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500 MILE RACE AT BROOKLANDS.

THE MOTOR CYCLE

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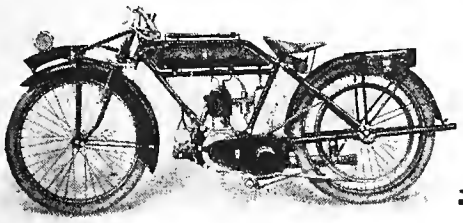

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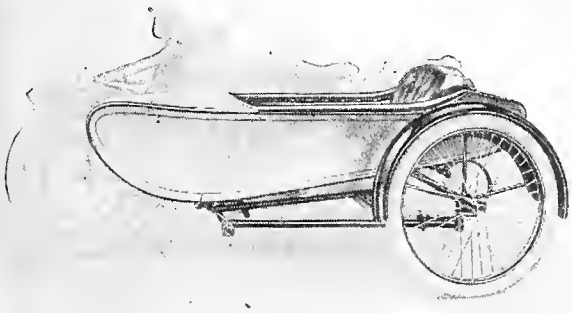

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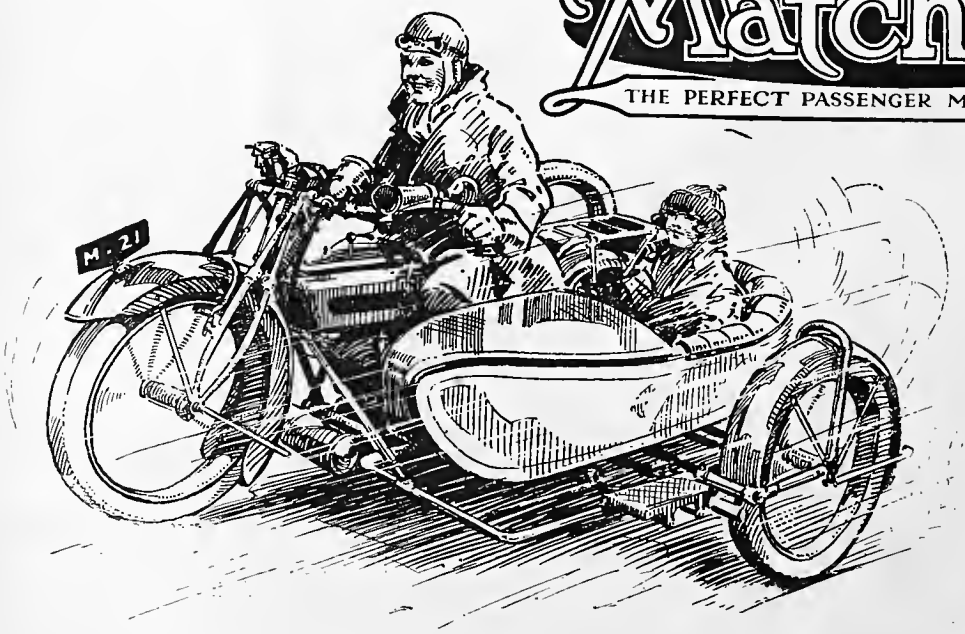

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The Five Hundred Mile Race.

BEFORE any really important event there is always a tendency to exaggerate the hardships of the test, and on Saturday last it was freely mooted that not 5% of the starters would finish the 500 mile race at Brooklands. However, the prognostications of the pessimists came to naught, and thirty-three machines out of sixty-four starters (or just over 50%) completed one of the severest trials ever provided, and incidentally set up many new records during the process.

It was expected that a big twin would carry off the premier award, and this type secured the first three places. Next came a well tried 500 c.c. machine. It was in the smaller classes that the greatest surprises occurred, the 350 c.c. class being won on a two-stroke with considerable ease, after a magnificent display of consistent riding, while the speed of the winning 250 c.c. machine was within a fraction of the second 350 c.c.

Two-strokes ran with wonderful regularity, and definitely refuted the suggestion that this type of engine is unable to stand prolonged speed work.

On the whole, the race provided a marvellous testimony to the endurance of the modern motor cycle. Though the excellence of the British single was demonstrated once again, the absence of a fast British big twin was sadly obvious.

Brakes, valve gear, and lubrication are the points which stand out as being most in need of improvement. Undoubtedly, the introduction of a 500 mile track race has been justified, and, just as certainly, it should become an annual event of the first importance Though not spectacular from the viewpoint of the casual observer, it is full of interest to the entrant and manufacturer, who should acquire much valuable information as to the capabilities of his mount. While being, perhaps, the most strenuous event of the year, it is by no means an event to be won by the freak speed machine; in fact, this type is penalised by the regulations.

Reliability Trials on the Continent.

WITH the present year's glut of English competitions, motor cycle manufacturers find it difficult to decide as to which to support. For this reason, perhaps, the International Six Days in Switzerland has not received the consideration due to it. This year organised by the Swiss Motor Cycle Union for the cup presented by the British Cycle and Motor Cycle Manufacturers' and Traders' Union, this old-established International event first saw the light in the shape of a race between representatives of different countries. As, however, the movement progressed, it was felt that when the International Federation of Motor Cycle Clubs was revived, it would be more beneficial to the industry for manufacturers of different countries to match their products against one another in a reliability trial.

Up to the present time important races in France and elsewhere have been fairly well supported by the British trade. These races take place on flat, safe roads, and are all very well in their way; but, if our manufacturers have any regard for overseas trade, they would do well to consider the International Six Days Trial, especially as this year it will be held in Switzerland, a country which, as all the world knows, contains some of the longest hills that can be encountered, which compare favourably even with the highest in our overseas dominions. We shall be surprised if anything in the nature of a freak hill is produced, but what we all want to know is how the average British motor cycle or sidecar outfit will behave on the long, tiring gradients which abound in Continental countries, and also in our own overseas dominions. How British machines behave in English and Scottish trials we know quite well, but here is virgin ground, and the lessons to be learned from this trial are, we think, likely to be exceedingly valuable. The trial is in the hands of the Swiss Motor Cycle Union, and it is safe to assume that the organisation will be of the very best.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS BY IXION

350 c.c. Sidecars.

NOW that the 350 c.c. machine has beaten the larger type in the T.T., we shall probably see the small sidecar outfit catalogued by a large number of makers. So long as it is not asked to accommodate a large family it will prove a useful addition to existing types; but if too much is claimed for it it will grow into a "five hundreder" again.

Toujours the A.J.S.

IN the T.T. there is only one place where a racing man gets the full benefit of 500 c.c., viz., along the straights towards Sulby on the far side of the Island. What he gains on the swings, he loses on the roundabouts. Over the bulk of the Manx racing route the longer wheelbase of the 3½ h.p. makes it inferior to a cobby 2¾ h.p. in corner work. The extra weight of the 3½ h.p. tires out the riders faster than the lighter 2¾ h.p. I don't think that a 350 c.c. will win the Senior next year if the present conditions are maintained; for several of the bigger machines which were very "green" this year will be stauncher in twelve months' time. But it is certain that the Manx course doesn't give the 3½ h.p. enough rope. Thus a really good 2¾ h.p., ridden by a first-class man, will always press the 500 c.c. hard, and would occasionally win outright.

The Alternatives.

THE line of least resistance will be to continue the existing arrangement for another year, and see what happens. (The effect would be to develop the steering, reliability, brakes, etc., of the 3½ h.p. without demanding more h.p. from it.) If this solution does not commend itself to the powers that be, there are two others. One is to limit the Senior race to 350 c.c., in which case the most popular type of British engine will be abandoned to indirect methods of development, and the Scott Co.—for example—will be tempted to build a special racing engine wholly distinct from their commercial models. (This would be a pity, as 500 c.c. is still the practical minimum for sidecar work.) The other plan is to discover a fresh course, embodying more straights and longer straights. There is no such roads in the Isle of Man. There are plenty of such courses in England, but it is doubtful whether the legal preliminaries are possible. There are plenty of such routes in France, and the French municipal authorities would subsidise the A.C.U. to cross the water, while Ireland was freely mooted in the Island last month.

The A.B.C. at Le Mans.

THOUGH trade depression robbed us of the delight of watching a racing A.B.C. in the T.T., some of us will see the French edition at Le Mans. At Provins the other day this machine proved itself appreciably faster than the cream of its compatriots, but one of the riders broke a valve, and the other battered too light a back wheel to pieces. The French racing A.B.C. machines do 5,200 r.p.m. under load on the road. Nevertheless, my French correspondent considers that o.h.v. motor cycle engines should have an overhead camshaft, operating the valves direct. The commoner type of o.h.v. entails in his opinion too much weight for racing revs; moreover, with a pushrod-rocker-tappet outfit you must use a ridiculously heavy spring and a correspondingly sturdy valve, or else everything "floats." (This objection ultimately narrows itself down to the question whether we can get a light valve which will stand a colossal spring; the T.T. suggests that we can, but why not fit return springs to the rocker gear?)

Ixion's "MOTOR CYCLE REMINISCENCES" have lately been published in book form, price 5s. 3d. post free, from "The Motor Cycle" Offices, 20, Tudor Street, E.C.4.

Occasional Comments.—

A Good Gradometer.

SOME months ago I alluded to the Tapley gradometer as a good instrument for verifying gradients. I originally made a special attachment for mounting a car model on my motor cycle, but the inventor has now brought out a special motor cycle edition. A clip is bolted to the top tube, handle-bar, or special accessory crossbar, and this clip is thin enough to clear the tank on any make of machine. The instrument is fixed to the clip by a ball joint, so that it can be accurately levelled up before tightening in position. The needle is so thoroughly well damped as to justify the makers' use of the term "dead beat," and it does not flicker, being as immune from acceleration or road vibrations as any instrument can be. It is designed to work at any lateral angle up to 40°, so that it is quite legible when the owner is in his riding position, and a variety of dials can be obtained. The makers supply a book of graphs from which—with the aid of a speedometer—it is possible to work out the approximate horse-power which the engine is developing on a given hill. The gradometer is thus a very fascinating toy, and of real value in tuning up an engine, besides satisfying our natural inquisitiveness about unknown hills.

Flywheel Lighting.

MANY of us felt a thrill of joy quiver up our marrows when Cyril Pullin announced that his forthcoming two-stroke would have a flywheel magneto, which also provided current for the lamps. Such a combination struck us as the essence of simplicity and cheapness; and it slew the main hoodoo of the utility "baby" machine (let me explain in a stage whisper that I mean *lamps*). I don't know how Mr. Pullin has been faring, but one or two of my friends who conceived a similar brainwave about the same period have experienced unco' difficulty in coaxing a flywheel magneto to give enough current for the two separate purposes. However, the other day, I ran into Mr. A. P. Young, of the B.T.H. He is always a cheery personage, but he was so exceptionally jovial on this occasion that I suspect his flywheel magneto is distilling all the juice he wants, and then some. I hope so.

A Pessimist.

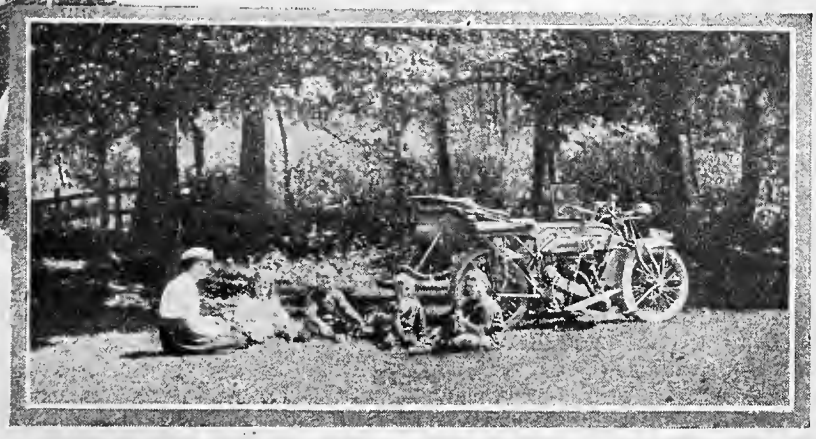
THE everyday definition of a pessimist is a man who wears a belt as well as braces. I met a motor cycling pessimist the other day. In fact, I discovered him by accident. He was mending a puncture, and when I stopped to see if everything was O.K., my startled eye fell on the contents of a small suit case—or should I say, a large *attaché* case—which lay open on his carrier. It contained more spares and tools than my entire garage—two valves, four sparking plugs, two complete chains, spare cover and tube, endless tube spanners, a hammer, several files, etc. I told him that I was touring with no equipment other than the makers' toolkit, one plug, one chain link, and a repair outfit. He looked positively shocked.

Utility Tyres.

ON a big machine tyres present no special problem in everyday business riding. You can make room for a pair of 3in. tyres on a 3½ h.p. machine, and it is then long odds that you will ride punctureless for a whole year. Not so on the cheap babies, which many of us affect for business purposes. They often have 24in. tyres, with covers little thicker than a safety razor blade; and any self-respecting flintlet on the road can force such covers to emit a sickening hiss. In pleasure riding a puncture can be taken philosophically—it is at least an excuse for a pipe. But when you are riding hard to nip some big business before the other fellow gets in ahead of you, or when you are scorching home in the dark to keep tryst with Arabella, a tyre stop is the deuce and all. I haven't solved the problem yet. At present I have been driven to don the thickest 24in. cover going (it isn't really very thick), to fit a sheath inside it, and to add a self-sealing inner tube. This outfit is not proof against broken bottles, but it will at least keep out tacks and pins.

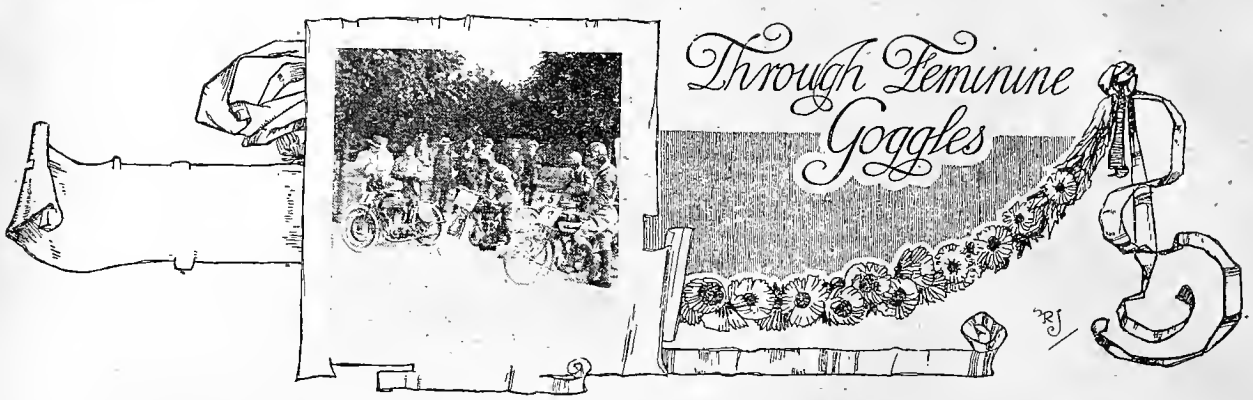
Magneto Lighting.

UNTIL somebody devises a specific term, I use the above crossheading to indicate those electric lighting systems which embody no expensive dynamo, but use the surplus output of whatever ignition device is fitted. I know I shall be accused of gross exaggeration, but I am going to say that a perfected outfit of this class revolutionises utility motor cycles, and constitutes just such another landmark in the industry as the advent of the spray carburetter or the high-tension magneto.



A JOLLY FAMILY PARTY.

A Matchless tandem-seated outfit, the owner of which derives not the least of her pleasures in conveying her family from the stuffy city to the green fields. Sometimes the question is asked: "Why buy a big sidecar outfit when the price is so near to that of the three-wheeler or cheap four-wheeler?" The query is well answered here!



A Lady Motor Cyclist's Impressions of the Isle of Man T.T. Week.

BY M. LOCKWOOD TATHAM.

Considering the number of ladies present at this year's Tourist Trophy races, a woman's impressions should be of great interest. The "mere male with a mechanical mind" might consider that the average lady would find little of interest in a spectacle of speed. Our contributor (who, by the way, is a Douglas resident) reveals that there are minor points which most men overlook. With men, machines perhaps come foremost; but with ladies the personal element takes first place.

Our contributor with her sketch book was a familiar figure in the enclosure, where she obtained the thumb nail impressions of T.T. personalities reproduced in this article.

SINCE the Tourist Trophy races there has been so much talk of such things as overhead valves and gear ratios and other mysteries chiefly of interest to the engineer that one sometimes wonders whether the motor cycles skipped round the Isle of Man course without human assistance. Surely the riders had something to do with the victories?

Of course, we all appreciate that the event is organised by the Auto Cycle Union to assist the development of motor cycles, not of motor cyclists; but, as a woman, I cannot help thinking that the human element and the social side of the T.T. week is somewhat neglected. With so many ladies now reading *The Motor Cycle*, it occurs to me that the time cannot be far distant when the Tourist Trophy event will be likened to Ascot. By this I mean that, perhaps, we shall see in the papers some details of coming fashions; perhaps—and who knows?—mannequins will parade in the paddock, and photographs will appear on the back page of the important dailies depicting the latest creations worn by important personages associated with the blue riband of the motor cycle world.

The Dominant Theme.

When the Editor of *The Motor Cycle* commissioned me to write my impressions of the T.T., I was sorely tempted to try to subordinate my interest as a motor cyclist, and to remember that I was just a woman with the average woman's interests. I find, however, that I am too much a motor cyclist, and, having met many of the riders and officials in my temporary appointment as *The Motor Cycle* artist, I find that, after all, the race comes first.

Percy Butler—a former T.T. rider, and a well-known figure at important motor cycle events

An R.A.C. scout whose activities impressed our artist sufficiently for her to sketch him from memory.

There were crowds at the start—on the grandstand, in the "paddock," and all over the road—about an hour before the race started. Riders in their businesslike, and sometimes quite gaily coloured kit were surrounded by well-wishers, including many charmingly garbed ladies, all anxious for a handshake and "good luck," and, in some cases, an even more effusive expression of good wishes. Lucky dogs!

But, poor boys, some of them were very nervous, and the last cigarette could be seen to tremble slightly between two fingers.

Clearing the Course.

Then came the "Clear the course!" and busy marshals hurried about with "Now then, please," and "Come along, ladies, hurry up now!" A rush was made for the grandstand, and competitors filed by to their appointed places with their trusty steeds. A little wait, and there was a flutter on the press stand, a shot, and the first rider was off.

Loud cheers came from the crowd when their favourite competitors started, and the grandstand buzzed with conversation as wagers were laid and chances discussed.

When the last man had started a string band burst forth into cheerful music, and was reinforced later by four gentlemen who gaily warbled

Mrs. Lockwood Tatham's impression of Clarence Wood—the Scott exponent.

Through Feminine Goggles.—

"Caroline" and other jazzy subjects, with a strong American accent and beautiful Odol smiles.

As the day wore on there came a more and more noticeable interest in the refreshment tent, where one heard much technical conversation, such as "Do have a bottle of bread and dripping, old thing!" between important people, who, away from the Island, are no doubt very sober-sided business and professional gentlemen.

It took me quite a long time to solve the mysteries of machines referred to as the "Flying Banana," "St. Vitus," and "The Organ." To the initiated, however, the long yellow tank of the Wooler makes the name appropriate, and Sun-Vitesse is more obvious. The "Organ" is very subtle. Anyone who knows a Scott also knows that on changing gear the engine plays the first few bars of a well-known hymn.

Fully equipped for long distance riding. Lady motor cyclists who took part in a recently organised trial in Devonshire.

By the way, why *is* it that people flock to a place where there is a reasonable hope of somebody crashing? Bloodthirsty brutes we are!

There were many amusing incidents at the grandstand as machines stopped at their "pits." It was wonderful to see the dive made by a diminutive boy scout to do his duty with a duster on number plates. He frantically polished one plate while his eyes remained adoringly on the rider's face, and his ears stuck out in the effort to catch the slightest word falling from the hero's lips.

Eric Williams, after his success in winning the Junior race.

I wonder what were the secret thoughts of the rider who, having retired very near the start, rode up to his pit on a lady's push bicycle and demanded to be filled up?

The Junior race got very exciting as it went on, and much interest was shown in the wonderful performance of Whalley on a Massey-Arran. He was among the lap leaders at the end of the fourth circuit, and it was awfully bad luck that he should burst a tyre on his last lap. He was running Eric Williams, the winner, very close.

Eric Williams's victory was a popular one. He was seized and "chaired" through the enclosure with a perfect army of photographers following and fighting for snaps. He was in the best of humour, chatting and laughing with everybody, but thankful to gain the comparative peace of the refreshment tent. But enthusiastic as his reception was, I do not think it came up to Howard Davies's on Thursday. There was something irresistibly humorous and very sporting about a little 2¾ h.p. A.J.S. taking the palm over the heads of all these wonderful big machines—even the "hush-hush merchants"—and it appealed to everybody. I think Davies was a little more exhausted than Williams, but he stuck his lionisation nobly.

Crowds of people went to Keppel Gate, Hillberry, Governor's Bridge, the Ramsey hairpin, and other "thrill spots," and they certainly *got* plenty of thrills! But everybody is much relieved that there were comparatively few accidents both during practices and the races. We were all very glad to see Alfie Alexander on the stand on Thursday after his smash on Tuesday. His eye was badly swollen and his arm in a sling. There is no doubt that his crash helmet saved his life. Whalley, too, had a nasty spill, and Olsson, Fairweather, Jones, Clarence Wood, Sutcliffe, Shaw, Thorpe, all came off rather badly, but, taking it all round, the casualty list was not large. Everybody, spectators, competitors, and officials semed thoroughly to enjoy themselves, and we are looking forward to another exciting event next year.

"A Welshman with an Italian name, a sunny smile, and a mop of fair hair"—C. Sgonina, who rode a Triumph.

I wonder what effect the victory of the A.J.S. in the Senior will have? It will be difficult to differentiate between Junior and Senior. I should not be surprised to see a three days trial for all comers, with the "sky the limit."

Two more contributors to the problem of carrying spare bulbs. One reader cuts a short length off a dud inner tube, pops his bulbs into it, ties string round the tube between each pair of bulbs, and why, there you are, looking just like the python which crawled into the Sports Club at Rangoon and swallowed three footballs. S. Smith and Sons announce a special metal case, made for the purpose. Their head tester has evidently had special experience; for they propose to design it for carrying three spare tail lamp bulbs, and no head lamp bulb on the ground that the latter never gives trouble. I confess I have not had many head lamp bulbs go dud, but surely he would be a brave man who would try to ride from London to Manchester of a winter's night with no spare head lamp bulb?

IXION.

Pillion Riding

Some Comments on the Practice of Accommodating Two Persons on a Motor Bicycle designed for One.

MUCH has already been written on the subject of carrying a passenger on the carrier of a motor bicycle, and thus accommodating two persons on a machine which is built to carry only one.

A great deal of what has been said is simple nonsense. For example, I read, not long ago, a serious statement to the effect that when a passenger was carried upon the luggage bracket of a motor bicycle of the usual type, the centre of gravity of the whole conveyance, complete with its human load, was brought so far to the rear that it was in reality behind the back axle, and thus interfered considerably with the steering and general balance. That it would so interfere I am perfectly willing to admit, for the effect of such a displacement of the centre of gravity would be not simply to take so much weight off the front wheel that it would lose its power of steering and balancing the machine for lack of sufficient friction on the ground, but even to cause the front to lift in the air, stand on end, and, finally, fall backwards, and the drive of the engine would assist in this remarkable evolution.

An Argument Reduced to Absurdity.

Clearly this is so much piffle; for not only do we see motor cycles daily proceeding upon their way with two passengers on board, but a little calculation will show that the rear passenger who is capable of producing such a result must measure his weight in hundredweights certainly, if not in tons, and although I have both friends and relations who are stouter than they need be, I have yet to meet the man or woman who can turn the scale at half a ton.

This statement, then, we may take as a piece of grotesque exaggeration, and dismiss it as absurd. Still, it is a fact that, on some machines where the centre of gravity is in the first place too far to the rear, the balance is affected somewhat adversely.

Now to approach the subject with an unbiassed mind it must be admitted that pillion riding has its risks like many another form of sport and travel, and if we consider the matter carefully we shall easily see that these risks vary greatly in individual cases; but in my opinion the risks are not so great as to be the subject of special legislation.

It is quite true that there have been accidents which might possibly not have occurred had the carrier been empty, and the presence of an extra weight in the rear may perhaps make just that small difference which exists between an accident and a narrow escape, but if due care is taken it seems to me that the risks are hardly worth considering.

The Necessity of Taking Care.

The taking of due care means, of course, a consideration of several matters. The combination of wet weather and rutty roads should be avoided if possible, so also should a passenger who will not sit still. Personally, I have never been troubled with sideslip or wobbling on good roads even when the weather has been wet. Corners should never be taken at a high speed, especially those round which it is impossible to see; partly because the extra weight in the rear makes it difficult to turn as sharply as might be wished, and partly because it is generally when turning a blind corner that the sudden emergency arises, and sudden emergencies are among the things to be avoided.

Further, the position of the pillion passenger has a considerable effect on the general stability of the machine. Some prefer to sit astride, others sideways, and there are riders who assert that each of these positions is the safer. It is certainly desirable that there should be some sort of rest for the feet, and long footboards, combined with the astride position, satisfy this claim fairly well.

Lastly, it is very clear that a spring seat, if properly designed and constructed, adds greatly not only to the comfort, but also to the safety of the passenger. It is, however, essential that the spring seat should have some lateral firmness, by which I mean that it must be so constructed that it cannot tip over sideways or drop at one corner. Such a seat, while possibly adding to the comfort and being fairly satisfactory where the astride position is adopted, must most certainly take from the security and steadiness of a passenger sitting sideways. Steadiness is important in more ways than one. First, a lack of it makes the passenger feel very insecure, and secondly, sudden movement on the part of the passenger is inclined to upset the steering and cause the machine to wobble.

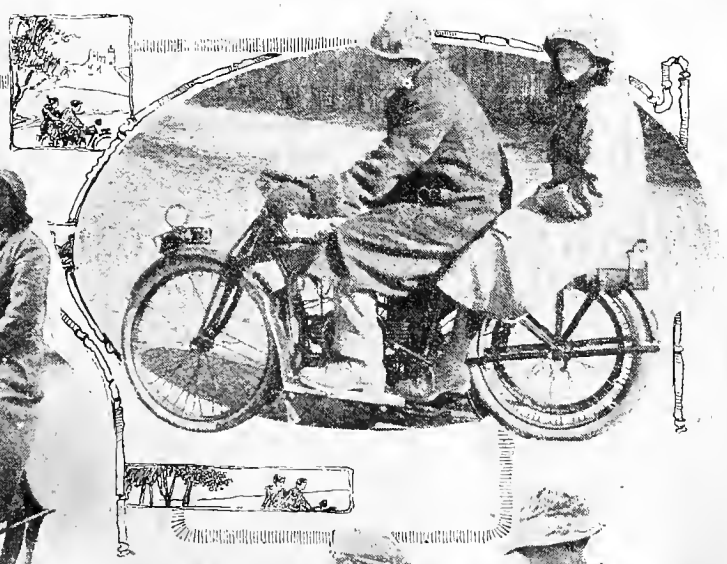
Pillion Riding.—

It is far cheaper to carry a pillion passenger than to fit a sidecar to one's motor cycle. This is a point of considerable importance to many, though it may not matter to the fortunate few. In the first place the cost of the sidecar—£40 or so—is saved, and in the second place the running costs are kept lower all round. As a sidecar imposes considerable side strain upon a motor cycle more power is required to drive it, and the tyres suffer more. More power obviously means more petrol and oil. Then again, under the new taxing arrangements, 20s. is saved in the cost of the licence.

Some little while ago a friend and I were running identical machines (3 h.p. Enfields) both in good tune. My friend fitted a light sidecar weighing about 70 lb., and found that up a certain main road hill of moderate steepness he was obliged to drop his gear even when the sidecar was empty, while I could carry a 140 lb. passenger on the pillion up this same hill at a fast pace without having to change down.

Young people, I find, are very fond of pillion riding; they say it is more sporting than sitting in a sidecar. But let us be fair—a sidecar is far more comfortable than a seat on the carrier. J.H.W.

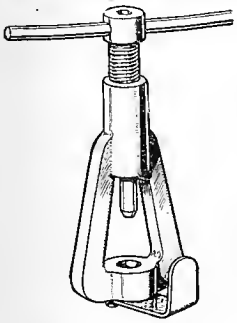
In America and Holland pillion passengers prefer to ride astride on a saddle, with footrests and pommel as safeguards.



STYLES OF PILLION RIDING.

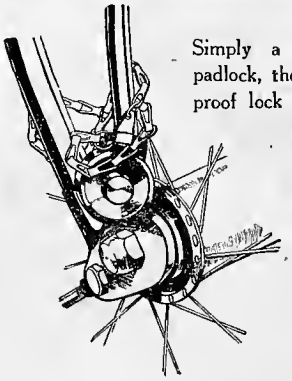
No amount of argument will convince the experienced rider or the passenger that any particular method of pillion riding is the best. An ordinary cushion and a stout strap are considered by many to be not only the cheapest, but the best method, while others insist on fully sprung seats with footrests and backrest. It is a matter which often causes surprise that pillion passengers appear to suffer no discomfort from the use of a thin cushion, which, however, is more practicable when used on a spring wheel mount, such as the Wooler, depicted in the lower illustration. Despite the spring frame, however, we doubt the success of the lady's jumper knitting efforts except when posed for the photographer.

AMONG THE ACCESSORIES.

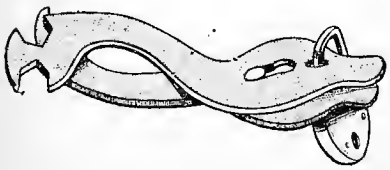


An adjustable stop and a hollow cutter which does not clog are useful points about the Pennant belt punch. (The Pennant Manfg. Co., Ltd., Central Works, Watery Lane, Birmingham.)

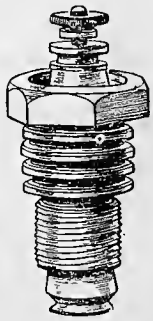
Not only is the Nesthill a speedometer lamp, but it may be used to illuminate a route card, as an inspection lamp, or even in extremities, as a temporary head light. Standard pattern four-volt bulbs are used. (Ernest Hill, Ltd., Beta Works, 56, Broomhall Street, Birmingham.)



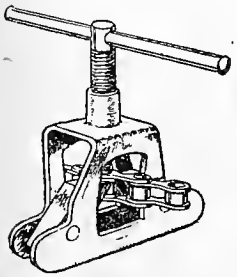
Simply a chain and padlock, the Dot thief-proof lock is marketed by Dunhills, Ltd., 359-361, Euston Road, London, N.W.1.



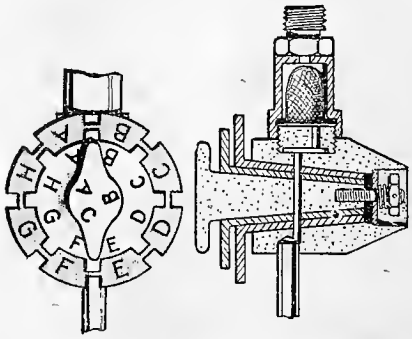
Two specially-shaped flat spanners have been cleverly designed to lock together in the manner shown and, with the addition of a padlock, to form a thief-proof wheel-locking device. (A. H. Hunt, Ltd., H.A.H. Works, Tunstall Road, East Croydon, Surrey.)



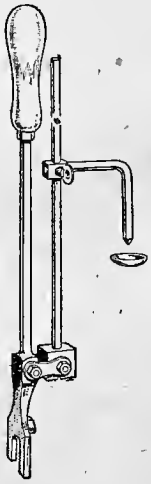
As the insulated portion is merely a taper fit in the body, only a sharp tap is necessary to dismantle the Over-all sparking plug for cleaning. Explosion pressure tends to keep the plug absolutely gas tight. (L. Duponte, 7, King Street, Cheapside, London, E.C.2.)



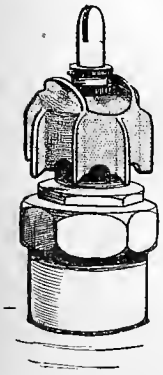
Where 30 seconds may mean the loss of the race, T.T. riders chose with care such items as chain punches. Weight and size are also important considerations, and as the Carlton rivet extractor weighs only six ounces, is but slightly larger than an ordinary belt punch, and is adaptable to any size of motor cycle chain, it is not surprising that it was carried by many competitors this year. It is sold by A. J. D., Ltd., Clay Lane, Coventry, for 4/6.



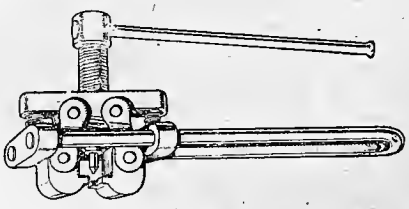
Foiling the motor cycle thief by locking the petrol supply is the aim of Boot's petrol tap lock. Only when the holes in the cones (in the sectional drawing) register is the petrol on, and this only occurs when the discs are in their proper combination. We shudder to think of the unfortunate owner who forgets the key letters! The inventor is Mr. G. H. Boot, 1, Berridge Road East, Nottingham.



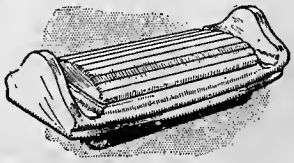
For workshop use, the Elite valve-lifting tool, which, as shown, is adjustable to practically any engine, has much to commend it. Great leverage is provided by the long handle, while the lower link is self-aligning. It is the design and product of Mr. R. Ballingall, Motor Cycle Agent, Forfar, and is shortly to be placed on the market.



Consisting of a small finned aluminium casting, the O. and J. plug radiator protects the plug from moisture, and at the same time dissipates heat from the central electrode. (The Star Equipment Co., 9, Baronsmere Road, East Finchley Road, London, N.2.)



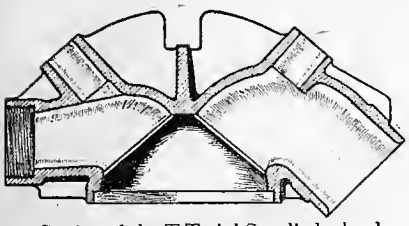
Somewhat heavy for the tool-kit, but very useful for the garage where more than one chain size has to be contended with, this fully adjustable chain rivet extractor has just been introduced by Saxessories, Ltd., George Street Works, Coventry. Good features are the long tommy bar, the convenient handle, and the ingenious self-centring action.



Quickly detachable rubber pads are used on the Massey-Arran footrests, which are mainly made of polished aluminium. (The Massey-Arran Motor Co., Bell Barn Road, Birmingham.)

A REMARKABLE 350 c.c. ENGINE.

Some Notes on the Engine that won both Senior and Junior T.T. Races.



Section of the T.T. A.J.S. cylinder head. The shapes of the head and gas passages are clearly indicated. Holes are drilled through the transverse web between each pair of cooling ribs.

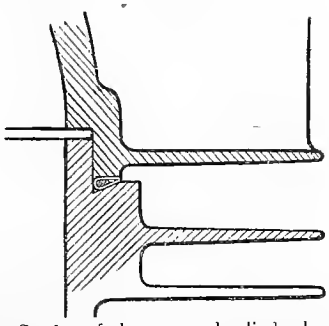
It is now household news throughout the world that, in addition to obtaining six out of the first seven places in the Junior Tourist Trophy, a 350 c.c. A.J.S., ridden by H. R. Davies, succeeded in defeating the pick of the world's 500 c.c. machines in the Senior event. The performance naturally has caused considerable interest and curiosity wherever motor cycles are known, and it was with the object of ascertaining how much of the detail of their engine the producers were prepared to divulge that we approached Messrs. A. J. Stevens immediately after the race. The brothers Stevens were very frank as regards most of the important parts.

Not the Limit.

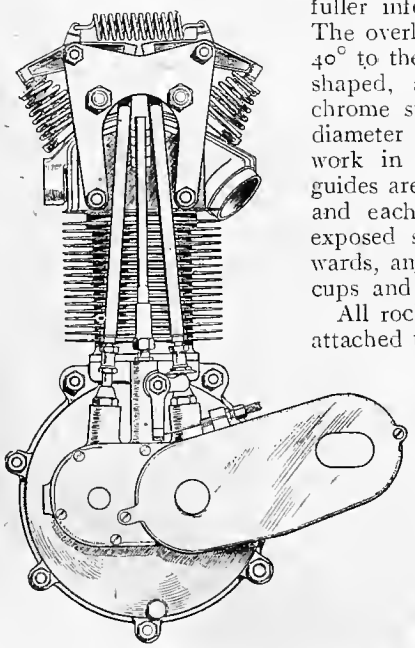
Possible because they realise that, though their marvellous little engine was good enough for this year's races, it will not be fast enough for the 1922 events, they are already at work on improvements and modifications. This is the right spirit to adopt, for though at the present moment the T.T. A.J.S. can hardly be considered a standard machine, the firm attach considerable importance to the lessons learned in their racing experience, and much of the knowledge gained by this means is used when designing standard productions.

At the beginning it may be said that the overhead valve A.J.S. engine contains few very startling features, but is the outcome of excellent design and careful experiment, and the results of this year's Isle of Man races are sufficient to prove that their win was no mere "fluke," but a performance that can be repeated with any similar engine, given a good enough rider.

A bore of 74 mm. and stroke of 81 mm. (349 c.c., are the dimensions of the cylinder, which has inclined overhead valves. The engine, except for a double row roller bearing big end, has plain bearings throughout. Such in brief are the chief features, but those who desire to follow closely the development of the petrol engine will require much fuller information. To begin then at the top. The overhead valves are inclined at an angle of 40° to the vertical, they are hollow and trumpet shaped, and are made from a special nickel chrome steel. Having a lift of $\frac{5}{16}$in. the port diameter of each is $1\frac{9}{16}$in. clear, and the stems work in separated cast iron guides. These guides are pressed into the cylinder head casting, and each has six cooling ribs formed on its exposed surface. The valve springs taper upwards, and are secured by light but sturdy spring cups and plain cotter fixings.



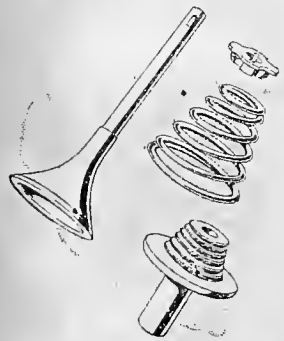
Section of the patented cylinder head joint, showing the inclined lower seating for the copper asbestos washer.



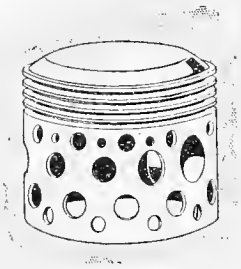
Valve side of the $2\frac{3}{4}$ h.p. A.J.S., showing operating mechanism and return spring for push rods and tappet gear.

All rocker gear is carried by two steel plates, attached to either side of the cylinder head, and the inlet and exhaust rockers are interconnected by a powerful tension spring, which, by returning the rockers and push rods, relieves the valve springs from any duties other than closing the valves. Push rods of $\frac{7}{16}$in. diameter and of very light gauge connect the rockers with the tappets, ball heads being formed on the tappets and rockers, and sockets being soldered into either end of the push rods. Adjustment is carried out at the tappets in a normal manner. Separate cams operate the tappets directly, and provide the following valve timing: Inlet opens 15° early and closes 58° late, exhaust opens 50° early and closes 25° late.

Of cast iron and having deep vertical radiating fins, the cylinder head is roughly hemispherical in shape. It should be noted that the fins lie in the direction of the air current when the machine is in motion, and that the gas passages are carefully designed. A single steel bar used as a strap holds the head in position, turnbuckles with right and left hand threads being provided on either side for tightening down.



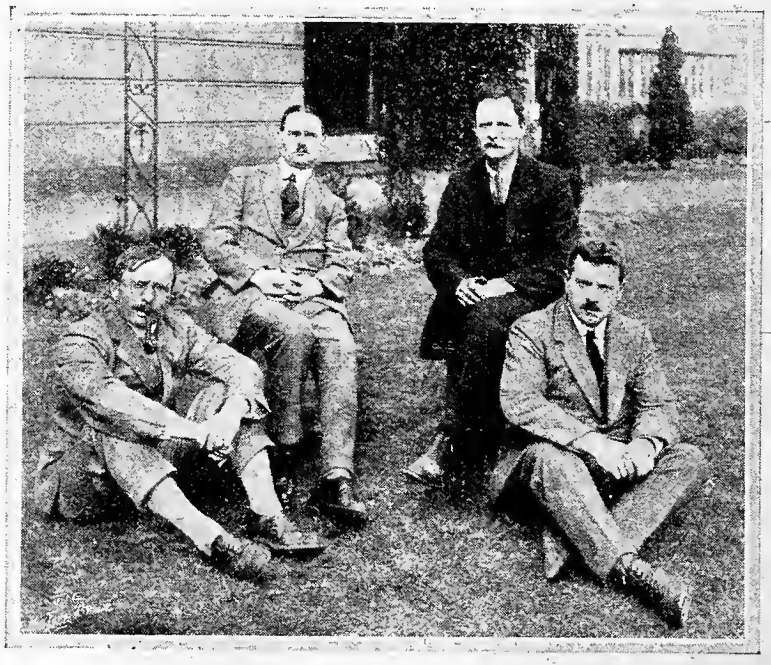
The hollow trumpet valve and taper valve spring. The valve guide has six radiating ribs machined on the exposed end.



A light steel piston, liberally drilled, and carrying four narrow rings, is a feature of the T.T. winner.

A Remarkable 350 c.c. Engine.—

In early days considerable trouble was experienced in obtaining a first-rate compression joint between cylinder and head, but after considerable experiment Messrs. A. J. Stevens designed and patented a simple form of joint wherein a copper asbestos washer is pinched between a flat and a taper face, and this construction has proved absolutely satisfactory. The cylinder itself is of cast iron, and is ground all over, both inside and out. Fins of 1in. depth and $\frac{9}{32}$in. pitch extend from the top almost to the base, and both cylinder and head are covered with copper deposit before blacking. This is done with the idea of improving the cooling, but since the deposit is of no great depth it is doubtful if any great gain is effected in this way. Undoubtedly it is the admirable design and arrangement of fins on the walls of the cylinder itself, and more particularly on the cylinder head that permitted the little engine to average 3,400 r.p.m. for 226 miles. A steel piston with concave head provides a compression ratio of 5.5—1. This piston carries four narrow cast iron rings, and is liberally drilled. In design it is more or less normal except that the length is slightly less than the bore, and that it is machined from the solid billet; nevertheless its weight complete with rings and hollow gudgeon pin is no more than 12 oz. in all.



THE MEN BEHIND THE A.J.S.
From left to right, seated: Mr. A. J. Stevens, M.I.A.E., production manager; Mr. H. Stevens, M.I.M.E., A.M.I.A.E., senior managing director. On ground: Mr. G. Stevens, A.M.I.A.E., commercial manager; Mr. J. Stevens, jun., A.M.I.A.E., manager experimental department

Taper pins secure the gudgeon pin in its bosses, and the light H section connecting rod is bushed with bronze in the small end. From the small end the connecting rod tapers out to a considerable depth at the big end. A hardened steel ring is pressed into the rod and forms the outer race for two rows of $\frac{5}{16}$in. rollers running on the crank pin.

Parallel at each end, the crank pin is secured to the 7in. steel flywheels by fine threaded nuts, though the crank axles are secured by tapers and keys. Bronze bushes of $\frac{13}{16} \times 1\frac{5}{16}$in. on the timing side, and $\frac{13}{16} \times 1\frac{9}{16}$in. on the drive side, carry the crank unit, and, excepting that there is ample clearance between flywheels and crank case to prevent oil drag, no very special arrangements have been made for lubrication. Suitable oil holes are, of course, provided, but the foot-operated oil pump delivers directly into the crank case in a perfectly normal manner. A chain-driven Lucas magneto supplied the ignition, and the spark at full advance occurred 13 mm. before top dead centre.

It is worthy of mention that a new type of Renold chain, without rollers, was employed for the primary drive.

There is little need to mention the workmanship and general excellence of the A.J.S., since the results obtained speak for themselves.

THE INTERNATIONAL SIX DAYS TRIAL

FULL details are now available concerning the International Six Days Trial, which starts from Geneva on August 1st. So far as Great Britain is concerned the Auto-Cycle Union has nominated a team to rescue the valuable cup presented by the British Cycle and Motor Cycle Manufacturers and Traders, Ltd., to the F.I.C.M. from the holders, the Swiss Motor Cycle Union. This team is to be composed of Leslie Guy (Scott), H. S. F. Morgan (Morgan), and Eric Williams (A.J.S.), with as reserves Hugh Gibson (Royal Ruby), H. R. Davies (A.J.S.), and J. A. Newman (Sunbeam).

So as to give British manufacturers and riders a chance of entering for this interesting and instructive competition, the Swiss Motor Cycle Union have postponed the date of closing the entries until July 10th, at ordinary fees (which cost in Swiss money 300 fr. for manufacturers, and 150 fr. for private owners), and at double fees until July 15th. It is best to send entries direct to Mr. T. W. Loughborough, Secretary of the Auto-Cycle Union, 83, Pall Mall, London, S.W.1, who is also secretary of the International Federation of Motor Cycle Clubs, under whose auspices the Trial will be organised.

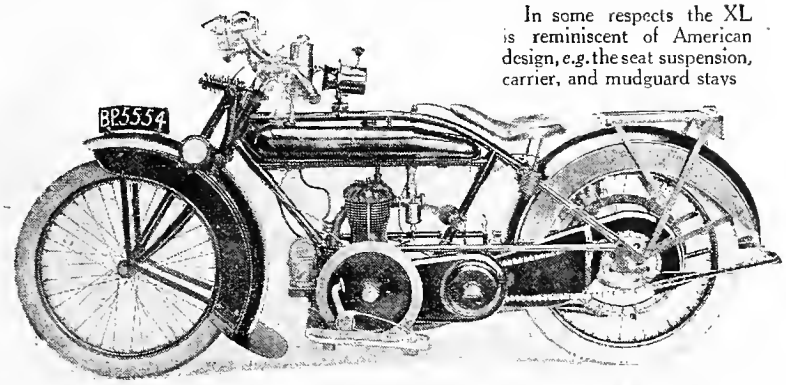
Such a course as has been selected for this trial has never been chosen before for any competition. It takes the competitor round the whole of Switzerland, and includes the principal mountain passes, among which is the St. Gothard, which reaches an altitude of 2,112 metres (6,900ft.), descending to Lugano through an absolutely different type of country from what is encountered on the northern side. All the principal touring centres in the country are traversed, and practically the whole of Switzerland, except the cantons, which are forbidden to motorists.

The Swiss Motor Cycle Union has prepared an extremely interesting plan of the course with contours of the hills, and a most attractive programme, which describes each day's journey in detail, and is copiously and beautifully illustrated. One picture shows the zigzag road running to the summit of the Grimsel Pass. No fewer than eighteen hairpin corners are visible, each corner a comparatively easy curve and practically dead flat.

MID-YEAR MODELS.

Touring and Sporting Solo Machines and Sidecar Outfits.

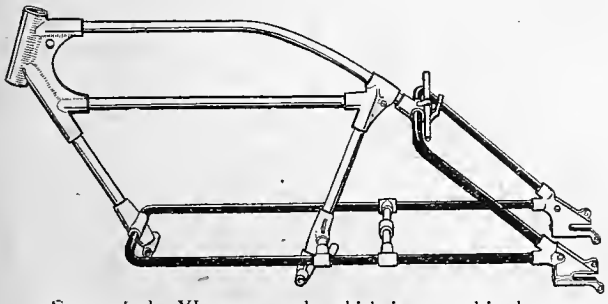
ALTHOUGH autumn and Olympia Showtime sees the birth of the greater number of new models, there is at present "certain liveliness" amongst manufacturers—a hopeful sign considering the industrial situation generally. New designs are appearing under both new and old names to an unusual extent for this season of the year.



In some respects the XL is reminiscent of American design, *e.g.* the seat suspension, carrier, and mudguard stays

Proving its Merit.

The first of these is the new XL motor cycle, a machine embodying several interesting features, and which recently was subjected to an A.C.U. observed test from John-o'-Groat's to Land's End. Two standard models were entered—the first a 4 h.p. Blackburne-engined mount, and the other a similar machine equipped with a 4 h.p. J.A.P. engine. Pressed steel frame lugs are employed throughout, whilst the lower ends of the engine tubes are rigidly held by a sub-frame, which, in conjunction with a cross member at the rear of the engine, supports the gear box. The head is of sound design, and is reinforced by steel webs between the top and bottom tank tubes. The possibility of whip in the engine-supporting tubes and the rear fork is greatly reduced by virtue of the incorporation of the additional sub-frame.



Frame of the XL motor cycle, which is unusual in the construction of its rear and lower members: pressed steel lugs are used throughout.

A gravity-feed lubrication system is employed, the tank being tapped at the base to receive a standard sight-feed lubricator. A non-return valve is located at the delivery end of the pipe, thus permitting the vacuum in the crank case to induce oil automatically. Pressed steel front forks, set at 60°, are fitted, while the tank, also of pressed steel, is of unusual shape, and has a somewhat deceptive appearance, being capable of holding two gallons of petrol and half a gallon of oil.

Semi-enclosed Transmission.

All-chain drive is employed, and the whole transmission is protected by cases of very neat appearance. Three screws only need be removed to release the plate concealing the clutch.

Another commendable feature is the provision of adjustable links on the footboards. The mudguarding is excellent; 6¾in. dome-shaped guards are fitted to both wheels. Voiturette (26×3in.) tyres are standard, but the brakes, as employed on the model illustrated, will later be substituted by a brake of the manufacturers' own design. A stand and carrier, both of flat-section pressed steel, are used, whilst a B.T.H. magneto is, in the case of both machines, mounted on an adjustable platform in front of the engine. The J.A.P. model is equipped with the new 85 × 95 mm. (539 c.c.) side-by-side valve engine, which, judging from our brief run, is possessed of remarkable acceleration and power. XL motor cycles are manufactured by the Excel Co., Norfolk Engineering Works, Worthing, Sussex.

A Single-speeder.

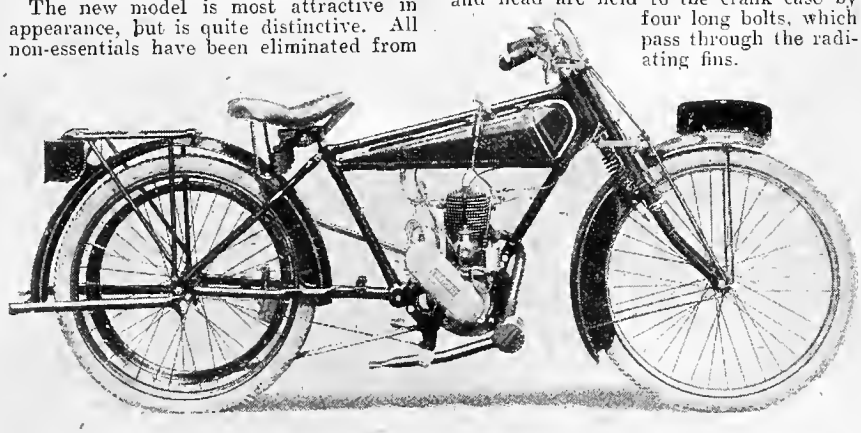
That there is still a good market for a single-speed lightweight is evidently the opinion of the Calthorpe Motor Cycle Co., of Barn Street, Birmingham, for this firm has just introduced a very neat-looking new model complying with this specification. And as Calthorpes have been making lightweights almost since the earliest days, they should be able to sound public opinion pretty accurately on this point.

The new model is most attractive in appearance, but is quite distinctive. All non-essentials have been eliminated from the design, which, by its very simplicity, promises great reliability. The price will be 43 guineas.

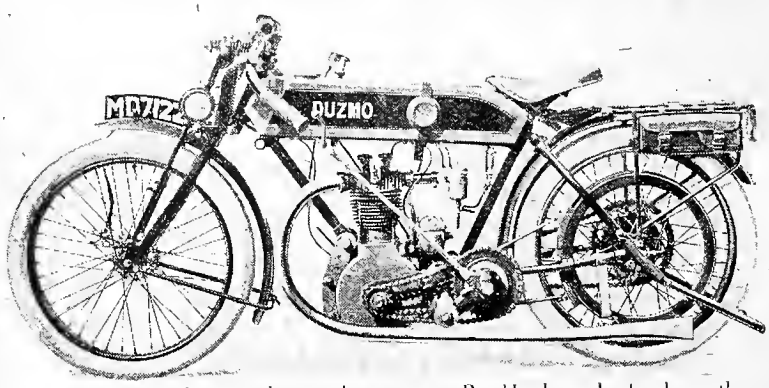
Other Calthorpe models are (1) the 2¾ h.p. J.A.P.-engined machine with an Enfield gear, which sells at 70 guineas (kick-starter £3 15s. extra); (2) the 3 h.p. two-stroke at 60 guineas (kick-starter £3 15s. extra); and (3) the 3 h.p. two-stroke sidecar outfit, which is supplied complete with a Maglita lighting set, at 105 guineas.

The Duzmo Revived.

Last year the Duzmo made quite a creditable impression during its brief appearance in the competition world, and the reintroduction of the 500 c.c. sporting solo model is a matter of some interest. The chief alteration in the design is the return to a splash lubrication system—previously a pump was located in the base of the crank case, and circulated oil through the engine from a sump in the crank case—oil being fed to the crank case by a Best mechanical pump, which is driven from an intermediary pinion between the magneto and timing pinions. The 3½ h.p. four-stroke engine (which has a bore and stroke of 88.9 × 79.2 mm. = 491 c.c.) differs from the previous model in the combustion head and crank case design. Overhead valves are used, the casting round the valve pockets now permitting the passage of air between the two valves. The cylinder and head are held to the crank case by four long bolts, which pass through the radiating fins.



A two-stroke single-speed model Calthorpe designed to meet the demand of those who want the very simplest form of motor cycle.



An aspirant to honours in speed events at Brooklands and elsewhere—the 3½ h.p Duzmo. The standard sporting model will have a direct belt drive.

The crank case and internal flywheels form new features; and the external appearance of the case has been greatly improved. Two rockers are operated by a central timing wheel, and the exhaust valve lifter is located in front of the timing case.

The standard sports model will have a direct 1in. belt drive from an adjustable pulley.

A more attractive tank has now been produced, as may be seen from the illustration, whilst the straight-through induction and exhaust pipes, combined with a large and efficient silencer, give the machine a distinctly sporting appearance.

Near and off side pedals operate belt rim brakes above and below the rear fork tube, and curiously-shaped blocks of aluminium are screwed to the pedal proper, which bring the latter just beneath the heel when the foot is in the usual riding position.

Appealing to Speedmen.

For a sporting machine the mudguarding is good, whilst the price of £98 includes a tool kit, repair outfit, and pump. In addition to the 3½ h.p. model, the production of a 7 h.p. V twin sidecar machine is in progress.

The illustration above is of a special machine, which will be entered in the 500 mile race at Brooklands, and to which an especially large tank and a two-speed Enfield gear have been fitted to meet the requirements of this event.

Duzmo machines are manufactured by John Wallace, Cedar Road Works, Hertford Road, Enfield Highway, Middlesex.

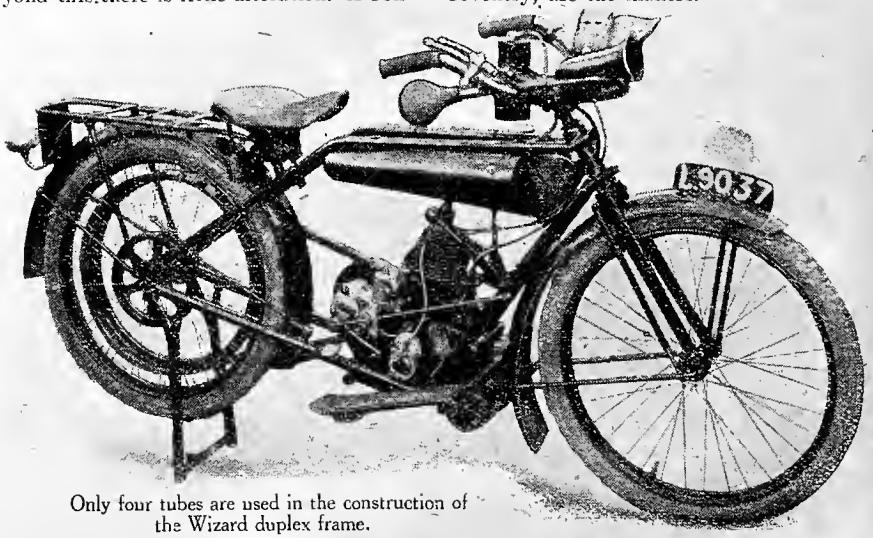
A Powerful Solo Flat Twin.

To avoid an unusually long wheelbase the gear box of the new model Coventry-Victor is located beneath the rear cylinder of the 6 h.p. flat twin engine. Beyond this there is little alteration. A Cox-Atmos carburetter is now fitted, and on one model we noticed an unconventionally-shaped induction pipe, which, it is claimed, gives very good results. Instead of being placed somewhere midway between the two cylinders the instrument is actually in the rear of back cylinder, and the induction pipe itself is not curved at any point, but makes only sharp right angle bends and 45° bends.

Although no compression release of any sort is fitted, the new model is an exceptionally easy starter from cold, as a short test run proved. The machine steers very nicely, and the engine is, like all really good flat twins, almost vibrationless. There also appeared to be ample power, although our short trial did not give us much opportunity of really plumbing its full capabilities.

Despite the fact that the short wheelbase model has been evolved for solo riding, it is nevertheless quite suitable for sidecar work, as it has the same engine and gears as the previous models; indeed, our illustration shows it in conjunction with a light sidecar, such an attachment forming a very pleasing outfit of moderate weight. With a high power-weight ratio a machine of this type possesses excellent accelerative powers, enhanced by the smooth torque of such an engine.

Morton and Weaver, Ltd., Cox Street, Coventry, are the makers.

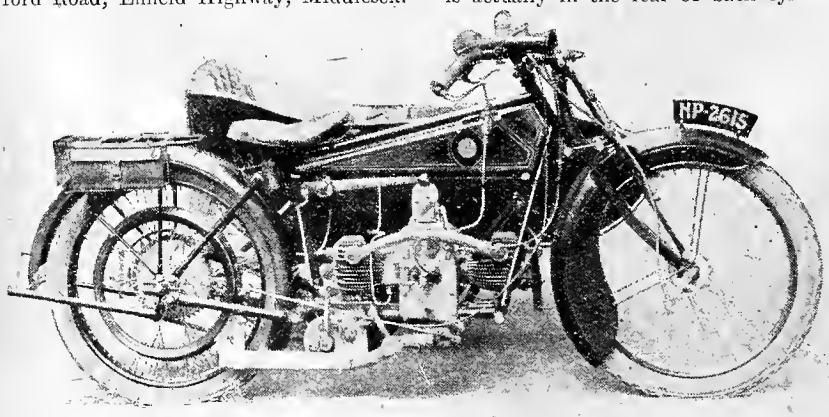


Only four tubes are used in the construction of the Wizard duplex frame.

Novel Frame Design.

Originality in frame construction is exemplified by the Wizard motor cycle recently introduced by the Wizard Motor Co., of Rhondda, Cardiff. Here we have a machine following conventional outlines, but arriving at that end by unconventional means.

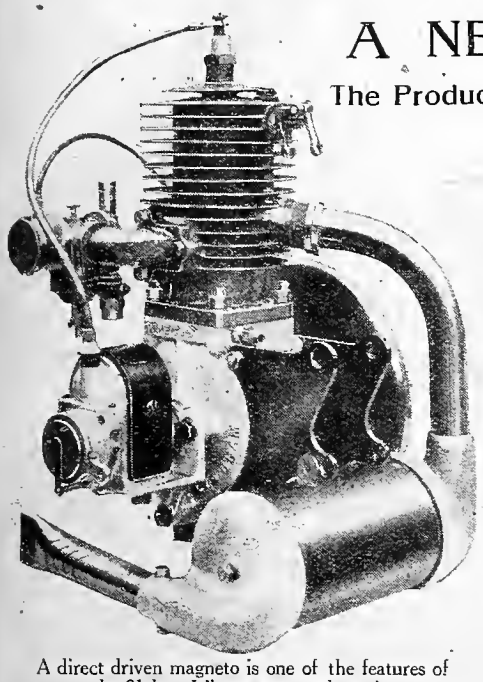
The idea behind the design has been to produce a motor cycle which would be easy to construct and assemble, with consequently a corresponding reduction of cost. The duplex frame consists of four separate tubes which are bolted to the steering head, and to the rear fork ends. Unit assembly of engine and gear box is employed, for these components are bolted to a steel plate cradle, which is completely dropped into a lower angle of the frame and secured by two widely spaced cross bolts, thus making for rigidity. Although this frame construction is not theoretically correct, its possibilities and the ruthlessly ingenious elimination of non-essentials show distinct promise. Simplicity is also the keynote of the front fork design, the "blades" being straight and having entirely enclosed springs. The appearance of the Wizard is quite neat.



By locating the gear box under the rear cylinder, the designers of the new Coventry Victor have considerably reduced the wheelbase

A NEW TWO-STROKE.

The Product of an Old-established Concern.



A direct driven magneto is one of the features of the 2½ h.p. Liberty two-stroke unit.

ASSOCIATED with the motor cycle industry from the earliest days, A. W. Wall, Ltd., of Hay Mills, Birmingham, may justly claim to be one of the oldest purely motor cycle firms, for they did not migrate from the cycle trade. Moreover, they have been responsible for many striking innovations since 1904.

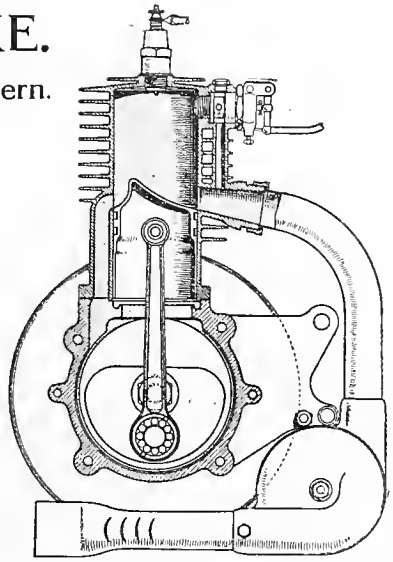
Latterly, two-speed gear boxes, frames, hubs, and other components have been the firm's specialities, but a departure is now being made in the form of a thoroughly up-to-date 2½ h.p. two-stroke engine unit to be known as the Liberty.

Equal Bore and Stroke.

Having a bore and stroke of 70×70 mm. (269 c.c.), the engine is based on the three-port system, and has a particularly cleanly cast cylinder. The piston has a streamlined deflector, and is extremely light. Roller bearings are used in the big end, which works on a built-up crank pin carried between small crank discs or small internal flywheels. Plain bearings of ample size are used for the mainshaft, and the large outside flywheel has provision on the boss for either a pulley or sprocket.

Amongst details to be noted are the concealed passage from the release valve to the exhaust port, and the special bracket which carries the magneto on the side of the crank case. The drive is taken directly off the crankshaft.

The unit is to be sold complete with engine plates, silencer with tail pipe, and Runbaken magneto. A carburetter is not supplied, but the makers recommend the Cox-Atmos as being most suitable. We had a short run on a machine fitted with the Liberty engine, and found it to be smooth in operation and lively. At very slow speeds some little amount of four-stroking was noticeable, but with the least load on the engine the firing was as regular as could be desired. The firm of A. W. Wall, Ltd., should well uphold its prestige with the Liberty unit.



Section of the Liberty two-stroke unit, manufactured by A. W. Wall, Ltd. The cylinder dimensions are 70×70 mm. (269 c.c.)

FOUR-STROKE LIGHTWEIGHT SIDECARS.

Two New Royal Ruby Outfits of the "100 Guinea" Class.

A sidecar outfit that will appeal to the economist in original cost, petrol consumption, and general upkeep, the 349 c.c. four-stroke Royal Ruby, marketed at 107 guineas. Above is the sidecar of the 98 guinea outfit.

THERE are very few lightweight outfits available for those who prefer the four-stroke engine, and the Ruby Cycle Co., of Moss Lane, Altrincham, have filled this gap by the introduction of two new models.

Engined with the Royal Ruby 2¾ h.p. engine of 349 c.c. (74.5×80 mm.), the motor cycle part of the outfits is practically the same as the solo sports model, but the sidecars differ to some extent. One has a side door and a body conforming to accepted ideas of what a touring sidecar should be, and the other is on sporting lines.

As the weight of the motor cycle is under the 200 lb. limit, the taxation on either of these outfits is, of course, only £2 10s. Incidentally, the weight of the sporting sidecar is 65 lb., and the touring type 8 lb. extra. It should also be mentioned that the machines are manufactured throughout (including the gear boxes) by the Ruby Co., and are finished in the characteristic colours of black, ruby, and gold; the Royal Ruby adjustable laminated spring front fork is, of course, incorporated in the design. The prices are as follows: Sporting outfit, with two-speed clutch and kick starter, 98 gns.; with three-speed, 103 gns.; touring outfit, 102 gns. and 107 gns.

ROAD RACING IN FRANCE.

Motocycle Club de France 183 Mile Grand Prix at Provins won by an A.B.C.

The winner of the Grand Prix Motor Cycle Race, held last week at Provins, crossing the finishing line after riding 183 miles at an average speed of 53 m.p.h. His mount is a French built A.B.C.

NAAS, riding a 500 c.c. A.B.C., won the "Grand Prix" motor cycle race at Provins last week, after a most keen contest, his average for the 183 miles being 53 m.p.h. The race, which must not be confused with the national Grand Prix, to be held at Le Mans on the 24th of this month, was run under the auspices of the Motocycle Club de France, and was open to 250, 350, and 500 c.c. machines. There was a simultaneous start for each class; but, as there were only three in the 250 c.c. section and two in the 350 c.c. division, real interest lay in the 500 c.c. mounts, of which eleven started.

Keen Rivalry.

Competition was exceedingly keen, particularly between the Alcyon, Peugeot, and A.B.C. teams: and, not until the beginning of the last of the sixteen laps, could the winner be forecasted with any degree of certainty. For a time it looked as if the real struggle would be between Alcyon and Peugeot. The Peugeot is a vertical twin, the two cylinders being set very close together, and the eight overhead valves being operated by two camshafts with a train of pinions. The general features of the valves and valve-operating mechanism are similar to those of the well-known Peugeot racing cars. The Alcyons, on the other hand, are V twins, with a couple of overhead valves inclined in the head of each, and operated by push rods and rockers. The Griffons are also overhead valve twins, while the A.B.C. machines were practically standard productions.

At the end of the first lap, Naas, who was looked upon as the crack rider for the A.B.C., came in excitedly, and asked for a cylinder head joint. No such article existed at the pits, but a man was sent post haste to Provins to get what was required, while Naas, after grumbling considerably, changing a plug, and looking over his machine generally, went away and rode hard without another stop. The man who had run four miles under a broiling sun to get the washers, came back and then fell utterly exhausted, while the washers he had brought lay unrequired on the bench.

Jolly (on an Alcyon) led at the beginning, with Benoit (Peugeot) a close second, and Desvaux (Alcyon) an equally close third. All the machines having been sent away together, it was a very easy matter to keep a check on their positions in the race. The Peugeot-Alcyon duel continued with slight changes for nearly half the distance, when Gillard (Peugeot), who had been running second, retired with broken timing gear. Pean was delayed by punctures, and Desvaux (Alcyon) and Naas (A.B.C.) came to the front.

Desvaux's blue Alcyon was leading when, on the hairpin turn near Provins, the rider discovered he was out of fuel. Desvaux, who would have been a wonderful recruit for the Lifeguards, lifted up his machine, and shook it to assure himself that the tank really was empty, then ran back to the main grandstands—a distance of a mile—to get a can of petrol. Meanwhile, Naas, another giant, had been driving hard, and, by reason of this incident—for the Alcyon man lost eight minutes—had no difficulty in getting into the lead. Desvaux was soon in action, but had to be content with third place behind his team mate Jolly.

Good Team Work.

Barnard (on an A.B.C.) came in fourth, with Bartlett (an Englishman) fifth on the same make of machine. Pean, the Peugeot crack, only finished sixth. The full A.B.C. team finished, and one of them made the record lap at an average of 61½ m.p.h. Bartlett ran with considerable regularity, notwithstanding the fact that his automatic oil pump broke early in the race, and that his jets were sucked up into the carburetter manifold.

The 1,000 c.c.-sidecar race was won by André on a Harley-Davidson, followed by Bache on an Indian, with another Indian in third place. Three Orials ran in the 600 c.c. class, and, although there was no outside competition, the men fought among themselves, Guignet winning over his team mate Moret with the advantage of less than a length. Results:

500 c.c. (183 Miles).

	h.	m.	s.
Naas (A.B.C.)	3	28	54
Jolly (Alcyon)	3	30	26
Desvaux (Alcyon)	3	34	10
Bernard (A.B.C.)	3	34	38
Bartlett (A.B.C.)	3	44	50
Pean (Peugeot)	3	52	09

350 c.c. (183 Miles).

Marc (Alcyon)	3	45	16
Meunier (Armor)	4	55	02

250 c.c. (149 Miles).

Sandford (M.S.)	4	47	27
Reservat (Gratieux)	4	59	35

1,000 c.c. SIDECARS (183 Miles).

André (Harley-Davidson)	4	34	57
Vaché (Indian)	4	43	04
Coquidé (Indian)	4	49	26

A BUSY MONTH FOR COMPETITION RIDERS.

JULY is always a busy month for competition riders, but this year there is a particularly full programme. Opening with the Arbuthnot Trophy two-day trial and the 500-mile race at Brooklands, the schedule of events contains many important trials in various places.

To-day (Thursday) the Essex County and Southend A.C. and Essex M.C. Club hold their joint speed trials.

On Saturday there are the St. Andrews speed trials, as usual preceding the Scottish Six Days Trial, which starts from Edinburgh on Monday. Saturday next (the 9th) is also the date of the Cardiff and Associated Clubs' open hill-climb, while the following Saturday the Ilkley Club will hold its annual trial under conditions which are perhaps the nearest approach to those prevailing on the frontiers of the Empire. Then on Saturday, the 23rd, the East Midland Centre A.C.U. is to hold its open speed trial on the eve of the Grand Prix at Le Mans.

The month concludes with an open speed event to be organised by the Newcastle and District M.C.

In addition, of course, there are the usual number of week-end club events.

CLUB NEWS

Featherstone and District M.C.

Mr. J. W. Hemingway, Traveller's Hotel, Purston, near Pontefract, is the secretary of this newly-formed club. There is already a membership of forty.

Westbury on Trym A.C.

A new motor cycle club, as above, has been formed. Mr. J. E. Skellern, of 310, Southmead Road, Westbury-on-Trym, is the secretary.

Wallington and District M.C. and L.C.C.

The recent night trial attracted fifteen entries. The start took place from Woodcote Green, Wallington, at 10.30 p.m., the first man away being Capt. L. F. Peaty, who was mounted on one of the new Hawkers; R. A. Green, who figured on an Ivy in the T.T., was riding a B.S.A. sidecar. Result :

1, Capt. L. F. Peaty (Hawker), 4½m. error; 2, G. H. Symonds (Levis), 6¾m. error; 3, R. A. Green (B.S.A. sc.), 10m. error.

Kidderminster M.C.C.

For the third time the Kidderminster Club has availed itself of the kind permission of Mr. Brown-Westhead to use the drive of Lea Castle, Wolverley, for its annual speed trial. Considering the drive is only a quarter of a mile in length, thus making a standing start necessary, no very fast times could be expected. The event was quite a success, there being about forty entries. It is interesting to note that, while some good times were put up, they were not quite good enough to beat those put up in 1913, when at least three of the winners were on single-geared machines. Results :

CLASS 1 (Sidecar Machines, Unlimited Capacity, on Time).—1, F. Adam (3½ Norton), 24s. = 37 m.p.h.; 2, F. W. Giles (2¾ A.J.S.), 25⅘s. = 35 m.p.h.

CLASS 2 (Solo Machines up to 350 c.c., on Time).—1, F. W. Giles (2¾ A.J.S.), 24⅘s. = 36.5 m.p.h.; 2, G. Hemingway (2¾ A.J.S.), 26⅘s. = 34 m.p.h.

CLASS 3 (Solo Machines up to 600 c.c., on Time).—J. G. Nickson (3½ Douglas) and F. Adam (3½ Norton), 21⅕s. = 42.5 m.p.h., tied. Re-run, when Nickson proved the winner.

CLASS 4 (Solo Machines, Unlimited Capacity, on Time).—1, F. W. Giles (2¾ A.J.S.), 21⅕s. = 42.5 m.p.h.; 2, J. G. Nickson (3½ Douglas), 22s. = 41 m.p.h.

For comparison, the fastest and second fastest times of day in 1913 over the same distance were as follows :

FASTEST TIME OF THE DAY.—S. Wright (3½ single gear Premier) and J. G. Nickson (3½ Rudge Multi), 19⅘s. = 45.5 m.p.h., tied.

SECOND FASTEST TIME OF THE DAY.—H. Greatwich (6 single gear Wright) and H. C. Rhodes (3½ single gear Premier), 20⅘s. = 44 m.p.h., tied.

Hartlepools M.C.

In spite of the severe thunderstorm which raged until within an hour of the start, the reliability trial on the 26th ult. attracted twenty-three entries. Limber Bank was observed and accounted for all the entries but eight. Results :

1, Cyril Walker (8 Rover); 2, J. Petch (7 A.J.S. sc.); 3, J. Charlesworth (7-9 Harley-Davidson sc.).

Bath and West of England M.C.

A successful half-day reliability trial was held on June 25th over a stiff course around the hilly district of Bath.

The prize list for this trial was exceptionally good, and was augmented to the extent of a silver vase and a Brooks' saddle, presented by the Manufacturers' Union. These, with a prize (value three guineas), given by Mr. Austin Speed, were put up as awards for amateurs. Results :

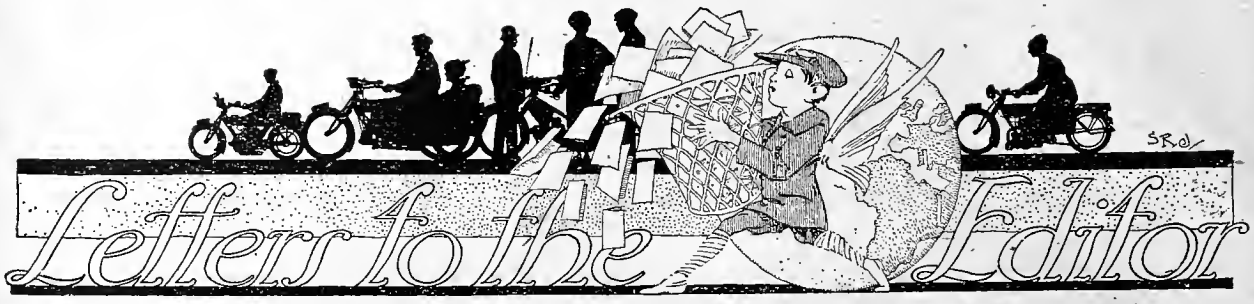
BEST PERFORMANCE OF THE DAY (the Fery Cup and replica).—1, E. Gunning (4 Norton).

AMATEURS.—1, C. B. Newman (3½ Douglas); 2, A. C. Sheppard (3½ Sunbeam); 3, F. D Butcher (7-9 Harley); 4, A. B. Fuller (2¾ Douglas); 5, C. W. Greenwood (4 Triumph); 6, J. Carver (5-6 Rover.

TRADE AND EXPERTS.—1, E. Colmer (2¼ Levis); 2, V. Anstice (3 A.B.C.); 3, A. E. Sims (4 Norton sc.).

Special prize given by Mr. E. G. Fery for a very good performance, but attended with bad luck, goes to G. O. Scampton (4¼ Dunelt sc.).

A meet of members of the Doncaster M.C.C. prior to a recent run. Such a big gathering denotes an enthusiasm which augurs well for the continued success of this go-ahead Yorkshire Club.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

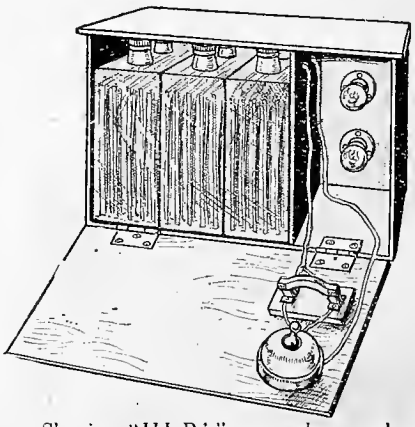
THE T.T. RACES.

Sir,—On asking several friends their opinion of the result of the Junior T.T. their reply, in every instance, was to the effect that, though by no means surprised, they were very far from satisfied to have such special machines "sweep the board." That is just my own view of the affair. One is advised (see advertisements) to purchase an A.J.S. for speed, power, and reliability; but have the makers really so little confidence in this speed, power, and reliability that they have to produce such special machines for the T.T., the very race that should be regarded as a proof of the makers' claims for their standard bicycles?

I do not expect the competing machines to have touring bars, footboards, and lamps fitted, but let the alterations to the standard bicycles be such as any private owner can effect. Surely this is only fair. H. G. KELLEY.

CARRYING SPARE BULBS.

Sir,—*Re* "Ixion's" appeal for information as to how to carry spare bulbs, the method I have employed may be of interest. I had a wooden box made to fit on the carrier stays of my 4 h.p. Triumph, replacing the usual pannier bag. This was divided into two compartments. The front and larger compartment housed three S.G. two-volt accumulators, while the rear and smaller compartment had two S.B.C. holders with bases screwed to its back wall. These held the bulbs securely and obviated all packing.



Showing "H.L.R.'s" accumulator and spare bulb case, which he substituted for one pannier bag on his Triumph.

Portarlington. H.L.R.

COMPARING THEORETICAL AND PRACTICAL PERFORMANCES.

Sir,—As an old reader of your valuable paper, there is no more interesting page to me than "Questions and Replies."

I am all out for efficiency and take great interest in my 2½ h.p. Villiers two-speed O.K. 1920 two-stroke.

I have read all sorts of hints as to petrol economy, but have never seen a technical reply on the theoretical petrol consumption of motor cycles. By this I mean, assuming a well-known brand such as Shell, giving a definite number of B.Th.U. per gallon, given the most effective air mixture, at a speed, say, of 20 m.p.h., what mileage would a machine like mine give? One could then proceed to eliminate the theoretical for the practical, but I suggest such information in tabular form, giving (1) theoretical mileage of well-known machines, (2) best practical performance under official supervision, (3) makers' guarantee, and (4) what the average rider should attain, would be of immense value to those of us who wish to get the best possible out of our mounts.

We hear so much about "tune." Can someone give us a definition? Why not state what steps were necessary to give such results, as shown last year by a Levis fitted with an Amac carburetter, giving in one case over 200 miles per gallon and in the "twin" machine over 300? Why this huge difference? It seems to me manufacturers are letting themselves down, as an amateur can rarely get over 100 miles per gallon in every day work.

Do give us more information as to what we (the average riders) can do, rather than expert official tests which tell us nothing in the long run! C. G. VOKES.

[Our reader's desire to know "what the average rider should attain" is a natural one but somewhat difficult of gratification, for much depends on extraneous conditions, such as the rider's method of driving, and especially the nature of the road upon which the test is to be carried out.—ED.]

DANGERS OF HUMP-BACKED BRIDGES.

Sir,—The recent letter by "Longjump" left me regretting that his forks only went through his lamp, for a cyclist of his stamp is a continual danger to his fellow-beings. Any one knows that hump-backed bridges are a great deal worse than blind corners, for they are all exceedingly narrow, and to take one at the speed which resulted in such a jump (even allowing for exaggeration) is not sporting nor plucky; it is pure idiocy.

Had a car been taking it from the other side when he made his "magnificent" jump, what would have happened?

Dunfermline. TAKE A LOOK.

SIDECARS FOR DISABLED DRIVERS.

Sir,—I also have lost a leg about 7in. from the hip (left). I ride a 1920 5-6 h.p. James outfit with hand clutch. I always wear my artificial limb when riding, and use the ordinary saddle without inconvenience. This machine as standard had the brake on the left-hand side (this is what "1914-1919" wants), but Messrs. Godfreys changed it to the right-hand side without any trouble. The kick-starter is easily used, either from the saddle or standing. "1914-1919" would probably find a machine with the starter on the left more convenient, *e.g.*, Douglas. Shall be pleased to furnish any further information. PH. BROUGH.

FROM A MECHANICAL ENGINEER'S POINT OF VIEW.

Sir,—Referring to the letter of "Draughtsman" in a recent issue of *The Motor Cycle*, he does not say if he will enclose his cranks in cases, or design a special suit of untearable overalls. And he evidently does not know that there are shaft drive motor cycles on the market to-day. Again, if he was a practical man, he would know that broken propeller-shafts are known on cars; and as regards the number of cases of broken chains, these occur mostly, in my experience, with the people who expect a chain to function indefinitely and without attention, and then grumble when it eventually gives up. And he finishes his letter with the remark that two-stroke design is "a colossal example of sheer blind copying." Can he explain the duplicity of the Scott and any other two-speed two-stroke? A PRACTICAL MOTOR MAN.

Blackburn.

MAXIMUM SPEED OF THE TRIUMPH.

Sir,—I hope you will forgive my spoiling your interesting correspondence pages by returning to a subject which many of your readers must be familiar with, but "Relkcub's" last letter is irresistible. If his experience has been that most Triumphs will not do 50 m.p.h., it is only fair to the "daddy of motor bicycles" for those whose experience has been the other way to let the world know it. I have had two recent date countershaft Triumphs, each of which I have kept a couple of years, and you should see the present one smile when I showed it "Relkcub's" letter! I was not a D.R., and have no special skill or assistance in tuning, but both would do 50 m.p.h. in a few seconds almost, and on a good road get near 60 m.p.h. I have no reason to believe my speedometer is wrong. The gear is 4½ to 1, a suitable jet, etc., being understood.

At present I get all this speed with the standard silencer, very substantial legshields, accumulators, etc.; total weight, about 285 lb., which is very heavy for a Triumph. But the weight and the legshields do not cause overheating. I myself weigh 195 lb. MOTOR TRAMP.

Birkdale, Lancs.

Sir,—I have read with great interest the discussion concerning the speed of the 4 h.p. Triumph. I have owned one or two of these machines, and the maximum speed that I have ever obtained from one of them as *standard* was 56 m.p.h. (timed over a quarter of a mile, and with a 4.6 gear).

In reply to Mr. Hartley, I would like him to know that my present machine, which is the one I used in the inter-'Varsity and other events during the last year, is by no means standard now. The main alteration is a high compression engine, obtained by means of a new light single ring piston. With this the machine once touched close on 66 m.p.h., and it is still giving excellent service, after nearly 12,000 miles hard running.

In conclusion, I should like to state that I am sure the 4 h.p. Triumph was never designed for speed, but as a dual-purpose machine, to be used purely and simply as a reliable touring mount. As this it stands pre-eminent among present-day motor cycles. C. MOSER.

Sir,—With regard to Mr. C. H. Stephenson's letter concerning the chain-drven Triumph in your issue of June 23rd, I must, as an owner of one of these excellent machines, write a few words with regard to his criticisms.

It is hardly understandable that a motor cyclist, and I conclude that Mr. Stephenson is one, could write in such strain about the Triumph gear box. He mentions that it is impossible to change down without lifting the exhaust. I wonder whether Mr. Stephenson has found such a lever on his handle-bar as a clutch lever? It is possible, yet certainly not advisable, to change down without declutching or lifting the exhaust. It is ridiculous to say that it is impossible to change into neutral from any gear without stopping the engine first when the machine is stationary. For the machine to be stationary when its engine is running it must either be in neutral or have its clutch out, and, with its clutch out, any gear, including neutral position, can be obtained by operating the gear lever.

I am glad that Mr. Stephenson has found out that to obtain neutral position, when stationary, "the idea of lifting the exhaust is hopeless."

When using the exhaust to change down the action is only momentary, and is too quick to cause any check in the acceleration of the machine.

The paragraph on the gear ratio is certainly very humorous. To say that the top ratio of 4¾ to 1 is "too low for comfort" is certainly extraordinary. It is only by having a very efficient cush drive on a chain-driven machine that such a high ratio can be used. I certainly do not recommend a higher ratio, or comfort will be a thing of the past on Mr. Stephenson's machine.

With reference to the other items he mentions, the chain drive is a wonderfully efficient job on this machine. There is no snatch at all at low speeds. It is certainly as sweet as a belt-driven machine. The chain case is very good.

My machine has completed over its first 1,000 miles, ridden just as it was delivered to me. I have had no need to touch the engine with any tool for any mechanical fault yet. With the makers' setting of the carburetter it does 95 m.p.g., and I have had 54 m.p.h. from it according to my Bonniksen speedometer, which, I think, can be trusted when speed has to be measured by an instrument.

Should Mr. Stephenson's gear box be mechanically wrong, it is certainly unfair of him to criticise it in print, for there is no doubt that the Triumph gear box is an excellent piece of work, and certainly one of the best, if not the best, on the market.

I have no connection whatever with the Triumph Co. beyond being a very satisfied user of their excellent production. H. HEATH.

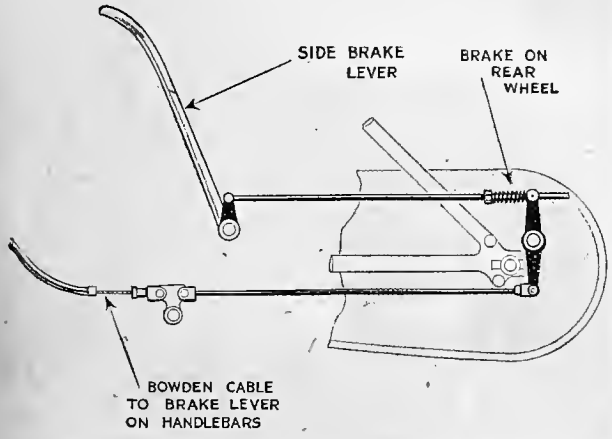
WHERE ARE THE SPRING FRAMES?

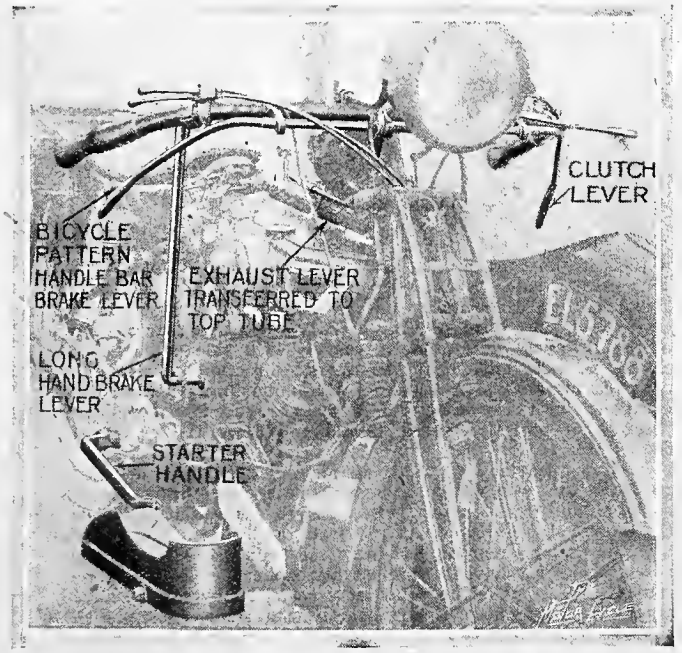
Sir,—As one travels about the country, one cannot fail to notice how few motor cycles are fitted with spring frames.

I should like to have some of your readers' opinions and reasons as to why they do not ride spring frame machines.

Saxmundham. OLD TIMER.

ALL OPERATIONS BY HAND.





OF INTEREST TO DISABLED MEN. A Rover sidecar outfit that can be entirely controlled without the use of pedals. The sketch shows the dual operation of the rear brake, while the photographic reproduction depicts the additional fitments and alterations to the standard controls

DAMAGE TO ROADS.

Sir,—I have followed with interest the articles published in *The Motor Cycle* headed "Damage to Roads," and should like to express my opinion also in your valuable paper.

As a motor cyclist, I have been appalled at the actual amount of damage which a heavy steam tractor drawing two or three large trucks really can do on a smooth Tarmac surface road. Recently I was riding from Stonebridge to Castle Bromwich—a road which is really too good for heavy haulage vehicles—when I observed a huge steam engine coupled to three heavy trucks running towards Stonebridge. The deep indentations caused by the straked driving wheels on the Tarmac, and the badly cracked surface of the waggon tracks, were sadly visible for a long way towards Castle Bromwich.

Even a road such as from Sutton to Tamworth has been rendered almost unsafe for a rider on a motor cycle, and this road no doubt has been carrying heavy vehicles for a long time.

Could not a special set of roads be set apart for these road trains, and then leave us lightweight motorists at least a few decent surfaces to ride on? DOUGLAS RIDER.

Erdington.

AIR-COOLING OF MOTOR CYCLE ENGINES.

Sir,—Air-cooling of motor cycle engines appears to be a much discussed subject at the present time, and no doubt, judging from the articles which have recently appeared in *The Motor Cycle*, there are various opinions regarding the subject.

A knowledge of air-cooling is more or less a knowledge of air currents, and, having had some experience in the latter, this enables me to express the following views.

The efficiency of air-cooling depends directly on the amount of cold air brought into actual contact with the outer surfaces of the cylinder These air currents take away the heat by convection. If air currents are absent, we depend on radiation, and it is obvious that this method must retard cooling.

As pointed out by Mr. Granville E. Bradshaw, the air-cooled engine of to-day is almost identical with those in vogue eighteen years ago, and the same methods of cooling obtain. Further, it was an established fact, from experiments carried out about that period, that air-cooling was not as satisfactory as it could be. It was proved that the rear, or leeward side, of the cylinder attained a much greater heat than did the front, or windward, side. This difference varied over 100° on the Centigrade scale. Only recently I was informed that in aero engines it is possible to see hail or snow clinging to the front, whilst the rear is red hot, and probably some of the readers of these lines could say whether this is an actual fact. This means that the front temperature is below 0° C. (32° F.), whilst the rear heat is over 500° C. (932° F.). A little calculation shows that the variation in expansion must be excessive when this prevails.

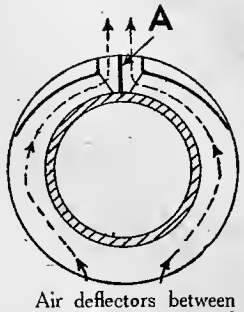
It is easily understood, therefore, why the question should be asked, "Is air-cooling satisfactory?" The answer is evidently in the negative. The next question follows, "Why is it unsatisfactory?" and I believe the following explanation will be endorsed by thinking men.

Taking the ordinary type of vertical cylinder, when this moves through the atmosphere either at one mile or 100 m.p.h., a flow of air is set up against the front of it. This creates side currents which flow to the rear and there strike against each other. Now, before impinging against each other, they have left *actual contact* with the rear portion of the cylinder walls, and, moreover, each side current has set up an eddy current in the reverse direction. These two eddy currents remove air from the immediate rear of the cylinder, with the nett result of a reduced atmospheric pressure or partial vacuum behind and down the centre of the cylinder.

Now, as previously stated, an air-cooled cylinder depends primarily on convection of heat by air currents in actual contact, and to a much lesser degree on radiation. We therefore get the former at the front and sides, due to air currents under a more or less increased pressure, whilst at the rear, where we have a rarefied atmosphere, we depend on radiation. To make the point more clear, I may say we have at the rear of the cylinder exactly the same principle as obtains in the Thermos flask, and its action is proportional to the velocity of the prevailing air currents.

Having briefly described what takes place behind a vertical cylinder, no doubt the following method of overcoming the defect will be appreciated.

Around the rear of the cylinder and inside each pair of fins is fixed (what I have named, for obvious reasons) an "antivac" (see sketch. This leads each side current to the rear, where it strikes a plate A, and is deflected outwards. Each current also induces its adjacent current, and thus promotes the flow of air around, and in contact with, the cylinder walls, with, consequently, increased cooling effect.



Air deflectors between cylinder flanges, suggested by Mr. T. Hough.

Apart from the cooling effect of the antivac, there are two other incidental advantages, one of which is a reduced wind resistance, due to the disappearance of negative pressure in the rear of the cylinder.

The other advantage is the reaction set up by the issuing air currents on the back of the cylinder.

As regards the invention, I believe it will be found most effective from every standpoint, and will tend to fulfil the requirements as set forth by Mr. Bradshaw where he states, "We must have adequate cooling draught, and in the right place if we are going to stick to existing types."

The antivac is made from aluminium, and easily fixed to most types of cylinders. When fixed in position, it is not easily seen, and requires no further attention. It is always effective at any velocity, and, when stationary, does not detract from the ordinary cooling efficiency. It is unlike the ordinary baffle, insomuch as it merely leads, or diverts, the air, and, consequently, sets up little wind resistance.

In conclusion, I would like to point out that the position of the cylinder with regard to windshield leg-guards, etc., is a factor which should be closely studied if air cooling efficiency is sought for. THOMAS HOUGH.

SUMMARY OF CORRESPONDENCE.

Referring to a recent article by "Chinook," "Puzzled" (Manchester) comments on the difficulty of keeping chains at the proper tension when the limit of adjustment has been reached. He tried taking out half a link, but the chain was then too short.

BOOKS AND MAPS FOR MOTOR CYCLISTS

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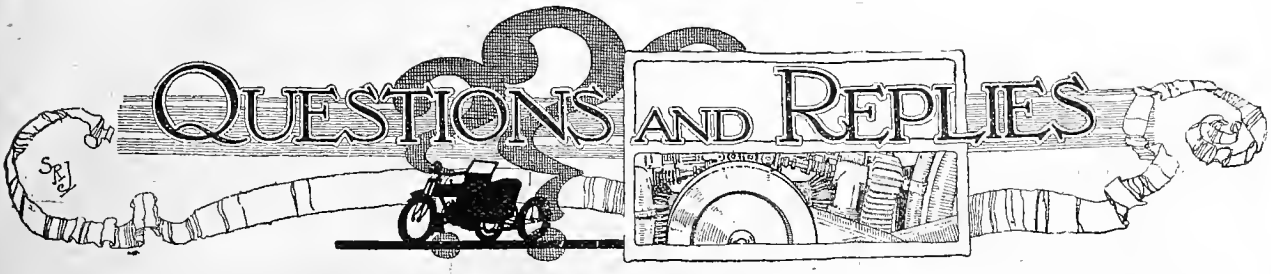


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

COASTING DOWN HILL.

Can I with impunity coast down hills in neutral with the throttle completely closed? If so, am I right in getting straight into top gear when near the bottom of the hill merely by declutching without touching the exhaust valve lifter?—H.P.

You will do no harm by coasting down hills with the engine shut off and the gear in neutral. The safest plan of re-engaging the gears is to start up the engine by means of the kick-starter before the machine comes to a standstill.

BENDING SIDECAR WOODWORK.

How do sidecar builders get the front of their sidecar bodies narrow? I have some pieces sawn with a downward curve, but I want to make it narrow at the front.—T.W.H.

The usual method of bending sidecar frame members is to steam the wood until it can be bent easily. When it has assumed the required shape, it is clamped so that it cannot spring back, and then dried. The process is one which you will not be able to carry out very readily yourself, and it would be best to get the work done by a coachbuilder.

CALCULATING GEAR RATIOS.

Would you kindly inform me of the correct method by which one can ascertain respective gear ratio, as in ignition and valve timing, and also regarding the pinions used on a lathe for thread-cutting? If you could let me know of a book dealing with the above subject thoroughly I should be much obliged.—A.H.C.

In the case of a gear reduction consisting of two wheels only, you merely require to count the number of teeth on each, and dividing one by the other will give you the ratio. In the case of compound drives such as you get in the screw-cutting gear of a lathe, count the teeth on all the driving wheels, and multiply these together. Then count the teeth on all the driven wheels, and multiply these; divide the products to find the ratio. Idle wheels, such as those used to change the direction of rotation or to bridge a space between a driving and driven wheel, may be ignored. Almost every engineer's handbook, mechanic's pocket book, etc., contains instructions in gear calculations.

A BROKEN GEAR BOX.

Could you give me any possible explanation of the following accident? I was out with my 4½ h.p. Star, and, when approaching a level crossing (with the gates closed), changed down, meaning to get into low gear and go very slowly until the train passed. When I tried to put in the low gear from middle, a grinding noise arose as if the teeth had not meshed properly, so I stopped the engine. I restarted in the usual way, engaged low gear, and let the clutch in slowly. When the clutch was properly in, there was a bang in the gear box, and on examination I found the gear box case broken in several places. Taking the gear box down subsequently, I found the gears and teeth in perfect order, not a fault anywhere, yet something must have gone wrong.—M.L.

From your description we are unable to give a definite reason for the breakage of your gear box. As the gears themselves, however, are still in good condition, it would appear that some such part as a nut or bolt had been left inside some time when the box was dismantled, or that by some means two gears were engaged at once, and that, instead of breaking the teeth, the shafts were forced apart, thus cracking the box.

A queer looking little vehicle—the Lewis Sedan—built primarily for invalid use, is electrically propelled, and will, it is claimed, run about fifty miles on one charge of the accumulator.

A TWO-STROKE FOR A HILLY DISTRICT.

(1.) Which lightweight motor cycle has the lowest driving position (distance from saddle to ground)? (2.) Does a two-stroke consume a larger quantity of oil and petrol than the average four-stroke lightweight? (3.) Do you think a 2¼ h.p. powerful enough for all ordinary purposes in the Derbyshire districts? (4.) Would you advise me to get a chain drive or belt drive machine for solo riding only, my weight being nine stones?—J.A.B.

(1.) The average distance from the top of the saddle to the ground is 27in., or 28in. in the case of most lightweight motor cycles fitted with 24in. wheels such as the Connaught, Triumph, Levis, and Cedos. (2.) A small two-stroke engine usually consumes a larger quantity of petrol than a four-stroke of similar capacity, but at low speeds the power is generally greater. The average consumption of the above-mentioned machines is 80 to 100 m.p.g. (3.) A 2¼ h.p. two-stroke engine will answer all ordinary requirements if fitted with a two-speed gear. (4.) Chain-cum-belt or all-chain drive is to be preferred.

WEAK RUNNING OF TWO-STROKE ENGINE.

I have a 2¾ h.p. T.D.C. two-stroke motor cycle, which I cannot get to start. It is brand new, and timed with the piston ⅛in. from top of stroke when the contact points are about to break with the ignition control fully retarded. When one tries to start the machine there are loud explosions in the silencer, but only slight firing in engine, which lacks power. Also there appears to be great leakage at cylinder joints and carburetter. Moreover when the plug is removed from the bottom of the crank case about half a pint of oil and petrol pours out.—J.M.

There should be no leakage at the joints between the cylinder and crank case, or between the two halves of the crank case itself. The latter joint should be remade, smearing the joining faces with seccotine. The cylinder base joint needs a thick brown paper washer, also coated with seccotine on both sides. The spark should occur when the piston is on top dead centre with the ignition fully retarded. Make quite sure that the piston is fitted with the deflector side nearest the transfer port.

MISFIRING UNDER HEAVY LOAD.

My machine is a 1919 New Imperial (with 8 h.p. J.A.P. engine), to which is attached a heavy sidecar. I find that occasionally when pulling hard on hills on top gear the engine will misfire on one cylinder. When the summit is reached, if there is a slight descent, or even a level road, it will again fire correctly, and may not miss again for fifty miles or more. This trouble is not always in evidence, but the engine never misses except under load, and it will often climb the most severe hills without the suspicion of a misfire. As soon as I drop to second gear it immediately fires normally.—H.P.

The trouble may be due to one of the sparking plugs becoming overheated when the engine is heavily loaded; the misfiring at very low speeds may be due to an air leak either at the induction pipe joint or at the inlet valve guide.

MAGNETO TIMING.

I shall be much obliged if you will kindly advise me as to the best ignition timing for the 1915 5-6 h.p. Indian (used with heavy coachbuilt sidecar). The magneto is a Dixie, which I recently had occasion to send to the makers' depot for complete overhaul, and at the same time I lowered the top gear ratio from $4\frac{1}{4}$ to about 5 to 1. I imagine that this fact will allow of a slight ignition advance with some advantage, also considering that it is a long stroke engine 70×89 mm.; the original timing was rather late. I am still using the original setting with which the contact breaker points begin to separate at about $\frac{1}{4}$in. from the top of stroke on full advance. On full retard they separate at $\frac{3}{4}$in. down the firing stroke. The engine never knocks and has plenty of power, and will run dead slow on full advance. If I advance the ignition by only one tooth the firing point on full retard is $\frac{1}{8}$in. or so before top of stroke, and on full advance about $\frac{3}{4}$in. before. I have tried this for a short time on the road, but find that quite easy gradients require slight retarding, not because knocking results, but merely because the road speed rises perceptibly on retarding. Incidentally, on this more advanced setting the engine will not run half so slowly in neutral. Carburetter three-jet Binks, noted for excellent slow running possibilities. I should be glad to know whether you consider the latter setting too far advanced, as I do not wish to ruin the big end bearings, etc., by over-early ignition. I take it that the spark does not actually occur at the plugs until an appreciable fraction of time after the contact breaker points begin to separate, which will make the actual ignition point later than the moment of opening.—R.A.G.

The spark occurs when the points first separate. The ignition should be set so that the spark occurs when the piston is 10 mm. from the top of the compression stroke with the control fully advanced, or alternatively use the setting which we invariably recommend, viz., contact points just separating when piston is on top dead centre with magneto control two-thirds retarded.

Important Dates.

Thurs., July 7th—Essex County and Southend A.C. and Essex M.C. Joint Open Speed Trials.

Sat., July 9th—St. Andrews Speed Trials

Sat., July 9th—Cardiff M.C.C. and associated clubs Open Hill Climb.

Mon., July 11th, to Sat., July 16th—Scottish Six Days' Trial.

Sat., July 16th—Ilkley M.C. and L.C.C. Open Reliability Trial.

Sat., July 23rd—East Midland Centre A.C.U. Open Speed Trials

Sun., July 24th—Motor Cycle Grand Prix Race in France.

Sat., July 30th—Newcastle and District M.C. Open Speed Trials.

Mon., Aug. 1st, to Sat., Aug. 6th—International Six Days Trial in Switzerland.

Sat., Aug. 6th—B.M.C.R.C. Open Brooklands Meeting.

Sat., Aug. 6th—North Wales M.C.C. Open Reliability Trial.

Fri., Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd A.C.U. Six Days Trial.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

VIBRATION AND LACK OF POWER.

I have a $3\frac{1}{2}$ h.p. Humber motor cycle, which I think is a 1911 model. (1.) There is much vibration in the engine at anything over 20 m.p.h., yet the condition is very good: no loose bearings, and piston and rings are in excellent order. The engine is not loose in the frame. Is the piston too light or too heavy to cause this, or is it due to some other cause? (2.) The engine does not pull well, and overheats in three or four miles. Engine valve timing: Exhaust opens $\frac{3}{8}$in. from bottom centre, and closes on top; inlet opens just after turning top centre, and closes a little up compression stroke. I have tried the exhaust to open earlier and later, with no better results. Also I have tried the magneto timing in all positions, but the trouble is still there. I have tried several different plugs, thinking that a faulty plug would cause preignition, as, in fact, I have had that trouble several times. The carburetter is a B. and B., No. 31 jet, which, I believe, has been enlarged a shade. I have tried a smaller jet, but it will not run at all on it. It now takes the air lever slightly in advance of the throttle lever, which leaves plenty in reserve for more air. The petrol level is nearly to the top of the jet. The machine starts away easily from cold, but in travelling the throttle is quite ineffective if opened more than half way.—H.P.W.

(1.) Excessive vibration may be due to defective engine design: possibly the reciprocating parts are not correctly balanced. We are inclined to think, however, that the trouble is accentuated by the engine bolts being worn; the engine may appear to be quite rigidly fixed, but if you withdraw the bolts you will probably find that the holes in the engine plates are worn slightly oval, or that the bolts themselves are worn. (2.) All the adjustments appear to be in order, and it is therefore difficult to state the cause of the trouble without actually inspecting the machine. It would be worth while trying a larger jet, say No. 34, in order to find out if the opening of the throttle beyond half way will produce a corresponding increase in speed or power. If it does not do so, it is clear that the area of the inlet pipe or valve port is too small. Try a gear of about 5 or $5\frac{1}{4}$ to 1.

RECOMMENDED ROUTES

HALIFAX TO SEASCALE.—G.R.O.

Halifax, Keighley, Skipton, Gargrave, Hellifield, Long Preston, Settle, Clapham, Ingleton, Kirkby Lonsdale, Crooklands, Milnthorpe, Heversham, Levens Bridge, Lindale-in-Cartmel, Newby Bridge, Greenodd, Lowick Green, Grizebeck, Broughton, Whickham, Whitbeck, Bootle Muncaster Castle, Holmbrook, Drigg, Seascale. Approximately 118 miles.

GREAT MALVERN TO WEYBRIDGE.—C.E.H.

Great Malvern, Wynds Point, Malvern Wells, Upton-on-Severn, Tewkesbury, Coombe Hill, Gloucester, Birdlip, Cirencester, Poulton, Fairford, Lechlade, Faringdon, East Challow, Wantage, Blewbury, Streatley, Basildon, Pangbourne, Purley, Reading, Wokingham, Bracknell, Ascot, Sunninghill, Egham, Staines, Chertsey, Weybridge. Approximately $124\frac{1}{2}$ miles.

EAST FINCHLEY TO AXMINSTER.—W.G.F.

East Finchley, Hendon Station, Kingsbury Green, Kenton, Harrow-on-Hill, Pinner Green, Eastcote, Ruislip, Ickenham, Uxbridge, Slough, Maidenhead, Littlewich, Twyford, Reading, Theale, Newbury, Hungerford, Marlborough, Beckhampton, Devizes, Seend, Trowbridge, Southwick, Beckington, Frome, Nunney, Shepton Mallet, Wells, Priddy, Cheddar, Westbury, Glastonbury, Compton, Somerton, Langport, Curry Rivel, Hambridge, Puckington, Ilminster, Peasemarsh, Chard, Tatworth, Tytherleigh, Axminster. Approximately 192 miles.

SITTINGBOURNE TO CARDIFF.—R.M.

Sittingbourne, Key Street, Detling, Maidstone, Wrotham Heath, Borough Green, Ightham, Seal, Bat and Ball Station (Sevenoaks), Riverhead, Brasted, Westerham, Oxted, Godstone, Bletchingley, Nutfield, Redhill, Reigate, Burgh Heath, Ewell, Surbiton, Kingston-on-Thames, Hampton Court, Hampton, Sunbury Common, Staines, Windsor, Eton, Salthill, Maidenhead, Henley, Nettlebed, Benson, Shillingford, Dorchester, Nuneham Courtenay, Littlemore, Oxford, Botley, Eynsham, Witney, Burford, Northleach, Andoversford, Cheltenham, Gloucester, Huntley, Lea, Ross, Wilton, Goodrich, Whitchurch, Symonds Yat, Monmouth, Raglan, Usk, Llangibby, Caerleon, Newport, St. Mellons, Cardiff. Approximately $235\frac{1}{2}$ miles.

A NEW BIG TWIN.

Distinctive Features of the B. and H. Engine.

THE unusually large and unconventionally shaped aluminium combustion heads with which the new 10 h.p. V twin B. and H. engine is equipped are its most noticeable peculiarity, for they do not accommodate valve caps, and, in consequence, the size of the cylinders is deceptive.

Valve and tappet adjustment of the new B. and H. engine.

The bore and stroke are 80×99 mm. (996 c.c.), and side-by-side valves of $1\frac{5}{8}$in. diameter are used. Many new and distinctly interesting features are incorporated in the design, for which one of the designers of the Metric engine is responsible.

The timing gear has a separate cam for each inlet valve, while one only lifts the exhausts; the latter is positioned nearest the cam wheel pinion and has a lift of $\frac{13}{32}$in. The acceleration of the rocker is constant, whilst the device for raising the exhaust valves is exceptionally neat. Two pawls engaging a small shoulder on the exhaust valve rockers are lifted by a Bowden wire and hook. The former is carried in a tubular fixing in the centre of the timing case, and the latter lifts the ends of the pawls, and consequently the valves, *via* the tappets.

Adjustable Valve Stems.

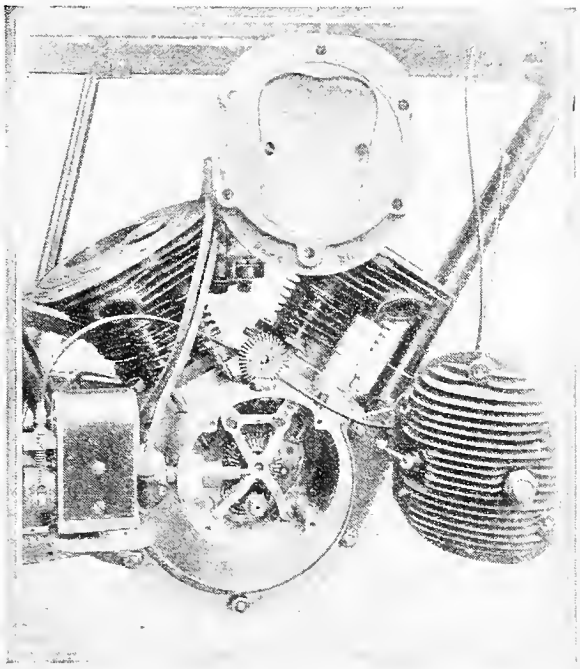
The inlet valves are slightly offset in order that they may ride on the two cams respectively located on the outside of the timing wheel. An unusual procedure is the incorporation of the tappet adjustment with valve spring retaining washer. This design permits the use of plain rods for the tappets.

The complete valve spring and tappet are enclosed in a telescopic cylinder, whilst the head of the valve is slightly concave.

Very careful consideration has been given to heat dispersion and the rapid expansion and exit of the gas.

The cylinder head is made with a number of cooling fins, which completely cover its surface, whilst air passes around both valve pockets located in the top of the cylinder.

The shape of the dome inside the head has been cleverly arranged to facilitate the passage of the gas both in and out of the inlet and exhaust valve pockets, respectively. Figures of interest are the diameter of the pockets. The inlet has a 1in. diameter, whilst the exhaust is $1\frac{1}{4}$in. wide. The actual pockets, however, immediately around the valve heads, are $1\frac{1}{2}$in. in diameter.



Detachable cylinder heads, which also give access to the valves, are one of the most outstanding features of this new 10 h.p. V twin engine.

Six bolts hold the head to the cylinder and are not continued to the crank case, thereby allowing for expansion.

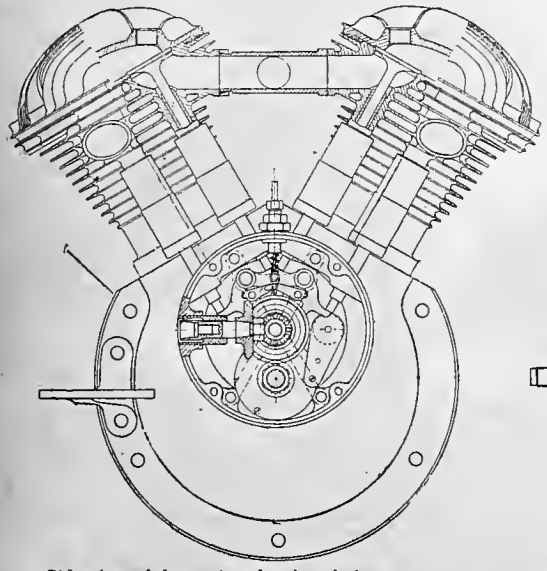
The piston is fitted with two thin, deep rings. The skirt is, of course, grooved to assist the distribution of the oil.

An elaborate bearing layout is used—a most desirable feature—and it includes a double row of Hoffmann rollers for the big end, a roller bearing of the same make on the pulley side of the main shaft, and on the other side a Hoffmann ball bearing.

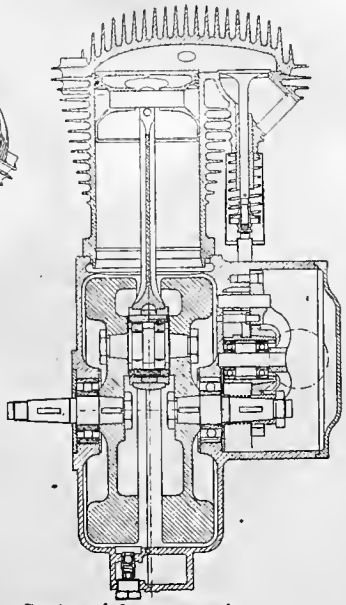
Gear-driven Magneto.

Two ball bearings are also used on the camshaft. It would be interesting here to mention that the magneto, which is bolted to a plate on the side of the crank case, is driven by a bevel and shaft from the cam wheel. In this position it is accessible and is protected by the large timing case.

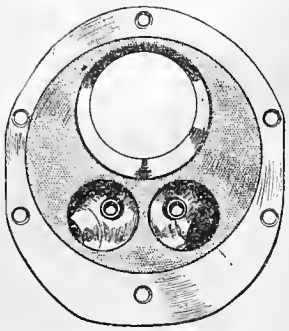
Probably the most novel feature of this engine is the lubrication system. It will be more readily understood if the path of the oil be traced from its tank. An oil lead from the usual type of drip-feed lubricator is connected to the front cylinder wall, where there is an annular groove. The piston, at the bottom of its stroke, descends sufficiently low to permit the oil entering the waist, from where



Side view of the engine showing timing gear arrangement.



Section of the power unit.



Plan view of the cylinder.

A New Big Twin.—

it is spread around the cylinder by the piston grooves. The surplus oil, however, drips into the crank case, and it is forced therefrom by pressure on the down strokes of the piston being carried *via* a ball non-return valve into a large annular chamber encircling the crank case.

Between these chambers, and in the faces of the crank case, is a groove connected by a small channel to the chamber.

Oil is forced into the groove, and thence *via* a small hole to the annular grooves around the base of each cylinder. It would appear, then, that the front cylinder is overfed, or the rear under-supplied, with oil. This, however, is equalised by the splash from the flywheels and the big end, the front cylinder having a baffle, whilst the rear is open. Two drain taps are fitted—one for emptying the annular chamber and the other for releasing the waste oil in the crank case.

Other interesting notes would show that the valve spring tension is 45 lb., whilst the weight of the piston is 14 oz. It is possible that experiments with aluminium alloys will be made at a later date.

The manufacturers, the B. and H. Engineering Co., Ltd., Napier Works, Napier Road, Ponders End, Middlesex, entered one of these engines fitted in a Zenith frame, for the 500 mile race at Brooklands. This really constituted a trial from which the makers hope to gain some useful data.

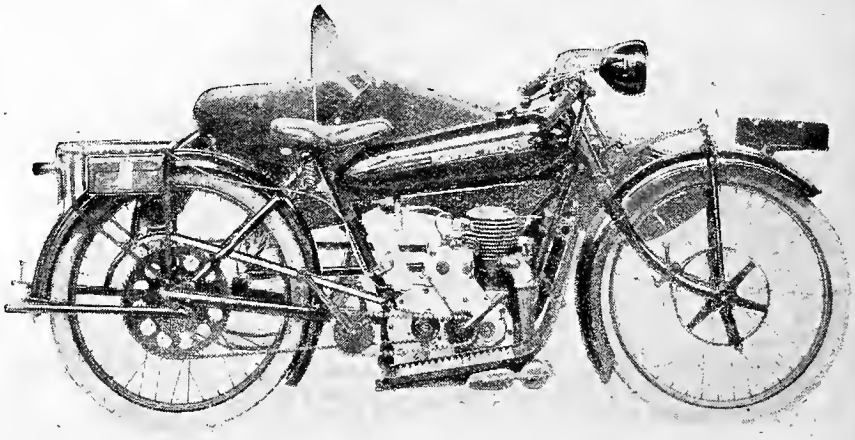
A limited number of engines will be available shortly.

ALL-STEEL FRAME CONSTRUCTION.

New Beardmore-Precision Models. Weight and Price Reductions.

OUR acquaintance with the Sports solo model Beardmore-Precision dates from the first ascent of the Screw Road (near Carnarvon) by a party organised by *The Motor Cycle*. On that occasion the new model, which was still in its experimental state, performed admirably.

Engined with the now well-known 350 c.c. Precision two-stroke, the new Sports model, in its final form, differs in many respects from the original Beardmore-Precision, for it was decided that there was a large demand for a light, speedy solo mount to sell at a lower figure than was possible with the original spring frame specification. With Sturmey-Archer two-speed gear, clutch, and kick-starter, the machine sells at £75; but it must be clearly understood that, in reducing the price, no inferior workmanship and material are employed—in fact, the construction throughout is scientific, and in many ways superior to that of higher-priced competitors.



Lighter and cheaper than the spring frame model, this new sidecar outfit is fitted with the combined engine and gear unit with which the Beardmore-Precision first made its appearance

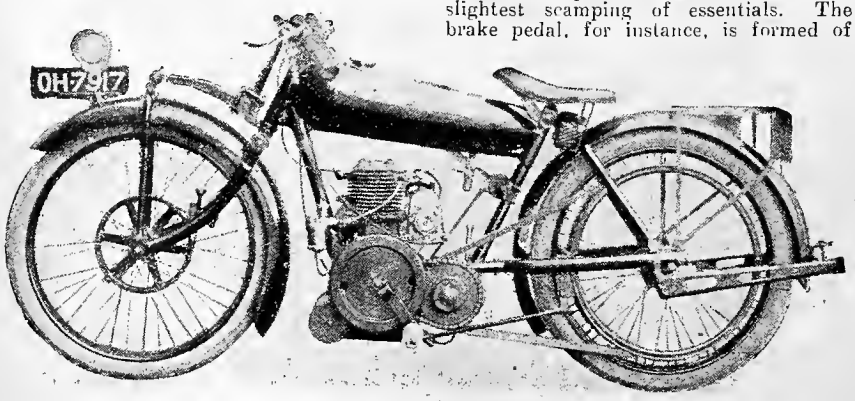
No Frame Lug Castings.

Not a single casting is employed in the short compact frame, which, of course, embodies a steel tank in place of the two top tubes. Every lug is made up of steel pressings, the bottom bracket lug forming an admirable example of the general construction.

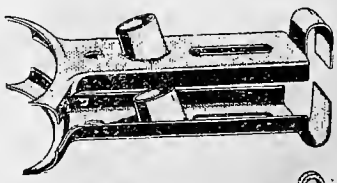
The component parts are welded together so as to form a box girder of section admirably suited to the stresses imposed, yet without unnecessary masses of metal. Throughout, the frame is characterised by exceptionally sturdy construction; but, in spite of this, the machine weighs just under the 200 lb. limit, and is consequently covered by a 30s. tax. The flexible leaf spring forks of previous models are retained, but no rear springing is employed, and the wheelbase is consequently considerably shorter, 50in. being the actual measurement.

In detail we find the same careful consideration of production costs, without the slightest scamping of essentials. The brake pedal, for instance, is formed of bent strip steel of ample section, and duplicated in the shank, a neat aluminium foot plate adding the necessary finish. Again, the carrier is formed of angle steel welded at the joints, and yet a third admirable feature is the pressed steel rear stand.

The whole machine is a good example of the manner in which weight and manufacturing costs can be reduced without detriment, and even with improvement to the machine.



A sports model Beardmore-Precision which is 70 lb. lighter than its spring frame forerunner—many of the features of which have been retained. A Sturmey-Archer gear box is fitted.



No castings are used in the Beardmore-Precision frame construction. Above are seen the steel pressings which, when welded together, form the bottom bracket

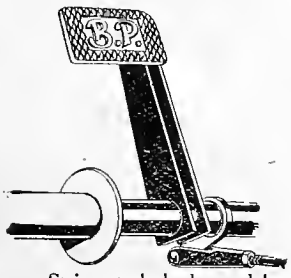
Naturally, the Precision automatic lubrication system is retained.

Selling at £105 complete with Canoelet Minor sidecar, the sports sidecar outfit is slightly more elaborate. Except for the gears, which in this case are of the selective clutch type, and form a unit

All-steel Frame Construction—

with the engine, the layout is similar to that described above. The engine and gear assembly is already familiar to motor cyclists, since it has been exhibited at the last two Olympia Motor Cycle Shows, and is to be met on the road in considerable numbers. Having a 55in. wheelbase, this sturdy little passenger outfit has all-chain drive, and, in addition, is fitted with such luxuries as combined steel leg-shields and foot plates, a pressed steel silencer, and many little refinements. In spite of these, it is 70 lb. lighter than the spring frame outfit, and from our own experience we can state that it is handy and full of life on the road. During a short road test, the outfit, with an eleven-stone passenger, successfully negotiated Weatheroak Hill on the standard ratios of 6 and 11¼ to 1—no mean performance, as any Midland rider will be aware. The little engine responds quickly to the throttle, and will pull regularly and evenly down to a mere crawl before low gear is engaged.

Braking power is good, for, in addition to the countershaft brake, a large band brake is fitted to the front wheel, and this feature is common to both new models. 26×2¼in. tyres are fitted, and the performance of the machine is calculated to surprise many an owner of heavier sidecar outfits.

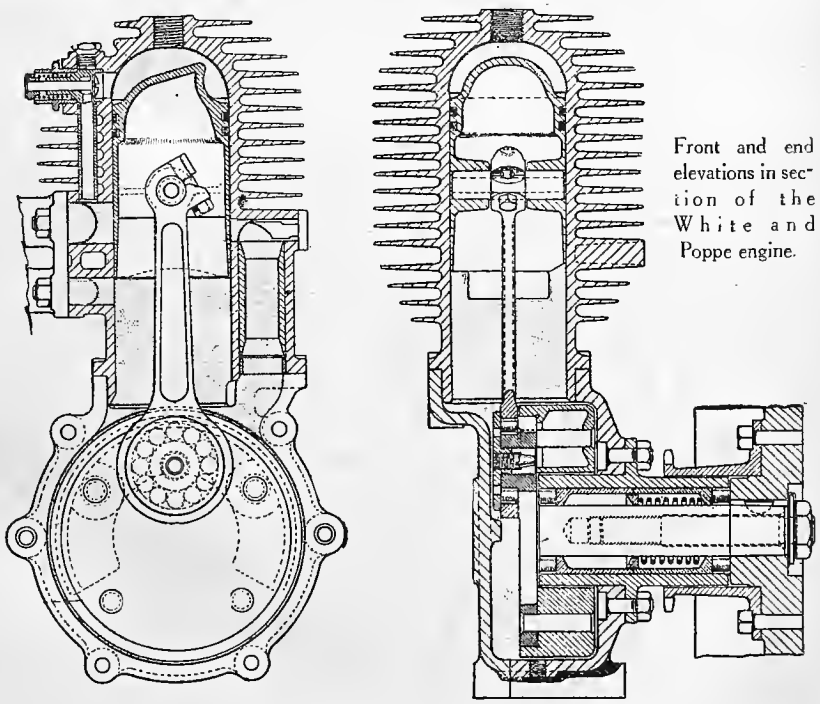


Strip steel brake pedal with aluminium pad is a neat feature of the sporting solo Beardmore-Precision.

A New White and Poppe Two-stroke Engine.

A Small Engine produced by Pioneer Designers.

VISITORS to last week's Royal Agricultural Show at Derby will have noticed an interesting motor-driven mowing machine shown by Dennis Bros., of Guildford. The mowing machine is a wonderful piece of work running on ball bearings throughout, and being made on engineering lines. What is of greater interest to motor cyclists, however, is the neat little air-cooled two-stroke engine of 2½×3in. bore and stroke used to propel the machine. This engine is the product of the famous White and Poppe works, and we believe that we are correct in stating that in the near future it will form the power unit of a novel motor cycle. A cast iron cylinder, having ribs of 1½in. in depth and a considerable wall and head thickness, is of great interest in itself. The ports are particularly wide, and, in spite of the fact that a circular transfer passage is cast integral with the cylinder, every port is arranged in such a manner that it can be accurately machined.



Front and end elevations in section of the White and Poppe engine.

Roller Bearings.

At the present time a cast iron piston is employed giving a compression ratio of 5½ to 1. Two wide rings are fitted, and the deflector is arranged to ensure a high velocity to the entering gases.

Floating in the piston bosses, a hollow gudgeon pin is secured in the split small end of the connecting rod by a pinch screw, which also engages a groove in the outer wall of the gudgeon pin.

A single row of ⅜in. rollers is employed for the big end, and a heavy (1⅛in. diameter) overhung crankshaft is used.

This crankshaft is one of the most interesting features of an engine replete with ingenious features. The crank web is a circular steel disc, and attached to its outer face is a small hollow flywheel so constructed as to act as a balance weight, and yet to fill the crank case, and provide high crank case compression.

Spring-loaded Compression Gland.

Roller bearings spaced nearly 4in. apart support the mainshaft, a long steel bush pressed and bolted into the crank case forming the outer race of each bearing. The space between the rollers and within the steel bush is occupied by an ingenious system of spring-loaded packing, so as to maintain crank case compression, whilst the driving sprocket (at present used for magneto drive only) extends well back between the crank bearings.

For Utilitarian Purposes.

As fitted in the mower, the outside flywheel acts as a blower, drawing in air past the crank case, and delivering it to the cylinder, the drive to the blades and wheels being through epicyclic gears and chains, and providing a ratio of 36 to 1. The clutch and controls are beautifully arranged, and all working parts are enclosed and run in oil.

Experimentally, the exhaust gases are led into a large silencer tangentially, and escape through a drilled pipe, the inlet ports which lie directly below the exhaust being connected to the carburetter through a port which adjoins the silencer.

At the moment we are sworn to secrecy with regard to further developments, but our readers may rest assured that they will receive early information should these developments lead to something more closely connected with motor cycle matters.

CHAMPIONSHIP TRIALS.

The South-eastern Centre Inter-club Championship Team Trial for the Woolwich Cup will take place on Saturday, July 16th, at 2 p.m., from the Three Horseshoes, Knockholt, Kent.

Entries, which close on July 9th, should be addressed to the hon. secretary, Woolwich, Plumstead, and District M.C., 3, Nightingale Place, Woolwich.

On the same date the South Midland Centre holds an individual championship trial over a circular course of seventy miles, two non-stop circuits having to be covered. Watford is the starting place.

CURRENT CHAT

Times to Light Lamps.

July 7th	... ...	9.46 p.m.
,, 9th	... ...	9.45 ,,
,, 11th	... ...	9.43 ,,
,, 13th	... ...	9.41 ,,

Motoring in Ceylon.

There are over 3,000 motor cyclists and motorists in the island of Ceylon.

Royal Patronage.

His Majesty the King has graciously consented to extend his patronage to the Annual Cycle and Motor Cycle Show at Olympia, which will be held from November 28th to December 3rd.

Screw Road.

Photographs of the now famous Screw Road—the hill recently "discovered" by *The Motor Cycle*—are now available. Unmounted prints, $9\frac{3}{4} \times 3\frac{3}{4}$in., cost 2s. 6d., or mounted 3s. 6d., from these offices.

Obituary.

We regret to announce the death as the result of an accident of Harold Parsons, champion motor cyclist of Australia, and holder of most Australian records. He was the greatest rider Australia has ever seen, and a thorough sportsman to boot. The most wonderful performance to his credit was $1,114\frac{1}{2}$ miles in twenty-four hours on the road at Mortlake (Victoria).

Found, a Watch.

Mr. W. H. Wells, the captain of the M.C.C., has in his possession a silver watch lost by a competitor in the team trial. The owner should communicate with Mr. Wells, 366, Euston Road, N.W.1.

A "Surplus" Rumour.

We have heard of a man who recently bought a Government motor lorry for £28, which in itself was somewhat of a bargain. When, however, he found time to examine it he discovered that it contained six brand new motor cycles. History does not relate what action he took in the matter.

Bad Road Materials.

At a recent meeting of the Bromyard District Council a discussion took place on the materials used for road-making in Herefordshire. The Chairman, Alderman G. Cresswell, said if the Council could not get more work done on the roads for the money they were now spending, he thought they had better stop altogether. Their expenditure was double what it was last year.

The suggestion is made that the repair of the roads should be done on a piece-work basis. At present the roads were not properly rolled, and loose stones were found after the work was supposed to be completed. It was stated that in Worcestershire the roads were 150% better than in Herefordshire.

Special Features.

MID YEAR MODELS.
500 MILE RACE AT BROOKLANDS.
PILLION RIDING.

A 44 Ton Haul for a Sidecar.

Recently a reader (Mr. Hugh Sharrock, of Melling) towed a 44 ton barge along the Leeds-Liverpool canal for the distance of one mile, using a 7-9 h.p. Indian sidecar. A number of people witnessed the feat, and now Mr. Sharrock would like to know if it constitutes a record haul for a sidecar outfit.

Re-union of Ex-D.R.'s.

For the third time since the war ex-despatch riders of the 24th Division held an annual reunion last week. This year's venue was Chester. Thirteen of the old section motored to the Albion Hotel, and to augment this unlucky (?) number an ex-29th D.R. favoured them as guest. A motor boat trip up the River Dee and a visit to Eaton Hall were much enjoyed.

A SIDECAR GRAND PRIX AT PROVINS.

In England the A.C.U. demand that certain rules and regulations be observed regarding the activities of the passenger-in-sidecar events, consequently such balancing feats as depicted are not now seen in our Trials. The inset shows the extraordinary attitude adopted by a passenger on an Indian sidecar outfit whilst cornering in the recent race at Provins (France).

An Omission Rectified.

All our readers who are in possession of registered motor cycles should by now have received a postcard from the local taxation department requesting them to fill in frame and engine numbers on their registration books, and also to supply this information to the department. This step should certainly make more difficult the traffic in stolen machines.

CLUB NEWS.

(Continued from page 15.)

Leeds M.U.

The results of the A. I. Greenwood Royal Enfield trial, held at the end of June, are as follows:

1, T. W. Lancaster, 2, H. Gothard, 3, A. Rayner, 4, P. A. Roberts, 5, T. Hardy, 6, J. S. White, 7, C. Keighley, 8, C. Jackson, and 9, A. Levitt.

North London M.C.C.

In spite of all the counter attractions in London last Saturday, a flexibility test was held near Radlett.

The competitors covered a certain distance fast and slow, using the same gear in each case. The results were as follows:

SOLO.

350 C.C. AND UNDER.—R. H. Baxter (2¼ Radco).
600 C.C. AND UNDER.—L. P. Walter (4 Triumph).
UNLIMITED C.C.—R. G. Smith (Pearl-Jap).

SIDECARS.

650 C.C. AND UNDER.—C. H. Sullens (3½ Ariel sc.).
UNLIMITED C.C.—H. V. Bateman (10 Henderson sc.).

Coventry and Warwickshire M.C.

Over forty members competed in this club's trial last Saturday for the cup presented by the president, Lieut.-Col. J. A. Cole. The outward route to Oxford included Edge and Tyso Hills, which, well known as they are to the majority of Coventry riders, were responsible for several stops. The following apparently survived the trial with clean sheets:

J. L. Hardy (4½ Dunelt), W. Brandish (4 Triumph), T. H. Meakin (4 Triumph), E. H. Broughall (3½ Challenge-Jap), C. F. Dyer (3½ Norton), F. E. Shanks (4 Triumph), S. A. Tomson (4 Triumph), G. F. Evans (3½ Sunbeam), B. Clare (3½ Rudge), R. P. Ransome (3½ Lea-Francis), T. Doyle (3½ Lea-Francis), J. E. B. Bramley (3½ Coventry Challenge), J. Mathers (3½ Rudge), W. L. Danskin (3½ Rudge), C. Merrett (4½ Humber), H. Whitten (4½ Humber), G. L. White (5-6 Rover sc.), J. W. Hazlewood (8 Hazlewood sc.), G. Papin (4 Triumph sc.), D. A. Atkin (5-6 Rover sc.), J. W. Astley (5-6 Rover sc.), H. S. Perry (4¼ B.S.A. sc.), T. R. Gibbins (8 Acme sc.), G. H. Vernon (7-9 Rudge sc.), F. Yates (4½ Humber sc.), A. J. Elliott (5-6 Rover sc.), A. Edwards (4½ Humber sc.), and G. Lee (3½ Sunbeam sc.).

Among those reported to have stopped in non-stop sections were:

L. Crisp (4½ Humber), Rev. S. R. Philpot (6 Martinsyde sc.), H. F. Harrison (4 Triumph sc.), H. Finch (4 Triumph sc.), C. Falconbridge (5-6 Rover sc.), E. Poppe (7-9 Rudge sc.), and F. Arbuckle (4½ Humber sc.). The last mentioned retired.

Week-end Club Events.

July 9.—North-West London M.C.C. Surprise Run.
July 8.—Luton and South Beds. A.C. Twenty-four Hour Reliability Trial.
July 9.—Surrey M.C.C. Hill-climb.
July 9.—M.C.C. Brooklands Meeting.
July 9.—Scottish Speed Championships at St. Andrews.
July 9.—South Wales Motor Cycle Open Competition Committee. Joint Open Hill-climb.
July 9.—Sutton Coldfield and North Birmingham A.C. Reliability Trial
July 9.—Stourbridge M.C.C. Hill-climb.
July 9.—Kidderminster M.C.C. Reliability Trial.
July 9.—Surrey M.C.C. Reliability Trial.
July 9.—Yorkshire Centre A.C.U. Speed Trials at Saltburn Sands.
July 9.—North Wales M.C.C. Speed-judging Contest.
July 9.—Liverpool M.C. Speed Trials.
July 9.—Coventry Triangle M.C. Club Run to Napton.
July 9.—North-West London M.C.C. Paperchase.
July 9.—Public Schools M.C.C. Petrol Consumption Test.
July 9.—Bristol M.C.C. and Bath M.C.C. Inter-club Trial.
July 10.—West Kent M.C. Hill-climb.
July 10.—Manchester M.C. Ferodo Cup Trial Re-run.
July 10.—North-West London M.C.C. Picnic.
July 10.—Sheffield M.C.C. Club Run to Lathkill Dale.
July 10.—Central London M.C.C. Club Run to Newland's Corner.
July 10.—Leeds M.U. Hill-climb.
July 10.—Brighton and Hove M.C.C. Hill-climb.
July 10.—Bridgnorth and District M.C.C. Hill-climb at Copthorne.
July 10.—Woolwich, Plumstead, and District M.C. Club Run to Hampton Court.
July 10.—Bury and District M.C. Windermere Reliability Trial.
July 10.—Barrow and District M.C. Hill-climb.
July 10.—Berwick and District M.C. Club Rally to Moor House, Rothbury.
July 10.—Harrogate and District M.C.C. Social Run to Malham.
July 10.—Newcastle and District M.C. President's Cup Day.
July 10.—Burton and District M.C.C. Club Run to Holt Fleet.
July 10.—Exeter M.C. and J.C.C. Club Run to Branscombe.
July 10.—Halifax and District M.C.C. Club Run to Filey.
July 10.—Rochester, Chatham, and District M.C. and L.C.C. Merewarth Woods Hill-climb.
July 10.—Ivy M.C.C. (Wolverhampton). Captain's Day.
July 11.—Birmingham M.C.C. Gymkhana.
July 11.—Worcester and District M.C.C. Evening Main Road Trial for Novices.
July 13.—North-West London M.C.C. Paperchase.
July 13.—Burton and District M.C.C. Paperchase.
July 13.—York and District M.C. "Sealed" Trial.
July 14.—Doncaster and District M.C.C. Speed Trials.
July 14.—Worcester and District M.C.C. River Trip.
July 14.—Oxford M.C. Paperchase.
July 14.—Canterbury and District M.C.C. Speed-judging Contest.

Proposed Club at Evesham.

A meeting was recently held at the King's Head Hotel, Evesham, to consider the formation of a motor cycle club. Mr. F. C. Badham presided, and officials of the Cheltenham and Worcester clubs offered practical support by permitting members of the new club to take part in their trials.

Ulster M.C.C.

On Friday and Saturday, the 15th and 16th inst., a series of speed trials and races at Magilligan Strand will be held; a fifty miles championship of Ireland is also included. This event is one of the most important in the Irish competition world, and a large entry from England is hoped for. Entries should be addressed to Mr. W. Dowling, 48, Candahar Street, Belfast.

Shepley and District M.C.C.

A successful hill-climb and slow speed trial was held on the 26th ult. at Board Hill, on the Penistone to Woodhead road. Results:

SIDECARS (Open).—W. Dransfield (6 Enfield).
SOLO (over 3 h.p.).—B. Roebuck (3½ Norton).
SOLO (under 3 h.p.).—A. Townend (2¼ Enfield).

In the slow speed trial F. Wallace (4 Triumph) was successful in winning both the solo and sidecar classes.

Any motor cyclists in the Shepley or Huddersfield districts are cordially invited to communicate with the secretary of this new club, Mr. Frank W. Brook, Post Office, Shepley.

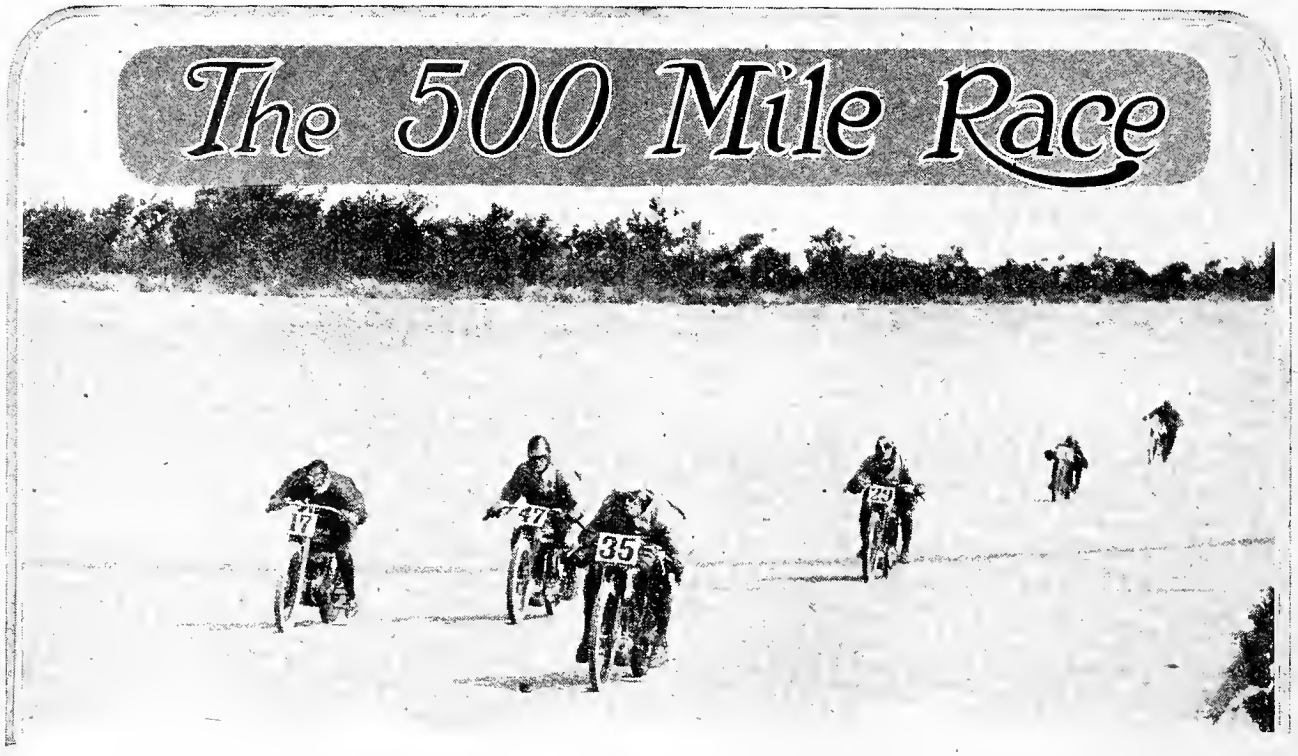
Manchester M.C.

The paperchase held at the end of last month over about twenty-five miles of good roads through Cheshire was won by A. Whiteley on a 4 h.p. Dalton sidecar. This is the first of three similar events for the Taylor Bowl, awarded to the competitor with the best aggregate performance in the three trials.

A Section devoted to Club Announcements will be found on Supp. xlvi.

THE 500 MILE RACE AT BROOKLANDS. Probably never before has such a field been seen at Brooklands for a single event. Here are the sixty-four competitors starting in the race which was destined to be a remarkable testimony to the reliability and speed of the modern motor cycle.

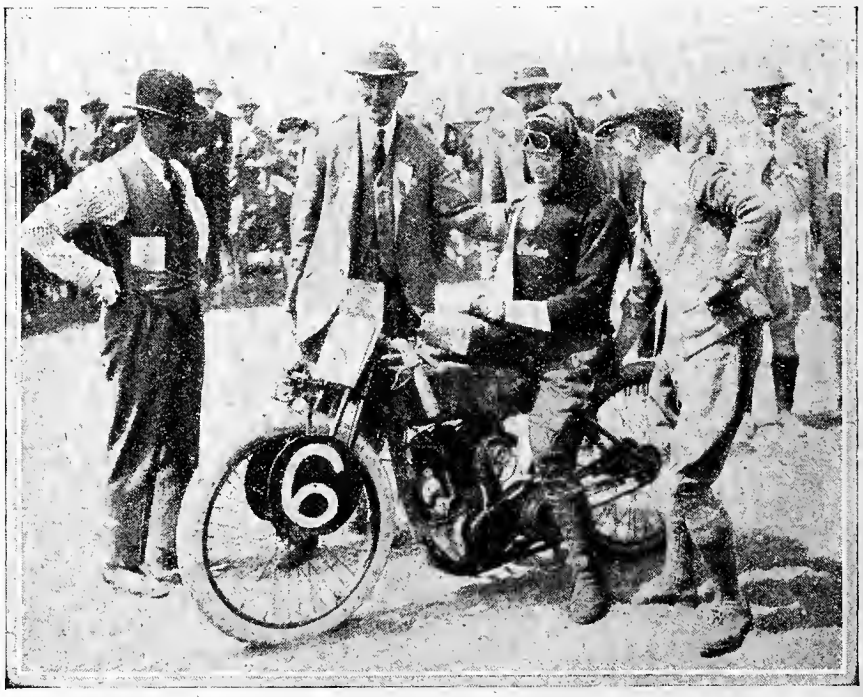
The 500 Mile Race



Great Race at Brooklands reflects Credit on Modern Motor Cycles of all Classes. Wonderful Record Ride by H. Le Vack (Indian) at 70.42 m.p.h. Coventry-Victor, Norton, Ivy, and New Imperial first in their Classes.

SEVEN a.m. is too early a starting hour to attract a crowd, and few except those most intimately concerned arrived at Brooklands in time to see the great 500 mile race for Capt. Miller's gold cup. The sun had barely dispersed the dawn mists when the men lined up in four rows just past the fork. Each class was distinguished by flimsy overall jackets of a different colour. The front row was composed of the 250 c.c. riders (white jackets) and the 350 c.c. (blue). The big 500 c.c. class (yellow) filled the second line. Next came the select 750 c.c. company—eight in number—with green overalls; and last of all the big 1,000 c.c. twins resplendent in red. The entire body of starters, sixty-five in number, formed a most imposing array, and the scene when they all got away simultaneously at a common signal absolutely baffled description. The sharp crack of so many well-tuned exhausts, the clouds of Castrol mingling with the mists of early morning, the semi-comic aspect of so many running and leaping men, formed a spectacle which repaid the company for its early rising.

For a few laps the procession was so continuous that nobody could sort out the riders who forged ahead, and the spectators were able to appreciate the new paddock at the fork, and to study their programmes. There were notable absentees. The A.J.S. cracks were missing altogether. So were two Scotts and Dance's Sunbeam, which as late entries ranked as reserves, and could not be found room on the track. The gold cup promised to be "easy fruit" for the American entries, as a 1,000 c.c. engine can always beat smaller machines on Brooklands, and our British twins mostly emanate from comparatively small factories. Nortons and Douglases were present in fair force. Triumphs were



The winner, H. Le Vack, and the 7 h.p. Indian, on which he put up such a splendid performance, being congratulated by W. Wells, of the Hendee Co.

The 500 Mile Race.

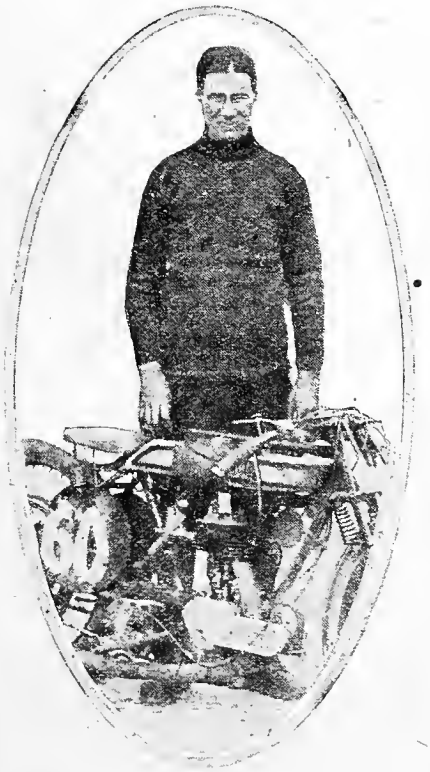
represented by Edmond on a side valve, and Shemans and Sgonina on the four-valve Ricardo-engined model. There were lots of interesting machines, and eke of resurrected riders. Pullin's Zenith had an Anzani engine, and Jepson's a Harley-Davidson power unit in a loop frame. The two Woodhouses' Matchless machines were standard spring frame models assembled on the previous day. It was pleasant to see the two Bashalls and H. H. Bowen out again; the smaller Martinsyde, ridden by the latter, is surely a newcomer to the track? The other *débutantes* included the 6 h.p. Blackburnes, R.W. Scout, Edmond, Coventry Eagle, two Hobarts, and the Acme Junior. The Ivy, destined to run so prominently, was a standard sports model.

A Group of Flat Twins.

The cinema men naturally took a special interest in H.R.H. the Duke of York's Douglas, ridden by S. E. Wood. The Coventry-Victor was the new short wheelbase model, described in this issue. Nixon's A.B.C. aroused special enthusiasm in the breasts of many clients of the Sopwith Co. The two Morris-Warne machines have aluminium cylinders with steel liners.

Presently the confusion of the incessant processim began to tantalise the lookers-on; and all eyes turned to the lap-scoring stand opposite the fork, where number cards were turned down as each man completed a lap. Other visitors pushed up towards the cages constructed across the end of the finishing straight for the purpose of repairs and replenishments.

From the outset it was clear that several terrific duels were being waged, and that other machines had comfortable victories assured in their classes if they could add stamina to speed. In the big class D. H. Davidson (Harley-D.) and Le Vack (Indian) were plainly the fastest, and watching each other like two game-



Victor Horsman (3½ Norton), winner of the 500 c.c. class. His speed averaged 62.31 m.p.h.

cocks. Of the 500 c.c. entry Horsman (Norton) and the three Triumphs seemed to be contesting the main issue. The 750 c.c. octette were rather more even—Parham, W. Bashall, and Jack Thomas being fairly level. For a long while Padley's Blackburne was supposed to be heading the 2¾ h.p. class, until somebody discovered the Ivy's number at the farthest end of the lap board, where it had been put as a reserve entry.

Among the 250 c.c. lightweights Milner's Levis, Kershaw's New Imperial, and Jacobs's Acme looked most formidable. But the track was so crammed with men—of whom the slowest were at this stage lapping at fifty odd, and the dozen and a half of big twins at about 80 m.p.h.—that it was extraordinarily difficult to keep in touch with the positions. The noise was almost intolerable, the lightning procession altogether bewildering.

The officials were just beginning to hope the day would pass without accident when Harry Reed's back tyre came off just beyond the Vickers shed, and threw him rather heavily. He walked back, had his torn hands dressed, and pluckily continued until a leaking tank put him out several hours later.

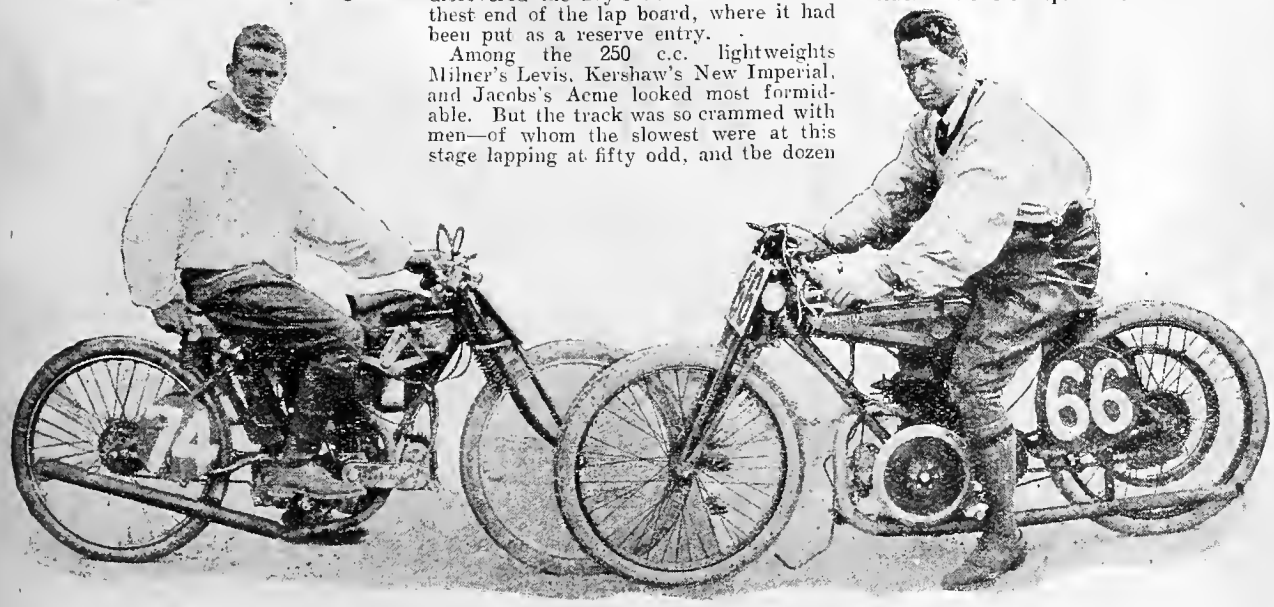
For a while the spectators mostly concerned themselves with studying the progress of their personal friends, but after forty-eight laps there was a moment of universal excitement—Le Lack did not appear when he was due, and Davidson went ahead unchallenged for the nonce. It presently transpired that the Indian's back tyre had come off down the railway straight, and the Harley had snatched a six-lap lead before Le Vack got going again. Nobody wasted time changing tubes at the depots. Out came the wheel, and a new wheel, complete with ready inflated tyre, was generally bolted up inside a couple of minutes. When Le Vack took the track again he began to "drive" Davidson. The pair rode side by side for laps, though Le Vack was, of course, a dozen miles behind the Harley. His policy evidently was to chance the Harley's breaking something before he did.

100 Miles.

Presently the timekeepers got out the positions and speeds for the end of the first 100 miles, and the leaders in their respective classes proved to be:

1,000 c.c.—Le Vack (Indian), 80.27 m.p.h.
750 c.c.—Parham (Coventry Victor), 60.71 m.p.h.
500 c.c.—Horsman (Norton), 65.01 m.p.h.
350 c.c.—Norris (Ivy), speed not worked out.
250 c.c.—Kershaw (New Imperial), 57.42 m.p.h.

This announcement embodied several surprises. Paddock experts had not credited the big twins with trying to do more than 65 m.p.h. average at the outside. The 5-6 h.p. class machines were



B. Kershaw (New Imperial-Jap), winner of 250 c.c. class. His average speed of 50.34 m.p.h. for the 500 miles is a fine tribute to the little machine

N. Norris (Ivy), whose performance really stood alone. This standard two-stroke beat all the 350 c.c. four-strokes, as well as capturing the 500 mile record

The 500 Mile Race.

appreciably slower than the 3½ h.p., and the latter were revenging themselves for being outstripped by the 350 c.c. in the T.T., though the A.J.S. was not here to do battle for its class. The magnificent showing of the New Imperial and the Ivy occasioned much comment, as did also the steady speed of the Levis.

By 9 a.m. a long string of men could be seen by the aid of binoculars repairing along the railway straight. Presently Edmond (Triumph) followed Le Vack's unhappy example, and lost a lot of ground through tyre trouble. Shemans was afflicted by slight clutch slip, due in part to an excess of oil reaching the chain case from the crank case. So Horsman was building up a good lead in the 500 c.c. class. By 9.30 he was two laps ahead. C. F. Temple (Harley), after riding most daringly and brilliantly for thirty-four laps, went out with tyre and engine trouble, leaving Davidson to act as unquestioned first string of the team. Dixon was also going excellently, leaning over a little as he did on his Indian in the T.T. At a quarter to ten Davidson had to change his back wheel, which allowed Le Vack to recover the ground he had lost in similar fashion. Half an hour later eight men had retired—not enough to diminish the roaring stream at all perceptibly. Of these, Greening (Coulson-Jap) had been taken to hospital with slight contusions due to a fall. After 200 miles the leaders were:

1,000 c.c.—F. W. Dixon (Harley), 74.31 m.p.h.
750 c.c.—W. H. Bashall (Martinsyde), 57.29 m.p.h.
500 c.c.—Horsman (Norton), 62.75 m.p.h.
350 c.c.—Norris (Ivy), speed not given.
250 c.c.—Kershaw (New Imperial), 51.26 m.p.h.

Before 10.30 the leaders had passed the half distance. Meanwhile Le Vack had once more changed his back tyre, this time as a precaution. It was interesting to see how the varying speeds translated themselves into terms of distance. Thus, when Davidson (Harley) had done 100 laps, the approximate distances of the leaders in the smaller classes were: 750 c.c., 80 laps; 500 c.c., 86 laps; 350 c.c, 73 laps; and 250 c.c., 72 laps.

Changing Positions.

The 300th mile saw more changes in leadership, for the positions now were:

1,000 c.c.—D. H. Davidson (Harley), 72.75 m.p.h.
750 c.c.—Parham (Coventry Victor), 55.81 m.p.h.
500 c.c.—V. Horsman (Norton), 62.5 m.p.h.
350 c.c.—N. Norris (Ivy), 51.64 m.p.h.
250 c.c.—B. Kershaw (New Imperial), 51.26 m.p.h.

About 11.20 a.m. the first British machine—Horsman's Norton—completed its one hundredth lap, five American twins having already completed that distance. The Norton had outdistanced all the British twins, and its feat indicates where our big twins might have stood if we had always given them as much attention as our 500 c.c. engines have received.

Presently news came that Dixon had sustained a bad crash on the railway straight, where his front tyre came off, and caused him to skid nearly the whole length of the flying kilometre. Luckily, he fended off the fall until his speed was reduced considerably, and so he was fit to proceed, though not a little shaken.

At about 11.40 a.m. there was a fresh sensation, for the leading Harley failed to come round when it was due, and Le Vack regained the lead, which he had taken in the first hundred, and lost in the second. On the one hand, no back tyre would last long on a 7-9 h.p., driven as the leaders were driving, though it was noticeable that the Indian's back tyres did not hammer so much as the Harley's. On the other hand, Le Vack had evidently risked engine damage in his prolonged scrap with Davidson. Luck was on his side in both cases: the Harley first had tyre trouble, and then its engine went wrong. So at the end of four hundred miles the class leaders stood as follows:

1,000 c.c.—H. Le Vack (Indian), 71.40 m.p.h.
750 c.c.—E. W. Parham (Coventry Victor), 55.98 m.p.h.
500 c.c.—V. Horsman (Norton), 61.76 m.p.h.
350 c.c.—N. Norris (Ivy), 51.38 m.p.h.
250 c.c.—B. Kershaw (New Imperial).

Relieved of his most dangerous opponent, Le Vack was now easing down a little for safety's sake, and it was noticeable that Shemans's Triumph was able to hold the redoubtable Indian for a lap or so. Repairs and stoppages grew more numerous and lengthy as the interminable racket searched out weaknesses; but both the speed and number of survivors do the industry every credit. Soon after 1 p.m. Dixon, who had been riding like a demon, on the off chance of catching the leading Indian, found it wise to change a wheel; including replenishments the job took him less than three minutes.

A Great Duel.

As 2 p.m. drew near Le Vack looked a certain winner, and there was a tremendous sensation when he became overdue on his 182nd lap. Just as the anxiety grew keen, Harveyson passed, and made an indistinct signal. The braves in the Indian wigwam grew very excited; two of them commandeered a sidecar and rushed off with a spare wheel down the road to the aeroplane sheds. Just as the Harley folk wondered whether Dixon might yet win, a crouching red figure appeared round the far banking, and as the tiny dot swelled in size, a hundred pairs of glasses read off the number "6"! Three miles from victory Le Vack had managed to oil up a pair of K.L.G. plugs which had carried him since the start, and his stop had thus been brief. He was soon round again on his 500th mile, but the flagmen failed to stop him till he had completed 186 laps. He finished wreathed in smiles and apparently quite fresh. Dixon soon annexed second place—he staggered a little on dismounting; and Harveyson, who finished third, was positively exhausted.

The rest of the 1,000 c.c. men were handsomely defeated by Horsman's wonderful ride, but it is worth noting that the Zenith Company finished with six machines out of seven starters. The Martinsyde trio, consisting of two 750 c.c. and one 500 c.c. machines, put up a level and consistent race, and all finished well up.

Perhaps the most amazing performances were registered in the junior classes. It was bold of the Ivy people to enter a single standard machine; it was superb to win with it at over 51 m.p.h. Similarly the 250 c.c. New Imperial was revving very very fast for nearly ten hours, and sounded as crisp in the exhaust at the end as it had done at the beginning. A great race, and the honours all went where they were thoroughly deserved and pluckily earned. Finishing order:

CLASS E.—1,000 c.c.

	h.	m.	s.	m.p.h.
1. H. Le Vack (7 Indian)	7	5	59⅘	70.42
2. F. W. Dixon (7 Harley)	7	15	37⅘	68.86
3. H. R. Harveyson (7 Indian)	7	44	43½	64.56
4. C. G. Pullin (7 Anzani-Zenith)	8	22	36	59.69
5. J. E. Harwood (8 Zenith-Jap)	8	50	26	56.55
6. S. C. Woodhouse (8 Matchless)	8	51	44	56.41
7. F. C. Townshend (8 Zenith)	8	53	16	56.26
8. Kaye Don (8 Zenith)	9	9	2¼	54.64
9. J. W. Woodhouse (8 Matchless)	9	25	6	53.08
10. R. Dequin (8 Zenith)	10	15	44	48.72
11. V. Gayford (8 Zenith)	10	57	47	45.61

Retired: C. F. Temple (7 Harley), after 34 laps, engine trouble. D. H. Davidson (7 Harley), after 122 laps, engine trouble. O. M. Baldwin (7 Indian), after 137 laps, broken frame. H. Jepson (8 Zenith), after 55 laps, firing on one cylinder. G. Packman (8 Sunbeam-Jap), after 57 laps, gear box trouble. A. G. Miller (8 Martin), after 38 laps, engine running badly. H. Reed (8 Dot), after 115 laps, tank leaking.

CLASS D.

	h.	m.	s.	m.p.h.
1. E. W. Parham (5.6 Coventry Victor)	8	55	42	56.00
2. W. H. Bashall (6 Martinsyde)	9	5	8	55.03
3. F. A. MacNab (5 Trump-Jap)	9	44	39	51.31
4. J. T. Bashall (6 Martinsyde)	9	54	5	50.49

Retired: J. C. Watson (4 Harley-Davidson), after 50 laps, piston trouble. H. F. Brockbank (6 Blackburne), after 65 laps, valve gear. J. Thomas (6 Blackburne), after 28 laps.

CLASS C.

	h.	m.	s.	m.p.h.
1. V. Horsman (3½ Norton)	8	1	25⅘	62.31
2. F. G. Edmond (3½ side-valve Triumph)	8	25	3⅘	59.34
3. G. J. Shemans (3½ 4 valve Triumph)	8	46	50	56.94
4. H. H. Bowen (3½ Martinsyde)	8	55	36	56.01
5. H. H. Beach (3½ Norton)	9	31	44	53.40
6. D. R. O'Donovan (3½ Norton)	9	40	47	51.67
7. J. D. Nixon (3 A.B.C.)	10	21	59	48.23

Retired: J. Emerson (4 Douglas), after 142 laps, forks failed. E. Longden (4 Coulson-Jap), after 131 laps. R. C. Chawner (4 Blackburne), after 117 laps, broken crankshaft. J. A. Watson-Bourne (Rex), after 76 laps, damaged cylinder. F. Roberts (4 Coventry Eagle), after 55 laps. S. E. Wood (4 Douglas), after 79 laps, chain trouble. C. Sgonina (3½ Triumph), after 52 laps, seized engine.

CLASS B.

	h.	m.	s.	m.p.h.
1. N. Norris (3 Ivy)	9	40	20	51.69
2. Tudor Thompson (2¾ Douglas)	9	50	17	50.82
3. J. Holroyd (2¾ Edmund)	9	50	22	50.81
4. Tommy Thompson (2¾ Douglas)	10	41	37	46.76
5. L. W. Clements (2¾ New Comet)	10	59	15	45.51
6. R. Weatherell (2¾ R.W. Scout)	11	5	34	45.07
7. J. F. Hull (2¾ Wooler)	11	25	17	43.77

Retired: E. Kickham (2¾ Douglas), after 101 laps, magneto. A. A. Prestwich (2¾ Dot-Jap), after 18 laps, engine trouble. A. A. Swan (2¾ New Imperial), after 68 laps, mechanical trouble. S. M. Greening (Coulson-Jap), after 15 laps, accident. A. Watson (2¾ Douglas), after 33 laps, leaky tank. L. Padley (2¾ Blackburne), after 70 laps. H. J. Linc (2¾ Linc), after 91 laps. S. E. Longman (2¾ Wooler), after 96 laps, magneto and valve trouble. F. A. Longman (2¾ Wooler), after 126 laps.

CLASS A.

	h.	m.	s.	m.p.h.
1. B. Kershaw (2¼ New Imperial)	9	55	55	50.34
2. A. Milner (2¼ Levis)	10	36	17	47.15
3. G. G. Savage (2¼ Hobart)	10	58	43	45.64

Retired: J. V. Prestwich (2¼ Massey-Arran), after 18 laps, piston trouble. A. K. Smith (2¼ Morris-Warne), after 90 laps. G. S. Smith (2¼ Morris-Warne), after 79 laps. H. Martin (2¼ Martin), after 120 laps. W. J. Lord (2¼ Hobart), after 59 laps, seized piston. W. A. Jacobs (2¼ Acme-Junior), after 30 laps, broken piston.

FIRST TWELVE TO FINISH, IRRESPECTIVE OF CLASSES.

	m.p.h.
1. H. Le Vack (7 Indian)	70.42
2. F. W. Dixon (7 Harley)	68.86
3. H. R. Harveyson (7 Indian)	64.56
4. V. Horsman (3½ Norton)	62.31
5. C. G. Pullin (7 Zenith)	59.69
6. F. G. Edmond (3½ Triumph)	59.34
7. G. J. Shemans (3½ Triumph)	56.94
8. J. Harwood (8 Zenith)	56.55
9. S. C. Woodhouse (8 Matchless)	56.41
10. F. Townshend (8 Zenith)	56.26
11. H. Bowen (3½ Martinsyde)	56.01
12. E. W. Parham (5 Coventry Victor)	56.00

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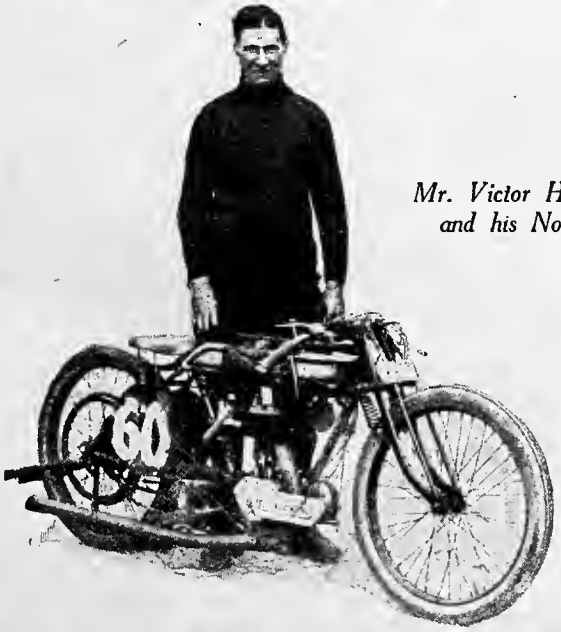

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MORGAN 8 h.p. 1920 de Luxe, elec. lamps	£235

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B.S.A., 4½ h.p., 1917, Mills-Fulford Sidecar	£77
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MORGAN, 8 h.p., 1919, J.A.P., w.-c.	£180
MATCHLESS, 8 h.p., 1920, Magdyno light.	£167
A.J.S., 6 h.p., 1920, 2-seater Sidecar	£165
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THE ARBUTHNOT TROPHY TRIAL

Sporting Two Days Trial for Naval Officers. Sixteen Starters, Four adjudicated Equal Winners of Trophy.

EVEN more successful than its two predecessors the third competition for the Arbuthnot Trophy has shown that for sheer keenness and sportsmanship the naval officer is without equal. He is, and must be, the most genuine type of amateur. He spends little time ashore, and so must, of necessity, be precluded from enjoying any of the advantages by which the civilian rider can profit. His mount may be of any age, he can have no axe to grind, and he is made to follow a course he would not dream of pursuing in the ordinary way and covers it without a grumble. One of those competing last Friday reported a stop on a certain hill and happened to mention that a cart was in the way. Said the official, "Would you not call that a traffic stop?" "Oh, no," replied the competitor, "it was sheer bad driving on my part." Several men who suffered many troubles carried on purely for love of the sport even though they knew they had no chance of winning, while it is interesting to have to record that all who competed in the previous Arbuthnot Trophy events have attempted to repeat their efforts in the succeeding competition.

Keen Supporters.

So far Terence Back, who, with Kidstone, last year's winner, was in the running for the trophy, has competed in all three, but Derek Stephens, and Jameson, who ran in the first event in 1919, and were prevented last year, turned up for this year's competition. This goes to prove that the trial is certainly appreciated by those who have ridden in it, while the enthusiasm of those present in endeavouring to render it more popular among their shipmates was quite remarkable.

This year the headquarters were at Sevenoaks, and it goes without saying that the Auto Cycle Union chose a course which was in every way worthy of this body. Not only were the usual Surrey and Kentish test hills in the programme, but two new ones—Yorks Hill and Starvecrow (locally known as Rook's Hill)—were included.

Each competitor was credited with two hundred marks at the start, ten being deducted for a stop on a named hill on the first circuit, fifteen on the second, and twenty on the third, while it must be remembered that the course of fifty-eight miles had to be covered non-stop three times.

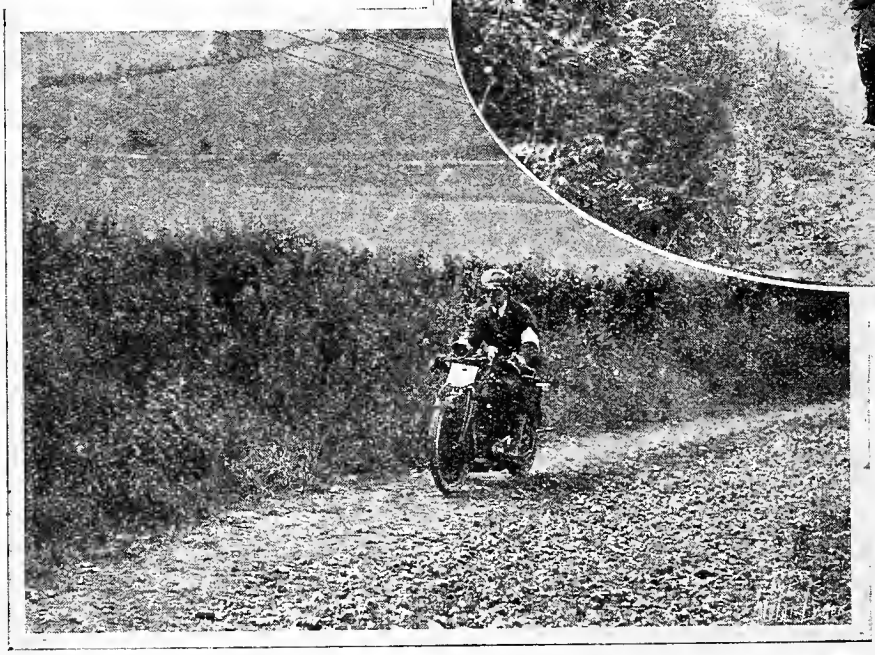
Of the twenty-one entries, five did not start, and of these W. G. L. Cooper (Scott) had magneto trouble before reaching Sevenoaks.

The first man, Wheeler (4 Coulson), was despatched from Bligh's hotel at 9.1 a.m. by Major Dixon Spain.

On Paddledock Hill. Lieut. C. Plumer (3½ Sunbeam), followed by Lieut. L. A. Heath (8 Bat).

The Arbuthnot Trophy Trial—

Although not the roughest hill, despite the loose patch at its base, Succombs, used by the A.C.U. in the One Day Trial, was probably the steepest, but it proved to be no impediment for the better and newer mounts, and excellent climbs were made by Wheeler (Coulson), Back (Triumph), Jameson (Sunbeam), James (N.U.T.), and Davis (Triumph). Failures were rare at this point, but Hovenden (Zenith) was brought to a standstill.



(Left) Sub-Lt. H. B. Baker (Indian) on the stone-strewn surface of Saltbox Hill.

(Right) Rough and narrow lanes were included in the course. Sub-Lt. R. Oliver Bellairs (Scott) on Starvecrow Hill.

The remaining hills not previously mentioned—Chalkpit, High Lane, Polesteeple, and Cudham—presented no difficulties, but Starvecrow at the end of the first lap was the chief topic of conversation. Not only has it a consistent gradient of 1 in 5 or worse, but rocks project through the surface and loose stones abound, while there is only a narrow pathway which is negotiable. Despite this fact, the first lap performances were quite good, and only Dibley (Indian), Hovenden (Zenith), and Grogan (Zenith) failed, the latter owing to not changing down early enough.

At lunch time there were two retirements—Baker (Sunbeam) and Heath (Bat)—both owing to tyre troubles. Baker foolishly started with a worn back cover. So far Back (chain-driven Triumph), Jameson (Sunbeam), James (N.U.T.), Chads (Triumph), Davis (Triumph), and Wheeler (Coulson) had made non-stop runs.

In the afternoon the performances on Yorkshill were distinctly good, and proved that the Navy possesses some clever riders. Wheeler came up well as usual, while Hovenden, Plumer (Sunbeam)—one of last year's riders—and Ford made good ascents.

Starvecrow or Rook's Hill was certainly a terror. Wheeler swerved badly but got up, Knox (Triumph) had his machine somewhat damaged by its fall, but did well, though he wobbled badly. Grogan (Zenith) had to make a second attempt, Stephens (Douglas) took a toss and failed, while Oliver Bellairs failed three times and damaged his Scott's footboard clip.

At the end of the afternoon's run Hovenden (8 Zenith), who had failed on Chalkpit, the Hairpin, Succombs, and High Lane, retired. A puncture spoilt Jameson's non-stop record, leaving only Wheeler (Coulson), Back (Triumph), Chads (Triumph), and James (N.U.T.) with clean sheets.

The Second Day.

The dozen survivors lined up at 8 o'clock on Saturday morning to make a third round of the course. By now they knew the hills and the stony surafces; but, although the hills caused little trouble, minor difficulties occurred, and there were only four men left in the running for the trophy—Back, Plumer, James, and Chads. All that remained to be done after lunch was the first half of the course as far as Caterham, and a fairly straightforward run to Brooklands, where it had been arranged to see the finish of the 500 miles race. Unluckily for the Arbuthnot trial, however, Le Vack's fine performance had upset all calculations, and they arrived too late to see him finish. Up to lunch time only one non-stop man had been eliminated, but Stephens (Douglas) had tyre trouble and retired.

There were no further retirements, but Knox (Triumph) stopped to pull a piece of wire out of his rear tyre, and Davis (Triumph) stopped for petrol, but, notwithstanding, arrived 15m. ahead of minimum time. Nothing daunted, the four non-stop men arrived to time and with clean sheets, and on their case being considered by the officials it was decided that they had all earned silver medals and the right to have their names engraved on the trophy, but to decide as to who should hold the trophy lots were drawn, and the draw was won by Back. The result was most popular, and thus concluded the third successful and sporting Arbuthnot Trophy competition.

Rider and Machine.	Remarks.
Lieut. T. H. Back, R.N. (4 Triumph)	Joint winner of trophy and holder.
Lieut. C. Plumer, R.N. (3½ Sunbeam)	Joint winners of trophy.
Lieut. P. V. James, R.N. (5 N.U.T.)	Joint winners of trophy.
Sub.-Lieut. H. C. Chads, R.N. (4 Triumph)	Joint winners of trophy.
Eng. Lieut.-Comdr. S. O. Wheeler, R.N. (4 Coulson-B.)	Retired 3rd lap; broken belt rim and puncture.
Eng. Lieut.-Comdr. A. K. Dibley, R.N. (7 Indian, 1915)	Carburetter trouble and loss of power. Retired 2nd lap.
Sub-Lieut. H. B. Baker, R.N. (3½ Sunbeam)	Retired 1st lap; burst cover.
Lieut.-Comdr. D. C. Ford, R.N. (6 A.J.S.)	Fell on Friday and stopped engine accidentally on Saturday. Finished to time.
Lieut. R. C. Hovenden, R.N. (8 Zenith)	Retired 2nd lap; failed on most hills.
Lieut. L. A. Heath, R.N. (5-6 Bat)	Retired 2nd lap; tyre troubles.
Sub-Lieut. R. T. Grogan, R.N. (6 Zenith)	Numerous stops on hills.
Lieut. W. D. Stevens, R.N. (4 Douglas)	Fell on Starvecrow Friday, tyre trouble Saturday. Retired 3rd lap.
Sub-Lieut. R. Oliver Bellairs, R.N. (6¾ Scott)	Failed on several hills. Finished to time.
Sec.-Lieut. T. E. N. Knox, R.M. (4 Triumph)	Fell on Hairpin Friday, stopped to pull wire out of tyre Saturday.
Comdr. J. C. Davis, R.N. (4 Triumph, 1915)	Sooted plug Friday, stopped for petrol Saturday afternoon.

THE SCOTTISH SIX DAYS TRIAL.

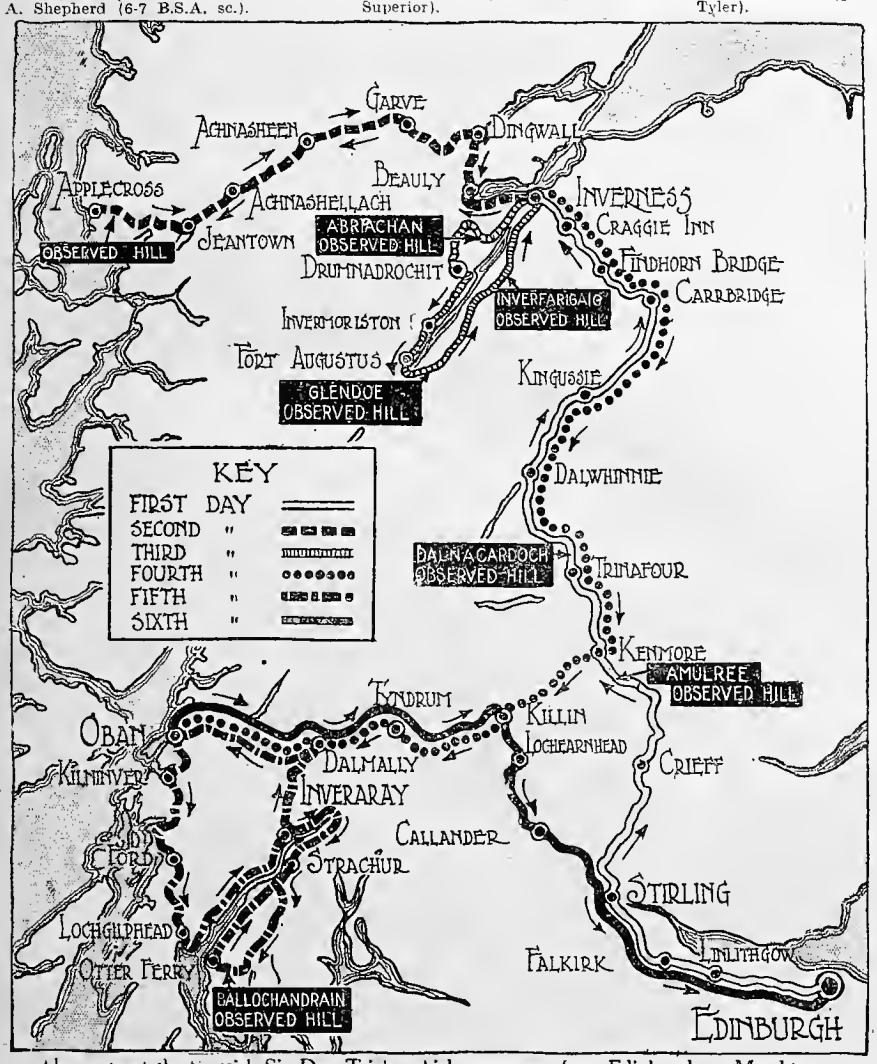
131 Entries for Next Week's Big Event in the North. Several New Routes Planned.

ON Monday next competitors in the Edinburgh M.C.'s classic Six Days Trial will leave the Scottish capital to cover the first day's route to Inverness, *via* Stirling, Crieff, and Amulree. The second day's route is to the famous Applecross Hill on the west coast, and back to Inverness; and the third day will be spent in the neighbourhood of Loch Ness, two of the test hills being Abriachan and a recent "discovery," Inverfarigaig, a hill likened to the Welsh Screw Road. Thursday will see the competitors journeying south again *via* Killin to Oban; while Friday's route will be a circular one, returning to this well-known Scottish resort. On Saturday the route is over main roads to Edinburgh.

LIST OF ENTRIES, WITH OFFICIAL NUMBERS.

No.	Rider and Machine.
1.	*Watson-Bourne (8 Brough Superior).
2.	George Brough (8 Brough Superior).
3.	*H. Karslake (8 Brough Superior).
4.	*D. Wright, Jun. (4 Norton sc.).
5.	Hugh Gibson (2¾ Royal Ruby).
6.	*J. Beck (8 Royal Ruby sc.).
7.	*Douglas C. Sangster (3½ James).
8.	*W. M. Buchanan (4¼ B.S.A.).
9.	F. J. Hutchison (8 Royal Ruby sc.).
10.	R. S. Macrae (7-9 Harley-Davidson sc.).
11.	H. Alexander (10 Calthorpe).
12.	*A. B. Fairley (10 Calthorpe).
13.	*R. Carfrae (——).
14.	H. Nelson (7-9 Rudge sc.).
15.	T. Hunter (6-7 B.S.A. sc.).
16.	D. S. Milne (6-7 B.S.A. sc.).
17.	A. Shepherd (6-7 B.S.A. sc.).
18.	*J. B. Richardson (8 G.N.).
19.	G. Grinton (7-9 Harley-Davidson sc.).
20.	Norman Black (Omega).
21.	*W. Westwood (4 Triumph).
22.	G. Cumming (3½ Sunbeam).
23.	*J. W. Morton (3½ Rover).
24.	F. W. Viles (5-6 Raleigh).
25.	A. G. Fenn (5-6 Raleigh).
26.	K. Holden (5-6 Raleigh).
27.	*J. Browne (2¾ Douglas).
28.	J. T. Wood (10 G.W.K.).
29.	*M. T. Calderon (2½ Velocette).
30.	*J. Richardson (5 Lea-Francis sc.).
31.	*C. A. M'Keand (4 Harley-Davidson).
32.	*R. T. Ball (3¾ Scott).
33.	A. L. Downie (5-6 Raleigh).
34.	*H. S. Heaton (8 Brough Superior).
35.	F. G. Boddington (10 Morgan).
36.	*R. K. Morrison (7 A.J.S. sc.).
37.	A. F. Downie (7 A.J.S. sc.).
38.	*J. Kish (4 Norton sc.).
39.	W. Brandish (3½ Rover).
40.	*C. Guthrie (8 Royal Ruby sc.).
41.	W. L. Guy (3¾ Scott).
42.	C. M. O'Connor (8 Rover).
43.	A. G. Cocks (3½ Beardmore-Precision).
44.	B. Alan Hill (8 Rover).
45.	T. Peck (6-7 Ariel sc.).
46.	T. Sinclair (7-9 Harley-Davidson sc.).
47.	G. Featherstonhaugh (8 Rover).
48.	L. Newey (6-7 Ariel sc.).
49.	B. Bladder (8 New Imperial sc.).
50.	L. N. Bennett (8 Rover).
51.	A. S. Guthrie (2½ Metro-Tyler).
52.	J. L. Stocks (6-7 Ariel sc.).
53.	*R. A. C. Rayner (7 A.J.S. sc.).
54.	D. J. Cutler (8 Rover).
55.	*A. Brown (3½ Sunbeam).
56.	A. J. Sproston (——).
57.	*J. A. Hilger (5 Rover).
58	F. T. Sibley (7-9 Rudge sc.).
59.	H. Gardner (8 Rover).
60.	R. B. Clark (5 Zenith).
61.	L. L. Sealey (4¼ B.S.A.).
62.	Neville Hall (2¾ O.K. Union).
63.	B. L. Bird (4¼ B.S.A.).
64.	*A. Conville (5½ Lea-Francis).
65.	L. A. Welch (4¼ B.S.A.).
66.	*A. Peffers (4 Indian Scout).
67.	W. Handley (2¾ O.K. Union).
68.	H. F. Edwards (4¼ B.S.A.).
69.	A. E. Rollason (4½ Ariel).
70.	A. Wood (4¼ B.S.A.).
71.	J. H. Walker (4¼ B.S.A.).
72.	H. F. S. Morgan (8 Morgan).
73.	H. Langman (3¾ Scott).
74.	Wm. Jowett (7 Jowett).
75	*J. E. Chisholm (3½ Ariel).
76.	Len. Crisp (4½ Humber).
77.	E. H. Gifford (6 Martinsyde sc.).
78.	J. T. Bashall (6 Martinsyde sc.).
79.	Harry Crisp (4¼ Humber).
80.	P. Cunningham (3½ P. and M.).
81.	R. Watson (4½ Humber).
82.	G. M. Townsend (3½ P. and M.).
83.	A. J. C. Lindsay (3½ Rover).
84.	Harry E. Fairley (12 A.B.C.).
85.	*Donald Parsons (8 Matchless sc.).
86.	S. C. Hubbard (2¾ Coulson).
67.	*Charles Moser (4 Triumph).
88.	J. B. Miller (4 Bradbury).
89.	W. G. Donaldson (——).
90.	*J. R. Fellows (3½ Sunbeam).
91.	*E. W. Choldcroft (4 A.J.S.).
92.	*W. A. Davenport (5-7 Coventry-Victor).
93.	J. Westwood Wills (4 Powell).
94.	*John A. Leyland (3½ P. and M.).
95.	*E. S. Astley (5 Rover).
96.	*Maj. J. D. Johnstone (7 Jowett).
97.	R. Lewis (3½ P. and M.).
98.	W. H. Bashall (6 Martinsyde sc.).
99.	*G. L. White (5 Rover).
100.	*D. A. Atkin (5 Rover).
101.	*W. H. Udall (6 Bradbury sc.).
102.	John Wallis (6 Bradbury sc.).
103.	Bert Kershaw (2¼ New Imperial).
104.	*George Nott (7 Matchless sc.).
105.	W. Douglas Hawkes (10 Horstman).
106.	*W. Moore (3¾ Scott).
107.	R. N. Lochhead (3½ Ariel).
108.	F. E. Marsden (3½ Sunbeam).
109.	*Donald S. Parsons (8 Matchless sc.).
110.	W. G. Donaldson (5 Rover sc.).
111.	K. M. Quaile (8 New Imperial sc.).
112.	*R. Spence (4 Harley-Davidson).
113.	R. M. Wilson (2¾ Hobart).
114.	C. H. Hanwell (2¼ Cedos).
115.	J. R. Alexander (3½ Douglas).
116.	Reg. Brown (3½ Sunbeam sc.).
117.	—— (2¾ Hawker).
118.	—— (2¾ Hawker).
119.	George Dance (3½ Sunbeam).
120.	—— (2¾ Hawker).
121.	W. L. Cowan (2¾ New Imperial).
122.	Rex G. Mundy (8 B.A.C.).
123.	W. C. Hemy (7 A.J.S. sc.).
124.	D. S. Alexander (3½ Douglas).
125.	*J. Shepherd (6 Campion).
126.	—— (2¾ Hawker sc.).
127.	J. Chater-Lea (8 Chater-Lea sc.).
128.	S. Hall (8 Morgan).
129.	—— (3½ Douglas).
130.	H. E. MacGillivray (3½ Ariel).
131.	J. A. Porter 2¼ Massey-Arran).

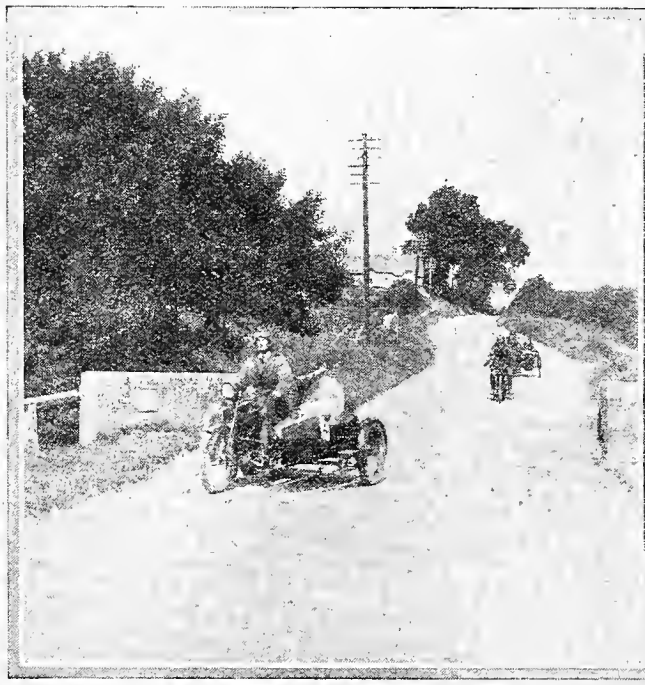
* Indicates private owner.



The route of the Scottish Six Days Trials, which commence from Edinburgh on Monday next

NO OBSERVED HILLS.

An Open Reliability Trial in the Bournemouth District.



A Harley-Davidson rider—J. Caslake, Junr., followed by H. M Brewer (2¾ Wilkin) and W. F. Arnatt (3½ P and M.) near Corfe Castle.

A couple of Martinsydes near Stoke Hollow, on a hill that was thickly strewn with big stones. The riders are A. A. Symes and F. L. Soames.

EXCEPT for one timed climb there were no observed hills in the first post-war open trial organised by the Bournemouth and District M.C. and L.C.C. on Saturday last.

A speed trial was included, and elimination was effected by means of time checks, both open and secret.

Weighing in took place at an early hour, and a start was made in perfect weather, at 9.30 a.m.; the course, though somewhat lacking in really severe hills, was made difficult by the rough by-roads traversed.

The course was by the main road to Wareham, then by circuitous route *via* Corfe Castle, taking in a very rough chalky hill called Creech Hill, which gave very little trouble, back to Wareham, thence on by-roads to Bere Regis, Milborne, Stileham, Dewlish, Lower Ansty, Stoke Wake Hill, Turnworth, Woolland, Winterbourne Stickland, and Blandford, for lunch. Nothing severe was encountered on the morning run except Stoke Wake Hill, and this only on account of surface. The riding here was very poor. It was a great pity that this hill was not observed, for about 30% failed. Perhaps this was due to lack of experience, for of the seventy-four entrants not a dozen were well known in the competition world, most being local clubmen.

The star performances were: R. Thick (7 Indian sc.), J. A. Newman (7 A.J.S.), D. T. Phillips (7 Harley-Davidson), J. E. J. Whitaker (3½ Norton), and H. F. S. Morgan (10 Morgan). W. Julian (Levis) had very hard luck, for halfway up the hill his leather coat caught in his chain, and brought him to a sudden stop. H. R. Kennedy also came to a sudden stop, this being due to lack of fuel. Except for three watersplashes, all rather shallow, due to continued drought, and miles of very flinty lanes—which made the thought of punctures very prominent—there were no further incidents to report in the morning run.

The Second Section.

In the afternoon Blandford was left by the Shaftesbury Road, through Iwerne Minster and Sutton Waldron to St. John's Hill, Shaftesbury, which gave no trouble, and the run continued to the Zigzag Hill. Here experience counted, and the old hands rounded the hairpins with ease, while others on similar machines had their feet well out on all corners.

The next point of interest was the timed hill at Fontmel Magna, an excellent wide hill of about 1 in 6. The top being visible from the bottom, the flagging system of timing was used. This enabled the officials to get the men off without any undue waiting. No failures were observed, and quite a number made fast climbs. E. J. L. Strong and D. T. Phillips (7 Harley-Davidson) being particularly fast. Some of the 3½ h.p. solo machines would have been much faster on their middle gears.

From Fontmel Magna the route continued to Tarrant Gunville, Tarrant Hinton, and Tarrant Launceston. Here a watersplash some yards wide, but not deep enough to give trouble, was negotiated, after which the run was fairly straightforward to Cranford Park, put at the disposal of the Bournemouth Club by Lady Wimborne for the speed trial. The Park being only a few miles from Bournemouth, some hundreds of spectators were present. The Harleys of Strong and Phillips were again very prominent, as also were O. Goodman (3½ N.U.T.), S. Priestley (4 Triumph), J. H. Welch (4¼ B.S.A.), the brothers Randall Jones on Triumphs, and C. Volk (Sunbeam). The two-strokes of Julian (2¼ Levis) and Handley (2½ O.K.) also had a useful turn of speed. In all, sixty-eight signed in at the last check.

THE ANGLO-DUTCH TRIAL.

The new date of the visit of the Dutch motor cyclists to this country has now been fixed as September 24th to 27th. The Anglo-Dutch trial will be on the 26th. A very complete programme is being arranged, and briefly is as follows:

Friday, September 23rd.—The Dutch team leaves for England.

Saturday, September 24th.—Entertained to breakfast by the Essex M.C. Run to Coventry. Dinner as guests of the Coventry and Warwickshire M.C.

Sunday, September 25th.—Run to Worcester, *via* Stratford-on-Avon. Dinner by the Worcester M.C.

Monday, September 26th.—Anglo-Dutch trial from Worcester to Brooklands, including speed trials on the track. Dinner at R.A.C. as guests of the A.C.U.

Tuesday, September 27th.—Return to Harwich.

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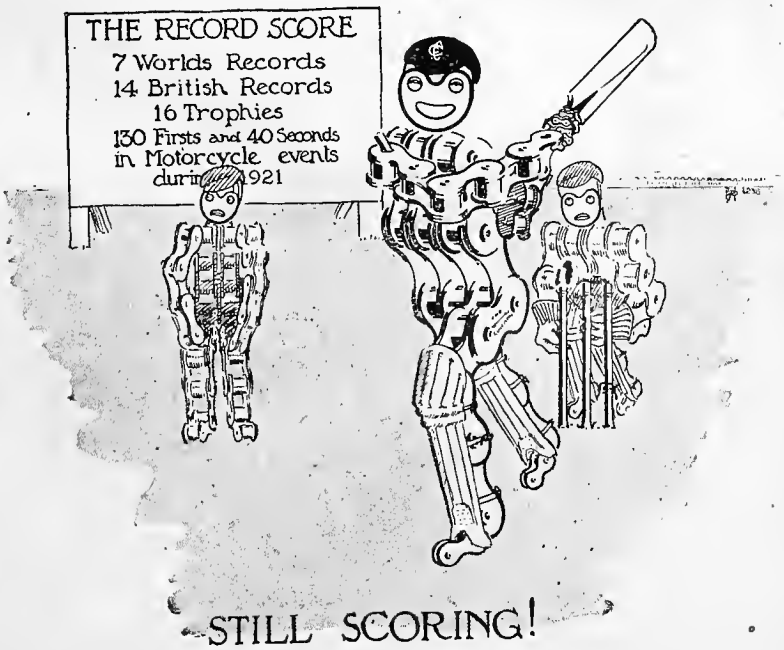

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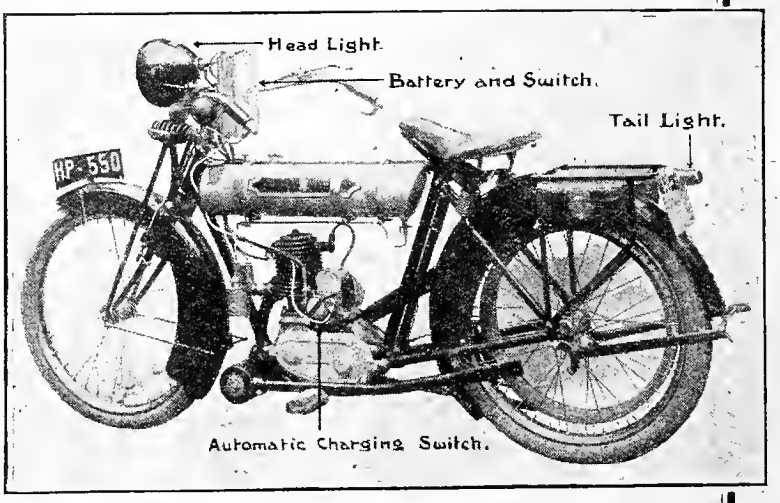

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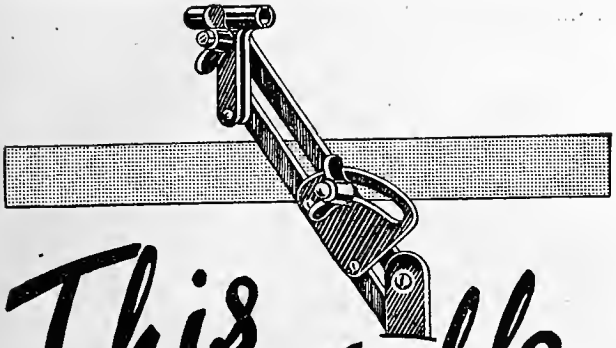

This adjustable fitting

enables the passenger behind a

Bluemels

SIDE CAR WIND SCREEN

to make unlimited horizontal or vertical adjustment as desired, simply by unscrewing with the fingers the two butterfly nuts shown. The whole screen may then be moved backward or forward, up or down, and again screwed to a firm position. This full adjustability is a big advantage over other types of screens which are fixed or semi-fixed. Made of transparent celluloid with a steel frame it is both light and rigid, and never loses its original shape. The side wings are hinged, allowing the whole screen to swing aside, giving free access and exit.

The Bluemel Windscreen has all the advantages.

Can be obtained through any Cycle and Motor Agent. If you desire further particulars send for illustrated leaflet—posted by return.

Price 88/- each.

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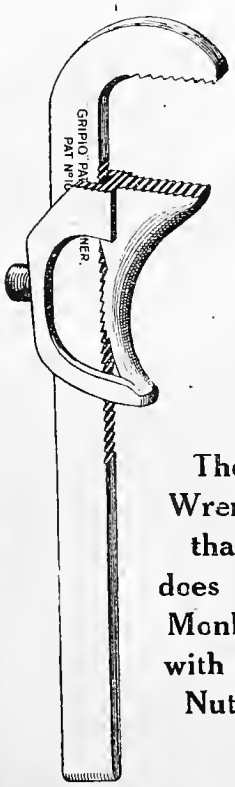
The Quickest ADJUSTABLE WRENCH in the World.



The Wrench that does not Monkey with the Nuts.

Fits every size and shape of Nut, Pipe, or Bolt.

The Handiest Tool for Motor-Cyclists ever invented.

Instantly adjusted by the mere pressure of the thumb.

The last ounce of power applied in a fraction of a second.

8in. size.
Grey Finish or Plated

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Prices on Application

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We undertake to exchange any Wrench bearing our Trade-mark, which proves unsatisfactory—or to refund purchase price in full

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The Patent "Gripio" Wrench and Spanner Co., Ltd.,
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It should be airtight;
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It should allow you to test the air pressure in the tyre;
It should be simple in construction;
It should be dustproof;
It should be made in standard sizes.

All of these qualifications are embodied in the

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The spring "Inside" is the finest air retainer in the world. The slotted cap can be used as a key to remove or replace "Insides." Testing by pressure gauge is a most simple operation. It is the only Tyre Valve made in one piece. There are no joints—no weak spots.

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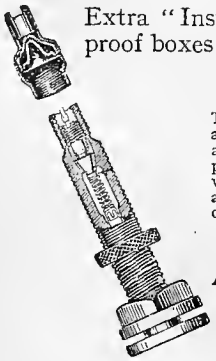
Extra "Insides" are obtainable in dust-proof boxes of five from all good dealers.



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The valves on your present tyres—if not already "Schrader Universals"—can be adapted to the "Schrader Universal" principle at a trifling cost. And then you will have no inconvenience from leakages arising from perished valve rubbers or other causes. Write to us for particulars.

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Be sure it's a "SCHRADER."

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The Trouble Saver

Every motor cyclist should include a "Britinol" Soldering Outfit in his Tool Kit. It is the most efficient and practical soldering outfit on the market. There is no mess or bother with flux or resin, "Britinol" is solder and flux combined in paste form, ensuring a clean, workmanlike job in a few moments. Used in the leading engineering workshops, and acknowledged to be the only soldering medium for high grade work. All accessory dealers should write for Trade Terms of this quick seller.

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Fit your machine with the L.M.C. Patent Suspension

Cuts out all saddle tiredness; gives the nearest approach to a full-sprung frame that can be obtained; fits any modern machine with a top tube over the tank. Price **£5 5 0**

The L.M.C. Saddle suspension is fitted as standard equipment on the 6-8 h.p. L.M.C. Twin All-chain combination. This machine is unique value at **£160.**

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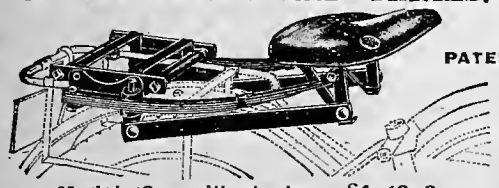
THAT WON THE
SANGSTER CUP & 3 GOLD MEDALS
IN THE LAND'S END TRIALS.



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Model 10 as Illustration £4 10 0.

ABSOLUTELY SHOCK PROOF.

Read what Mr. Short says—
Having ridden your Tan-Sad "No Hurts" Saddle in the recent Land's End Trials and being awarded 2 gold medals and the Sangster Cup, I feel it my duty to tell you again what I think of the Saddle. Having covered well over 600 miles in 2 days' riding, *I think it is the most comfortable seat* I have struck and I can honestly say I did not have the least sign of soreness, or stiffness in the back, *nor did I receive a bad jolt the whole journey.*

Wishing you every success,
Yours faithfully (signed) F SHORT.

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I have pleasure in informing you that I used one of your "NO HURTS" Saddles through the Land's End Trials this Whitsuntide and have much to thank same for. Although some of the roads were absolutely vile, the comfort was a revelation unimaginable, and unless one had the actual experience of riding one of your saddles is almost unbelievable.

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Pillion Seat	38/-
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The Tan-Sad Insurance covers Pillion Riding without extra charge.

Model 0, 2, 2 & 4 (as illustration) **49/-**

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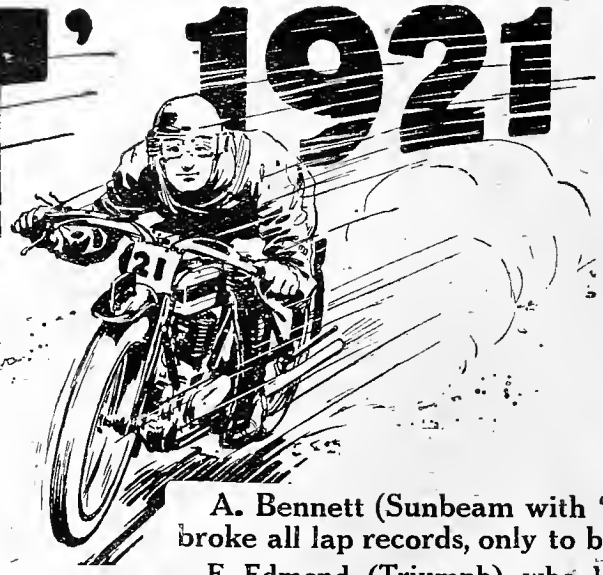

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A. Bennett (Sunbeam with "M-L" Magneto) broke all lap records, only to be beaten later by F. Edmond (Triumph), who lapped in 40 min. 8 sec., a wonderful record and also used an "M-L" Magneto.

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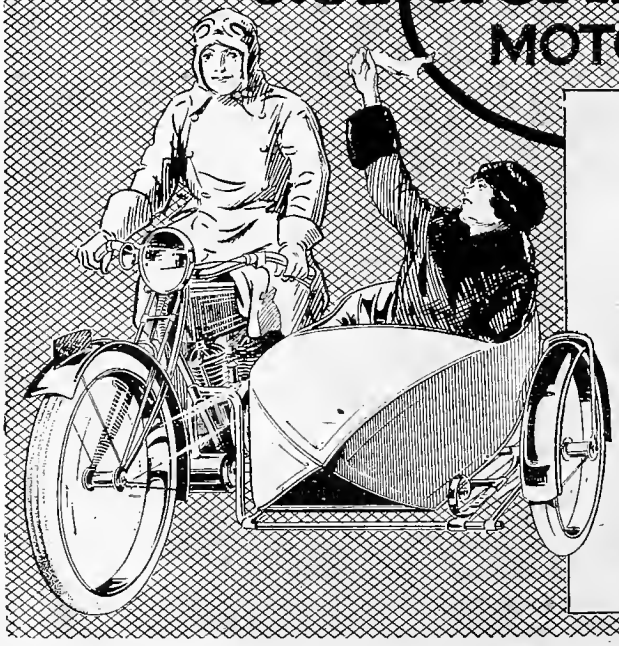
"THE MACHINE THAT RUNS LIKE A CAR"

Blackburne MOTOR CYCLES



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can be depended upon to carry you "there and back" without trouble of any kind and in perfect comfort. Get a Blackburne Motor Cycle for

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WHEREVER YOU GO

be it seaside, the Lake District, or the moors and dales of Yorkshire, if you purchase from

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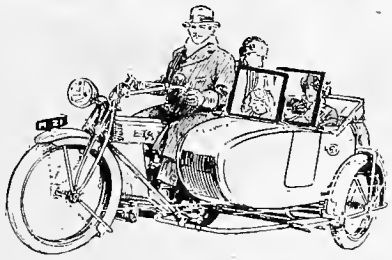
you ensure a trouble free HOLIDAY.



£191-10-0 cash, or £51-17-3 down and 11 payments of £14

Dynamo Lighting £22 10s. extra.

The larger the deposit, the more advantageously you buy.

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MORGAN Grand Prix	£218	0	0
MORGAN de Luxe, Magdyno lighting	£262	0	0
COVENTRY PREMIER	£250	0	0
MORGAN Family Model, dynamo lighting	£265	0	0
MORGAN de Luxe, J.A.P.	£228	0	0
ROVER Light Car	£262	10	0

NEW 1921 MACHINES.

NEW IMPERIAL, 8 h.p.	£168	0	0
MATCHLESS, standard	£185	0	0
MATCHLESS, dynamo lighting	£207	10	0
A.J.S., standard, spring seat	£215	0	0
A.J.S., dynamo lighting, spring seat	£243	0	0
TRIUMPH, Model H, 4 h.p.	£115	0	0
TRIUMPH, all-chain, S.D.	£125	0	0
TRIUMPH Junior	£70	0	0
TRIUMPH Sidecar (Gloria)	£50	0	0
NEW HUDSON Popular	£52	10	0
B.S.A. 6-7 h.p. Combination	£175	0	0
B.S.A., 6-7 h.p., dynamo	£195	16	0
DOUGLAS, 4 h.p., all on	£170	0	0
CLYNO, 8 h.p.	£195	0	0
ENFIELD, dynamo lighting, hood, screen, spring bars, 2-seater model	£194	16	0
ENFIELD, 2¼ h.p.	£65	0	0
ENFIELD, 2¼ h.p., kick-starter	£70	0	0
DOUGLAS, all on, 2¾ h.p.	£85	0	0
DOUGLAS, 2¾ h.p., 3-speed	£100	0	0
LEVIS, 2¼ h.p., 2-speed	£68	0	0
LEVIS, single-speed, semi-T.T.	£60	0	0
B.S.A., Model K2	£107	0	0
B.S.A., Model H2	£110	0	0
NEW HUDSON Ace, with spare aluminium piston	£75	0	0
PARAGON Sidecars	£31	10	0
ALLON, 2-speed, kick-starter	£75	0	0
HARLEY-DAVIDSON, electric model	£180	0	0
HARLEY-DAVIDSON, standard	£175	0	0
HARLEY-DAVIDSON, sports	£150	0	0
HARLEY-DAVIDSON Sidecar	£45	0	0
HARLEY-DAVIDSON Super Sidecar	£86	5	0
RUDGE, I.O.M.	£85	0	0
O.K., 2-speed	£59	17	0
O.K., single-speed, semi-T.T.	£50	8	0
CONNAUGHT, single-speed	£47	10	0
CONNAUGHT, 2-speed, semi-T.T., kick-start	£62	10	0
CALTHORPE-J.A.P., 2-speed	£69	6	0
CALTHORPE, special model	£45	3	0
CALTHORPE, 2-stroke, 2-speed	£65	0	0
NEW IMPERIAL, 2¾ h.p., kick starter	£80	17	0
NEW IMPERIAL, 2¾ h.p.	£73	10	0
B.S.A. No. 3 Sidecar	£42	0	0
B.S.A. No. 2 Sidecar	£35	0	0
B.S.A. No. 1 Sidecar	£42	0	0
***INDIAN** Powerplus Combination, electric	£198	0	0
***INDIAN** Powerplus, solo, electric	£162	0	0
***INDIAN** Scout Combination, electric equipment	£186	0	0
***INDIAN** Scout, solo, minus electric equipment	£132	0	0

*These machines are slightly shop-soiled.

1920 NEW MACHINES.

1920 **P. & M.** Combination	£130	10	0
1920 **DOUGLAS,** 2¾ h.p., 3-speed	£92	10	0
1920 **NEW HUDSON,** 2-speed	£60	0	0
1920 **JAMES** 4¼ h.p. Combination	£150	0	0
1920 **NEW IMPERIAL** and Swan Sidecar	£150	0	0

SECOND-HAND MACHINES.

1916 **HARLEY-DAVIDSON** and Sidecar	£100	0	0
1921 **MORGAN,** dynamo lighting, hood cover, watch, speedometer, dash lamp, spring gaiters, Klaxon horn, electric hooter, and many spares	£240	0	0
1920 **HARLEY-DAVIDSON** Combination, lavishly equipped	£210	0	0
1920 **LEVIS** Popular, T.T. bars, and accessories	£50	0	0
1916 **DOUGLAS,** renovated model	£50	0	0
1920 **RUDGE,** 7-9 h.p. twin, and accessories	£85	0	0
1919 (Dec.) **TRIUMPH** and Watsonian Sidecar	£95	0	0
1915 **HARLEY-DAVIDSON** Combination, electric	£95	0	0
1921 **DOUGLAS** 4 h.p. Com., expensively fitted up, as new	£165	0	0
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1920 **AMERICAN EXCELSIOR,** dynamo lighting	£165	0	0
1921 **COVENTRY PREMIER** Runabout, only soiled	£230	0	0
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1915 **ENFIELD,** fully equipped	£85	0	0

WANTED.—1916 and later Solo Machines.

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A ten-mile radius round home covers all your walks! Besides, walking in the sun is not pleasure, it's hard work, and out of date at that.

New machines in stock for Immediate Delivery.

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200 BARGAINS IN SECOND-HAND MACHINES.

IMMEDIATE DELIVERY.

COVENTRY EAGLE, 4 h.p., 3-speed, clutch, and K.S.	£103	0
B.S.A. (H2), 4½ h.p., all-chain	£110	0
B.S.A. (K2), 4½ h.p., chain-cum-belt	£107	0
ZENITH, 90 bore, o.h.v., T.T.	£146	0
COULSON, 2¾ h.p., Blackburne, 3-speed	£117	12
ARIEL, 3½ h.p., 3-speed, clutch, and K.S.	£100	0
TRIUMPH, 4 h.p., 3-speed	£115	0
A.J.S. 7 h.p. dynamo lighting Combination	£243	0
ALLON, 2¾ h.p., 2-speed, clutch, and K.S.	£75	0
ARIEL 7 h.p. twin Combination	£150	0
BLACKBURNE, 4 h.p., 3-speed, clutch, K.S.	£127	10
CALTHORPE 3 h.p. 2-stroke 2-speed clutch and K.S. Combination, dynamo lighting	£110	0
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DIAMOND, 2¾ h.p. J.A.P., Enfield, 2-speed	£84	0
DIAMOND, 2¾ h.p. J.A.P., Sturmey 2-speed, clutch, and K.S.	£89	5
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DOUGLAS, 2¾ h.p., 3-speed, clutch, K.S.	£105	0
HUMBER, 4 h.p. flat twin, 3-speed, clutch, and K.S.	£140	0
INDIAN 4 h.p. Scout, 3-speed, clutch, K.S.	£172	0
LEA-FRANCIS, 3½ h.p. twin, 3-speed, clutch, and K.S.	£125	0
LEVIS 2½ h.p. Sports Popular	£60	0
MARTINSYDE 7 h.p. twin Combination	£145	0
MATCHLESS 7 h.p. Combination, magneto, standard	£185	0
Dynamo lighting, extra	£25	0
2-seater Sidecar, extra	£7	10
NEW IMPERIAL 8 h.p. Combination	£168	0
NEW IMPERIAL, 2¾ h.p., 2-speed	£73	10
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O.K.-VILLIERS, 2½ h.p., single-speed	£50	8
O.K.-VILLIERS, 2½ h.p., 2-speed	£59	17
O.K.-VILLIERS, 2½ h.p., 2-speed, clutch, K.S.	£64	1
P. & M., 3½ h.p., 2-speed, clutch, and K.S.	£115	0
RUDGE, 3½ h.p., I.O.M., Multi	£85	0
SCOTT, 3⅜ h.p., 2-speed, sports model	£130	0
VELOCETTE, 2½ h.p., 2-speed, clutch	£75	0
WOLF, 4 h.p. Blackburne, 3-speed, clutch, and K.S.	£110	0
ZENITH, 5 h.p., sports model	£115	0
MORGAN, G.P., 90 bore, o.h.v. J.A.P., lighting, hood, and screen	£241	0

Swan, Millford, Henderson, Montgomery SIDECARS.

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All the best makes supplied promptly. Below is a selection taken from our list.

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ARIEL Combination, 4½ h.p.	£150	0
MORGAN Grand Prix, w.c. M.A.G.	List price	
WOOLER, 2¾ h.p., T.T. model, all on	£85	0
MATCHLESS, dynamo, with 2-seater Sidecar	£216	15
WOOLER, 2¾ h.p., touring model, all on	£90	15
MORGAN de Luxe, a.c. M.A.G., complete with access., tax paid	£240	0
CHATER-LEA Combination, No. 10	£160	0
COVENTRY PREMIER, dynamo	£250	0
DOUGLAS, 2¾ h.p., clutch, and kick-start, all on	£105	0
G.N. Cycle Car, touring model	£245	0
DOUGLAS, 4 h.p., all on	£130	0
BRADBURY, 2¾ h.p.	£89	0
DOUGLAS 4 h.p. Combination, all on	£170	0
BRADBURY 6 h.p. Combination	£173	0
DOUGLAS, 2¾ h.p., improved W.D., 2 speeds, all on	£85	0
BRADBURY, 6 h.p.	£135	0
TRIUMPH, 4 h.p., chain drive	£125	0
BRADBURY, 4 h.p.	£103	10
DOUGLAS, 4 h.p., Model H	£115	0
QUADRANT, solo, 4½ h.p.	£105	0
TRIUMPH 4 h.p. Combination	£165	0
QUADRANT Combination, 4½ h.p.	£125	0
NEW IMPERIAL-J.A.P., 2¾ h.p.	70 gns.	
VELOCETTE, 2½ h.p., 2-speed	£75	0
ROYAL ENFIELD, 2¾ h.p.	£65	0
SUNBEAM, 3½ h.p.	£155	8
ROYAL ENFIELD, 2¾ h.p., kick-start	£70	0
MATCHLESS Combination, 8 h.p., standard, spare wheel and tyre, screen	£185	0
ROYAL ENFIELD Combination, 8 h.p., dynamo	£182	0
A.J.S. Combination, 7 h.p., dynamo	£245	15
ROYAL ENFIELD Combination, 8 h.p.	£160	0
A.J.S. Combination, 7 h.p.	£215	0
B.S.A., 4½ h.p., Model K2	£107	0
Big Four **NORTON** and de luxe Sidecar	£177	0
B.S.A., 4½ h.p., Model H2, chain drive	£110	0
NORTON, 3½ h.p., 3-speed, all-chain	£132	0
B.S.A. Combination, 6-7 h.p., dynamo	£195	15
Big Four **NORTON**, 3 speeds, clutch, and kick start	£135	0
B.S.A. Combination, 6-7 h.p. twin	£175	0
BLACKBURNE, solo, 4 h.p.	£127	10
LEVIS, 2½ h.p., 2-stroke	£60	0
BLACKBURNE twin Combination, 8 h.p.	£227	10

NEW 1920 MACHINES. Reduced price.

2½ h.p. **P. & S.**	£60	0
AUTOPED Scooters, dynamo	£25	0

SECOND-HAND MACHINES.

DOUGLAS, 2¾ h.p., 3 speeds	£85	0
TRIUMPH Junior, 2¼ h.p., 1914	£40	0
SCOTT and Sidecar, 3⅜ h.p., 1913	£45	0
DOUGLAS and Rideezi Sidecar, 4 h.p., 1915	£65	0
J.H. Combination, 7-9 h.p., 1915	£75	0
CARDEN Monocar, 5-6 h.p., 1914	£70	0
A.V. Monocar, 6 h.p. (special engine)	£160	0
SUNBEAM and Sidecar, 3½ h.p., 1915	£105	0
INDIAN and Sidecar, 5-6 h.p., 1913	£60	0
J.A.P. Engine, 8-10 h.p., 1920, w.c., magneto, new (engine only)	£40	0
AUTOPED Scooter, dynamo, licence paid, 1920	£20	0

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BAT-J.A.P. 6h.p. Combination, 3-speed, Mills-Fulford sidecar, Easting, Tan-Sad; £75, or offer.—47, High St., Merton. [7734

£25.—Bat 5-6h.p., Bosch mag., B.B. carburetter, good tyres, perfect running order.—35, Sedgmoor Place, Camberwell Green. [7261

BAT-J.A.P. 4h.p., 1914, Mabon clutch, pulley, lamps, carburetter, variable jet, all new, licensed; £26; private owner.—George Smith, 268, Lavender Hill, Clapham Junction. [7021

BAT 1921 8h.p. Combination, dynamo lighting, spare wheel, fully equipped, only run a few hundred miles, as new, privately owned, must sell; £160. —Edward Loyd, 176, Piccadilly, W. Gerrard 2338. [7462

BAT 1920 Combination, 8h.p., aluminium sidecar, hood, screen, legshields, speedometer, lamps, etc., luxurious outfit; exchange for late 2-seater polished Rover or similar, or sell £185.—B., 123, Uxbridge Rd., London, W.12. [7136

BAT 1921 8h.p. Combination, sprung frame, new; delivery from stock; complete with spare wheel, £185; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0071

Beardmore.

BEARDMORE-PRECISION, 3½h.p., 2-speed, kick starter, little used, like new, tax paid; £70.—Hora, Rainsford Rd., Chelmsford. [7836

BEARDMORE-PRECISION 3½h.p., 1920, fully equipped, excellent condition, small mileage; £70. —Collins, Lister Lodge, Atherstone, Warwicks. [X4925

BEARDMORE-PRECISION 1920 3½h.p., perfect condition, done about 1,000 miles, complete with lamps, horn, tools; £60.—Ogle, Denstone College, Staffs. [7483

Blackburne.

8h.p. Blackburne and Canoelet sidecar, slightly shop-soiled; £200, or nearest.—A. J. Young and Co., Ltd., Newmarket. [6794

BLACKBURNE 1921 8h.p. Sporting Outfit, very special lot; bargain, £160.—Bartletts, 93, Gt. Portland St., W. [6938

BLACKBURNE Agents.—Official Blackburne engine repairs in any make.—Bulloughs Motors, Ltd., Waterloo St., Oldham. [1099

1920 Blackburne Combination, Watsonian de luxe sidecar, Easting wind screen, lamps, tools, licence, etc.; 100 gns.—Jackson, 54, Victoria Rd., Surbiton. [7540

BARGAIN.—1921 Blackburne combination, 4h.p., 3-speed, hand clutch, S.S., fully equipped, tax paid; ready to ride away, only done 40 miles; £138, or near offer.—Holiday, Deddington, Oxon. [7068

1921 8h.p. Blackburne Combination, lamps, screen, horn, spare wheel, insured, tax paid, recently overhauled, small mileage; £160; owner going abroad.—Jenkins, Wroxton, Banbury. [7131

Bradbury.

BRADBURY with Bowden 2-speed and Henderson sidecar; £65.—John Aldrich and Co., Diss, Norfolk. [0629

BRADBURY 4h.p., Cane sidecar, N.S.U. gear, Bosch mag., good condition; £50.—58, Shirley Park Rd., Croydon. [7723

3½h.p. Flat Twin Bradbury C.B. Combination, 3-speed, all on, like new; sacrifice £67.—Parsons, 261, Waterloo Rd., S.E. [7301

BRADBURY, 1921, 4h.p. and 6h.p. models, prompt delivery.—Agents, Bright and Hayles, 78, Church St., Camberwell, London. [2981

4h.p. Bradbury Solo Machine, tax paid, 2-speed N.S.U. gear, any trial; £38.—De Cort and Flynn, 39, Essex Rd., London, N.1. [7890

1912 4h.p. Bradbury, 2 speeds, F.E., T.T. bars, splendid condition throughout, all on, tax paid; £40.—52, Ashburnham Rd., N.W.10. [7424

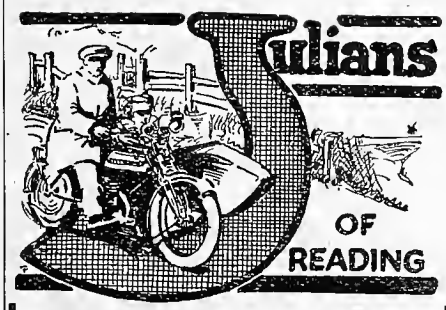
1912 4h.p. Bradbury, Saxon forks, Bosch, long copper exhaust, excellent order; any trial; tax paid; £23, or exchange lower power.—5, Thames View, E. Molesey. [7534

BRADBURY 1920 4h.p. Combination, 3 speeds, electric lighting, Klaxon, speedometer, clock, 1921 tax paid, small mileage; 100 gns.—Broom, 88, Gt. Portland St., W.1. [7721

BRADBURY 4h.p., N.S.U. coachbuilt combination, fully equipped, in excellent order, spares, genuine bargain; £50.—Jenkinson, 6b, Grove End House, St. John's Wood Rd., N.W. [7370

1921 6h.p. Twin Bradbury Combination, 3-speed, C.S., K.S., Grindlay de Luxe S.C., hand, foot clutch, only done 600 miles; £125, or near; high-class lot; cost £175.—Box 5,051, c/o *The Motor Cycle*. [7942

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Bradburys, all new models in stock, ready for immediate delivery; 4h.p. solos, 6h.p. combinations, and 2¾h.p. lightweights, from £89.—Apply for our easiest of easy terms. [4541



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Bradbury.

1921 4h.p. Bradbury Combination, complete with lamps, etc., delivered five weeks ago, just done 300 miles, in perfect condition owner must realise; £120, no offers.—Flynn, 19, Millfield Terrace, Gateshead-on-Tyne. [7215

BRADBURY, 4¼h.p., N.S.U. 2-speed gear, free, new Bosch, B. and B., new tyres and tubes, new belt, just overhauled, many new parts, excellent condition, tax paid, insured, trial; £58.—Luno, 14, Colby Rd., Upper Norwood, S.E.19. [7162

Brough.

3½h.p. Brough, late 1917, 3-speed, countershaft, perfect; £75; ride 50 miles; exchange considered.—Hatcher, 294, Rolls Rd., Bermondsey, London. [7930

BROUGH, T.T., o.h.v., Model H.C., 3½h.p. twin, 3-speed Sturmey box, engine practically new, very fast, all accessories; £63.—Lieut. Hogg, Rock House, Cromford, Matlock. [7764

BROUGH 3½h.p. Sporting Twin, Model H, 1916, o.h.v., 2-speed countershaft, Binks, lamps, horn, tax paid, exceptionally fast; absolute gift, £45.—121, Acton Lane, Chiswick, W.4. [7850

BROUGH 3½h.p. Model H, 3-speed, S.A., K.S., hand and foot clutch, electric lamps, footboards, Klaxon, just completely overhauled, licensed, very fast sporting solo; £75; seen or trial by appointment.—H. J. Baker, 23, Cumberland Park, Acton, W.3. [7015

WE are now ready to deliver that fast sporting Brough 3½h.p. flat twin in the following models: 3½h.p. touring model, guaranteed to do 60, the sports model to do 65, the T.T. model guaranteed to do a speed over 70 m.p.h.; absolutely the finest workmanship, wonderfully easy to handle; £130.—Send your orders along to the agents, G. and J. Dawson, 60 and 62, Regent St., Cambridge. [0599

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1920 4½h.p. B.S.A. Combination, brand new, unused, fully equipped; £110.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7961

B.S.A., all models, and Rudge, repairs, spares, sidecars.—Alexander, Wallasey Village, Cheshire. [8423

NEW 1921 B.S.A. Combinations in stock; list price. —Bounds Garage, 223, High Rd., Kilburn, N.W. [7145

B.S.A. 1919 4¼h.p., with Bowser sidecar; £75.—R. P. Lloyd, 7, Kestor Lane, Longbridge, Preston. [7910

3½h.p. B.S.A. Canoelet Combination, 2-speed, tax paid; £50; evenings.—52, Sandyhill Rd., Ilford. [7513

1914 B.S.A., 3½h.p., perfect throughout, tax paid, all on; £39.—Ashworth, Hallfold, Whitworth, Rochdale. [6419

B.S.A., 1914, Philipson, discs, fast, guaranteed; 48 gns.; exchange lightweight.—217, Belsize Rd., Kilburn. [X4954

1920 B.S.A. All-chain Combination, Easting, acetylene lighting, lovely condition; £110.—21, Keppel Rd., East Ham. [7255

B.S.A. 1921 Twin 6-7h.p. Combination in Stock; £175; spare wheel, tyre, and luggage grid extra £13/19.—Below.

B.S.A. 1921 Model H2, 4¼h.p., chain drive, £110; No. 3 1921 sidecar, £42; No. 2 1920 type sidecar, £35, in stock.—A. Rivett, 236, High Rd., Leytonstone. [5949

B.S.A., 1921, chain-cum-belt; £107; in stock.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7948

1920 B.S.A. Combination, mileage 1,300, lamps, speedometer, horn, spares; any trial; £125.—145, Northcote Rd., S.W. [7569

B.S.A., 1914, 3½h.p., 2-speed, fully equipped, splendid condition, tax paid; £40, or near offer.—64, Grove Av., Hanwell. [7141

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B.S.A.

1920 B.S.A. 4¼h.p. H2 Combination, lamps, Lucas horn, excellent running order, tax paid; £100.—Malby, Woodford, E.18. [0660

B.S.A., 1921, Model H, £110; B.S.A. sidecar, £35.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. Exchanges arranged. [7982

B.S.A. 6-7h.p. Twin Motor Cycle, brand new, never ridden; £120, a bargain.—Skerritt, 112, Arden Rd., Acocks Green, Birmingham. [X4903

LATE 1920 B.S.A. 4¼h.p., lamps, etc., and sidecar; £100, or nearest.—Borley, Fentham Rd., Hampton-in-Arden, Birmingham. [X4167

B.S.A. Models for immediate delivery; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7914

B.S.A., 1919 (July), Model K., with Montgomery sidecar, excellent condition, accessories, spares.—Griffiths, Woodville, Bramhall, Cheshire. [7243

B.S.A. 1015 Combination, 4h.p., 3-speed, countershaft, sturdy and reliable.—Apply, Newholme, Robin Hood, Hall Green, Birmingham. [7744

B.S.A., 1920, and B.S.A. sidecar, ridden 1,000, Lucas dynamo lighting, hood, screen, speedometer, luggage grid; £150.—245, Enston Rd., N.W.1. [7270

FRANK WHITWORTH, Ltd., of Birmingham, have several excellent B.S.A. machines and combinations at very moderate prices; write for details. [X4177

£85; B.S.A. 4¼h.p., 1919, sidecar, Easting screen, electric light, tax paid, spares, tools, splendid touring condition.—Goss, L.E.P. Co., 196, Deansgate, Manchester. [7860

B.S.A. 6-7h.p. Twin, Model A, with B.S.A. No. 1 sidecar; in stock; immediate delivery; £175; easy payments arranged.—Wilkins, Simpson, opposite Olympia, London. [7292

B.S.A. 1920 4¼h.p., All-chain Combination, delivered 1921, Easting screen, speedometer, lamps and accessories; £130, or best offer.—F. Smith, 207, Vicarage Rd., Watford. [7174

B.S.A. 1921 4¼h.p. Combination, dynamo lighting, Cameo screen, etc., mileage 300, £160; also new 1921 B.S.A. combination, £140.—Marston, 31, Bridge St., Chester. [7937

B.S.A. Singles and Twins, early deliveries, fitted with any model Sandum sidecars; B.S.A. twin and dual sidecar in stock.—Sandum Sidecars, 336, Gray's Inn Rd., W.C.1. [0541

B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St., New Bond St., W.1. [0657

B.S.A. Combination, Mills-Fulford S.C., all-chain drive, K.S., 3 speeds, clutch, lamps, and spares, splendid condition, tax paid; £75; seen any time.—The Lodge, Windlesham Moor, Surrey. [7479

B.S.A. 1914 3½h.p., N.S.U. 2-speed, free engine, overhauled, replated, re-enamelled by makers, as new, new Dunlops, tax paid; £60; exchange for lightweight and cash.—Luxton, Bourton-on-the-Water. [7237

B.S.A. Combination, 3½h.p., 2-speed, kick start, excellent running and appearance, roomy coachbuilt sidecar, many spares, lighting complete, tax paid; nearest £75.—30, South Rd., Faversham. [7012

1921 Twin B.S.A. Combination, Lucas Magdyno, spare wheel, etc., not done 300 miles, cost £220 a month ago; £200, or near offer; owner bought car.—Foster, Red Hatch, Kingsgate-on-Sea, Kent. [7026

B.S.A., 1921.—All models for immediate delivery from stock on the best terms; cash, exchange, or extended payments.—City Agents, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0066

IMMEDIATE Delivery of any B.S.A. Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0501

LATE 1919 4¼h.p. B.S.A. Model K Coachbuilt Combination, lamps, horn, speedometer, watch, luggage carrier, smart, powerful machine, very little used; exceptional bargain, £85.—Braycot, Station Rd., Thames Ditton. [7434

1920 B.S.A. 4¼h.p. Combination, with Easting screen 3 electric lamps, Smith speedometer, tax paid, all O.K.; trial, appointment; accept best offer over £100.—Wood, 20, Howland St., Tottenham Court Rd., W.1. [7487

B.S.A. 4¼h.p., Model H2, with B.S.A. No. 3 sidecar, actually in stock for immediate delivery at makers' price, £152; also Model H2 solo; inspection invited; easy payments arranged.—Wilkins, Simpson, opposite Olympia, London. [7293

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—B.S.A. K2, new 1921 models, just delivered, £107; Model H2, all-chain, £110; 6-7h.p. twin combination, standard, £175; immediate delivery from stock; cash, easy terms, or exchange. [4540

1918 B.S.A. Combination, Mills-Fulford, 3-speed, kick start in perfect condition, 68 gns.; also 1918 P. and M. combination, new magneto, lamps, carburetter, etc., expensive turnout, 64 gns.; exchanges; evenings.—67, Fernlea Rd., Balham. [7849

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1921 **ENFIELD** Combination	£160	0
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1921 4 h.p. **DOUGLAS** Combination ..	£170	0
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B.S.A. late 1920 6-7h.p. Twin Combination, spare wheel and cover, luggage grid, Lucas lamps and horn, Cowey speedometer, petrol can carrier, licence paid, quite new, never been ridden, bought car; £176/10.—Page, c/o Hucklebridge, 133, Sloane St., London, S.W.1. [X4956

B.S.A.—A motor cycle worthy of its name is the B.S.A. We have always in stock at least three models, Model K, Model H, and 6-7h.p. twin; immediate delivery; all spares in stock; trade supplied.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0379

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CALCOTT 2½h.p., 1914, Sturmey 3-speed, clutch, complete with lamps, licence paid, excellent mechanical condition; £35.—White Swan, North Town, Aldershot. [7670

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CALTHORPE-J.A.P. 2¾h.p., 2-speed, 1919 model, all on, beautiful condition; bargain £38/10.—Below.

CALTHORPE 2-stroke 2-speed, 1920, equal to new, all on; £47/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7972

1920 3h.p. Calthorpe Lightweight, Enfield 2-speed, lamps, tax paid; £55; exchanges.—H. Rock, Cradley, Staffs. [X4891

CALTHORPE 2-stroke, excellent order, nearly new, Avons, complete, tax paid; £33, offers.—Bull, Blenheim Rd., Ramsey, Huntingdon. [7252

£68.—Calthorpe-Jap 2¾h.p., Enfield 2-speed and clutch, 1921, shop-soiled only.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7950

CALTHORPE 2½h.p., 2-speed, C.S., 2-stroke, condition, as new; sell £48, or exchange 1915 Scott.—Harrison, Melrose, King Edward St., Slough. [7908

1929 GNS.; Calthorpe-Jap 1915-16 2¾h.p., 2-speed, new tyres, lamps, horn, licence, genuine bargain; photo.—Spencer, Potter St., Bishop's Stortford. [7870

1914 2¾h.p. Calthorpe-Jap, 2-speed Burman box, lamps, horn, licensed, good condition; £25.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7957

2¾h.p. Calthorpe-Jap, 2-speed Enfield gear, P.H. lamps, Tan-Sad, tax paid, excellent condition; £35.—Smith, Springdene, Kingsley Rd., Limbury, Luton, Beds. [7448

CALTHORPE-J.A.P. 2¾h.p., 2-speed, 1921, purchased in May; owner going abroad; tax paid, insured; best offer over £50.—6, Warwick Rd., Anerley, S.E. (near Selby Rd.). [X4964

CALTHORPE-PRECISION Junior, 2-speed, F.E., re-bushed, lamps, footboards, enamel and plating excellent; £30; offers.—Croft, 84, Shortlands Rd., Kingston-on-Thames. [7410

5-6h.p. Calthorpe-Precision, 1914 twin, C.B. sidecar, recently been overhauled and painted, new gears, new tyres, splendid condition; £75, or exchange.—Hope Cottage, Flamborough, E. Yorks. [6973

3h.p. Twin Calthorpe-Jap, 30/- tax paid, fast, successful competition machine, Enfield gear, overhauled, replated, fully equipped, spares; £48.—Stanley's, 173-4, Railway Approach, Shepherd's Bush. [7751

CALTHORPE-J.A.P. 2¾h.p., Enfield 2-speed gear, good condition, overhauled, back tyre new, lamps, Klaxon, spares, reliable, economical, climb anywhere, licensed, insured; £45, or near.—Head, Station House Ashford, Kent. [7199

CALTHORPE 1921 Combination, actually in stock for immedite delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd., Clapham Common, S.W.4. 'Phone: Brixton 2417. [0509

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1920 Campion-Jap, 2¾h.p., Sturmey 2-speed, kick start, hand clutch, new condition, unused this year, licensed; £50 for quick sale.—Challis, 11, Allfarthing Lane, Wandsworth. After 7. [7415

2½h.p. Campion 2-speed Countershaft Lightweight, overhead valves, overhaul and refitting cost £15 last March, a splendid little machine; £33, or would exchange for 3½h.p.—83, London St., Reading. [7135

CAMPION Combination, 6-8h.p. J.A.P., all chain drive, Jardine countershaft gear box, clutch, etc., just been thoroughly overhauled and entirely re-enamelled, Binks, P. and H. lamps, fast and powerful, 3 anywhere, any trial, tax paid; best offer near £80 secures; a bargain.—Meanley, Shepherd's Lane, Thurnscoe, near Rotherham. [7188

Cedos.

E. KICKHAM for Cedos, sole agent for Bristol and district.—Stokes Croft, Bristol. [3357

Chater-Lea.

7-9h.p. Chater-Lea Combination, licence paid; ride away; £65, or offer.—106, Lillie Rd., Fulham. [7192

CHATER-LEA New Model No. 10 Sidecar Combination, 8h.p., 3-speed, the best value on the market; £160. Have you seen it? Write for leaflet.—Chater-Lea, Ltd., Banner St., London, E.C.1. [5142

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2h.p. 3-speed Douglases, less handle-bars and clutch, new condition; what offers?—49, King Henry's Walk, Balls Pond Rd., Islington, N. [7398

4h.p. Douglas, Cowey speedometer, lamps, tools, licence etc., splendid condition; £90, nearest offer. Oliver, Glanavon, Abersychan, Mon. [X4815

DOUGLAS 1915 2¾h.p., 2-speed, re-enamelled, licensed; 38 gns.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [0659

DOUGLAS 4h.p. Combination, excellent condition, ready to ride away; price £80, bargain.—W. King, 27, Melbourne Rd., Wallington, Surrey. [7027

DOUGLAS 4h.p., reconditioned like new, new tyres, belt, mag., chain, licensed, horn, pump; 73 gns. —Deeming, Hadley, Highstone, Barnet. [X4940

DOUGLAS, 1919, W.D., complete with lamps, licence, tools, mileage under 500; £55.—Martin, 59, Hodford Rd., Golders Green, N.W.11. [7853

1918 4h.p. Douglas Combination, 3-speed, kick start, Saxe blue sidecar, in perfect condition; £80.—Watts, 417, Caledonian Rd., N.7. [7160

DOUGLAS Motor Cycle, 1916, tax paid for 12 months.—Can be seen 135, Cricklewood Broadway, N.W.2. Privately owned; open to offers. [5898

DOUGLAS, 1917, rebuilt as new, does over 50 m.p.h., all on, including tax and speedometer; £52.—Stevens, Louveuecourt, Ashtead, Surrey. [7617

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F.O.C.H. have several good second-hand Douglas combinations and solos: bargains.—5, Heath St., Hampstead (near Hampstead Tube Station). [7330

DOUGLAS Combination, late 1919, perfect condition, lamps and screens, Tan saddle, new tyres; sacrifice, £120.—Hammond, 100, High St., Cricklade. [X4933

DOUGLAS 4h.p. Combination, new, complete with accessories, Lucas lamps, unused, good reason for selling; what offers?—Cox, Lynwood, Uttoxeter, Staffs. [7011

DOUGLAS 2¾h.p., Sept., 1919, 2-speed, tax, accessories, splendid condition; £65, near offer.—Shilvock, 1, Osborne Cottages, Rydens Grove, Hersham, Surrey. [7362

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DOUGLAS 4h.p. 1918 Combination, 3-speed, clutch, excellent condition, lamps, tools, spares, tax paid; any trial; seen evenings after 7.30; £85.—232, Wellesley Rd., Ilford. [7288

DOUGLAS 4h.p. Models; several second-hand solo and combinations; from £50.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7919

BRAND New Douglas 2¾h.p., 3-speed, cost £110, completely equipped, unscratched, mileage 100, beautiful machine, licensed; £78.—37, Canterbury Rd., Dalston. [8039

DOUGLAS 1914-15 2¾h.p., 2-speed, fully equipped, licensed, splendid condition, Binks, latest improvements, fast, economical; trial; £48.—74, Dollis Park, Finchley, N.3. [7268

DOUGLAS 2¾h.p., 2-speed, 1915, lamps, Klaxon, aluminium discs, pillion, just overhauled and plated, tax paid, £56; after 6.—14, Beulah Crescent, Thornton Heath. [7112

1920 4h.p. Douglas Combination, fully equipped, including £5 unexpired insurance, excellent condition; £93.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7959

1920 2¾h.p. 3-speed Douglas, Lucas lamps, condition like new, overhauled, tax and insurance; £70.—Pidcock, 17, The Park, Golders Green. Tel.: 260 Hampstead. [7366

DOUGLAS 1919 2¾h.p., 2 speeds, original enamel, new Dunlops, licence, lamps, Tan-Sad, accessories, new condition; £55.—G., 63, Solon Rd., Brixton, S.W.2. [7777

£40.—1915 2¾h.p. Douglas, just overhauled, new T.T. bars and tyres, speedometer, accessories, tax paid, splendid appearance and condition.—3, Glencoe, Stratford-on-Avon. [7514

DOUGLAS Combination, May, 1919, just completely overhauled, Klaxon, Easting, 1921 Binks, spares, taxed; £110; evenings.—49, Princes Av., Palmer's Green, N. [7855

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8h.p. 1914 Williamson Water-cooled Combination, perfect.—5, Tidy St., Brighton. [7490

DOUGLAS 2¾h.p., 2-speed, 1915; offers.—Druitt, 47, Ordell Rd., Bow, London, E. [7488

2¾h.p. Douglas, 2-speed, footboards, clutch, speedometer, horn, spares, a.i.v., guaranteed sound; £30; also Phœnix cane-built sidecar, £3.—3, Strafford Rd., High Barnet, Herts. [7643

1920 4h.p. Douglas Combination, Easting wind screen, legshields, lamps, horn, etc., whole guaranteed in first-class condition; £128/10.—Gibb, 100, Northgate, Gloucester. [7759

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful to you.—The Pioneer Agent for Douglas Motors, 196, Cheltenham Rd., Bristol. [0016

1917 4h.p. Douglas Combination, in good running order, tax paid one year; £65.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [7558

4h.p. Douglas 1920 Combination, electric lights, screen, discs, leg guards, numerous spares; any trial; £125; modern solo part exchange.—Sansom, 25, Great Northern St., Huntingdon. [X4890

DOUGLAS 2¾h.p., 1915, 2-speed, fine condition throughout, £45; appearance, speed equal anything, W.S.R. jet, 120 m.p.g., all on, spares.—52, Brookwood Rd., Southfields, S.W. [7103

DOUGLAS 2¾h.p., 2-speed, uncrated last Nov., lamps, legshields, knee grips, taxed, splendid running, new appearance; nearest £53; evenings.—46, Avondale Rd., Harringay, N.15. [7639

DOUGLAS 1921 2¾h.p. 2-speed All-on Models; £85; delivery from stock; exchange or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0067

LATE 1919 4h.p. Douglas Combination, splendid condition, spare tyre and tube, tools, lamps, speedometer, tax and insurance paid; £100, no offers.—Brown, 203, Anerley Rd., Anerley, S.E.20. [7389

DOUGLAS 1920 4h.p. Combination, dynamo lighting, raised dash and screen for sidecar, excellent order; offers.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7920

£60.—Douglas 2¾h.p., 2-speed, W.D. model, new, not reconditioned, mileage 100, Klaxon, new spare belt and chain, beautiful machine, tax paid.—Penny, Redport Villa, Post Office Rd., Cobham, Surrey. [7018

IMMEDIATE Delivery of any Douglas Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0505

DOUGLAS Combination, 4h.p., 1921, all on model, fitted complete, licensed, mileage under 500, unscratched, and absolutely as new; £150; deferred payments arranged.—Hewin's Garages, Ltd., The Real Service Firm, Taunton. [7458

1920 Douglas 4h.p. Combination, fully equipped, Easting, wind screen, spare tyres, belt tubes, insurance and tax paid, perfect condition, trial; 98 gns. —Ayers, 112, Portobello Rd., Notting Hill, W.11. 'Phone: 643 Park. [8020

A TIP-TOP 4h.p. Douglas (1920) for Sale, bought Feb., 1920, used three months, since then been oiled and stored, full-set tools, Klaxon, spare belt, spare tube, and 5-guinea lamp and generator, absolutely new condition; what offers?—Allen, Gorey, Wexford. (D) [7196

ALL 1921 Douglas Models, 2¾h.p., 4h.p., and new improved W.D., at £85, all fully equipped; trade supplied. Extended payments taken at one one-fifth down, remainder in 12 equal monthly payments; exchanges arranged.—Wauchope's, 9, Shoe Lane, Fleet St., London. [4538

WANTED, purchasers for any model of new 1921 Douglas motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bomber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0647

DOUGLAS, 1919 (Sept.), genuine, not a made-up machine, owned privately, all tools and accessories, lamps complete, speedometer, etc., guaranteed in every way perfect—wind, eyes, and limb; must sell owing to doctor's orders; thoroughly looked after, low mileage; £65.—E. F. Griffiths, 757, High Rd., Tottenham. [7090

Dreadnought.

LATE 1917 Dreadnought-Villiers, 2-speed, just overhauled and rebushed, new tyres and belt, spares; £37.—Austin, Shelley, Ongar. [7020

Edmund.

GOURLAY, the spring frame Edmund agent, Fallowfield, Manchester. [6093

EDMUND Spring Frame Motor Cycle, 2¾h.p. J.A.P. models £75 and £85, 2¾h.p. Blackburne model £98; immediate delivery from stock.—Marston, 31, Bridge St., Chester. [7935

Enfield.

JULIANS, of Reading, have 1921 Enfields in stock. [0473

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD 2¼h.p., 1920 Model, condition perfect; £49.—Neave, Hoddesdon. [7238

1921 Royal Enfield 2-stroke, uncrated; £57/10.—272, Green St., Forest Gate. [5010

1917 Enfield 3h.p., 2-speed, K.S., excellent condition; £45.—197, Park St., Luton. [6981

6h.p. Enfield Combination, electric lighting, tax paid, all on; any trial; £80.—Below.

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1919 3h.p. Twin Enfield; £50.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0341

ENFIELD 3h.p., 1916, overhauled makers, all on; £43.—Rockhurst, Headington, Oxford. [7547

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD Combinations and Lightweights, Vickers engines.—Clifford Motories, Eastwood, Notts. [7810

NEW 1921 Enfield Combination in stock; £160.—Bounds Garage, 223, High Rd., Kilburn, N.W. [7144

ROYAL ENFIELD 3h.p. Twin, 2-speed, kick start, Bosch, good condition; £45.—183, Richmond Rd., Ilford, E. [7081

ENFIELD 8h.p. Magdyno Combination, late 1920, perfect condition; best offer over £150.—Fancourt, Stamford. [7556

1916 Enfield Combination, lamps, accessories, new Bluemel screen; £105.—Westlake, Station Rd., Taunton. [7120

1917 Enfield 3h.p., K.S., lamps, horn, tax paid, new tyre, tube; £50.—74, Parson's Mead, W. Croydon. [7482

ENFIELD 2¼h.p. 2-stroke, 2-speed, 1921, in stock, £65; kick starter £5 extra.—Rivett, 236, High Rd., Leytonstone. [5951

1916 6h.p. Enfield Combination, fully equipped, licence paid; £90.—Jones Garage, The Broadway, Muswell Hill. [7691

ENFIELD 1921 Combination, Vickers 8h.p., Magdyno, as new; best offer.—Piano Works, Woodchester, Stroud, Glos. [X4814

1920 Enfield Combination, Magdyno, screen, speedometer, electric horn, Claudel; £150.—Westlake, Station Rd., Taunton. [7121

1919 2¼h.p. Enfield Lightweight, 2-speed, fully equipped, in A1 condition; £50.—Jones Garage, The Broadway, Muswell Hill. [7695

ENFIELD Combination, 1921, 8h.p. Vickers, Magdyno lighting, tax paid; nearest £170.—B., 156, High Rd., East Finchley, N.2. [7993

NEW 1921 Enfield Combination, 8h.p., in stock; list price £160. — Fowler and Brigden, 130, Euston Rd., N.W.1. Museum 4827. [0621

8h.p. Enfield Combination, 1918, 700, speedometer, grid, lamps, accessories, splendid condition; £125, or close offer.—37, Bonfield Rd., Lewisham. [7515

NOV., 1919, Royal Enfield, 2¼h.p., 2-speed, clutch model, with lamps and horn, thoroughly good order; £45.—Redler, Poplars, Bathpool, Taunton. [7755

ENFIELD 6h.p. Coachbuilt Combination, June, 1920, cost £212, fully equipped, spares, Tan-Sad, any trial; £150.—101, Archer's Rd., Eastleigh Hunts. [7169

ENFIELD-J.A.P. 8h.p. Combination, late 1920, small mileage, tax paid, horn, lamps, tools, etc., new condition; accept £120.—Hodson, Clothier, Bloxwich. Tel.: 12. [X4906

S.E. London Service Depot.—In stock 8h.p. Enfield combination, £160; tandem sidecar, £164; 2¼ h.p. 2-stroke, £65.—Cleare and Co., 125, High St., Woolwich. [5201

ENFIELD 1920 Combination, mileage 2,000, 1921 Vickers engine, recently fitted Magdyno, wind screen, tax paid, perfect condition; £140.—23, Hamilton Rd., Reading. [7397

6h.p. Enfield Combination, hood, screen, mechanical horn, electric lights, speedometer, Tan-Sad seat, licence paid; £75.—49, Annesley Av., The Hyde, Hendon, N.W.9. [7909

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1917 Enfield Combination, electric and acetylene lamps, hood, screen, Tan-Sad, licensed, excellent condition; 90 gns.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7955

ENFIELD 2¼h.p. 2-stroke, 2-speed, brand new 1921 model, just arrived from works, in stock; immediate delivery; no waiting; £65; easy payments arranged.—Wilkins, Simpson, opposite Olympia, London. [7295

ENFIELD Combination, 1916, Lucas horn, Lucas head lamp and generator, sidecar lamp, rear lamp, excellent appearance and condition; £85.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7350

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ENFIELDS.—The cheapest twin on the road. We are North London agents, and can supply from stock standard models £160, electric £182, cash, or deferred payments. All spares in stock. Trade supplied.—Jones' Garage, Muswell Hill, and at Woodside Parade, N. Finchley. [0380

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ENFIELD Colonial Model, 1920, J.A.P. 6h.p., Dunlop and Palmer tyres, P. and M. head, tail and side lamps, 2 large generators, horn and extras, tax paid, owner driven with greatest ease, and guaranteed in most excellent running order; trial by appointment; for quick sale, £135.—Langholm, Canford Cliff, Bournemouth. [7185

Excelsior.

1919 Excelsior-Villiers 2½h.p., 2-speed, clutch, kick-start, fully equipped, long copper exhaust, tax paid; £49.—Lees, 17, Fairbridge Rd., Highgate, N. [7512

NEW 1921 British Excelsior Combination, 6h.p., Lucas Magdyno, horn, screen, dark sidecar, tax and insurance; £175.—31, Broom Rd., Rotherham. [7854

F.N.

F.N. 5-6h.p., 2-speed, lamps, good condition, tax paid; £35.—Fall, Priory House, King's Langley, Herts. [7538

F.N. 5-6h.p., 2-speed, clutch, Bosch, Binks, overhauled; £25.—Avondale, Weymouth St., Apsley End, Herts. [7553

F.N. Combinations in Stock; reduced price, £188; call for a trial run.—Grimes and Co., 18, Bruton Place, Bond St., W. Mayfair 4792. [6071

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Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY Sports, brand new, equipped; £125, bargain.—Clark, 7, Exhibition Rd., S.W.7. [7980

1918 7-9h.p. Harley Combination, fully equipped, luxurious outfit; £150; photo.—529, Chertsey Rd., Woking. [6989

HARLEY-DAVIDSON.—All models in stock, new and second-hand.—Sole Agents, Bamber's, Southport, Lancashire. Tel.: 607. [5009

HARLEY-DAVIDSON Combination, 1918, fitted up complete, fine machine, any examination; £110.—Heighton, Elton, Peterborough. [X4415

HARLEY-DAVIDSON Solo, 1915, 7-9h.p., lamps, horn, all in good order; £80, or nearest.—37, Heathcliff St., Evering Rd., Clapton, E.5. [7794

1920 Harley-Davidson, 7-9h.p., electric model, perfect conidtion, many accessories; £140; Lancashire.—Box 5,049, c/o *The Motor Cycle*. [7941

HARLEY Combination, 1918, fully equipped, recently overhauled and enamelled; £140.—Smewin, 22, Cambridge Gardens, North Kensington, W.10. [7075

7-9h.p. Harley-Davidson 1917 Combination, excellent condition, tax and insurance paid; £100, or offer.—Tilly, 10, Lavender Rd., Wallington, Surrey. [7183

F.O.C.H. have a late model Harley-Davidson combination; bargain, dynamo, tax paid.—5, Heath St., Hampstead (near Hampstead Tube Station). [7335

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JAMES 2-stroke 2-speed 2¼h.p., Amac, Thomson-Bennett, lamps and horn, tax paid, condition perfect, take two anywhere; £45, bargain.—73, Greenford Av., Hanwell. [7050

JAMES 3½h.p. Twin, 3-speed, countershaft, kick start, hand clutch, enclosed chain drive, B. and B. pilot jet carburetter, Palmer cords, mileage under 2,000, splendid condition; £70.—Irvine Smith, Buttershaw, Bradford. [7818

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£55.—8h.p. J.A.P. combination, speedometer, all on, tax paid; after 6.30.—219, Crystal Palace Rd., S.E. [7177

8h.p. Twin J.A.P., 4-speed, kick-start, clutch, Binks, lamps, etc., licence paid, as new.—Rowbottom, 13, Albert St., Brigg, Lincs. [7116

2½h.p. J.A.P., Druid forks, drop frame, mag., variable ignition, lamps, horn, etc., mechanically perfect, economical, tax paid, ride away; £23.—H. Dooley, 5, Clarendon Rd., South Woodford, E.18. [7507

J.E.S.

J.E.S., late 1920, mileage 1,000; £35; cost with accessories, etc., £55; appointment.—Huson, 125, Fawnbrake Av., Herne Hill, S.E.24. [7621

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LATE 1920 Lea-Francis, standard touring model; £95.—A. J. Young and Co., Ltd., Newmarket. [6796

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LEVIS Popular, 2¼h.p., excellent condition; £35.—6, Winn Rd., Burnt Ash Hill, Lee, S.E.12. [7014

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45 GNS.—1920 Baby Levis, all on, runs beautifully.—Clifford Bate, Tarporley, Cheshire. 'Phone: 42. [X4878

LEVIS 1919 2-speed, chain drive, Lucas lamps, tax paid; £48; exchanges.—H. Rock, Cradley, Staffs. [X4892

LEVIS, late 1919, guaranteed perfect, all lamps, licence, new tank; £40.—Clifford, Eastwood, Notts. [7812

LEVIS 2-stroke, 2-speed, very good condition, had little wear; £38.—Box 762, c/o *The Motor Cycle.* [7290

£36.—Levis, 2-speed countershaft, 1916, new Dunlops and engine parts, lamps, licence.—34, Park Rd., Ilford, E. [7023

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LEVIS, splendid condition, tax, tools, disc, dynamo lighting and gas set, any trial; £35.—21, Windsor Rd., Denmark Hill. [7842

LEVIS.—Sole Walsall agents; special exchange and deferred payment terms; immediate delivery.—Maudes', Walsall Garage, Walsall. [2423

1921 Levis, better than new, cost with extras £67; bargain, £58, no offers; disallowed to ride; letter only first instance.—98, Markhouse Rd., Walthamstow. [7201

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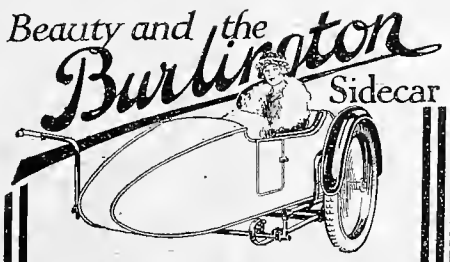
ONLY 4% Extra for Easy Payments on any new 1921 Levis model; write for full details.—The Premier Motor Co., Aston Rd., Birmingham. [X4994



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Lincoln-Elk.

LINCOLN-ELK 3½h.p., Bosch, B. and B., tax paid; £38.—6, Charlieville Rd., Northumberland Heath, Erith, Kent. [7061

LINCOLN-ELK 3½h.p., Grado gear, good condition, with canoelet sporting sidecar (red); £35/10.—Apply, S. K. Price, c/o Knight and Wheatley, 4, Pavement, Coulsdon, Surrey. [7219

L.M.C.

L.M.C. 1920 6h.p. Combination. 3-speed, K.S., licensed, perfect, done 500, bought car; £130.—Longney, Oswestry. [X4884

Martin.

MARTIN-J.A.P. 4h.p. Combination, C.B. sidecar, Bosch; B. and B., electrically equipped, including Lucas horn, perfect condition, tax paid; £70, or near offer.—Q., 32, Clifton Rd., Finchley, N.3. [8041

Martinsyde.

MARTINSYDE Combination, in stock; £145; order now.—The Moreton Garage, 2, Moreton Terrace Mews, Pimlico, S.W. [6495

MARTINSYDE 6h.p. Twin Combination, Lucas dynamo lighting set, makers' hood, tax paid; £140, no offers.—Garlick, 46, Prebend St., Bedford. [7200

MARTINSYDE 6h.p. Combination, 1920, Lucas Magdyno lighting, electric horn, Triplex screen, in perfect condition; £150; deferred payments arranged.—Hewin's Garages, Ltd., The Real Service Firm, Taunton. [7459

Massey-Arran.

MASSEY-ARRAN.—Immediate delivery from stock of the popular sports model with 2¾h.p. Blackburne engine and Sturmey gear, 95 gns.; J.A.P. engine model, £90; exchanges or deferred payments.—P. J. Evans, 81-91, John Bright St., Birmingham. [7342

IMMEDIATE Delivery, 1921 2¾h.p. Massey-Arran, super sports model, Blackburne engine, Sturmey 2-speed, K.S., hand and foot clutch, discs, knee grips, finished black and gold, specially tuned; 95 gns.; tax 30/-; exchanges or easy payments arranged.—Demonstration and full particulars with pleasure by the sole agents for Stamford and Peterborough: Aero Motor Works, Stamford, Lincs. [7735

Matchless.

MATCHLESS.

DELIVERY Free for 150 miles from London. Don't forget, every outfit personally tested by the (Matchless only) expert. I am now booking orders for the new sports model, ready shortly, the fastest and best combination on the road.—J. Tassell, 1a, Bloomfield Rd., Plumstead, S.E.18. [5374

JULIANS of Reading have all Matchless models in stock. [0480

4h.p. Matchless-Jap, P. and M. 2-speed gear; £35.—S. E. Pailthorpe, 46, Danby St., Peckham, S.E.15. [7289

1921 Model H Matchless, shop-soiled only, lamps, horn; £185.—Box 760, c/o *The Motor Cycle.* [X4931

MATCHLESS-J.A.P. C.B. Combination, 1915, licensed, equipped; £65.—151, Sheen Rd., Richmond. [7867

MATCHLESS 1920 Model H., run 3,000 miles, Binks, complete outfit.—Baldock, Gt. Missenden, Bucks. [6968

MATCHLESS Combination, 8B M.A.G. engine, good order, tax paid; £95.—78, Rochdale Rd., Plumstead. [7365

BRAND New 1921 Matchless Combination, 8h.p., M.A.G. engine; £162.—24, Balliol Rd., North Kensington. [7709

MATCHLESS Combination, sporty, discs, condition guaranteed; £53; or exchange lightweight.—217, Belsize Rd., Kilburn. [X4953

MATCHLESS Combinations, new, in stock, from £174; 1921 models, £205.—Sheffield Agent, J. A. Stacey, 12, Ecclesall Rd. [0574

1921 Matchless Magdyno Combination, brand new, unused, unregistered, owner must sell; £188.—41, Madrid Rd., Barnes, S.W. [6786

MATCHLESS, Model H, Magdyno lighting, all on, splendid condition; cheap, must sell.—23, Federation Rd., Abbey Wood, S.E.2. [7594

MATCHLESS 1921, delivery from stock; exchanges; £185.—Geo. Smith (opposite Arding and Hobbs), Lavender Hill, Clapham Junction. [4993

8h.p. Matchless, overhead valve engine, in perfect condition, exceptionally fast; a genuine bargain, £50.—Clifton, 34, Windsor Rd., Southport. [7344

MATCHLESS 1921 2-seater Combination, M.A.G., run 1,000 miles; £160, or very near offer.—R. P. Lloyd, 7, Kestor Lane, Longbridge, Preston. [7911

MATCHLESS-J.A.P. 8h.p., 3-speed, clutch, coach-built sidecar, wind screen; best offer; appointment.—Newman, 48, Camberwell Grove, S.E.5. [7583

MOTOR CYCLES FOR SALE.

Matchless.

MATCHLESS 1917, M.A.G., electric, Tan-Sad, hood, screen, enamelled as new, splendid condition; £125.—39, Kyrle Rd., Clapham Common, S.W.11. [5800

1912 or 1913 6h.p. Matchless, 2-speed, Bosch mag., in first-class condition throughout; £47, or best offer.—Horswill, Indian Agent, 42, Bridge St., Chester. [4779

MATCHLESS 4½h.p., 3-speed, clutch, and coach-built sidecar; exchange lightweight and cash, or sell £45; offers.—F. Bonner, Bridgeway, Wembley. [7886

MATCHLESS 1920 Model H Combination, Easting screen, spare wheel, horn, tools, etc., guaranteed, tax paid; £145.—Feathersline, Sidley, Bexhill-on-Sea. [7059

1921 Matchless, all models for immediate delivery, exchanges and deferred payments if required.—Edwards, 50, Harrington Rd., South Kensington. [6784

1919 Matchless Victory, 8h.p. J.A.P., electric light, tax paid, wind screen, spare wheel, luggage grid, perfect order; £112.—Limby, 2, Kynance Rd., Gloster Rd., S.W.7. [7626

MATCHLESS Combinations for immediate delivery. Your present machine in part payment.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7916

1921 Brand New Matchless, Magdyno, double sidecar, hood, step, shields, speedometer, tax paid, cost £232; receipt shown; £210; seen London.—Box 5,055, c/o *The Motor Cycle*. [7946

MATCHLESS Combination, 8h.p. J.A.P., accessories, speedometer, screen, excellent condition; 95 gns., or exchange lower power.—34, St. James Rd., Wandsworth Common, S.W.17. [7386

MATCHLESS Combination, 1915, 7-9h.p. M.A.G., new carburetter, spare tyre, tax paid, fast; price £79; owner bought car.—Baldwin, c/o May's Garage, Crown Rd., Twickenham. [7322

MATCHLESS Combination, Model H, 1920, fully equipped, spare wheel, etc., Lucas lamps, unused last 9 months; real bargain, £138.—35, Gartmore Gardens, Goodmayes, Ilford. [7591

F.O.C.H. have a 1920 Matchless Combination, dynamo, small mileage, hood, screen, luggage grid, spare wheel, tax paid; bargain.—5, Heath St., Hampstead (near Hampstead Tube Station). [7333

MATCHLESS Combination, 8h.p., 1920, little used and well looked after in every way, original tyres in excellent condition, Cowey horn, Magdyno electric lighting; £155.—47, Streatham Hill, S.W.2. [7040

1920 Matchless Combination, 8h.p. J.A.P., Magdyno, hood, electric horn, speedometer, perfect condition, trial, owner bought car; £160.—Gunary, Primrose Farm, Goodmayes. 'Phone: Ilford 177. [7368

1920 Matchless M.A.G., hood, screen, spare wheel, speedometer, Lucas lamps, horn, legshields, etc.; bargain, £135, tax paid; property of a client.—Seen S. E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [6831

1920 Matchless Combination, with step, screen, Lucas horn, legshields, electric lighting, spare wheel, licence paid, excellent condition; £165 cash.—West Kent Main Sewerage Board, 9, Durham Rd., Sidcup. [8046

MATCHLESS 1920 Standard Combination, Lucas Magdyno, Easting wind screen, speedometer, Binks carburetter, 70 m.p.g., tyres unpunctured, mileage 1,500, cost £250, perfect condition; £150.—116, Maida Vale. [7476

MATCHLESS Combination; £185; best value on market; spring frame, detachable wheels included.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. Kensington 4096. Exchanges arranged. [7989

MATCHLESS, 1921.—Reduced price £185, 2-seater body £6/10 extra; delivery from stock; exchanges or extended terms.—City Agents, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0069

1920 Matchless Model H Combination, carefully driven, small mileage, front band brake, and many improvements costing £25, excellent condition; £170; seen by appointment.—Holly Lodge, Windmill Rd., Clapham Common, S.W.4. 'Phone: Battersea 2131. [7551

1920 Matchless M.A.G. Combination, Magdyno, speedometer, hood, screen, leg shields, luggage grid, Tan-sad, brand new cover on spare wheel, fully equipped, perfect condition, year's tax paid; £155.—Wood, 69, High Rd., South Tottenham. 'Phone: Tottenham 2074. [7472

MATCHLESS 1920 Model H., complete with Magdyno lighting, speedometer, horn, legshields, mirror, and usual tools, an ideal outfit, mileage 3,000, tax paid; £150; condition like new; owner taking delivery of light car.—Can be seen at Wilkins, Simpson, opposite Olympia, London. [7244

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

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MATCHLESS.—Brand new 1921 combinations at makers' latest reduced prices; with Magdyno lighting, £207/10; without Magdyno lighting £185; actually in stock for immediate delivery; no waiting; call and inspect; easy payments arranged.—Wilkins, Simpson, opposite Olympia, London. [7296

FOR Sale, Matchless combination, late 1920, Model H, M.A.G. engine, spare wheel, spring frame, electric lighting, speedometer, hood, wind screen, mudshield, sidecar step, full set of tools and spares, has been carefully driven, and is in excellent order; price £195.—Apply, Tinkler and Co., King St., Penrith. [7041

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MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

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MAXIM-DALM, Dec., 1920, 3h.p. 2-stroke, absolutely new, Amac carburetter, E.I.C. mag., Albion 2-speed, Hutchinson tyres, accessories, £52; ditto with clutch, kick start, £58/10.—224, Pentonville Rd., London, N.1. [4292

Minerva.

MINERVA 3½h.p., mag., B. and B., good order; £20.—Osgood, Maundown, Basingstoke, Hants. [7184

Metro.

METRO-TYLER 2¾h.p., 2 speeds, perfect running order; £38.—71, Pooles Park Rd., Finsbury Park, N.8. [7632

METRO-TYLER, 1919 (August), single speed, decent condition, equipped, tax paid; £35.—33, Eldon St., Southsea. [7263

METRO-TYLER 1920 2¾h.p., 2-speed, Type S, new, shop-soiled only; £65.—P. J. Evans, 81-91, John Bright St., Birmingham. [7341

1920 S Type Metro-Tyler, all enclosed, 2-speed, only ridden 600 miles, licence, insurance paid, all accessories; 52 gns.—Potter, 54, Victoria Rd., Surbiton. [7541

METRO-TYLER, 2½h.p., single speed, 1917, just overhauled, new piston, rings, cylinder, bushes, crankshaft, in good order; £38; tax paid.—A. Poore, 20, Malton St., Plumstead. [7163

METRO-J.A.P. 1919¾ 2¾h.p., o.h.v. racing single, very fast, 2 speeds, red discs, lamps, horn, new Dunlop, copper exhaust, muffler, new condition, photo; £65.—Bagshaw, High St., Glossop. [6986

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 2-8, Alexandra Rd., Hornsey. [3698

Monarch.

1920 Monarch-Villiers, 2-speed, lamp, horn, tools, licence; expert inspection welcomed; £45.—F. W. Fairbank, Summerford, Willenhall, Staffordshire. [7210

MONARCH-VILLIERS, 2½h.p., 1920 model, 2-speed, clutch, K.S., guaranteed perfect; £56, quick sale.—Particulars, 128, Huddersfield Rd., Oldham. [7013

Motosacoche.

MOTOSACOCHE Lightweight, mag., spring forks, A1 condition; £18, for quick sale.—Platts, 602, King's Rd., Fulham, London. [7452

MOTOSACOCHE Lightweight, mag., light Druids, go anywhere, tax paid, similar J.E.S.; £18.—6, Burras Lane, Otley, Yorkshire. [6990

New Hudson.

JULIANS of Reading have all New Hudson models in stock. [0534

NEW HUDSON 3½h.p., 3-speed, splendid condition; £33.—65, Barnfield Rd., Plumstead, Woolwich, S.E.18. [7298

NEW HUDSON 1919 4h.p., countershaft, 3-speed and clutch, fine machine; £70.—Bartletts, 93, Gt. Portland St., W. [6941

NEW HUDSON 2¼h.p. Single, perfect, lamps, spares, trial, ride away; £37.—1, Melody Rd., Wandsworth, London. [7152

1920 New Hudson, tourist, 2-speeds, perfect condition, electric lighting, accessories; £55.—18, Fulham Place, Paddington. [8036

MOTOR CYCLES FOR SALE.

Premier.

PREMIER 2h.p., running order; £25, or offer.—23, Plevna Rd., Hampton. [7725

3½h.p. Premier Motor Cycle, 2-speed, countershaft; ride away.—R. Copping, Osborne Farm, Ipswich Rd., Colchester. [7134

PREMIER 2¾h.p., aluminium footboards, tax paid, excellent condition and appearance; £26; evenings.—71, Ewhurst Rd., Crofton Park, S.E. [7104

PREMIER 4h.p. Combination, in good running condition, Bosch mag., 2-speed countershaft, lamps, horn, tyres good, tax paid; trial by appointment; £60.—Walton, 28, Basinghall St., EC.2. [7122

PREMIER Combination, 3½h.p., Bosch, B. and B., Brampton variable gear, free engine and clutch, date about 1911, in very good condition, original enamel and plating; £18, a bargain.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [7719

Quadrant.

QUADRANT 3-speed Coachbuilt Combination, all accessories; any trial; £65, or offer.—636, Harrow Rd., Paddington, W.10. [7454

QUADRANTS.—A selection of second-hand models in stock.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7951

1920 Quadrant 4¼h.p. Canoelet Combination, all accessories, as new; £85; any trial.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [7998

2¾h.p. Quadrant, countershaft, 2-speed, and clutch, m.o.v., horn, licence holder, good tyres and belt, thoroughly rebushed, fine running order; first £19/10 scures.—9, Riversley Rd., Nuneaton. [7756

QUADRANT Sole Agents and Wholesale Distributers, London, Southern, and Eastern Counties. All spares stocked. Official repairers.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Tel.: Hop. 210. [5703

Radco.

RADCO 1920 2¼h.p., single-speed, as new, done 200 miles, cost £53; sell £47.—Longney, Oswestry. [X4887

2½h.p. Radco, 1916, 2-speed, clutch and kick-start; £31.—134, Brownlow Rd., New Southgate. [7405

RADCO 1921 Lightweights in stock; 42 gns.—Geo Smith (opposite Arding and Hobbs), Lavender Hill, Clapham Junction. [4992

1921 2-speed Radco, fitted up regardless of expense, including Watford trip speedometer, Lucas horn, P. and H. lamps, aluminium number plate, tax paid, etc., machine absolutely as new; £49/10.—37, Arlington Rd., Surbiton. [7874

Raleigh.

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1921 5-6h.p. Raleigh; £147.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [7658

NEW Raleigh Combination, ridden only 25 miles for demonstration purposes; £160.—Virgo, 156, High St., Hounslow. Tel.: 125. [7831

RALEIGH Specialists. Demonstration machine available for you to try. Solo or combinations for immediate delivery. Your present machine in part payment.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7915

WE can give delivery of this famous make of machine from stock; there is no better quality or finish possible; a perfect machine in every point and detail; Raleigh 5-6h.p. flat twin solo, 140 gns.; combination, 176 gns.—G. and J. Dawson, 60 and 62, Regent St., Cambridge. [0600

Reading-Standard.

READING-STANDARD, 1920, dynamo lighting, Henderson touring sidecar, ample luggage capacity, immense power; £165.—27, Camden Mews, N.W.1. [7269

BARGAIN; Reading-Standard 7-9h.p., speeds, clutch, kick starter, electric lighting, electric horn, new tyre, splendid condition, exchange, tax paid; £48.—89, East Hill, Wandsworth. [7883

8h.p. 1915 Reading-Standard Combination, 3-speed, kick start and clutch, perfect condition, all on, tax paid; £100, or near.—H. Pannett, Military Road Garage, Hythe, Kent. 'Phone: 114. [7712

READING-STANDARD Combination, June, 1920, 10h.p., dynamo lighting, Bonniksen trip, electric horn, wind screen, all tools, licence, only ridden 800 miles, take 3 anywhere; cost £230, price £165.—19, Highlever Rd., North Kensington, W.10. [7493

Regent.

1920 Regent and Sidecar, small mileage.—Tilley and Moores, St. Albans. [7469

1920 Regent Combination, 5-7h.p. Coventry Victor engine, S.A. gears, 28×3 tyres; must sell; what offers?—30, Princess Rd., Leicester. [X4934

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REX Combination, good puller and fast, 5-6h.p.; £30.—49a, Wellesley Rd., Chiswick. [7056

BRAND New Rex-Blackburne Combination, spare wheel, 8h.p.; £185, or nearest offer.—Cleator, Llangollen. [7010

1921 Rex Combination, 8h.p. Blackburne engine, spare wheel, beautifully equipped; cost £238, accept £140.—24, Balliol Rd., North Kensington. [7710

REX Combination, twin-cyl., 6h.p., guaranteed running order, licence paid, all on; £65, or offer; seen any time.—Buelah Spa Garage, Upper Norwood. [7002

REX-BLACKBURNE 1921 10h.p., special dickey seat sidecar, Easting, speedometer, hood, electric lights, cost £250 last month; £225; London district.—Box 766, c/o *The Motor Cycle*. [7442

NEW 8h.p. Rex-Blackburne Combination, detachable wheels, spare wheel, makers list price £218; offered at £175; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X4995

Rover.

JULIANS of Reading have 75 m.p.h. Rover model in stock. [0585

1920 Rover T.T. 3½h.p., single-speed; £85.—A. J. Young and Co., Ltd., Newmarket. [6793

1918 Rover, countershaft, perfect condition; price £79.—Welford James's St., Brighton. [7098

ROVER 3½h.p., 1919 model, in first-class condition; price £50.—Surrey Motors, Ltd., Sutton, Surrey. [7038

1920 3½h.p. Rover Combination, lamps, horn, Easting, Tan-sad; £120.—377, Barking Rd., East Ham. [7652

ROVER, 1914, 3½h.p., 3 speeds, all accessories, serviceable machine; £43. — Peppin, Hillbrow, Rugby. [7161

1920 Rover, countershaft, T.T. bars, licence paid, as new throughout; £79.—Welford, James's St., Brighton. [7097

BRAND New 1920 3½h.p. Rover Combination; a gift, £130.—Jones Garage, 4, Woodside Parade, North Finchley. [7683

ROVER 5-6h.p. and Rover sidecar, April, 1920, splendid condition; £145, or near; owner buying car.—11, Dover St., Canterbury. [7180

3½h.p. Rover, 1914, good condition, Mabon variable gear fitted, £45; also coachbuilt sidecar; £10.—Mudd, Bridge Garage, Bedale. [6992

ROVER 3½h.p., used 3 months, done 2,000, new Ang., 1920, new speedometer, horns, etc., as new; what offers?—Ogle, High Welwyn, Herts. [7550

1920 Rover 3½h.p., all chain, lamps, horn, full toolkit, original tyres unpunctured, T.T. bars; £85.—Down House, Hillbrow Rd., Esher. After 7 p.m. [7460

1914 Rover Combination, 3½h.p., 3 speeds, clutch, exceptionally good condition; £65; trial.—Daley, 31, Cranbrook Rd., Tottenham (nr. Spurs Ground). [7385

1921 Rover Combination, sporting outfit, tax paid, electric lighting, all accessories, done under 500 miles; £125.—Grimes, 18, Bruton Place, Bond St., W.1. [7768

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

5-6h.p. Rover-J.A.P. Combination, Mills-Fulford sidecar, all new Nov., 1919, guaranteed perfect, 2 spare tyres, full toolkit, lamps, Klaxon, etc.; £115.—Lovett, Sandycot, Walton-on-the-Naze. [7582

ROVER Combination, 5-6h.p., new in 1919, Sunbeam sidecar, fitted with wind screen, hood, side curtains, aluminium disc wheels, Tan-Sad, saddle, perfectly equipped, excellent condition; £120.—Warde Bros., Ashtead, Surrey. [4791

ROVER 3½h.p. Combination, 1919, warranted in sound, perfect condition, with spare tyre, tube, valve, plugs, rings, luggage carrier, 3 belts, lamps, generators, tools; £138.—47, St. John's Park Mansions, N.19. [7149

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.—John Aldrich and Co., Diss. [0630

1919 8h.p. Royal Ruby Combination, well equipped; £95.—24, Balliol Rd., North Kensington. [7707

NEW Royal Ruby, 2¾h.p., sports model, in stock; 80 gns.—Virgo, 156, High St., Hounslow. Tel.: 125. [7832

ROYAL RUBY 8h.p., 1919, fully equipped, perfect; £95. — Braemar, 17, St. Quentin's Av., North Kensington. [7656

ROYAL RUBY 1919 8h.p. J.A.P. Combination, excellent condition, fully equipped.—'Phone: Park 5541.—204, Ladbroke Grove, W.10. [7471

1919 8h.p. Royal Ruby Combination, indistinguishable from new, tax paid, ride 60 miles to purchaser; 98 gns.—2, Fortunegate Rd., Harlesden, N.W. [8005

MOTOR CYCLES FOR SALE.

Royal Ruby.

ROYAL RUBY Combination, 8h.p. J.A.P., 1919-20, unused, 3-speed, lamps, horn, tax paid, reliable machine; bargain, £125.—Davies, 471a, Holloway Rd., London, N. [7820

1920 3h.p. Royal Ruby, spring frame, done 600 miles, lamps, horn, tax paid, as new; £85, or exchange for modern combination.—18, Broughton Av., Bentley Rd., Doncaster. [7581

ROYAL RUBY 8h.p. Combination, 1919, electric lighting, wind screen, speedometer, puncturepoof tyres (all unpunctured), accessories, tax paid, excellent order; 100 gns.—Summerall, Bird-in-Hand Forge, Nailsea, Somerset. [7858

Rudge.

RUDGE Multi, 3½h.p., 1917-18, lamps, etc.; £43.—73, Sutherland Rd., Edmonton, N. [7992

1920 3½h.p. Rudge Multi, T.T., nearly new condition, licensed; £75.—Butler, Baldock. [5934

RUDGE, 1921 model, I.O.M., T.T., new, in stock; £85.—Bartletts, 93, Gt. Portland St., W. [6945

RUDGE Multi 3½h.p., 1914, good-looking, sound; £44.—11, Hadley Gardens, Chiswick, W.4. [7433

1919 3½h.p. Rudge, splendid condition, all accessories, tax paid; £50.—Rectory, Weymouth. [7132

3½h.p. Rudge Multi, splendid condition, enamel as new, tax paid; £53.—Cross, 20, Carey Place, Watford. [6978

£85.—Rudge Multi 3½h.p., pedal-starter; in stock.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7949

1919 3½h.p. Rudge Multi, unscratched, in perfect order; £70.—Jones Garage, The Broadway, Muswell Hill. [7697

1917 3½h.p. Rudge Multi Combination, C.B. sidecar with hood; £60.—Wrenn, 9, Agnes Rd., Acton. After 4 Saturday. [7506

RUDGE Multi 3½h.p. Coachbuilt Combination, hand clutch, lamps, horn, Easting, good order.—Lewis, 12, Trinity Rd., S.W.17. [7393

RUDGE Multi, 3½h.p. 1916, combination, solo, perfect running order; £60.—Baylis, c/o 66, Gt. Percy St., Islington, London. [7827

T.T. Rudge, 1913, perfect order, fully equipped, re-enamelled 1921 colours, electric lights, tax paid; £30.—Hancock, Twyford, Berks. [7436

1920 3½h.p. Rudge Multi, lamps, horn, Tan-Sad, good condition; £50.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7958

RUDGE Multi 1918 3½h.p., just cost £30 for overhaul, fully equipped; £60.—James Bros. Dairy, Tracey St., Kennington Cross. [7378

RUDGE 3½h.p. Combination, hand clutch, good order, or exchange higher power and little cash.—76, London St., Chertsey. [7775

RUDGE Multi 5-6h.p. Combination, wind screen, speedometer, lamps, complete, tax paid, good condition; £70.—51, Meath Rd., Ilford. [7592

RUDGE Multi 3½h.p., late 1919, perfect order, recently overhauled, licensed, fully equipped; best offer.—Jagger, Claughton St., Kidderminster. [7406

1919 Rudge Multi 3½h.p., clutch and kick starter, lamps and horn, all in good condition; £65.—Apply, 46, Osborne Rd., Palmer's Green. After 6 p.m. [7093

1919 3½h.p. Rudge Combination, speedometer, electric lighting, and several spares; a real gift, £87/10.—Jones' Garage, The Broadway, Muswell Hill. [7680

1920 3½h.p. Rudge, I.O.M., perfect mechanical condition, lamps, spares; view evening or by appointment; £75.—Davis, Hither Deacons, Elstree, Herts. [6138

1920 Rudge Multi, mileage under 500, lamps, trip speedometer, knee-grips, equal new, tax paid; nearest offer £75 secures.—Stevens, 33, Central Rd., Leiston, Suffolk. [7523

98 GNS., or exchange, real bargain.—1920 Rudge Multi 5-6h.p., special De Luxe Rudge sidecar, lamps, Klaxon, wind screen, tax paid, lovely condition.—Garage, Hansler Rd., E. Dulwich. Sydenham 2452. [7430

3½h.p. Rudge Multi, engine 11935, late model, overhauled, fast, long exhaust, tyres good, clutch, Senspray, C.A.V. lamp, horn, licensed; sell £45, or exchange higher power solo; trial until 7 p.m.—48a, Hawley Rd., Kentish Town, N.W.1. [6152

1921 Rudge Multi, 5-6h.p., Rudge touring sidecar, luggage grid, Easting, electric lighting, speedometer, Klaxon, Tan-Sad, spare belt, fully insured, beautiful condition; total cost £200; first cash offer over £120; want light car.—J. Gifford, Staplefield, Sussex. [7797

Scott

T.T. Scott, nice condition, £40; exchange 2-stroke.—Wood, 79, Fernhead Rd., Paddington. [7466

1920 Scott (Aug.), low mileage, equal new, tax paid; £100.—Stebbings, Attleborough, Norfolk. [X4905

3¾h.p. Scott Luxurious Combination, 1920, £120; 3¾h.p. Scott solo, £75.—Palmer's Garage, Tooting. [7615

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26 × 2½ × 2¼	Englebert Super Heavy	55/-
,,	Hutchinson Rubber Studded	49/-
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	For 26 × 2½ Rims.	
26 × 2½	Heavy Non-skid	35/-
,,	Extra Heavy Non-skid	39/-
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,,	Wood-Milne Combination	55/-
,,	Ribbed, wired on	25/-
26 × 3 × 2½	Skew Extra Heavy Non-skid	42/6
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28 × 2½	Clincher Dreadnought	45/6
	28 × 3	
28 × 3	Wood-Milne Extra Heavy	32/6
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MOTOR CYCLES FOR SALE.

Scott.

1920 Scott, 45 gn. B.S.A. sidecar, run 1,000 miles, as new, licence paid; £120.—Friend, Saltford, near Bristol. [7091

SCOTT Combination, wicker sidecar, sound condition, good tyres, any trial; £70.—47, St. John's Park Mansions, N.19. [7150

F.O.C.H. have several Scotts, solos and combinations; bargains.—5, Heath St., Hampstead (near Hampstead Tube Station). [7334

1915 Scott, engine 2914, newly overhauled and re-enamelled, new Palmer cords; £45 only.—F.H., Serck Radiators, Greet, Birmingham. [X4941

SCOTT Combination, 1921, delivery from stock; deferred payments arranged.—Hewin's Garages, Ltd., The Real Service Firm, Taunton. [7456

£145.—Nearly new Scott combination, 3in. tyres, tax paid, all accessories; would take Douglas in payment.—Grimes, 18, Bruton Place, Bond St., W.1. [7769

1920 Scott Combination, Easting screen, luggage grid, electric lighting, Lucas horn, condition perfect; price £95 the lot.—Welford, James's St., Brighton. [7095

SCOTT 1916 3¾h.p., just overhauled and re-enamelled, lamps, horn, tools, guaranteed 50 m.p.h.; what offers?—Mecredy, 310, Cricklewood Lane, Cricklewood. [7871

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and noused; at £130.—Burlington Motors, Ltd, South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

1921 Scott, just ridden in, Godfrey's electric lighting, 3in. Palmers, Bonniksen trip, horn, mirror, tax paid, fully insured; seen West End; £110.—24, Hillcroft Crescent, Ealing. [7360

SCOTT and Sidecar, new last year, condition perfect, electric light side and rear, small mileage, tax paid, spares; £120; owner bought car.—Shirley Smith, 1, Park Av., Gillingham, Kent. [6997

SCOTT Combination, 1920, small mileage, splendid condition, Easting, electric lighting, spare chains, tyres; £120, or close offer.—Voss, Malmsmead, Woodcote Lane, Purley. Tel.: Purley 98. [7953

SCOTT Combination, re-enamelled, engine overhauled, new piston, lamps, horn, few spare parts, tyres in good condition, tax paid, trial given; sell £75, or exchange higher power.—Smith, 14, Monson Rd., Wrottlesley Rd., Harlesden, N.W.10. [X4863

SCOTT 1913 Twin, 2-stroke, all chain drive, 2-speed countershaft, kick start, water cooled, footboards, nearly new heavy tyres, has been carefully used and is in very good condition, appearance almost as new; accept £34.—Watson, Victoria Rd., Aldeburgh, Suffolk. [7718

Silver Prince.

1921 Silver Prince, Mark IV. Villiers engine, Sturmey, kick start, with Canoelet sidecar, tax, well equipped; first cash £66, or £56 and £10.—Morris, Walker St., Eastwood, Notts. [7745

Singer.

SINGER 1916 4¼h.p., countershaft 2-speed, splendid condition; what offers?—42, Eltham Rd., S.E.12. [7379

SINGER 1¾h.p., good condition, running order; £13; tax paid.—Peacock, 16, Ermine St., Huntingdon. [7702

1914 4¼h.p. Singer Combination, 2-speed, lamps, horn, speedometer; £45.—Fairmount, Brockley View, Forest Hill, S.E.23. [7428

SINGER Combination, 4¼h.p., carefully overhauled, and worn parts renewed; private owner; any trial; £55.—West, Christchurch St., Frome. [7253

Sparkbrook.

SPARKBROOK, 2-speed, new 1921 model, unused; £60, or near offer.—Johnson Bros., Spalding. [7006

8h.p. Sparkbrook-Jap 1914 Countershaft Combination, first-class condition and appearance, mileage 6,000, engine in exceptionally good condition, recently fitted 4 new valves, new Binks carburetter, new belt and chain, new Brooks saddle, 2 nearly new tyres and 1 original, lamps, horn, speedometer, and accessories, coachbuilt sidecar, screen and luggage grid, licensed and insured; £90, no offers; any evening by appointment.—Sayers, The Poplars, Partridge Green, Sussex. [7029

Speedwell.

6h.p. Speedwell 2-seater, hood, screen, electric lamps, dual ignition, Zenith, excellent condition throughout, tax paid; £40, near offer; exchange motor cycle; stamp, photo.—Cox, Chilterns, Ray Mill Rd., Maidenhead. [7416

Star.

STAR 1916 4¼h.p., 3 speeds, clutch kick starter, all-chain drive, countershaft, perfect condition; part exchange lightweight, Douglas preferred.—206, High St., Poplar, E.14. [7601

Sun.

SUN-PRECISION, C.B. sidecar, 3-speed, licensed; £45.—Butler, Baldock. [5932

2¾h.p. Sun-Villiers, lamps, tax paid; £27.—Cartwright, Highwood Hill, Mill Hill, N.W.7. [8010

MOTOR CYCLES FOR SALE.

Sun.

917 Sun-Villiers, all accessories, tax paid, pull two anywhere; £38, or offer.—20, Wyvis St., Poplar, 14. [7259

30; Sun-Villiers, 1916, 2½h.p., 2 speeds, tyres and general condition excellent, complete lamps, rn, licence.—Maynard, 8, Silver St., Enfield. [7856

UN-VILLIERS, T.T., 2¾h.p., 2-stroke, 2-speed, tax paid, perfect condition, everything as new; rgain, £32.—128, London Rd., King's Lynn. [7900

Sunbeam.

915 3½h.p. Sunbeam; £75.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [7660

. KICKHAM for Sunbeam, sole agent for Bristol , and district.—Stokes Croft, Bristol. [3352

919 Sunbeam Combination, 8h.p., electric lighting, horn, tax, mileage 4,600; £180.—Wright, 2, Park t., Rugby. [X4981

921 (March) 3½h.p. Sunbeam, fully equipped, detachables, as new; £137.—Tucker, Humber House, ghbridge. [7267

UNBEAMS.—We are agents, and can deliver promptly here, or at works.—Bunting's Exchange, aldstone. [7902

UNBEAM 3½h.p. Combination, 1915, tax paid, lamps, horn, tools, spares; £90, or near.—Box, 2, ke St., Brighton. [6261

1h.p. New Sunbeam and sidecar, interchangeable 2 wheels; £200; from stock.—A. J. Young and , Ltd., Newmarket. [6795

921 3½h.p. Sunbeam, not done 50 miles, licensed, all on as new; £145 for quick sale.—Sowerbutts, 1, South St., Bacup. [7761

921 (April) 3½h.p. Sunbeam, mileage 1,300, perfect condition, lamps, horn; £135.—Graham, East dge, Wargrave Manor, Wargrave. [6979

UNBEAM 1919 3½h.p. Model, excellent machine complete with lamps and horn; a bargain at 100 s.—26, New Rd., Shoreham, Sussex. [7230

1h.p. Sunbeam Machine, incomplete, only a few 2 parts wanted, to assemble; £55, practically new. Flynn, 39, Essex Rd., London, N.1. [7891

ATE 1919 3½h.p. Sunbeam, absolutely as new, with Lucas accessories; a gift, £120.—Jones rage, 4, Woodside Parade, North Finchley. [7686

UNBEAM 3½h.p., 1919, T.T. model, guaranteed not done 4,000 miles, owner bought car, all accesries; absolute bargain, £115.—Parkes, Castle View, ingollen. [7308

h.p. Sunbeam Combination, late model, interchangeable wheels, hood, screen, electric lighting, etc., gnificent outfit; £180.—Smurthwaite, C. Binks, d., Eccles. [X4968

UNBEAM 1915 3½h.p. Model with Sidecar, complete with all accessories, excellent condition; 10.—Parker's, Bradshawgate, Bolton, also 245, Deanste, Manchester. [4915

919 8h.p. Sunbeam Combination, excellent condition, mileage about 3,000, speedometer, hood, d all accessories; best offer over £150.—Abinger ctory, Dorking. [7138

919 (late) 3½h.p. Sunbeam, lamps, horn, tools, tax paid; will ride 50 miles to genuine buyer; maine in splendid condition; 85 gns.—Wood, 8, Vale L, Bushey, Herts. [7663

UNBEAM 3½h.p., 1920, and Canoelet sidecar, leg shields, Lucas lamps and horn, perfect condition, x and insurance paid; £155.—Dr. Tighe, South use, Long Eaton, Notts. [7031

h.p. Sunbeam Combination, 1914, thoroughly overhauled, condition perfect, speedometer, wind een, Klaxon, complete; £115; any trial, after 7.—, Elms Rd., South Side, Clapham. (D) [6984

ATE 1916 8h.p. Sunbeam M.A.G. Combination, Lucas dynamo lighting, hood, screen, luggage id, spare wheel, a real nice outfit and dirt cheap; t45.—Jones Garage, The Broadway, Muswell Hill. [7696

1h.p. Sunbeam Combination, as new, unscratched. 2 fully equipped, 1920 engine, complete, put in arch, 1921, under 600 miles; any trial; guarantee; vate owner buying car; sacrifice £100.—4, Nursery alk, Worcester. [7285

UNBEAM, 1920 (late), 3½h.p., Lucas dynamo lighting, Lucas electric horn, oversized tyres, exceptionally good condition; £125, for quick sale. Parker's, Bradshawgate, Bolton; also 245, Deanste, Manchester. [X4917

VANTED, purchasers for any model of new 1921 Sunbeam motor-cycles and combinations, for mediate delivery. Your present machine taken in rt exchange; full market value allowed; distance no ject.—R. Bamber and Co., Ltd., 2, Eastbank St., uthport. Tel.: 607. [0648

UNBEAM Combination, 6h.p., 1914 (stored during war), super-Gloria sidecar, luggage grid, spare tyre, wey speedometer, Klaxon, lamps, spares, everything; agnificent turnout, in excellent running order, tax paid d insured; any trial; £105, or nearest.—Churchill, , Iverson Rd., Brondesbury, N.W.6. [7380

EXCHANGES QUOTED

1921 NEW LIGHT CARS.

STANDARD, 11.6 h.p., 4-seater	£610	0
STANDARD, 11.6 h.p., 2-seater	£575	0
AIREDALE, 11.9 h.p., 4-seater	£475	0
AIREDALE, 11.9 h.p., chassis	£400	0
LAGONDA, 11.9 h.p., 4-seater	£420	0
LAGONDA, 11.9 h.p., Coupé	£420	0
CALTHORPE, 2-seater. Reduced price	£420	0
CALTHORPE, 4-seater. Reduced price	£450	0

1921 NEW MOTOR CYCLES.

COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
EDMUND-BLACKBURNE, sp. frame	£98	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., c/shaft, K.S.	77 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£155	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, Sporting	£152	5
SUNBEAM, 3½ h.p., Touring	£155	0
NORTON Big 4, 3-speed, and Sidecar	£165	0
NORTON, 3½ h.p., single-speed	£98	0
***DOUGLAS,** 2¾ h.p., 2-speed	£85	0
***DOUGLAS,** 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£170	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON Big Four, 3-speed	£115	0
DOT-J.A.P. 1920 8 h.p. Combination	£145	0
P. & S., 2-sp., 2¾ h.p., clutch	£55	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
ALLDAYS-ALLON, 1916, 2½ h.p., 2-sp.	£47	10
BROUGH, 1916, 3-speed, countershaft	£59	10
DOUGLAS 1919, 2¾ h.p., 2-sp., tax paid	£65	0
ENFIELD, 1920, 2½ h.p., 2-sp., tax paid	£57	10
CLYNO, 1920, 2-speed, lightweight	£55	0
MINERVA, twin, spring forks	£29	10
ARIEL, 1920, 3½ h.p., 3-speed, c/shaft	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10

PASSENGER MACHINES.

CALTHORPE, 1920, sporting 4-seater	£365	0
HAZELWOOD-J.A.P., 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting. Tax paid	£115	0
MORGAN, 1915, sporting	£130	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£99	10
HENDERSON 10 h.p. 4-cylinder Combination, very smart condition	£195	0
HARLEY 1920 Combination, electric	£175	0
HARLEY, 1916, and S/car, very smart	£105	0
INDIAN 3-speed twin Combination	£79	10
READING STANDARD 3-speed Comb.	£100	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Comb.	£75	0
ALECTO 1920 coach Combination	£82	10
BRADBURY, 3½ h.p., 3-sp., countershaft Sturmey, coach Sidecar	£75	0
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£85	0
NORTON Big Four, new sidecar	£135	0
SCOTT, 1920 Combination, very special	£135	0

Deferred Payments Taken.
Cash offers considered for Second-hand Models.

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1920 Carburetter, shop-soiled	£2	17	6
New Magnetos for Triumph, Douglas, B.S.A., and other makes	£5	17	6
New Army Knapsacks, 13½ × 11in.	£0	5	6
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New Perfection coach Sidecar (shop-soiled only) for Triumph	£19	10	0
Second-hand Douglas Magneto	£1	17	6
Second-hand Amac Carburetter	£0	15	0

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM Combination, late 1920, fitted 47 gn. Sunbeam sidecar, Cameo screen, P. and H. lamps, speedometer, tax paid, indistinguishable from new, cost £240; accept £155.—Dentist, 216, Portobello Rd., North Kensington. [7079

SUNBEAM 3½h.p. (late 1920), touring model, P. and H. lamps, Lucas horn, Watford trip speedometer, genuinely soiled only; exceptional value, £130.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7349

SUNBEAM 1920 8h.p. Combination, Lucas Magdyno lighting, spare wheel, electric horn, Bonniksen speedometer, oversized tyres, tax paid; £200, or near offer. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4916

T.D.C.

2¾h.p. T.D.C., excellent running condition, licensed, 4 over 100 m.p.g., reliable; £20.—Broadfields, Letchworth, Herts. [X4880

T.D.C. De Luxe 2¾h.p., 2-stroke, splendid condition, tax paid; £35, or nearest offer; evenings after 5.30.—74, Brudenell Rd., Upper Tooting, S.W.17. [7525

Triumph

PREMIER Motor Co. for 1921 Triumphs.

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WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; W.D.B. (renovated), £95; Type H 4h.p., 3-speed, £115; Type S D., chain drive, £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph specialists, The Premier Motor Co., Aston Rd., Birmingham. [X4991

CROSS, Rotherham, can deliver all model Triumphs from stock.

1921 Chain-driven, with Lucas dynamo lighting set, complete; £146/7/6.—Cross, Agent, Rotherham. [X4927

1918 Countershaft Triumph, from £50.—24, Bailiol Rd., North Kensington. [7706

TRIUMPH and Sidecar, lamps, horn, excellent condition; £50.—Solomon, Camberley. [7355

1920 Baby Triumph, 2-speed, as new; £50.—Jones' Garage, The Broadway, Muswell Hill. [7681

TRIUMPH 1912 Clutch Model, in good condition; £33.—Apply, Flying Horse, Borough, S.E.1. [7179

1917 4h.p. Triumph Combination, lamps, etc.; £78, bargain.—1, Bellingham Terrace, Catford. [7588

DAN GUY, Weymouth.—1921 Triumph all-chain combination; £175. Baby 2-stroke, £70, from stock. [0623

1921 Triumph and Millford Sidecar, Lucas lamps, complete, tax paid; £140.—Cross, Agent, Rotherham. [X4928

1918 Triumph, countershaft, fully equipped; twenty, from £50.—Park 5541.—204, Ladbroke Grove, W.10. [7470

TRIUMPH Combination, 1918, 4h.p., countershaft, perfect; £85, or separate.—179, Brixton Rd., S.W.9. [X4559

1918 Triumph, good condition, licensed; £68, or near.—134, Godstone Rd., Caterham Valley, Surrey. [7419

1914 Triumph, 3 speeds, perfect; 50 gns.—Hamlet Court, Hamlet Court Rd., Westcliff-on-Sea, Essex. [8037

TRIUMPH, 1914, 4h.p., 3-speed, re-enamelled, plated, tax; any trial; £62.—Crisp, 74, Bromley Rd., Catford. [7076

TRIUMPH, 2-speed, tax paid, faultless; £27/10, gift. — Bambridge, 43, Riverside, Kingston-on-Thames. [7156

1918 Triumph, engine 42601, licence paid, all lamps and horn; £77/10.—Welford, James's St., Brighton. [7100

1918 Triumph, countershaft, licence paid, condition perfect, engine 46553.—Welford, James's St., Brighton. [7099

£32/10.—Countershaft Triumph, nearly new, less engine; gift.—Ball, 49, Riverside, Kingston-on-Thames. [7660

TRIUMPH 4h.p., 1919, Sturmey 3-speed, K.S., Canoelet sidecar, licensed, complete; £88.—Longney, Oswestry. [X4886

TRIUMPH 1918, Swan sidecar, Easting, lamps, topping condition; £90.—Pope, 106, Munster Rd., Fulham, S.W. [7654

RENOVATED 4h.p. C.S. Triumph, indistinguishable from new; £85.—Jones' Garage, The Broadway, Muswell Hill. [7679

1914 4h.p. Triumph, 3-speed, overhauled and perfect; £45.—Jones Garage, 4, Woodside Parade, North Finchley. [7690

£65.—4h.p. Triumph, 2-speed, F.E., enamel and plating like new, fully licensed; ride away; after 6.—79, Abingdon Villas, W. [7094

TRIUMPH, T.T., single speed, new cylinder, tyres, and rims, guaranteed perfect.—Greene's Motor Depot, Enniscorthy. [7071

MOTOR CYCLES FOR SALE.

Triumph.

19 19 Baby Triumph, fully equipped, tax paid, new condition and tyres; £58, or nearest.—87, Roe Rd., Northampton. [X4889

COUNTERSHAFT Triumph, 3-speed, lamps, horn, etc., perfect condition, any trial; £70.—33, Hackford Rd., Brixton. [8025

19 21 Triumph (May), perfectly run in, guaranteed, fully equipped, registered; £112.—4, Elm Gardens, Hammersmith. [7248

LATE 1919 4h.p. Triumph Combination, fully equipped, all as new; £120.—Jones Garage, The Broadway, Muswell Hill. [7699

19 14 Triumph, kick start, clutch, Bosch mag., Sturmey hub, recently overhauled; £40.—173, Kentish Town Rd., N.W. [7036

LATE 1919 Triumph, lamps, horn, splendid condition; £75.—Butterworth's Garage, Brixton Hill. 'Phone: Streatham 2813. [7497

TRIUMPH 3½h.p. Combination, 2-speed, clutch; any examination; 45 gns.—West, 420, Durnsford Rd., Wimbledon Park, S.W.19. [7991

TRIUMPH, late W.D. model, thoroughly overhauled, new coachbuilt sidecar; £76.—Clark, 7, Exhibition Rd., South Kensington. [7978

19 21 Triumph, only ridden 100 miles, perfect condition, tax paid; £105.—W. E. Blackwood, Pennons Hospital, Hednesford, Staffs. [7170

19 19 Triumph Combination, new Swan sidecar, unused 9 months, lamps, tools, etc.; 100 gns.—Hora, Rainsford Rd., Chelmsford. [7837

TRIUMPH Junior, latest model, unscratched, has not done 500 miles, faultless; £60; no offers.—Everett, Cliddesden, Basingstoke. [7447

19 20 Junior Triumph, registered, lamps, horn, perfect condition; £60, or nearest.—Sharpe, 63, Elliot St., Hillhead, Glasgow. (D) [7814

TRIUMPH 4h.p., 1920 model, complete with sidecar, in first-class order throughout; price £120.—Surrey Motors, Ltd., Sutton, Surrey. [7037

19 12 Triumph 3½h.p., clutch model, Philipson, tax paid, mechanically perfect; £37; call after 6.—42, Richmond Rd., Shepherd's Bush. [7302

TRIUMPH 1918 4h.p., 3-speed, countershaft, in perfect order; £65.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [0658

A GOOD W.D. Triumph, in splendid order; will give good trial to purchaser; £65; it only wants seeing.—G.H., 66, Lonnpit Vale, Lewisham. [7402

TRIUMPH 4h.p. Countershaft, Sturmey 3-speed, clutch, kick start, nearly new sidecar, tax paid; £85.—Hole, 129, Park Lane, Carshalton. [6993

TRIUMPH, renovated W.D., Gloria, Cameo, spare chain, links, plugs, tyre, tube, fully equipped; £80.—Gifford, 29a, Albert Rd., Chatham. [7715

A FAST and Reliable 1914 3½h.p. Triumph, licensed, absolutely complete; £30; after 7.—Rosemeath, Silverdale Rd., Bushey, Herts. [7446

TRIUMPH Combination, 4h.p., countershaft model, 1918-19, guaranteed mechanically sound; £85.—Davies, 471a, Holloway Rd., London, N. [7821

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WOLF 2¼h.p., 4-stroke, overhauled; £15, or exchange.—17, Heaton Rd., Mitcham. [7518

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WANDSWORTH.—Triumph coachbuilt combination, 3½h.p., 2 speeds; any trial; licensed; 48 gns.—Below.

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WANDSWORTH.—Premier coachbuilt combination, 3½h.p., 3 speeds, nice condition, licensed; 52 gns.—Below.

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LLBER.—Neal-Dalm 1920 3h.p., 2-stroke, 2-speed, good tyres, lamps, horn, tools, etc., absolutely new, tax paid; £48.

LLBER.—Scout 1920 3h.p., 2-stroke, 2-speed, good tyres, complete with lamps, in splendid condi, tax paid; £45.

LLBER.—Edmund-Jap 1917 2½h.p., spring frame, Enfield 2-speed, all lamps, horn, etc., speedeter, in good order; £45.

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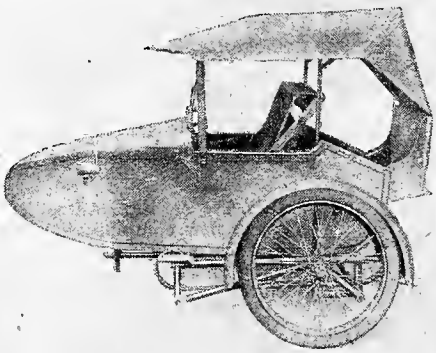

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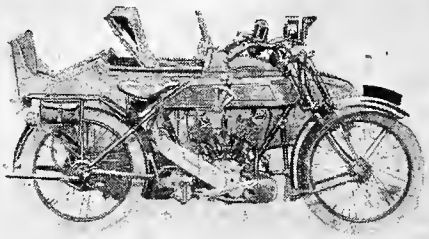

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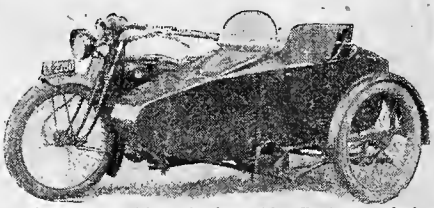

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LIGHT Sidecar, 4-point attachment, as new; £18 Wright, Sidney House, Algers Rd., Loughton, Essex. [70

SHOW Model Sidecar, new Triplex screen, luxuriously fitted up; £39.—Gray, The Boulevard, Balham. [72

SIDECAR Chassis, with large tradesman's delivery box; £5. — 68a, Delancey St., Camden Town, London. [73

SIDECAR ATTACHMENTS.

AN Sporting Sidecar, off 1920 3½h.p. Sunbeam, good condition; £20.—L. O. Taylor, Langport rset. [7492

ACHBUILT Sidecar, excellent condition, new tyre and all accessories; £23.—G. Arnold and Co., ington. [7049

AND New Coachbuilt Sidecar, fittings for Norton, 650×65 Dunlop, heavy; £28.—Bert Terry, nm, Hants. [7772

ILLS-FULFORD Sidecar, as new, roomy body with fittings; £15, or near.—Titmuss, Woodlands, onry, Beds. [7449

ASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before hasing elsewhere.

ASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars £14/18/6.

ASTONE'S.—We have a few soiled sidecars and bodies to clear at low prices.

ASTONE'S.—Distributing agents for the famous Montgomery sidecars. Latest 1921 sporting and r models in stock; trade supplied.

ASTONE'S (Sidecar Dept.), 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6850

DECAR, double seater, hood, storm apron, good condition, adjustable tyres; £20.—Avery, 85, ley Rd., Wallington. [7494

DECAR, Mills-Fulford chassis, new, roomy, C.B. body fit P. and M., Triumph, B.S.A., etc.—272, n St., Forest Gate. [5009

ADESMAN'S Strong Coachbuilt Sidecar, complete, tyre unpunctured, new condition; £6.—128, lon Rd., King's Lynn. [7901

W. Manufacturing Co., manufacturers of Ladbroke sidecars; all-weather model, smartest on the road, pearing coupe hood, £38/10.

W. Manufacturing Co.—The Ladbroke lightweight sidecar, very smart, suitable for Triumphs, £19/19.

W. Manufacturing Co.—The Ladbroke standard, an excellent touring model, will stand hard wear; 10.

W. Manufacturing Co. for sidecars of distinction, quality, at moderate price. Particulars given by n.

W. Manufacturing Co. have a few shop-soiled bodies, also nearly new Douglas chassis, cheap.—o 24, Avenue Close, Poplars Av., Willesden Green. ne: Willesden 2805. [6431

DECAR, coachbuilt, £10/10; another, £12/10; lightweight, £8/10; Clyno bodies, unused, from 5.—57, Kenbury St., Camberwell, London. [7634

ORIA Sidecar Chassis, 28in. wheel, nearly new Dunlop tyre, tube, complete all fittings, right 1915 Harley tank.—49, Crawley Rd., Luton. (D) [7245

NBEAM Sidecar, coachbuilt, disc wheel, light model, excellent condition, with luggage grid; ns.—A. Davis, Tibberton, near Gloucester. [X4904

WARDES Sidecar Chassis, to suit all makes, £7, £7/10, £8/10, £10, £10/10, for Harley or trades-Call and inspect.—277, Camberwell Rd., S.E. [7805

21 Gloria de Luxe Sidecar, spring wheel, wind screen, petrol, oil, and luggage carriers complete, riumph; £30.—Fitt, near Pike's, Church St., Che- [7729

LLFORD De Luxe and Swan Sidecars for Harley, American X, and Henderson machines; prices £35.—Halifax Motor Exchange, 25, Horton St., ax. [7329

NNOC Sidecars, bodies, hoods, screens, largest stock in London, actual manufacturers through-Send for our 1921 catalogue, 32 pages, 80 rations.

ŒNIX Sidecars.—All spare parts in stock by the Rennoc Sidecar Co.

NNOC Sidecar Co. specialise in sidecars for Indian motors, with left-hand kick starters, and can r.

NNOC Co. have 50 second-hand and clearance sidecars, bodies, hoods, etc., all to clear at out prices. Note: Write for special clearance

NNOC Co. have the finest selection of complete sidecars in the trade.

NNOC Co. undertake repairs to any make of sidecar, repainting, and reupholstering a speci-

NNOC Co. have in stock sidecars to fit all makes, English and American.

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NNOC Motors, Ltd., Head Office and Engineering Works, Victoria Works, Victoria Rd., Stroud , N.4. 'Phone: Hornsey 850. Body Building Progress Works, Marlborough Rd., Holloway, 'Phone: Hornsey 1589. [2931

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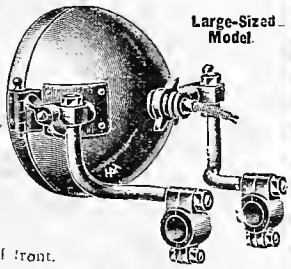
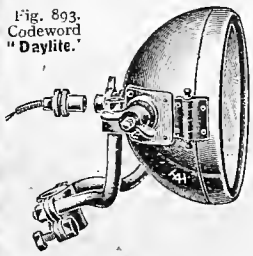
Fig. 895. Codeword "Daylite" Best quality finish throughout. Very massive and strong. Adjustable focus. Adjustable brackets. Special dust and weather-proof front.



Large-Sized Model.

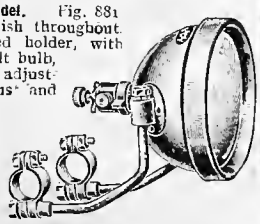
Fig. 893. Codeword "Daylite."



NEW PRICES
Fig. 895 Nickel-plated 60/- each.
Fig. 893 Black-plated 65/- each.

OLD PRICES
Fig. 895—Nickel 72/6 each.
Fig. 893—Black 76/6 each.

Medium Size Model. Fig. 881 Best quality finish throughout. Totally insulated holder, with switch and 4-volt bulb, adjustable focus, adjustable brackets, dust and weather proof front. As illustrated. Fig. 881.



NEW PRICES
Nickel .. 36/-
Black .. 39/-
OLD PRICES
Nickel .. 43/-
Black .. 47/

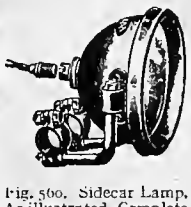


Fig. 878. Similar to Fig. 895, but smaller, and with special "pull on" front. Rubber ring casting for glass. New Price, Black-plated, 40/- each. Old Price, 55/-

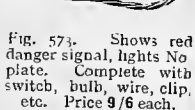


Fig. 500. Sidecar Lamp. As illustrated. Complete switch, bulb, wire, nuts, washers, etc. Price 8/6 each

Fig. 573. Shows red danger signal, lights No plate. Complete with switch, bulb, wire, clip, etc. Price 9/6 each. "Force" Heilesen Battery, 9/11

586. Special metal case for "Force," 8/6. Complete rear set. 27/6.

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SIDECAR ATTACHMENTS.

SIDECAR, Henderson lightweight, new last summer, not used, unscratched, 4-point suspension, Dunlop tyres; cost £21, sell £12/10.—Tel.: 4940 Padd.—Dr. S., 130, Harley St., London. [7086

SIDECARS, several new and second-hand; wind screens, hoods, aprons, mudguards, arms, clips, lugs, etc.—Geo. Smith (opposite Arding and Hobbs), Lavender Hill, Clapham Junction. [4991

SIDECARS Complete. Bodies and chassis supplied separately; hoods, screens, aprons, repairs, and repaints.—T. Williams, Manufacturer, 9, Lower Chatham St., Oxford Rd., Manchester. [X4965

1920 Montgomery Sidecar, Harley colour and fittings, 28in. wheel, brand new, £28; also 1920 Montgomery sidecar, 28in. wheel, brand new, £22.—Batchelor, Clarence St., Kingston-on-Thames. [6727a

ROYAL Leicester Sidecars are made for comfort, attachments for any machine; price 18 gns. upwards; have few cars to clear at reduced prices; repairs, repainting, etc.—The Willowbrook Motor Co., Leicester. [0335

BRAND New.—Dinky sporting model sidecar, £25; also Henderson sprung frame model, £25; fittings suitable for any machine.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0076

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G.N., 1914; £95; overhauled; trial.—133, Clonmell Rd., Tottenham. [7069

A.C. Sociable.—48, Dartmouth Rd., S.E.23.—See Exchange Column. [7966

8h.p. Morgan, a.c., 1916, very good order, licence paid; £120.—Heighton's, Thrapston, Northants. [X4417

PREMIER 4-wheel Cycle Car; exchange Coulson or similar; sell £85.—Hobbs, Gillingham, Dorset. [7781

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [7784

A.V. Monocar, splendid order; sell cheap; take lightweight part.—57, Kenbury St., Camberwell, London. [7636

ROVER Light Car, 8h.p., latest model; immediate delivery from stock.—Marston, 31, Bridge St., Chester. [7933

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

MORGAN 1919 Sporting Model, 8h.p. J.A.P. engine, unused for last 12 months, hood screen, lamps; £135.—Below.

MORGAN Grand Prix 1918 10h.p., W.C., M.A.G. engine, hood screen, lamps, speedometer, good mechanical order, tyres, etc., wants painting; bargain, £135.—Below.

MORGAN 1921 De Luxe and Family Model in Stock; exchanges; extended terms.—Authorised agents, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0076

7-9h.p. Chater Cycle Car, 4 speeds, gate, worm drive, w.c., streamline body; trial; tax paid; £75.—13, North St., Barking. [7542

G.N., 1920, discs, dynamo, owner driven; best over £200; accept modern motor cycle part.—Mosa, Blundell, Huntingdon. [X4505

MORGAN 1919 Grand Prix, all 1921 improvements, new tyres, repainted like new; £175.—Clark, 7, Exhibition Rd., S.W.7. [7983

G.N. Cycle Cars, latest models, always in stock; £198 and upwards.—Drake and Mount, Ltd., Motor Agents, Bracknell. [3696

MORGAN, 1914, mechanically perfect, beautiful condition, fully equipped; nearest £100.—Johnston, Church Walk, Hartlepool. [7072

IMMEDIATE Delivery.—1921 Morgan De Luxe, M.A.G. (W.C.), full equipment.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [7782

RUNABOUTS AND CYCLE CARS.

DAN OUY, Weymouth, Morgan Agent.—Family model, M.A.G., £240, De Luxe M.A.G. £233, Grand Prix, M.A.G., £223 from stock. [0624

1920 Morgan Sports Model, M.A.G. engine, absolutely perfect, two to choose from; price £165 each.—Welford, James's St., Brighton. [7101

TAMPLIN 1920 2-seater, small mileage, speedy, economical; £100; would entertain exchange or deferred payments.—Bunting's Wealdstone. [7905

G.N.'s.—All models for immediate delivery; extended payments; exchanges.—Reys, 378-364, Euston Rd., N.W.1. 'Phone: Museum 6436. [7785

HUMBERETTE, 1914, water-cooled, excellent order, new tyres, smart appearance; £165 lowest. —69, Princes Av., Palmer's Green, N.17. [7528

IMMEDIATE Delivery.—1921 Morgan Grand Prix, M.A.G. (W.C.), full equipment.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [7783

G.N., 1920, dynamo lighting, 5 wheels, hood, screen, speedometer, nearly new; combination wanted, cash adjustment.—61, New Kent Rd., London. [7676

A.V. Monocar, 8h.p. J.A.P., Lucas accessories, indistinguishable from new; £130.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4910

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KINGSBURY Junior, 1920, as new, with speedometer, dynamo lighting, spare wheel, licence paid; 200 gns.—Barker's Motors, 194, Balham High Rd., S.W. [6827

FOR Sale, A.C. Sociable, with box, suitable for business purposes, good condition, thorough running order; price £65.—Norburn, St. Neots Rd., Sandy, Beds. [7645

MORGAN 1921 10h.p., M.A.G., water-cooled, grey, as new, mileage 1,600, spare tyre, all accessories; £260; trial by appointment.—Williams, 6, Paxton Place, Gipsy Rd., S.E. [7747

COVENTRY PREMIER Runabout, 3-speed and reverse, spare wheel, screen, hood, dickey seat, dynamo lighting; immediate delivery.—Marston, 31, Bridge St., Chester.

COVENTRY PREMIER, as above, electric Klaxon, 3-speed and reverse, spare wheel, screen, hood, dynamo lighting, licence paid, mileage 1,500, used for demonstration only; £220.

COVENTRY PREMIER, 3-speed and reverse, spare wheel, screen, hood, mileage under 1,000, licence paid; £200.—Marston, 31, Bridge St., Chester. [7934

A.V. Monocar, 1919, polished aluminium body, 2-speed and clutch, licence paid, electric lights, mechanical horn, etc., in excellent order, competed at Brooklands; £68.

MORRIS-OXFORD 1914 2-seater, excellent order, just overhauled, lamps, detachable wheels, etc.; £190.—Wallington Motor Co., Ltd., 35, Stafford Rd., Wallington, Surrey. [7731

1921 Burney Cycle Car, 3 speeds and reverse, small mileage, electric lighting; exchange solo and cash, or sell outright; offers considered.—Burney, Northchurch, Berkhamsted. [7414

SAXON Light Car, 1915, 4-cyl., 2-speed, reverse, streamline body, all tyres very good, smart and fast, very reliable; accept £105 cash.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [7720

CASTLE-THREE, 1921 model, slightly shop-soiled, 4-cyl., water-cooled engine, spare wheel, dynamo lighting, hood, screen, etc.; £245.—P. J. Evans, 81-91, John Bright St., Birmingham. [7340

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—1921 Morgan de Luxe, o.c. M.A.G. engine, fully equipped, hood, screen, etc., not ridden 250 miles, tax paid; £225; easy terms arranged. [4536

MORGAN 1919-20 G.P. 10h.p. M.A.G., w.c., finished dark green, acetylene, discs, Cowey horn, spare tube, jack, pump, tools; £170.—65, Osborne Rd., Forest Gate, E.7. [7527

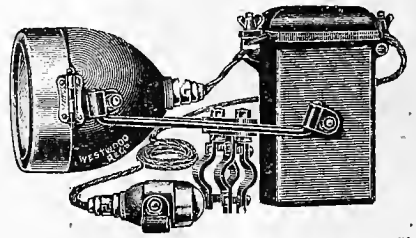
SWIFT 13h.p. 3-seater, Bosch mag., new Zenith carburetter, Beatonson hood and wind screen, thoroughly overhauled, fully licensed and insured; price £170.—Andrews, 41, North Walls, Winchester. [7746

A.C. Sociables, by the A.C. Co., dependable little runabouts, mechanically sound, good appearance, modern, fully equipped; from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [6465

SMARTEST Morgan on the road, £195 or best offer; 1920 de luxe, w.c., electric and acetylene lighting, perfect, all new spares, photo, 200 miles trial pleasure.—Hall, 54, Maygrove Rd., Brondesbury. [8013

TRUMBULL, 1916, 4-cyl., 13.2h.p., central gate change, detachable wheels, electric lights, new tyres and hood, repainted and overhauled; £160; offers, combination wanted.—1, Townley Rd., E. Dulwich, S.E.22. [7714

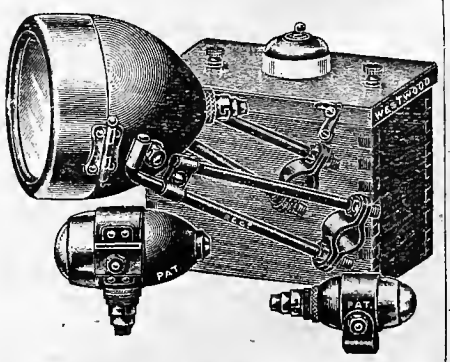
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

Complete Outfit, List No. 30/1, Price £5 5 0
(If tail lamp is not required, deduct 12/6).

"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The Accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting and will give very satisfactory service in use. Many have now been in use two or three years, and are as efficient as when first purchased. **All our Accumulators are specially made to stand vibration.** Ordinary accumulators are never satisfactory for motor cycle work. The hard wood case supplied with this set is finished ebony black, and is specially treated to withstand acid. This outfit is despatched completely assembled with bulbs and all necessary wiring, etc.

Complete Outfit, List No. 30/2, £7 7 0.

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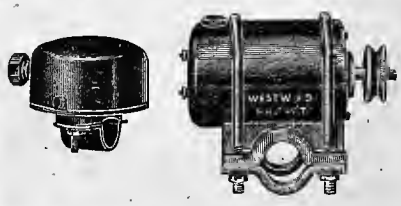

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WHIPPET, almost brand new, only used 600 mi, many extras, easy starting, smooth running, lamps, Cowey horn, special valve lifter; car absolutely faultless; £160.—Wallis, 23, Hartington Gro Cambridge [7

ROVER 1921 Model 8h.p. Light Car, bought April, mileage under 1,500, excellent conditi dynamo lighting, spare wheel, available 4th Ap price £240.—Capt. H. H. Gilbert, Kenilworth Fleet, Hants. [7

TAMPLIN-CARDEN 1919 2-seater, 8h.p. J.A.P. speeds, seat kick starter, perfect conditi throughout, just been completely overhauled, all ty good; £80, bargain.—R. Watson, Victoria Rd., Al burgh, Suffolk. [7

G.W.K., 1914, as new, stored until August, 19 re-coachpainted, new hood, dickey, elect lamps, oversize tyres, speedometer; bargain, £1 exchange War Bonds or combination.—Trefusis, He stone Lane, Pinner. [7

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COVENTRY Premier Runabout, brand new, lat model, dynamo lighting set, spare wheel, dic seat, £250; exchanges or extended terms arrange Elce and Co., 15-16, Bishopsgate Avenue, Camom St., E.C. 'Phone: Avenue 5548. [0

1920 (late) 10h.p. De Luxe Morgan, M.A.G. engi hood, screen, etc., electric lighting, speedome mileage 1,000, absolutely as new, licence paid; a genu bargain at £200; exchanges entertained.—Bambers, L Eastbank St., Southport. 'Phone: 607. [7

1921 Morgan Runabouts, de luxe, family, and a models, ready drive away; complete stock spares, chains, sprockets, tyres, etc.—Main distribu Monmouthshire: W. Luther J. Davies, 71, Comm cial St., Newport, Mon. 'Phone: 2488. [0

G.N. 1921 10h.p. Latest Touring Model, brand n fully equipped; £241. Your present machine be taken as part payment. Extended terms arrange Authorised agents, Elce and Co., 15-16, Bishopsga Av., Camomile St., E.C. 'Phone: Avenue 5548. [0

MORGAN Runabout, fitted new J.A.P. in 1920, speed gear box, Lucas dynamo lighting, 5 lam Lucas electric horn, petrol tin carrier, just overhau and repainted, tyres 700×80 (nearly new); any tri nearest offer to £150.—W. G. Eaton, 373, Sto Stanton Rd., Coventry. [X4

BRAND New Laurence Jackson 2-seater Light C all detachable wheels with spare wheel tyre, 5 in all, 10h.p. J.A.P. water-cooled engine, speeds and reverse, hood, screen, and large ho list price £275, faultless and guaranteed; acc £185, absolute gift.—191, Sweetman St., Wolv hampton. [7

CASTLE THREE New 1921 2-seater Runab actually in stock; detachable wheels all ron spare wheel and tyre, 4-cyl. engine, hood, wind scre beautifully sprung, dynamo lighting, fully equipp beautifully finished; the finest runabout on the ro speedy and most economical; £295; any good mo cycle or combination taken in part exchange.—Bamb Ltd., 2, Eastbank St., Southport. Tel.: 607. [7

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WOLSELEY 16-20h.p. ¾ Landaulet; £125.—77, A Lane, S.W.2. [7

£60; 10-12h.p. Unic landaulet, lamps, Stepney, e perfect.—44, Chapel St., Marylebone. [8

LANDAULET, 1910, 16h.p., £90; exchange mo cycle.—Daily, 31, Gatton Rd., Tooting. [7

CADILLAC 8-cyl. Touring Car, perfect; £295.— Carr, 94, Branksome Rd., London, S.W.2. [7

SIZAIRE-NAUDIN 2-seater, all on; £65, near o —T. Callard, 25, Conington Rd., Lewisham, S [77

ABSOLUTE Bargains.—Sixty cars stocked; postc procures list. Call.—Douglas S. Cox, West N wood. [4

14-16h.p. Gregoire 4-seater, fully equipped, g running order and condition; £145, or t combination part.—436, Whitehorse Rd., Thorn Heath, S.E. [7

SMART Little Car, wire wheels, differential, w and sector steering, live axle, 2-speed, 8h.p., cooled twin, easy to drive; £70.—16, St. Mary Abbo Ter., Kensington. [7

FOR Sale, 1916 Trumbull 12h.p. 2-seater car, w spare wheel, hood, wind screen, and to £135; or would exchange for good combination solo machine.—Winn, Bentham [7

DE DION, twin-cyl., very nice comfortable fo 5-seater open touring car, complete, in excel all-round condition, tax paid to end of year; barg £115; trial.—11a, Dafforne Rd., Upper Tooting. [5

£140.—10h.p. 2-seater 1915 Trumbull, 4-cyl., paid, water-cooled, 4 speeds, electric light, det able wheels, hood, screen, very good climber.—Ow 8, Randolph Mews, Maida Vale, W.9. Appointm [6

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Motor Coaches.

THERE is no gainsaying that the motor coach is becoming part and parcel of our national life. Already its popularity is far greater than the form of travel it has supplanted—the horse-drawn char-à-banc—and, therefore, it has to be taken into consideration when road faring questions are under discussion.

From the motor cyclist's point of view, the great increase in motor coaches is regarded almost as a nuisance, but it is realised that the "day trippers" have an equal right to the road. On the other hand, there are many drivers of these large pleasure vehicles who make no attempt to foster goodwill between themselves and other road users. With a little commonsense and courtesy, they could remove the chief cause for complaint on the part of owners of private machines, who often have difficulty in overtaking the larger vehicles.

In fairness to the average motor coach driver, it will be admitted that, on learning of the presence of another and faster vehicle in the rear, he will promptly "pull over" to the left. There are others, however, who do not show this willingness so readily, but need not now be discussed.

One can appreciate the motor coach driver's preference for the crown of the road, and also the difficulty of hearing the horn of an overtaking vehicle, but it occasions surprise on the part of other road users that all motor coaches and other large vehicles do not carry a mirror reflecting a view of the road behind, or, preferably, a "look-out" man at the rear.

The fitting of mirrors should be made compulsory by law, and, until this is done, we cannot expect the universal use of such a fitment, however much its value is appreciated by the motor coach driver. As a rule, the driver is not the owner of his vehicle. If such were the case, probably the majority of these large vehicles would be so equipped. We understand that this and other matters affecting the popular motor coach is being considered by the Ministry of Transport.

As regards speeds, while perhaps the statutory 12 m.p.h. is a trifle too low to be of any real value, we think that some of them are too fast. There is also a feeling among all other classes of road users that such large vehicles should not be permitted to traverse roads which are only sufficiently wide to allow their passage, and it has been suggested that by law they should be compelled to keep to those highways which have sufficient width to allow two of them to pass. Certain county councils have recognised the need for restricting motor coach traffic in narrow lanes.

Reliability Trials or Obstacle Races?

ON a recent occasion two team trials were run on the same day, and out of fields of 68 and 162 there were 4 and 101 finishers respectively.

The routes selected were of about equal distance, and each was covered thrice, but the natural difficulties of one were much greater than those of the other. By artificial means the difficulties on the route, already severe by nature, were intensified to such an extent that the majority of the entry was eliminated half way through the first circuit.

Spectators thereafter on other parts of the route lost interest, and the scene at the finish was dull in the extreme. The organisation of a trial which produces such results is, unintentionally no doubt, working against the best interests of the movement; far better to have a close finish between many riders than cast a stigma on the reliability of machines by setting them at some artificial obstacle which eliminates all but the ultra-cautious.

A moral is drawn from the results of the other trial over fairly ordinary roads: the finish was close, yet absolutely decisive, the proportion of those surviving at least two laps was high, and public interest was therefore sustained to the end. The last item is most valuable from the propaganda point of view.

An index to the advertisements in this issue will be found on the page facing the back cover.

Occasional Comments By "Ixion"

Early Birds.

IF I had been born into a feathered species, I should certainly have left the worm to others. As it is, others are welcome to whatever is the human equivalent of the worm. But July 2nd found me many miles from Brooklands, and under orders to attend the start of the 500-mile race at 7 a.m. I rose with the dawn—ugh! It is astonishing how cold the dawn can be during a heat wave. Fur gloves. Leather sausages over my ears. And even then I wished I possessed one of those false noses our Gallic neighbours wear at carnivals. 6.30 a.m. found me tottering into Cobham in a frost-bitten condition, trying to believe that the sight of the pallid sun fighting the mist over a Surrey landscape was worth all I had suffered. The White Lion was full of other sufferers, and it was with set teeth we rolled out to the track, solemnly cursing the B.M.C.R.C. and all its works.

Some Job.

THE pressmen were perched on the sort of wooden scaffold on to which railway companies unload sheep. We had kitchen chairs to sit on, and, ere long, the eternal roar of the engines and the glare of the sun, reflected from the concrete before us, set us all nodding. When we caught Secretary Loughborough, we strafed him for not giving us an awning. He took us into the roofed timekeepers' box for a sample two minutes, and we rejoiced that our stand was unroofed. The riders plainly found 182.98 laps pretty exhausting, but they had a picnic compared to the men with the watches, whose roofed box served as a noise-catcher. Moreover, they had to spot every man as he passed, and record somewhere about 13,000 separate lap times to a fifth of a second apiece. The time and lap scores required very special organisation under such circumstances, and I greatly admired the system adopted, and the precision of the men who worked it.

Wanted, a British Super-twin.

I REALLY marvel that more of the firms who try to carve out for themselves a notch in the British motor cycle industry do not seek to develop a British super-twin of the 7-9 h.p. variety. In this type we are still absolutely outclassed by the American Harleys and Indians. It was frightfully humiliating to watch the Yankees romping away from our own machines, and nauseating to watch two big British twins slowly reeling off their concluding laps several hours after our better singles had finished the distance. The sales of the Harleys and Indians prove that there is an excellent market in this country for a good 7-9 h.p. machine of the sports or semi-sports type. We have very largely neglected this model. In the race our principal representatives were the Matchless (a standard sidecar type, assembled on the previous day, and necessarily quite untuned from a track standpoint, even if it had been designed for racing, which it was not) and the Zeniths—a mixed lot with a variety of engines, and all of them equipped with the belt drive. When we take a particular type of motor cycle seriously, we can lick creation with it. We have never taken the 7-9 h.p. seriously.

A New T.T. Course.

THESE reflections influence me to hope that a new T.T. course may be found, if not in 1922, at any rate by 1923. Perhaps in Ireland. Perhaps in England. Perhaps in France, though only as a last resource, in case Parliament and local authorities prove obscurantist. The 500-mile race showed very clearly how the Manx course handicaps the 3½ h.p. machine; relieved of the twists and corners of Manxland, it absolutely slaughtered the 350 c.c. class, which had outshone it in the Island. If we can only find a course which permits unfettered speed, the 500 c.c. machines well be shown in their proper colours, and we should have a chance to

Occasional Comments.—

institute a 1,000 c.c. class. No doubt, the Indians and the Harleys would fight it out the first year. In the second year we should see new models of the Zenith and Matchless pressing the Yankees hard. In the third year we should see a British win. By the fourth year British twins would be selling freely to those enthusiasts who prefer 7-9 h.p. for general road work. At present, when the country is sinking to the level of what economists call a "debtor nation," we are shovelling much good money out of the country in payment for foreign twins largely because—let us admit it frankly—imported twins are ahead, just as British single-cylinders have held a lead because they are the specialised products of single factories.

The Sportsmouth Road.

COMMONLY called plain "Portsmouth" Road. It always tantalises me. Its surface is so super, its corners so easy, its gradients so mild that it simply shrieks for a blind. But what with the police and the traffic, one generally has to burble along it at just under twenty with muscles tense against throttle and brakes, one eye on the speedometer, and the other spotting hard for men in blue. On July 2nd I struck the Sportsmouth Road on something very fast at an hour of the morning when lighted lamps are legally obligatory. Gadzooks, how I hummed up it! Here and there one saw a man in blue, erect in some recess at the roadside, and practising what every constable learns in his recruit's course, *i.e.*, going to sleep standing up, whilst wearing a deceptive appearance of alertness. I knew their eyes were numb with sleep, and none of them got my number. Couldn't we get Parliament to close the Sportsmouth Road for two days every summer, and hold the T.T. on it?

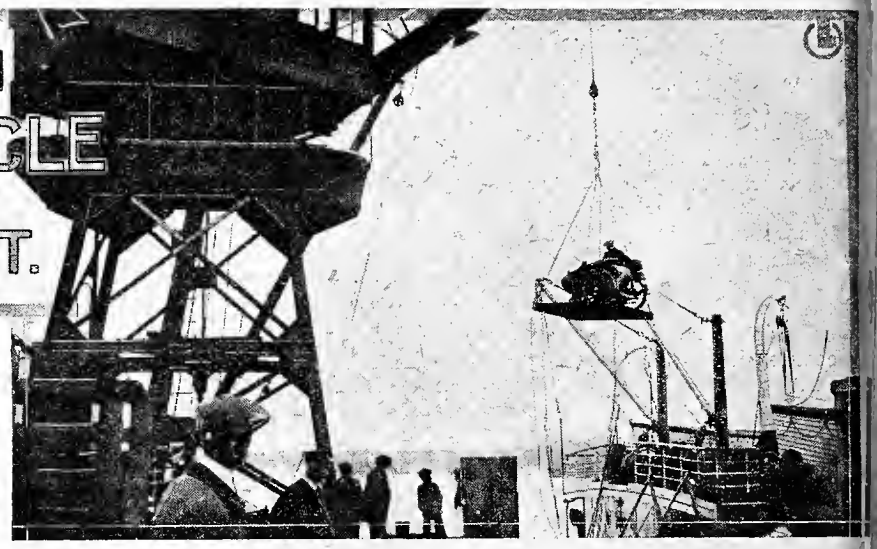
Bobby-Dodgers.

ANY old acetylene lamp gives enough light for a not too keen sighted reader to maintain touring speeds in strange country on a clear night. The innocent takes it for granted that the same applies to all systems of electric lighting. I think it only fair to the public to remark that many of the cheaper and simpler electric outfits only furnish sufficient light for comparatively cautious travelling, and are therefore known to the initiated as "bobby-dodgers." For example, a set which depends on a dry battery or an accumulator minus a dynamo must be designed for a very limited rate of discharge. Limit the flow of current, and you limit the light. Similarly, such outfits as my own B.T.H. Sparklight merely bottle up the surplus output of the magneto, and do not utilise a source of electricity specially designed to provide enough light for speed. In other words, one of these compromise installations is simply ideal for local work, where you know the roads, the corners, and any special danger points, and where a good average speed is not essential; they fulfil the law. But for serious riding on a powerful 'bus in unknown districts a dynamo outfit is still desirable, and may long remain so.

PREPARING FOR THE ANGLO-DUTCH INTERNATIONAL CONTEST.

Dutch motor cyclists are leaving no stone unturned in order to find the best team to represent them in the forthcoming Anglo-Dutch trial. The various clubs have held eliminating trials, the winners of which will constitute the Dutch team. The above illustrations depict incidents in the final trial held last week in Holland.

TAKING A MOTOR CYCLE to the CONTINENT.



Information of Use to the Motor Cyclist who intends to Tour on the Continent, to witness the Grand Prix, or to Journey to Switzerland to see the International Six Days Trials.

THE touring season and the occurrence of many important Continental events combine to make desirable some information regarding the costs likely to be entailed and the formalities to be gone through on taking a motor cycle to the Continent.

In the first place it is necessary that the intending traveller should become a member of one of the motoring organisations, either through a club affiliated to the Auto Cycle Union, as a direct member of the Auto Cycle Union, or as a member of the Automobile Association. A motor cyclist who attempts to do without the help of these organisations will be worried by a number of tiresome details.

As regards the formalities, these are comparatively simple. First and foremost the motor cyclist must get an international travelling pass, which costs 10s. 6d., and takes the place of a driving and machine licence in whichever country he may be travelling. Next a passport is necessary: this costs 8s. A visa for France costs £1, while the Belgian visa has been done away with altogether. For Italy and Holland the visa costs 8s., and for Switzerland and Spain 5s.

Now, in France every motor cyclist has to pay to the Customs a fee of twelve francs, which licenses a motor cycle in that country for one year.

Customs Formalities.

We now come to the question of Customs formalities. Motor bicycles are introduced into France, Holland, and Belgium free on presentation of a special Customs card, but duties are payable in advance in the case of sidecar outfits in these countries.

In France, when a sidecar is attached, the accompanying scale will give the information required. Motor cycles of British makes are charged 220 francs per 100 kilogs., American makes 250 francs, and other makes 330 francs. Sidecars, which are charged on the body only, and weigh less than 125 kilogs., are charged 120 francs for British makes, 150 francs for American, and 180 francs for other makes. These rates are minimum; therefore, any machine or sidecar not turning the scale up to the specified weights is chargeable exactly as above. Those exceeding are dutiable proportionately higher by the above basis. The charges for motor bicycles must also be multiplied by the co-efficient 1.3, while the charges for sidecars must be multiplied by the co-efficient 1.2. As an example of this basis of reckoning the duty, we quote the following: A British motor bicycle weighing 100 kilogs. net is charged 286 francs, American makes 325 francs, and other makes 429 francs. The minimum payment on a British sidecar weighing 125 kilogs. is 144 francs, on American makes 180 francs, and on other makes 216 francs. In the case of a sidecar outfit of non-European make, imported through a European country, an extra *(entrepot)* tax of 3.60 francs per kilog. net on both machine and sidecar must be charged.

Belgium, Spain, and Italy.

Fortunately, in the other countries, the duty is charged on a simpler basis; but in Belgium the motor cycle and sidecar are charged at £7 4s. per cwt., and in Norway and Sweden 15% *ad valorem*. These two latter countries charge duty at the same rate for solo motor cycles and also for sidecar outfits. In Spain a solo machine is charged at the rate of 3s. 6d. per lb., but if a sidecar is fitted at £5 17s. per cwt. Lastly, motor cycles and sidecars are usually admitted into Italy on payment of a deposit of £3, returnable on application when leaving the country within three months. The R.A.C., however, is endeavouring to make special arrangements with the Italian authorities. Motor bicycles and sidecar machines can be introduced into Switzerland on payment of £2 per cwt.

Now, the sum of money demanded in each case can be deposited with the association to which the motor cyclist belongs, and is refunded to him on his return to this country.

The following is the scale of charges for the transport of motor bicycles by the principal cross-Channel routes:

Great Eastern Railway: Harwich to the Hook of Holland. Boat departs 10.15 p.m. Motor bicycles—accompanied by owner, £1; unaccompanied, £1 2s. 6d. Motor cycles and sidecars—accompanied, £2; unaccompanied, £4 (plus 5s. transmission fee). Vehicles to be alongside at 3 p.m. for the 10.15 p.m. boat. The rates for Harwich to Antwerp are the same as to the Hook, but the boat departs at 10.20 p.m., and vehicles must be alongside at 3 p.m.

South-Eastern and Chatham Railway: Dover to Calais. Motor bicycle, £1; motor cycle and sidecar, £2. London to Calais: Motor bicycle, £1 10s.; motor bicycle and sidcar, £3. Vehicles required alongside at 9 a.m. for the 10.30 a.m. boat, and at 12 noon for the 1.10 p.m. boat. The fares are the same in the case of Folkestone and Boulogne, but machines are required alongside at 6 p.m. for the 7.30 p.m. boat, while the fares for Dover to Ostend are not yet available.

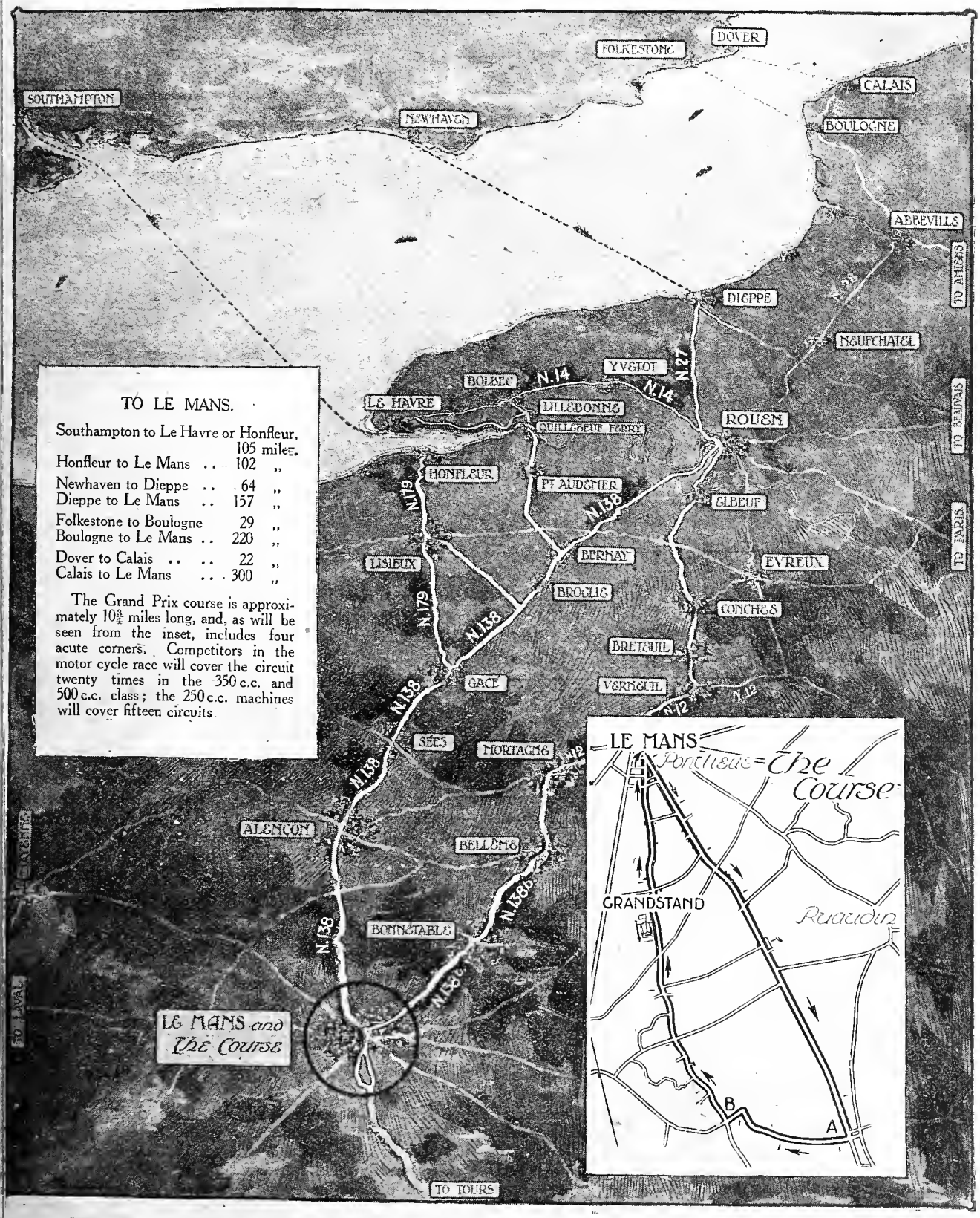
London, Brighton, and South Coast Railway: Newhaven to Dieppe. Boat departs 11.45 a.m.; machines to be alongside at 9.30 a.m. Motor bicycles 12s. 6d.; motor cycle and sidecar, £1 11s. 6d. In the latter case 300 lb. is allowed; excess weight charged at 9d. per 10 lb., or part of 10 lb.

London and South-Western Railway: Southampton to Havre. Boat departs 11.30 p.m.; vehicles to be alongside at 8.30 p.m. Motor bicycle and sidecar, £2 3s. 9d. at owner's risk, £3 2s. 6d. at company's risk; motor bicycle, 11s. 5d. at owner's risk, 14s. at company's risk; tricars (not exceeding 7 cwt.), £4 1s. 3d. at owner's risk, £5 12s. 6d. at company's risk. The rates to St. Malo and the Channel Islands are the same as those stated above.

Passengers' Fares.

The passengers' fares are as follows: Harwich to the Hook, or Harwich to Antwerp, £2 first single; no return. Dover to Calais, 17s. 10d. first single, £1 15s. 8d. return. Folkestone to Boulogne, 15s. 10d. first single; £1 11s. 8d. return. Newhaven to Dieppe, £1 15s. 6d. first single; £3 7s. 10d. return. Southampton to Havre, £2 2s. 9d. first single; £3 6s. 3d. return. Southampton to St. Malo, £2 1s. 11d. first single, £3 4s. 7d. return.

HOW TO REACH THE GRAND PRIX COURSE.



TO LE MANS.

Southampton to Le Havre or Honfleur,	105	miles.
Honfleur to Le Mans ..	102	,,
Newhaven to Dieppe ..	64	,,
Dieppe to Le Mans ..	157	,,
Folkestone to Boulogne	29	,,
Boulogne to Le Mans ..	220	,,
Dover to Calais	22	,,
Calais to Le Mans ..	300	,,

The Grand Prix course is approximately 10¾ miles long, and, as will be seen from the inset, includes four acute corners. Competitors in the motor cycle race will cover the circuit twenty times in the 350 c.c. and 500 c.c. class; the 250 c.c. machines will cover fifteen circuits.

Large numbers of motor cyclists will doubtless desire to witness the Grand Prix race on July 24th. For the benefit of those travelling to the course by road, the above map has been prepared, showing the main avenues of approach.

THE 4½ h.p. HUMBER.

SPECIFICATION.

ENGINE: 75 × 68 mm. = 700 c.c. flat twin.
CARBURETTER: Claudel-Hobson.
LUBRICATION: Mechanical.
TRANSMISSION: ¼in. chains.
GEAR BOX: Humber three-speed clutch and kick-starter.
TYRES: 26 × 2½in.
FORKS: Druid type.
FITTINGS: Touring or T.T. optional.
WEIGHT: 275 lb.
PRICE: £140 solo.

THAT the 4½ h.p. Humber is a reliable and powerful mount has been amply proved by the results of this year's trials—particularly the stock machine event, in which it was one of those which gained a first-class award. How a machine behaves, however, and just how it would or would not appeal to the average buyer, can only be gauged after an actual test on the road. Thus it was with some interest that we seized an opportunity of a fairly extended trial of the latest Humber as a solo mount.

An Uneventful 400 Miles.

The test proved most successful, and seldom have we enjoyed as pleasurable a spell of riding. During 350-400 miles it never even seemed likely that the toolbag must be opened (nor was it), and a second or third kick never failed to start the engine.

The Humber cannot be regarded as a lightweight—it weighs well over 300 lb. fully equipped—the wheelbase is fairly long, and the riding position is unusually far back. However, it quickly proved as docile as any lightweight; indeed, possibly more so, and steadier. A single-lever Claudel-Hobson carburetter allowed the well-balanced flat twin to tick over, with the throttle lever in the shut position, so nicely and evenly that one could vault off the machine and walk alongside, controlling by one hand, *when in second speed*. This we demonstrated several times for the benefit of unbelieving friends.

Naturally, therefore, traffic riding in low gear became merely a matter of balance. And the balance of the Humber is excellent, so good at all speeds above 12 m.p.h. that one felt tempted to all sorts of acrobatic tricks. On grease, too, the same feeling of security prevailed, and, although some of our riding was over treacherously wet roads, there was a noticeable absence of any tendencies to skidding—"noticeable" after two big singles minus efficient transmission shock absorbers! Possibly an inherent caution born of riding many mounts in all weathers saved us, but undoubtedly our wet-weather averages on the Humber were often as high as our normal dry-weather speeds on the same journeys.

No Vibration at Speed.

Regarding maximum speed, it is sufficient to say that there are few touring motor cycles on the road to-day that are appreciably faster than the machine under review. At full throttle there is the same absence of vibration that is so pleasingly evident at touring speeds.

Both the potterer and the hard rider will find that the engine is apparently quite tireless; it runs with just as little effort at the end of a 200 mile jaunt as in the first ten miles. Indeed, like the luxurious 4 h.p. car, its speed is inclined to be deceptive, and a speedometer is almost a necessity for the rider who would keep within the law!

Road Tests of New Models.—

Gear changing required very little practice, and the second neutral position in the gate (next to top) proved very convenient more than once, especially so as the clutch, delightfully delicate in engagement, was inclined to drag very slightly.

With footrests the pedal for the rear brake seemed too far forward for comfort, but the rider soon finds that he can fling his feet about indiscriminately without fear of wobbling complications. The brake itself—acting on a dummy belt rim — is amply powerful, but the machine slows down so well on the throttle that it is seldom necessary to use it.

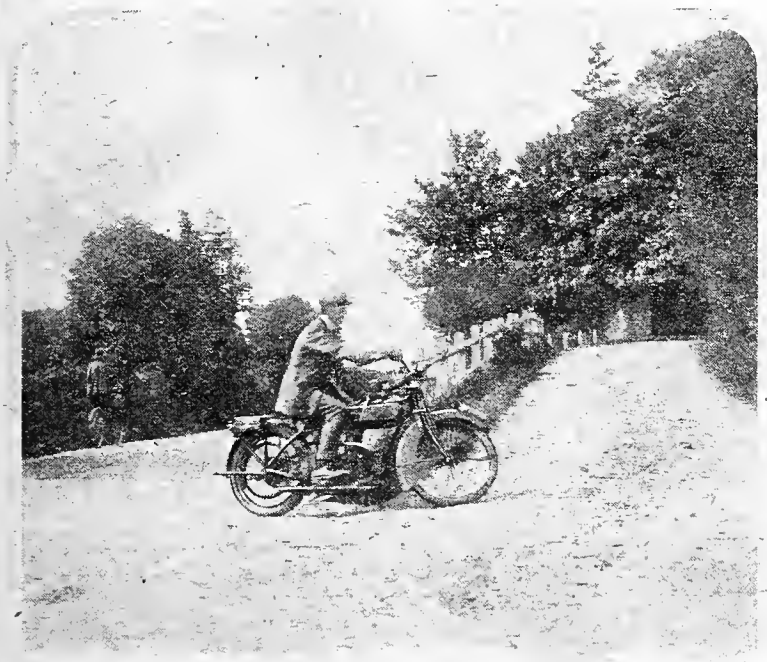
Hill-climbing Capabilities.

Edge, a well-known Midland test hill, which not all 350 or $4\frac{1}{2}$ h.p. solo mounts surmount in top gear, was climbed, with due respect for a wet bend, at a speed which never dropped below 22 m.p.h. — according to Bonniksen—and all the way up the gradient on the highest ratio.

On a sixty-mile run at a good average speed fuel consumption worked out at approximately 75 m.p.g.; but the engine was not spared.

Of course, the most distinctive, and almost proverbial, feature of this machine is its silence. So well known is this quality even, and perhaps especially, to the man in the street that it does not seem necessary to emphasise it. Very, almost lamentably, few other makes deserve to be classified with the Humber in this respect.

Although the photographs in conjunction with the opening specification should serve to refresh the reader's memory regarding the general design, a few words on some of the mechanical features may not be amiss.

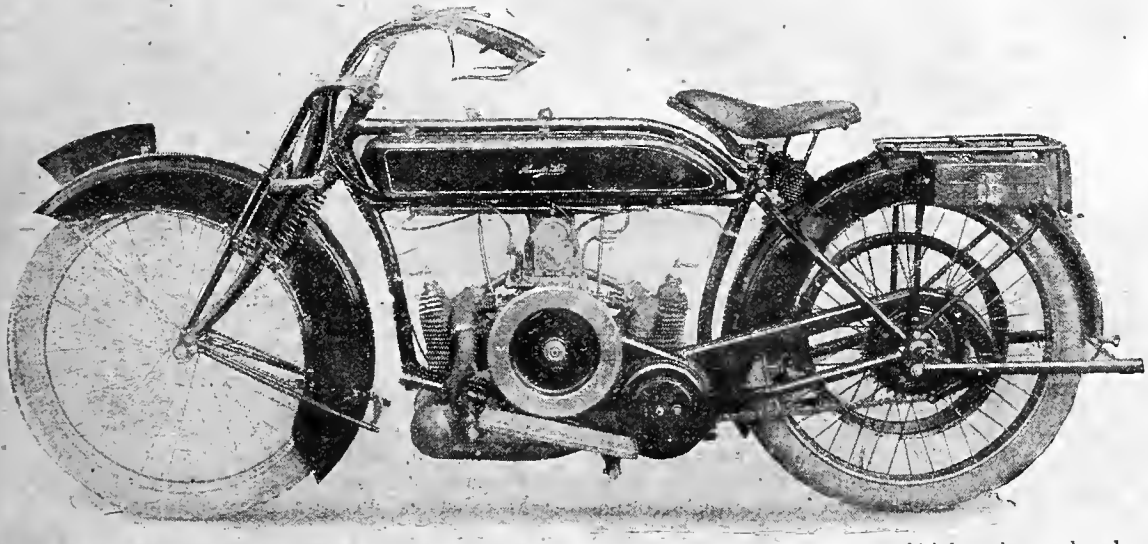


Hairpin cornering is a matter of great ease on the Humber, and although the footrests in this case are unusually high up, the balance of the machine gives one perfect confidence.

Oil in the crank case sump normally keeps the engine lubricated, but there is an auxiliary drip feed for emergency use. We found that, however much the engine was flooded with lubricant, there was no tendency to oil up the plugs, nor did there, on the other hand, seem to be any overheating when the drip was entirely shut off. The oil tank, by the way, is a separate cylindrical compartment set across and inside the main petrol tank.

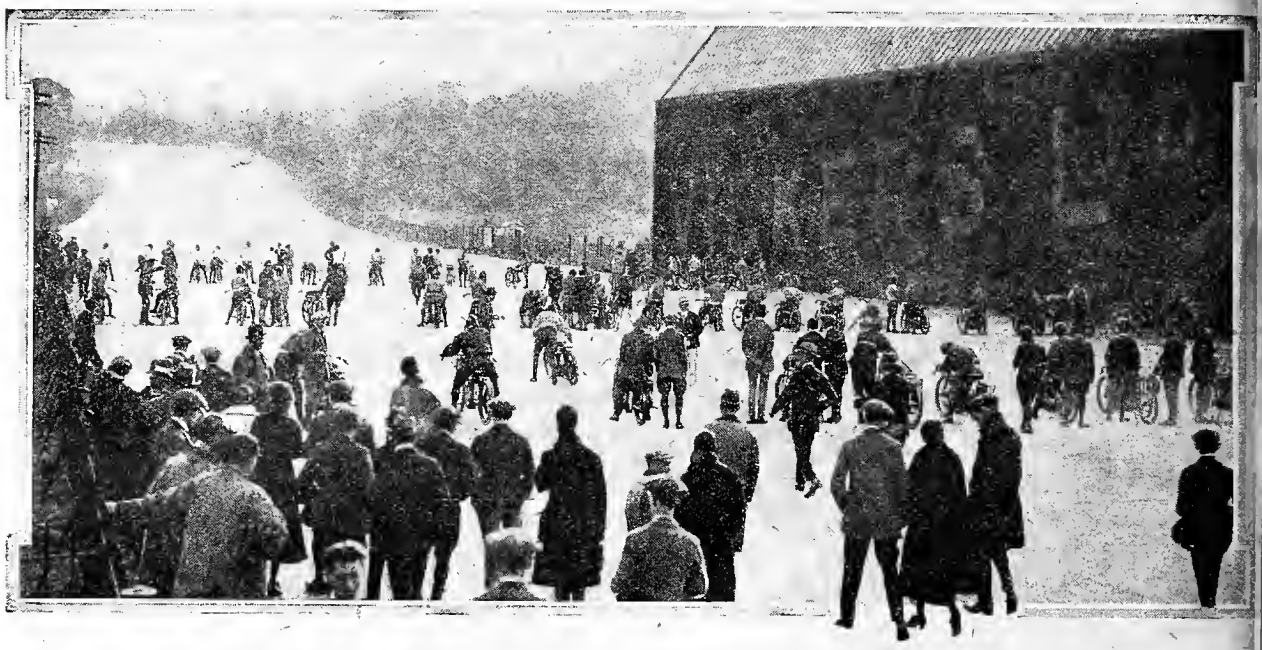
An ingenious assembly permits the valves, complete with their seatings and manifolds, to be removed without disturbing the cylinder.

Mudguarding is good, and, as a further protection, there is a large undershield, extending beneath the power unit.



The $4\frac{1}{2}$ Humber flat twin, a mount that answers splendidly as a double purpose machine. The engine, which has a bore and stroke of 75 × 68 mm., is particularly smooth, yet sufficiently powerful for sidecar touring in any district.

TECHNICAL ITEMS OF THE 500 MILE RACE.



Lessons to be Learned from a Study of the Successes and Failures of the Competing Machines.

APART from those competitors who set out with the intention of winning the Miller gold cup or a "class" prize in the 500 mile race, quite a number of manufacturers seized the opportunity of trying out new or existing models under strenuous conditions.

Amongst the most interesting of these entries were those of the two standard Matchless machines, ridden by J. W. and S. C. Woodhouse. These machines were only erected the day before the race and received no preliminary testing. Standard Matchless spring frames were used, but all unnecessary fittings were removed. It was very noticeable that this pair of machines held the track well; they lapped consistently side by side, and finished with an average speed of 53 and 56 m.p.h. respectively.

An Anzani V Twin.

Quite a collection of engines were fitted in various Zenith machines. The standard 8 h.p. Jap, a Harley-Davidson, and the new 8 h.p. overhead valve British Anzani. The last mentioned engine has several interesting features. Having a bore and stroke of 83 × 92 mm. (996 c.c.), the valves are placed vertically in the head, and are operated by rockers and push rods in the normal manner. A large oil sump with transverse radiating ribs form part of the crank case, and a mechanical oil pump is driven from the timing gear. In the particular machine used for the race a tachometer, driven from the crankshaft, was fitted in addition to a speedometer—a combination of instruments which should provide some interesting information with regard to transmission and wheel slip at high speeds. The heads of the Anzani cylinders are detachable, and the Zenith gear was fitted beyond th outside flywheel.

Two of the new Morris-Warne 250 c.c. engine put in an appearance, both in attractive duplex tri angulated frames. One engine was fitted horizontall with direct belt drive, and the other vertically drivin through a Moss gear box. In the engine itself ther are several interesting features, for the cylinder is c aluminium fitted with a thin steel liner, a separat aluminium head helping to secure the liner. A cas iron piston is employed. An aluminium cylinde was also fitted to Milner's Levis, which was simila to the T.T. mounts, except that the primary driv was fitted outside the flywheel.

Aluminium pistons were fitted to several machine including Le Vack's winning Indian. On bein stripped for examination after the event these pistor were in perfect condition—in fact, except for a trac of carbon on one corner of the head, they might hav just come off the grinding-machine and been run in The Indian, by the way, is a twin of the T.T. singl and, except for a 3½ gallon petrol tank and duple down tube, resembles the standard product in almo every respect; a gear ratio of 4.25 to 1 was employe

A Fast Flat Twin.

The flat twin Coventry Victor in a neat short whee base frame put up a very fine performance, and d well to win the 750 c.c. class. In this class th Trump-Jap, ridden by McNab, ran regularly, and th Bashall brothers on the overhead exhaust val Martinsydes put up a fine performance.

In addition to the distinctive twin torpedo tan the Martinsydes were using a new fork of Martinsy

emical Items of the 500 Mile Race.—

lign, which is reported to have admirable steering ilities. Watson-Bourne spoke highly of his Black-ine-engined Rex, with which he had the misfortune cblow out a valve cap.

The Single-cylinder Machines.

V. Horsman's 500 c.c. Norton was the first British rchine to finish the race, running fourth to two ilians and a Harley-Davidson. F. G. Edmond's ie-by-side valve Triumph ran second in the 500 c.c. ss, and was followed by G. Shemans's o.h.v. Cumph. The latter was dogged by clutch slip from early stage, and suffered a leaky petrol tank later Of the 350 c.c. machines, N. Norris's Ivy rde one of the st outstand-g perform-ces of the ly, and led nsistently loughout; the gine is a ndard sport-production, l was in ex-lent mechani-l condition er the race. B. Kershaw's h.p. New perial had a nfortable win the 250 c.c. ass, but A. lner's Levis marvel-usly, and tually im-oved its lap nes after the st 100 miles. vage's Hobart sofinished well. Troubles are t without erest, since is from them at experience is gained, and one or two causes grief were rather unduly obvious. At least eighteen lve troubles of various types were reported. Two mes and one handle-bar broke during the race. veral tyres blew off the rims at speed, and nearly used serious accidents. A very large number of gines refused to start properly after replenishment ps, and many machines overshot their replenishment pots through absence of proper brakes. This last int is most important, especially in an event of this ture, and a serious accident due to this cause was t narrowly averted, two helpers and a competing achine being knocked over. Valve caps, com-ression taps, and sparking plugs, blew out of cylin-ers, and several tanks developed leakages, but, eyond these, most other troubles were confined to ngle instances. It was noticeable that single-lever arburetters were fitted to the winners of each class, ith the exception of the Binks on Horsman's Norton.

COMPETITORS IN THE 500 MILES RACE AT BROOKLANDS.
On the Byfleet banking. King Smith (Morris-Warne) and Miller (Martin) in tandem.
It will be observed that these riders kept well at the bottom of the banking.

Reverting to the matter of leaking tanks, those who have not visited Brooklands may consider that such things should not happen on a track, under the misapprehension that the surface is like a billiard table. It is not. Far from it. There are roads much better in this respect.

Flexible Oil and Petrol Pipes.

A new accessory, in the form of flexible petrol and oil pipes, appeared on one or two machines: it is the product of the Petroflex Co., of Watford, and resembles a rubber pipe encased in a wire spiral. Petrol resisting tubing of other types was also in evidence, and, judging from the number of broken petrol and oil pipes, there were not a few who would have done well to try some such fitment.

It is hard to blame tyres for wear under such trying conditions; but it is, perhaps, worthy of mention that the Dunlop Magnum fitted to the front wheel of Shemans's Triumph finished the race with the mould marks still visible, in spite of the fact that it had previously carried the machine through the Senior Tourist Trophy and several practice laps.

It was noticeable that comparatively few riders really lay down to save wind resistance. Le Vack, Dixon, and Horsman were notable exceptions, and probably gained a considerable advantage thereby, though the flapping racing jackets must have been responsible for a perceptible slowing down of the faster men. These flimsy racing colours are admirable from a spectator's point of view, but most unpractical in their present form.

Organisers of future 500 mile races will have to decide whether it is a test for man or machine. If it is further to develop the motor cycle, the human factor must be removed as far as possible. For that reason each machine should be allowed two riders, who might change over at intervals, thus eliminating any liability to failure as a result of the driver's weariness.

Altogether, the race was a decided success, and Captain Miller is to be congratulated on instituting a most useful and informative competition, which must have influence on the development of the motor cycle.

Proposed Prestwich and District M.C.C.

Riders in the Prestwich (near Manchester) district who are desirous of supporting a local club should get in touch with Mr. H. Hannaford, 26, Deyne Avenue, Prestwich, Manchester.

Harrogate and District M.C.C.

The winner of the president's trophy trial, which was held on July 3rd, was F. H. Smithies (4¼ B.S.A. sc.), who lost 210 marks; T. W. Monkhouse (4 Triumph sc.), who lost 214 marks, was runner-up; and third place was occupied by G. Hill (2¼ Triumph). There were twenty-nine entries, twenty-seven of whom started.

Cardiff M.C.C.

A successful reliability trial, over a secret course, was held on the last Saturday in June for the Alex. Thom Trophy. Fourteen competitors started, and five completed the course. The results are as follows: Alex. Thom Trophy and replica, Ivor Thomas (3½ Sunbeam); gold medals, Alex. Thom (3½ Scott) and Jack Salter (4 Bradbury); silver medal, E. R. Bevan-Darley (4 Triumph).

Plymouth District M.C. and L.C.C.

Twenty-seven competitors took part in the recent speed trials. Both flying and standing starts were imposed, and the course was about half a mile of the Chillaton Road, near Tavistock. M. Lucy, riding a 3½ Norton, made the fastest time of the day in 24.9s. Results:

500 c.c. SOLO (Novice).—A. Endicott (3 A.B.C.), 27.3s.

250 c.c. SOLO (Expert).—F. Medlin (2¼ New Hudson), 37.4s.

750 c.c. SOLO (Expert).—I. Spooner (3½ Sunbeam), 26.8s.

350 c.c. SOLO (Novice).—F. Brown (2¾ Douglas), 38.8s.

500 c.c. SOLO (Expert).—M. Lucy (3½ Norton), 24.9s.

350 c.c. SOLO (Expert).—H. F. Flower (2¾ A.J.S.), 31.6s.

1,000 c.c. SOLO (Expert).—M. Dawes (3½ Sunbeam), 26.5s.

1,000 c.c. SIDECARS.—I. Spooner (3½ Sunbeam sc.), 30.7s.

Taunton and District M.C.C. and L.C.C.

A "treasure hunt" was recently held, and the route, which was given to each competitor before starting, led over some very difficult country. The treasure was located one and a half miles from Taunton, but the route as mapped out covered a distance of about thirty miles.

Redditch and District M.C.C.

The results of the speed trials held last month are as follows:

TIME CLASSES.

350 c.c. SOLO.—1, F. Wood (2¾ Verus) and T. Ward (2¾ Verus), tie; 2, T. Weaver (2¾ Verus); 3, Gem. Smith (2¼ Morris) and J. Dosher (2¼ Enfield), tie.

600 c.c. SOLO.—1, W. E. Smith (3½ Norton); 2, Gem. Smith (3½ Martin); 3, F. Simmonds (3½ Norton).

UNLIMITED SOLO.—1, W. E. Smith (3½ Norton); 2, T. Weaver (5-6 Verus); 3, F. Simmonds (3½ Norton).

750 c.c. PASSENGER.—1, W. E. Smith (3½ Norton); 2, T. Weaver (5-6 Verus).

UNLIMITED PASSENGER.—1, W. E. Smith (3½ Norton); 2, T. Weaver (5-6 Verus).

UNLIMITED FOUR-WHEEL.—1, J. Cave (8.7 G.N.); 2, G. Silk (8.7 G.N.).

FASTEST TIME OF THE DAY.—W. E. Smith (3½ Norton).

FORMULA CLASSES.

350 c.c. SOLO.—1, J. Dosher (2¼ Enfield); 2, T. Weaver (2¾ Verus); 3, T. Ward (2¾ Verus).

600 c.c. SOLO.—1, W. E. Smith (3½ Norton); 2, J. Dosher (2¾ Enfield); 3, Gem. Smith (2¼ Morris).

UNLIMITED SOLO.—1, J. Dosher (2¼ Enfield); 2, W. E. Smith (3½ Norton); 3, C. Hull (2¼ Levis).

750 c.c. PASSENGER.—1, W. E. Smith (3½ Norton); 2, T. Weaver (5-6 Verus).

UNLIMITED PASSENGER.—1, T. Weaver (5-6 Verus); 2, W. E. Smith (3½ Norton); 3, S. Bright (6 Enfield).

UNLIMITED FOUR-WHEEL.—1, J. Cave (8.7 G.N.); 2, G. Silk (8.7 G.N.); 3, F. English (11.9 Albert) and C. Brown (9.5 Standard), tie.

HANDICAP.—H. Spencer (winner).

FREAK HILL-CLIMB.—1, W. Swiffen; 2, E. Keay.

The awards in the President's Cup Reliability Trial are as under:

PRESIDENT'S CUP AND GOLD MEDAL (best performance).—J. Cave (8 G.N.).

GOLD CENTRE MEDALS.—J. Cave (8 G.N.), T. Weaver (2¼ Verus), and J. Dosher (8 Enfield).

GOLD CENTRE MEDAL (for best performance by rider not having previously won an award in a reliability trial).—J. Cave (8 G.N.).

SILVER MEDALS.—K. Holden (5·6 Raleigh), A. Taylor (6·7 B.S.A. sc.), H. Spencer (2¼ Enfield), G. Baragwanath (3½ Sunbeam), L. Hadley (Enfield), G. Silk (8 G.N.), H. Poole (4¼ B.S. sc.), C. Johnson (4 Verus), and C. Machin (B.S.A.).

BRONZE MEDALS.—G. Keay (3½ B.S.A. sc.), Smith (3½ Norton), H. Perry (6-7 B.S.A. s S. Bright (8 Enfield sc.), G. Hill (2¾ Sparts H. Gibbs (3½ B.S.A. sc.), F. Jakeman (8 Mat less sc.), and B. Kershaw (2¾ Verus).

North Lindsey A.C.

Speed trials were held in Holme La on July 2nd over a half-mile cour which had a rising grade of about 1 160. The weather conditions were favo able, and a good muster of spectators w nessed the event, which was electrica timed. The results were as follows:

CLASS 1 (up to 275 c.c.).—1, Mrs. M. C. Je son (2¼ Velocette), 35⅗s.; 2, H. A. L. Thurs (2½ Radco), 47s.

CLASS 2 (up to 350 c.c.).—1, Mrs. M. C. Je son (2¼ Velocette), 31s.; 2, H. A. Robinson Ivy), 34s.

CLASS 3 (up to 600 c.c.).—1, R. Towle Norton), 28⅗s.; 2, L. W. Bainton (3½ Norton),

CLASS 4 (up to 1,000 c.c.).—1, F. G. How (8 Zenith), 27s.*; 2, L. W. Bainton (3½ Norto 29s.

CLASS 5 (unlimited, on formula).—1, Mrs. C. Jennison (2¼ Velocette), 869 (figure of mer 2, R. Towle (3½ Norton), 919.

* Fastest time of day.

Dublin and District M.C.C.

The beach races at Portmarnock, h on July 2nd, were somewhat marred the condition of the sand, which bumpy, and had a number of treacher soft places. Chief favourite at the ev was S. J. Redmond, whose 3½ h.p. sing cylinder Indian was a winner from scratch line on two occasions. Rest with handicap times are as follows:

SOLO (under 301 c.c.), distance 6 miles.—1 E. Green (2¼ Enfield), 12s.; 2, T. Slevin Velocette), 15s.; 3, E. C. Draper (2½ Metro-Tyl 15s.

SOLO (between 301 and 550 c.c.), distanc miles.—1, S. Redmond (3½ Indian), scr.; 2, Cathcart (3½ Norton), 55s.; 3, J. McCullagh Norton), 55s.

SOLO (over 301 c.c.), distance 16 miles.—1 Redmond (3½ Indian), scr.; 2, J. A. Carville Triumph), 2m. 30s.; H. J. McInnally (5 Indi 2m., finished first but was disqualified for cut inside the turning point flag on his last lap.

SIDECARS (unlimited), distance 6 miles.—1 A. Adair (4½ B.S.A.), 2m. 40s.; 2, J. Hall Harley-Davidson), 15s.; 3, P. Smith (7 Indi ecr.

News.—

Birmingham M.C.C.

e annual hill-climb, which will be to all members of clubs in the Mid- Centre A.C.U., is to be held on den Hill, Ilmington, on Saturday

Exeter M.C. and J.C.C.

eld on Dartmoor on a recent Satur- the reliability trial for the Ford d resulted in the following awards made:

Ford Shield and gold medal), A. M. Knill (4 n sc.), 2s. error; 2 (silver cup), L. Peters orton), 10s. error; 3 (gold medal), E. Wood ale), 15s. error; 4 (silver medal), D. Physick Norton), 25s. error; 5 (silver medal), G. R. ge (4 Triumph sc.), 28s. error. Additional medals were also awarded to L. Vicary (8 less sc.), J. Eddy (4 Excelsior), L. Stagg (5-6- try Eagle), T. Williams (4 Triumph sc.), ord (4¼ B.S.A.), and E. M. Chudleigh (6 less).

Edinburgh and District M.C.

he annual team trial for the Dobson phy was held at the end of June over fty-mile course, which included a d climb of Hartree Hill. Nine teams entered, but only six faced the er, and of these the Edinburgh and rict M.C. were easy winners. The lts follow:

Edinburgh and District M.C.C., J. R. Alex- (2¾ Douglas), G. M. Black (3½ Norton), G. Grinton (7·9 Harley-Davidson sc.), 2s. lost 1; 2, Clackmannan County M.C.C., 35s. lost 1; 3, Glasgow Western M.C.C. No. 1, 62s. lost 1; 4, Glasgow Western M.C.C. No. 2, 89s. on hill.

istest time of the day on the hill 8s.) was made by G. M. Black Norton).

on Coldfield and South Birmingham A.C

sults of a well-supported hill-climb enkridge Hill, on July 2nd, were as r. The formula used was that re- mended by *The Motor Cycle* (capacity iplied by time (squared) divided by ht):

CLASS 9.

Rider and Machine.	Time, Sec.	Fig of Merit.
N. Roberts (2¼ New Imperial)	57.8	2657.27
Jennings (2½ Cedos)	62.8	3365.85
W. Thrush (2¼ Levis)	64.4	3939.69

CLASS 10.

N. Roberts (2¼ New Imperial)	56.2	2152.62
E. Pugh (2½ Levis)	52	2385.31
W. Thrush (2½ Levis)	57.1	3130.02

CLASS 11.

N. Roberts (2¼ New Imperial)	56.4	2530.54
W. Thrush (2¼ Levis)	55	2873.75
C. Nichols, Junr. (2¾ Omega)	50.4	2929.65

CLASS 12.

S. Boston (2¾ A.J.S.)	39.4	1842.76
E. Pugh (2½ Levis)	52	2385.31
N. Roberts (2¼ New Imperial)	55.2	2424

*Fastest time of the day. Special award.

CLASS 13.

N. Roberts (2¼ New Imperial)	56	2494.77
W. Thrush (2¼ Levis)	55	2873.75
Richardson (2¾ Armis-Jap)	53.2	3044.18

CLASS 14.

S. Boston (2¾ A.J.S.)	44.2	2319.11
W. Thrush (3¼ Sunbeam)	44.2	2678.2
Richardson (2¾ Armis-Jap)	50.6	2751.19

on Shield for fastest amateur S.C. and N.B.A.C. member.

CLASS 15.

N. Roberts (2¼ New Imperial)	51	2069.16
W. Thrush (2¼ Levis)	51.6	2529.43
Richardson (2¾ Armis-Jap)	51	2794.86

CLASS 16.

S. Boston (2¾ A.J.S.)	39.6	1861.52
N. Roberts (2¼ New Imperial)	52	2151.1
Hallam (3½ Norton)	47.6	2876.22

CLASS 17.

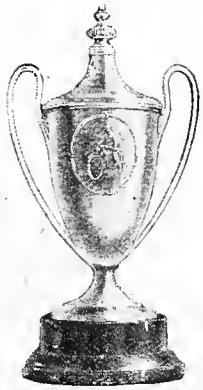
N. Roberts (2¼ New Imperial)	57.8	2657.72
A. Stamps (Norton)	46.8	2794.8375
Richardson (2¾ Armis-Jap)	51	2794.8633

CLASS 18.

S. Boston (2¾ A.J.S.)	40.4	1937.49
N. Roberts (2¼ New Imperial)	51	2069.16
Richardson (2¾ Armis-Jap)	51.2	2816.82

Week-end Club Events.

July 15-16.—Ulster M.C.C. Magillan Speed Trials.
July 16.—South Midland Centre A.C.U. Championship Trial.
July 16.—Bishop Auckland and District M.C. Hill-climb.
July 16.—Birmingham M.C.C. Hill-climb.
July 16.—Dewsbury and District M.C.C. Picnic.
July 16.—South Eastern Centre A.C.U. Inter-club Team Trial for the Woolwich Cup.
July 16.—Ealing and District M.C.C. Brooklands Meeting.
July 16.—Eastbourne and District M.C.C. Club Team Trial.
July 16.—Saltcoats and District M.C.C. Club Run to Gourock.
July 16.—Birmingham M.C.C. Hill-climb. Open to Midland Centre A.C.U.
July 16.—Herts. County A. and Ar. C. Hill-climb.
July 16.—West Kent M.C. Captain's Speed Trials.
July 16.—Kidderminster M.C.C. Social Run.
July 17.—Bridgnorth and District M.C.C. Reliability Trial.
July 17.—Rochester, Chatham, and District M.C. and L.C.C. Run to Eastbourne.
July 17.—Basingstoke and District M.C. and L.C.C. Club Run to Southsea.
July 17.—Stamford and District M.C.C. and Peterborough M.C.C. Joint Reliability Trial.
July 17.—Northern M.C. Gipsy Run to Carter Bar.
July 17.—West Birmingham M.C.C. Annual Club Run to Hereford.
July 17.—Doncaster and District M.C.C. Social Run to Sutton Bank.
July 17.—Middlesbrough and District M.C. Sidecar Reliability Trial.
July 17.—Wolverhampton Auto Nomads. Club Run to Church Stretton.
July 17.—Essex M.C. Club Run.
July 17.—Stafford and District M.C.C. Club Run to Tamworth.
July 17.—Exeter M.C. and J.C.C. Club Run to Lydford Grange.
July 17.—Liverpool M.C. Picnic at Llangollen.
July 17.—Loughborough and District M.C.C. Club Run to Belvoir Castle.
July 17.—Brighton and Hove M.C.C. Picnic Run Alfriston, and Gymkhana.
July 17.—Sheffield M.C.C. Douglas-Vickers Trial.
July 17.—Central London M.C.C. Club Run to Epping Forest.
July 17.—Leeds M.U. Gymkhana.
July 17.—Wolverhampton M.C.C. Social Run to Holt Fleet.
July 17.—Ivy M.C.C. (Wolverhampton). Matlock.
July 20.—Exeter M.C. and J.C.C. Evening Run to Dawlish Warren.
July 21.—North Wales M.C.C. Speed-judging Contest.



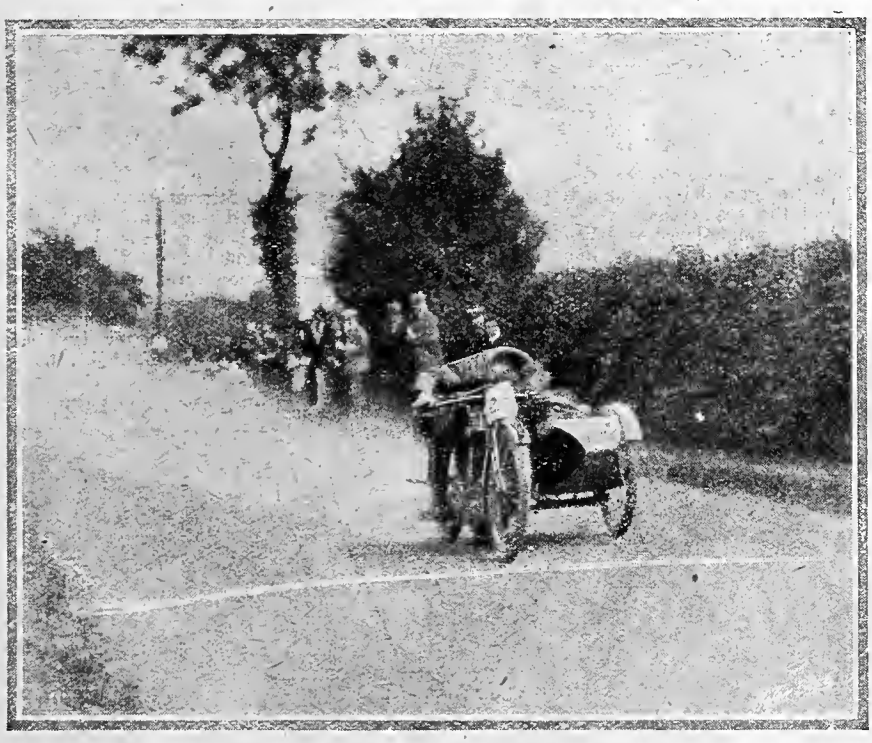
The £200 Doncaster Cup presented by the Colmore Depôt, Manchester, to the North-western Centre A.C.U., as premier award in this centre's team trial. The holder is Hugh Gibson.

Surbiton and District M.C.C.

Over a course of forty-three miles the evening trial for the Briller Cup was run off on Wednesday, the 6th inst. Bagdon, White Downs, and others of the Surrey Hills were included, and forty-two competitors faced the starter. Kaye Don, riding a 3½ h.p. Zenith-Bradshaw, secured the cup, and made a non-stop run with only ⅘sec. time error. The following were awarded silver medals:

V. Cayford (Zenith), R. C. Staunton (Triumph), R. A. Green (Norton), J. S. Bennett (M.T.), C. D. Michaelis (Zenith), W. R. Preston (Sunbeam), R. C. Charlesworth (Zenith), T. O. M. Sopwith (Hawker), L. H. Wells (Hawker), L. Gummer (Triumph), A. Love (Norton), W. H. Wells (Norton sc.), L. Peaty (Hawker sc.), R. B. Wiffin (Morgan), L. J. Freeman (B.S.A. sc.), H. W. Glendinnings (Rex sc.), H. E. K. Saltell (Morgan), S. T. Green (Indian sc.), G. C. Griffiths (A.C.), J. Abbott (Zenith), R. N. Stewart (Triump), and A. Ellison (Ellison).

A Section devoted to Club Announcements will be found on Supp. xlvi.



T. C. de la Hay winning the 500 c.c. sidecar class of the Kidderminster, Stourbridge, and Wolverhampton inter-club hill-climb held at Hopton Bank, near Cleobury Mortimer.

MORE MID-YEAR MODELS.

New Lightweights. Low-priced Solo and Sidecar Outfits.

IN last week's issue of *The Motor Cycle* we gave particulars of several recently-introduced models, and in some cases it appeared that serious effort was being made to market machines at a lower price than those that have prevailed for some time past. On this and the following page we are able to illustrate a further batch of mid-year models of which the prices are certainly very attractive to those who have been waiting to purchase comparatively low-priced machines.

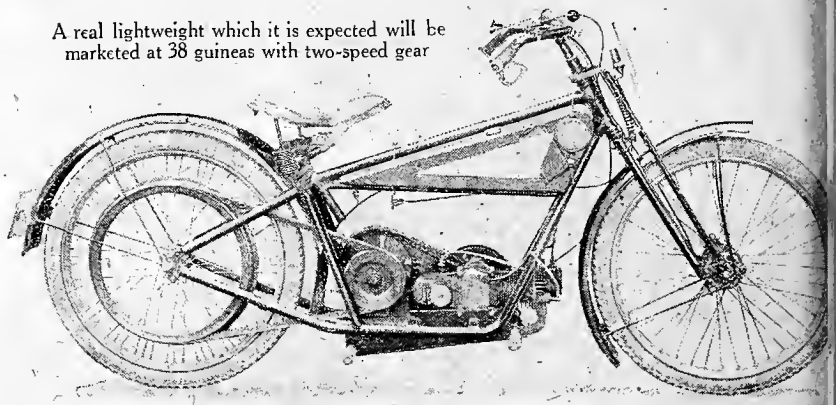
The first of these is a genuine two-speed lightweight of 112 lb., at present unnamed, and which, it is expected, will be marketed at thirty-eight guineas.

Mr. W. F. Hooper, 10, Genoa Road, Anerley, London, S.E., who was responsible for the Superb Four, is the designer.

The motive power is a small but efficient 2 h.p. single-cylinder four-stroke engine of 60×44 mm. bore and stroke (125 c.c.), which gives the horse-power stated at 5,000 r.p.m. The engine has overhead valves and a detachable head, while the gear-driven magneto is bolted behind the crank case.

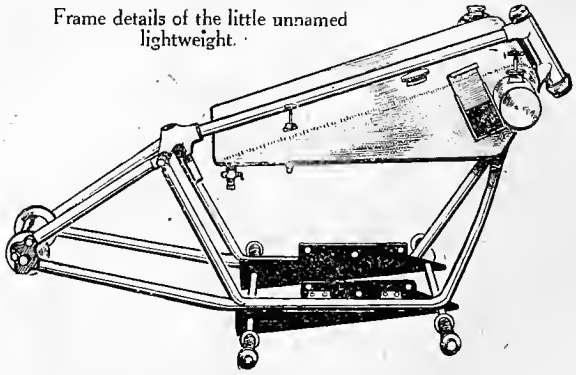
Of the single-lever variety, the carburetter is of a new type known as the Willis, details concerning which are not yet available, as the instrument is the subject of an uncompleted patent. A duplex frame and spring forks of rather unusual design are used.

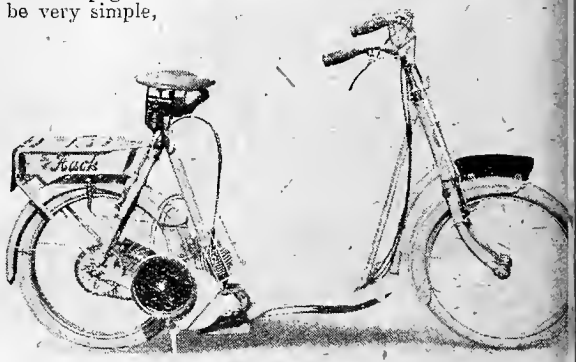
A real lightweight which it is expected will be marketed at 38 guineas with two-speed gear



On the road the machine behaved quite well, and it was taken for a short run up Sanderstead Hill, which is a long, tiring pull for so small a mount; nevertheless, two-thirds of it were taken on top gear. We found the control to be very simple, the carburetter to respond to the slightest touch of the throttle opening, while the gear was changed by a lever similar to a spark lever mounted on the handlebars. The machine steered well, and was comfortable; but the "revving" of the tiny engine was somewhat disconcerting to anyone used to the larger type of motor cycle. There is no doubt, however, that it is eminently suited for lad Arrangements have been made for production of this machine in quanti in a large and well-equipped works cl to London

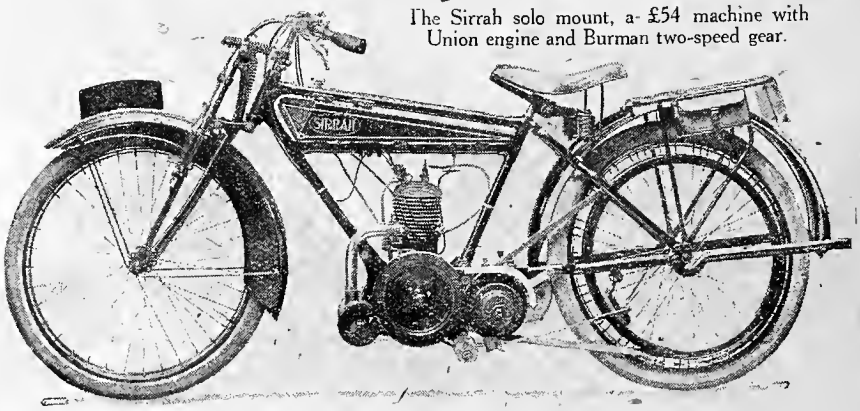
Frame details of the little unnamed lightweight.





As its name implies, the Hack miniature is mainly intended to fill a useful gap for utility work

The Sirrah solo mount, a £54 machine with Union engine and Burman two-speed gear.



A Single-geared Miniature.

True to its name, the Hack miniat is mainly intended for short dista work; it would also appear to be a suitable mount for a lady.

Its motive power is a Simplex eng slightly modified and adapted to scooter. The magneto gear wheels enclosed, and the drive is by si chain to the rear wheel, the gear r being 10 to 1. A clutch is used me to disconnect the engine from the wheels, and not for starting purpo After the compression release has l opened the clutch is withdrawn by m of the same lever, and consequently engine cannot race when the clutch is engaged. The frame is strongly structed, but is designed to "give" s ciently to render it just flexible.

A £70 Sidecar Outfit.

£70 for a sidecar outfit is surely lowest-priced machine of its class on market. This is the Sirrah, a well-m Union-engined motor cycle produce a well-known concern for several o agents. R. O. Jones, of Bellbarn B Birmingham, is offering it in Birm ham, and with its very complete sp

ore Mid-year Models—

ation (including Brampton forks, Burman two-speed gear, clutch, and kick-starter, Avon tyres, and sporting sidecar) is becoming very popular. £54 is the rice of the solo machine.

Another Newcomer.

The Mars is a newcomer, but is produced by an engineer who, up to quite recently, has been works manager of old-established motor cycle firms. One model s made, but offered with Villiers, J.A.P., r Blackburne engine, single-geared, or quipped with plain two-speed or two-peed clutch and kick-starter.

Equipment and finish are quite up to he best standards. For example, Brampon Bi-flex forks with two vertical springs ire fitted, and all other proprietary items ire of the best class. The Mars machines ire lighter than usual, 130 lb. being the veight of the single-geared Villiers model selling at £48, while with clutch and kick-starter it is only 150 lb., and is offered it £64. The single-geared J.A.P. model s £58, plain two-speed £64, and two-peed clutch and kick-starter model £70. The fully-equipped Blackburne-engined nodel will be in the neighbourhood of £80. The manufacturers are Mars, Ltd., Greyfrairs Lane, Coventry.

The H.B.

Motor cycles bearing the distinctive initials H.B. are now getting fairly well known. They are made by Hill Bros., of Wolverhampton, a centre famous for he quality of its productions, and this irm is endeavouring to maintain this reputation. The H.B. is a good-class production, and quite above the average machine built up of proprietary units. The frame details are exceptionally good, he mudguarding and brakework especially so. A saddle tank fits over a well-lesigned frame having straight tubes. Two models are made, having 2¾ h.p. and 4 h.p. engine and two and three-speed gear boxes.

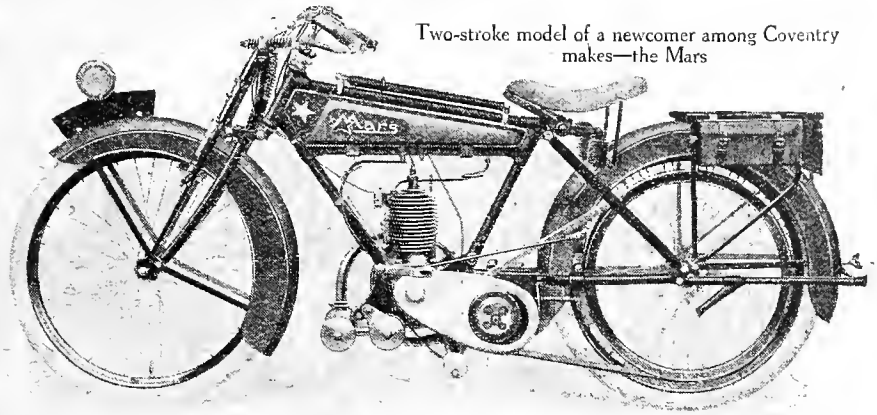
For Sporting Sidecarists.

Similar in general specification to the standard 4 h.p. machine, the Sheffield-Henderson is now marketed as a sporting sidecar outfit. In this case the rear frame is rigid, and in conjunction with a specially tuned Blackburne engine, a T.T. Amac carburetter, and a Sturmey-Archer close ratio gear box (if required), it makes a very attractive sidecar mount. A semi-streamline racing sidecar is fitted. Henderson Motors, Ltd., 73, Fitzwilliam Street, Sheffield, are the makers.

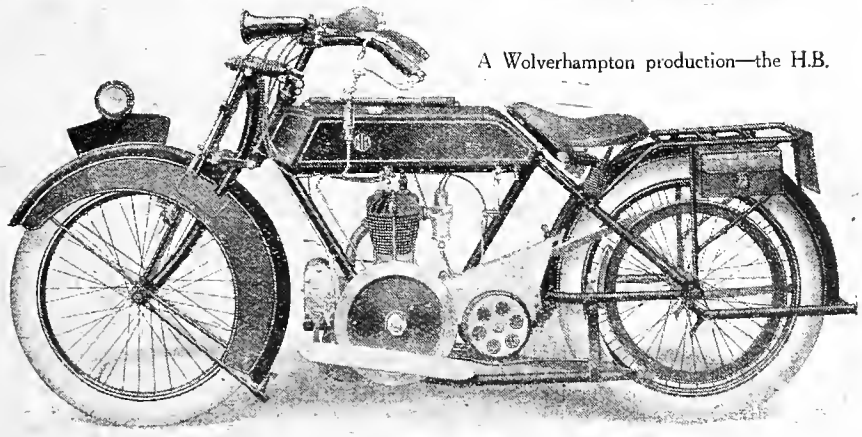
The Vindec Outfit.

Quite one of the handsomest sidecar outfits on the market, although following more or less standard lines, is the Vindec, marketed by Brown Bros., Ltd., Great Eastern Street, London, E.C.2. The motive power is provided by an 8 h.p. J.A.P. engine (85.5×85 mm. = 976 c.c.).

In the particular model under review, the transmission is by chain to a Sturmey-Archer gear box, and thence by belt to the rear wheel. An extension of the primary chain cover serves to protect the magneto drive. In future models all-chain drive will be provided if desired. Detachable and interchangeable wheels are fitted, the belt drum running upon a separate hub of its own.

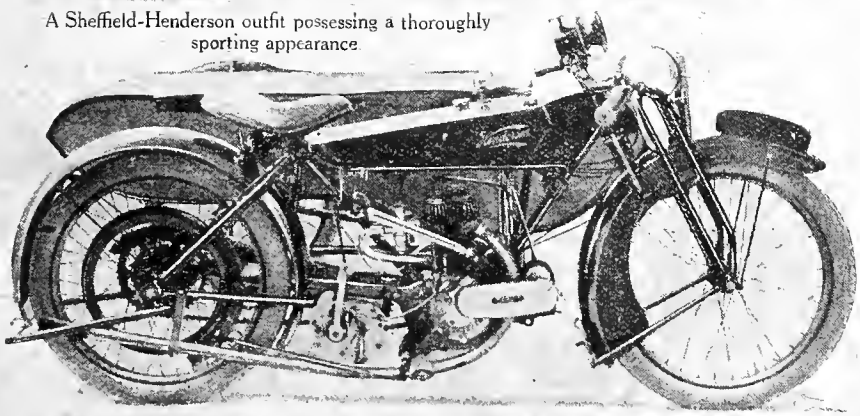


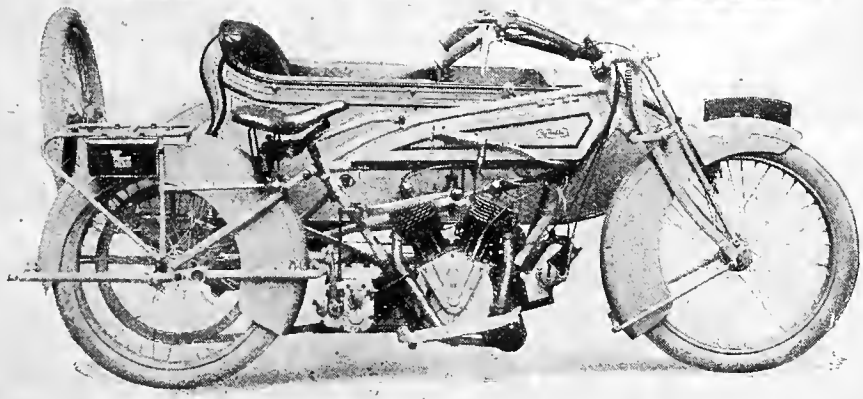
Two-stroke model of a newcomer among Coventry makes—the Mars



A Wolverhampton production—the H.B.

A Sheffield-Henderson outfit possessing a thoroughly sporting appearance





That exceptionally large mudguards do not always detract from appearance is evidenced in the 8 h.p. Vindec-Jap sidecar.

LITTON SLACK CLIMBED FIFTY TIMES.

A Successful Attack on a so-called "Impossible" Hill.

LITTON Slack, a mere track over the hills near the head of Miller's Dale, in Derbyshire, is one of those tantalising climbs which presents continual difficulty to motor cyclists.

Comparatively few non-stop ascents have been made, and its inclusion in the Six Days Trial of 1914 proved an entire *fiasco*. Recently in a well-supported trial only one solo and one sidecar out of a large entry reached the summit.

The gradients throughout the length of the hill (approximately half a mile) are severe, but it is doubtful if either on the first steep pitch at the foot or the last rise at the summit they approach the 1 in "5 point something" claimed for them. Drought had brought the hill into its most climbable condition, the chief difficulties to contend with being the loose and shifting surfaces near the bottom and again at the summit. For those not familiar with the hill an indication of its severity may be given when we say that our representative's 4¼ h.p. single-cylinder sidecar (with passenger normally seated) failed entirely through wheel slip.

This attempt was made on Thursday last, our presence being due to the fact that Mr. L. B. Henderson, the maker of the Sheffield-Henderson machines, was intent on that day to test one of his productions—the new sports model—in rather an unusual way.

At the summit of Litton Slack, Miller's Dale, Derbyshire, which was climbed fifty times last Thursday, by F. W. James on a 4 h.p. Sports Sheffield-Henderson.

The proposed test was to make fifty ascents, these, with the corresponding descents by way of the winding and less direct "slip road," to be done as far as possible without stopping. The machine was standard pattern with 4 h.p. Blackburne engine, having a lightened piston, flywheel, and connecting rod. New Clincher tyres were fitted, and the carburetter was an Amac. Runbaken magneto, Sturmey-Archer gear box (gears 5¼, 8¾, and 14 to 1), Brampton chains and Enfield cush hub were also in conformity with the usual specification. A Sphinx sparking plug with air-cooled central electrode was employed.

At 12.5 p.m. the machine started on its first circuit, being ridden by F. W. James, son of the well-known Sheffield agent, who handles this make. The circuit was approximately one and a quarter miles in length, and involved serious braking tests as well as the demands upon the power of the engine; for the "slip road" has two bad hairpins, one absolutely overhanging the valley below.

A Good Performance.

Twenty-five climbs were completed without stopping, when the rider decided to take some refreshments at two o'clock; thus the average speed was approximately 16 m.p.h.

A restart was made at 2.33 p.m., but the engine stopped firing owing to an oiled plug at the end of the first descent. In order to prevent any unobserved adjustments, the rider carried no spares or tools, and a mechanic had to run with the necessary renewal to the bottom; at the end of the next descent the same thing happened again. Probably the trouble was caused by the drip feed being left open during the refreshment stop.

Thereafter the machine ran perfectly until the fiftieth circuit was completed at 4.21 p.m., the average speed over the second period being 17½ m.ph.

At the finish the machine was in perfect condition so far as engine, brakes, transmission, and cycle parts were concerned; the tread of the back tyre, however, was much worn by the loose stones.

Altogether, the test provided the manufacturer with much useful data as to the capabilities of the new model and the success of various modifications which had been made to the engine.

The descent of the slip road was purposely chosen as a test of braking power. The Sheffield-Henderson is seen rounding the hairpin at the top, while over the valley the ascent of the top half of Litton Slack is clearly shown.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

OOK TO YOUR LICENCES.

Sir,—I noticed in your issue of some two or three weeks go, a case where two motorists had been fined, their umbers, etc., on the licences having faded by the sun. I ave just recently filled in the numbers and letters on my wn licences, as they had also faded. Why do not the uthorities use parchment ink when writing these, or Indian nk? This ink lasts for some years, through wet as well, nd would also stand the sun. DOUGLAS.

Rugby.

ETTY POLICE PERSECUTION.

Sir,—I read with interest about the Manchester reader who was stopped on the Wilmslow Road, Cheshire, for aving one shoe missing on his front brake. I was stopped n Haslingden for the same thing about eight weeks ago, nd although the shoe was on four miles previously, and he brake in order, I was fined £1, including costs, the hairman of the bench remarking that they had let me off ightly owing to my youth, and that they hoped it would e a warning. JUSTICE.

Waterfoot.

RY BATTERIES.

Sir,—It occurs to me that my experience with a dry attery lighting set might be of interest to others who may ontemplate the use of this system.

Early this year I purchased a small three-volt dry battery nd leather case from Siemens without the rear lamp, as I lready had this fitted to my machine, and, in addition to he rear lamp, I also connected it to a similar bulb in the cetylene head lamp for town use only. This arrangement was so convenient and atisfactory that it encouraged me to se the battery in the London-Land's End trial for lighting the rear lamp and lso an inspection lamp on the handlebars.

Since then I have used the same attery for the London-Edinburgh, and, n spite of frequent use between the wo events, it carried me through uccessfully. On the return journey he rear light failed for two hours, and n investigating I discovered that the vire to the rear lamp was chafed hrough and making contact with the rame, to which the earth wire from he battery was also connected.

I feel convinced that for the whole wo hours the battery was shorted, and et it gave a fair light after this ill-use.

I must confess that I am amazed at he results, and congratulate myself n the amount saved by not using the cetylene head lamp for town riding, part from the trouble of recharging he generator. I have no connection vith the makers of the batteries, but onsider it only fair to mention their ame. JAMES A. HOULT.

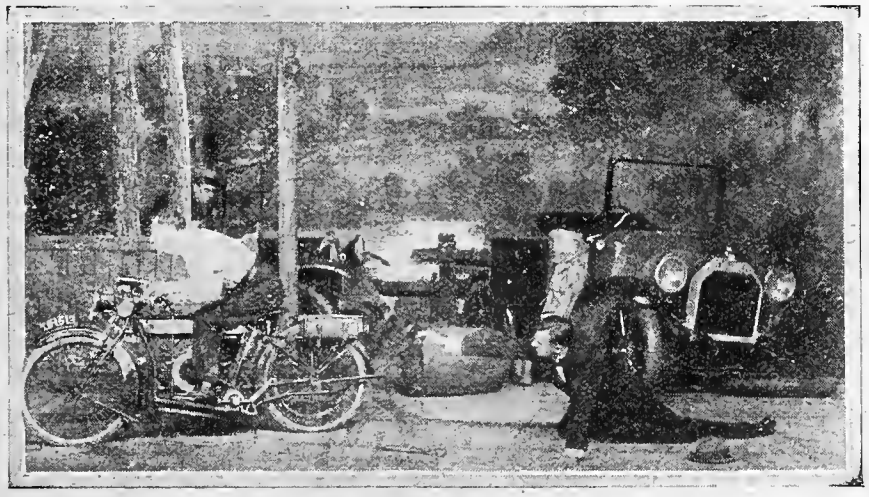
FROM THE MECHANICAL ENGINEER'S POINT OF VIEW.

Sir,—As a constant reader of your most interesting paper, may I crave illumination from such undoubted experts as "Draughtsman" and the Pelican Engineering Co. on the advantages of journal over cup and cone bearings in the hubs of motor cycles? Does the cup and cone type give much trouble? If so, how, and how often? It seems to me as the conventional type stands up to the T.T., and Brooklands racing, one may say that the motor cycle industry runs on cup and cone bearings (and very smoothly at that). Unless these experts can show that journal bearings are cheaper and give less frictional resistance, why change them?

"Draughtsman" is of opinion that motor cycle designers have not sufficient ability to design journal bearings. Doubtless, such firms as A.J.S., Sunbeam, Indian, Norton, Triumph, and Scott will vie with each other to obtain the services or someone who has that ability.

I quite agree with "Draughtsman" that, having seen one or two lightweights, one has seen all; but what other alternatives have the designers? One can hardly expect a seventy-guinea lightweight to have such startling and alarming features as crank and connecting rod transmission. If "Draughtsman" believes that cars are exempt from transmission troubles, let him stay in the neighbourhood of notable hill districts in Great Britain. It is not uncommon for crown wheels and bevel gears in the transmission to strip their teeth, and for propeller-shafts or half-axles to shear, although, happily, these troubles grow fewer each year. G.M.R.

Dalmuir.



THE MOTOR CYCLE IN THE THEATRE.

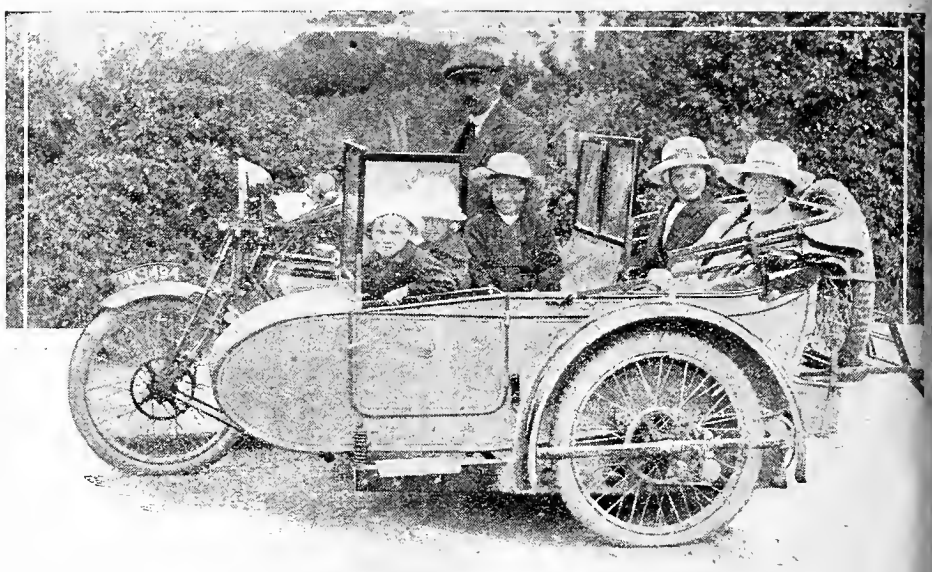
Motor cycles have an established *role* on the stage; they are invariably used by heroes and heroines when a thrilling "get away" has to be made. Here is a scene from the London success, "Out to Win," now appearing at the Shaftesbury Theatre.

A REAL FAMILY SIDECAR

Sir,—The enclosed photograph shows one way of reaching the seaside in comfort, with a family (and luggage). Although the sidecar is heavy, whatever side drag exists it is not transmitted to the handle-bars. It steers beautifully. I have had no experience with it so far on greasy tram lines, but I find no difficulty in winding country lanes, muddy or otherwise. You will notice the "sidecar" brake; this is connected with the brake on the driving wheel. Mr. Bischoff is quite right about the "pull to the left" feeling for the first few rides.

The sidecar is well sprung and rides very comfortably. The three children's seats in front are removable, and another adult seat may be used instead.

H. WOOLARD.



The difficulty of accommodating a family of six in a sidecar has been overcome by our correspondent, H. Woolard, by means of a special Acme outfit, adapted from the taxi sidecar made by the Coventry Acme Co

AN ULTRA-NARROW SIDECAR.

Sir,—Referring to "A.C.C.'s" letter enquiring for a sidecar outfit that will pass through a passage 53in. wide, I may say that I have recently had a sidecar fitted to my 3½ h.p. Rudge, and the outfit measures only 48in. overall width. The sidecar is one of a new design recently brought out by Henry Leslie, Ltd., Clifton Road, South Norwood, and, in addition to being strong, simple and light, can be bought for £15 10s. complete. The name of the sidecar is the "Tritube."

L. J. MOORE.

ENGINES ACROSS THE FRAME.

Sir,—On several occasions recently I have seen mentioned in *The Motor Cycle* (which is fully appreciated here in Italy) the arrangement of a V twin engine transversely in a frame of duplex variety. In view of the several advantages in the direction of cooling, compactness, and neatness of an engine and gear box unit, besides the possibility of adopting overhead valves, it would be interesting to know whether such designs have any great disadvantages.

I am wondering whether the imperfect balance presented by the V engine, the influence of torque and vibration is to be feared in the lateral balance of the machine, which in some way may influence the steering. Such a fault does not exist in the flat twin A.B.C. and is inappreciable in the little single F.N., but cannot the torque in a big single or B twin engine be felt?

ABROAD.

Bologna, Italy.

MOTORING IN SWITZERLAND.

Sir,—I was pleased to read the letter in your last issue from Dr. Paul Lang to the effect that Federal control of the police in Switzerland is likely to succeed the present Cantonal control. The proof of the pudding is in the eating, however, and it remains to be seen whether *motor vehicles*, as apart from their drivers and passengers, will be any more welcome in Switzerland under the new authority.

The first forms the required proofs should take are: (1) That policemen should cease to draw a percentage of fines inflicted in cases brought by them; and (2) that the power to demand money from a motorist should be taken from all policemen.

J. STUART WHITE.

AT THE BIG A.C.U. EVENTS.

At Brooklands, in the Isle of Man, at every venue where motor cyclists foregather for a big event, cameras of all sorts and sizes are greatly in evidence. In addition to the expert press photographers, there are small boys with little Brownies attempting the impossible with fast moving riders as their object; there are ladies who "snap" their friends and their friends' friends, and there are other keen amateurs who set out to collect "snaps" with definite objectives. These impressions have been selected from the Isle of Man films of Capt. N O Vinter of the Scott Co., who collected "Smiles," which reveal the spirit of motor cycledom at the T.T races, and are typical of motor cyclists generally, for a more genial fraternity does not exist

(1) A. Sapey, of the Lucas Electrical Co., Ltd.
(2) A popular Amac representative—"the genial Mr. Clibbery."
(3) A well-known A.C.U. judge, Dr. A. M Low
(4) R. R. Coes, from the U.S.A., stable manager of the Indian wigwam
(5) A. V. Ebblewhite, an official timekeeper and the friend of every man who attempts records at Brooklands.
(6) Prominent in Yorkshire J. Norman Longfield
(7) Norman Black, the Omega rider, who smiled all round the T.T. course
(8) R. W. Stansfield a Scott speed man

THE CYCLE CAR OF MODERATE PRICE.

Sir,—I was much interested in the article by "Ubique" under the above heading, and if a go-ahead manufacturer could be induced to venture on its production—and other firms would soon follow—the wants of a large section of the motoring public would be catered for. From evidences on the road, a considerable number of sidecar owners take a passenger on the pillion, and often an extra child in the sidecar, and it is for this class that "Ubique's" design would, I think, immediately appeal.

With regard to a suitable power unit, I am of the opinion that an 8 h.p. twin engine would prove better than a 600 c.c. single; also a three-speed gear box instead of two speeds. Neither of these could be considered as unnecessary "frills," especially as we all do not live in level counties, and also that the proposed cycle car would have to do the same serious work as is now done by high-class sidecar outfits.

As to price, it would seem that as some well-known sidecars with an 8 h.p. engine and three-speed gear box can be purchased for about £160, "Ubique's" cycle car should not, with a large output, cost much more, and tours could be undertaken in practically all parts of the country in far more comfort and cleanliness than with a sidecar.

I am aware that there is an enormous number of single-cylinder sidecars doing all that is asked of them, but after ten years' experience of all types I am driven to the conclusion that for a hilly country especially, and for serious touring, an 8 h.p. engine and three-speed gear box are a *sine qua non* for the transportation of more than one passenger and a moderate quantity of luggage.

It must not be forgotten, of course, that this four-wheeled cycle car would cost a few pounds per annum more in tax, insurance, etc., which I should think, however, would prove no detriment, in view of the increased comfort and cleanliness for the driver and pillion passenger in their new positions. DUMPLING.

Tavistock.

RIDING CONDITIONS IN IRELAND.

Sir,—In a run of about fifty miles (inside a twenty mile radius), I met the following "attractions" (?) to our already none too wonderful roads.

Fifteen trenches dug across the road and two felled trees. Nine of the trenches had been filled in, but still capable of giving one a considerable jar. Three others semi-filled about nine to twelve inches deep. Three open trenches were three feet across, and from two to three feet deep. One of these had a Ford in it, in rather an unusual position, and some parts of that Ford were "slightly" bent. I might also mention that I have been "held up" four times in one evening. T.C.D.

Dublin.

Sir,—As you no doubt know, motoring in parts of Ireland is a very risky undertaking just now. It is quite common to come on stone walls built across the road, trees felled to block all traffic, and trenches cut, to impede military operations.

A few days ago I was running nicely along with my wife in my Sunbeam sidecar and another lady on the Tan-Sad, when we saw a little roughness on the road in front of us. It proved to be a trench, with a little line of stones placed so as to hide the hole from anyone coming up the hill. This I avoided by a foot, and swung round a corner into another road. A mile further on a large tree lay in the way, and by breaking a few boughs and twigs I was able to make a way through. In a beautiful place called the Scalp, near Enniskerry, I ran round a corner slowly, and, before we could realise what had happened, I ran into a trench 2ft. 6in. deep by 18in. wide. My memory of exactly what happened is rather confused. There was a terrific crash, and I felt sure the machine was wrecked, but after hunting over for the damage I found the stand of the back wheel had slipped from its catch. The silencer, however, was crumpled up, but not even a spoke was bent. The wheels ran true, the springs of the sidecar were intact—in a word, the Sunbeam was practically not a whit the worse for its adventure.

I consider this very remarkable. I had a passenger load of about twenty-seven stone, and a heavy box and other luggage, and to be able to say my machine was none the worse is a very wonderful thing. It shows the excellent stuff there must be in the Sunbeam.

EDGAR F. KEATINGE.

SIDECAR BRAKES.

Sir,—Your contributor, Mr. P. W. Bischoff, is perfectly correct in his assumption that the "swing to the right," when a sidecar outfit is braked on the rear wheel only, does actually take place. This is accentuated to a great degree when a side-by-side two-seated car is fitted, as in the case of our motor cycle taxi. It was the knowledge of this fact that caused us to design our special Bowden-operated, compensated rear wheel and sidecar wheel brake before we marketed this vehicle.

In our system, upon which patents are pending, the compensation is obtained by passing the cable over a pulley between two stops, the pulley being drawn forward by the action of the foot lever.

We have found in practice, however, that it is not necessary to give a definite advantage in leverage to the rear wheel as, owing to the much greater length of the cable to the sidecar wheel brake, a proportion of the force applied is absorbed by the compression of the outer Bowden casing, with the result that the brake action is sufficiently reduced.

As our outfit is fitted with the usual internal expanding brake to the rear wheel of the B.S.A. twin in addition to the compensated brake which operates on the brake drums attached to the rims of the rear and sidecar wheels, it is possible for us clearly to demonstrate that the theory is correct.

It is found, when descending a steep hill, particularly if one takes to the wrong side of the road, that if the standard brake be operated on the rear wheel only, with a full load in the sidecar, *i.e.*, two passengers, the "pull to the right" is very marked indeed. If this brake be released and our compensated brake then operated, this "pull to the right" is immediately corrected and a straight course is steered without effort. Also, the retarding effect of this brake upon the two wheels will pull up the outfit in the same distance with equal effort, as the single wheel brake, and without skidding the wheels. With extra pressure the wheels can be skidded and the outfit pulled up in half the distance. With the road smooth and greasy, experiments show that if the rear wheel brake alone were applied the outfit would skid obliquely down the hill.

These facts we have demonstrated to many police authorities up and down the country in the course of our motor cycle taxi crusade, and they have unanimously expressed their unqualified approval of this system of braking.

If Mr. Bischoff is at any time in Birmingham it would give us great pleasure to take him to the local test hill in our demonstration motor cycle taxi and prove his theories to his satisfaction.

THE COUNTY CYCLE AND MOTOR CO.
Birmingham.

JUST WHAT A LARGE NUMBER OF OUR LADY READERS REQUIRE.

Miss Bradley, daughter of *The Motor Cycle* Continental correspondent, in the smart little cycle car, which engined with a 7-9 Harley-Davidson engine, has been found capable of 60 m.p.h.

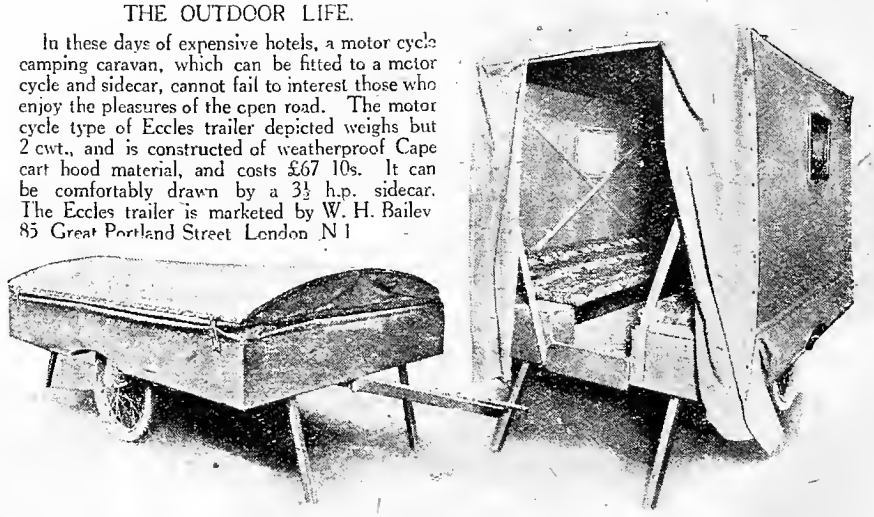
DAMAGE TO ROADS.

Sir,—I would like to say a few words to Messrs. Barnett who passed such a great deal of time away "thinking" about the traction engine before they wrote. I sincerely trust they were not the pair in charge of the engine in question, or their "vast experience" in driving it comes to nothing. I attempted to pass this machine on the road, but had travelled some distance before I could make the person in charge realise that he had not bought the road. The damage extends as far as Trentham, and between Stone and Trentham on three different stretches of road there were in all eleven men working for three days after the traction engine had passed; with all their experience they may possibly tell us how far the tax paid went in paying for repairs. Also at Trentham I saw two solo riders thrown by the rut caused through that machine. In one instance there was a lady riding on the carrier. If your correspondents require any more information the A.A. patrol at Trentham could, perhaps, furnish them with it.

AN "INEXPERIENCED" DRIVER.

THE OUTDOOR LIFE.

In these days of expensive hotels, a motor cycle camping caravan, which can be fitted to a motor cycle and sidecar, cannot fail to interest those who enjoy the pleasures of the open road. The motor cycle type of Eccles trailer depicted weighs but 2 cwt., and is constructed of weatherproof Cape cart hood material, and costs £67 10s. It can be comfortably drawn by a 3½ h.p. sidecar. The Eccles trailer is marketed by W. H. Bailey 85 Great Portland Street London N.1



CHAIN DIFFICULTIES

Sir,—Referring to your correspondent Mr. Henry Evans's remarks on the question of standard chains, may I be allowed, through your columns, to state the following experience.

During the third week in April I ordered through a local garage some spare half links for my Enfield gear chains from the chain manufacturer. At the end of a week a reply was received stating that two different types of the particular size of chain were made differing by $\frac{1}{100}$ in. in a certain dimension. My chain was accordingly accurately measured by micrometer and the exact dimensions forwarded. No reply having been received after a fortnight a second application was made (over a week ago). Three days ago an advice note was received referring to the despatch of the links, but up to the time of writing they have not been received.

I cannot believe that a delay of over a month is in the least necessary at the present time, when factories are almost without exception working short time, owing to the universal slump, to say nothing of the coal strike. I would add that the spares were unobtainable in the town, although of an exceedingly common size.

D.J.C.

Northampton.

BRAKES ON SIDECARS

Sir,—I have had a sidecar brake fitted on my Matchless combination. A compensator is fixed between the rear brake lever and the sidecar brake lever. The control rod is fixed just a little towards the rear wheel brake, on the compensator, there being more need of a better leverage on the rear wheel than the sidecar wheel on account of the extra weight of the bicycle. The brake and parts are so constructed as to allow the wheel to be changed in about seven minutes. I have experienced no bad effect on the steering, both brakes going on together and, owing to the compensator, both getting an even pressure according to weight. I am able to pull up in a very short distance at speeds from thirty to forty miles an hour without the sign of a skid. The cost comes out at £7. If any of your readers are interested I am willing to forward the address of the mechanic who carried out the work.

C. MAPLE.

MOUNTS FOR DISABLED RIDERS.

Sir,—With reference to the letter in the issue of June 23rd from J. Murray, I lost my right arm (at elbow) some two years ago, and have lately been looking for a solo machine that would not require a lot of alteration for me to be able to drive. Most machines seem to have controls on both sides of the handle-bars, some of which would have to be altered for foot control. I fail to see how a gear change can be worked, unless a special appliance is used in place of an artificial hand. I should be glad of some advice on this matter.

D. R. TOLLER.

[It should not be a difficult matter to convert most gear change mechanism to foot control. Several T.T. riders used foot control on Sturmey and Moss gears.—ED.]

SUMMARY OF CORRESPONDENCE.

Referring to recent notes by "Ixion," on the family sidecar, Mr. J. P. Sowerby suggests that an old A.C. Sociable may easily be converted to render it suitable for quite a large family.

"Powerplus" complains of the "road hogging" of fast cars. He asserts that certain owners of cars appear to delight in steering dangerously close to a motor cyclist they overtake.

Capt. the Hon. Eyre Massey writes in appreciation of the treatment received at the hands of the makers of the Dunelt motor cycle, and also of Messrs. Frank Whitworth, Ltd., their Birmingham agents.

Mr. F. G. Bailey, 72, Malvern Road, Gillingham, Kent, asks if any reader knows of a good second-hand motor-propelled invalid chair for sale.

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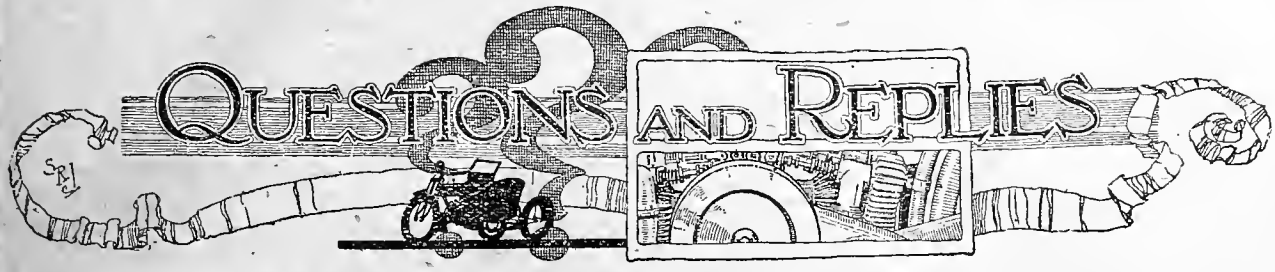


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

FINISH OF ENAMELLED FRAMES.

(1.) Is the enamel on a motor cycle varnished over after being stoved to give it a glossy appearance? (2.) If so, what varnish is used, and where can it be obtained?—R.E.

(1 and 2.) The enamel is not varnished after being stoved, as the finishing coats have a high gloss without further treatment.

RESPONSIBILITY FOR ACCIDENT.

I was riding a motor cycle along the main road and had a bad smash by running into a motor car, which was reversing. On my left-hand side was a small lane, not used by motors, etc. The driver of the car tried to turn at this spot, with the front of his car on the hill. He must have heard me coming, because he stopped as if for me to pass. When close on him his car came across the road. I ran into him because there was no room to pass. (1.) Was that driver allowed to turn on the by-lane? (2.) He has offered to pay some little towards expenses. Should I accept?—C.H.

(1.) It was quite permissible for the driver of the car to attempt to turn in the road; but he should have assured himself that the road was clear. (2.) As he offered to pay something towards the expenses of your repairs, he evidently admits responsibility, and your best course is to submit a reasonable account to him.

GEAR RATIOS AND SPROCKET SIZES.

Having a 5 h.p. V twin machine of my own building, I intend fitting a Sturmey-Archer gear box (chain-cum-belt drive) and should like to know the size of engine sprocket I shall need. There is a 14in. diameter belt rim on hand of which I should like to make use. Please enlighten me on the following: (1.) What number of teeth on engine sprocket shall I require, using 14in. diameter belt rim, to get a 5 to 1 top gear? (2.) What is the pitch and width of chain suitable for the Sturmey-Archer gear box?—P.P.

(1.) If you use a 14in. diameter belt rim on the back wheel, it is almost impossible to get a gear as low as 5 to 1, as it is inadvisable to use a sprocket with a smaller number of teeth than 12, and even this size is smaller than that recommended by the chain makers. With the present sizes of belt pulleys and 30 T. clutch sprocket, it would be necessary to use an engine-shaft sprocket of 10 T. to obtain a 5 to 1 top gear ratio. (2.) The Sturmey-Archer three-speed gear box is intended to take $\frac{5}{8} \times \frac{3}{8}$in. chain.

ADJUSTING HUB GEAR.

The Sturmey-Archer three-speed hub in my 1914 Triumph will not give second gear. I get bottom and top, also free engine, and can get second for a few revolutions. Then it appears to slip out down to low. I have tried adjusting it in all positions. All the pinions are in good order. Can you tell me what to do, as nothing appears to be worn at all?—W.H.

If the pinions and other internal parts of the hub gear are in as good condition as you state, there is no reason why you should not get all three gears, provided the control is correctly adjusted. Place the control lever in the low gear position, and completely slacken off the adjustment of the rod; the low gear should now be fully engaged. Gradually increase the tension of the gear rod adjustment until it is just taut, then move the lever towards the second gear position. About midway between the two gears, it should be possible to revolve the back wheel independently of the belt drum without any grating sound from the pinions; use the adjuster until this position is found. There should be a neutral adjusting position on the control quadrant, also between second and top gears.

Important Dates.

Sat., July 16th—Ilkley M.C. and L.C.C. Open Reliability Trial.

Sat., July 23rd—East Midland Centre A.C.U. Open Speed Trials

Sun., July 24th—Motor Cycle Grand Prix Race in France.

Sat., July 30th—Newcastle and District M.C. Open Speed Trials.

Mon., Aug. 1st, to Sat., Aug. 6th—International Six Days Trial in Switzerland.

Sat., Aug. 6th—B.M.C.R.C. Open Brooklands Meeting.

Sat. Aug. 6th—North Wales M.C.C. Open Reliability Trial.

Fri. Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat. Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd A.C.U. Six Days Trial.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Mon., Nov. 28th, to Sat., Dec 3rd—The Olympia Motor Cycle Show.

REMOVING J.A.P. TIMING WHEEL.

How is the timing wheel on the engine-shaft of an 8 h.p. o.h.v. J.A.P. air-cooled engine removed? Is it screwed on, and, if so, is it right or left-hand thread?—W.O.F.

The timing wheel is screwed on to the mainshaft with a left-hand thread.

VIBRATION.

When running my $2\frac{3}{4}$ h.p. two-stroke on the stand at a little over a quarter throttle, a side-to-side vibration makes itself evident. By that I mean that the whole engine bodily sways from side to side. This, however, ceases at half-throttle and over. This condition of affairs is also evident on the road, although not so markedly, both when running light and also when running fast up a gradient. (1.) Do you consider that the above vibration is caused by the balance weights being unequal? (2.) Is it possible to find out which is the heavier of the two with a view to rectification? The crankshaft is made in one piece, and, owing to the complicated shape of the bob-weights, it is practically impossible to measure them with a view to finding their volume and so checking them that way. (3.) Can you recommend a satisfactory jointing medium for making an oil-tight crank case?—W.G.W.

(1 and 2.) It is most unlikely that the vibration which you mention is caused by the balance weights being unequal, although without actual inspection it is difficult to diagnose the trouble. Presumably, you have made quite sure that the engine bolts are a good fit, and that the crank case is well secured in the frame, also that the main bearings are in good condition and that the flywheel and crankshaft are both running truly. (3.) If the faces of the crank case and cylinder are in good condition, a packing made of strong brown paper smeared on both sides with seccotine should answer well.

A Low Priced Monocar.

The price of the A.V. monocar is now one hundred guineas, complete with windscreen and mechanical horn; inadvertently we mentioned the figure as £100 in a recent issue.

Flywheel Spanners.

A special spanner for locking up the flywheels and driving centre of Villiers engines is being marketed by the Villiers Engineering Co., Ltd., Blakenhall, Wolverhampton. The average motor cycle spanner is too small for this purpose, and the special spanner is of a very robust character, and is sold for 3s. 6d. Incidentally, it may be used as a plug spanner.

Transport to the Grand Prix.

A scheme for the transport of competing British machines to France for the Grand Prix at Le Mans on July 24th is being organised by the Hutchinson Tyre Co., 70, Basinghall Street, London, E.C.2. Briefly, the company will transport any competing machine without worry to the riders, provided that it is delivered to them securely crated. They also suggest that if all British manufacturers and riders could arrange to cross on the same day, the Hutchinson interpreter would be placed at the disposal of the party.

British Tyre Trade.

A booklet published by the British Rubber Tyre Manufacturers' Association describes the position of the rubber tyre industry in Great Britain. It is pointed out how the British tyre trade is placed in a difficult position owing to the cheaper labour rates on the Continent and the fact that foreign tyres are still allowed to be imported into this country free of duty. As regards tyre imports, the greatest number (12,045) come from Belgium, while 10,027 covers have been received from the United States. The largest number of inner tubes was received from France (325,151), America coming second with 289,037.

SPARKLETS

American Machines in South Africa.

In a recent Port Elizabeth M.C.C. flexibility hill-climb, 7-9 h.p. Indians were first, second, and third in the unlimited solo class; while in the unlimited sidecar class the same makes gained the first five places.

A Successful North-country Rider.

Hugh Gibson, who recently gained the N.W. Centre (A.C.U.) Deansgate Challenge Cup probably has a longer list of successes in reliability trials than any other rider in the country. He still holds the John-o'-Groat's to Land's End and the Irish End-to-End sidecar records, and has innumerable meritorious performances in English and Scottish Six Days Trials to his credit. A native of Lancashire, it is fitting that he should be responsible for the competition work of the Royal Ruby machines.

Some T.T. Echoes.

R. E. Pugh, who rode a Levis, was reported to have had trouble with his magneto spindle. This idea no doubt arose from the fact that when questioned by an official he said the defect was the "back spindle," which was misunderstood for "mag. spindle." His E.I.C. magneto functioned perfectly throughout.

In addition to the amounts already mentioned in connection with Mr. A. Ross's I.O.M. Hospital Fund, the sum of £4 1s. 8d.; being proceeds of the A.C.U. "*Tea-Tea*" *Gazette*, has to be acknowledged.

The fastest lap in the 250 c.c. class of the Junior Race, which was accomplished by B. Kershaw (2¼ New Imperial), was no doubt facilitated by the Cox-Atmos carburetter.

The following statistics regarding the use of gear boxes in the T.T. races have been compiled: In the Junior Race twenty-three motor cycles were fitted with Sturmey-Archer gears, nineteen with other proprietary makes, and the remaining twenty-four were fitted with gears made by the manufacturers of the machines. In the Senior race twenty used Sturmey-Archer gears, one of another make, and forty-seven with gears made by the manufacturers themselves. During the actual races no machine equipped with the Sturmey box had gear trouble.

H. R. Harveyson, the unlucky member of the Indian team, told us that his troubles were entirely due to inner tubes. On the second lap the seam in the tube failed him at Bray Hill, and on the third lap the butt-ended tube caused similar trouble.

Ball bearings made by the Skefko Ball Bearing Co., Ltd., Luton, were fitted to the triumphant A.J.S. machines in the T.T. races.

The T.T. was a decided success for Renold chains. Out of thirty gold medal winners twenty-nine used this make. The winners of all classes but the 750 c.c. in the 500 miles race also used them.

An American Four-cylinder.

The manufacturers of the Ace four-cylinder, which was introduced into this country last year, have now entirely got over the financial difficulties they have been experiencing, and are now working on full time.

Review.

"The Handy Boy's Book" (Ward, Lock, and Co., Warwick House, Salisbury Square, London, E.C.4, 6s.): A book which will certainly delight the heart of the younger readers of *The Motor Cycle*. It teaches the youngster how to use his hands, first, by simple work, such as carpentry, then by more advanced work, such as wood-turning, till it comes to the question of motor cycles, to which a particular chapter is devoted. The clear illustrations showing the four-cycle principle are taken from "Motor Cycles and How to Manage Them." There are also a few notes concerning photography, the making of tents, and camping.

Catalogues Received.

Ward and Avey, Ltd., Somerset Road, Teddington, Middlesex: Folder describing the 5, 6, and 8 h.p. models of the 100 guinea A.V. monocar.

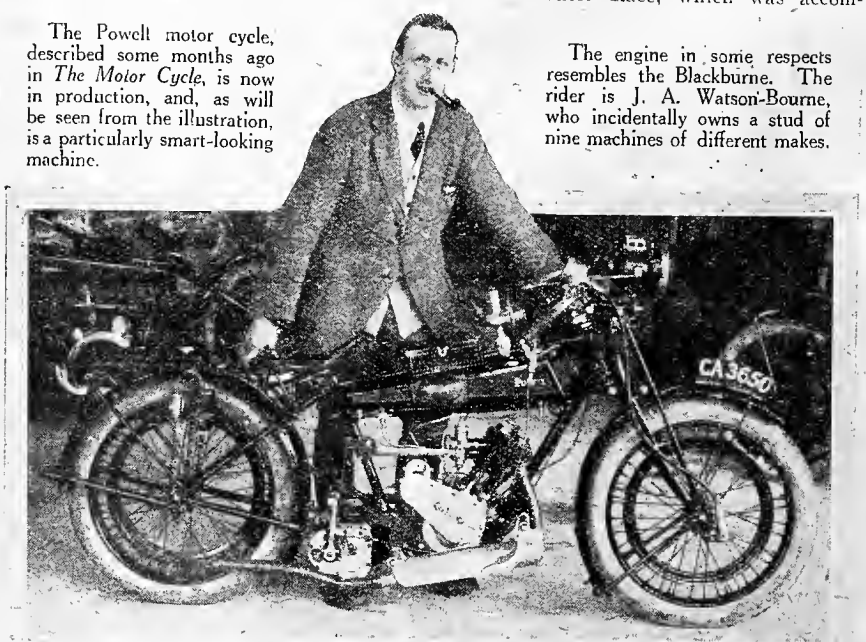
Ferodo, Ltd., Sovereign Mills, Chapel-en-le-Frith: A loose leaf price list dealing with the well-known Ferodo friction materials.

Amac, Ltd., Aston Cross, Birmingham: A list detailing the successes of machines in the T.T. races equipped with Amac carburetters. These carburetters were fitted to the first three of the Junior, and first, third, and fourth in the Senior, Races.

Douglas Motors, Ltd., Kingswood, Bristol: Spare parts list of the 2¾ h.p. Douglas models and a folder giving the specification of the "completely equipped" models

The Powell motor cycle, described some months ago in *The Motor Cycle*, is now in production, and, as will be seen from the illustration, is a particularly smart-looking machine.

The engine in some respects resembles the Blackburne. The rider is J. A. Watson-Bourne, who incidentally owns a stud of nine machines of different makes.



SPEED TRIALS AT WESTCLIFF.

Inter-club Mid-week Event supported by Large Entry. Duel between Motor Cycle and Car.

THE Western Esplanade at Westcliff is a long and sticky stretch of Tarmac, which is relieved at one point by a slight left-hand bend, but it provided an excellent course for the open speed trials organised conjointly by the Essex M.C. and the Essex County and Southend A.C., held last Thursday.

An entry list, including numbers of well-known riders and machines, aided by the rapid and unceasing sequence of events, held the interest of the many hundreds of spectators lining the route from the first to the last event, motor cycle and car classes being run alternately.

Some very fast times were made; but, since there were no fewer than thirty-four motor cycle events, a record of each cannot be attempted. Throughout the event there were no untoward incidents, and the organisation was most efficient.

Unfortunately, what is usually the most exciting race of the day—a duel between the fastest car and the fastest motor cycle—was somewhat disappointing. H. Le Vack was pitched against J. F. Duff on a 200 h.p. Fiat. The Fiat raced home many yards ahead of the Indian. The following are the place winners on time. Formula results are referred to on page 62.

A duel between a single and a twin. H. Le Vack on his 7-9 h.p. Indian and Harold Petty (3½ Norton) riding almost "neck and neck" in the Southend Speed Trial.

Results on Time.

250 c.c. CLASSES.

ANY TYPE.—Flying start: 1, H. Newey (2¼ Levis), 42⅘s.; 2, J. V. Prestwich (2¼ Diamond-Jap), 42⅘s.; 3, A. A. Swan (2¼ New Imperial), 44⅕s. Standing start: 1, J. V. Prestwich (2¼ Diamond-Jap), 47⅞s.; 2, B. Kershaw (2¼ New Imperial), 50s.; 3, H. Newey (2¼ Levis), 50⅘s.

STANDARD TOURING.—Flying start: 1, G. M. Greening (2¼ Francis-Barnett), 44⅕s.; 2, J. V. Prestwich (2¼ Massey-Arran-Jap), 46⅕s.; 3, J. Lidstone (2¼ James), 47⅗s. Standing start: 1, H. Newey (2¼ Levis), 47⅞s.; 2, G. M. Greening (2¼ Francis-Barnett), 50s.; 3, J. V. Prestwich (2¼ Massey-Arran-Jap), 53⅕s.

350 c.c. CLASSES.

ANY TYPE.—Flying start: 1, J. V. Prestwich (2¼ Diamond-Jap), 41s.; 2, A. A. Prestwich (2¾ Dot-Jap), 42⅗s.; 3, A. A. Swan (2¼ New Imperial), 44⅗s. Standing start: 1, J. V. Prestwich (2¾ Dot-Jap), 48⅗s.; 2, B. Kershaw (2¼ New Imperial), 49s.; 3, A. A. Prestwich (2¼ Diamond-Jap), 51s.

STANDARD TOURING.—Flying start: 1, A. A. Prestwich (2¾ Dot-Jap), 39⅗s.; 2, J. V. Prestwich (2¼ Massey-Arran-Jap), 48s.; 3, H. F. Edwards (2¾ Coulson-Jap), 48⅗s. Standing start: 1, H. F. Edwards (2¾ Coulson-Jap), 52⅗s.; 2, J. V. Prestwich (2¼ Massey-Arran-Jap), 53⅕s.

500 c.c. CLASSES.

ANY TYPE.—Flying start: 1, H. Petty (3½ Norton), 31⅕s.; 2, G. A. Vandervell (3½ Norton), 34⅗s.; 3, B. S. Allen (3½ Norton), 35⅗s. Standing start: 1, H. Petty (3½ Norton), 38⅕s.; 2, B. S. Allen (3½ Norton), 42⅗s.; 3, J. V. Prestwich (2¼ Diamond-Jap), 48⅕s.

STANDARD TOURING.—Flying start: 1, G. Strange (3½ James), 37⅕s.; 2, H. Le Vack (3½ Indian), 38⅗s.; 3, J. Day (3½ Norton), 40s. Standing start: 1, E. A. Marshall (3 A.B.C.), 43⅗s.; 2, G. Strange (3½ James), 45s.; 3, J. Day (3½ Norton), 46s.

600 c.c. CLASSES.

SIDECARS (ANY TYPE).—Flying start: 1, B. S. Allen (3½ Norton sc.), 46s. Standing start: 1, B. S. Allen (3½ Norton), 52⅕s.

750 c.c. CLASSES.

ANY TYPE.—Flying start: 1, G. A. Vandervell (3½ Norton), 37⅗s.; 2, H. Petty (3½ Norton), 38⅗s.; 3, J. V. Prestwich (2¾ Dot-Jap), 42⅕s. Standing start: 1, H. Petty (3½ Norton), 37⅗s.; 2, G. A. Vandervell (3½ Norton), 39⅗s.; 3, J. V. Prestwich (2¼ Diamond-Jap), 47⅕s.

STANDARD TOURING.—Flying start: 1, J. Day 3½ Norton), 33⅗s.; 2, G. Strange (3½ James), 39⅗s.; 3, D. Crawford (5 Zenith), 45s. Standing start: 1, G Strange (3½ James), 43⅗s.; 2, A. A. Prestwich (2¼ Dot-Jap), 48⅕s.; 3, J. V. Prestwich (2¼ Massey Arran-Jap), 56⅕s.

STANDARD TOURING SIDECARS.—Flying start: 1, D. Crawford (5 Zenith), 54⅕s. Standing start: 1, G. E. Stobart (5-6 James), 50⅗s.; 2, D. Crawford (5 Zenith), 1m. 2⅗s.

ANY SIDECAR.—Standing start: 1, D. Crawford (5 Zenith), 1m. 8⅗s.

THE UNLIMITED CLASSES.

ANY TYPE.—Flying start: 1, H. Le Vack (7 Indian), 29⅗s.; 2, H. Petty (3½ Norton), 31⅕s.; 3, G. A. Vandervell (3½ Norton), 33⅗s. Standing start: 1, H. Le Vack (7 Indian), 39⅗s.; 2, H. Petty (3½ Norton), 40s.; 3, D. H. Davidson (7-9 Harley-Davidson), 42⅕s.

STANDARD TOURING.—Flying start: 1, G. Strange (3½ James), 37⅗s.; 2, A. A. Prestwich (2¾ Dot-Jap), 43⅗s.; 3, J. V. Prestwich (2¼ Massey-Arran-Jap), 46⅗s. Standing start: 1, L. McCardle (7-9 Harley-Davidson), 41⅗s.; 2, G. Strange (3½ James), 44s.; 3, A. A. Prestwich (2¼ Massey-Arran-Jap), 46s.

ANY SIDECAR.—Flying start: 1, H. Le Vack (7 Indian), 37⅗s.; 2, D. H. Davidson (7-9 Harley-Davidson), 42⅗s.; 3, F. C. Pead (7-9 Harley-Davidson), 47⅗s. Standing start: 1, H. Le Vack (7 Indian), 43⅕s.; 2, W. J. Barker (7-9 Zenith), 1m. 1⅕s.

STANDARD TOURING SIDECARS.—Flying start: 1, G. E. Stobart (5-6 James) 38⅕s.; 2, F. C. Pead (7-9 Harley-Davidson), 48⅗s. Standing start: 1, W. Veasey (8 Henderson), 50⅗s.; 2, F. C. Pead (7 Indian), 53⅗s.; 3, W. J. Barker (7 Zenith), 56⅗s.

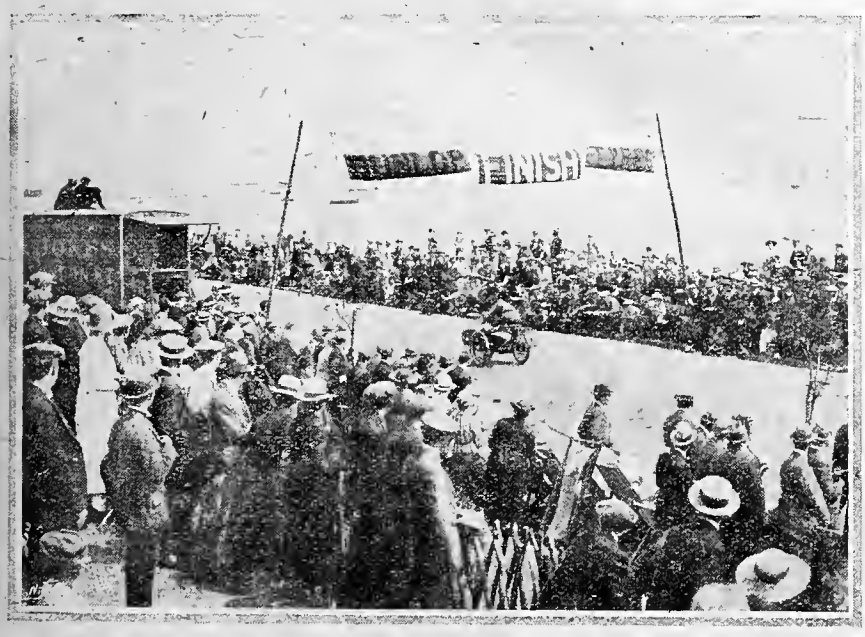
CYCLE CAR CLASSES.

TOURING THREE-WHEELERS.—Standing start: 1, E. B. Ware (8 Morgan-Jap), 52⅗s.; 2, K. G. Cockerell (8 Morgan), 53⅗s.

ANY THREE-WHEELERS.—Standing start: 1, E. B. Ware (8 Morgan-Jap), 54⅗s.

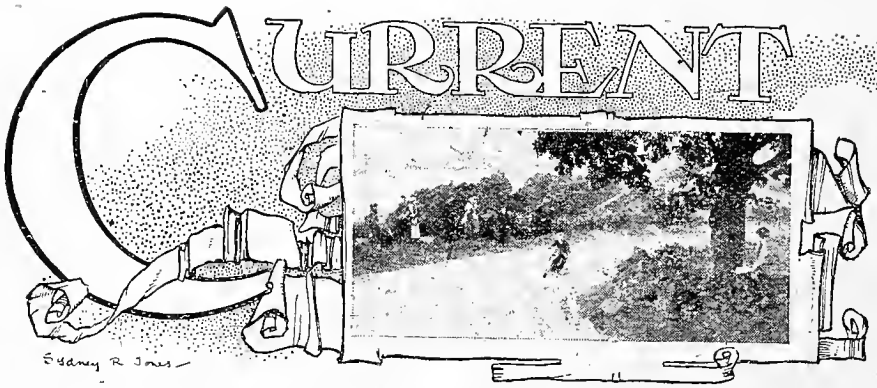
ANY FOUR-WHEELED CYCLE CAR.—Standing start: 1, H. R. Godfrey (G.N.), 43⅕s.; 2, G. L. Hawkins (G.N.), 45⅗s.; 3, H. W. Martin (G.N.), 1m 2⅕s.

TOURING FOUR-WHEELED CYCLE CAR.—Standing start: 1, H. W. Martin (G.N.), 1m. 10⅕s.; 2, E. H. Alliott (Carden), 1m. 17⅗s.



Showing the great public interest in the Speed Trials at Southend. G. G. Stobart, 5-6 h.p. James sidecar, finishing.

CURRENT CHAT



Times to Light Lamps

July 14th	... ...	9.41 p.m.
,, 16th	... ...	9.39 ,,
,, 18th	... ...	9.37 ,,
,, 20th	... ...	9.35 ,,

More Index Marks for Birmingham.

In addition to the index letters O, OA, OB, OE, and OH, reserved for Birmingham motorists, there is now OK.

Motoring Visitors to France.

Having regard to the imminence of the Grand Prix race in France, and to the obvious necessity of getting all the money possible into that country for the purpose of strengthening her financial position, it seems most unfortunate (says *The Autocar*) that the French should have selected motor cars as articles of presumed luxury, to be taxed unmercifully on importation.

Australian Preferential Tariff.

According to Reuter's Trade Service, the House of Representatives in Australia has agreed to the following changes in the tariff:

Motor cycles, excluding sidecars.—British preferential, 20%; intermediate, 25%; general, 30%.

This new tariff represents a reduction from £10, £11, and £12, or 30%, 35%, and 40% *ad valorem* respectively to the foregoing exclusive *ad valorem* rates.

Colouring Petrol.

For many years the only means of indicating to a motorist the grade or quality of his petrol, apart from its performance, has been by the use of differently painted cans. So many distinctive colours of cans are now marketed that the position is somewhat bewildering, and with the advent of the roadside pump a ready means of identification of the various grades is of great benefit. We hear that a method of colouring petrol has now been perfected, and gives results which are of a most convincing nature. To know that Grade 1 petrol is blue and Grade 3 red, or any other combination of colours, and also to be assured that if water should by any chance be present in petrol it will not absorb any of the colour of the spirit but remain water-white, will remove many of the minor worries from the mind of the motorist. Mr. Knight, of the Air Ministry, Alexandra House, Kingsway, London, W.C.1, is responsible for the invention of this method of colouring.

Motor Cycling in Ceylon.

The Ceylon Motor Cycle Club has come to life again, and has some sixty members The club intends to encourage the sporting side of motor cycling by organising hill-climbs, short reliability trials, speed competitions, etc. In due course the club will be affiliated to the A.C.U., with a view to obtaining for the members the usual privileges when they go home.

Arbuthnot Trial, 1922.

During the recent Arbuthnot Trophy Trial all the competitors and officials met to discuss next year's competition, and some valuable suggestions were made. As regards date, it was thought that Easter leave would best suit officers in ships and in barracks. It was also suggested that entries should not close till just before the event. Entries must be sent by postcard and paid for on arrival. This would be a great boon to officers who might not get leave till the last moment. Several competitors pointed out that the Navy possessed a number of two-stroke riders who were afraid to compete, and it was then learnt that these machines were known in the service as "Splutterers." Someone then suggested a "Splutterers' Cup." The meeting was finally found to be in favour of making the competition a team trial between teams from various units, and it was suggested that the Admiralty should be approached and asked to suggest which units might send entries. It was also suggested that the course might be easier, repairs might be allowed, but that there should be non-stop sections and a stricter time limit.

SPECIAL FEATURES

MORE MID-YEAR MODELS.
CROSSING TO THE CONTINENT.
THE SCOTTISH TRIALS

A Rally in the Midlands.

The manufacturers of Easting windscreens are holding a rally in the recreation grounds at Stratford-on-Avon on July 23rd. Prizes will be given in various events, and all motor cyclists are invited.

An 80 lb. Miniature.

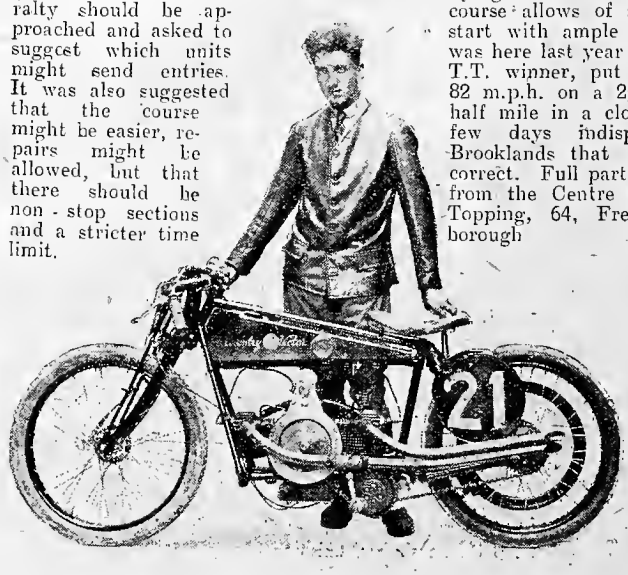
America's latest motor cycle is a miniature on scooter lines embodying an open pressed steel frame, which is sprung, a vertical twin-cylinder engine, two-speed and clutch, and disc wheels. It weighs 80 lb., and sells at 150 dollars.

500 Miles in 25 Hours.

Recently A. O. Brett, of Scarborough, set out to do 500 miles in twenty-five hours in order to qualify for a medal offered by the York M.C., riding a 5-6 h.p. Coventry-Eagle sidecar. Starting from Scarborough at six o'clock one Friday evening, the rider went to Barnet, then returned *via* York to Great Smeaton, and returned to York, having covered 506 miles within the required time. Total weight of the outfit was 8 cwt. 1 qr., and consumption averaged 60 m.p.g.

Open Speed Trials at Clipstone.

After a lapse of about ten years Clipstone Drive, Mansfield, is again to be used for open speed trials, the event being the competition organised by the Loughborough and Mansfield Clubs for the East Midland Centre on July 23rd. Clipstone is probably the finest course in the country, and on the present occasion there is to be a standing and flying kilo for the various classes. The course allows of a very generous flying start with ample room for pull up. It was here last year that H. R. Davies, the T.T. winner, put up his pace of nearly 82 m.p.h. on a 2¾ h.p. A.J.S. over the half mile in a closed event, and after a few days indisputably confirmed at Brooklands that the timing had been correct. Full particulars may be obtained from the Centre Secretary, Mr. K. S. Topping, 64, Frederick Street, Loughborough

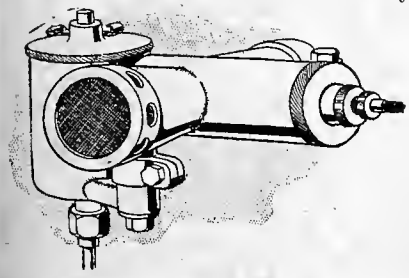


E. W. Parham with the short wheelbase Coventry-Victor, on which he competed in the 500 mile race at Brooklands. He was first in his class, having covered the 500 miles in 8h. 55m. 42s. at an average speed of 56 m.p.h.

127 Starters in this Week's Big Event organised by the Edinburgh M.C.

EDINBURGH, SUNDAY.

A RECORD entry and a record drought are the top spots of the 1921 "Scottish." If the rain does not come speedily, the dust will baffle description, especially as thirty-five sidecar outfits, four runabouts, and fourteen light cars are sandwiched in amongst the eighty solo entries. But if thunder rain should come, it is liable to assume the form of a cloudburst in these violent latitudes, and floods may easily provide worse going than a loose, dry surface. Meanwhile the officials blandly describe the trial as "easy." They have organised it down to the last tack, and have already



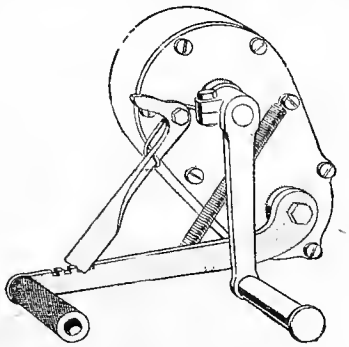
A new single lever carburetter, the Wex, is fitted to three of the Hawker machines. A single jet with long narrow slit diffuser is employed.

ordered the medals—fifty gold, thirty silver, and ten bronze—which they hope to present to the successful competitors within three hours of the finish next Saturday. An interesting proviso in the rules deals with the question of wheelslip on observed hills. Plenty of observers are provided, and a rider who suffers from officially observed wheelslip is entitled to lift his machine on to a harder patch of road (if he can find one) and score a clean ascent, provided he does not stop the engine. There are eight official hills, of which two—the Inverfarigaig Corkscrew and Ballochandrain—are new. The Edinburgh sportsmen are working like niggers to put the wind up us about all the hills, but I believe that Amulree and Glendoe will still provide the real resistance. Amulree is the sort of hill that one can never be sure of, and Glendoe is full of real gradient.

The New Hill—Inverfarigaig.

Ballochandrain — on Friday — is intended to weed out any engines which cannot hold their tune for a week. The Corkscrew is a test of driving. It includes—some say eight, some say fifteen—hairpins: anyhow, four of them occur almost simultaneously. The grade is not frightful, the edges of the road are smooth, and its centre is very rough. As all good motor cyclists know, hairpins should be taken on the outside. So the men will have to cross and recross the rough road centre very dexterously in order to tackle the successive Z turns in good style. Z to the *n*th power is the official description of this hill. Tornapress, of course, will always take its toll.

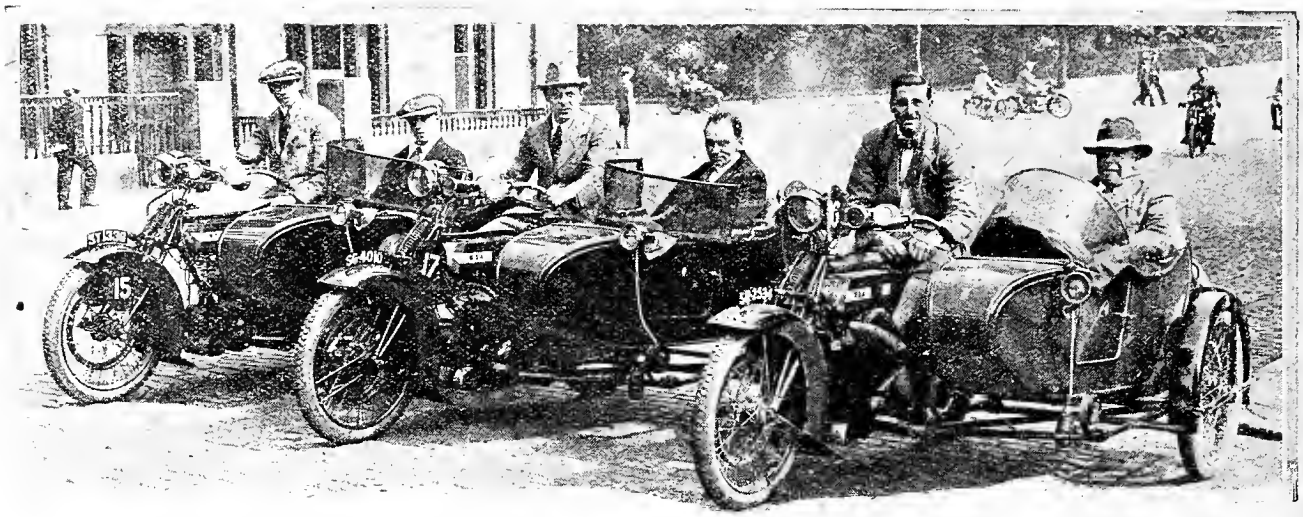
There are plenty of interesting entries. Most of the motor cyclists are yearning with an unholy joy to see the fourteen light cars perform on Tornapress; seven of these cars are air-cooled. Possibly the boot will be on the other leg—if it isn't, the road threatens to become well and truly blocked. Four Hawker baby two-strokes, with sump lubrication and flywheel magnetos, are entered. H. G. Hawker could not get away to drive the sidecar, but T. Sopwith is handling one of the solo machines: the sidecar has a simple three-tube chassis, of which the main member was once a Dolphin undercarriage axle. "M. T. Calderon" is an anagram in pseudonyms, this rider's doctor having forbidden him to compete; nevertheless, he covered the 325 miles between his home and Edinburgh in one day.



A long pedal provides delicate clutch control on the Zenith (R. B. Clark's), a simple ratchet holding the clutch out when required.

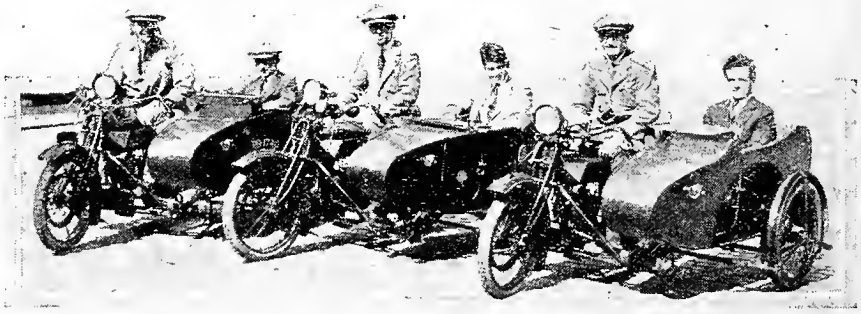
Watson-Bourne is still suffering from the torn ear which resulted from his scrap home to Ramsey after the T.T.; but Brough has pressed one of his Swiss customers, Rudolph Banner, of Zurich, into the service, and he will be number one, never having ridden in a competition.

The B.S.A. people have three teams entered (two solo and one passenger), whilst



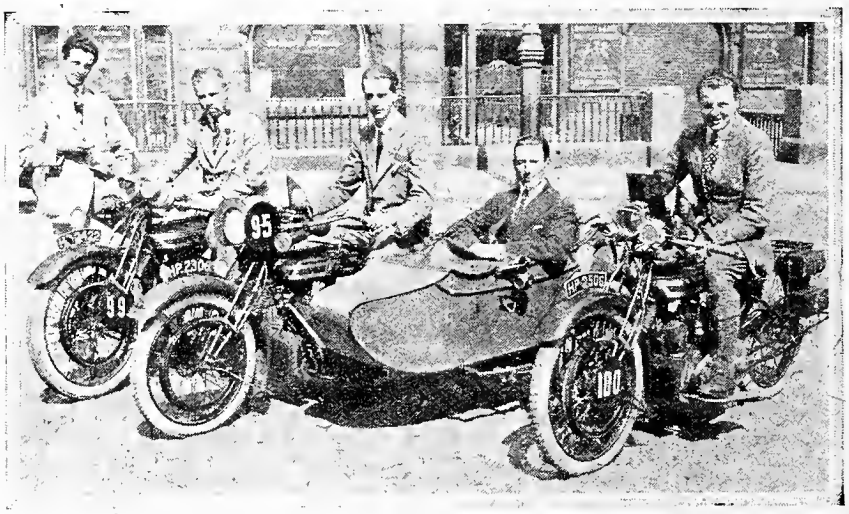
The B.S.A. passenger team. (From left to right) T. Hunter, A. Shepherd, and D. S. Milne, all on 6-7 h.p machines.

Rovers divide their nine men into one solo team and two passenger trios. Gear ratios vary incredibly. The Hawker sidecar has one of the coveted new Sturmey-Archer lightweight three-speeds, with ratios of $5\frac{1}{2}$, $10\frac{1}{4}$, and 17, whereas the emergency gear of two of the Brough Superiors is 5.2 to 1. Eaton's Brough has its Lucas switchboard and Bonniksen speedometer very neatly mounted in an old Harley tool-box on the top of the tank. The solitary Cedos entry has a Moss three-speed box. H. F. S. Morgan has very wisely brought up a machine with a short wheelbase and plenty of ground clearance—he is using a water-cooled J.A.P. engine. The rules demand touring head lamps. Many riders have hastily purchased lamps of the hen's egg variety. The general opinion is that very little will be seen of the sidecarettes after the trial once enters the "doorstep" districts. One or two machines are equipped with a very taking little French speedometer—the Jaeger. Cased in aluminium, its weight is far below the average. The driving pinion is fixed to three front wheel spokes by hook bolts. Carfrae is driving his 1915 $2\frac{3}{4}$ h.p. A.J.S., having failed to get delivery of a new model in time. Several machines are fitted with the Dawson patent nail catcher, quite the neatest device of this pattern which I have seen. The Metro-Tyler has a Blackburne engine. The New Imperial outfit has a luggage carrier extending forward of the sidecar, which is generally mistaken for a life-saving apparatus. The beautiful running of the Raleighs arouses much favourable comment. Nothing has a quieter tick-over. The Raleigh riders are by way of being "gadget merchants," and Fenn runs Harold Karslake close for the championship in this department. Fenn has a pneumatic saddle cover, a haversack holder on his rear forks, a carbide tin container enamelled in Raleigh colours, and drawers under his foot plates containing spare chains embedded in molten grease, not to speak of a vermilion knob on his gear lever.

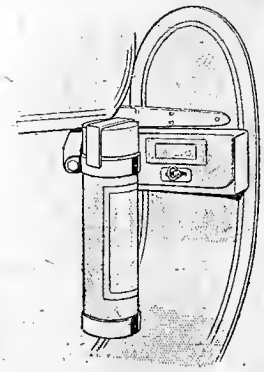


The Martinsyde passenger team—J. T. Bashall, E. Simms, and E. H. Gifford.

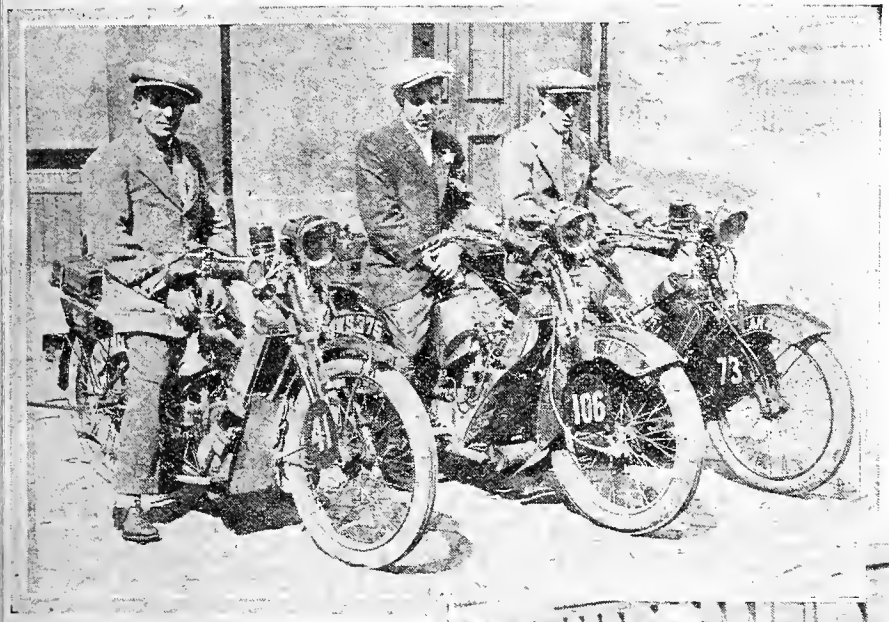
Karslake is quite depressed, for against this formidable list of extras he can only muster on his Brough a complete set of chain shields, a special route card-

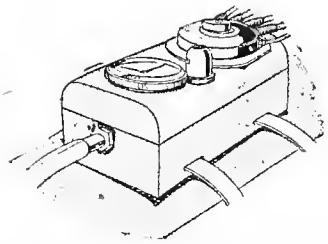


A Coventry sidecar and solo trio on 5-6 Rovers—G. L. White, E. S. Astley, and D. A. Atkin.



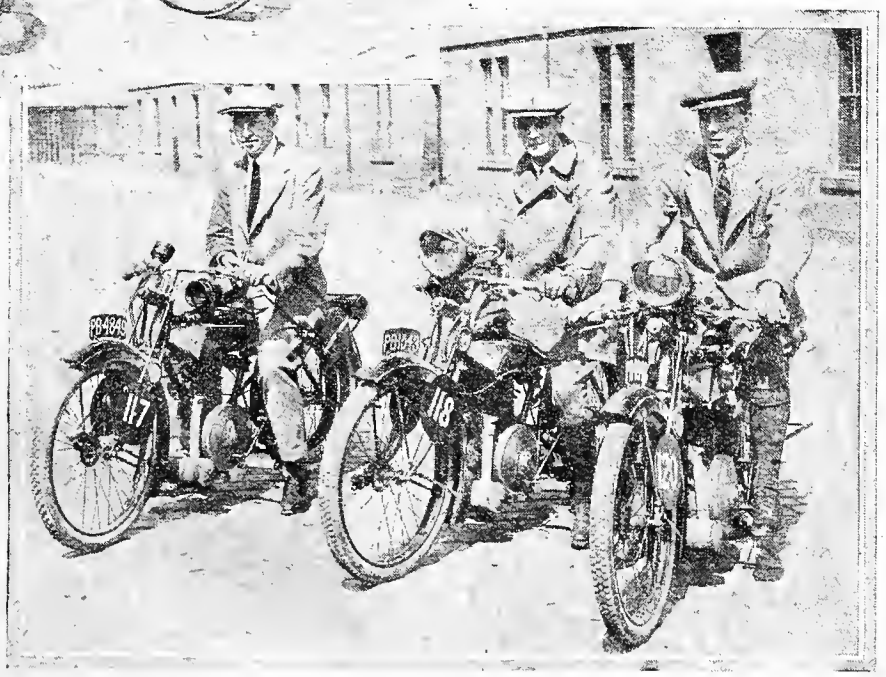
Carbide carrier enamelled to match the tank, and an extra tool bag on the leg shield of A. G. Fenn's Raleigh.

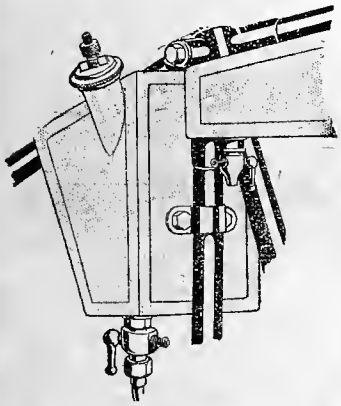




A very neat arrangement of speed indicator and Lucas switch-box lit by a converted tail lamp on the tank of Eaton's Brough Superior.

(Left) A Scott trio. The riders are: W. F Scott, W. Moore, and H. Langman.
(Right) Little two-strokes to conquer big hills The Hawker team: T. O. M. Sopwith, P. R Dowson, and L. H. Wells.





Extra half-gallon petrol tank operated by air pressure on Westwood Wills's Powell.

holder, and handle-bar clips for the grease gun. One of the Humbers mounts a pair of spark intensifiers. R. B. Clark's countershaft Zenith has a ratchet for holding the clutch out, and its chain is enclosed in an oiltight aluminium case. The organisation of petrol supplies in what a golfer would term the "tiger country" is better than of old, thanks to the ubiquitous motor lorry; but several riders will carry auxiliary tanks. Westwood Wills has a neat example under the saddle of his Powell, and uses a tyre pump to obtain the necessary pressure for transferring the "juice" to the main tank.

Route marking is to be carried on by a Ford car specially fitted up for the purpose. The floorboards on the near side of the rear compartment of the body have been cut out to accommodate a large "powder mill," fitted with a shaking grid and operating handle. Beneath the hole is a tin chute. Thus the yellow ochre can be laid without stopping the car or staining its occupants. This year the ochre will be in "blobs" instead of streaks.

Tyres for Hill-climbing.

Unless rain falls early in the week, dust will play a notable part in the week's work, choking carburetters and acting as an abrasive inside engines. If rain comes, there will be a great deal of skidding, as the long drought has made all the roads exceptionally loose. The side-car men in many cases speak highly of the Stepney road grip cover for their driving wheels on steep hills, as its substantial crossbars afford a good grip. The solo men are less agreed in their tyre selections, but a good many tyres are too small for their job.

There will probably be rather a slaughter of the innocents during the first day or two. A number of entrants have no conception of what is before them. A certain car driver was asked what provision he had made for extra cooling water in the five-mile climb to Tornapress. He was quite indignant, stating that his car had come all the way from London, and never lost a drop! Several motor cyclists, new to a Scottish Six Days, innocently await similar disillusionments. Meanwhile the heat is terrific.

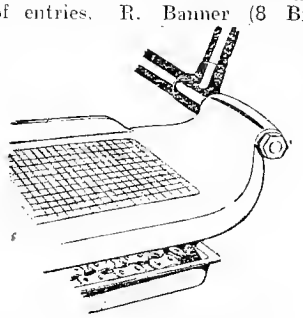
There is always a light breeze in Edinburgh on the calmest day; to-day's breeze feels as if it came straight from the Sahara, and our Scottish hosts find the weather a noble ally in their annual work of discovering how much liquid refreshment English motor cyclists can—should we say "swallow," or "stand"? But, whatever weather awaits us, with a sporting course to follow, and a sporting club in command, we are assured a jolly week, and everybody is glad to see the British factories supporting this event as it has always deserved to be supported. Until this year the club has always lost money on the trial, and has continued to spend its funds for the benefit of the sport. This year a record entry should imply a small profit.

The Scottish Six Days Trial.—

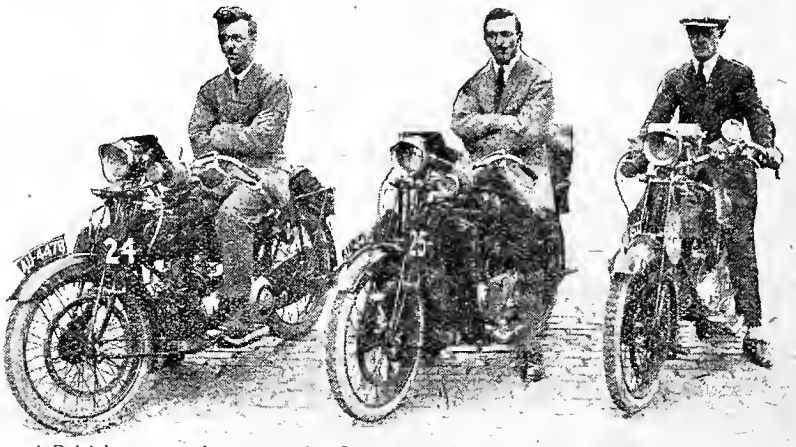
HEAT WAVES AND ROAD WAVES ON MONDAY.

VERY few of the competitors slept on Sunday night. It had been one of the hottest days of the year, and those who were not tortured by dreams of Amulree were thinking of engines cooled by hot air. Day dawned with a dull grey sky, apparently full of rain, and for once it would have been welcome. A light drizzle actually fell between seven and eight, but it soon cleared off and another heat wave was promised.

There were several alterations in the list of entries. R. Banner (8 Brough Superior) is riding in place of Watson-Bourne; Norman Black (Omega) fills the No. 20 vacancy in the programme; R. Elliott (3½ Rover) takes Brandish's place; A. Farr (B.S.A.) rides in place of A. Wood, C. Christie instead of W. C. Hemy (7 A.J.S. sc.), and E. Simms has taken over W. H. Bashall's 6 h.p. Martinsyde sidecar. Bashall was struck by a piece of concrete during the 500 miles race, and was delayed in that event for half an hour, hence his second instead of first place. D. S. Alexander was a non-starter owing to injuries sustained while practising for the Scottish Speed Championships on Saturday.



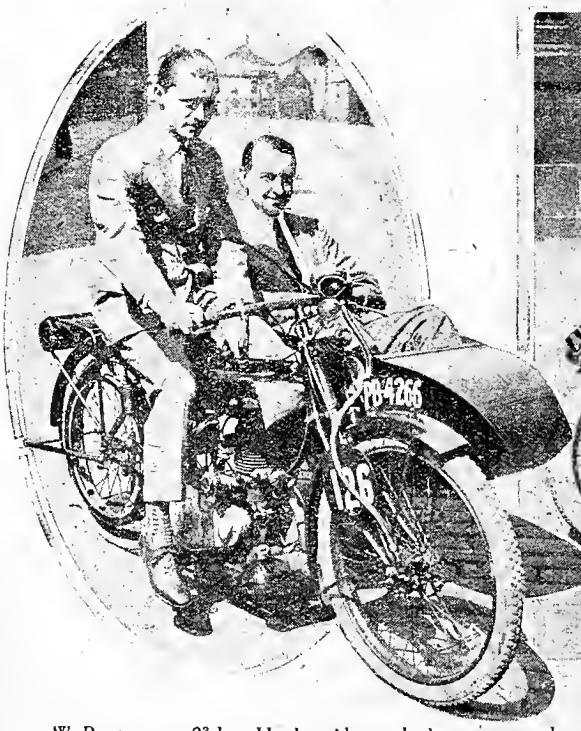
A steel drawer is fitted under the footboards of the Raleigh entry. Each drawer contains a spare chain packed in grease.



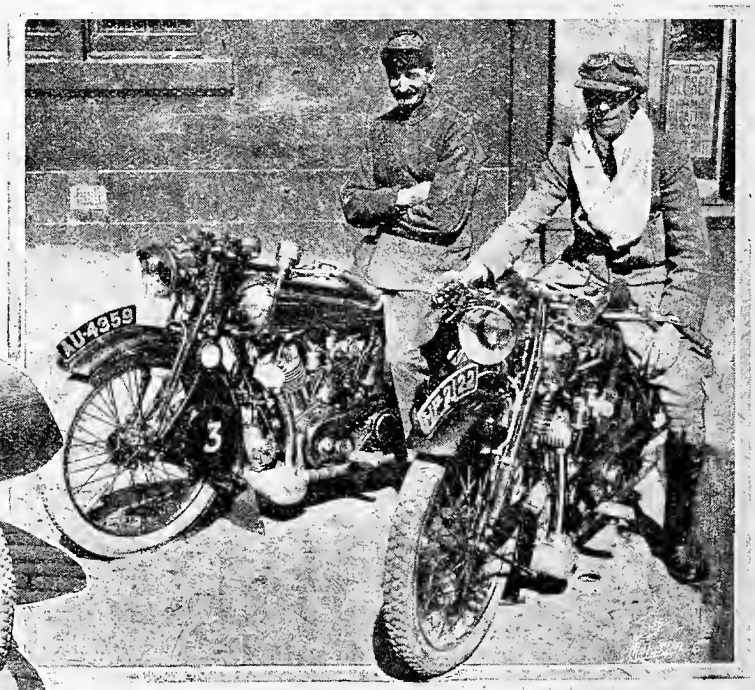
A Raleigh team, to demonstrate big flat twins on Scottish hairpin corners—F. W. Viles, A. G. Fenn, and K. Holden.

The competitors started in pairs at one-minute intervals, except that a gap of three minutes was allowed after each pair of four-wheelers had been despatched. This was distinctly necessary, in view of the probable dust and the narrow roads. The first forty miles on Monday were extremely tedious, as they lay through a grimy district with many tramlines and much heavy traffic on nearing Stirling. Sections of the road reminded one of the devastated areas, for, although it is a main route, it is ploughed into colossal pot-holes and high ridges. Anybody attempting to tackle it at ordinary touring speeds would infallibly be thrown. The route marking so far had been excellently done, the yellow ochre showing up well.

To-day (Thursday) the route is from Inverness *via* Dalnacardoch, Kenmore, Killin, Dalmally, to Oban, there being no observed hills; but to-morrow (Friday), in the run from Oban *via* Lochgilphead, Inveraray, Leanach, Otter Ferry, Inveraray, Cladich, Dalmally, back to Oban, there will be Ballochan drain (one of the new hills) to be negotiated. Saturday's run is over main roads back to Edinburgh.



W. Peattey on a 2¾ h.p. Hawker sidecar, the lowest-powered outfit in the trial.



CONTRASTS.

Familiar figures in the big trial. H. Karslake and Geo. Brough on 8 h.p. Brough-Superiors.

400 ENTRIES IN SOUTH WALES HILL-CLIMB.

Successful Event at Catsash Hill, near Newport, Mon.

A. Jenks (3½ Norton sidecar) on the finishing mark after a splendid climb. Observe the "orchestra stalls" behind the hedge.

BROILING heat and dazzling sunshine sums up the weather conditions under which the open event A.C.U. took place at Catsash Hill, near Newport, Mon., on Saturday last. The event had been well advertised, and reaped the reward, attracting no fewer than 400 entries, including many well-known riders of the sporting motor cycling world.

A Popular Venue.

Catsash Hill is a turning off the main Newport-Chepstow road, at the milestone four miles from Newport and twelve from Chepstow. Attracted by the event and entries, huge crowds of motorists wended their way to this spot for an interesting and exciting half-holiday.

The organisation was excellent. All motor traffic was skilfully piloted into adjoining fields before reaching the starting point, and these presented a fine spectacle.

The hill is straight and the whole course could be seen from the starting point, and was bordered by a grass verge and low bank and hedge. The length was a measured half-mile; average gradient, 1 in 14. The start was on the level and the finishing line was on the hill itself.

The Norton riders had a field day, for G. W. Walker, Alex Lindsay, J. Thomas, and A. Jenks were all outstanding performers on this make. Fastest time of the day and a number of both solo and sidecar wins fell to the first mentioned.

Harry Church (2¼ Velocette) on the finishing line. He won several events.

RECORDS BEATEN IN THE 500 MILE RACE AT BROOKLANDS.

IN a race of 500 miles, such as the recent event for the Miller Cup, when the winner averaged over 70 m.p.h., and even the lightweights over 50 m.p.h., many long distance records were bound to be beaten. The B.M.C.R.C. has now issued the official results, which are identical with those given in last week's issue of *The Motor Cycle*. It is, therefore, now possible to record the times which broke records existing on that date. They are as follows:

CLASS E.—1,000 c.c.

Miles.	Rider.	h. m. s.	m.p.h.
50	H. Le Vack (7 Indian) ..	37 29	80.03
100	,, ,,	1 14 45	80.27
200	F. W. Dixon (7 Harley-D.)	2 41 25.6	74.34
300	H. Le Vack (7 Indian) ..	4 9 51.6	72.04
400	,, ,,	5 36 6.7	71.49
500	,, ,,	7 5 59.6	70.42

Hrs.	Rider.	ml.	yd.	m.p.h.
1	H. Le Vack (7 Indian) ..	80	659	80.33
2	F. W. Dixon (7 Harley-D.)	145	1,203	72.84
3	H. Le Vack (7 Indian) ..	216	933	72.17
4	,, ,,	286	252	71.53
5	,, ,,	358	27	71.65
6	,, ,,	431	1,181	71.94
7	,, ,,	495	1,176	70.83

CLASS C.—500 c.c.

Mls.	Rider.	h. m. s.	m.p.h.
100	V. Horsman (3½ Norton)	6 29 23	61.64
500	,, ,,	8 1 25.4	62.31

hrs.	Rider.	mls.	yd.	m.p.h.
6	V. Horsman (3½ Norton)	375	213	62.57
7	,, ,,	434	1,364	62.11
8	,, ,,	498	528	62.28

CLASS B.—350 c.c.

hrs.	Rider.	ml.	yd.	m.p.h.
7	N. Norris (3 Ivy)	360	1,476	51.54
9	,, ,,	464	686	51.59

mls.	Rider.	h. m. s.	m.p.h.
500	N. Norris (3 Ivy)	9 40 20	51.69

CLASS A.—250 c.c.

hrs.	Rider.	ml.	yd.	m.p.h.
1	B. Kershaw (2¼ New Imperial)	55	1,212	55.69
2		111	101	55.53
3	,, ,,	162	1,453	54.27
4	,, ,,	208	330	52.18
5	,, ,,	256	1,106	51.21
6	,, ,,	304	781	50.74
7	,, ,,	357	107	51.03
8	,, ,,	406	370	50.77
9	,, ,,	454	1,292	50.54

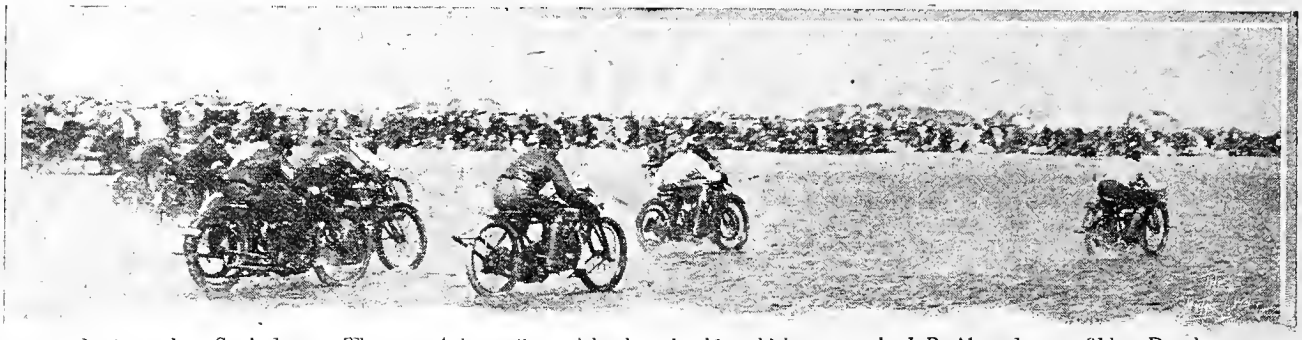
mls.	Rider.	h. m. s.	m.p.h.
100	B. Kershaw (2¼ New Imperial)	1 47 32	55.79
200	,, ,,	3 49 49	52.21
300	,, ,,	5 51 9	51.26
400	,, ,,	7 52 56	50.75
500	,, ,,	9 59 5	50.07

The Team Prize has been awarded to the Martinsyde riders, H. Bowen, J. T. Bashall, and W. H. Bashall, 11th, 13th, and 23rd to finish, respectively.

None of the other teams succeeded in qualifying for an award.

SCOTTISH SPEED CHAMPIONSHIPS.

Excellent Racing at St. Andrews.



On the sands at St. Andrews The start of the mediumweight championship, which was won by J. R. Alexander on a 3½ h.p. Douglas.

THE annual speed event promoted by the Scottish Auto Cycle Union was held at St. Andrews on Saturday last under favourable weather conditions. The condition of the sand might easily have been better from the speed point of view, but, nevertheless, some very fast times were recorded. Several machines were making their first appearance in the event, and after its many misfortuness in the T.T. much interest was centred in the Massey-Arran. In addition three 2¾ h.p. T.T. A.J.S.'s were on view, and speculation was rife as to the ultimate winner of the 350 c.c. class.

The Lightweights.

Class 1—the Scottish featherweight speed championship—provided a keen race between D. B. Calder (2¼ New Imperial) and R. M. Wilson (2¼ Hobart). Up to the last lap the former was leading, but to the surprise of the spectators Wilson was first past the post, Calder having plug trouble in the last mile.

Class 2.—The twenty mile 2¾ h.p. speed championship was won by A. L. Downie (2¾ A.J.S.), whose riding was most consistent, his lap times being 2m. 19s. for nearly every lap. At the end of the first lap, George Kelby (2¾ A.J.S.) led, but a choked jet let Downie into leading place, which he never lost. It is singular to record that the first lap from a standing start was in every event the fastest.

In the 3½ h.p. championship the surprise of the afternoon was the riding of G. M. Black (3½ Norton), who led from the start, but was unfortunate in the last lap by getting water on his plug, causing him to stop; thus first place was secured by J. R. Alexander (3½ Douglas), with R. W. Loughton (3½ N.U.T.) second.

The heavyweight speed championship was won by R. J. Braid (7-9 Indian), who led from the start, with R. Boyack (7-9 Indian) second.

J. R. Philipps (2¾ Blackburne), in the open one lap race, put up a very fine performance in beating Downie and Walker on A.J.S.'s. Had the winner not had plug trouble in the championship event, it was evident that Downie would have had a harder struggle for his success.

The cornering of the majority of the riders was none too good, and it was interesting to watch the various methods of rounding the turns. G. W. Glen (3½ Sunbeam), a past holder of the 3½ h.p. championship, was very speedy at the turns, but appeared to take them too wide.

As usual in an event of this nature, several minor mishaps prior to the race prevented several of the prominent riders from taking part. D. S. Alexander was run into in practice, and, his hand being severely damaged, was prevented from competing.

The Edinburgh M.C. won the team prize. Results :

CLASS 1 (Scottish Featherweight Championship).—R. M. Wilson (2¼ Hobart), time 15m. 50⅖s.

CLASS 2 (Scottish Lightweight Championship).—A. L Downie (2¾ A.J.S.), time 23m. 35⅖s.

CLASS 3 (Scottish Mediumweight Championship).—J. R. Alexander (3½ Douglas), time 24m.

CLASS 4 (Scottish Heavyweight Championship). R. J. Braid (7-9 Indian), time 21m. 51⅗s.

CLASS 5 (Private owners, 350 c.c.).—J. W. Walker (2¾ A.J.S.), time 7m. 37⅗s.

CLASS 6 (Private owners, 560 c.c.).—J. G. McEwen (3½ Norton), time 6m. 48⅘s.

CLASS 7 (Private owners, 1,000 c.c.).—J. W. Walker (2¾ A.J.S.), time 7m. 13⅗s.

CLASS 9 (One lap, open, 350 c.c.).—J. R. Philipps (2¾ Blackburne), time 2m. 8s.

CLASS 10 (One lap, open, 560 c.c.).—G. M. Black (3½ Norton), time 2m. 3s.

CLASS 11 (One lap, open, 1,000 c.c.).—R. Boyack (7-9 Indian), time 1m. 59⅗s.

R. W. Wilson (2¼ Hobart), who won the featherweight championship.

A. L. Downie (2¾ A.J.S.), winner of the lightweight speed championship

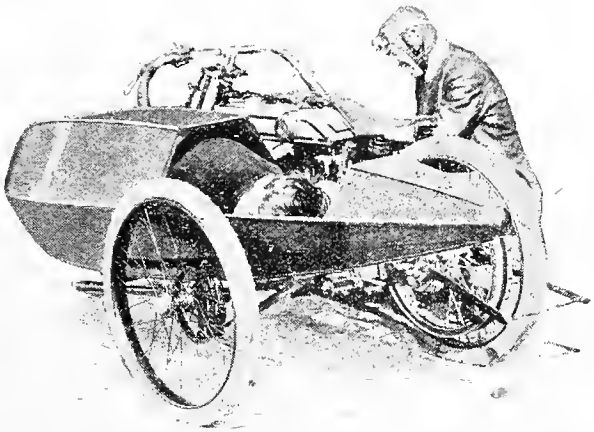
J. R. Alexander (3½ Douglas), winner of the mediumweight championship

R. J. Braid (7-9 Indian), winner of the heavyweight class.

SCOTTISH SPEED CHAMPIONS FOR 1921.

BROOKLANDS MEETING FOR M.C.C. RIDERS.

Nine Closed Events all carried off by Prominent Track Exponents.



O'Donovan's new racing sidecar, in which his passenger "goes to bed."

THERE were many close finishes, while high speeds were the order, at Brooklands, on Saturday, when a meeting organised by the M.C.C. took place. From the spectators' point of view, however, the great heat, especially noticeable in the neighbourhood of the track, was almost unbearable.

Three handicap races for solo machines not exceeding 350 c.c., 560 c.c., and 1,000 c.c. respectively, were first run off; the first seven in each event being eligible for the "Harry Smith" Gold Challenge Cup race.

Tudor Thompson (2¾ Douglas) with a handicap of 2m. 9s. behind the limit man ran into first place in the 350 c.c. race, while H. Le Vack (3½ Indian) won from F. A. Longman (3½ Ariel) by twenty-seven yards in the next race.

In the third event C. F. Temple (7-9 Harley-Davidson) made a splendid performance, his machine lapping at over 90 m.p.h.

Three three-lap handicap races followed for machines of similar capacities, and these were won by S. R. Axford (2¾ A.J.S.), H. Le Vack (3½ Indian), and C. F. Temple (7-9 Harley-Davidson) respectively.

A handicap sidecar race of two laps followed, open singles of any capacity, and this was won by F. A. Longman (3½ Ariel sc.) with 1m. 22s. start from the scratch man, D. R. O'Donovan.

In the multi-cylinder three lap sidecar handicap, H. Le Vack (7-9 Indian sc.) won from scratch. The principal award in this event was the Starley Cup.

The final event was the M.C.C. Championship for the Harry Smith Gold Challenge Cup, this being a five lap handicap race; the cup was secured by C. F. Temple, whose Harley-Davidson was again in fine fettle, and averaged over 91 m.p.h. Results:

HANDICAP RACE (3 laps, up to 350 c.c.).—1, Tudor Thompson (2¾ Douglas); 2, H. F. Brockbank (2¾ Brock-Blackburne); 3, J. F. Hull (2¾ Wooler). Winner's speed, 66 m.p.h.

Also ran: S. R. Axford (2¾ A.J.S.), Kaye Don (2¾ Massey-Arran), A. Prestwich (2¾ Dot-Jap), W. G. Churchill (2¾ Verus), A. F. Edwards (2¾ Coulson-Jap), H. Brockbank (2¾ Brock), J. S. Holroyd (2¾ New Scale), F. A. Applebee (2½ Levis), J. F. Hull (2¾ Wooler), F. A. Longman (2¾ Wooler), A. E. Gelder (2½ F.N.), H. W. Harrington (2¾ Douglas), R. L. Richardson (2¾ Alecto), S. Warne (2½ Morris-Warne), W. Julian (2½ Levis), D. J. Stone (2½ Orbit), and A. G. Prior (2½ Villiers).

HANDICAP RACE (3 laps, from 350 c.c. to 560 c.c.—1, H. Le Vack (3½ Indian); 2, F. A. Longman (3½ Ariel); 3, J. A. Peacock (3 A.B.C.). Winner's speed: 74 m.p.h.

Also ran: Kaye Don (3½ Norton), R. M. Knowles (3½ Norton), C. C. Labin (3½ Indian), C. Pearson (3½ Douglas), C. N. Green (3½ Rover), P. Cunningham (3½ P. and M.), and H. C. Nias (4 Triumph).

HANDICAP RACE (3 laps, from 560 c.c. to 1,000 c.c.).—1, C. F. Temple (7-9 Harley-Davidson); 2, H. Le Vack (7-9 Indian); 3, Kaye Don (8 Zenith-Jap). Winner's speed, 88.3 m.p.h.

Also ran: F. C. Townshend (8 Zenith-Jap), and J. McBirnie (7-9 Indian).

SCRATCH RACE (2 laps, not exceeding 350 c.c).—1, S. R. Axford (2¾ A.J.S.); 2, Tudor Thompson (2¾ Douglas); 3, Kaye Don (2¾ Massey-Arran). Winner's speed, 67.7 m.p.h.

SCRATCH RACE (3 laps, not exceeding 560 c.c.).—1, H. Le Vack (3½ Indian); 2, S. R. Axford (2¾ A.J.S.); 3, C. Pearson (3½ Douglas). Winner's speed, 68.4 m.p.h.

SCRATCH RACE (3 laps, 560 c.c. to 1,000 c.c., for O. C. Godfrey Cup).—1, C. F. Temple (7-9 Harley-Davidson); 2, H. Le Vack (7-9 Indian). Winner's speed, 88.78 m.p.h.

HANDICAP RACE (2 laps, any single-cylinder sidecar).—1, F. A. Longman (3½ Ariel sc.); 2, D. R. O'Donovan (3½ Norton sc.); 3, V. Olsson (3½ Sunbeam). Winners' speed, 48.8 m.p.h.

HANDICAP SIDECAR RACE (3 laps, any multi-cylinder, for J. K. Starley Cup).—1, H. Le Vack (7-9 Indian sc.); 2, O. de Lissa (8 Motosacoche sc.); 3, J. A. Masters (7-9 Harley-Davidson sc.). Winner's speed, 71.7 m.p.h.

M.C.C. CHAMPIONSHIP HANDICAP (5 laps, for Harry Smith Cup).—1, C. F. Temple (7-9 Harley-Davidson); 2, F. A. Longman (3½ Ariel); 3, H. Le Vack (3½ Indian). Winner's speed, 91 m.p.h.

Also ran: S. R. Axford (2¾ A.J.S.), Tudor Thompson (2¾ Douglas), A. H. Prestwich (2¾ Dot-Jap), J. A. Peacock (3 A.B.C.), P. Cunningham (3½ P. and M.), H. C. Lias (4 Triumph), and J. F. Hull (2¾ Wooler).

THE MOTOR CYCLISTS' PARLIAMENT.

Policy of Auto Cycle Union Criticised. 30,000 Members. Fewer Competitions Proposed.

AT the second meeting of the A.C.U. General Committee at Taunton on July 8th, at which some twenty-four members attended, there was little business to record which was really interesting. The attendance, as usual, was mainly from London, but among those present we noticed Mr. S. L. Bailey from Bristol, Mr. Q. A. Nicol from Newcastle-on-Tyne, and Mr. E. Featherstone from Cheltenham. The chair was ably occupied by Col. F. S. Brereton, C.B.E.

In the minutes mention was made of the membership of the A.C.U., and in reply to Mr. Thomas, Mr. T. W. Loughborough (the Secretary) mentioned that the number of members was some forty per cent. below the figures for the corresponding period last year—rather under 30,000. The matter was discussed by several members at considerable length, and it was generally agreed that the cause of the decline was due to the increased subscription, or more probably to the fact that the Union had failed to convince its members of the benefits it offered.

Messrs. S. L. Bailey and W. H. Wells contended that the A.C.U. should cater more for the man in the street and on the road, and not devote so much time to competitions. Considerable discussion then ensued, which concluded with a speech by the chairman, in which he pointed out that he noticed with regret that all motor cyclists were not united in one body.

There was little of interest arising out of the minutes of the Competitions Committee meetings.

One of the few important points referred to in the Competitions Committee report was that the A.C.U. had now decided to insist that T.T. helmets must be worn in all open speed events and open hill-climbs, and it was also laid down that all courses on which open speed events were to take place should be inspected to see if they are suitable before a permit can be granted. Some discussion ensued as to whether the course in Clipstone Park, selected for the E. Midland Centre speed trials, really needed to be inspected, and it was pointed out that a plan of the course to the scale of 25in. to the mile must be submitted, on which the positions to be occupied by spectators must be indicated. Reference was then made to the championship scheme, which had been considered by the Competitions sub-Committee, and was reported on as being unworkable. Lengthy discussion ensued, and Major Axford mentioned that six centres had promised it support.

Mr. Loughborough said he thought the scheme excellent from the Centre's point of view, but there would be difficulties in the organisation, and it would be hard to tell how much the champion would owe to his prowess or to his machine.

Mr. S. L. Bailey moved an amendment to the effect that, instead of championship, the scheme should be known as the reliability premiership; this was put to the meeting and carried.

The budget provoked some discussion, as certain members felt that the organisation was costing more than the result in membership warranted. The Secretary pointed out that the cost of looking after the interests of motor cyclists was high, and amounted to more than in the case of car owners. The applications for affiliation from twenty-nine motor cycle clubs were then accepted.

After tea the delegates were taken for drives in the country by the local club, and entertained to a smoking concert.

CURRENT CHAT (Continued from p. 54).

"Six Days" go to Devon.

On August 30th and 31st this year's Six Days Trials will follow routes in the Taunton district. It is nine years since the trials touched Devonshire.

A Midland Racing Track?

At a supper in honour of the T.T. winners Mr. J. Howell, of the Worcester and District M.C.C., foreshadowed the possibility of a racing track, similar to Brooklands, in the vicinity of Worcester. They had the ground in Worcester, he said, which would provide a two-mile course, and it was thought that Midland manufacturers would support events at such a convenient centre.

An International Race.

Thirty-six entries have been received for the Grand Prix race at Le Mans on the 24th inst. Jolly (on an Alcyon) is No. 1, de la Hay (Sunbeam) No. 2, and Le Vack (Indian) will be the third to start in the 500 c.c. class. In the 350 and 250 c.c. classes the leading men are Meunier (Alcyon) and A. Milner (Levis).

Out of fifty-seven entrants there are sixteen British riders and twenty-seven British machines. There are also twenty-eight French machines, one Italian, and one American, so that the race is of an international character.

Imports and Exports.

As was to be expected, last month's imports and exports were much below the average. Only seventy-one motor cycles were imported, and these were valued at £6,111. Compared with June last year, this number is a reduction of 172 machines.

EXPORTS.

June export figures show that we sent out of this country half the number of machines compared with the same month last year. The figure is 722, and, curiously enough, the comparison is similar if we take June, 1913, when we exported 1,419 machines.

The following table shows comparative numbers and values of motor cycles exported in June, 1913, 1920, and 1921:

	1913.	1920.	1921.
Value of motor cycles	£62,416	£105,733	£54,792
No. of motor cycles	1,419	1,405	722

The value of parts and accessories exported in June amount to £19,374.

Efficient Silencers.

Recently several motor cyclists have been summoned at Leicester for having "a silencer that was inefficient." As one of these riders was the owner of a Villiers-engined machine, the makers of this engine took up the case in the interests of the many riders using their engines. Several other firms supported them, and on the machine being tried on the road for the edification of the court, the Chairman remarked that it was a stupid case, and dismissed it without further comment.

THE GRAND PRIX RACE.

A FEW more tickets are still available for readers of *The Motor Cycle* for the grandstand for the Grand Prix race. It will be recalled that a certain number of tickets were reserved by this journal on behalf of readers of *The Motor Cycle*, a specially good position being chosen for the block. Similar arrangements were made by *The Autocar*, and in this case all the car tickets have been snapped up by readers. There remain, however, a few tickets for the motor cycle Grand Prix at the price of 4s. 6d., and immediate application for these should be made to the Editor of *The Motor Cycle*, 20, Tudor Street, London, E.C.4, or at Coventry.

Garage tickets are also available for the day of the motor cycle race at a cost of 4s. 6d. An estimate of the cost of the trip to the coast will be found on page 36, together with advice on how to reach the course at Le Mans and other details in connection with taking a machine across the Channel.

CLUB NEWS. (Continued from page 43.)

South Midland Centre A.C.U.

The trial announced for next Saturday will start from Berkhampstead at 9.30 a.m., instead of Watford at an earlier hour, as previously announced.

Bristol M.C.C. and Bath and West of England M.C.C.

On Saturday last the two clubs held a joint trial for the challenge shield at present held by Bath. A forty mile circuit of a most sporting nature between the two headquarters was covered twice, and on each round five observed hills having extremely difficult surfaces were encountered. There were six solo and three sidecars in each team, and it appears that the Bath M.C.C. will retain the trophy, but the results are not yet announced.

Bedford and District M.C.

A reliability run was held on July 3rd from Bedford to Hunstanton and back, and allowing for a certain amount of dust due to the dry condition of the roads the going was excellent throughout. The results, decided on a secret check, were as follows:

ALLEN CUP AND CLUB MEDAL.—J. George (7-9 Harley-Davidson sc.), 1 mark lost.
HUMPHRIES CUP AND CLUB MEDAL.—T. Garner (4 Triumph), 2 marks lost.
SILVER MEDAL.—A. Bristowe (Premier cycle car), 2 marks lost.
BRONZE MEDALS.—J. C. Hines and H. Hartopp, 3 marks lost.
TEAM PRIZE.—A. R. Lindley (Henderson sc.), A. Bristowe (Premier cycle car), and T. Garner (Triumph).

A picnic is arranged at Filmersham Vicarage, at the invitation of the Rev. L. R. Levett. Members desiring to attend should notify the secretary to-day.

Northern M.C. (Newcastle).

The most successful trial of the year was held in the Lake District on July 3rd and 4th. The weather was perfect, and the first day's run was to Keswick, *via* Whitfield (where an observed freak hill was included), Alston, and Penrith. All the competitors checked in at Keswick. The second day's run was about 200 miles, and included a number of observed hills. A circular course led from Keswick over the Winlatter Pass to Buttermere Hause, over the Newlands Pass, and back to Keswick; all these parts were observed. The course next led to Grasmere, up Red Bank, then to Ambleside, and over Kirkstone Pass to Penrith for the lunch stop. This portion of the course eliminated a large number of the competitors, but a secret check was taken between Penrith and Alston on the homeward run. The results are as follows:

ANDERSON CUP.—S. Donkin (10 Henderson).
ZENITH MEDAL.—H. Ellis (2¾ Douglas).
GOLD MEDAL.—K. Dixon (3½ Sunbeam).
SILVER MEDALS.—T. A. Carlile (7-9 Harley-Davidson) and H. Tanaka (10 Henderson sc.).
BRONZE MEDAL.—C. L. Nordman (7 A.J.S. sc.).

East Midland Centre A.C.U.

A championship trial was held on July 3rd over a thoroughly good course in the Peak District. There were eleven checks, each being, roughly, ten miles apart; thus strict maintenance of schedule was essential. One interesting feature was the restarting and acceleration test made immediately after the lunch stop; machines had to be started from cold, and cover twenty-two yards. In this test the best time (5s.) was made by H. Widdowson (3¾ Scott). G. Brough (8 Brough-Superior sc.) was the best sidecar in 6⅔s. The awards are as follows:

1, G. Brough (8 Brough Superior sc.).
Best performance of Lincolnshire resident: J. E. Harston (8 Campion).
Best performance of Leicestershire resident: W. Chapman (7 A.J.S. sc.).
Best performance of Derbyshire resident: S. Ratcliffe (8 Brough Superior).
Best two-stroke: H. Widdowson (3½ Scott).
Team prize: Nottingham and District M.C.C., consisting of W. E. Brough (5-6 Brough sc.), A. G. Fenn (5-6 Raleigh), and H. Widdowson (3½ Scott).

Gold medals were also awarded to:

A. Doughty (6 Martinsyde), S. S. Debenham (3½ Brough), H. Karslake (8 Brough Superior), T. L. Vickers (3 A.B.C.), G. W. T. Hartwell (3 Beardmore), E. A. C. Oliver (8 Morgan), A. G. Robinson (6 Sunbeam), and N. U. Jones (4 Norton).

SPEED TRIALS AT WESTCLIFF.

ON page 53 we publish illustrations and time results of the speed trials organised jointly by the Essex M.C. and the Essex County and Southend A.C. In many cases the first place winners on time also took the formula prize. The exceptions are as follows:

250 c.c. CLASSES.—*Any Type, Flying Start:* H. Newey (2¼ Levis). *Standard Touring, Flying Start and Standing Start:* J. V. Prestwich (2¼ Massey-Arran-Jap).

350 c.c. CLASSES.—*Any Type, Flying Start and Standing Start:* A. A. Swann (2¼ New Imperial). *Standard Touring, Flying Start:* J. V. Prestwich (2¼ Massey-Arran-Jap).

500 c.c. CLASSES.—*Any Type, Flying Start:* A. A. Swann (2¼ New Imperial). *Standing Start:* F. W. Applebee (2¼ Levis) *Standard Touring, Flying Start and Standing Start:* J. V. Prestwich (2¼ Massey-Arran).

750 c.c. CLASSES.—*Any Type, Flying Start and Standing Start:* J. V. Prestwich (2¼ Diamond-Jap). *Standard Touring, Flying Start and Standing Start:* J. V. Prestwich (2¼ Massey-Arran-Jap).

UNLIMITED CLASSES.—*Any Type, Flying Start:* A. A. Prestwich (2¾ Dot-Jap). *Standing Start:* J. V. Prestwich (2¼ Diamond-Jap). *Standard Touring, Flying Start:* J. V. Prestwich (2¼ Massey-Arran-Jap).

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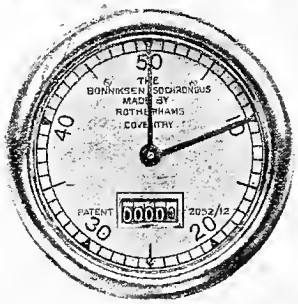

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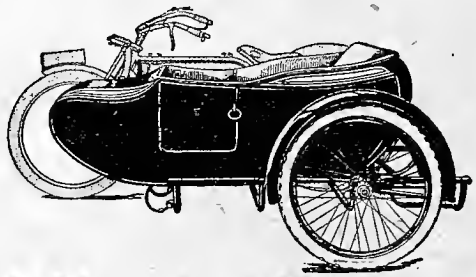

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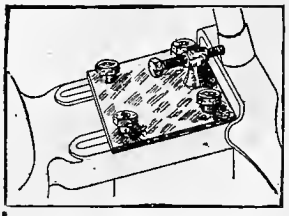

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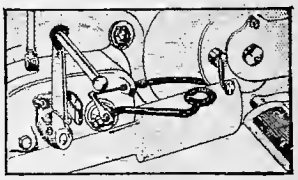

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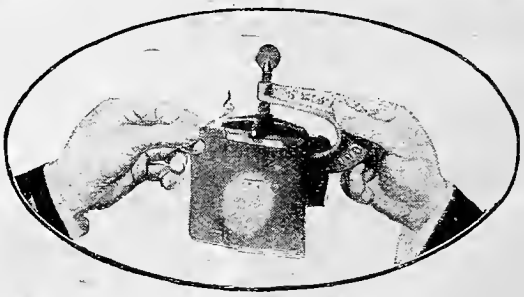

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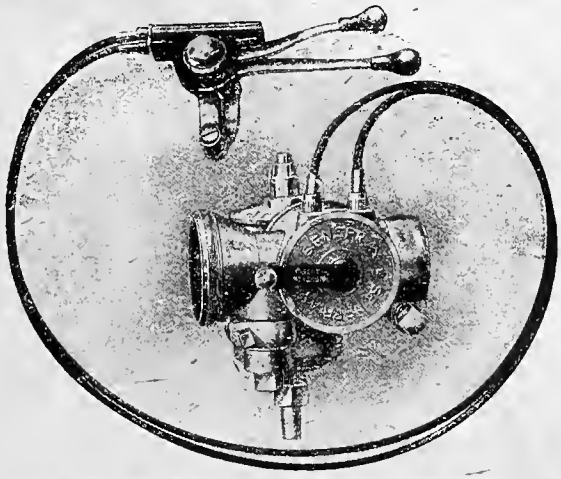

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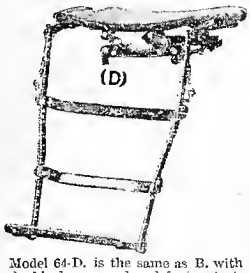

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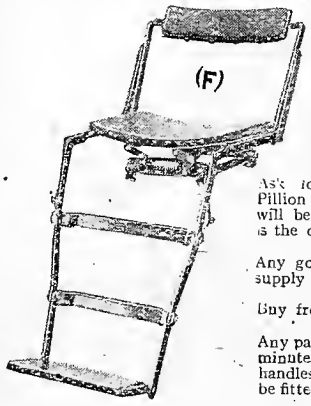

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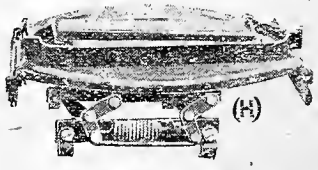

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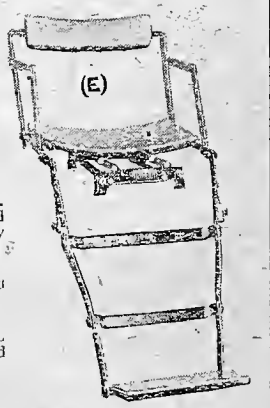

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We have a few shop-soiled 192. seats at £1[illegible]. These are supplied direct only.

Model 64-F. is the same as E. showing arm rests down if required. Seat same as B. Folds up like G. and H. Complete £3 10 0.

Tynesider Seat Wks., 9 & 10, Union St., M.C., North Shields, Eng.

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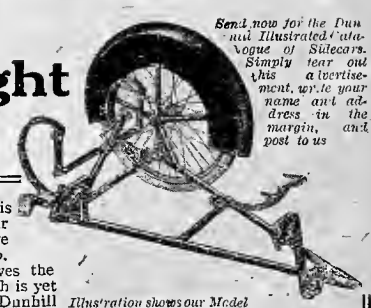
The ideal lightweight outfit.



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EDMUND-BLACKBURNE, 2¾ h.p., k/s. model	£95 0
MATCHLESS, M.A.G. combination	£185 0
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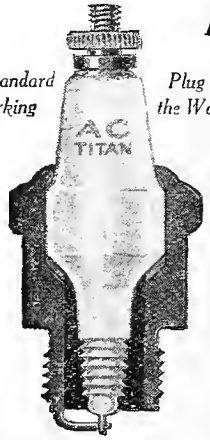

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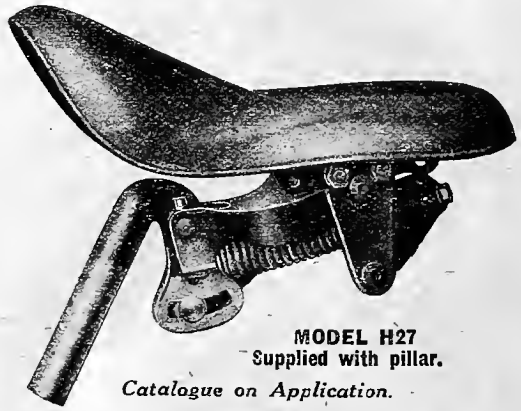

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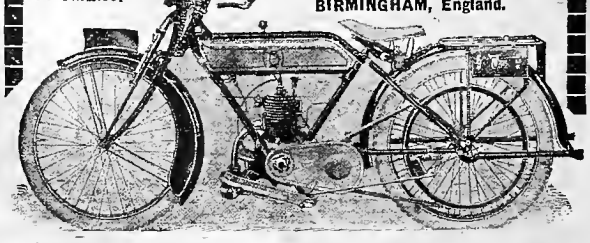

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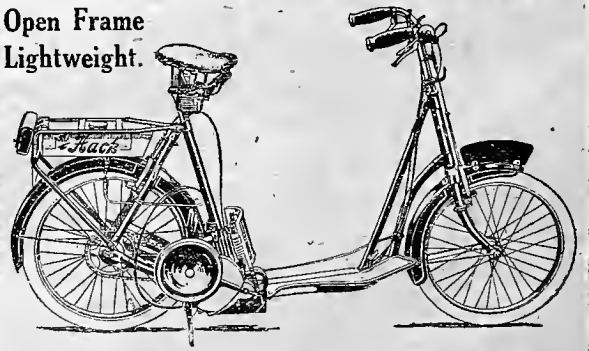

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BAT Combination, 6h.p., 1920 model, brand new; genuine bargain, £150.—Seen Briggs' Garage, Chapel Rd., Worthing. [8458

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8h.p. Bat Combination, late 1919, just overhauled, new tyres, perfect condition, lamps, horn, speedometer, tax paid; £115.—Tutnall Hall, Bromsgrove, Worcester. [X5373

BAT Motor Cycle and coachbuilt sidecar, 8h.p. J.A.P. engine, Bosch mag., Dunlop tyres; any trial; £85, dirt cheap; any time after 6 o'clock.—Pawsey, 21, Dundas Rd., Peckham, S.E. [8351

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8h.p. Blackburne and Canoelet sidecar, slightly shop-soiled; £200, or nearest.—A. J. Young and Co., Ltd., Newmarket. [6794

BLACKBURNE Agents.—Official Blackburne engine repairs in any make.—Bulloughs Motors, Ltd., Waterloo St., Oldham. [1099

1920 4h.p. Blackburne, overhauled March, new chains, perfect condition, tax paid; £85 cash.—Elliff, 11, Marlborough Grove, York. [X5317

1921 8h.p. Blackburne Combination, lamps, screen, horn, spare wheel, insured, tax paid, recently overhauled, small mileage; £160; owner going abroad.—Jenkins, Wroxton, Banbury. [7131

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BRADBURY 2-speed Gear Box, clutch, controls, good condition; £6/10.—Deshorough, Talbot Rd., Northampton. [8945

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BRADBURY, 1921, 4h.p. and 6h.p. models, prompt delivery.—Agents, Bright and Hayles, 78, Church St., Camberwell, London. [2981

1914 4h.p. Bradbury C.B. Combination, 3-speed, Bosch, Binks, lamps, tax, recently overhauled, owner going abroad; £60.—56, Thornton Av., Chiswick. [9088

6h.p. Bradbury Combination, 3 speed, countershaft, Binks, Easting Royal, speedometer, lamps, licensed, excellent condition; £106.—Bate, Brook Lynn, Golborne, Newton-le-Willows. [8859

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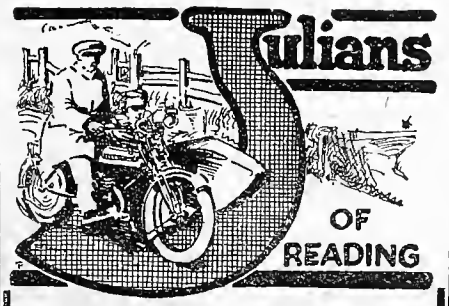

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WE are now giving delivery of the famous Brough Superior machine, 8h.p., overhead valves, made to an ideal specially for the man who takes a pride in ownership and desires the best, specially tuned, guaranteed 8 or 80 on top gear. Standard, £175; electric, £195.—Agents, G. and J. Dawson, 60 and 62, Regent St., Cambridge. [0593

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B.S.A.—All models always in stock; delivered any where.

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FRANK WHITWORTH, Ltd., of Birmingham, have several excellent B.S.A. machines and combinations at very moderate prices; write for details. [X4177

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B.S.A. 3½h.p., T.T. type, variable, free, overhauled and enamelled, reliable and powerful, tax paid: nearest £36.—Lydford, Chilworth, Guildford. [8178

1919 B.S.A. Millford Combination, excellent condition, just overhauled; £110.—Write Dickson, Brendon Lodge, Lyndale, Childs Hill, N.W.2. [8153

B.S.A. 1919 4¼h.p., chain-belt, with this year's sidecar, horn, lamps, tools, spare new outer cover, tax paid; £100.—Barker, Llennek, Bowdon, Cheshire. [8816

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B.S.A. Singles and Twins, early deliveries, fitted with any model Sandum sidecars; B.S.A. twin and dual sidecar in stock.—Sandum Sidecars, 336, Gray's Inn Rd., W.C.1. [0541

B.S.A. 1920 (September) Combination, all-chain, 3-speed model, Easting, 3 lamps, 2 generators, etc.; £145; or 1921 Allon 2-stroke part exchange.—Oakley, Stonnall, near Walsall. [8308

3½h.p. 1914 B.S.A., 3-speed, with B.S.A. sidecar, lamps, horn, and licence; £67/10.—The Layton Garages, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9032

B.S.A. Model H2 Solo and Combinations for immediate delivery; also twin combination; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [8952

GENUINE 4¼h.p. B.S.A. Combination throughout, 1920, fullest equipment, valuable accessories, luxurious body licensed, mileage 2,000; 90 gns.—Fersfield, Westbury Rd., New Malden. [8787

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B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St., New Bond St., W.1. [0657

NEARLY New 4½h.p. B.S.A. Combination, all-chain countershaft, 3-speed, K. start, clutch, lamps, tax paid; exchange A.B.C. solo; sell £100, or nearest.—B. Wright, Leechpool, Lydney, Gloucestershire. [8301

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4½h.p. B.S.A., 1921, all chain, with Henderson sidecar, Maglita electric equipment and Apollo horn, aluminium number plates, spring seat-pillar, Best mechanical pump, many spares, licence and insurance; £148 (cost £180).—Box 776, c/o *The Motor Cycle.* [X5221

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1915 Calthorpe-Jap, Enfield 2-speed, good condition; £30.—Crewdson, 16, Carlisle Rd., Romford. [8482

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Telephone—Langham 1257

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Following for Immediate Delivery:

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1921 **NEW IMPERIAL,** 3-speed. clutch, and kick-starter	£80 17
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1921 Model K. **B.S.A.**	£107 0
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CALTHORPE, 2¾h.p. J.A.P., brand new, 2-speed, 2-stroke; £50 to clear.—Saunders Garage, Parade, Golders Green. [8189

CALTHORPE-J.A.P., 1915 model, 2¾h.p. engine, Enfield 2-speed gear; £27/10/6.—Wanchope's, 9, Shoe Lane, London. [9009

CALTHORPE-J.A.P., 1920, 2¾h.p., 2-speed, all on; £48/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8991

CALTHORPE New 1920 2¾h.p. 2-stroke, Enfield 2-speed gear; £52/10.—Eagles and Co., 275, High St., Acton, London. [8791

1916 2¾h.p. Calthorpe-Jap, Enfield gear, horn, tools, tax paid, ride away; £25.—5, Addison Av., Holland Park, W.11. [9092

CALTHORPE-J.A.P., 1916, 2¾h.p., Enfield gear, long polished exhaust, just overhauled, fast, sporty; £35.—H. M. Wadham, Cockermouth. [8820

CALTHORPE-J.A.P., 1916, 2¾h.p., perfect condition, tax, lamps; £37/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8998

£68.—Calthorpe-Jap, 2¾h.p., Enfield 2-speed and clutch, 1921, shop-soiled only.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7950

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CARFIELD-UNION, late 1919, 2-stroke, Albion 2-speed, fully equipped, splendid order, tax paid; £47. Also road racing bicycle, specially built, little used, £10.—Hilkin, 367, Garratt Lane, Wandsworth.

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E. KICKHAM for Cedos, sole agent for Bristol and district.—Stokes Croft, Bristol. [3357

FOR Sale, Cedos motor cycle, absolutely new; £55.—Box 4,671, c/o *The Motor Cycle.* [8904

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4h.p. Chater-Lea 2-speed Combination, perfect everywhere, tax paid; £32/10.—45, Walm, Lane, Cricklewood. [8130

CHATER-LEA 8h.p. Combination, 3-speed, clutch, new tyres, lamps, all-chain, perfect running order; £80.—54, Ballater Rd., Acre Lane, Brixton. [8349

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Chater-Lea-Jap.

1914 Chater-Jap 4½h.p., splendid condition; £30.—14, Phœnix St., Euston, N.W.1. [8809

Chater-Lea-Peugeot.

CHATER-PEUGEOT 5-6h.p., handsome machine; £22/10.—Robinson, 91, Grove Rd., London, N. [8591

Chater-Lea-Precision.

8h.p. Chater-Lea-Precision Combination, hood, screen, lamps, tax paid; £65.—28, Queen's Rd., Dalston, E.8. [8542

Clement.

CLEMENT-BAYARD 8h.p., 1913, 4-cyl., electric lights, fine condition; £140.—Rev. Johnson, St. Barnabus, New Whittington, Chesterfield. [X5255

Clyno.

CLYNO 2¾h.p., 2-speed, clutch, as new; £45.—Rogerson, Newtown, Wigan. [X5271

1917 Clyno Combination, 3 speeds, kick start; £78.—27, Chipka St., Cubitt Town. [8821

1914 6h.p. Clyno Combination, spare wheel, lamps, tax paid; £85.—Ross, 86, High Rd., Lee. [8620

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Douglas.

DOUGLAS 1920 2¾h.p., 3-speed, completely equipped and in splendid condition; £78/10.—The Layton Garage, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9033

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4h.p. Douglas 1920 Combination, electric lights, screen, discs, leg guards, numerous spares; any trial; £125; modern solo park exchange.—Sansom, 25, Great Northern St., Huntingdon. [X4890

DOUGLAS Combination, late 1918, 4h.p., fully equipped, overhauled, spares, tax, insurance, perfect; £110; part exchange small car, Singer, Rover; Surrey.—Carter, 13, Suffolk St., S.W.1. [8348

DOUGLAS 4h.p. Combination, 1918, enamelled and plated as new, new 3in. tyres and tubes, new mag., carburetter, etc., perfect condition, tax paid; £90.—81, Water Lane, Brixton. [8693

4h.p. Douglas Combination, 1918, 3-speed, clutch, kick start, brand new sidecar, condition splendid throughout; a bargain, £88, or offer.—Blackmore, 769, Romford Rd., Manor Park, London, E. [8250

4h.p. Douglas Combination, new condition; £95; part payment deals considered.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (half-min. from Brixton Skating Rink). [8982

4h.p. Douglas Combination, special sidecar, Binks, 3 lamps, horn, speedometer, screen, new tyres, spares, splendid condition, not W.D., tax paid; bargain, £80.—16, Dorset Rd., Wimbledon. [8494

19 19 Douglas Combination, in first-class condition, 3 acetylene lamps, horn, Tan-Sad, Easting, small mileage, tax paid, owner going abroad; £100.—Apply, E. C. Bosanquet, 16, Ranelagh Rd., Winchester. [8771

DOUGLAS 4h.p. Combination, May, 1919, mechanically sound, lamps, speedometer (new), Binks, Cameo, discs, tyres, perfect condition, tax paid; £100.—Apply, Shrigley's Garage, Poynton, nr. Stockport. [8778

19 21 Douglas, 2¾h.p., 2-speed, delivered March, unscratched, lamps, horn, pneumatic grips, long exhaust, tax paid, not ridden many times; £75; owner buying stronger horse-power. — Palmer, Shillington, Hitchin. [8219

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95 GNS.; positively must sell; luxurious late 1919 Douglas combination, absolutely faultless, new Dunlops all round, very little use, engine No. 8185, tax paid, ready for immediate use.—22, Buller Rd., Thornton Heath. [8947

19 20 Douglas Combination, 3-speed, clutch, K.S., lamps, Klaxon, tools, hood, wind screen, tax paid, mileage 1,100, guaranteed as new; £130, or nearest offer; after 6 p.m.—Heathfield, Morden, Surrey, near Wimbledon. [8549

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DOUGLAS Late 1919 Combination, 4h.p., not W.D., Ferodo dry plate clutch, 3-speed, kick starter, 3 lamps, 2 generators, spare belt, Easting, Klaxon, any trial; £105. — 'Phone: Hop 4969. — Surline, Mycenæ Rd., Blackheath. [8523

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DOUGLAS 1918 Combination, 4h.p., 3 speeds, clutch model, kick starter, acetylene lighting all round, coachbuilt sidecar, Easting wind screen, fully equipped, licence paid for year, first-class condition throughout; £85; trial.—29, Allsop St., Upper Baker St., N.W.1. [8450

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WANTED, purchasers for any model of new 1921 Douglas motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0647

4h.p. Douglas Combination, late 1919, not War Department machine, Easting wind screen, undershield and leg guards, speedometer, luggage grid, patent jet adapter, 2 new full size tyres, machine in excellent condition, only done small mileage; £125.—Fowler, Linley Nurseries, Chesswood Rd., Worthing. [8152

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DOUGLAS 1916 2¾h.p., 2-speed, P. and H. lamp set, Stewart horn, oversize Dunlop tyres, back new, front almost, New Dunlop belt, copper exhaust, plating and enamelling perfect, engine in beautiful condition, machine well looked after, tax paid; £50; by appointment.—61, Highbury New Park, Highbury, London. [9062

DOUGLAS 4h.p., 1918, 3 speeds, smart coach combination, clutch, kick starter, splendid outfit, bulbous back sidecar, fully equipped, 3 lamps, new tyres, Tan-Sad, extra seat, wind screen, not war worn reconstruction, but genuine outfit, tax paid; trial any time; bargain, £84.—Stepney Garage, 77, Salmons Lane, Commercial Rd., Stepney. [8823

Edmund.

GOURLAY, the spring frame Edmund agent, Fallowfield, Manchester. [6095

19 21 2¾h.p. Edmund, spring frame, shop-soiled; £90.—Ross, 86, High Rd., Lee. [8623

EDMUND 2¾h.p. J.A.P., 2-speed, clutch, spring frame, lamps, speedometer, good condition; any trial; £42.—136, Ravensbury Rd., Earlsfield, S.W. [8970

Emblem.

AMERICAN Emblem, 1917, 4-5h.p. twin, o.h.v., countershaft clutch, kick start, Berling Schleber, weight only 198 lb., licensed for sidecar, exceptionally smart and fast, a real hogbus, £38, no offers; featherweight C.B. sidecar, suit above, £7.—152, Peckham Park Rd., Peckham, S.E. [8772

Enfield.

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD 2¼h.p., 1918, in splendid condition, tax paid; £45.—2, Prospect St., Caversham, Reading. [8322

6h.p. Enfield C.B. Combination, good tyres; bargain, £57/10.—74, Brighton Rd., Surbiton. [8743

ENFIELD Combination, new (200 miles), £40 extras; £160, or offer.—39, Tottenham Court Rd. Museum 4853. [8154

ENFIELD 1917 3h.p. Twin, fully equipped, nice condition; £49.—120, Fairbridge Rd., Highgate, N. [8785

ENFIELD 2¼h.p. 2-stroke, 2-speed, 1921, in stock, £65; kick starter £5 extra.—Rivett, 236, High Rd., Leytonstone. [5951

ENFIELD 6h.p. Combination, excellent running order and condition; all on, £75.—23, St. James' Place, Plumstead. [8171

19 19 Enfield, 2¼h.p., 2-speed, splendid condition, any trial, lamps, horn; £35.—11, Elms Rd., Dulwich Village. [8233

19 19 Enfield, M.A.G. 6h.p. Combination, all on, perfect, tax, insurance paid; £130.—17, Beck Rd., Hackney, E.8. [8444

6h.p. Enfield Combination, 1914, tax paid, fully insured, all on, perfect machine; £82.—84, Greenside Rd., Croydon. [8539

£57/10.—Enfield twin 6h.p. combination, overhauled, good condition, good tyres.—Rose's Garage, Uxbridge. [8707

ENFIELD 3h.p. Twin, Bosch, Amac, splendid condition; £30, or offer.—Gardiner, 51, Chipstead St., Parsons Green. [8492

19 17 6h.p. J.A.P.-Enfield Combination, electric lights, tax and insurance paid; £90, no offers.—7, Gibson Sq., N.1. [8916

ENFIELD 2¼h.p. 2-stroke, 2-speed, late 1920, complete lamps, tools, condition perfect; £49.—644, Fulham Rd., Fulham. [8515

ENFIELD 8h.p. Latest 1921 Combination, in stock; £160; exchanges entertained.—Eagles and Co., 275, High St., Acton, London. [8793

ENFIELD, 3h.p., 1918, fully equipped, like new, tax paid; 50 gns.—Francies, 56, Smart's Lane, Loughton, Essex. After 6 p.m. [X5175

ENFIELD 3h.p. Twin, 2-speed, K.S., excellent appearance and condition, complete, any trial; £55.—99, Kingsland Rd., Plaistow. [8753

ENFIELD Combination, 6h.p., overhauled, lamps, horn, tools, Easting, and tax paid; trial; offers.—75, Love Lane, Tottenham, N.17. [8679

ENFIELD 3h.p. Twin, Bosch, Lucas set, Tan-Sad saddle, just overhauled; £45; evenings.—24, Englewood Rd., Clapham Common. [8459

NEW 1921 8h.p. Enfield Combination, £160; also Enfield lightweights, £65; in stock.—Bounds Garage, 223, High Rd., Kilburn, N.W. [8257

19 17 6h.p. Enfield Combination, wind screen, hood, speedometer, lamps, etc.; £95; trial.—Pinn's Garage, 12, High St., Fulham, S.W.6. [8930

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1919 6h.p. Enfield Combination, in good condition, all accessories, Easting wind screen, tax paid; £120.—Bounds, 223, High Rd., Kilburn, N.W. [8258

3h.p. Enfield, good condition, kick start, 2-speed, lamps, horn, footboards; must sell; £42.—Write Sheppard, Welney, Tubbenden Lane, Farnborough, Kent. [8477

1921 8h.p. Enfield Combinations, with or without lighting, in stock; £182 and £160.—D. J. Shepherd and Co., Enfield Highway. Tel.: Waltham Cross 31. [0341

ENFIELD, 1921, 8h.p. J.A.P., lamps, horn, speedometer, wind screen, child's seat, insurance, mileage 700; price £158.—41, Chevening Rd., London, N.W.6. [9008

S.E. London Service Depot.—In stock 8h.p. Enfield combination, £160; tandem sidecar, £164; 2¼ h.p. 2-stroke, £65.—Cleare and Co., 125, High St., Woolwich. [5201

ENFIELD Combination, 6h.p., 1913, thoroughly overhauled, enamelled and plated as new, grid, toolbox, lamps, spares; £92.—Wright, 94, High St., W. Norwood, S.E. [8582

1918 Enfield Combination, 6h.p., electric lighting, oversize tyres, fully insured, recently overhauled, 3 spare tubes; best over £85.—327, Upper Richmond Rd., Putney. (P) [8574

ENFIELD 1921 8h.p. Combination, new, £160, delivery from stock; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

1921 Enfield 2-stroke, 2-speed, speedometer, lamps, etc., licence and 10 months' insurance, cost over £80, not done 100 miles; best offer over £65.—50, Forest Drive West, Leytonstone. [8650

1921 Enfield Combination, 9h.p. Vickers, electric light, Tan-Sad, screen, tax paid, insured £185, perfect, mileage 150, owner buying car; what offers?—Box 5,193, c/o *The Motor Cycle.* [8472

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Royal Enfield models from stock, combinations and lightweights, from £65; supplied on our easiest of easy payment systems. [4559

1917 Enfield Combination, electric and acetylene lamps, hood, screen, Tan-Sad, licensed, excellent condition; 90 gns.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7955

ENFIELD 8h.p. Combination, 700×80 tyres, Binks, Cowey speedometer, all lamps, Stewart horn, etc.; nearest offer to £125.—Williams, 9, Dyson Terrace, Blanmerle Rd., New Eltham, S.E.9. [8688

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1921 Enfield Combination, 8h.p., brand new, not unwrapped, just received from makers; owner unable to use; will accept £147/10 cash for quick sale; cost £160.—Box 5,201, c/o *The Motor Cycle.* (D) [8902

ROYAL ENFIELD 1919 6h.p. Combination, hood, screen, lamps, etc., just been re-enamelled and overhauled; seen by appointment at Ealing; no reasonable offer refused.—Box 5,230, c/o *The Motor Cycle.* [9139

ENFIELD 1919 (Dec.) 6h.p. Combination, hood, screen, side screen, Tan-Sad, D.A. lighting set, P.H. lamps, new tyres, new chains, 3,800, tax paid (Dec.), as new; £140, or near offer.—9, Elmfield Av., Graham Av., Mitcham, Surrey. [8081

ROYAL ENFIELD 1921 Combination, 8h.p., nearly new, complete with Lucas Magdyno electric lighting, Lucas bulb horn, Enfield patent hood and screen, Cowey trip speedometer, spare tube, chain, etc.; price £175, or near offer.—Box 5,179, c/o *The Motor Cycle.* [8293

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B.S.A., 4¼ h.p., model H.2, c. & k.-s.	£110	0	
COULSON, 2¾ h.p., clutch & k.-s...	£111	6	
COULSON, 2¾ h.p., 3-sp., c. & k.-s...	£117	12	
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1915 3½h.p. Twin 3-speed James and accessories, in good condition; £55.—Bounds, 223, High Rd., Kilburn, N.W. [8261

1913 3-speed James, Watsonian folding sidecar (save storage), new tyres, belt, tax paid; trial; bargain, £50.—105, Hemingford Rd., Barnsbury. [8504

JAMES Combination, 5-6h.p., late 1919, insurance and tax paid, splendid running order; £110, or near offer; genuine.—Pallett, 20, Pickets St., Balham. [8353

JAMES 6h.p., 1919 excellent condition, lamps, license, ride 50 miles purchaser; £82/10.—Parker, c/o Culvedreu Garage, Standen St., Tunbridge Wells. [8454

JAMES 1920 Combination, Lucas dynamo lighting, 5-6h.p. twin, new condition throughout; £125; deferred terms.—Midland Garage, 7, Broad St., Birmingham. [8374

5-6h.p. James, new 1920, 3-speed, lamps, horn, speedometer, tax, very fast, in lovely condition; £95; exchange lower power and cash.—Fitt, nr. Pikes, 102a, Church St., Chelsea. [8725

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LATE 1920 Lea-Francis, standard touring model; £95.—A. J. Young and Co., Ltd., Newmarket. [6796

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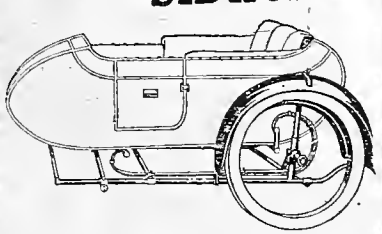

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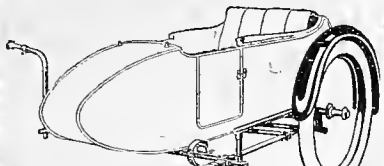

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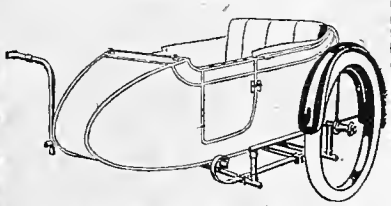

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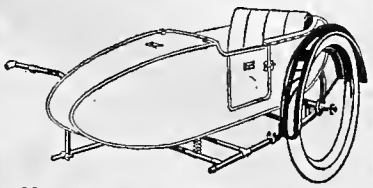

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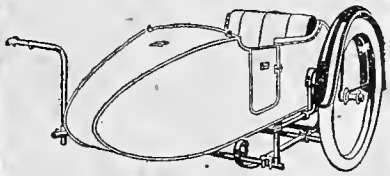

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£18.—4¼h.p. Lincoln-Elk, 2-speed countershaft, kick start, incomplete.—31, Andover Place, Kilburn. [8318

4¼h.p. Lincoln-Elk Combination, 2-speed, clutch, kick start, good Dunlops, excellent order; £42/10.—Miller, 151, Kingston Rd., Teddington. [8514

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L.M.C., 3½h.p., 1920, 3-speed, clutch, kick starter, as makers' specifications, shop-soiled only; at bargain price of £85 for cash only.—See below.

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3½h.p. L.M.C., good condition; must sell; bargain, £28, or nearest.—Full particulars, write Pressland, 15, Lea St., Kidderminster. [8134

L.M.C. 1920 6h.p. Combination, brand new, but slightly shop-soiled; bargain price, £115.—The Layton Garages, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9036

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MARTINSYDE Combination, in stock; £145; order now.—The Moreton Garage, 2, Moreton Terrace Mews, Pimlico, S.W. [6495

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MATCHLESS Combination, twin 8h.p. J.A.P., new gears, tyres practically new, acetylene lamp; any trial; tax paid; cheap, £95.—Alchin, 75, Croydon Rd., Caterham Valley, Surrey. [8252

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LATE 1920 8h.p. Matchless Combination, Magdyno lighting, spare wheel, wind screen, sidecar step, legshields, trip speedometer, all tools, etc., low mileage; £155.—436, Whitehorse Rd., Thornton Heath, S.E. [8570

1920 Model H. Matchless Combination, M.A.G., Magdyno, hood, speedometer, and other accessories, first-class condition, mileage 1,000; £170; owner bought car.—Write Finch, Hembsy, Kingsway, Gerrard's Cross. [8350

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METRO-TYLER 2½h.p., 2-speed, brand new; £50 to clear.—Saunders Garage, Parade, Golders Green. [8190

METRO-TYLER 2¾h.p., perfect condition, must sell; bargain; £30.—Fisher, 24, Tremadoc Rd., Clapham, S.W.4. [8669

METRO-TYLER, May, 1921, 2-speed, clutch, and kick starter, De Luxe sports sidecar, Lucas electric, hood, wind screen; a snip, £85.—Bailey, Ashley Rise, Walton-on-Thames. [8376

METRO-TYLER, 1919, new 1920, 2½h.p., 2-speed, lamps, horn, tools, tax, splendid order throughout; after 6.30.—Burrage, Cornwall Lodge, Cornwall Rd., Sutton, Surrey. £55. [8083

Minerva.

2¾h.p. Minerva, new tyres, overhauled, unregistered, guaranteed; £20.—Greenfield, 16, Temperley Rd., Balham. [8371

3½h.p. Minerva, rebushed, new mag., tyres, enamelled, tax paid, go anywhere; £27; after 6.—8, St. Peter's Sq., Hammersmith. [8076

Mohawk.

SHOP-SOILED Mohawk Combination, 3½h.p. K.D. engine, 3-speed, kick start, hand clutch; £130.—2, 4, 6, Alexandra Rd., N.8. [8281

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 2-8, Alexandra Rd., Hornsey. [3698

Monopole.

2¾h.p. Monopole-Villiers, almost equal to new, tax paid, brand new heavy Dunlops, lamps, horn; £40; exchange Omega or Diamond-Jap.—Kemp, New York, Lincoln. [X5197

Moto-Reve.

MOTO-REVE Twin Lightweight, mag., good running order, tax paid; £17.—Carlile, 10, Glenferrie Rd., St. Albans, Herts. [8844

Neal

1920 Neal-Dalm, 3h.p., countershaft, Brampton forks, electric lighting, brand new condition; any trial; £45.—James, Stewart St., Nuneaton. (D) [X5336

New Comet.

NEW COMET, 1921, Climax engine (inside flywheels, finest 2-stroke single manufactured), 2-speed, T.T. bars, Cox Atmos, complete with lamps, horn, spare belt, new chains, licence, long copper exhaust, almost new tyres, specially tuned for competition work; any trial or examination with pleasure; £48, or arrangement.—Mannox, Henlow, Beds. [8408

New Hudson.

1914 3-speed New Hudson, fine condition; £36.—Ross, 86, High Rd., Lee. [8625

MOTOR CYCLES FOR SALE.

New Hudson.

ONLY £52.—New Hudson C.B. combination, 4h.p., 3-speed, K.S., splendid condition.—Jarvis, Victoria Crescent, Wimbledon. [8289

1914 New Hudson, 3½h.p., 2-speed, excellent condition, complete with accessories: bargain, £50. 7, Norwood Rd., Herne Hill, S.E.24. [9005

NEW HUDSON 1920 2¼h.p. 2-stroke, 2-speed, all accessories, perfect order: £48, or nearest.—Riter, 163, Kennington Cross, S.E.11. [8070

6h.p. New Hudson Combination, like new, legshields, screen, electric lights, licensed, under 1,000: £145.—28, Humberstone Rd., Leicester. [8839

1919 (November) 6h.p. New Hudson Combination, full equipment, Easting, Binks, luggage grid, leg shields, sound, powerful; £125.—Bray, 19, Hemend, Ledbury. [8763

NEW HUDSON 1913 3½h.p., 3-speed, clutch, thoroughly overhauled and re-enamelled, electric lighting; £40; evenings, except Saturday, Sunday.—Bassett, 17, Heathfield North, Twickenham. [8315

NEW HUDSON C.B. Combination, 3½h.p., 3-speed, rebushed and repholstered, perfect mechanical order, speedometer, horn, tax paid; bargain, £45.—M., 60, Lea Hall Rd., Church Rd., Leyton, E.10. [8265

NEW HUDSON 1914 3½h.p., Armstrong 3-speed, clutch, lamps, tools, speedometer, tax paid, ride away, excellent condition; £50, or near offer; privately owned.—Seen Welch's Garage, Evering Rd., N.16. [9067

1919 (late) 4¼h.p. New Hudson Combination, Glorin sidecar, 3-speed, hand clutch, kick start, speedometer, large lamp set, Lucas horn, legshields, tax paid, almost new appearance; 77 gns.—15, Summerhill Rd., Dartford. [8516

NEW HUDSON Lightweights, all models, on view. Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Catalogues and any information by return.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [4756

New Imperial.

JULIANS of Reading have New Imperial 2¾h.p. 3-speed model in stock. [0638

2¾h.p. New Imperial, Aug., 1920, equipped, tax paid; £50.—Coalbrookvale House, Nant-y-glo. [8244

1916 Imperial-Jap 2¾h.p., 2-speed, accessories, good condition; trial; offers.—174, High St., Tooting. [8509

LATE 1919 2¾h.p. New Imperial-Jap, well equipped, tax paid; £47.—24, Balliol Rd., North Kensington. [8610

2¾h.p. New Imperial-Jap, 1920, free engine, 2-speed, spring frame; £65.—Heighton, Elton, Peterborough. [X4416

4h.p. New Imperial-Jap Coach Combination, 3-speed countershaft, grand order; 49 gns.—Ramsden's, 8, Maybell Av., Blackpool. [8345

NEW IMPERIAL 1917 2¾h.p., 2-speed, splendid condition, complete; £45; exchange higher power.—13, Scoresby St., Blackfriars, S.E.1. [9107

NEW IMPERIAL-J.A.P., 2¾h.p., 2-speed, 1916, new tyres, lamps, horn, tax paid, good order; £48/10.—Futcher, Clarence Rd., Fleet, Hants. [8556

NEW IMPERIAL-J.A.P., 1919, 2¾h.p., 2-speed, all on, tax, perfect condition; £50.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8995

1916 New Imperial, complete, lamps, horn, speedometer, etc., good condition; bargain, £40.—A. Phillips, Anzac Villa, Chandlersford, Hants. [8864

1916 New Imperial, 2¾h.p., 2-speed, lamps, horn, tax paid, good condition, running order; £35; seen evenings.—321, St. Margaret's Rd., E. Twickenham. [8069

NEW IMPERIAL-J.A.P., 2¾h.p., 1920, in splendid condition, clutch, kick starter, tax paid; £40.—Apply, Ralph Lucas, 10, St. Germain's Place, Blackheath, S.E.3. [8321

FOR Sale, practically new 1920 New Imperial with sidecar, twin Jack engine, 8h.p., in fine condition; £140, or near offer.—Apply, Gater, 1, Argyll St., Oxford Circus, W.1. [8274

NEW IMPERIAL Motor Cycles for dependability; all models for immediate delivery; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [8953

NEW IMPERIAL 8h.p. Combination, 3-speed, kick starter, clutch, specially built, W.D. type, not been 200 miles, many spares, sound touring outfit; accept £100 to clear.—Poulton, 43, Crawford St., W. [8845

NEW IMPERIAL.—Immediate delivery from stock, 2¾h.p. T.T. model with 3-speed gear box, 70 gns.; clutch and kick start model, 77 gns.; 8h.p. combination, 150 gns.—P. J. Evans, 81-91, John Bright St., Birmingham. [8407

IMMEDIATE Delivery of any New Imperial Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0506

NEW 1921 MODELS.

ALLON, 2¾ h.p., 2-speed, clutch, and kick-starter	£75 0
A.J.S., 2¾ h.p., 3-speed	£105 0
A.J.S. 7 h.p. Combination	£215 0
A.J.S. 7 h.p. Combination, with dynamo lighting	£243 0
ARIEL, 3½ h.p., 3-speed	£100 0
ARIEL 3½ h.p. Combination	£135 0
ARIEL, 4½ h.p., 3-speed, all-chain	£110 0
ARIEL 4½ h.p. Combination	£150 0
ARIEL 6-7 h.p. Combination, chain-cum-belt	£150 0
ARIEL 6-7 h.p. Combination, all-chain	£165 0
B.S.A. 6-7 h.p. Combination, with dynamo lighting	£195 15
B.S.A., 4½ h.p., Model K	£107 0
B.S.A., 4½ h.p., Model H, and No. 3 Sc.	£152 0
BRITISH EXCELSIOR, 2¾ h.p. Blackburne, 2-speed, clutch, and kick-starter	£88 0
LEVIS, 2½ h.p., Popular Model	£60 0
LEVIS, 2½ h.p., 2-speed	£88 0
MARTINSYDE 6 h.p. Combination	£145 0
MATCHLESS 8 h.p. Combination	£185 0
MATCHLESS 8 h.p. Combination, with dynamo lighting	£207 10
MATCHLESS 8 h.p. family Combination	£191 10
MATCHLESS 8 h.p. family Combination, with dynamo lighting	£214 0
METRO-TYLER, 2½ h.p., 2-speed, sports model	£70 0
NEW IMPERIAL, 2½ h.p., Model 1	£73 10
NEW IMPERIAL, 2½ h.p., Model 2	£80 17
NEW IMPERIAL 8 h.p. Combination	£168 0
RALEIGH 5-6 h.p. flat twin, 3-speed, spring frame	£147 0
RUDGE, 3½ h.p., Multi	£85 0
ROYAL ENFIELD, 2¾ h.p., 2-speed	£65 0
ROYAL ENFIELD, 2¾ h.p., 2-speed, with kick-starter	£70 0
ROYAL ENFIELD 8 h.p. Combination	£160 0
ROYAL ENFIELD 8 h.p. Combination, with dynamo lighting	£182 0
SCOTT, 3¾ h.p., solo model	£130 0
SCOTT 3¾ h.p. Combination	£170 0
SCOTT 3¾ h.p. Squirrel	£130 0
TRIUMPH, 4 h.p., Model H, chain-cum-belt	£115 0
TRIUMPH, 4 h.p., Model S.D., all-chain	£125 0
TRIUMPH, 2½ h.p., Junior Model	£70 0
ZENITH GRADUA, 5 h.p., sports model	£115 0
ZENITH GRADUA, 8 h.p., Model H	£144 0

SECOND-HAND.

Overhauled and Guaranteed.

BROUGH, 1920, 5 h.p., 3-speed, clutch and kick-starter, Swan sporting Sidecar, lamps, horn, speedometer, windscreen. Tax paid	£115
COULSON, 1920, 2¾ h.p. Blackburne engine, 2-speed. Tax paid	£60
DOUGLAS W.D. 4 h.p. Combination, 3-speed, clutch, and kick-starter, as new	£105
DOUGLAS, 1921, 2¾ h.p., 3-speed, clutch, and kick-starter, dynamo lighting, Klaxon horn, handle-bar watch. Tax paid	£98
DOUGLAS, 1916, 2¾ h.p., 2-speed, lamps, horn. Tax paid	£50
ENFIELD 1917 8 h.p. Combination, 2-sp., clutch, and starter. As new	£120
METRO-TYLER, 1920, 2¾ h.p., 2-speed, lamps, and horn	£55
RADCO, 1914, 2¾ h.p., 2-speed, lamps, horn. Tax paid	£25
ROVER, 1920, 5 h.p., 3-speed, clutch, and kick-starter, and Empress Monitor Sidecar, electric lighting, speedometer, horn. Tax paid	£148
ZENITH, 1914, 8 h.p., Gradua gear, sporting model, all red	£60

CASH, EXCHANGE, DEFERRED PAYMENTS.

Eastern Garage Co.,
Official repairers to R.A.C., A.C.U., A.A., & M.U.
418, Romford Rd., Forest Gate, E.7
'Phone: 490 East Ham. 'Grams: Egaraco, L'don.

MOTOR CYCLES FOR SALE.

New Ryder.

NEW RYDER de Luxe 2¾h.p., kick starter, 2-speed gear, list 76 gns., slightly shop-soiled; 60 gns; deferred terms arranged.—Midland Garage, 7, Broad St., Birmingham. [7353

Norton.

PREMIER Motor Co. for 1921 Nortons.

ANY Model Norton delivered to your address, carriage paid within 24 hours; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X4989

DAN GUY, Weymouth.—Norton official agent; early deliveries. [0595

1916 Norton 3½h.p., very fast, as new, all on, spare belt; £75.—20, Bounty Rd., Basingstoke. [8196

NORTON Motor Cycles.—Can deliver anywhere; early dates.—Kelly, Bachelor's Walk, Dublin. [4029

CYRIL WILLIAMS for immediate delivery of all models Norton.—Chapel Ash Depot, Wolverhampton. [X3820

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5005

NORTON.—Sole Walsall agents: exchanges or deferred payments.—Mandes' Motor Mart, Walsall Garage, Walsall. [2421

NORTONS 16H and Big Four, and B.R.S. specials from stock.—Frank Whitworth, Ltd., 139, New St., Birmingham. [X4160

NORTON 3½h.p., T.T., Phillipson, good order, engine No. 151063; £60, or lower power and cash.—47, Hamilton Rd., Reading. [8666

1920 4h.p. Norton and de luxe sidecar, lamps, horn, screen, perfect condition; reasonable offers.—Carder, Corsham, Wilts. [X5400

NORTON, 1919, 3½h.p., 3-speed, Venus sidecar, lamps, tools, original tyres, licensed, any trial; £115.—Henwood, Launceston. [8880

T.T. Norton, 3½h.p., 1921, run 5 miles only; £90, tax paid.—Apply, Ralph Lucas, 10, St. Germain's Place, Blackheath, S.E.3. [8320

LATEST Big Four Norton and Grindlay Sidecar, as new, exchange older machine and cash, Indian preferred.—1, Grosvenor Rd., Rugby. [X5324

BIG Four Norton and Canociet Sidecar, Easting wind screen, all lamps, 1916 model, very good condition; £75.—Lambert, Gilsland, Mill Rd., Deal. [8522

NORTON Big Four Combination, 1921, scarcely used, Mills-Fulford sidecar, lamps, speedometer, tools, oversize tyres, tax paid; £130.—17, Sussex Rd., New Malden, Surrey. [8593

NORTON 1921 Combination, Big Four, dickey seat on sidecar, fitted with every conceivable accessory, exactly as new; £175; deferred terms can be arranged. Midland Garage, 7, Broad St., Birmingham. [8142

1921 Norton Big Four Combination, Norton sidecar, with large lockers, practically new, Cowey, F.R.S lamp set, spares; any trial; tax and insurance paid; £155.—Harvey's, 47, South Lambeth Rd., S.W.8 (near Vauxhall Station). [9017

NORTON Big Four (August 1920) Combination, Watsonian sidecar, brand new, fully equipped, tools, etc., complete electric lighting, 700×80, tax paid; £140, or near offer; must sell or solo, £115.—C.H.H., Court Hill, Chipstead, Surrey. [9123

B.R.S. Model Norton, 1916.—This machine is the winner of many competitions, is one of the fastest Nortons in England, and is in beautiful condition; £75; particulars with pleasure.—The Layton Garages, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9038

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

1921 3½h.p. 3-speed All-chain Norton, Model 16H, large Lucas head lamp, Lucas tail lamp, and horn, Watford trip speedometer, and A.K. knee grips, also spares, indistinguishable from new, and exceptionally fast; any trial; a snip, no offers, £126; exchange 7-9h.p. Harley.—Particulars, D. Thomas, 9, Mostyn Crescent, Llandudno. [8642

L. MITCHELL, our representative, rode his private 1920 3½h.p. Norton in the Senior T.T. to prove his confidence in the machine he sells. Result, first Norton first private owner, and sixth place in the greatest race ever contested. If the effort deserves encouragement, you can do no less than place that Norton order with him and watch him in the next big event.—Bulloughs Motors, Ltd., Waterloo St., Oldham. [2050

1921 Norton 16H. Model, new 21st May, absolutely unscratched, and in perfect condition, won fastest time of day against 70 machines in Oxford and Banbury Hill-climb, 1st in 650 c.c. class, Oxford City and Varsity Hill-climb, and 4 other firsts; has won first place every time entered; Lucas King of Road lamps, Klaxon, licensed, and fully insured; £130, or best offer; owner going abroad immediately.—A. D. Cruickshank, Wheatley, Oxon. [8963

MOTOR CYCLES FOR SALE.

N.S.U.

£20.—N.S.U. 3h.p., splendid condition; take push cycle part.—57, Kenbury St., Camberwell, London. [8597

N.S.U. 1914 Twin Combination, all on, thoroughly overhauled, excellent sidecar, tax paid; £52/10.—Yates, 144, Church St., Kensington, W.8. [8279

NOT a Printer's Error. Price right. First comer for £8/19/9. N.S.U. 2¾h.p. twin lightweight, mechanical valves, Binks, Bosch, Lycetts saddle, Hutchinson shod, carrier and stand. Don't hesitate.—Butler, Littleover Works, Derby. [X5174

N.U.T.

N.U.T.-J.A.P. 4-5h.p. Twin, C.B. sidecar, new body, 3-speed, K.S., excellent condition; 54 gns., or offer—48, Wellington Buildings, Bow, E.3. [8885

N.U.T. 1920 5½h.p., dynamo lighting, tax paid, indistinguishable from new; £120.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X5262

N.U.T.—Sole agents for nine counties; special exchange or deferred payment terms; immediate delivery all models; trade supplied.—Maudes' Motor Mart, London, Exeter, and Walsall. [2422

N.U.T. 3½h.p., 1920, with Magdyno and fully equipped, licensed and insured, condition almost as new, and a bargain at £110.—The Layton Garages, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9039

3½h.p. 1921 Model P. N.U.T., engine No. 9/613, frame P451, Magdyno, set of lamps and horn, Cowey trip speedometer, Palmer tyres unpunctured, mileage 2,714, delivered Dec., 20th, original bill £159 shown, gold medal winner London-Land's End, special mention for ascent of Porlock (see "Motor Cycling" report), insurance included; would ride Newcastle, Edinburgh, or Carlisle to bona-fide purchaser; price £115.—Ralph Leather, Belford, Northumberland. (D) [8500

O.K.

FOUR Machines, O.K.'s, brand new (not unpacked); £40 each.—Wilks, Stockton, Rugby. [8842

O.K. 2¼h.p., 2-speed, 4-stroke, good tyres, licensed; £28.—3, Park St., Wellington, Salop. [X5226

O.K. 2¼h.p., 4-stroke, M.A.G., 2-speed; £25, tax paid.—Langton, 53, Greenvale Rd., Eltham, S.E.9. [8555

O.K.-J.A.P., 2¾h.p., 2 speeds, new condition, licensed, spares; £40.—3, Eve Rd., Leytonstone, E.11. [8425

O.K.-VILLIERS, 1920, 2-speed, mileage 600, taxed, accessories, perfect; £40.—Phillips, Elmsdale, Tilehurst. [8942

LATE 1920 O.K. 2-stroke, lamps, Klaxon, etc.; £37/10, or near.—Allston, Bergholt, High St., Harpenden, Herts. [8711

2¾h.p. O.K., late model 4-stroke, 2-speed, all lamps and horn, tax paid, perfect; £32/10.—4, Station Buildings, Woodside, S.E.25. [9047

O.K. 2¼h.p., 2-speed countershaft gear, good condition and appearance; £30; deposit system.—Snow, Laurel St., Queen's Rd., Dalston, E.8. [9082

APPROVAL.—O.K.-Villiers, new 1921, 2-speed, full equipment, licensed; this machine starts easily, is very reliable, and runs particularly smoothly, suit either sex; guaranteed mechanically and externally faultless; £49.—S.V., 199, Unthank Rd., Norwich. [7624

Omega.

OMEGA 2-stroke, 2 speeds, just overhauled; £29.—Warwick, Hinckley Rd., Leicester. [X5252

P. and M.

P. and M. Combination, all on, now in use; £65.—2, Canonbury Grove, N.1. [8357

P. and M., 3½h.p., 2 speeds, K.S., replated; £54, or offer.—20, Clarence Rd., Tottenham, N.15. [8352

P. and M., 1919, overhauled, re-enamelled, sidecar, tax; £85.—4, Waldegrave Gardens, Twickenham. [8828

P. and M., 1918; £70; any trial; must be sold.—Green, 60, Dewsbury Rd., Dollis Hill, Willesden. [8175

P. and M., 1918, just renovated, stoved, plated, new tyres, all on; £50.—106, North End Rd., W.14. [8312

CYRIL WILLIAMS for immediate delivery of all models P. and M.—Chapel Ash Depot, Wolverhampton. [X3821

P. and M., as new, K.S., 2 speeds, perfect running; £42.—35, St. Clement's Mansions, Lillie Rd., Fulham. [8801

P. and M., 1917, overhauled, perfect, lamps, horn, complete; £50.—38, Sherrik Rd., West Hampstead, N.W.6. [8590

P. and M. Combination; expert examination invited; £75.—Speechley, 86, Churchfield Rd., Acton, London, W.3. [8656

P. and M. Combination, 1918, lamps, 28×3 tyres, spares, licensed, any trial; £65.—3, Eldon Park, South Norwood. [8429

P. and M., 1918, reconditioned, equal to new, splendid sidecar; £72/10.—Yates, 144, Church St., Kensington, W.8. [8278

EXCHANGES QUOTED

1921 NEW LIGHT CARS.

STANDARD, 11.6 h.p., 4-seater	£610	0
STANDARD, 11.6 h.p., 2-seater	£575	0
AIREDALE, 11.9 h.p., 4-seater	£475	0
AIREDALE, 11.9 h.p., chassis	£400	0
LAGONDA, 11.9 h.p., coupé	£420	0
CALTHORPE, 2-seater. Reduced price	£420	0
CALTHORPE, 4-seater. Reduced price	£450	0

1921 NEW MOTOR CYCLES.

COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
EDMUND-BLACKBURNE, spring frame	£98	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2¼ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£155	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four, 3-speed, and Sidecar	£165	0
NORTON, 3½ h.p., single-speed	£98	0
***DOUGLAS,** 2¾ h.p., 2-speed	£85	0
***DOUGLAS,** 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£170	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON Big Four, 3-speed	£115	0
P. & S., 2 speed, 2¾ h.p., clutch	£55	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
ALLDAYS ALLON, 1916, 2¼ h.p., 2-sp.	£47	10
BROUGH, 1916, 3-speed countershaft.	£59	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2-speed, lightweight	£55	0
ARIEL, 1920, 3½ h.p., 3-speed c/shaft.	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10

PASSENGER MACHINES.

SUNBEAM 8 h.p. M.A.G. Combination	£145	0
HAZLEWOOD-J.A.P. 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting, tax paid	£115	0
MORGAN, 1915, sporting	£130	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£99	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£195	0
HARLEY 1920-Combination, electric	£175	0
HARLEY, 1916, and S'car, very smart	£105	0
INDIAN 3-speed twin Combination	£79	10
READING-STANDARD 3-speed Com.	£100	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£75	0
ALECTO 1920 coach Combination	£82	10
REX 1914 6 h.p. Combination	£72	10
ZENITH-GRADUA. 6 h.p., and Sidecar	£57	10
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£85	0
NORTON Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£135	0

Deferred Payments taken.
Cash offers considered for Second-hand Models.

SUNDRIES.

1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1⅛	£2	12	6
New Electric Head Lights, 6½in. dia., black nickel finish, usual price £3 17 6	£2	19	6
New Army Knapsacks, 13½×11in.		5	6
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£19	10	0
Second-hand Douglas Magneto	£1	17	6
Second-hand Amac Carburetter		15	0
Second-hand B. & B. Carburetter	£1	5	0
Coach Sidecar, for Triumph	£14	15	0

MOTOR CYCLES FOR SALE.

P. and M.

1919 P. and M., 2-speed, kick starter, perfect order, like new, must be sold; any offers; seen 6-8 p.m.—61, High St., W.C. [8765

P. and M. Solo, rebuilt, as new, splendid machine; 50 gns.—Cooper and Chalk, 84, Holland Park Av., W.11. Park 5108. [8426

P. and M., 1920, as new, mileage 2,000, fully equipped, Easting, unpunctured; £105.—Bradley, Furnishers, Edmonton, London. [8378

P. and M. Combination, K.S., 2 speeds, lamps, smart appearance, perfect running, licensed; £50.—Warwick, Hinckley Rd., Leicester. [X5250

1920 P. and M. Combination, lamps, speedometer, horn, in perfect condition; 100 gns.—Fry, 39, Wallisoote Rd., Weston-super-Mare. [8872

P. and M. 1919 (late), not W.D., lamps, horn, tools, spares, tax paid, splendid condition; £65.—6, Asylum Villas, Darenth, Dartford. [8174

1920 (Nov.) P. and M. Combination, like new, aluminium discs, lamps, horn, speedometer, tax paid; £110.—9, York Place, Newport, Mon. [8892

1921 P. and M. with 1920 Sidecar, cost with accessories £165 a week ago; no reasonable offer refused; registered.—Box 5,178, c/o *The Motor Cycle.* [8292

P. and M. Combination, 2-speed, clutch, excellent going condition, must sell, owner going abroad; best over £32.—302, London Rd., Thornton Heath. [8761

P. and M., 1918, 2-speed, clutch, just overhauled, re-enamelled, and plated; £55; lightweight part exchange.—56, Conington Rd., Lewisham, S.E.13. [9053

P. and M. 3½h.p., 2-speed, fine condition, overhauled and re-enamelled, plating as new, tax paid, £35; sidecar, Milford chassis, £6.—M., 40, Pier Rd., Erith. [9065

P. and M. Combination, 1917, new tyres, electric lamps, re-enamelled and upholstered like new; £55 for quick sale; no offer.—R.A., 66, Church Rd., Acton. [8363

1918 P. and M. Combination, perfect condition, gas head, electric sidecar and rear lamps; Cowey speedometer, new tyres, tax paid; £80.—64, College Rd., Isleworth. [8356

1920 P. and M. Combination, condition and appearance as new, little used, speedometer; best offer around £104; would separate, £90 and £14.—C.C., 291, Iffley Rd., Oxford. [8436

1919 P. and M. Combination, in good condition, Mills-Fulford sidecar, complete new chassis, Camac wind screen, electric and acetylene lights; £65, or sell separately.—Rowland, Temple Mount, Belvedere. [9086

1920 P. and M. Combination, excellent condition, fully equipped, Lucas electric lighting, horn, accumulator, spare tyre, tools, etc., licence paid; £130, or nearest offer; a bargain.—Apply, North Finchley Motors and Metals, Ltd. Finchley 611. [8280

Paragon.

1920 3h.p. Paragon, 2-stroke, 2-speed, spring frame, recently overhauled, in first-class condition, tax paid, all on; £45.—C. S. M. Smith, Drill Hall, Braintree. [8203

Peugeot.

3½h.p. Peugeot Combination, N.S.U. 2-speed, Bosch, Amac, Lucas lamps, etc., good tyres, excellent condition, tax paid; £38.—22, Warwick Gardens, Harringay, N.4. [8550

Precision.

4¼h.p. Precision, clutch, Bosch mag., 2-speed, P.S., Klaxon, lamps, tip-top condition and appearance, genuine; £45, or near.—The Haven, Sutherland Rd., Croydon. [8687

PRECISION 1914 4h.p. Coachbuilt Combination, 3-speed and clutch, lamps, wind screen, etc., splendid condition and appearance; bargain, £40, or offer.—Kirkham, 26, Albert Rd., Hendon, N.W.4. [8858

Premier.

3½h.p. T.T. Premier, overhauled, will do 50; £35.—Windebank, 40, Green Park, Bath. [8455

PREMIER 4h.p., countershaft, recently overhauled, enamel and plating good; £39.—Warwick, Hinckley Rd., Leicester. [X5251

£30 buys 2¾h.p. 2-speed countershaft model Premier, guaranteed first-class condition.—37, Vicarage St., North Shields. [8400

PREMIER Combination, 7-9h.p., fully equipped; any trial; 90 gns.; take lower power part.—57, Kenbury St., Camberwell, London. [8598

3½h.p. Premier, 3-speed, countershaft, and sidecar, lamps, horn, etc.; bargain, £65.—Pinn's Garage, 12, High St., Fulham, S.W.6. [8931

BARGAIN.—1912 Premier, 3½h.p., single-speed, new cylinder, rebushed, splendid condition throughout; £23.—51, High St., Chatteris. [8928

4¼h.p. Premier, 1916, 3-speed countershaft, K.S., all on, new tyres, perfect condition, tax paid, take sidecar; £63.—H.E.H., 44, Junction Rd., Highgate, N. [8944

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Premier.

PREMIER 2¾h.p., 3-speed hub and clutch, for 6h.p. Bosch, B. and B., lamps new, overhauled, ride away; £30.—1, Christchurch Rd., Ilford. [8496

1914 Premier 3½h.p. Combination, 2-speed clutch, lamps, generator, horn, completely overhauled, tank re-enamelled makers' colours; best offer secures.—Campbell, 29, Palmerston Rd., Acton, W.1. [8358

1916 4h.p. Premier Combination, countershaft gears, kick start, waterproof Bosch, B. and B., tax paid, lamps, good order, recently overhauled; sell £50; exchange lightweight and cash.—J. Ogden, 11, Thomas St., King's Lynn. [8104

Quadrant.

1920 Quadrant Combination, nice order, £85.—Ross, 86, High Rd. Lee, S.E. [8622

QUADRANTS.—A selection of second-hand models in stock.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7951

4½h.p. Quadrant Combination, B.S.A. 3-speed, countershaft, all accessories; trial; £70.—Pinn's Garage, 12, High St., Fulham, S.W.6. [8932

QUADRANT Combination, 1914, 4½h.p., 3-speed, canoelet C.B sidecar, fully equipped, top-hole condition; trial; £55.—Richards, 5, Church Lane, Lichfield. [8144

QUADRANT Sole Agents and Wholesale Distributers, London, Southern, and Eastern Counties. All spares stocked. Official repairers.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Tel.: Hop. 210. [5703

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EASY Payments only 4% extra. We can deliver to your address within 24 hours the new Raleigh 5-6h.p. flat twin, spring frame, chain drive; solo, 140 gns.; sidecar, 176 gns.; spare wheel and tyre, 6 gns.—Sole Birmingham Agents, The Premier Motor Co., Aston Rd., Birmingham. [X4990

NEW 1921 5-6h.p. Raleigh; immediate delivery from stock; 140 gns.—Gray's Garage, Watford. [8926

1921 Raleigh, 5-6h.p., flat twin solo, 140 gns.; combination, 176 gns.—Howard, 72, Chase Side, Enfield. [8360

RALEIGH Motor Cycles.—Demonstration machine available for you to try; immediate delivery; cash or deferred payments, your present machine in part payment.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [8951

WE can give delivery of this famous make of machine from stock; there is no better quality or finish possible; a perfect machine in every point and detail; Raleigh 5-6h.p. flat twin solo, 140 gns.; combination, 176 gns.—G. and J. Dawson, 60 and 62, Regent St., Cambridge. [0600

Reading-Standard.

1916 Reading Standard Combination; £90.—Ross, 86, High Rd., Lee, S.E. [8627

Rex.

REX 3½h.p., C.A.V., slight adjustment; £10.—Marsden, 43, Deynsford Rd., Camberwell. [8302

REX 1912 5-6h.p. Combination, 2-speed, hand clutch, Bosch mag., B. and B. carburetter, just done up; £47, or near offer.—Henderson, 41, Winston Rd., Stoke Newington, N.16. [8803

NEW 8h.p. Rex-Blackburne Combination, detachable wheels, spare wheel, makers list price £218; offered at £175; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X5361

REX 6h.p. Twin, 2 speeds, free engine, handle starting, Bosch mag., low, fast, Amac carburetter, bulbous back coachbuilt sidecar, economical, guaranteed perfect, simple lamps, tools; trial any time; bargain, £56.—Stepney Garage, 77, Salmons Lane, Commercial Rd., Stepney, London. [8824

Roc.

£15.—Roc 3½h.p., mag., Druids, good tyres, fast, powerful, ride away.—Bedford Laundry, Whetstone. [8775

ROC, 3½h.p., Bosch, B. and B., new Dunlop and belt, good order throughout; £24.—Whitbourn, Vicarage Rd., Chobham, Surrey. [8295

Rover.

1920 Rover T.T. 3½h.p., single-speed; £85.—A. J. Young and Co., Ltd., Newmarket. [6793

3½h.p. T.T. Rover, excellent condition, very fast.—Ashfield, Church Rd., Whitchurch, Glam. [8334

6h.p. Rover 2-seater, £55; Argyll lorry, £60; near offer.—Pemsel and Wilson, Boxmoor, Herts. [9126

1914 Rover 3-speed Coachbuilt Combination, ready for hard work; £45.—41, Regent St., Wellington, Salop. [X5223

LATE 1919 5-6h.p. Rover Combination, beautifully equipped, tax paid; £90.—24, Balliol Rd., North Kensington. [8609

3½h.p. T.T. Rover, tax paid, fast and reliable; first 19 gns. gets it.—Ramsden's, 8, Maybell Av., Blackpool. [8339

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1914 Rover, lamps, etc., in excellent order; £30.—Smith, 3, The Parade, Staines Rd., Bedfont, Middlesex. [8091

FOR Sale, 1916 Rover motor cycle, 3½h.p., 3-speed, clutch model, perfect condition.—Brook Bros., Burnham-on-Sea, Somerset. [8705

5h.p. Rover Combination, twin J.A.P., 3-speed, electric lighting, wind screen, luggage carrier; £110.—22, Leybourne Rd., Leytonstone, E.11. [8691

1919 Rover 3½h.p., T.T., overhauled Rover works, cost £8, guaranteed perfect; £50, or offer.—479, Bristol Rd., Bournbrook, Birmingham. [X5354

3½h.p. Rover Combination, new, unregistered, must sell; will ride any distance to genuine purchaser; £135, or offer.—Thornton, 5, Stoneygate Av., Leicester. [8462

ROVER, 3½h.p., 1920 touring model, 3 speeds, clutch, kick starter, shop-soiled only, as makers' specifications; at bargain price of £100 for cash only.—See below.

ROVER, T.T., Philipson pulley, shop-soiled only, as per makers' specifications; at bargain price of £85 for cash only; 1920 model.—Mebes, 156, Gt. Portland St., W.1. 'Phone: Langham 2230. [8285

ROVER Late 1920 5-6h.p. Combination, 3-speeds, chain drive, new and unused; offers or exchange. — Eagles and Co., 275, High St., Acton, London. [8792

ROVER, 3½h.p., 1916 model, fully equipped with Campion sidecar and all accessories, perfect order; £85.—Ramsay, 6, King's Av., Greenford, Middlesex, Southall 12. [8639

BARGAIN, £30.—6h.p. Rover, 2-seater, w.c., mag., folding wind screen, hood, Stepney, running order, good condition, private owner.—Wall, Central Garage, Warminster, Wilts. [8255

BRAND New Rover, 3-speed, spring chain, cost £115, guaranteed unridden, countershaft, approval anywhere; first decent offer.—Postmaster, Barnwell, Peterboro'. [8713

ROVER 5-6h.p. Combination, 1918, tax paid, mechanically perfect, 3-speed, kick starter, horn, lamp, and tools; £90 for quick sale; trial given.—345, Edgware Rd., W.2. [8481

1919 Rover Combination, 5-6h.p., chain drive, 3-speed, kick start, god tyres, electric lighting (accumulator), tax paid; £85.—Allen, 66, Whitton Rd., Twickenham. [8533

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

1919 3½h.p. Rover Combination, 3-speed countershaft, kick starter, tyres never punctured, Lucas lamps, luggage grid, splendid condition; about £100; open to offer; owner must sell.—34, East Sheen Av., S.W.14. [8355

1918 T.T. Rover, h.b.c. Phillipson, 650×65 Veiturette rims and tyres, will guarantee certified speed 70 m.p.h., long plated exhaust, large P. and M. lighting set, Lucas horn, special saddle fitting dropped 4in., perfect throughout, any expert trial or examination; £70.—16, Jessamy Rd., Weybridge. [8637

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.—John Aldrich and Co., Diss. [0630

ROYAL RUBY 2-stroke, 2-speed; £35.—Greenfield, 16, Temperley Rd., Balham. [8370

1919 Royal Ruby 8h.p. Combination, fully equipped; £95.—Braemar, 17, St. Quintin's Av., North Kensington. [8674

1917 2¾h.p. Royal Ruby, 2-speed, new chain and belt, lamps, Stewart, tax paid, good condition; 40 gns.—11, Popo Rd., Bromley, Kent. [8087

ROYAL RUBY Combination, 1920, 8h.p., 3 speeds, lamps, horn, Tan-Sad, original tyres unpunctured, tax paid; trial; £130.—130, Northfield Av., Ealing, W.13. [8853

ROYAL RUBY 1920 Combination, 8h.p., wind screen, speedometer, etc., splendid condition, Sturmey-Archer gears; £160. — 37, Dryburgh Rd., Putney. [8228

ROYAL RUBY, 8h.p., ex-W.D. model, 3-speed gear box, complete with Montgomery sidecar, all lamps, running order, but requires overhauling; clear at £62.—Maudes', 100, Gt. Portland St., London, W.1. [9129

Rudge.

1920 3½h.p. Rudge Multi, T.T., nearly new condition, licensed; £75.—Butler, Baldock. [5934

1920 I.O.M. Rudge, not used this year, in splendid condition; £68.—W. H. Hines, Castle Brewery, Bedford. [8065

£85.—Rudge Multi 3½h.p., pedal-starter; in stock.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7949

RUDGE, 3½h.p., clutch, speedometer, lamps, horn, tax paid, good condition; £35. — Goiffon, 26, Mornington Rd., N.W.1. [8545

MOTOR CYCLES FOR SALE.

Rudge.

1919 Rudge Multi, 3½h.p., I.O.M., torpedo coachbuilt sidecar, very good condition; £75.—Simons, Hagley, Gerrard's Cross, Bucks. [8354

RUDGE Multi 5-6h.p., fitted with T.T. bars, lamps, horn, licence holder, etc., only done 20 miles; owner compelled to sell through illness; £90.—White's Garage, Hinckley. [X5194

£65.—3½h.p. Rudge Multi and coachbuilt sidecar, fast, powerful machine, special Binks carburetter, spares, etc.—Seen at Wright's Garage, 249, Camberwell Rd., S.E. Tel.: Hop. 2890. [9000

3½h.p. Rudge Multi, I.O.M. T.T., pedal starter, bought new 1920, excellent running condition, lamps, horn, new belt, and many spares; £65.—Smith, 30, Wharf Rd., Stamford. [8640

1920 Rudge Multi 3½h.p. Combination, fully equipped, only done 300 miles; bargain, £85.—James, c/o Bradmore's, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [8883

1921 Rudge Multi 3½h.p., best value for money on the market, delivery from stock; £85.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

1913 Rudge 3½h.p., tax paid, 3-speed Armstrong, unused during war, overhauled, but shabby through neglect; best offer; any trial given.—Marsh, Minden, Ash-vale, Aldershot. [8488

LATE 1920 T.T. Rudge Multi, fully equipped, speedometer, insured, new condition, mechanically perfect, small mileage, private owner; £80, or near.—Frank Terry, Odiham, Hants. [8795

RUDGE, 3½h.p., 1914, sporting model, unused during war, condition, appearance as new, any trial 2 up, equipped; £35, or exchange 2-stroke.—80, Station Rd., Hampton, Middlesex. [8296

RUDGE Multi, 3½h.p., coachbuilt sidecar, lamps, speedometer, Klaxon, tools, 2 new Dunlops, mechanically perfect, insurance and tax paid; £50, lowest.—Seen at 357, High Rd., Ilford. [8052

JUST Purchased, a 5-6h.p. Rudge combination, late 1920, elaborately furnished, warranted better than new; 100 gns. cash. Come and see it. Yours in part if you wish.—Bunting's Exchange, Wealdstone. [8959

1920 3½h.p. Rudge Multi, engine No. 18596, sloping top tube, hand controlled clutch, mechanical horn, F.R.S. lamps, Dunlop tyres as new, licence paid, perfect condition; £75 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X5362

Scott.

1920 Scott Sporting, Lucas fittings, perfect; any trial; offers.—51, Cairns Rd., Sheffield. [8797

SCOTT 3¾h.p., 2-speed, water-cooled; £48; take lightweight part.—57, Kenbury St., Camberwell, London. [8599

3¾h.p. Scott and Coachbuilt Sidecar; £45; excellent opportunity.—Wauchope's, 9, Shoe Lane, London. [9013

LATE 1920 Scott, T.T. bars, electric lamps, Lucas horn, like new; £90; exchanges.—S. Rock, Beecher Rd., Cradley, Staffs. [X5276

F.O.C.H. have several Scotts, solos and combinations; bargains.—5, Heath St., Hampstead (near Hampstead Tube Station). [7334

1920 Scott Combination, special Montgomery sidecar, hood, screen, lamps, complete, like new; £150.—Griffith Garage, Bath. [X5371

1920 Scott Combination, Easting, all lamps, Lucas horn, speedometer; £100; exchange.—4, Thornton St., Kempston, Bedford. [8826

SCOTT, 1919, and sidecar, with spares, Klaxon, lamps, wind screen, licence paid, just overhauled; £80.—Thomas, 21, The Avenue, Watford. [8507

1920 Scott Combination, hardly used, 3in. tyres; would exchange for lightweight and cash; sell £140, offer.—Grimes and Co., 18, Bruton Place, Bond St., W.1. [8369

SCOTT, late 1920, nearly new condition, 6-volt. set, £4 tax paid; any trial; £100, offer; exchange machine value £50 or less and cash.—James, Roseneath, Ilkeston. [8697

1921 Scott Squirrel, with sporting Canoelet sidecar, Klaxon, speedometer electric lighting, mileage 200, insured, licensed; £170.—Carpenter, 41, High St., Baldock, Herts. [8415

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; at £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

SCOTT Combination, 1920; bargain; perfect condition, electric light side and rear, small mileage, tax paid, spares; £110; owner bought car.—Shirley Smith, 1, Park Av., Gillingham, Kent. [9006

1920 Scott, beautiful machine, original tyres untouched, lamps, horn, etc., tax paid; trial willingly; 90 gns., offers; exchanges considered.—1, Boundary Rd., Notting Hill. 'Phone: Park 654. [8680

SCOTT 1920, complete with cigar-shaped sporting sidecar, very good condition, complete with lamps, horn, and licence; offered at £120.—The Layton Garages, 90, High St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [9040

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1920 Scott, splendid condition, Amac, 1921 lubrication, 3in. extra heavy Dunlop, F.R.S. Major, Stewart horn, Watford trip, etc., licence, insurance, tools, many spares; bargain, £90.—1, Kingfield Rd., Bushey (Bakerloo). 'Phone: Dalston 48. [8558

SCOTT Motor Cycle and Sidecar, fitted with speedometer and all accessories, licensed to end of 1921, in excellent condition, only run 350 miles; price £130; owner buying car.—The Pytchley Autocar Co., Ltd., 216, Gt. Portland St., W.1. 'Phone: Langham 1800-1. [8461

SCOTT-SQUIRREL, 1921, done about 400 miles, absolutely as new, 80 m.p.g., and over 60 m.p.h., complete with special low gear sprocket for hill-climbs, all tools, and licence for year, also large P. and H. lighting set; owner must sell to make room for car, and will accept £95; absolute bargain.—A. W. Bell, Hillside, Langholm. [8379

Singer.

SINGER 2¾h.p., Bosch mag., B. and B. carburetter; accept £19 quick sale.—Bannister, Sheep St., Rugby. [X5268

£22.—Singer motor cycle, 2¾h.p., Bosch mag., Amac carburetter, single gear, adjustable pulley, good running order, licensed, lamps, horn, and spares.—Gray, 6, Coleswood Rd., Harpenden. [8073

SINGER 1912-13 4h.p., 2 speeds, clutch, footboards, full P. and H. lamp set, horn, etc., tyres and belt very good, tax paid for the year, in perfect condition throughout, very smart and fast; £29, bargain.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [8776

Sparkbrook.

2¾h.p. Sparkbrook, 2-speed, 1919 model, all on; £46/10.—45, Walm Lane, Cricklewood. [8129

SPARKBROOK 2¾h.p., 2-speed, cost £78 Feb., 1921; accept £49.—Rogerson, Newtown, Wigan. [X5269

SPARKBROOK Combination, 1914, 6h.p. J.A.P., Bosch, coachbuilt, Easting, perfect running condition; complete £95.—Echarti, Burley, Brockenhurst, Hants. [8664

SPARKBROOK, latest 1921 models, 2½h.p., 2-speed, hand clutch, kick starter, £72/10; also 2-speed models, £65; deferred payments or exchange.—Eagles and Co., 275, High St., Acton, London. [8789

SPARKBROOK 2½h.p., Aug., 1920, small mileage, Villiers, flywheel mag., Brooks saddle, 2 speeds, Dunlops, lamps, tools new condition, tax paid; £55.—1, Beacon Rd., Loughborough, Leicestershire. [8242

Sun.

SUN-PRECISION, C.B. sidecar, 3-speed, licensed; £45.—Butler, Baldock. [5932

1914 Sun-Precision, 4h.p., 3-speed, Willowbrook cane sidecar door, licensed; £50.—Andreae, 54, Brampton Rd., St. Alban's. (D) [X5295

Sunbeam.

E. KICKHAM for Sunbeam, sole agent for Bristol and district.—Stokes Croft, Bristol. [3352

SUNBEAM.—Brand new 3½h.p. touring combination, in stock; exchanges.—Moss, Wem. [X5304

1920 Sunbeam 3½h.p. Combination, lamps, horn, tax paid, equal to new; highest offer.—Crawley, Chatteris, Cambs. [8194

3½h.p. New Sunbeam and sidecar, interchangeable wheels; £200; from stock.—A. J. Young and Co., Ltd., Newmarket. [6795

3½h.p. Sunbeam Combination, black and gold, 3-speed, perfect order, tax paid; 89 gns.—Ramsden's, 8, Maybell Av., Blackpool. [8344

SUNBEAM 1920 Combination, nearly new; £130; no dealers, no offers.—Write Albert Harling, 123, Gt. Suffolk St., Borough, S.E. [9068

SUNBEAM 3½h.p., Dec., 1915, 3-speed, kick starter, Lucas lamps, new tyres; £75, or offer.—Billett, Wrestlingworth, Sandy, Beds. [8160

LATE 1915 3½h.p. Sunbeam Combination, recently overhauled, guaranteed order, complete with accessories; £105.—2, Glebe Rd., Barnes, S.W. [8432

1919 Sunbeam and Sunbeam sidecar, speedometer, lamps, horn, licensed, excellent condition; £108.—Edwards, 50, Harrington Rd., South Kensington. [9130

1919 3½h.p. Sunbeam and Henderson spring frame sidecar (1920), lamps, speedometer, Easting, etc., mileage small; £120.—Beattie, 25, Castlemaine Av., Croydon. [8381

SUNBEAM 8h.p., Sept., 1920, Henderson Elite sidecar, electric lighting, horn, tools, tax paid, perfect condition, equal to new; £195 cash.—Perry, Beoley, Redditch. [X5391

SUNBEAM Combination, 3½h.p., as new, 3-speed, kick start, licence paid, Lucas accumulator lighting, any inspection; £135.—Cresswell, Westbourne Rd., Walsall. [8079

8h.p. Sunbeam Combination, Lucas Magdyno, spare interchangeable wheel, fully equipped, tax, handsome outfit, nearly new; offers.—19, Streatley Rd., Brondesbury. [9023

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1915 3½h.p. Model with Sidecar, complete with all accessories, excellent condition; £110.—Parker's, Bradshawgate, Bolton, also 245, Deansgate, Manchester. [X5263

SUNBEAM, 3½h.p., Sept., 1919, black and gold, fully equipped, T.T. or touring bars, specially tuned, condition and appearance as new; £110.—43, Grove Rd., Sparkhill, Birmingham. [X5292

1920 (July) 3½h.p. Sunbeam Combination, in excellent condition; and perfect order, interchangeable wheels, mileage negligible; £155.—F. T. Smith, The Stores, Twyford, near Winchester. [X5291

£140.—1921 3½h.p. Sports Sunbeam, fitted with Lucas lamps and horn, tax paid, cost £162, absolutely as brand new and unmarked.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6265

MAGNIFICENT 1919 3½h.p. Sunbeam Combination, 3-speed, kick starter, clutch, tyres as new, lamps, tools, etc., perfect condition throughout; £110.—2, Grenville Place, South Kensington. Western 2946. [8633

SUNBEAM 1920 (late) 3½h.p., Lucas dynamo lighting, Lucas electric horn, oversized tyres, in exceptionally good condition; £135 for quick sale.—Parker's Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X5264

1921 Sunbeam 8h.p. Combination, 900 miles, dynamo lighting, insurance and tax paid, luxurious outfit; cost over £300 April, receipt shown; £225, genuine bargain; every accessory.—215, Richmond Rd., Kingston-on-Thames. [8552

SUNBEAM Combination, late 1920, fitted 47 gn. Sunbeam sidecar, Cameo screen, P. and H. lamps, speedometer, tax paid, indistinguishable from new, cost £240; accept £155.—Dentist, 216, Portobello Rd., North Kensington. [7079

1920 3½h.p. Sunbeam (Aug.), fitted with new Sunbeam sidecar, fully equipped, Lucas fittings, Sunbeam leg shields, Binks, interchangeable wheels, not done 800 miles, licence and insurance paid; £150.—14, Estcourt St., Devizes. [8163

SUNBEAM 3½h.p. (late 1920), touring model, P. and H. lamps, Lucas horn, Watford trip speedometer, genuinely soiled only; exceptional value, £130.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7346

3½h.p. (June) 1920 Sporting Sunbeam, Lucas sets, Cowey, 700×80 Dunlop, improved steering, special carburetter, 52 m.p.h., 105 m.p.g., owner-driven throughout; £135; write appointment.—Capt. Smyth, 114, Denbigh St., S.W.1. [8223

LATEST Model 3½h.p. Sunbeam Combination, as new, run 800 miles, spare wheel, all interchangeable, sprocket for solo, Lucas lamps and horn, legshields, Eastings wind screen, tax paid; cost £230, accept £170.—21, Alexandra Rd., Ansdell, Lytham. [8329

LOOK!—Brand new unregistered 1921 8h.p. Sunbeam combination, Lucas dynamo, electric horn, legshields, hood, wind screen, spare wheel, most luxurious outfit, costing nearly £300; must sell, offers or exchange.—Maskell, 5, Brixton Hill, S.W.2. [8850

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

8h.p. Sunbeam, J.A.P. engine, Mills-Fulford sidecar de luxe, late 1919, small mileage, spare wheel, speedometer, lamps, hood, screen; bargain; owner must sell; seen and tried Haig's Motor Co., Granada Rd., Southsea; price £140.—Particulars from Owner, 19, Hamilton Rd., Reading. [8117

T.D.C.

T.D.C., 1916, tax paid, condition as new; offers.—388, Katherine Rd., Forest Gate. [8181

T.D.C. 4h.p., 3 speeds, clutch, kick start, perfect; £28.—89, Dalling Rd., Hammersmith. [8756

£26.—New, but badly shop-soiled, 1920 2¾h.p. 2-stroke T.D.C. de Luxe, E.I.C. mag., Amac carburetter, Brooks saddle, Dunlops, etc.—Bacon, Offington Lane, Worthing. [8643

Triumph

PREMIER Motor Co. for 1921 Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; W.D.B. (renovated), £95; Type H 4h.p., 3-speed, £115; Type S.D., chain drive; £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [X4991

1918 Countershaft Triumphs, from £50.—24, Ballioll Rd., North Kensington. [8607

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X5331

£63.—Triumph, 1916, perfect tune, good appearance.—71, High St., Witney, Oxon. [8788

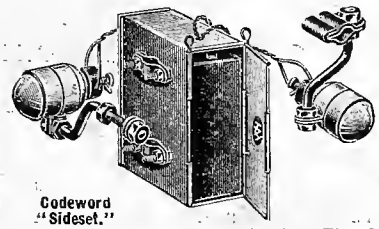
1918 Countershaft Triumph Combination; £75.—9, Church Rd., Willesden, N.W. [8579

THE LAST HALF HOUR OF THE EVENING RUN

when lamps must be used makes one appreciate the convenience and reliability of

H.A.H. LIGHTING SETS.

H.A.H. MOTOR CYCLE HEAD, SIDE AND TAIL LAMPS.
H.A.H. COMPLETE SIDE AND REAR SET.



Codeword "Sideset."

Price **32/-** per set; Metal Carrying Case, Fig. 386, **8/6** extra.—A most convenient form of lighting when a large acetylene head lamp is used. Comprising fig. 573, Rear Lamp, complete, **9/6**; fig. 560, Side Lamp, complete, **8/6**; fig. 386, metal case, **8/6**. "Flash" Genuine Hellesen Dry Battery, **14/7**. Postage extra.

Have you any Lighting Problems — REGISTERED H.A.H. TRADE MARK — **Solving them is our Business.**

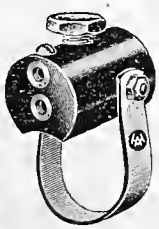


Fig. 428. 1-way Motor Cycle Type. Price **2/-** each. Screw action. Postage extra.

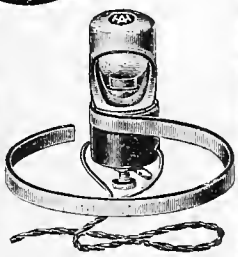


Fig. 347. **'Speedolite.' H.A.H.** Patent Speedometer Lamp, **7/6** each. Clips direct on to Speedometer, and has coloured bulb to prevent glare. Postage extra.

H.A.H. ACCUMULATORS.

Fig. 1162. **Accumulator.** Size 4⅜x3⅜x6½. Capacity 4 volt 40 amp. Price **31/6** each. Postage extra.

H.A.H. CARRYING CASES.

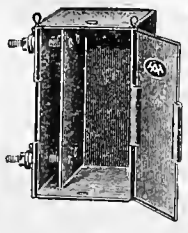


Fig. 379. **Case** for 1162 Accumulator. Price **12/-** each.

Fig. 359. **Inspection Lamp,** less bulb, **8/6** each; Postage extra.

Complete Solo and Sidecar Sets. Prices from £5.

A. H. HUNT, LTD.,
H.A.H. Works, Tunstall Road, CROYDON, Eng.
Telephone: Croydon 2225. 2226. Telegrams: "Keyage, Croydon."

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH, new 1921 Type H, just arrived, no waiting; £115.—Moss, Wem. [X5305

£38.—Triumph combination, good tyres, Mabon gears, all on.—169, Harvist Rd., Kilburn. [8330

2¼h.p. Baby Triumph, 2-speed gear, 1915; £42/10.—Wauchope's, 9, Shoe Lane, London. [9010

TRIUMPH, 3½h.p., clutch, equipped, licensed, perfect; £25.—17, Heaton Rd., Mitcham. [8682

1914 Triumph, 3-speed, licensed, as new, guaranteed; £45.—Shaw, Jeweller, Wellington, Salop. [X5227

TRIUMPH 4h.p., perfect condition, lamps, horn; £52, bargain.—119, Brecknock Rd., N.19. [8476

1914 Triumph, 3-speed hub, sound and complete, but shabby; £48.—Cross, Agent, Rotherham. [X5334

3½h.p. Triumph, clutch, Philipson, topping order refused permit; £28.—King, Lismore, Waterford. [8229

TRIUMPH-GLORIA Combination, new, unused, in stock, lovely outfit; exchanges.—Moss, Wem. [X5306

£28/10.—Triumph 3½h.p., just overhauled, good condition, good tyres.—Rose's Garage, Uxbridge. [8706

TRIUMPH 4h.p., 3-speed countershaft, in perfect order, as new; £65.—4, The Square, Carshalton. [8936

1919 Triumph Combination; £85. — James, c/o Bradmore's, 482, Harrow Rd., Paddington. [8883a

TRIUMPH 3½h.p., perfect running order, lamps and tools; £40.—J. G. Burbidge, Ketton, Stamford. [8671

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

3½h.p. Triumph, just overhauled, all on; 30 gns., or near offer. — Perfitt, The Leys, Chipping Norton. [8232

1918 Triumph, first-rate condition; £70.—'Phone Wanstead 48.—374, Grove Green Rd., Leytonstone. [8388

TRIUMPH, single gear, E.I.C. mag., less cylinder; first £20.—Platts, 602, King's Rd., Fulham, London. [8654

4h.p. 1918 Triumph, renovated, licence, trial, like new; London; £68.—Box 5,212, c/o *The Motor Cycle*. [9046

TRIUMPH, 1912, renovated, new cylinder, piston, bushes, receipts shown; £45.—Lea, 224, Fore St., Edmonton. [8128

£30.—Triumph 3½h.p., clutch, licensed; seen any time except Sunday.—D. Humphrey, Walberton, Sussex. [8116

BABY Triumph, 2-speed, mileage negligible, tax paid, equipped; 39 gns.—Ramsden's, 8, Maybell Av., Blackpool. [8338

TRIUMPH 3½h.p., clutch, K.S., T.T. bars, new tyres, Tan-sad, all on; 40 gns.—92, Tennyson St., Battersea. [8782

1914 Triumph Combination, 3-speed, many spares; £75, or offers.—James, Bristol House, Parkend, Lydney, Glos. [8161

1917 Countershaft Triumph, lamps, etc., guaranteed perfect; 60 gns. — Balcombe, Chobham, near Woking, Surrey. [8966

TRIUMPH C.B. Combination, Millford, excellent condition, any trial; £87.—374, Stoney Stanton Rd., Coventry. [X5195

3½h.p. Triumph, tax paid, running order; £35; accept any reasonable offer.—C.S., Wood House, Brimpton, Berks. [8183

TRIUMPH Combination, 2-speed, all accessories, tax paid, perfect order.—Owen, 59, Scholefield Rd., Upper Holloway. [X5327

4h.p. Triumph Countershaft Combination, engine No. 55702; £95, or near offer.—Murrell, Godstone Rd., Caterham Valley. [8576

TRIUMPH 3½h.p., 1912, free engine, good running order, tax paid; £25.—Pope, 161, Thornhill Rd., Tolworth, Surbiton. [8581

3½h.p. Triumph, Mabon gear, tax paid, running order; £25.—Owner, c/o Orange Tree Garage, New Southgate. [8701

OXFORD: £45.—Triumph combination, 1913, 3-speed, clutch, good couchbuilt sidecar.—King, Egrove Farm, Oxford [X5340

LATE 1914 Triumph, 4h.p., 3-speed, clutch, Cowey horn, lamps, tax paid, trial 2 up; £40.—Scoltock, 78, Sloane Av., Chelsea. [8724

TRIUMPH Countershaft Combination, Millford sidecar, as new, genuine bargain; £75.—33, Hackford Rd., Brixton, S.W. [9120

1919 Triumph and Sidecar, perfect order, lamps, horn, tax paid; £85; would separate.—88, Brampton Rd., St. Albans. [8635

4h.p. Triumph, 1918, renovated, splendid condition, licence, Klaxon, lamps, any trial, guarantee; £73.—60, Eaton Rise, Ealing. [9045

GLORIA-TRIUMPH Combination, 1919, tax, accessories, Triplex screen, luxurious outfit; £120.—39, Warren Rd., Wanstead. [8545

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 3½h.p., clutch, complete, licensed, good tyres, excellent condition; £23.—Garage, Temple Fortune Lane, Golders Green. [8273

TRIUMPH, countershaft, with Swan sporting sidecar, fully equipped and tax paid; £72/10.—Hole, 129, Park Lane, Carshalton. [8534

4 h.p. W.D. Model Triumph, electric lighting, not run 500 miles; £100.—Sutton, 120, Richmond Rd., Kingston-on-Thames, Surrey. [8964

TRIUMPH 1912 3½h.p., Armstrong 3-speed, clutch, wicker sidecar, or separate, in daily use; £40.—Tegg, Camille, Pangbourne, Berks. [8323

TRIUMPH, 3½h.p., 2-speed, F.E. clutch, adjustable pulley, 2-seater wicker sidecar; bargain, £26.—100, Spencer's Rd., Crawley, Sussex. [8653

TRIUMPH 1912, single speed, in excellent running condition; price £35, or offer.—East Grinstead Motor Garage, Ltd., East Grinstead. [8113

TRIUMPH 1919 4h.p., splendid condition, very little used; owner been abroad; £75.—K. Aynsley, Blurton, Longton, Staffs. [8692

1920 Triumph-Montgomery Combination, perfect condition, all accessories, tax paid; £110.—Capt. Rushton, Maida Barracks, Aldershot. [8188

TRIUMPH Countershaft Combination, in splendid condition throughout, guaranteed, any trial; £110.—33, Hackford Rd., Brixton, S.W. [9118

1916 4h.p. 3-speed Countershaft Triumph and accessories, tax paid, in good condition; £75.—Bounds, 223, High Rd., Kilburn, N.W. [8262

TRIUMPH 4h.p., 3-speed, C.S., engine 72283, new April, 1921, under 2,000, P. and H. lamp, Klaxon, licence; £97.—2, Chudleigh Rd., Ladywell. [8508

1914 4h.p. Triumph Coachbuilt Combination, 3-speed hub clutch, lamps, horn, perfect condition, tax unpaid; £57.—37, Green Walk, Crayford. [8502

TRIUMPH, late 1918 4h.p., 3-speed, with Dunhill sidecar, electric lighting, excellent condition; £90.—85, Broadhurst Gardens, Hampstead, N.W. [8564

3½h.p. Triumph, clutch, believed 1913, overhauled throughout, equipped, 30/- tax paid, splendid condition.—Box 5,200, c/o *The Motor Cycle.* [8901

1921 Chain Drive Triumph, immediate delivery.—'Phone: Greenwich 751. Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [8967

1914 Triumph, 4h.p., Bosch mag., B.S.A. carburetter, 3-speed, clutch, overhauled and painted; £65.—F. Marden, Layham's Farm, Keston, Kent. [8249

TRIUMPH 1918 4h.p., countershaft, thoroughly overhauled, enamelled, plated, as new, fully equipped; £68.—30, Crystal Palace Park Rd., Sydenham. [8568

TRIUMPH Junior, 2¼h.p., May, 1921, complete with lamps, licence, etc., owner going abroad, almost new; £60.—Box 5,177, c/o *The Motor Cycle.* [8291

F.O.C.H. are Triumph Agents; combinations and solos, new and second-hand in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [7331

TRIUMPH, 1912, clutch, tyres new, head lamp, in splendid condition throughout; will dismantle engine for inspection; £30.—105, Park Hill, Clapham. [8156

TRIUMPH, 4h.p., 1918, countershaft, 3-speed, sidecar, £4 tax paid, engine etc., excellent condition; £67/10.—Edgerton, 19, Lewis Grove, Lewisham, S.E. [X5090

1913 3½h.p. Trimph Clutch Model, waterproof Bosch, tyres and belt new, tax paid, all lamps, good order; 29 gns.—W. Green, Southgate Court, King's Lynn. [8102

TRIUMPH, 1917, 4h.p., countershaft, excellent condition, £58/10; with new sporting sidecar, £75.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8996

TRIUMPH, 1918, 4h.p. countershaft, engine No. 52178, perfect condition; 60 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [0658

TRIUMPH, 1919 engine, 3-speed, 3½h.p., K.S., countershaft; £75, or with sidecar, new, £85; ride away; bargain; West Ealing.—Box 5,210, c/o *The Motor Cycle.* [9050

1918 Triumph Gloria Combination, sidecar 1920, as new, complete in detail and perfect; will ride to intending purchaser; tax paid; £95.—306, High Rd., Lee, S.E.13. [8562

TRIUMPH-GLORIA Combination, 1920, electric lighting, perfect condition; any trial; £110; going abroad.—Williams, 18, Charing Cross Rd., London. Gerrard 8447. [8919

4 h.p. Triumph Combination, May, 1919, Gloria sidecar, Easting screen, lamps, speedometer, tools, perfect condition; £105; owner bought car; last time used in December.—Allirey, Chacombe Priory, Banbury. [8199

TRIUMPH (late) 1919, Mills-Fulford sidecar, unscratched, perfect throughout, little used, new lamps, speedometer, mirror, etc., T.T. bars; any trial; nearest £110.—Box 5,126, c/o *The Motor Cycle.* [8146

COPPEN ALLAN & CO.,

Sole Distributors for

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The WORLD'S MASTER Motor Cycle.

NEW HUDSON, ACE, DUNELT (the £150 Comb.), B.S.A., TRIUMPH Motor Cycles.

PLUS ONE, M.P. SIDECARS.

NEW MACHINES.

NEW HUDSON, 2¼ h.p., Popular Model	£52	10
NEW HUDSON, 2¼ h.p., de luxe Tourist Model, 2-speed	£68	5
NEW HUDSON, 2¼ h.p., de luxe Sporting Model, 2-speed	£88	5
NEW HUDSON 2¼ h.p. Ace Racer, 2-speed special engine	£78	15
Extra for 2-speed Sturmey-Archer gear, with clutch aud kick-starter	£2	2
DUNELT, 4 h.p., solo, with electric lighting set, all lamps	£115	0
DUNELT 4 h.p. Combination, as above, and including detachable wheels (1 spare)	£150	0
ACE 8-10 h.p., solo, 4-cylinder	£130	0
ACE 8-10 h.p. Combination, with bulbous back cantilever sprung M.P. Sidecar	£219	18
ACE 8-10 h.p. Combination, with Plus One single-double-seater Sidecar	£232	10
Extra for Lucas dynamo and all lamps	£20	0
ROYAL RUBY 8 h.p. Combination, with interchangeable wheels	£220	0
ROYAL RUBY 8 h.p. Combination with Plus One Sidecar and spare wheel	£246	0
Extra for Lucas Magdyno and all lamps	£20	15
TRIUMPH 4 h.p., Model H, solo, 3-speed, chain-cum-belt	£115	0
TRIUMPH 4 h.p. Model H Combination, with cantilever sprung M.P. Sidecar	£154	0
TRIUMPH, 4 h.p., Model S.D, solo, 3-speed chain drive	£125	0
TRIUMPH 4 h.p. Model S.D Combination, with M.P. Sidecar	£164	0
B.S.A., 4¼ h.p., Model K.2, solo, 3-speed, chain-cum-belt	£107	0
B.S.A. 4¼ h.p. Model K2 Combination, with M.P. Sidecar	£145	0
B.S.A., 4¼ h.p., Model H.2, solo, all-chain drive	£110	0
B.S.A. 4¼ h.p. Model H.2 Combination, with M.P. Sidecar	£148	0
B.S.A., 6-7 h.p., Model A, solo, all enclosed chain drive	£133	0
B.S.A. 6-7 h.p. Model A Combination, with No. 1 B.S.A. Sidecar	£175	0
B.S.A. 6-7 h.p. Model A Combination, with M.P. Sidecar	£171	0
B.S.A. 6-7 h.p. Model A Combination, with Plus One Sidecar (double-seater)	£185	10
Extra for Lucas Magdyno lighting and all lamps	£20	15
MARTINSYDE, 6 h.p. Combination	£145	0
MARTINSYDE, 6 h.p., solo	£125	0
READING STANDARD, 8-10 h.p., solo, including dynamo lighting	£163	0
READING STANDARD 8-10 h.p. Combination, as above, with M.P. Sidecar	£198	0
READING STANDARD 8-10 h.p. Combination, with Plus One Sidecar, hood, and screen	£225	0
PLUS ONE Sidecar, single or double seater at will, in any one of six colours	£52	10
M.P. cantilever sprung bulbous back Sidecar, in any one of six colours	£39	18

USED MACHINES.

HARLEY-DAVIDSON, 1920, mag. model, P. & H. acetylene equipment, Harley de luxe Sidecar, speedometer; only shop-soiled	£200	0
READING STANDARD, 1921, dynamo lighting, all lamps, M.P. cantilever Sidecar, coverall apron	£160	0
ACE Combination, 1921, dynamo lighting, horn, mirror, speedometer, C. & M. de luxe Sidecar with disappearing hood and screen, tax paid; cost £320; 800 miles	£220	0
ACE Combination, 1921, dynamo lighting, electric horn, mirror, carrier tool box, fitted with Plus One Sidecar, hood, and screen; cost £320	£230	0
MEAD DEAKIN M.M.4 Sidecar, new, Harley green	£33	0
WHITWORTH-STEVENS Sidecar, new, Harley green	£33	0
M.P. cantilever sprung Sidecar, shop-soiled	£30	0
Sidecar Chassis, for fitting to 8 h.p. Sunbeam, suitable for tradesman's carrier	£7	0
NORTON Sidecar, sports, new, for 3½ h.p. Big Four	£31	10

89, Great Portland Street, LONDON.

Telephone: Langham 1601.

MOTOR CYCLES FOR SALE.

Triumph.

KNUTS or Tom Boy's Machine, as new, 3½h.p. Triumph 1912 engine fixed, Premier loop frame, light 50 P.H.; £21; photo, stamp.—93, Oakly Rd., Redditch. [X5293

TRIUMPH 4h.p., 3-speed countershaft, excellent condition; any trial; tax paid; £65, or nearest; not Sundays.—Richmond House, Crescent Rd., Shepperton-on-Thames. [8418

1918 Triumph 4h.p., countershaft, rebuilt, new parts W.D. model, indistinguishable from brand new; £75.—Barnett, 21, Rodborough Rd., Golders Green, London. [6139

TRIUMPHS.—1916 C.S., £70; 1918 C.S., £75; 1919 C.S., £84; 3 months' guarantee given; several 1914 3-speed S.-A. hub gear models, £45.—Ross, 86, High Rd., Lee [8632

4 h.p. Triumph Combination, 3-speed, fully equipped, with spares, new Gloria sidecar, spring wheel, screen, any trial, tax paid; £55.—35, Palmerston Rd., Forest Gate, E. [8634

TRIUMPH Combination, 1919, type H, 4h.p., 3-speed, Montgomery sidecar, perfect condition; £110 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X5364

1921 Triumph, 4h.p., chain drive, brand new, never ridden, with Lucas lamps, generators, and horn, cost £132; will sell for £122.—W.M., 39, Piedmont Rd., Plumstead, S.E.18. [8739

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

TRIUMPH, countershaft, superb condition, footboards, legshields, lamps, Lucas horn, many spares, Brooks largest luxury saddle; £60.—Leahurst, Priest's Lane, Shenfield, Essex. [X5274

TRIUMPH 4h.p. C.B. Combination, Easting, legshields, countershaft 3-speed, H. and F. clutch, kick start, perfect condition, all on; £125.—Anstey, Hanford, Stoke-on-Trent. [8197

TRIUMPH 4¼h.p., countershaft, 1918, renovated, P. and H. lamps, horn, pump, tax paid 1922, with Watsonian sidecar; £75.—Tregear, The Homestead, Bognor. Tel.: 140. [8294

TRIUMPH 1913 3½h.p., 3-speed, kick start, Bosch mag., new condition, engine overhauled makers; £42/10; seen after 7 o'clock, 2 o'clock Saturday.—3, Charnock Rd., Clapton, E.5. [8317

TRIUMPH 1914 3½h.p., 3-speed gear, not used during war, lamps, horn, tools, etc., in first-rate condition; price £47/10, or near offer.—East Grinstead Motor Garage, Ltd., East Grinstead. [8112

1920 Triumph, with special Gloria coachbuilt sidecar, Tan-Sad, Stewart, lamps, etc., really nice condition, tax paid; sacrifice £105.—Solwayhank, Hayes, Kent. 'Phone: Bromley 532. [8367

JUNIOR Triumph, 1917, Bosch mag., 2 speeds, machine has been stored for two years, in perfect order and condition; £45, or nearest offer.—163, Stockwell Rd., Pixton, London. [8754

TRIUMPH Combination, 1921, lamps complete, Klaxon horn, Easting wind screen, speedometer, tax paid, not done 1,000 miles; price £160, or near offer.—119, Herne Hill, London, S.E.24. [8313

1918 and 1917 Triumphs, 3-speed, clutch, K.S., reconditioned and overhauled, excellent condtiion, from £52 in makers' colours; new coachbuilt sidecar, £17.—Edwards, 50, Harrington Rd., South Kensington. [6785

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt, and renovated models.—Jones Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all models in stock, new chain drives, new chain-cum-belts, solos and combinations; immediate delivery; supplied on easiest of easy terms; trade supplied. [4537

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

1920 Triumph, 4h.p., 3 speeds, polished discs, guaranteed indistinguishable from new, and perfect running, 78 gns.; with unused 1921 Montgomery sidecar, £110.—35, St. Clement's Mansions, Lillie Rd., Fulham. [8800

TRIUMPH C.B. Combination, 1914, 3-speed, clutch, overhauled, replated, and enamelled; any trial; £65, tax paid, or separate; ride 40 miles to purchaser.—Broomfield, Harrow House, Hartley-Wintney, Hants. [8703

TRIUMPH Combination, Gloria sidecar, 1919, condition perfect, not renovated, Cowey, Lucas lamp set, full equipment and spares; £100, or offers; any trial.—Harvey's, 47, South Lambeth Rd., S.W.8 (near Vauxhall Station). [9018

TRIUMPHS! Triumphs!—For prospective purchasers please note we have only a few machines left that have not been overseas, in perfect condition; 65 gns.—Triumph Specialists, The Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. [9117

A34 **All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.**

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1914, 3-speed and clutch, lamps, horn, licence paid, engine and gears thoroughly overhauled and guaranteed perfect; any trial; £56.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7347

COUNTERSHAFT Triumph, 3-speed, K.S., aluminium discs, copper exhaust, plating and enamelling like new, polished crank case, etc., fully equipped, excellent condition; £75.—88, High St., Collier's Wood, Merton, S.W. [8235

4h.p. 1914 Triumph Combination, 3-speed hub gear, clutch, brand new sidecar, screen, tank, re-enamelled, etc., splendid condition, only wants seeing, must sell; £70, or near offer; no reasonable offer refused.—76, Boyne Rd., Lewisham. [8604

1920 (late) Triumph Combination, bicycle used 500 miles only solo, perfectly fitted with electric lamps and dynamo, faultless, Gloria sidecar, brand new, unused; £140; would sell sidecar alone £40.—Standley, White Swan, Southall, Middlesex. [8434

TRIUMPH 3½h.p. Engine, complete, £14/10; Armstrong 3-speed wheel, 26×2¼, clutch and gear controls, brake rim, pedals, also rear frame, just overhauled, £9/10; B.B. carburetter, 15/-; fixed pulley, unbored, 2/6.—Monmouth House, Beckington, Somerset. [8327

1919 (late) Triumph, countershaft 3-speed, with 1920 No. 1 Montgomery sidecar, luggage grid, Lucas lamps and horn, spares, tax paid, everything in perfect condition, outfit as new, and very little used; £118, or offer.—L. Savage, 7, High St., Sutton, Surrey. [8941

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Easthank St., Southport Tel.: 607. [0646

LATE 1920 Triumph Combination, beautiful condition, low mileage, tyres unpunctured, blue Watsonian sidecar, large Lucas head, electric side and rear lamps, Easting wind screen, Cowey horn, lined helmet, gloves, overall trousers thrown in; £125.—Seen at 69, St. Mark's Rd., N. Kensington, W.10. [8106

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X4992

Velocette.

VELOCETTE, brand new 1921 2-speed model, in stock.—Moss, Wem. [X5307

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

VELOCETTE, 2-speed countershaft, 2-stroke, all-chain, lamps, perfect condition; £38.—154, Hackney Rd., E.2. [8815

2¾h.p. Velocette, late 1920, winner of hill-climbs, etc., fine condition, accessories; £60.—Richardson, 74, Tulse Hill, S.W.2. [8567

1921 Velocette.—All models in stock for immediate delivery; easy payments only 4% extra; 2¼h.p. 2-speed, £75; 3-speed, £85; lady's open frame, £78; buy your machine direct from the Velocette specialists. The Premier Motor Co., Aston Rd., Birmingham. [X5363

Verus

DON'T Pay £126.—Verus-Blackburne, 4h.p., done 500, unscratched, only wants seeing; £105, offers.—Box 788, c/o *The Motor Cycle.* [X5318

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, ridden 250 miles, tax paid; £80.—Shepherd, Enfield Highway. Tel.: Waltham Cross 51. [0656

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0502

1920 4h.p. Verus Blackburne, Sturmey 3-speed, electric lighting, Cowey horn, footboards and mudshield, also footrests, solo and sidecar sprockets, tax paid, exchanges considered; £80.—Tong, 143, Mason's Hill, Bromley, Kent. [8721

Villiers.

VILLIERS 1916 2-stroke, lamps, tax, perfect condition, tax paid; bargain, £28/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [8993

Werner.

WERNER Motor Cycle, 2¾h.p., good running order; bargain, £19; letter only.—R.D., Cromac, Cadworth, Surrey. (D) [8218

Williamson

WILLIAMSON, 8-10h.p., A.C., with 2-seater sidecar, hood, wind screen, side screens, lamp, horn, speedometer; must sell, £100, or sell separate.—Bond, 193, Church St., Blackpool. [8050

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WILLIAMSON 8h.p. twin air-cooled coachbuilt combination, guaranteed; £75.—1, Townly Rd., East Dulwich, S.E.22. [8636

Wolf.

WOLF, 2¾h.p. J.A.P., 2-speed, kick start, hand clutch, as new; £49.—Rogerson, Newtown, Wigan. [X5270

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0503

Wooler.

WOOLER 1920 Model, fully equipped, tax paid, as new; £60.—Owen, 59, Scholefield Rd., Upper Holloway. [X5328

WOOLER, 1920, 2¾h.p., lamp, horn, accessories, tax, insurance paid, perfect; £55; view Croydon.—3, King's Av., Eastbourne. [7963

WOOLER 2¾h.p. Tourist Model, 1920, shop-soiled only, lamps, Cowey horn, at the bargain price of £87/10 for cash only.—Mebes, 156, Gt. Portland St., W.1. 'Phone: Langham 2230. [8286

WOOLER, 1921, as new, speedometer, lamps, horn, watch, tyres as new, insured, licensed; £85; seen any time; trial; 166 m.p.g.—45, Pember Rd., Kensal Green, N.W.10. [8411

WOOLER, 1920, excellent condition, fully equipped, discs, Binks, spare tyre, tube, belt, cost £115, run 1,000; only reason selling, bought car; bargain, £85.—Carter, Fairmount, Olton, Warwickshire. [8084

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

ZENITH 1921 5h.p. Sporting Model, shop-soiled only; £98.—Tippen, Marden, Kent. [8540

4h.p. Zenith-Gradua, lamps, horn, good condition; must sell; £35.—106, Fawe Park Rd., S.W.15. [8431

£32.—4h.p. Zenith, Gradua gear, engine overhauled, new tyres, tank re-enamelled.—King, Egrove Farm, Oxford. [X5241

3½h.p. Zenith-Gradua Combination; £45; all perfect condition; by appointment.—58, Boundaries Rd., Balham. [9141

1916 5h.p. Clutch Model Zenith, £60; also new 5h.p. sports model in stock, £115.—Ross, 86, High Rd., Lee. [8628

1920 5h.p. Sporting Zenith, as new, all on, tax paid; £95, or nearest.—J. Nelson, Staniwells, Sturton, Brigg, Lincs. [8740

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [7332

1920 8h.p. Countershaft Zenith Combination, electric lighting, speedometer; £135; lightweight part.—53, Brixton Rd., S.W.9. [9089

ZENITH Combination, 8-10h.p. J.A.P., Easting wind screen and folding hood, as new; bargain, £55.—46, Raleigh Rd., Hornsey, N. [9106

1920 Zenith Sporting Combination, 6h.p., excellent condition, fully equipped, unscratched; sell or exchange.—Mathias, Burwood, Formby. [8411

4h.p. Zenith, K.S. and clutch, perfect condition, tyres and belt as new; 65 gns.; any trial.—Write J. d'Eaubonne, 4, Balbec Rd., London, N. [9079

1921 8h.p. Zenith, sports, tax paid, perfect condition, 6 weeks old; trial anywhere in South of England; £110.—Witherow, 16 Camp, Larkhill. [8256

ZENITH 8h.p. Combination, semi-T.T. bars, fast and powerful, insured; £100, best offer, or exchange with cash solo.—29, Selkirk Rd., Tooting. [8439

1920 Zenith Combination, 8h.p., clutch, kick start, lamps, discs, Stewart, Tan-Sad, spares, perfect; any trial; offers.—36, Alexandra Rd., Croydon. [8746

5h.p. Sports Zenith, discs, plating and enamelling as new, all accessories, licensed, any trial; £65, or offer.—88, High St., Collier's Wood, Merton, S.W. [8234

ZENITH 6h.p. Combination, K.S., clutch, luxurious sidecar, hood, screen, etc., overhauled, licensed; £110, or exchange 2-seater.—292, Wandsworth Rd., S.W. [8475

ZENITH, 1920, 6h.p., Montgomery sidecar, nearly new, complete with hood, screen, grid, horn, lamps, and tools licensed; bargain £120.—Barker, Sacombe, Ware. [8221

ZENITH Combination, 1920, 8h.p., Model H, lamps, fully equipped, little used, condition perfect; any reasonable trial; £125.—Holt, Lakedown Camp, Salisbury. (D) [8299

ZENITH 1921 8h.p., 90×77½, side valve, countershaft, Canoelet K.4 sidecar, open for any expert examination and trial; £150.—Stewart, Malvern, Upminster, Essex. [8670

1919 8h.p. Zenith Sports Combination, electric horn, and Klaxon, Smith's speedometer, 3 lamps, excellent condition; £90.—Lainson, 134, Jerningham Rd., New Cross. [8424

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Zenith.

8-10h.p. o.h.v. Zenith, mechanically perfect, new condition throughout, mag. switch, 3in. exhaust pipe, very handsome and exceptionally fast; £110; photo.—Barton, Coln, Fairford. [7277

1920 8h.p. Zenith, complete with Millford sporting sidecar, perfect condition, electric lamps, mechanical horn, licensed; trial; £115.—Haisboro, Baker St., Weybridge. [3939

1920 8h.p. Zenith Combination, countershaft model, Henderson sidecar, Easting wind screen, lamps, mileage 1,500, indistinguishable from new; £110.—37, Arlington Rd., Surbiton. [8685

LATE 1920 5h.p. Sporting Zenith, electric lighting, special oiling, long plated exhausts, Klaxon, etc., tools, spares, showroom condition; nearest offer £95.—13, Corn Market, Worcester. [X5372

1917 4-5-h.p. Electric Zenith Sports Model, in perfect order, new belt, tyres good, just had new crankshaft, all bearings, pulley, flange; at £60.—Upjohn, Stapleford, Cambs. (D) (P) [8717

1919 6h.p. Sports Zenith, speedometer, Tan-sad, horn, lamps, and tools, tax paid and insured, mileage 6,400; £98, or nearest.—Brazier, 16, Stroud Green Rd., Finsbury Park. North 1799. [8595

8h.p. Zenith Countershaft Combination, speedometer, lamps, Easting, engine recently overhauled equal to new, licensed, smart, fast; £100; exchanges considered.—Chandler, 43, Hillfield Av., Hornsey, N.8. [8305

1914 6h.p. Zenith Combination, kick starter, clutch, Gradua, fully equipped, spares, etc., insurance and tax paid, special coach body; sacrifice, owner giving up, £75.—11, Elmar Rd., South Tottenham, N. [8934

ZENITH, late 1920, 8h.p., countershaft, K.S., with very sporty R 54 sidecar, all accessories, absolutely as new, any trial; £135; lower power part exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [9072

ZENITH Sporting Combination, 5-6h.p., 1919-20, torpedo sidecar, discs, screen, apron, knee grips, belt case, etc., new tyres, belt, very smart; 100 gns.—Jenkinson, 36, Avenue Rd. N.6. 'Phone: Chancery 7606. [8714

ZENITH, 1920, 8h.p., sports model, brand new, absolutely unsoiled, complete to usual specification; particulars with pleasure; approval anywhere; genuine bargain, £100.—Pollady, Hemingford, Bicester, near Oxford. [9027

ZENITH 1920 8h.p., countershaft, lamps, tax paid, Swan aluminium painted sporting sidecar, smartest outfit on the road, and absolutely as new; £145; exchanges.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [7977

Ladies' Motor Cycles.

AS a Lady's Motor Cycle, the Ivy is It.—Send for details from the Midland agents, Frank Whitworth, Ltd., Birmingham. [X4180

LADY'S Model 1915 3-speed 2¾h.p. Douglas Motor Cycle, perfect condition, very fast; £42; cheap.—Snewin, Barford Cottage, Little London, Basingstoke. [8715

Miscellaneous.

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BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax.

BARGAINS.—1920 Indian Combination, dynamo lighting, screen, £145/10; G.W.K. light car, detachable wheels, £155/10.—Booths Motories, Halifax.

BARGAINS.—8h.p. Matchless combination, countershaft gear, £49/10; 4¼h.p. James, 3-speed, chain drive, £39/15.—Booths Motories, Halifax.

BARGAINS.—7-9h.p. Indian, 2-speed, £29/10; 6h.p. Chater-Lea and sidecar, £30/10. — Booths Motories, Halifax.

BARGAINS.—3h.p. Enfield lightweight, 2-speed, £35/10; 3½h.p. Triumph, £26/10; 3½h.p. Ariel, £35/10; J.E.S. motor set on cycle, £17/10.—Booths Motories, Halifax.

BARGAINS. — 3½h.p. 1914 P. and M., £49/10; nearly new 1921 2-speed Omega, £51/10; 1920 O.K., £35/10; 1920 Scott, £87/10.—Booths Motories, Halifax

BARGAINS.—4h.p. Douglas, 3-speed, £59/10; 1915 2¾h.p. Douglas, £37/10; new 1921 Rudge Multi, £85.—Booths Motories, Halifax.

BARGAINS.—Shop-soiled 1920 models: 2¾h.p. O.K., £43/10; ditto 2-speed, £54/10; 2¾h.p. Omega-Jap, 2-speed, £67/10; Harley-Davidson and sidecar, £189/10; 6h.p. Ariel combination, £149/10; exchanges entertained. Pay us a visit.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [6195

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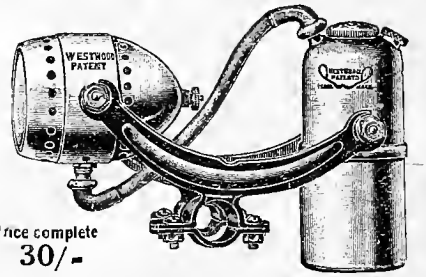

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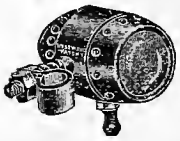

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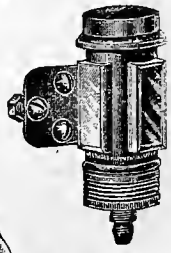

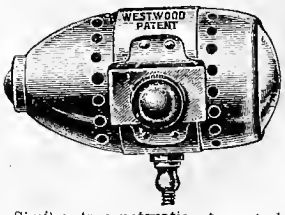

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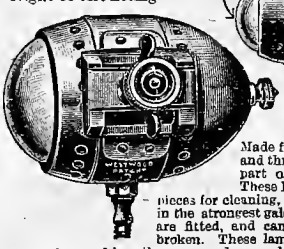

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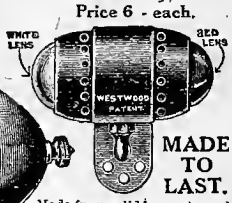

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WANDSWORTH.—Premier with coachbuilt sidecar, 3½h.p., 2 speeds, runs splendidly; 48 gns.—Below.

WANDSWORTH. — F.N. coachbuilt combination, 5-6h.p., 4 cyls., 2 speeds, clutch, lamps; 59 gns.—Below.

WANDSWORTH.—Triumph coachbuilt combination, 3½h.p., 2 speeds, countershaft; very cheap, 58 gns.—Below.

WANDSWORTH. — Triumph 3½h.p., 3 speeds, clutch, dropped frame, very smart; 56 gns.—Below.

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WANDSWORTH.—Minerva 3½h.p., good tyres, suit learner; cheap, 13 gns.—Below.

WANDSWORTH Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [9122

ALBION 2-speed Gear Lightweight, splendid condition, Best and Lloyd drip-feed, new; any offers.—Neave, Plumber, Forfar. [X5283

BRADBURY, mag., running order, suit beginner, £10; also Douglas, Bosch mag., wants timing, good order, £15.—Gibbons, 14, Aliwal Rd., Whittlesea, Cambs. [8066

WE wish to clear our stock of second-hands, and will take £10 each for some; others at £11 and £20; just come and see them.—Bunting's Exchange, Wealdstone. [8966

A1 Opportunity.—Exceptional bargains in shop soiled motor cycles and combinations for cash or the easiest of easy terms, no extra charge.—Write 'phone, or call at Wauchope's, Shoe Lane, London. [4533

SAM E. CLAPHAM (Motors), 'phone: Greenwich 751, the leading agent for all high-class motor cycles. Write, call, or 'phone your requirements.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [8966

3½h.p. Ariel Combination, 1921 model, condition as new, all in, has not done 500 miles, any trial, mechanical or otherwise; also a 2¼h.p. New Hudson lightweight, 1920 model; ill-health reason of selling.—Apply, A. W. Sutton, Newsagent and Confectioner, High St., Sandy, Beds. [6077

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MOTOR CYCLES FOR SALE.

Miscellaneous.

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged; any new motor cycle combination or car supplied, cash or easy payments. — Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [7337

MOTOR ATTACHMENTS.

AUTO-WHEEL, with shock absorber, tax paid; £9.—21, Swiss St., Accrington. [8852

AUTO-WHEEL, B.S.A., excellent order; £8.—68, Gloucester Rd., Camden Town. [8812

AUTO-WHEEL, A1 condition, new tyre, tax paid; £10, or close offer.—81, Long Lane, East Finchley. [8212

SIMPLEX Unit on B.S.A. cycle, brand new, shop-soiled; £40.—Pemsel and Wilson, Boxmoor, Herts. [8115

WALL Auto-wheel de Luxe, in good order, engine No. 41621; £10.—Foster, 39, Hallam Rd., Hodalming. [8798

AUTO-WHEEL, new tyre; sell cheap, or exchange H.M.V. gramophone and records.—Hordley Rectory, Ellesmere. [8766

LADY'S Cycle with Young motor attachment, practically new; £21/10; attachment only, £14.—Lander, Chilwell, Notts. [8861

AUTO-WHEEL 1½h.p., spare tyre new, rear lamp and generator, licensed; £10.—106, Barlow Moor Rd., Didsbury, Manchester. [8855

AUTO Wheel, good condition, brand new cover, tube, can be seen after 8 p.m. Friday; £8/10.—Mitchell, 82, Bravington Rd., W.9. [8646

SIMPLEX Attachment, as new, Raleigh special 3-speed wheel; £26, or separate; particulars.—Cundell, Documents, Maresfield, Sussex. [8373

MOTOR CYCLES FOR HIRE.

MOTOR Cycles, solo, Saturday to Monday, 42/6; 1 week, 85/-; combination 52/6 and 110/-; write for further information.—Maudes', 100, Gt. Portland St., W.1. [X2672

TRICARS FOR SALE.

CHATER-LEA Tricar, 3-speed and reverse, top-hole running order, £45 or offer; Baby Peugeot chassis, less engine and gear box, £8; 4-seater 13.9h.p. B.S.A., S.K., perfect; £250.—J. Parry, Moreton, Newport, Salop. [8446

TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catalogue free.—Rayner, 10-12, George St., Blackpool. [X7038

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

MOTOR SCOOTERS.

SCOOTER, 2h.p., requires assembling; £10.—77, Acre Lane, S.W.2. [8975

AUTOPED Scooter, 1920, almost new dynamo; £20.—Wauchope's, 9, Shoe Lane, London. [9011

AUTOPED, clutch, electric, tax paid; 12 gns., offer.—Lemon, Yew Cottage, Amesbury. [8209

A.B.C. Skootamota, 1921, new; £33.—Frank Whitworth, 139, New St., Birmingham. [X4178

SKOOTAMOTA, overhauled and in good condition; £22, or near offer.—Simpson, Shaie, Guildford. [8443

BARGAIN.—Mobile Pup Scooter, splendid condition, seat, taxed; £24.—54, Melton Rd., Leicester. [8298

1920 Kingsbury, perfect condition, tax paid; sacrifice £20.—Mills, 3, Croxted Rd., Dulwich, S.E.21. [8583

1921 Skootamota, just received from works, in crate; £31/10 — 54, St. James St., Ashted, Birmingham. [X4179

SKOOTAMOTA, A.B.C.; 24 gns.; after 6 p.m.—18, Bellevue Gardens, Clapham Rd. (2 mins. Stockwell Electric Station), S.W.9. [8220

SKOTTAMOTA, never been used, in perfect condition as delivered from makers; price £25.—East Grinstead Motor Garage, Ltd., East Grinstead. [8111

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SANDHAM'S make thousands of hoods every year; 50/- each. First quality twill waterproof.

SANDUMS.—The Sandum Patent Wind Screen of 100 positions, as shown at Olympia. Finest screen in the market; 90/-.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0635

A.B.C. Skootamota, new condition, tax paid; offers wanted.—Cook, 9, Bedford St., Ipswich. [8738

EASTING Standard Wind Screen, perfectly new; £3/10 for quick sale.—114, Osborne Rd., Sparkhill, Birmingham. [7004

To the Motor Cyclist who has but once experienced the advantage of dealing with the Colmore Depot there is henceforth but one place whenever he wants anything "Motor Cyclish." And when a chum asks his advice as to the best place to get a new machine—spares, accessories, etc., it is never a case of "You might try the Colmore," but rather an unhesitating, decisive reply—"Why, Colmore OF COURSE."

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TOLEDO Hood, highest grade, brass fittings, 47/6; fittings, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [4754

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HERCULES Hoods, 45/- to 80/-; aprons, 17/6, full size; twill, 9/6 yard; sticks, fittings, etc.; recovered, 25/-; write for list.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [3539

BODIES.

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FOR

SANDUM, the largest and most renowned sidecar body builders in country.

SANDUMS have put on the market over 10,000 sidecar bodies.

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VENUS Bodies are made in a factory and supplied direct. Catalogue free.

VENUS Sidecar Co., 6-14, Gourley St., S. Tottenham. [0519

SIDECAR Bodies, coachbuilt, best quality, £7/7; original £12/12.—64, Bishopsgate, London. [0614

CAMBER Coach Bodies, from £4/17/6.—Bright and Hayles, 78, Church St., Camberwell, London. [9127

EDWARDES.—Sidecar bodies from £4/19/6, painted any colour, fitted free.—277, Camberwell Rd., S.E. [8911

SIDECAR Bodies, brand new, bulbous back locker, extra roomy; £10/10.—33, Hackford Rd., Brixton, S.W. [9119

CLYNO Bodies, unused, from £3/15; sidecar, coachbuilt, £10/10; another, £16; also lightweight, suit 2¾h.p., £8/15.—57, Kenbury St., Camberwell, London. [8601

ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

EDWARDES.—Bodies made to order, any size, any colour, from £4/19/6, fitted with spring back and spring cushion, suitable for Harley or Indian; £9/10.—277, Camberwell Rd., S.E. [8914

BASTONE'S for coachbuilt bodies (no better or cheaper house), sporting models, bulbous back and step pattern. All at low prices. Call or send your requirements.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6851

D. and F. Body.— We have in stock bodies to suit all machines, a special design for Triumph, Indian, Harley, etc., from £12; any design to any order in 10 days. Call and see them being made at our works; a large stock of chassis always available.—De Cort and Flynn, 39, Essex Rd., London, N.1. [8837

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

DOUGLAS Sidecar, as new; £16.—33, Hackford Rd., Brixton. [9113

P. and M. Sidecar, as new; £16.—33, Hackford Rd., Brixton. [9114

BRAMBLE, C.B., off Zenith, luggage carrier, etc.; £12.—29, Selkirk Rd., Tooting. [8440

MILLFORD Sidecar, off Triumph, complete, as new; £16.—33, Hackford Rd., Brixton. [9115

DOUGLAS Sidecar, blue, smart, all fittings; £10.—67, Little Heath, Charlton, S.E.7. [8886

NEW Dinky Sporting Model, finished grey, or black with gold lines; £25.—Below.

NEW Henderson Sprung Frame Model, finished green; £25.—Below.

NEW Mills-Fulford De Luxe Model, Harley-Davidson finish, £30.—Elce and Co., 15-16, Bishopsgate Av., Cannonile St., E.C.3. 'Phone: Avenue 5548. [0075

SIDECAR, Millford, smart, complete, new hood, screen; £14.—17, Heaton Rd., Mitcham. [8683

SIDECAR ATTACHMENTS.

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FOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Best value in Olympia Show.

SANDUM Chassis.—Insist on having our enclosed wheel type of chassis for safety.

SANDUM Models.—The Exquisite 23 gns., and sports 26 gns., are of distinctive appearance.

SANDUM Elite Sidecar, 27 gns.; the smartest sidecar on the road; highly recommended in "The Motor Cycle."

SANDUM Dual Purpose Sidecar (patented). A single or 2-seater sidecar as required in 5 seconds. Size of body as our single-seater Elite. Luxuriously comfortable seating for 2 adults, with the weight in correct position over rear axle. Finished in colours to suit any make of machine, 42 gns.; bodies only, 21 gns. The latest development of the 2-seater as designed by us, and approved by the recognised experts.

SANDUM Featherweight Streamline Body, smart and racy, weight 18 lbs.; price £4/17/6.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. Factories: 162 to 165, Pentonville Rd., N.; and Britannia Works, Britannia St., W.C. [0019

MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeams, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

MIDDLETON'S specialise in frame repairs of all kinds. Twisted motor cycle frames and forks promptly corrected.

CAMEO Screens in stock to suit all makes at Middleton's. Trade supplied also.

MR. RIDDOCK, riding 8h.p. Zenith, Middleton sidecar, won inter-'Varsity hill-climb. He also won Essex hill-climb with Middleton patent spring wheel sidecar.

MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give to the bumps, not bash into them.

MIDDLETON'S, London's oldest established sidecar makers, wholesale, retail, and export, 27, Stroud Green Rd., Finsbury Park (near Tube). 'Phone: Hornsey 1584. [0522

BARGAINS.—Shop-soiled high-class coachbuilt sidecars; cheap.—Booths Motories, Halifax.

BARGAINS.—Shop-soiled underslung sidecar chassis, cheap.—Booths Motories, Portland Place, Halifax.

BARGAINS.—High-class coachbuilt bodies, any colour.—Booths Motories, Portland Place, Halifax.

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph or B.S.A.; £18/15.—Booths Motories, Halifax.

BARGAINS.—Nearly new Henderson sidecar, suit Rudge, £16/15; Millford 27 gn. sidecar, nearly new, £16/10.—Booths Motories, Halifax.

BARGAINS.—New full-size coach body, locker under seat, £6/19/6; cane body, 25/-. — Booths Motories, Halifax. [6193

COACHBUILT, underslung, £8; new sporting Canoelet, £18.—84, Ilex Rd., Willesden, N.W. [8410

SIDECAR, light, C.B., semi-sporting aluminium body; £6/10.—9, Gibbins Rd., Selly Oak. [8546

BURBERRY Sidecar, C.B., 3in. tyre, Harley colour; £12/10.—27, Barrack Rd., Northampton. [8530

COACHBUILT Sidecar Screen, complete, bargain; £10, or offer.—76, Boyne Rd., Lewisham. [8605

BARGAIN.—Good light sidecar, complete, side door, cushion; £5/10.—Searle's Stores, Southborough. [8871

EDWARDES.—Sidecar chassis, underslung, new, from £7.—277, Camberwell Rd., S.E. Hop. 4913. [8912

DOUGLAS 1920 Chassis and Body, new condition; £20, or offer.—Shailer, 61, Bedford Hill, Balham. [7155

£12.—Coachbuilt touring sidecar, sprung wheel, new condition; exchange streamline.—27, Corinne Rd., N.19. [8512

COACHBUILT Sidecar, Indian red, 4-point coupling, screen, apron; bargain, £12.—6, East View, Nantwich. [8764

A Roomy Sidecar, complete, as new; £14, or nearest offer; a bargain.—Lucas, Parkside Rd., Sunningdale. [8949

SIDECAR, Canoelet, 4 fixings, hood, lamp, good Dunlop; £10.—Write, 143, St. Margaret's Rd., Twickenham. [8300

COACHBUILT Sidecar, 4-point, new tyre, lamp, apron, smart; £12/10.—41, Gordonbrock Rd., Ladywell, S.E.4. [8541

THE JOYS OF MOTOR CYCLING.

NO FAKED TYRES

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There are more pleasant holidays spoilt by faulty tyres than anything else. So look below before you go.

TYRES AND TUBES

IN PERFECT CONDITION.

I will refund your money immediately if you are not satisfied.

24 × 2	
Wood-Milne Special	28/-
26 × 2	
Wood-Milne Extra Strong	32/9
Wood-Milne Combination	44/-
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Macintosh Chain	32/6
Avon Sunstone	37/6
Clincher de Luxe Extra Heavy	35/-
Rom Combination	42/-
Avon Combination	38/9
Beldam Combination	35/-
Palmer Heavy Cord	36/9
Palmer Cord	32/6
Skew Rubber Non-skids	29/6
26 × 2⅜	
Palmer Heavy Cord	37/-
Palmer Cord	33/-
Dunlop Heavy	37/-
Clincher de Luxe Extra Heavy	34/6
Bates Special Heavy	37/6
Wood-Milne Extra Strong	35/-
26 × 2½ to fit 2¼ Rims.	
Hutchinson Rubber-studded	33/-
Wood-Milne Special	33/-
Wood-Milne Extra Strong	45/-
26 × 2½	
Dunlop Heavy	45/-
Macintosh Chain	36/-
Rom Combination	47/6
Hutchinson Rubber-studded	36/-
Skew Heavy Ribbed	37/6
650 × 65	
Heavy Rubber Non-skid	26/6
Wood-Milne Special	43/6
*Michelin Steel-studded	52/6
*Clincher Steel-studded	47/6
*Wood-Milne Steel-studded	45/-
Burnett Grooved	41/9
Dunlop Steel-studded	55/-

*Voiturette fitting.

700 × 80 to fit 650 × 65	
Wood-Milne Special	50/-
700 × 80 (for 650 × 65) Voiturette Rims	
Wood-Milne Gruv Ribbed	60/-
Spencer Moulton Ribbed	60/-
28 × 3	
Wood-Milne Extra Strong 4-ply	29/3
Palmer Cord Heavy	50/-
Dunlop Extra Strong 4-ply	50/-
28 × 2½	
Wood-Milne 4-ply	40/-
Hutchinson Heavy Rubber-studded	26/9
Hutchinson Heavy Ribbed	29/6

NEW TUBES, in all Sizes, 7/- each.

Also Clearance TUBES, with one small vulcanised patch by Manufacturers, otherwise quite new, 5/6.

The above goods are sent passenger train, Carriage paid.

BELTS OF LEADING MAKES.

8ft. 6in. × 1in. each	21/-
6ft. 6in. lengths of ¾ and ⅞ "	10/-

Special Offer of 7ft. 6in., in any length, at 2/1 per foot.

The above lines are sent Seven Days on Approval, and Forward Passenger Train Carriage Paid.

REMEMBER—**The reputation and guarantee of Emanuel's is behind all we sell.**

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Telephone: Dalston 3161. **LONDON, N.16.**
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37a, Balls Pond Rd., Dalston, London, N.

SIDECAR ATTACHMENTS.

CAMBER Semi-touring Models, Dunlop tyres; £18/10.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER Lightweight Models, Dunlop tyres; £17/10.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER Streamline Model, Dunlop tyres; £16/10. —Bright and Hayles, 78, Church St., Camberwell.

CAMBER Tandem Models, Dunlop tyres; £26.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER Utility Models; £25; Dunlop tyres.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER Utility Tandem Models, Dunlop tyres, large locker space; £27.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER Harley and Indian Models, 28×3 wheels, from £29.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER.—We undertake repairs, repainting, and upholstering to any make of sidecar.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER.—We are the largest makers of sidecars in South London. Established 1899.—Bright and Hayles, 78, Church St., Camberwell, London. 'Phone: Brixton 2951. [2930

SIDECAR, C.B., off 1916 Scott, new tyre, in excellent condition; £10.—J.C., 389, York Rd., Wandsworth, S.W.18. [8780

A. W. Manufacturing Co., manufacturers of Ladbroke sidecars, finest value in the trade; particulars by return.

A. W. Manufacturing Co., manufacturers of the Ladbroke all-weather sidecar, patent disappearing coupe hood, smartest on the road; write for particulars.

A. W. Manufacturing Co., for new or second-hand sidecars, actual manufacturers quality at moderate price.—13 to 24 Avenue Close, Poplars Avenue, Willesden Green. 'Phone: Willesden 2805. [8999

BASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars from £14/18/6.

BASTONE'S.—We have a few soiled sidecars and bodies to clear at low prices.

BASTONE'S.—Distributing agents for the famous Montgomery sidecars. Latest 1921 sporting and other models in stock; trade supplied.

BASTONE'S (Sidecar Dept.), 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6850

GLORIA Sidecar, complete, hood, apron, spare cover, tube, spring wheel; bargain, £11.—41, Totterdown St., Tooting. [8663

SPORTING Torpedo Rennoc, apron, wind screen, grid, locker, excellent condition; £15.—Cox, London Hospital, E.1. [8544

SIDECAR Chassis, 100 Douglas for disposal, £3/10 each.—The Central Motor Works, 14a, Loughborough Rd., Brixton. [9055

CHASSIS, heavy underslung, fit any standard machine, new 1920; £4/10.—Comfort, Havengore, Tudor Rd., New Barnet. [8371

A.B.C. Sidecar, new, uncrated, complete with sidecar sprocket; £27/10, carriage paid.—54, St. James St., Ashted, Birmingham. [X529

NEW Coachbuilt Sporting Sidecar, complete chassis, wheel, tyre; £10; seen by appointment.—Bailey, Ashley Rise, Walton-on-Thames. [83

EDWARDES.—Second-hand sidecar chassis, underslung, £5/10; bodies, £4/19/6 new.—277, Camberwell Rd., S.E. Hop. 4913. [891

BRAMBLE C.B. 26×2¼, art green, new condition, smart turnout, suit Triumph; 9 gns., bargain.—Kemp, 25, Knowle Rd., Brixton. [912

SIDECAR, light, coachbuilt, good condition throughout, Mille-Fulford chassis; best offer over £10.—Selby, 32, Honor Oak Park, S.E.23. [851

CLYNO Chassis, with 26in. wheel and Dunlop tyre new, bargain £8/10; Clyno second-hand body 30/-.—Simpson, 71, Nova Rd., Croydon. [874

NEW Mills-Fulford Bulbous De Luxe Sidecar, with lamps and bracket, suitable for 7-9h.p. Indian £30.—Hicks, 32, Lena Gardens, Hammersmith. [902

1920 Henderson Lightweight, black, gold line, disc wheel, apron, mat, lamp, generator (Lucas), absolutely as new.—233, Bingley Rd., Saltaire. (D) [888

DOUGLAS 1919 Sidecar, complete, enamel and upholstery in excellent condition, tyre and tube sound; £16.—11, St. Andrew's St., Rugby. [86

MONTGOMERY Sidecar, 1921, like new, all fittings, carrier, apron, £25, or nearest; 2½h.p. Clyno 1920, splendid condition, £40.—Beacon Garage, Penrith. [811

SIDECAR, C.B., almost new, complete with wind screen, hood, and attachments for Triumph; £1 bargain.—Compton, 47, West St., Marlow, Bucks. [90

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Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

The Auto Cycle Union.

WHEN the membership of an institution like the Auto Cycle Union drops 40% in twelve months—and this at a time when the number of motor cyclists has increased tremendously—the question naturally arises whether there is not something wrong with the policy of the organisation. The Auto Cycle Union is the governing body of the motor cycle movement, yet, as its membership roll shows, it represents but 10% of motor cyclists in this country—insufficient to justify the position as dictator in so many vital matters.

That a governing body is desirable—in fact, is necessary—will not be denied by all who have at heart the interests of the sporting side of the movement. This duty the Auto Cycle Union fulfils in a manner which has set a standard to the world, and, to do this, even a membership of 30,000 is sufficient. It is, perhaps, this side of the A.C.U.'s good work which is responsible for the comparatively low membership. The competition work of the Union, by its very success, overshadows its efforts in other directions. The great majority of motor cyclists, while appreciating the value of competitions, do not feel disposed to pay subscriptions to "improve the breed of motor cycles." The Automobile Association, on the other hand, is admittedly a business proposition, and probably its popularity is due to the fact that its main object is to provide service to the individual rider.

Elsewhere in this issue there appears a short article by the Chairman of the Auto Cycle Union, in which the question of amalgamation of all motoring bodies is discussed. As to whether such an amalgamation would prove advantageous to the motorist is a moot point, but certainly no harm would come from an examination of the situation. Probably a working arrangement between the bodies concerned would be better than to have everything controlled by one board, but in legislation matters united action is an absolute necessity.

The drop of 40% in the A.C.U. membership synchronises with the raising of the subscription. This was done at a most inopportune time, and, if any organisation is to receive the support of the majority, the subscription must be much less than the present fee.

Spring Frames.

ONE of the most difficult problems that has been set before the motor cycle designer is that of constructing a spring frame which shall be laterally rigid and flexible in action, but not unsightly, heavy, or costly. The last item has undoubtedly proved a severe handicap in recent times, when all have been endeavouring to reduce the selling price of their productions. Some riders, who have had experience of unsatisfactory devices, are inclined to stigmatise rear springing as unnecessary and even undesirable, but with them we cannot agree. There are rear suspension systems on the market which are perfectly satisfactory, and not only increase the comfort of the rider to a very considerable degree, but also save the mechanism of the motor cycle from many strains. Such faults as leaky tanks, fractured frames, and loosened nuts have been unduly prominent in recent competitions, and good rear suspension would do much to eliminate these troubles.

In the meantime, many forms of auxiliary suspension for the rider have made their appearance, and so excellently do some of these perform their function, that both riders and manufacturers are apt to be content with the substitute instead of racking their brains in an endeavour to achieve perfection. It must, however, always be remembered that, no matter how perfect the saddle suspension, the object in view is the attainment of the least possible amount of unsprung weight. When this ideal is attained, the consequent protection of the major portion of the mechanism from road shocks and vibration will permit the maintenance of higher speeds with safety and comfort.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

By "Ixion"

Lest We Forget.

AT the moment the keen interest lately shown in the matter of riding comfort is declining. *The Motor Cycle* campaign in favour of spring frames led to varied results. On the one hand, it bore fruit in a crop of fully sprung frames, some of which were decidedly excellent. On the other hand, various designers, who could not or would not evolve a first-class spring frame, circumvented the problem quite admirably by adopting much larger tyres, and by minor alterations in their fork or frame design. At present the comfort question is temporarily in a condition of stalemate. Little, if any, public emphasis is being laid on the matter. Some makers have dismissed spring frames from their minds. Others, after coquetting with big tyres, have relapsed to the bad old bone-shaker layouts, possibly because of increased costs and a tight market, possibly because their experiments were conducted with a flabby-sided tyre which rolled. But I hereby warn a section of the trade that there still are machines on the market which a large and increasing section of the public will never ride again, because they are notoriously less comfortable than certain better-designed rivals. If a sales manager finds that his market is shrinking in spite of live agents, good publicity, and ample competition successes, let him ask himself whether his 'bus is up-to-date in respect of comfort.

The Ray of a Sparklight.

ONE or two correspondents have asked me privately how much illumination is furnished by the smaller and cheaper electric lighting sets. It thus occurred to me to measure the ray of my B.T.H. Sparklight set on a pitch dark night. As readers will be aware, its illumination is obtained from a four-volt battery, which is charged by current obtained through a pick-up brush off the "idle maximum" of the magneto. In delivery adjustment its head lamp throws a duplex ray. There is a short-distance diffused circle of comparatively faint light, which is 30ft. in diameter at a distance of 15ft. ahead of the lamp, and suffices to give one a general idea of the immediate foreground. Penetrating distinctly through the centre of this faint circle is a long distance beam of much more concentrated and intense light, by which I can read a newspaper when standing at a distance of 85ft. from the lamp. Beyond that point the bright, narrow beam extends in a weaker form, which could only be measured with special instruments.

In other words, this inexpensive outfit allows one a distance of about thirty yards in which to pull up after sighting an obstacle, besides supplying comfortable information about the foreground. Presumably a battery of similar voltage, feeding as good a lamp, would give exactly the same light at even lower cost, and would be worth consideration where special facilities for recharging exist. The Sparklight is certainly adequate for use on the baby two-stroke on which I use it.

The Innocents Abroad.

THE big trials are intended to give the public an index to the reliability of motor cycles. They fulfil their purpose. But only the inside observer knows with what egregious folly some of the manufacturing firms "let down" the plucky fellows who ride for them. Competition riding is a game which wants quite as much knowing as league football or international cricket or growing prize leeks or washing a canary for exhibition (I am credibly informed that the last named job is the trickiest in the whole gamut of competitions; you do it with egg flip, and when it is over the bird generally dies of pneumonia or looks like a top hat which has been brushed the wrong way). However, to our muttons. What is the use of paying a handsome salary to a crack competition expert, and then ignoring all his recommendations? There are a lot of new men in the sales departments of the motor cycle industry. Some of them fancied in 1919 that selling motor cycles was as easy as handing round cigars at Show time. They know better now, and most of them are beginning to regard competitions seriously. But some of them have still to learn that success in competition means engaging a man who knows the game, and paying close attention to what he says.

Some Object Lessons.

FOR example, would W. H. Wells ever allow the Indian team to ride wafery 650 × 65 mm. back tyres in a big road trial? (Some British 7-9 h.p. machines do so.) What do you think of entering

Occasional Comments.—

sidecarettes in a trial which is notorious for smashing up frames, and has led to the redesigning of every big combination which ever competed in it? What is the sense of entering two-speed gears of very low ratio in an event renowned for its eternal hills and prolonged stretches of "doorstep" road, in which most failures are due to blinding necessarily indulged in to recover inevitable losses of time?.. Or, if you were pitting an expenditure of, say, £150 on trying to get an advertisement in a trial which few solo machines have yet completed without at least one tumble, would you mount the magneto in much the same position as a footrest? Or, again, if wild weather and watersplashes were impending, is it fair to send your men out with naked carburetters near the front wheel? For success in the competition game, you must employ an expert and *trust* him.

Multi-wheelers in Trials.

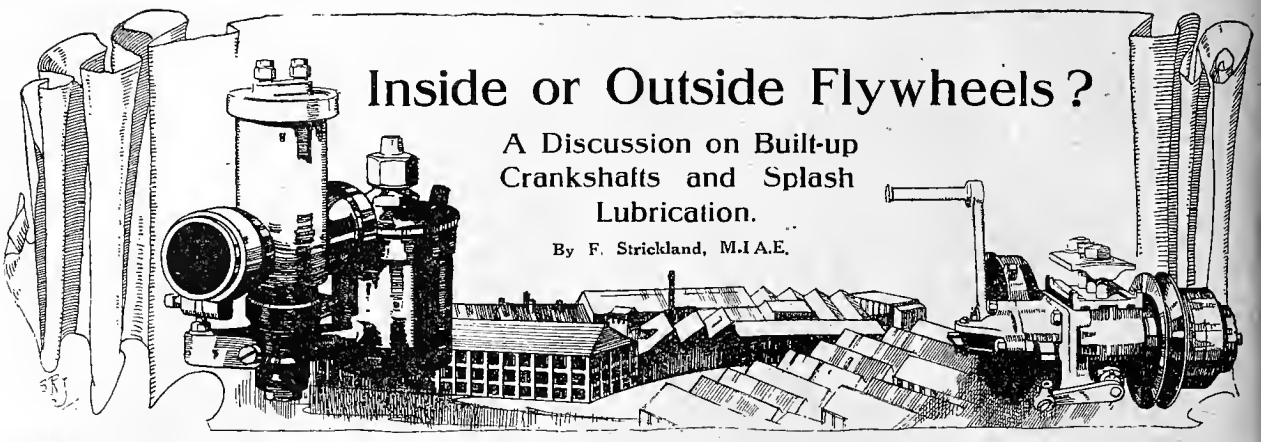
WHAT is the proper position of sidecars, cycle cars, and light cars in a mixed trial? The A.C.U. and M.C.C. generally station them at the tail of the procession, where their dust-raising and baulking proclivities cause the minimum degree of annoyance to the solo mounts. The Edinburgh M.C.C. attracted a little gentle criticism in last week's Six Day event, by sandwiching all four types of entry together, and providing a three-minute interval after each light car. In narrow lanes, up corkscrew freak hills, and in dry, dusty weather, no motor cyclist wishes to have any kind of multi-wheeler anywhere in front of him. If the passenger entries are lumped together at the tail of the procession, they suffer no hardship—unless the chance to lie in bed half-an-hour longer every morning be a hardship: but if the passenger men dislike being forced to ride in a bunch, they ought to agitate for a trial all to themselves, with lengthy starting intervals. We may love them intensely as individuals; but when they begin prancing among us on a hill like Porlock (in rain) or Park Rash or Summer Lodge, we wish them somewhere. And even more heartily do we detest them when six of them are scorching home along the level with an inch of white floury dust on the top of the road.

Tyre Confidence.

I HAVE never done 100 m.p.h. on a motor bicycle. I do not think I have ever done 80 m.p.h. on less than four wheels. I have no wish to touch either of these speeds. Once upon a day I burst my front tyre when I was doing a measly 65 m.p.h.—and only a speedometer 65 at that. I still feel minute beads of moisture bedewing my spine when I recall the occurrence. But when I read of Le Vack doing 106 m.p.h., I feel all warm inside to think of the sublime confidence he must repose in his tyre maker. Myself, I am a bit of a fatalist about tyres. In ordinary work I have grown to regard their freedom from puncture as something of a lottery. If I had to circle Brooklands on an eight-valved 1,000 c.c., I should probably fit solid tyres and Houdaille absorbers, being a coward to my marrows. The firms whose tyres are selected deserve much credit.

BURNING COUNTRYSIDE.

The terrific heat of last week-end has resulted in the destruction of many beautiful expanses of gorse and heather. Where there were masses of purple and golden bloom are now in many cases desolate stretches of blackened vegetation. The illustration on the left depicts a competitor passing burning vegetation during a trial organised by Messrs. Pike and Co., of Exeter. The great column of smoke shown in the illustration on the right arises from the blazing Oxshott Common on the Portsmouth road between Esher and Cobham.



Inside or Outside Flywheels?

A Discussion on Built-up Crankshafts and Splash Lubrication.

By F. Strickland, M.I.A.E.

TWO features of the ordinary motor cycle which have been more adversely criticised than almost any others are the built-up crankshafts and the splash lubrication, yet these are still almost universal after some twenty years' experience. Writers on motor cycles have demonstrated that the built-up crankshaft is quite wrong, and the inside flywheels still more wrong. One writer has stated that "built-up shafts are never used in any other type of prime mover"—a statement which only shows that he is quite ignorant of modern practice in stationary, marine, and locomotive engines. We are told that the drag of the oil on the flywheels absorbs an enormous proportion of the power of the engine, etc., and that with splash lubrication none of the oil ever gets to the parts which require it, while other writers say that, when a fresh charge is put in, the bearings are "overflooded," though it is not quite clear how a bearing is damaged by having more oil than necessary.

After Twenty Years' Test.

Most motor cycle makers—English, American, and European—use the inside flywheels and splash lubrication adopted by De Dion twenty years ago. So it seems worth while to investigate and see whether, after all, there are not some advantages in the "despised" system.

The first point is to take the actual results. Here we may for a moment go back to the days when single-cylinder engines were used for cars, and see how the bearings compare with the modern types which have forged shafts and pump lubrication.

One of the most successful of the older types of car engine was the 8 h.p. De Dion with one cylinder (100 × 120 mm.). This engine was used for four-seated cars, and would take four people on occasion over twenty miles in an hour, the car with passengers weighing well over a ton. The big end bearing was under 1in. diameter and 1in. long, the bearing surface therefore being about a square inch. These big ends would run 10,000 miles or more with no material wear. Lubrication was by simple splash with hand pump.

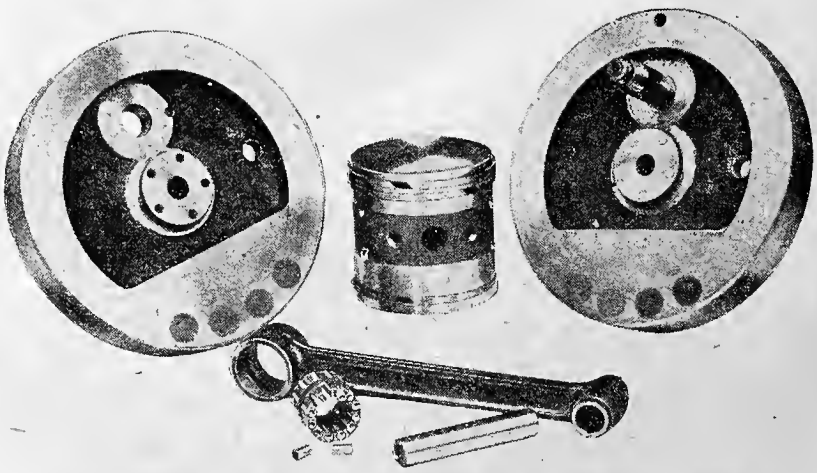
Comparisons.

I do not think that anyone will suggest that engines with as small bearings as this on forged shafts have ever done the same amount of work. The total area is about equal to that of many of the flat twin 2¾ h.p. cycle engines, and I think it will be generally admitted that to put one of these shafts into an engine capable of taking a ton twenty miles an hour would be asking for trouble, and lots of it. Further, car engines with forged shafts have far larger bearings than this, and yet the bearings require adjustment fairly frequently—in fact, many are not so very much more durable than the old De Dion. These De Dion engines also ran at a very high speed, probably in practice faster than the large majority of modern engines, as the cars had about 6½ to 1 top gear ratios.

I think, therefore, we may take it that the built-up shaft *has* been very successful even where it has come into competition with the forged shaft on its own ground in cars. Of course, it went out with the general introduction of the four-cylinder engine, for directly the cylinders are multiplied the great advantages of the built-up shaft disappear, as we shall see, and the construction becomes very difficult.

Assuming that the built-up shaft is satisfactory, why is it?

I think anyone who studies the action of the petrol engine will



Piston, connecting rod, and flywheels of a modern inside flywheel engine. Observe the lead-loaded balance weights.

Inside or Outside Flywheels?—

see that there are very great practical advantages in having the crank pin directly attached to the flywheels. The ordinary single-cylinder engine is driven by a series of impulses with a compression stroke in between. That is to say that the piston drives the flywheel and the flywheel the piston alternately. Now, if the flywheel is outside, these forces have to be transmitted through the crankshaft, and there is therefore a heavy twisting and bending stress on the shaft both on the explosion and to a less extent on the compression stroke, while the inertia of the piston causes stresses on the two idle strokes (fig. 1). On the other hand, with the inside wheels the pressure goes direct from the flywheel to the crank pin and *vice versa*. Further, as the flywheels are usually on both sides of the pin there is no material bending moment at all (fig. 2). All shafts subject to bending spring more or less unless very heavy, and if the shaft springs in the least the wear is greatly increased, as the brass does not bear properly the whole length of the journal. For this reason we might expect that the forged shaft would have to be a great deal heavier than the pin of the built-up one, and this appears to be the case.

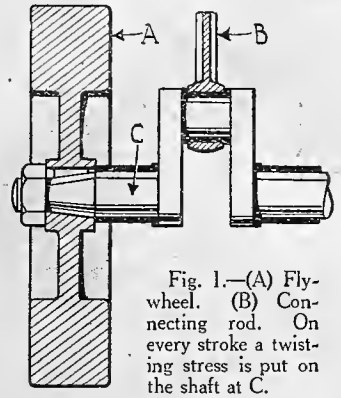


Fig. 1.—(A) Flywheel. (B) Connecting rod. On every stroke a twisting stress is put on the shaft at C.

Advantage of Symmetrical Construction.

Even if the forged shaft is made heavy enough to wear as well as the built-up one, it appears better in practice to have the flywheels as near the pin as possible, and it should give a sweeter-running engine. It should also be an advantage for sweet running to have the engine symmetrical, *i.e.*, to have two flywheels, one on each side of the centre line of the engine. This is usual with the inside flywheels, but is not easy to arrange with the outside ones.

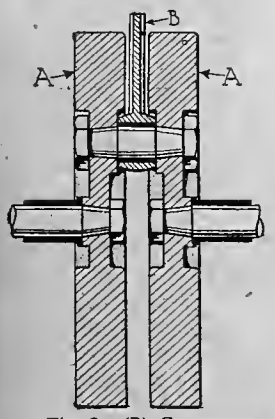


Fig. 2.—(B) Connecting rod. Forces are transmitted direct from crank pin to the flywheels.

In construction the built-up shaft has some distinct advantages, especially when we consider the fact that if bearings are to wear well the shafts should be hardened and ground. With the built-up shaft this is absolutely easy, but with the forged shaft it is not so easy to do it and be absolutely certain of uniform hardening. In fact it is so difficult that when we come to the four-throw crank of a car engine it is very unusual to harden them at all.

From what has been said about the alternating drive between the piston and the flywheel it will easily be realised that when the flywheel is outside, as in the case of the forged shaft, there will be an alternating drive on the key of the flywheel. In car practice the trouble with such flywheels working loose has caused the cone and key fastening to be almost entirely given up, and the flywheels are now almost always fastened on by a flange and bolts. In a motor cycle this would prevent ball bearings or unsplit bushes being used for the main bearings, and they would have to be split as in cars, and there is little doubt of the advantages of the unsplit bearing—a point again in favour of the built-up shaft, as the big end can be an unsplit bush. According to my experience, unsplit bushes wear better than split bearings of the same size, probably because they are more rigid, and it is generally cheaper to put in a new bush than to let together a split bearing and make a proper job of scraping it up. It is for these reasons that unsplit bushes are becoming increasingly popular in such engineering as locomotive work.

Splash Lubrication.

With regard to the splash lubrication, this has at all events the merit of simplicity, and it is not dependent on any mechanical device for action. Further, it can be varied at will to suit the conditions of running. These are distinct advantages, and it needs some definite shortcomings to be shown for its condemnation. Now I take it that the test of a lubrication system is simply whether it lubricates, and although we hear a great deal of the "complete failure" of the splash to do this, we do not get so many instances of actual failure, provided, of course, it has been properly used.

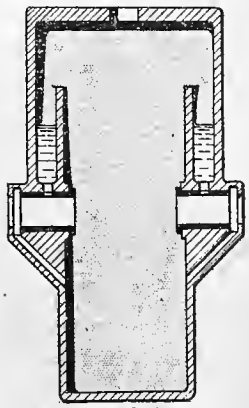


Fig. 3.—If there are large cups over the main bearings arranged so as to catch the oil thrown off the flywheels the bulk of the oil will always be in them, and the only difference between much and little oil in the crank case will be the oil level in the cups.

On the contrary, it appears to me that when one takes a well-designed splash lubrication engine to pieces, all parts appear to have been amply lubricated. Even in the very early days of the car industry this was the case, as was shown by the success of the motor cycle type of engine on cars.

Amount of Oil Needed.

The fact appears to be that when the engine is running at anything like the speed usual on a motor cycle engine, the whole crank case is full of a fine spray of oil. Let us remember that it only takes a few drops of oil a minute to lubricate a bearing, and anyone will see that no big end can go round in such a spray of oil without the oilholes meeting all the oil the bearing requires. Further, it will not make a very serious difference whether the spray is a thick spray or a thin one within fairly wide limits. The bearing will get enough oil, and any excess will run out at the end, as it does with forced lubrication. The main bearings can be provided with cups to catch the oil

Inside or Outside Flywheels?

running down the sides of the crank case, and unless the engine is absolutely starved, these cups will always be full, thereby giving the bearing oil under a uniform head. If these cups are large the bulk of the oil will always be in them (see fig. 3).

The only objection to the splash lubrication with hand pump feed appears, therefore, to be that the piston will get rather more oil at some times than others. This does not appear so very serious.

Not for Universal Application.

On the whole, therefore, the splash lubrication hardly deserves all the abuse it has had.

There remains one point, namely, the alleged drag of the oil on the flywheels. If this were of serious importance it is evident that no machine with inside flywheels could ever win a race or make a record.

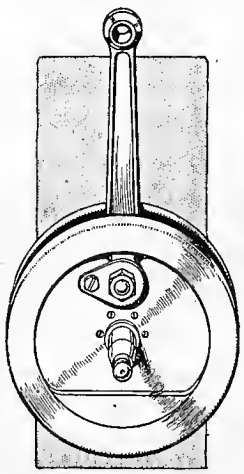


Fig. 4.—The built-up crank, inside flywheels, and connecting rod.

As inside flywheels have a fair share of success in such things it is evident that any drag is negligible. With the coming of the four-cylinder engine or even the flat twin it is probable that the built-up shaft will disappear, as it has done in the car. It is evident that its main advantage, namely, having the whole of the flywheel weight directly connected to the crank pin, disappears, as there are four crank pins, and the whole of the weight could not, therefore, be attached to the pin of the cylinder which was firing. Further, the torque from the front cylinders has to be transmitted through the back crank pins, so that we get alternating stresses on the keys in the shafts, and this appears to be a thing to avoid.

So with the multi-cylinder the built-up shaft will disappear, no doubt.

With regard to splash lubrication, good as it has been when well carried out, probably we shall come to something more automatic. If pump lubrication is to be satisfactory, however, it must be very well carried out. Some writers assume that there is never any trouble with the bearings or lubrication on cars and lorries, but this is not so, and there has been quite a lot of trouble through the circulating system failing. No doubt a perfect system can be made, but the space in a motor cycle is very much more cramped than in a car, and it will therefore have to be very well worked out. To those who think that plain splash is quite obsolete on four-wheeled vehicles, it may be news that one make of lorry largely used in France had plain splash with no forced feed or troughs. Further, that this lorry was probably the greatest favourite for hard work of any make out there.

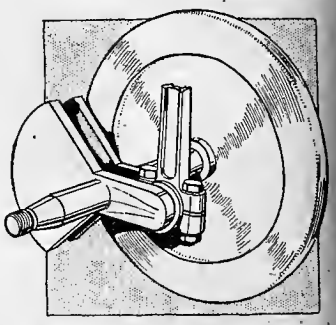


Fig. 5.—Crankshaft and connecting rod of an outside flywheel engine.

No Sudden Failures with Splash.

It must be remembered that while splash lubrication fails slowly, any circulating system fails without warning. That is to say, that with splash lubrication, if one forgets to put oil in, or if one's supply pump fails, the engine runs harder for some time before serious damage is done and attention is called. With a circulating system the first warning one usually has of anything being wrong is a bearing seized or run out.

It must not be thought that I wish to imply that all engines with forged shafts are bad, or that no system but splash is successful for lubrication. I am quite aware that most excellent engines are made with outside flywheels, etc., as well as inside. All I wish to do is to point out some technical reasons which, in my opinion, show that the balance of advantages is still with the inside flywheel and splash lubrication, as used by the large majority of makers of singles and V twins.

THE SIMPLE SOLO SINGLE.

IN pre-war days, when a young man bought a motor cycle, he probably selected a 3½ h.p. T.T. single. On this he could—and did—go anywhere, was as fast as anything on the road, and his petrol consumption was anything in the neighbourhood of 100 m.p.g.

In these degenerate times, when a young man's fancy turns to motor bicycles, he purchases a baby two-stroke, burdened with countershaft gears, a clutch, and kick-starter.

The writer intends no slight to two-strokes—far from it. They are fascinating little machines to drive, and are very capable of serious work if one is not in a great hurry. But they are not machines for "young blood."

It is the opinion of many enthusiasts that the high efficiency 3½ h.p. single—fixed gear with direct belt drive—is the finest type of motor cycle obtainable. It is simple, reliable, economical, exceedingly fast, and weighs considerably less than many so-called "lightweights."

One can never learn the fine points of driving from the saddle of a geared lightweight. The rule amongst many motor cyclists would appear to be—"When in doubt, change down." Traffic calls for no intelligence other than the ability to steer sufficiently well to avoid pedestrians. Hills now demand no skill.

The boy on his 3½ T.T. packs up his toothbrush and cigarettes on a Saturday afternoon, and starts out for a 250 mile week-end trip. There is no doubt about his getting there—his bicycle is so simple that there is practically nothing to go wrong. He may puncture, certainly, but who does not? A broken belt may detain him for five minutes, but otherwise an enforced stoppage is most unlikely. P.S.

UNITY OF CONTROL.

Unification of Motoring Bodies. Possibilities of an Amalgamation of R.A.C., A.C.U., A.A., and the Scottish and Irish Organisations.

I WOULD submit that there is every reason for an early unification of effort and of actual amalgamation of motoring bodies—R.A.C., A.A., Scotch and Irish, and that the financial position of the A.A. need not prejudice the issue. There is ample work to keep such an amalgamation going and to provide scope for present officials. Overlapping of effort would cease, resulting in enormous economies, sections with well-defined duties would work efficiently for the movement, and united effort on the roads, in the cities and towns, and in the House of Commons, would do incalculable good for the cause of automobilism. The A.A., with its healthy balance sheet (amalgamation need not of necessity rob it of a copper) and its very excellent road organisation, would improve and expand that organisation and be helpful to all road users. The R.A.C. would foster the social and the sporting side, perhaps reserving its Pall Mall premises to its club members, and, in the course of time, it might open country clubs for touring motorists. The A.C.U., with its motor cycle membership, would conduct the affairs of all motor cyclists in the region of sport, leaving the R.A.C. to provide its members with certain benefits, and the A.A. to wave them along the roads and help them when touring this and other countries.

"Unity of control—the lesson of the Great War is urgently needed in the cause of automobilism. . . . The motor industry requires the immediate and serious attention of a single influential body, representing the interests of motorists as a whole."

The above is an extract from an article which appeared the "The Autocar" in February 1919. "The Motor Cycle," also has urged the necessity for united action.

Lack of unity among the various motoring organisations, allowed the present taxation scheme to be foisted upon motorists.

Following recent comments on the subject by "Owen John" in "The Autocar" in last week's issue of our sister journal, Lt-Col. F. S. Brereton, C.B.E., Chairman of the Auto Cycle Union, discussed the position and possibilities of an amalgamation between the R.A.C. (the parent body of the A.C.U.), and the A.A., from which article the extracts given here have been culled.

Why should some such scheme conflict with financial or personal interests? Compare it with the present position. Smith is a member of the A.A., Jones a worthy supporter of the R.A.C. They motor together. They are the best of friends. They suffer from the same vexatious taxation and restrictions. In short, their aims and their views coincide. But their respective motoring organisations are at variance. Their staffs do not fraternise, they are in acute competition with each other. There is no attempt at co-operation, no combination of effort is possible, there is gross overlapping, and Smith and Jones and thousands of others who supply the golden eggs on which the respective staffs batten, sigh, and suffer and give up the task, which is rendered hopeless for the time being by—"Owen John" surmises—that personal element which can be alike the making and the absolute breaking of any movement.

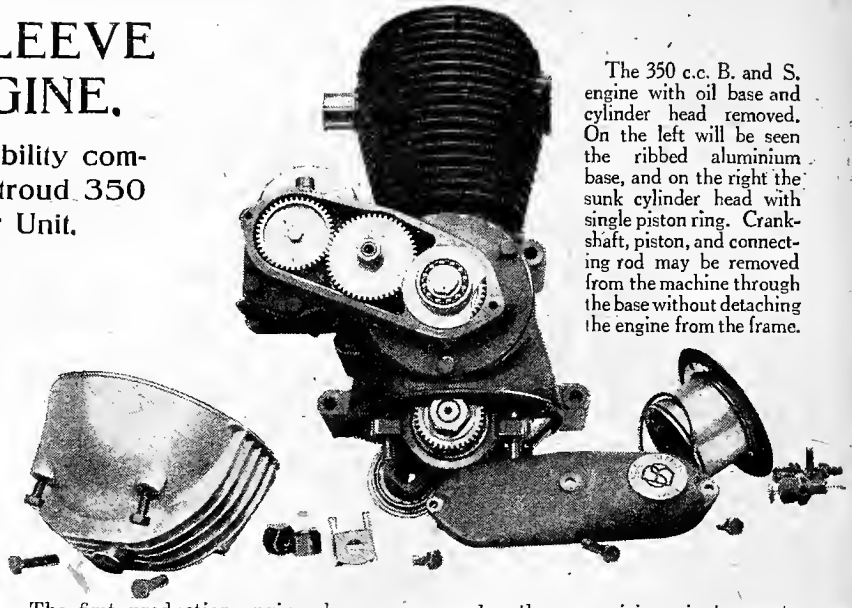
If "Owen John" be right in his surmise, one asks: Brother motorists, why submit to such a position? Why not shake off an element so essentially selfish, and seek, by free discussion in open committee, for a means of unity or amalgamation which shall benefit all our community. Why not, in short, accept the position that the interests of members of the various organisations come first, and that the vested interests of officials must give way before them?

F. S. BRERETON.

ON THE FOURTH DAY OF THE SCOTTISH TRIALS.
Outside the check at Dalnacardock: The riders, from left to right are:—J. W. Morton (3½ Rover), M. T. Calderon (2¼ Velocette), R. T. Ball (3¾ Scott), A. G. Cocks (Beardmore-Precision), Norman Black (5-6 Omega), W. A. Davenport (5-7 Coventry Victor), and W. F. Scott (3¾ Scott).

A SINGLE SLEEVE VALVE ENGINE.

Speed, Silence, and Accessibility combined in the New Barr and Stroud 350 c.c. Motor Cycle Power Unit.



The 350 c.c. B. and S. engine with oil base and cylinder head removed. On the left will be seen the ribbed aluminium base, and on the right the sunk cylinder head with single piston ring. Crankshaft, piston, and connecting rod may be removed from the machine through the base without detaching the engine from the frame.

SINCE the introduction of the sleeve valve engine in the automobile world, there have been various attempts to adapt this form of silent valve operation for motor cycle work. Most of these efforts have proved fruitless, though the lure of the mechanically silent engine is strong.

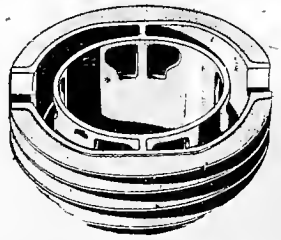
Amongst certain conservative motor cyclists there is some amount of prejudice against sleeve valves, probably owing to their comparative novelty; but the fact must be borne in mind that some of the highest class automobiles in the world are fitted with sleeve valve engines. Such names, for instance, as Panhard, Piccard-Pictet, Daimler, Minerva, Mercédès, Argyll, and Willys-Knight have served to prove the reliability of sleeves, both for touring and racing purposes. It may be remembered that the team prize in the 1914 Tourist Trophy car races was obtained by sleeve valve engined Minervas, which finished second, third, and fifth; while some twenty-three long-distance Brooklands records still stand to the credit of the single sleeve Argyll car.

A Tried System.

This last fact has a special bearing on the matter in hand, for the record-breaking Argyll and the new Barr and Stroud motor cycle engine are both manufactured under Burt patents, and the motion of the single sleeve is similar in each case.

As long ago as November, 1919, we were able to give details of an experimental engine produced by Messrs. Barr and Stroud, of Anniesland, Glasgow, and since that time the firm has been active in perfecting the design and modifying details for production purposes.

The first production engines have now been completed, and have undergone prolonged road and bench tests, and towards the end of the year a limited supply should be available. Messrs. Barr and Stroud, however, do not intend to market their new production until they have ample stocks, though it is intended that large numbers shall be produced in 1922.

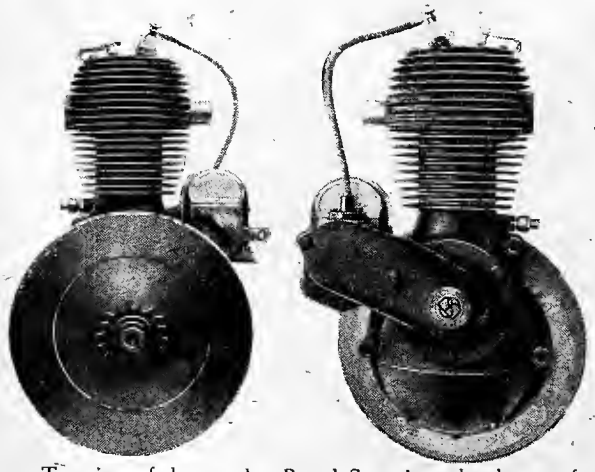


Section of the B. & S. cylinder, showing the arrangement of ports and gas passages.

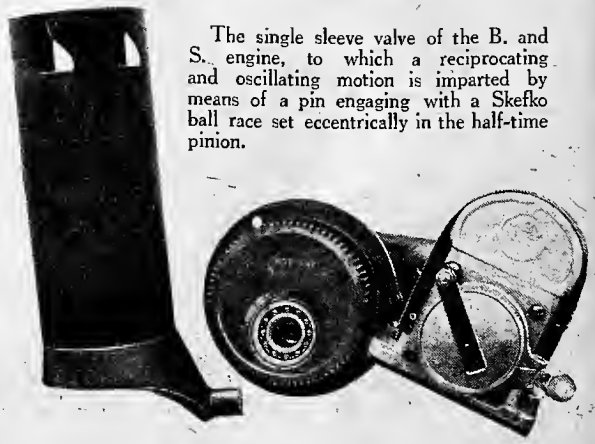
Before proceeding to describe the engine, it should be explained that the manufacturers, whose name is well known as makers of range finders, fire control mechanism, and other precision instruments, are accustomed to manufacturing to extraordinarily fine limits, and from our own observation we may say that the workmanship of the new B. and S. engine is superb.

Valve Operation Described.

Though retaining the principle of the single oscillating and reciprocating sleeve, the engine has been modified from its original form to a very considerable degree. The main dimensions are 70 mm. bore and 90.5 mm. stroke (349 c.c.), and the iron cylinder barrel is cast in one piece with the top half of the crank case. Within the barrel lies a semi-steel sleeve about $\frac{3}{32}$in. in thickness, the base of the sleeve being stiffened up and carrying a pin, at right angles to its axis, through which the motion is conveyed. It may be remembered that in the early engines the sleeve was given a combined vertical and semi-rotary motion by means of a crank and link. This operating gear has now been superseded by a clever adaptation of a Skefko self-aligning ball race set eccentrically (and at an angle) in the half speed operating wheel. The pin carried on the base of the sleeve engages in the inner race of



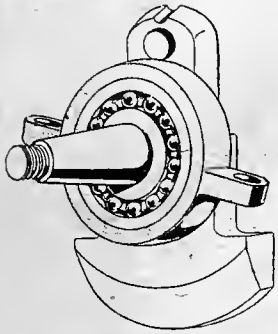
Two views of the complete B. and S. engine; the absence of external valve gear is particularly noticeable, and the clean lines obtained by combining the cylinder in the top half of the crank case, are also apparent.



The single sleeve valve of the B. and S. engine, to which a reciprocating and oscillating motion is imparted by means of a pin engaging with a Skefko ball race set eccentrically in the half-time pinion.

A Single Sleeve Valve Engine.—

this ball bearing, and is a sliding fit therein. Thus when the half time wheel is rotated the sleeve is raised or lowered, and at the same time rotated through a considerable number of degrees, the self-aligning ball race adapting itself to the necessary positions. It will be seen that any point on the sleeve follows an elliptical path. A stroke of only 1.4in. is given to the sleeve, and the necessary balance weight is incorporated with the half time gear wheel.

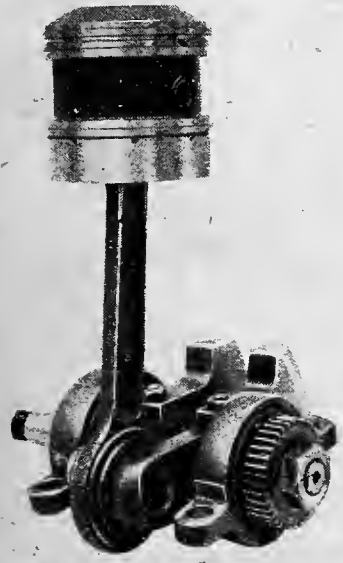


The crankshaft is supported in ball bearings, which are held up to the top half of the crank case in suitable steel housings.

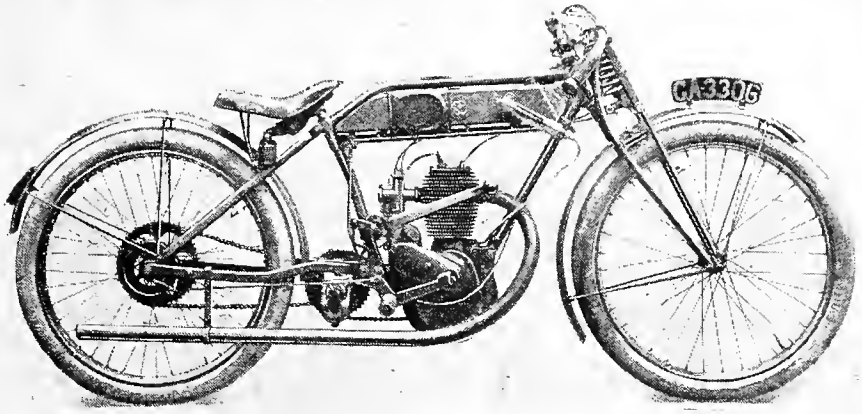
Five ports of a form calculated to provide the greatest possible area are cut in the top of the sleeve, two acting as exhaust ports, two as inlet, and one as both inlet and exhaust, since the rotary motion of the sleeve causes it to register with an inlet port on one stroke, and an exhaust port on the other.

Simple Head Construction.

Six corresponding ports are formed in the cylinder—three inlet and three exhaust. Sunk inside the sleeve is the cylinder head proper, which carries a single ring at its lower extremity as an additional gas seal, and also the sparking plug and release valve. Exhaust and inlet gas passages are cast with the cylinder, so that a single external pipe is all that is necessary in each case.

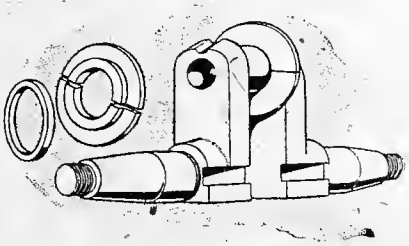


A waisted piston, having two top rings and one scraper ring, is connected to the crankshaft by an H-section connecting rod having a single row roller big end.

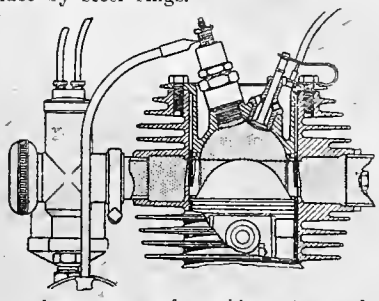


A light sporting machine in which a new B. and S. engine has been undergoing road tests.

A light cast iron piston of the Zephyr type, having two rings at the top and an oil scraper in the skirt, is used, the hollow gudgeon pin floating in the piston bosses and being fixed in the small end of the H-section connecting rod. A single row roller big end is employed, the connecting rod being threaded over the solid crankshaft, and located sideways by split bronze thrust washers held in place by steel rings.



After threading the connecting rod over the crankshaft, the rollers are located endwise by means of split bronze thrust washers held together by steel rings. The balance weights are attached after assembly.



Arrangement of sparking plug, and release valve. A somewhat modified form of piston is now in use.

Balance weights are attached after the bearing has been assembled, and are permanently fixed in position.

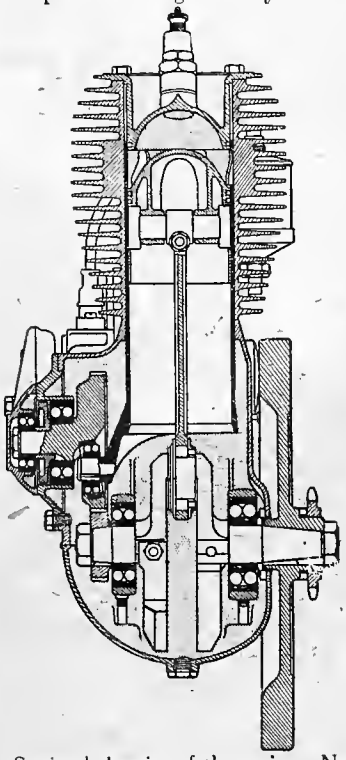
Both sides of the crank are carried in large ball bearings, and these bearings are held up to the four foundation bolts by steel carrier rings; a ribbed aluminium oil base covers the mechanism.

The sleeve operating half-time wheel has wide fine pitch teeth, and is driven directly from the crankshaft, and the magneto, which may be carried either in front or at the rear, is driven through a train of gears.

Easy to Dismantle.

Great accessibility is a feature of the engine. By removing the oil base and four nuts, the whole piston, connecting rod, and crank assembly may be removed for examination without detaching the engine from the frame, while by removing three screws the magneto and distribution gears may be detached complete, and the sleeve lowered through the base.

On the bench the engine has given most satisfactory results, and the standard article produces over 6 h.p. at 3,000 r.p.m. This figure is by no means



Sectional elevation of the engine. Note the sleeve operating gear, which runs on ball bearings throughout.

A Single Sleeve Valve Engine.—

the limit, as the power curve continues to rise steadily to well over 4,000 r.p.m., and special engines with high compression and light reciprocating parts have given a maximum power of approximately double that already stated.

After a thorough examination of all parts, we were offered a trial run on a light machine fitted with the standard engine and an all-chain drive Sturmey-Archer two-speed gear. Accompanied by Capt. Barr on another machine fitted with a brand new engine, we set out, having been warned that our mount was capable of a mile a minute under favourable circumstances.

The first noticeable feature was the entire absence of noise from the engine, with the exception of the exhaust. The distribution gear is inaudible from the saddle. There is not even a click to be heard from any other part of the power unit. A hum from the transmission chains and gears is noticeable, but not unpleasant. Next comes flexibility and top gear climbing, and it was found that the engine could hold a top gear of 5 to 1 on quite considerable hills even when these were approached at a crawl. And finally, where road conditions were favourable, we were able to try maximum speed. Unfortunately, no speed indicator was fitted, but we may safely assert that the new B. and S. is one of the fastest standard 350 c.c. engines which we have had the opportunity of riding. The engine was consistently smooth and silent in operation at all road speeds except the very lowest, when a slight vibration from the sleeve was noticeable; this fault, however, has already been corrected by a modification in the sleeve balance weights.

We were particularly impressed by the performance of the B. and S. engine, and, though from our preliminary examination, we were inclined to expect symptoms of overheating from the recessed cylinder head, we were entirely unable to extract a "knock" from the engine under the most trying circumstances. We are informed that the normal petrol consumption exceeds 100 m.p.g., and we were able to prove to our own satisfaction that the oil consumption is certainly not in excess of the normal.

In conclusion, the opinion of the new Barr and Stroud engine is that it is an extremely high-class production which is likely to carve out for itself a big future on account of its undoubted merits of silence, power, accessibility, and smooth running; it is adaptable to most standard lightweight frames.

NEARLY 90 M.P.H. ON SALTBURN SANDS.

Well-known T.T. Riders win "Yorkshire Speed Championship" Cups

SEVERAL thousand spectators witnessed the Saltburn speed trials promoted by the Middlesbrough and District Motor Club, under the auspices of the Yorkshire Centre A.C.U., which were held in ideal weather on a beach course two miles in circumference.

A feature of the event was that three Yorkshire championships had to be decided, and quite a number of T.T. riders were entered. In the twenty-mile championship for machines up to 350 c.c. the challenge cup went to Hugh Mason on a 2¾ h.p. N.U.T.; for machines up to 600 c.c. J. Whalley, of Lancaster, riding a 3½ h.p. Sunbeam, secured the trophy; whilst F. W. Dixon, the Middlesbrough expert, on a 7-9 h.p. Harley-Davidson, captured the 1,000 c.c. cup, and also carried off the trophy presented by Mr. John Gyers, president of the Middlesbrough Motor Club, for the fastest time of the day, Dixon's record in the flying kilo 1,000 c.c. event being 89.48 m.p.h.

The crowd was naturally delighted at the success of the local man, who scored the chief honours in every race he entered.

TRADERS' FOUR MILE RACE (for two-strokes up to 300 c.c.).—1, S. Jones (2¼ Velocette), 6m. 28⅘s.; 2, L. A. Runton (2¼ Velocette), 7m. 8s. *Experts barred:* 1, L. A. Runton (2¼ Velocette), 7m. 58s.

TRADERS' FOUR MILE RACE (for sidecars up to 350 c.c.).—G. S. Boston (2¾ A.J.S. sc.), 7m. 26⅘s.

TRADERS' FOUR MILE RACE (for sidecars up to 1,000 c.c.).—1, F. W. Dixon (7-9 Harley-Davidson sc.), 6m. 5s.; 2, A. Duchars (7-9 Harley-Davidson sc.), 7m. 2s.

TRADERS' FLYING KILO RACE (up to 250 c.c.).—1, S. A. Marks (2¼ Diamond), 63.91 m.p.h.; 2, S. Jones (2¼ Velocette), 53.77 m.p.h.; 3, T. Barrett (2¼ Levis), 47.80 m.p.h. *Experts barred:* 1, L. A. Runton (2¼ Velocette), 42.37 m.p.h.

TRADERS' FLYING KILO RACE (up to 350 c.c.).—1, G. S. Boston (2¾ A.J.S.), 65.79 m.p.h.; 2, J. Jobborn (2¾ Sunbeam), 63.91 m.p.h.; 3, H. Mason (2¾ N.U.T.), 58.56 m.p.h. *Experts barred:* 1, J. Jobborn (2¾ Sunbeam), 63.55 m.p.h.; 2, B. B. Bointon (2¾ Coulson-B), 55.92 m.p.h.; 3, E. B. Young (2¾ Verus), 49.71 m.p.h.

TRADERS' FLYING KILO RACE (up to 600 c.c.).—1, R. T. Cawthorn (3½ Norton), 79.32 m.p.h.; 2, C. P. Wood (3½ Scott), 74.57 m.p.h.; 3, H. Mason (3½ N.U.T.), 74.07 m.p.h. *Experts barred:* 1, J. Whalley (3½ Sunbeam), 69.47 m.p.h.; 2, C. N. Sadler (3½ Norton), 68.20 m.p.h., and G. Bethwaite (3½ Norton), 68.20 m.p.h., tied.

TRADERS' FLYING KILO RACE (1,000 c.c.).—1, F. W. Dixon (7-9 Harley-Davidson), 89.48 m.p.h.; 2, R. T. Cawthorn (3½ Norton), 81.05 m.p.h.; 3, T. W. Denny (——), 80.47 m.p.h. *Experts barred:* 1, C. N. Sadler (7-9 Indian), 74.07 m.p.h.; 2, J. Whalley (3½ Sunbeam), 68.20 m.p.h.; 3, R. A. Bonner (8 J.A.P.), 62.84 m.p.h.

TWENTY MILE YORKSHIRE CHAMPIONSHIP (350 c.c.).—1, H. Mason (2¾ N.U.T.), 26m. 37⅘s.; 2, G. W. Shepherd (2¾ Beaumont), 29m. 6⅘.; 3, S. Jones (2¼ Velocette); 4, G. S. Boston (A.J.S.).

TWENTY MILE YORKSHIRE CHAMPIONSHIP (600 c.c.).—1, J. Whalley (3½ Sunbeam), 23m. 46⅘s.; 2, L. Mitchell (3½ Norton), 24m. 23⅘s.; 3, L. Geoffrey (3½ Scott), 25m. 29⅘s.

TWENTY MILE YORKSHIRE CHAMPIONSHIP (1,000 c.c.).—1, F. W. Dixon (7-9 Harley-Davidson), 21m. 36⅘s.; 2, R. A. Bonner (8 J.A.P.), 24m. 15⅘s.; 3, L. Mitchell (3½ Norton), 24m. 43⅘s.

LADIES' TWO MILE RACE.—1, Miss Gibbon (3½ N.U.T.), 2m. 57⅘s.; 2, Miss E. Armstrong (2¼ Triumph), 3m. 20⅘s.; 3, Miss F. E. Dent (3¾ Scott Squirrel), 3m. 56⅘s.

TRADERS' FOUR MILE RACE (350 c.c.).—1, G. S. Boston (2¾ A.J.S.), 4m. 37s.; 2, Hugh Mason (2¾ N.U.T.), 5m. 21⅘s.; 3, S. A. Marks (2¼ Diamond), 5m. 25s. *Experts barred:* 1, J. Jobborn (2¾ Sunbeam), 5m. 20⅘s.; 2, B. B. Bointon (2¾ Coulson-B); 3, E. B. Young (2¾ Verus).

TRADERS' FOUR MILE RACE (600 c.c.).—1, L. Mitchell (3½ Norton), 4m. 20⅘s.; 2, Hugh Mason (2¾ N.U.T.), 4m. 35s.; 3, C. P. Wood (3½ Scott), 4m. 44s. *Experts barred:* 1, W. Wells (3½ Sunbeam), 4m. 49⅘s.; 2, M. Robinson (3½ Norton), 5m. 4⅘s.; 3, G. Wallis (4 Triumph), 5m. 18⅘s.

TRADERS' FOUR MILE RACE (1,000 c.c.).—1, F. W. Dixon (7-9 Harley-Davidson), 4m. 8s.; 2, R. A. Bonner (8 J.A.P.), 4m. 35s. *Experts barred:* 1, J. Whalley (3½ Sunbeam), 4m. 37s.; 2, R. A. Bonner (8 J.A.P.), 4m. 37⅘s.; 3, W. Wells (3½ Sunbeam), 4m. 53⅘s.

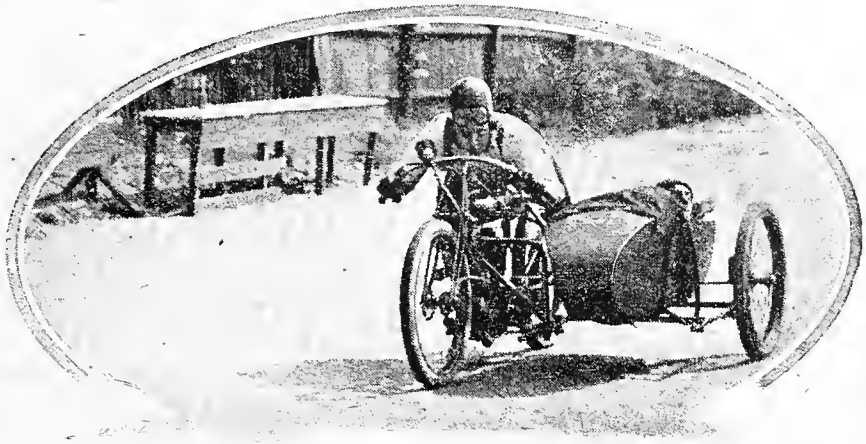
A lady competitor—Miss Gibbon (3½ N.U.T.) crossing the tape in the recent Yorkshire Centre A.C.U. Speed Trials on Saltburn sands.

Lightweight Sidecar Records Broken.

Fine Performances by an "Under-size" Two-stroke Machine in the 350 c.c. Class.

A SUCCESSFUL attempt at record-breaking was recently made at Brooklands by J. F. Newey on a 2½ h.p. New Comet and sidecar. The outfit was fitted with a Climax engine, 70×76 mm. (293 c.c.), and it was successful in beating the four hours, six hours, and 250 mile records. The engine is of considerably smaller capacity than the highest limit allowed in Class E1. In the four hours 163 miles 106 yards were covered, the average speed being 40.76 m.p.h.; in the six hours Newey travelled 234 miles 526 yards, the average speed being 39.09 m.p.h.; while the 250 miles were covered in 6h. 34m. 29⅕s., at an average speed of 38.02 m.p.h. The Climax engine works on the usual three-port principle, but differs from most two-strokes, in that it has inside flywheels.

The following accessories were used: Dunlop tyres, Dunlop belt, Amac carburetter, K.L.G. plug, Brooks saddle, Pratts' petrol, and Renolds chains.



J. F. Newey at speed on a 2½ h.p. New Comet and sidecar, on which he broke the four and six hours Class E1 records at Brooklands.

THE QUESTION OF CLOTHING.

THE abnormal drought experienced in this country during the past two months naturally made everyone take refuge in the lightest of summer clothing; but sooner or later our national weather is bound to return, and motor cyclists will be again faced with the problem of keeping clean and dry so as to appear presentable at the end of a long journey.

A firm which for the past ten years has carefully studied the requirements of motorists in this direction is the Velox Rubber Co., Ltd., of 12, Jackson's Row, Manchester, which has a very complete range of clothing to suit both motor cyclists and owners of cars.

The Velox Royal—A practical garment for the all-weather motor cyclist.

A Practical Design.

A particularly serviceable outfit is that illustrated and known as the Velox Royal. A double-breasted coat with deep storm collar is provided with a belt and exceptionally large military pockets—a feature that will be much appreciated. The trousers are of the seatless type secured at the top by a waist belt, and having a neat and efficient means of ankle fastening, while the inside of the foot is reinforced with leather.

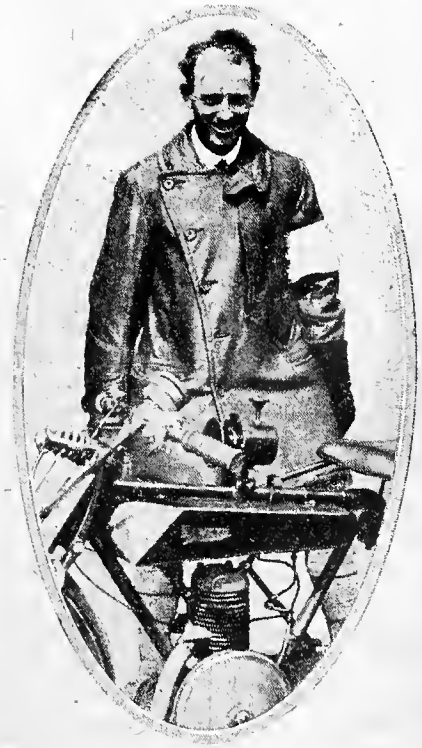
The suit is made of a superior waterproof material, and, from our examination of a specimen, appears capable of the hardest service. This model is priced at £4 10s.

THE LATE MR. H. G. HAWKER.

THOUGH best known as a pioneer airman, the late Mr. Harry Hawker, who was killed while flying at Hendon last week, was a prominent figure, not only in automobile but in motor cycle circles, and during the last twelve months gave his name to the interesting and successful Hawker two-stroke lightweight made by the company bearing his name, the Hawker Engineering Co., of Kingston.

Neither Mr. Hawker nor his partner Mr. T. O. M. Sopwith can be described as other than active motor cyclists. As soon as their little machine was ready for the market, both partners themselves entered various reliability trials. In the A.C.U. One Day Trial for stock machines, the two Hawkers driven by Mr. Harry Hawker and Mr. T. Sopwith made quite excellent performances; and, had they not run short of lubricating oil at the end of the event, there is no doubt they would have emerged therefrom with flying colours.

It is sad to think that Hawker's name will be missing from the movement into which he had so recently entered, but his memory will long survive as a daring aviator, whose luck in adversity was little short of proverbial, and it seems indeed hard that, after so many hairbreadth escapes, misfortune should have overtaken him at last.

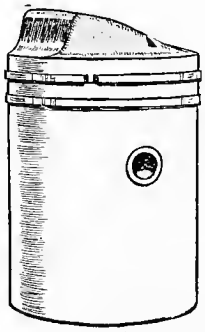


The late H. G. Hawker with one of the two-stroke motor cycles bearing his name.

TWO-STROKE PISTONS.

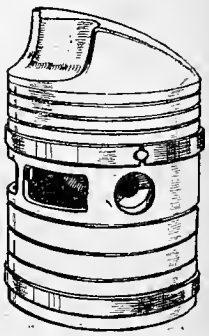
Some Considerations influencing the Design of the Deflector on Two-stroke Engine Pistons.

SUN-VITESSE.


LEVIS.

VILLIERS.

VELOCETTE.


CLYNO.

FROM a casual survey of half a dozen pistons, extracted from as many different makes of two-stroke engines, one might be led to imagine that anything with a hump in the middle will work. This in effect is true, and even a flat-topped piston will give results of a kind. On the other hand, deflector design has quite an important effect on the performance of the engine, as some of our readers, who have reversed the piston, have discovered.

Actually, piston design is affected by so many extraneous factors that the variations are easily accounted for. Since the main function of the deflector is to prevent unburned gases from passing out of the exhaust port it is desirable to maintain a high gas speed so as to deflect the transferred charge upwards with some force; but since, also, the volume of gas to be transferred varies with the throttle opening the ideal piston should have a variable baffle. Here we come up against the limits of possibility, and, as so often occurs in engineering practice, a compromise is the result.

Weights and Lengths.

Two-stroke pistons have perforce to be somewhat heavier than four-stroke pistons of the same bore, since their minimum length is governed by that required to seal the ports, added to which is the weight of the high deflector head.

Another feature which helps to increase the weight is bound up with the liability of piston rings to gum up in their grooves. To prevent this rather common fault it is necessary to use a considerable body of metal behind the rings to conduct the heat from the head.

The weight of a standard two-stroke piston of 64 mm. bore is about 14 oz., and that of a similar aluminium piston of 67 mm. bore about 11¼ oz., but certain difficulties occur in the use of aluminium pistons for two-stroke engines. For, though it is desirable to reduce clearances to a minimum, the high coefficient of expansion of the latter metal demands rather large cold clearances.

Clearances for Aluminium.

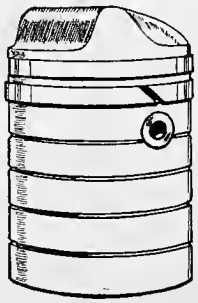
An aluminium piston has given good results in a two-stroke engine with clearances as small as .002in. per inch of cylinder diameter, but the design of the piston was such that it was at least as heavy as a corresponding cast iron piston, though it retained the main advantage of improved internal cooling.

Owing to the peculiar shapes adopted it has become the usual practice to cast the piston heads and trim them up to suit with a file, but one or two manufacturers, notably the makers of the Cedos, machine the heads all over, and so are in a position to guarantee uniformity, while effecting a considerable saving in production costs.

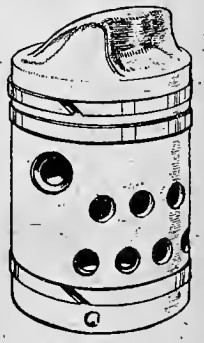
Distortion is a not uncommon failing with two-stroke pistons owing to the effects of intense heat on unsymmetrical piston heads, and, sometimes, to uneven expansion in the neighbourhood of the gudgeon pin fixing. For this last reason not a few manufacturers have adopted the practice of allowing the gudgeon pin to float in the piston bosses and locating it by a fixture in the connecting rods. The two-stroke Clyno was one of the first in which this method was applied in this country.

METRO-TYLER.

RADCO.


ALLON.

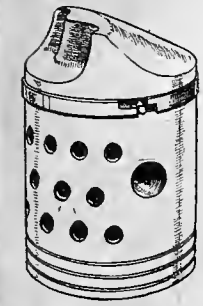
NEW HUDSON.


TRIUMPH

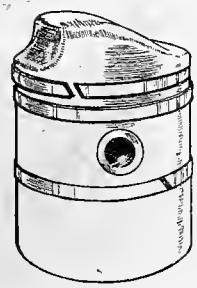
Two-stroke Pistons.—

It is not uncommon to find the gases transferred through ports in the piston wall, and this practice reduces the volume below the piston head, and, in some cases, assists in piston cooling. One firm even goes so far as to pass the charge over an internal deflector directly below the piston top, in order to improve the cooling of this vital spot.

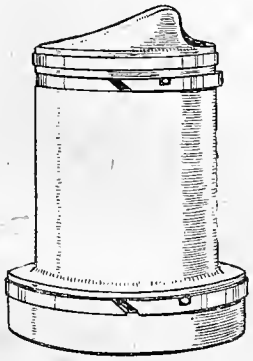
So much experimental work is being devoted to two-strokes at the present moment that a study of representative pistons may be of some value. This part will undoubtedly come in for careful consideration, though the most radical changes in the near future are likely to take place in other parts, and may even eliminate the necessity for the baffle.



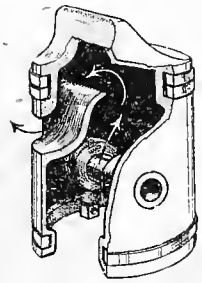
ROYAL ENFIELD.



SCOTT.



DUNELT.



DALM.

BEARDMORE-PRECISION.

RIDING TO SCHEDULE.

How to Make "Repetition" Journeys More Interesting.

THE writer is one of the numerous class of people whose home and business interests are separated by many miles. In his case the distance is forty-eight miles, by road, and cannot be achieved by train in less than 3½ hours, often taking an hour longer. It is obvious that quite an ordinary motor cycle should improve considerably on these times; in fact, it was hoped to reduce the journey time to 1¾ hours.

In the scramble of the early days of 1919, the machine which fell to the writer's lot was a 2¾ h.p. Allon two-stroke, and the first journey was undertaken with high hopes.

Taking into consideration the condition of the roads in the summer of 1919, and also the fact that the standard 2¾ h.p. two-stroke does not shine at prolonged speed work, a 20 m.p.h. schedule was deemed ambitious enough to begin with, the time allowed for the forty-eight miles being 2h. 25m. This proved well within the powers of the machine, and only once was the allotted time exceeded, the cause being a broken throttle wire. The best times recorded were one of 2h. 11m. on the outward, and one of 2h. 17m. on the homeward journey.

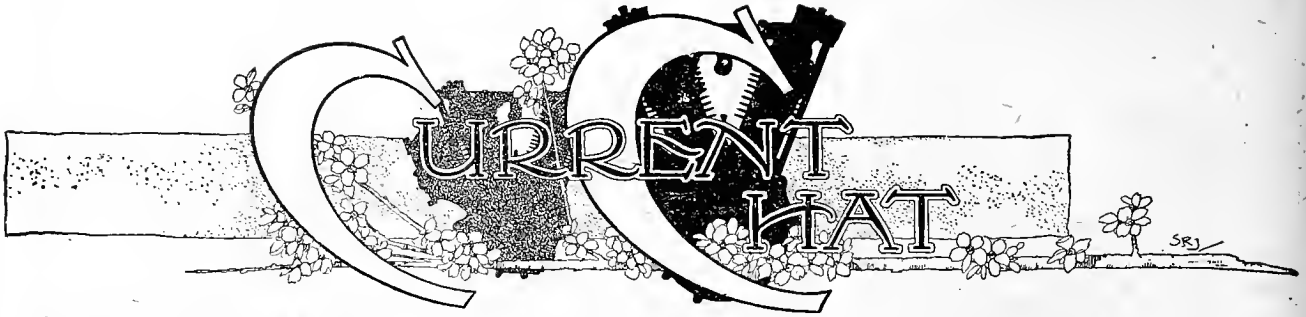
Experiences with a Douglas.

In the autumn of 1919 the writer parted with the sturdy little Allon—not without many regrets—and purchased a W.D. pattern 2¾ h.p. Douglas. The first run with the new machine was made on a very wet December day, which made one sigh for the excellent mudguarding of the Allon. So bad were the conditions that speed was quite out of the question, and, under the circumstances, the time of 2h. 19m. cannot be regarded as bad.

The fact that this time was usually slightly exceeded must not be taken as reflecting on the machine, which proved to be all that its makers claim for it. But at that time the condition of the roads was very bad. On the first outward journey a loss of fourteen minutes had to be recorded, as rather inconsiderate forcing of a new engine resulted in "drying up" on a hill. The best time in this direction was one of 2h. 3m. In the opposite direction "schedule time" was usually kept, a loss of four minutes on one occasion being the only exception.

When the long-waited time arrived, and a motor cyclist was able to choose his mount, the machine of the writer's choice was the 3¾ h.p. sports model Scott—a choice which he has never had occasion to regret. Most of the outward journeys were made on summer Sunday evenings, so that motor cyclists who have travelled along the Birmingham-Stratford road at such times will not be surprised to learn that the times for the initial eighteen miles to Shakespeare's town were usually rather slow, a loss of five minutes being frequent. But the slowest overall time was only two hours four minutes. Usually the scheduled time was closely adhered to, while on one of the few runs *not* made on Sunday, a saving of ten minutes was easily effected. In the reverse direction the Scott, as a rule, simply played with the schedule. Incidentally, with this machine I obtained 74 m.p.g. when using benzole and Spots.

Motor cyclists who have to make the same journey frequently might do worse than adopt a regular schedule, as this practice considerably lessens the monotony of a well-known ride. Probably many motor cyclists who read this have long ago adopted a similar practice. The schedule adopted should not be too "tight." Experienced riders know how difficult it is to maintain an average of even 20 m.p.h. over most roads. If roads are good, and no big towns have to be negotiated, there is no reason why a skilful rider should not average 24 m.p.h. with perfect safety to himself and the community. It is a speed which involves easy calculations, as it means an allowance of 2½ mins. per mile. MIDLANDER.



Times to Light Lamps.

July 21st	... ...	9.33 p.m.
,, 23rd	... ...	9.30 ,,
,, 25th	... ...	9.28 ,,
,, 27th	... ...	9.25 ,,

Where the Bits go to.

A reader discovered a lost valve cotter pin in his silencer.

Records.

More long distance sidecar records have been beaten by a two-stroke. (See page 73.)

Tornapress-Applecross.

This notorious "Pass of the Cattle" has lost most of its terrors. Engines improve year by year, but hills get no steeper.

Light Cars in the "Scottish."

There were fourteen light car entrants in the Scottish Six Days Trials, some of them air-cooled. Details of the trial from a light car owner's point of view appear in *The Autocar* this week.

Next Sunday.

Sunday is the great sports day of the week in France, hence the holding of the Grand Prix on Sunday next. There are fifty-seven entries. On the day following, the great Grand Prix for cars will be run. A description of the latter will appear in *The Autocar*.

Silence.

A mechanically silent motor cycle engine—an engine which has not even the sewing-machine whirr of the quietest twin, or the hum of the best two-strokes—has been produced by a Scottish firm of engineers. It is described elsewhere in this issue.

Motorists and Hospitals.

In response to a suggestion that distinctive signs, similar to those usually issued by the Automobile Association, should be erected informing motorists that they are passing a hospital, the A.A. has provided two signs carrying the injunction "Please do not hoot" for the Great Northern Central Hospital, Holloway.

Power Alcohol.

In reply to a deputation who waited upon him recently in connection with power alcohol, the Chancellor of the Exchequer stated that he saw difficulties in the way of adopting a different scale of preference duties for power alcohol from that applicable to alcohol intended for other purposes. The subject, however, was very complex, and he would consider it further.

The Number of Motor Cycles in France.

According to the latest statistics, there were some 37,761 motor cycles in France in 1914, and at the end of the war (1918) this number fell to 8,394, rising to 28,538 in 1919, and to 50,783 in 1920—the highest number yet recorded.

IMPORTANT NOTICE.

Owing to the August Bank Holiday, the issue of "The Motor Cycle" for August 4th must be closed for press earlier than usual. Insertion of Miscellaneous Advertisements in that issue can only be guaranteed if in our publishers' hands by FIRST POST, Thursday, July 28th.

Special Features

THE SCOTTISH TRIALS DESCRIBED

A SLEEVE-VALVE ENGINE.

The Little Giants.

The "baby" two-strokes did remarkably well in last week's Scottish Trials.

A Midland Rally.

There is to be a motor cyclists' rally at Stratford-on-Avon on Saturday next.

Thirty-eight Guineas.

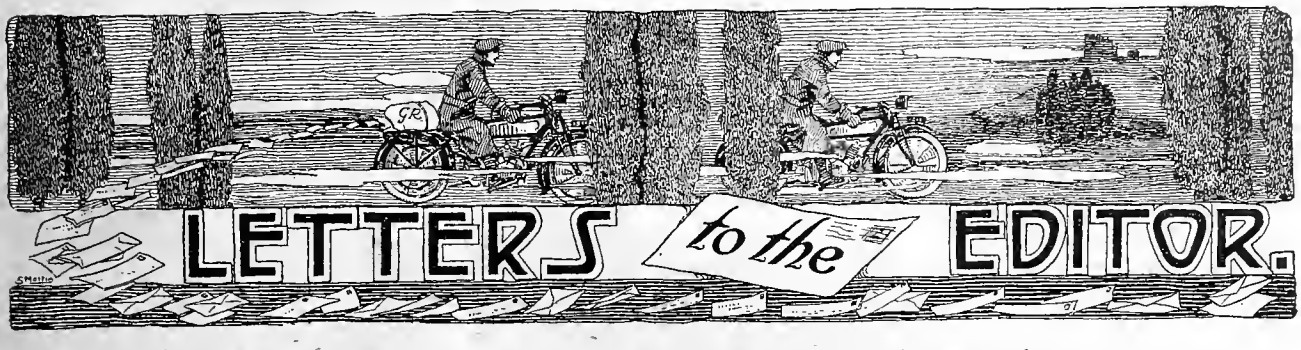
We *are* getting down to popular figures! A well-known lightweight now sells at thirty-eight guineas.

Belt Drive.

Belt drive still has its many supporters. At least, one would judge so from our correspondence columns.

THE SCOTTISH SIX DAYS TRIALS.

A group of competitors on the route near Achnasheen between Strathpeffer and Jeantown.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

PETROL TINS ON SIDECARS.

Sir,—With reference to the letter of Mr. R. C. Measures on "Petrol Tins on Sidecars," I have experienced the same trouble on a Triumph. I overcame the difficulty by fixing the ordinary petrol tin to the carrier of my machine by means of clips somewhat similar to the way in which a petrol can is fastened to the running board of a car.

The clips were made by a blacksmith, only cost a few pence, and have given no trouble during six thousand miles on the road. E. BRIDGFORD.

Sir,—Referring to R. C. Measures's letter *re* petrol tins on sidecars, I never could see the necessity of carrying two gallons of spare petrol on a sidecar.

My method is to obtain an empty half gallon tin of lubricating oil, cleanse with a little petrol, cut two nicks in the stopper and cut a leather disc as on a petrol tin. This can then be screwed down quite leak tight. I place this in the sidecar just in front of the seat, and when the supply in the tank gives out I am all right for at least another twenty miles. As a matter of fact I have often helped fellow motorists by letting them have the contents of my spare half gallon tin.

Of course he could have a spare gallon in the same manner and enamel the tin in any colour. FREDK. TAYLOR.

WHERE THE BITS GO.

Sir,—The following may interest your readers. I have a J.A.P. engine with overhead automatic inlet valves. A month ago, during a journey of some thirty miles, one of the inlet valve stems broke. I found the valve, spring, and broken bit of valve stem, but the cotter pin was missing. This worried me considerably, as I thought it might be in the cylinder. However, I slipped a washer on the valve stem, and riveted it well over; this took the place of a spring stop, and proved satisfactory. A few days ago I dismantled the silencer, and out fell the cotter pin.

R. B. MONTGOMERY SWAN.

MOTOR COACHES.

Sir,—Is it not time that some agitation should be started to force chars-à-bancs and other heavy traffic to have a man stationed in the rear of the vehicle, with a signal bell to the driver? It is impossible for any horn usually found on a motor cycle, or even on most cars, to attract attention through the din.

Travelling between Brighton and Lewes on a recent Sunday evening, I was overtaking a motor coach going uphill. After hooting vainly for some minutes to get the driver to take the left side of the road and give decent room to pass, and craning my neck round to watch for a suitable opening, I at length decided to pass. The motor coach kept the middle of the road, and there was only just room for me, and as the driver was going at a good speed it took quite an appreciable time to get clear. Just as I got level with the front wheels, a sidecar machine coming fast down the hill appeared round a slight bend some way ahead. There was no time to drop back and get behind, so my only course was to dash ahead and make a dangerous crossing between the motor coach and the approaching sidecar.

Had the motor coach drawn off to the left to let me pass, I should have been able to see far enough ahead to pick the right time. As it was, if there had been an accident, I should have been in the wrong in the eye of the law, although the fault really lay with the motor coach driver.

This sort of thing is of constant occurrence, and one can never feel safe in overtaking such vehicles. They sway about all over the road, and you never know if the driver has seen you or not, and, even if he has, you never get more than bare room to pass. Having such little room, it is dangerous to rush the passage, and, if you do not, approaching traffic may be on you before you can get clear. Traction engines with trucks behind carry a look-out, so why should not the faster and more dangerous char-à-banc?

WILFRID M. BEAR.

[It has long been advocated by *The Motor Cycle* and its sister journals, *The Autocar* and *Motor Transport*, that motor coaches and heavy transport vehicles carry mirrors, and, sooner or later, these efforts must bear fruit with the Government.—ED.]

THE T.T. RACES.

Sir,—As a keen follower of the sport on paper, I was much interested in this year's T.T., and in the various articles on the races that have appeared in your excellent paper. After having read "Road Rider's" article on "The Future of the T.T.," I cannot help thinking that the problem of capacity limit for the Senior race could be solved by having three races instead of two. Under the present system genuine lightweights have to compete in the same race as 350 c.c. machines capable of astonishingly high speeds, with the result that their own very creditable performances are completely overlooked by the general public; and in spite of the unexpected result of this year's Senior race, the same thing will probably happen to 350 c.c. machines if they are included in future Senior events as "Road Rider" suggests.

"Road Rider" states that so far as 500 c.c. machines are concerned, the T.T. has served its purpose. Now I consider that all classes of motor cycles, although overwhelmingly superior to their forerunners of eight or nine years ago, are still far from perfect, and that until the time comes when there are no cases of stoppage through mechanical trouble of any sort the T.T. races should continue to be held. I also think that it would be much more fair to the manufacturers as well as to the riders, if three races were run in future, the first for genuine lightweights, the second for machines of from 350 c.c. to 500 c.c., and the third for machines over 500 c.c. LAY READER.

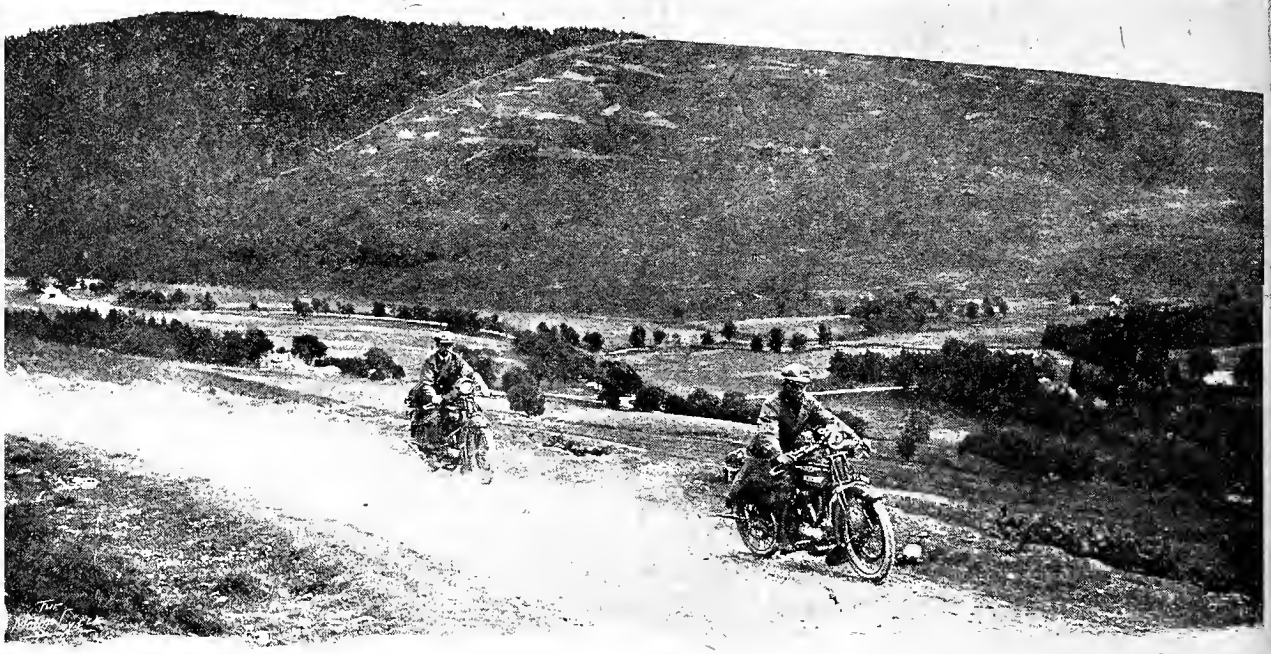
Sutton.

Sir,—I quite agree with "T.T. Aspirant" in *The Motor Cycle* of June 30th, that "Mr. H. R. Davies deserves all credit for his masterful performance," but surely he is not just when he says "one must not place too much admiration on the motor cycle concerned (the $2\frac{3}{4}$ A.J.S.)."

Motor cyclists I have met since the race have been simply bursting with admiration for the wonderful little machine and the Stevens Brothers.

Has "T.T. Aspirant" thought of the years Messrs. A. J. Stevens and Co. have fostered and developed the $2\frac{3}{4}$? Has he thought of the labour and expense it needed to produce at last a $2\frac{3}{4}$ which has really startled the motor cycle world? Let us give credit and admiration where due.

Wallasey. ADMIRER.



A fine panorama from Trinafour Hill, which was included in the first day of last week's Scottish Trials. The riders are L. A. Welsh and J. W. Walker, both on 4¼ h.p. B.S.A.'s.

THE LAW AND THE MOTOR CYCLIST.

Sir,—Quite recently I saw a motor cyclist who, with a lady on the carrier, was passing through the town (Newport, I.W.). The police constable on duty noticed that the lady's coat covered the back number plate; the inevitable followed. Similar cases are read of daily, and motorists are often fined for *not* breaking the law.

No one seems to know just how we motor cyclists stand with regard to the law, and as yet I have been unable even to purchase any printed matter on the subject. I believe I am right in saying that there are no books on sale which deal with motor cycle laws only. Why is it? Surely such a book would be eagerly sought for by nearly every motorist.

C. STAGG.

[A comprehensive summary of the law so far as it affects motor cyclists is contained in "Motor Cycles and How to Manage Them," issued by our publishers.—ED.]

SIDECAR V. CYCLE CAR.

Sir,—There is a good deal in what Mr. R. Younger says as to the advantage of the cycle car or light car over the sidecar outfit, but the cramped position of both driver and passenger in the former is a point he does not touch upon.

I know a man who has just given up his sidecar outfit and bought a small car; his wife, after a few rides, is talking very regretfully of the extreme comfort of her sidecar as compared with the new light car! But when Mr. Younger comes to the question of springing (especially as regards the bicycle) I am with him. My present outfit is a 350 c.c. two-stroke bicycle with light sidecar, and my two great drawbacks are noise and vibration. At my age (64) I am quite satisfied with the speed I get, but what I want is an outfit which combines: Cycle and sidecar efficiently sprung, noiseless engine, reliability and accessibility, and reasonable price.

F. COLE.

Sir,—I wondered on reading the letter on "Sidecar *versus* Cycle Car," whether the writer ever had the privilege of either riding in or driving the Matchless outfit. After being the owner of an Indian and Harley-Davidson outfits, I have now a model H2, which will take four up, and on a run such as from the Midlands to Cleethorpes will maintain an average speed of 30 m.p.h. non-stop, top gear throughout. This machine is fitted with the Lucas Magdyno, and to my mind it is the finest lighting set for a sidecar that could be employed. As regards the lubrication, to my mind the Best and Lloyd drip feed is splendid, as it is possible to set this exactly to a pumpful every five miles as advised by makers of the machine. As regards the petty breakdowns, I have just done 3,000 miles without ever having to trouble even a spanner. On the machine in question a one-lever Amac carburetter is fitted, and this is the one and only lever that has to be manipulated. The exhaust valve lifter is incorporated with the kick-starter, and when the carburetter is flooded I have never had to kick twice, even in cold weather, to start up. As regards comfort, how many times during the year do we have to face the wet and mud, and if suitably clothed it does not trouble the motor cyclist. In relation to the rear springing, I must say that the Matchless with its coil springs and Brooks saddle is as comfortable as, and more so than, some of the light cars upon the market. On bad roads I have been able to maintain 25 m.p.h., when other vehicles, including sidecar outfits, had to take their time. Your correspondent states that he is passed by car after car, but I may say that I have yet to see anything on the road, either sidecar or light car, including "Tin Lizzies," that can show me a clean pair of heels. Should I part with the machine I now own, my next would be the Matchless, fitted with the M.A.G. engine, which for speed and power cannot be equalled. I have no interest in the firm whatever except as a satisfied user.

London. SATISFIED.

Sir,—With reference to Mr. Younger's letter in *The Motor Cycle* of June 30th. Has he tried a popular model G.N.? I had one at Whitsun, and have now done 4,000-5,000 miles. I have not had a breakdown of any description as yet, and though I have owned practically every sidecar machine since 1907 I would never go back to one. I think the G.N. is a marvel of reliability, comfort, economy, and speed.

C. PETER JACKSON.

ULTRA-NARROW SIDECARS.

Sir,—"A.C.C." (London) desires a sidecar which will pass through a passage 53in. in width.

I have a 4 h.p. combination with a Hopley folding sidecar which will go through a doorway 30in. wide. I have used this outfit for the last eighteen months with every satisfaction. The sidecar is supplied with couplings to fit any standard machine. The maker is F. Hopley, Upper Highgate Street, Birmingham.

Usual disclaimer. T. W. GOODALL.

AVERAGE SPEEDS.

Sir,—Your correspondent "Eclipsed" is optimistic if he thinks that most Douglases can do 55 m.p.h. He is pessimistic when he imagines that averages of 28 m.p.h. are difficult to obtain.

I have no wish to write adversely about the Douglas, but I am convinced that very few 2¾ h.p. Douglases can do more than 45 m.p.h. "Ixion," some time ago, stated that he had never got more than 45 m.p.h. out of his Scott. Well, my own machine is a Scott, and a 1912 model. It will regularly do 55 m.p.h., and well over fifty with a passenger on the carrier.

NORMAN WILLIAMS.

A REJUVENATED ANCIENT.

Sir,—Having noticed several machines are now being built by motor cyclists, I am sending you a photograph I have taken of one I have lately built entirely from parts purchased through the advertisement columns of *The Motor Cycle*, with the exception of magneto, spokes, and nipples, which I purchased in Cambridge. The engine is an old 3½ h.p. Rex. It was equipped with accumulator and coil. I have now fitted up a Dixie magneto on a platform at the back of the engine. The original surface carburetter was scrapped and replaced by an Amac, and a new silencer was made and fitted with flexible pipe for exhaust. The frame I cut down 4½in. The top tube was bent and brazed in, also back stays. The old 28in. wheels were scrapped, and a new pair built up on 26in. D rims. 26×2⅜in. Clincher heavy tyres and tubes were fitted, the old front forks were rebuilt to form spring forks, the only new parts being two Druid springs. A new two-gallon petrol tank was made to fit under the top tube, also separate oil tank under the saddle, with hand pump for lubrication.

I think you will agree with me that, for the trouble taken, I have a very serviceable machine.

ARTHUR H. SUCKLING.

FASCINATING BELT DRIVE.

Sir,—The T.T. is undoubtedly a ruthless selector of the finest combination of man and machine. Other things being equal, the race is won by superb jockeying and *acceleration* powers, and calls for a positive transmission. The T.T. excites more public interest than any other motor cycling event, and the lay mind, glancing down the transmission column in the tabulated list, is apt to conclude, naturally enough, that belt transmission ie a thing of the past.

Now, here is my grumble. Having been provided with some of my most pleasant memories by Messrs. Zenith Motors, Ltd., I submit it must be a little irritating to them and kindred excellent makers of belt transmission. The tourist is provided with all the acceleration necessary by these firms. Incidentally, a Zenith driver has more time to devote to the glories of the countryside, or to his companion, than the perpetual wangler of three-speed gear levers and clutches, to say nothing of a grateful engine. When the chain-drivers provide me with an equivalent to this, and as care-free, I will cancel this growl.

A. WOODMAN.

Sir,—I was much interested to read the letter from "Medicus" *re* the Rudge-Multi, and should like to add my own experience with this most excellent mount.

I took delivery five months ago, and my mileage to date is 5,200. It is used daily to take me to and from business and at week-ends for pleasure runs, and I cannot speak highly enough of the service this machine has given me. I can fully bear out the opinion of "Medicus" concerning the pleasure derived from using the most interesting multi-gear, a pleasure totally debarred from gear box users. I cannot, however, agree with him on the question of running with slack belt. My pocket would not stand it; and, in any case, I do my best to prevent slipping in any weather, wet or dry.

"Medicus" will find his belt will last very much longer if he keeps it at a reasonably tight tension, as a slack belt "whips" to a very great extent when running, as well as the small amount of slip wearing the belt sides. If he does not already do so, I most strongly advise him to fit those belt fasteners which are provided with leather pads butting up against the belt ends. My own belt seems to be lasting indefinitely since fitting them. These, in conjunction with the most *flexible* belt obtainable, give a most satisfactory transmission.

The machine as delivered had the touring handle-bars. I had these changed for the T.T. bars, with a big improvement in general controllability, and far less tendency to skid on greasy roads and tramlines. For the first day or two the new position seemed strange, but now it is obvious to me it is the correct position. One feels part of the machine, and not an accessory perched on top.

A 700×80 mm. tyre on the rear wheel has increased the comfort of an already very comfortable machine, without making any noticeable difference to the hill-climbing powers, although the gear is raised appreciably by the larger wheel diameter. It is also much more satisfactory when taking a pillion passenger. This I have found perfectly satisfactory, *and safe*, provided the following points are observed:

1. The pillion seat kept as far forward on the carrier as possible.
2. The lady sits *astride*.
3. Footrests on the chain stays (very easily made or obtained).
4. Hand rail on front end of the pillion seat.
5. The passenger never, under any circumstances, puts her foot to the ground until the machine has actually stopped.

If these points are observed it is as safe for two as for one, even over very bad roads, where the usual side position would be highly risky.

RUDGE IT.

Marple Bridge.

CLOSE RATIO GEARS.

Sir,—I do not know in what sort of country Mr. Hartley does his motor cycling, but here in South Devon I not only require, but frequently use a bottom gear of 14 to 1 on my 4 h.p. Norton solo, on hills, too, that seem trifles when compared to those around Lynton on the London-Land's End route.

I am quite prepared to admit that this is on the "safety" side, but I should not feel happy unless my lowest gear was at least a "double figure" in this district.

The Rudge variable gear question is summed up by Mr. Hartley himself when he says that "on this same bottom gear (about 6 to 1) I have climbed Edge Hill, two up, after putting up a 30 m.p.h. average from Southam *(without a stop at the foot of the hill)*."

Exactly. As long as the hill can be rushed there is no need of a lower gear than 6 to 1. If Mr. Hartley had had to stop at the foot and then make the ascent, he would probably have found the climb a little more difficult. It is just because of possible baulking and consequent restarts on stiff gradients that "double figure" low gears are supplied and appreciated by the average rider.

Perhaps a good compromise to meet general requirements would be to fit a four-speed gear box as standard, with ratios of, say, 4½, 5½, 7, and 13½ to 1.

Newton Abbot. T.A. 744.

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THE SCOTTISH TRIALS.

P. N. Lockhead (3½ Ariel) on the grass grown track of Tornapress; he is seen on the hairpin bend followed by F. E. Marsden (3½ Sunbeam).

113 Motor Cycles and Cycle Cars in Edinburgh M.C.'s Annual Six Days Event. Splendid Performances by all Types of Machines over Difficult Course. Amulree, Applecross, and Inverfarigaig Account for Few Failures.

THE FIRST DAY, 183 MILES.

Route: Edinburgh, Stirling, Crieff, Amulree, Kenmore, Dalwhinnie, Kingussie, Inverness.

Test Hills: Amulree (a.m.), Trinafour (p.m.)

THE two chief features of Monday's run were the excessive badness of the roads and the complete triumph of the 1921 motor cycles over two hills, which were once regarded as formidable. Many of the main Scottish roads seem to have been left unrepaired since the war; and near populous centres like Stirling surfaces are tolerated on main roads which would create a scandal if they lay in remote corners of England. Several patches were pot-holed 6in. deep, and ridged 8in. high. They seemed first to have melted, and then to have been used as an exercising ground for tanks. The consequence was that such moorland roads as that past Amulree Hotel and the cross road from Whitebridge towards Struan came as a positive relief. In ordinary years they used to seem rather trying.

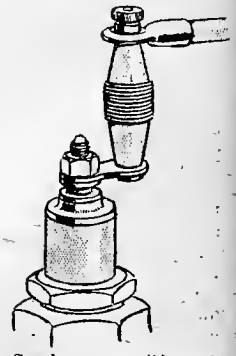
The Dawson spring nailcatcher, an effective device attached to the mudguards of several competing machines.

On Amulree everybody had heaps of power. The majority of the entrants literally toyed with the climb, merely changing down to bottom gear for the S bend, and changing up again above it. The 2¾ h.p. Hawker sidecar made a star ascent, and was loudly cheered. The two commonest blunders consisted of tackling the hairpins too fast or too close in, and practically all the fourteen failures resulted from these causes. Where so many did well, it is hard to particularise, but all the "babies" naturally deserve credit—the four Hawkers, Cowan's and Kershaw's New Imperials, Wilson's Hobart, Hanwell's Cedos, the O.K.'s, Hubbard's Coulson, "Calderon's" Velocette, Gutterie's M.T., Gibson's Royal Ruby, Browne's Douglas, and last, but not least, Carfrae's 1915 2¾ h.p. A.J.S. Amongst the bigger machines star ascents were put up by G. Brough and H. Karslake on their 5.2 to 1 geared Brough Superiors, Cumming (Sunbeam), Fenn (Raleigh), Downie (Raleigh), A. F. Downie (A.J.S. sc.—perhaps the finest of many fine sidecar climbs), Boddington and Morgan (Morgans), Newey (Ariel sc.), Brown and Dance (Sunbeams—the latter dodging a baulk cleverly), and Peffers (Indian Scout). Some of the sidecars skidded very clumsily.

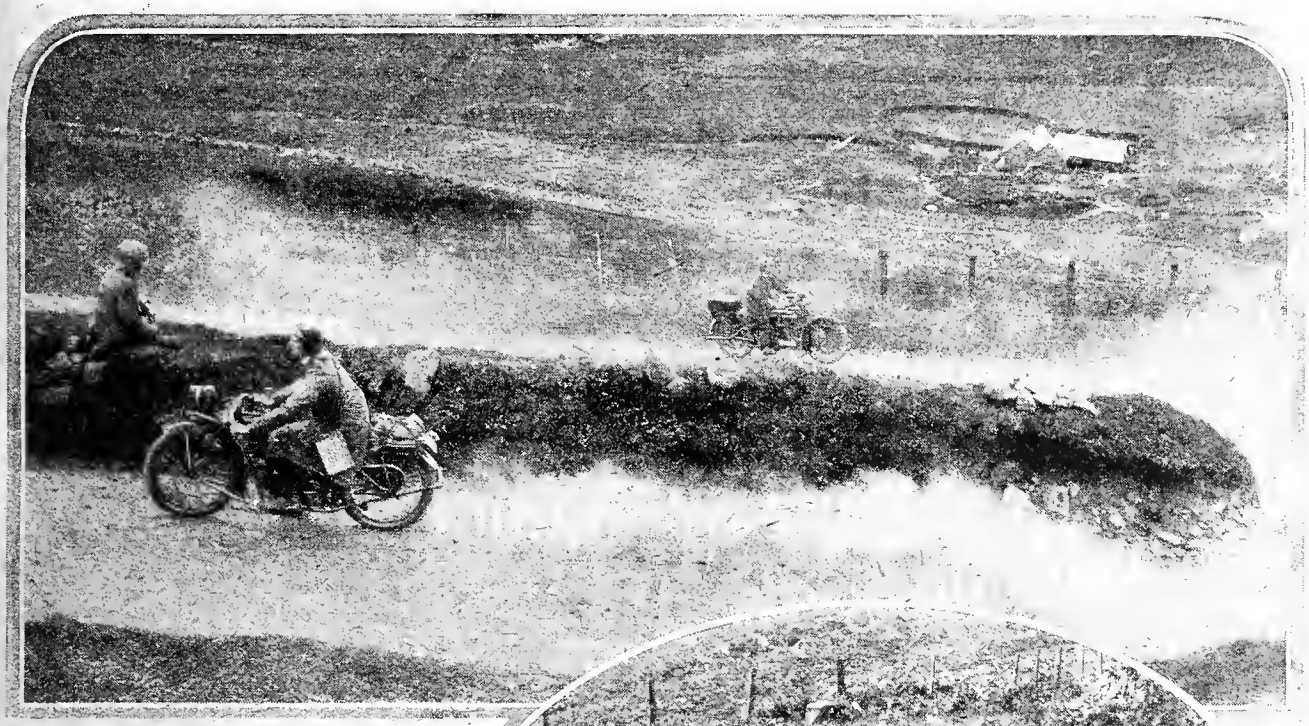
The Second Test Hill.

Trinafour has no special gradient, but several sharpish corners—two covered with six inches of sand, and two with big flints. It is possibly a nasty climb on a wet day, but on this occasion it was dry and loose. There were only five failures, and of these only one was due to lack of engine power, the others being ascribable to clumsy handling.

The first day naturally abounded with incidents. Banner, the Swiss substitute for Watson-Bourne, regarded the event as a T.T., and not infrequently used the Continental rule of the road. Near the foot of Amulree he dry-skidded in racing round a corner, and crashed. His ascent of Amulree is perhaps the finest on record, for his forks and frame were bent; his bottom gear was 5.2; he steered one-handed, for the other wrist was sprained or broken; and



Spark gaps, or "intensifiers," were fitted to the plugs of H. Crisp's 4½ h.p. Humber



(Top) This illustration conveys an idea of the state of the roads on some sections. The rider in the foreground is A. Peffers (4 Indian).

(Centre) F. W. Viles (5-6 Raleigh) and J. W. Morton (3½ Rover) on the lower hairpin bend of Amulree.

(Bottom) A. J. Sproston (3½ Lea-Francis) and A. Brown (3½ Sunbeam) making light of Trinafour.

blood was running into his eyes from a cut on his head.

Many people had bad tosses. Inverness-shire roadmen are fond of covering the road with three or four inches of dust and grit, which is ill stuff to corner on. Punctures were not numerous, but Fenn pulled his back tyre right out of the rim by braking hard. Motor cyclists may be interested to hear that six 8 h.p. Rover light cars climbed Monday's hills, and finished on time. The air-cooled A.B.C. car lost marks through catching fire as the result of a back-fire through the carburetter, but otherwise performed admirably.

NOTES.

M. Fraser (8 Royal Ruby sc.) seized his engine at Trinafour.

The following lost marks on the first day through being late at controls: R. S. Macrae (7-9 Harley-Davidson sc.), 18; A. G. Fenn (Raleigh), 25; R. K. Morri-

The Scottish Trials.—

son (7 A.J.S. sc.), 1; T. Sinclair (7-9 Harley-Davidson sc.), 3; F. F. Sibley (7-9 Rudge sc.), 11; J. A. Leyland (3½ P. and M.), 35; W. H. Udall (6 Bradbury sc.), 70; and J. Wallis (6 Bradbury sc.), 64.

Amulree took the following toll in stops: D. C. Sangster (3½ James), A. Shepherd (6-7 B.S.A. sc.), J. B. Richardson (G.N.), K. Holden (5-6 Raleigh), J. T. Wood (10 G.W.K.), T. Hunter (6-7 B.S.A. sc.), R. T. Ball (3¾ Scott), H. Crisp (4½ Humber), T. Sinclair (7-9 Harley-Davidson sc.), J. E. Chisholm (3½ Ariel sc.), D. Parsons (8 Matchless sc.), W. A. Davenport (5-7 Coventry Victor), J. A. Leyland (3½ P. and M.), W. C. Hemy (7 A.J.S. sc.), J. A. Porter (2¼ Massey-Arran), and W. R. Bruce (5-6 Monopole).

On Trinafour the under-mentioned were debited with having stopped: D. C. Sangster (3½ James), A. Shepherd (6-7 B.S.A. sc.), T. Peck (6-7 Ariel sc.), W. A. Davenport (5-7 Coventry Victor), and C. Christie (7 A.J.S. sc.).

After the competitors had gone up Amulree, a non-competitor made a very neat ascent with a girl on the carrier of his machine.

The Kenmore policeman waxed so enthusiastic that he kept busy filling up the riders' tanks with petrol.

The first day's retirements included: R. Banner (Brough Superior), fell and was injured; T. Sopwith (Hawker), burnt-out magneto; N. Hall (2¾ O.K.), B. L. Bird (4¼ B.S.A.), and J. E. Chisholm (3½ Ariel sc.).

SECOND DAY, 183 MILES.

Route: Inverness, Strathpeffer, Achnasheen, Jeantown, Applecross, and back by same route to Inverness.

Test Hills: Tornapress and Applecross.

Another fine day greeted the competitors on Tuesday morning, but a cool wind was blowing, and the temperature was by no means excessive. The surface as far as Strathpeffer was of the main road type, and for the most part in the wavy condition which precedes the formation of pot-holes.

After Strathpeffer the going was more or less of the moorland order, but usually permitted of high speeds, the only difficulty being to identify a rough patch in time to avert a wobble. But a harder section for timekeeping than that from Jeantown to Applecross—in either direction—can hardly be imagined. It consists of nineteen miles, viz., six miles of rough, twisty lane, a terrific five-mile climb, and an equally terrific five-mile descent. Over most of these last ten miles, it is impossible to pass a sidecar or a car, and very difficult to overtake a solo mount. Sixty minutes were allotted for these nineteen miles. A. G. Fenn (on a Raleigh twin) actually rode them in forty minutes, after repairing a puncture.

Naturally the entire interest of the day's run concentrated on the two test hills—the Pass of the Cattle, as the Tornapress-Applecross section is called. Tornapress commences with four miles of heavy collar work. The narrow road is sometimes of short turf from edge to edge, occasionally of loose stone (of all sizes), but generally composed of three ruts, divided by really stiff clumps of moor grass a foot high with reefs jutting through here and there. To the right is a grassy hill 1,500ft. high and very steep; to the left a series of gaunt, gnarled crags, with wild deer grazing beneath them; below a splendid loch, backed by a mountainous *massif;* above a fantastically rugged sky line.

Fine scenery compensated for the rough going and stiff hills. The riders shown are A. G. Cocks (Beardmore-Precision) and B. Bladder (8 New Imperial sidecar) on Trinafour.

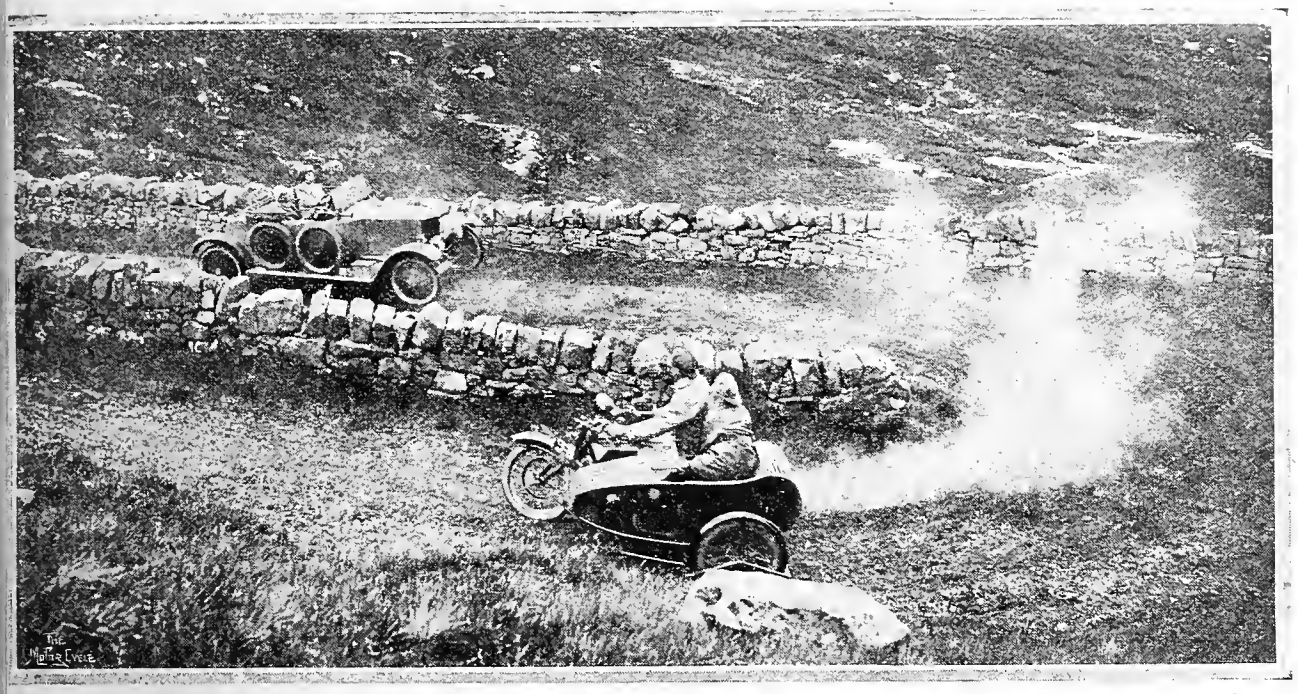
For the fifth and last mile the road goes mad, and resolves itself into three major hairpins, all acute, and connected to very rough grades of 1 in 5 or 6. There follows the difficult and dangerous descent known as Applecross, which is generally considered a much easier climb than Tornapress, though its stiff grade commences near the foot. Both hills are "engine heaters" of the first order, and Tornapress confronts one with three wicked corners just when the engine is most inclined to conk.

Splendid Performances.

The entry put up a truly magnificent performance, almost monotonous in the high level of its excellence. Man after man went up fast, slowed at a corner, cocked a wary eye at the lie of the ground, slewed his machine round, and accelerated without the least sign of a knock. It is simply impossible to award special praise, where nearly everybody performed perfectly. The following mentions are suggested by special circumstances: W. Peatty, on the little Hawker sidecar, made a most miraculous climb, and everyone was sorry that injuries to his sidecar chassis and rear wheel ball races were threatening to cause his retirement.

The smallest engine in the trial, the Velocette, ridden by "M. T. Calderon" (who is *not* H.R.H. the Duke of York, as was rumoured), did splendidly, as did the next smallest, Hanwell's Cedos. The small fry, as a class, covered themselves with glory, notably Handley's O.K., the two solo Hawkers; and Kershaw's New Imperial. Hugh Gibson put his feet down for a few yards at the second hairpin; his engine has a very light flywheel, and climbed well where its revs. could be kept up. Cocks (Beardmore) ran into the ditch at the second hairpin. His front fork was obviously most comfortable on ordinary roads, but was almost too springy on boulders.

As the whole hill was an official non-stop, Shepherd's Campion had to cover several miles with the stand trailing. J. B. Richardson on the G.N. is a sportsman of the first water. He had trouble on Monday, and got in other people's way on the narrow roads. To-day he



This illustration conveys a very good idea of the hairpin bend on Tornapress, and shows E. Simms (6 Martinsyde sidecar) negotiating the stiff rise immediately following.

sked that he might start last. Fate id not smile on him, as he deserved, or he took Applecross in penny numbers.

R. B. Clark (Zenith) had miserable ick: a few yards from the summit a tone lodged in his back wheel pulley, nd threw the belt off. Peffers (Indian cout) put up a model ascent. The cotts did better than most of the water-ooled cars, for they did not steam, hough they could not replenish their adiators whilst in motion. Guthrie Royal Ruby sc.) had a long stop two-hirds of the way up the hill, but after-vards took the top section in good style. Shepherd's B.S.A. also conked out half-way up. Brough made a perfect climb, ut Karslake (on a sister machine) seemed o hang on to top gear too long: many iders could hardly spare a hand to hange gear, owing to the jolting they eceived from the surface. Carfrae's 915 A.J.S. conked out just above the econd hairpin, much to everybody's urprise: an empty oil tank was the rime cause.

The hill is so long that six car loads f observers were kept busy observing t with binoculars, and a detailed descrip-ion is impossible. We can only say that after commencing to note details of each nan's climb we soon exhausted our upply of superlatives. There were a very few exceptions, mostly due to in-experienced and clumsy driving. But men and machines, as a whole, displayed supreme mastery of a terrible ascent which one expert has dubbed "Great Britain's only hill." Knocking, over-lubrication, and a hot, oily smell—which until recently were the concomitants of a severe hill—were conspicuous by their absence. Over a hundred fine climbs were made on the longest steep hill in these islands.

NOTES.

The unwisdom of sandwiching cars, sidecars, and bicycles together was proved on Tornapress, where much serious haulking occurred. Four motor cycles had to creep at 7 m.p.h. for over a mile behind a cautiously driven Calthorpe light car.

Browne's Douglas caught fire when restarting after the Jeantown check. It was put out by the Pyrene outfit from the petrol lorry, and Browne spent the rest of the day trying to coax partially burnt rubber belts to grip.

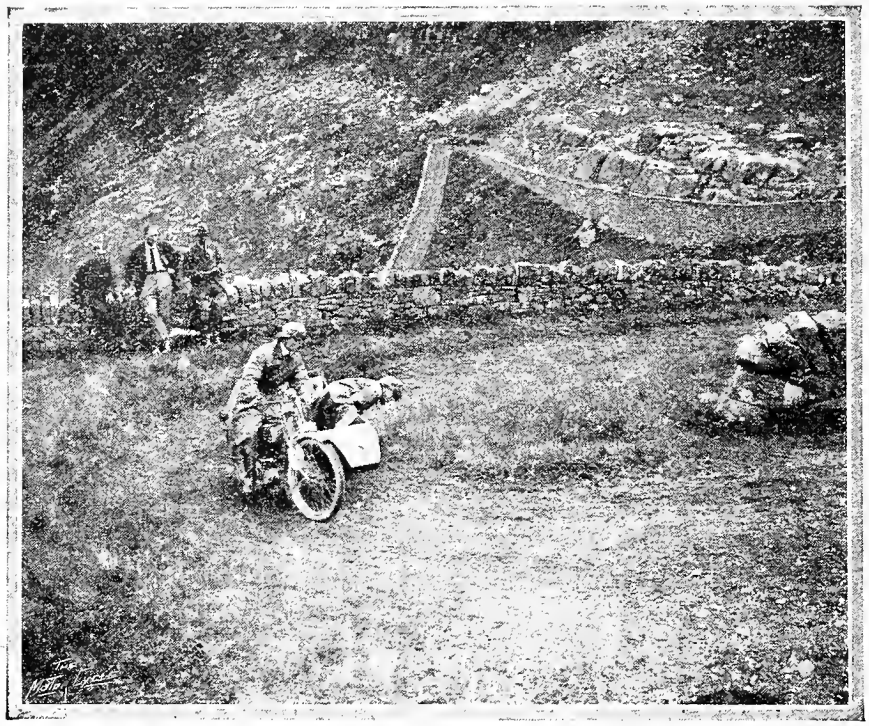
Four of the official cars konked out on Tornapress, including a brace of Fords.

On the way home one of the official Fords hit a bridge. Allan Hay, the veteran Scottish cyclist, was thrown out, and was reported to be suffering from slight concussion.

Gifford's Martinsyde collided with a bridge near Jeantown; the frame was sufficiently damaged to cause his retirement.

The scenery round Tornapress is so gorgeous that some of the competitors propose to revisit with time to spare. They dare not take an eye off the road in the trials, so bad was the going. George Brough has caravanned in this outlandish region with a Ford van.

T. Hunter (6-7 B.S.A. sidecar) on the rough surface in the picturesque district near Achanalt. The rutty nature of the course in places troubled some of the solo competitors, who had to make up lost time.



Quite one of the best performances on Tornapress was made by W. Peatty. This 2¾ h.p. Hawker sidecar outfit surmounted the difficult hill in quite a surprising manner.

R. S. Macrae's passenger failed him on Monday, so Macrae borrowed an Edinburgh mechanic, complete with overalls, who was heartbroken when the official passenger duly arrived on Monday night.

C. A. McKeand was using a 3½in. tyre on the back wheel of his Harley-Davidson.

Among Tuesday's retirements were T. Peck (6-7 Ariel sc.), broken chassis; T. Sinclair (Harley-Davidson sc.), broken chassis; W. T. Woodcock (6-7 Ariel sc.), magneto trouble; E. H. Gifford (6 Martinsyde sc.), fell; W. A. Davenport (Coventry Victor); and R. Spence (4 Harley-Davidson), broken frame.

Only twelve competitors were defeated by the notorious Tornapress. They were R. Carfrae (2¾ A.J.S.), A. Shepherd (6-7 B.S.A. sc.), J. B. Richardson (G.N.), C. Guthrie (8 Royal Ruby sc.), A. G. Cocks (Beardmore-Precision), H. Gardner (8 Rover light car), P. Cunningham (3½ P. and M.), W. G. Donaldson (5 Rover sc.), E. S. Astley (5-6 Rover sc.), K. M. Quaile (8 New Imperial sc.), W. C. Hemy (7 A.J.S. sc.), and J. A. Porter (2¼ Massey-Arran).

Four only failed to climb the return hill from Applecross: R. K. Morrison (7 A.J.S. sc.), W. G. Donaldson (5 Rover sc.), and R. H. Lockhead (3½ Ariel).

The Morgans made light of both test hills. (For the performances of the air-cooled Rover light cars, see *The Autocar*).

The following lost marks on Tuesday: D. Wright (4 Norton sc.), 4; A. Shepherd (6-7 B.S.A. sc.), 61; F. G. Boddington (10 Morgan), 2; R. K. Morrison (7 A.J.S. sc.), 61; F. T. Sibley (7-9 Rudge sc.), 19; J. E. Chisholm (3½ Ariel sc.), 1; W. G. Donaldson (5 Rover sc.), 55; J. A. Leyland (3½ P. and M.), 16; and W. H. Udall (6 Bradbury sc.), 31.

In the interests of accuracy, we have referred to the hill popularly known as "Applecross" by its official name "Tornapress." When motor cyclists talk of Applecross, they mean the whole of the "Pass of the Cattle," and the Tornapress section on the eastern side, the more difficult on account of its hairpins, has become fixed in the minds of riders as Applecross, which title by rights, and according to the official programme, is reserved for the ascent from the hamlet of Applecross, on the return.

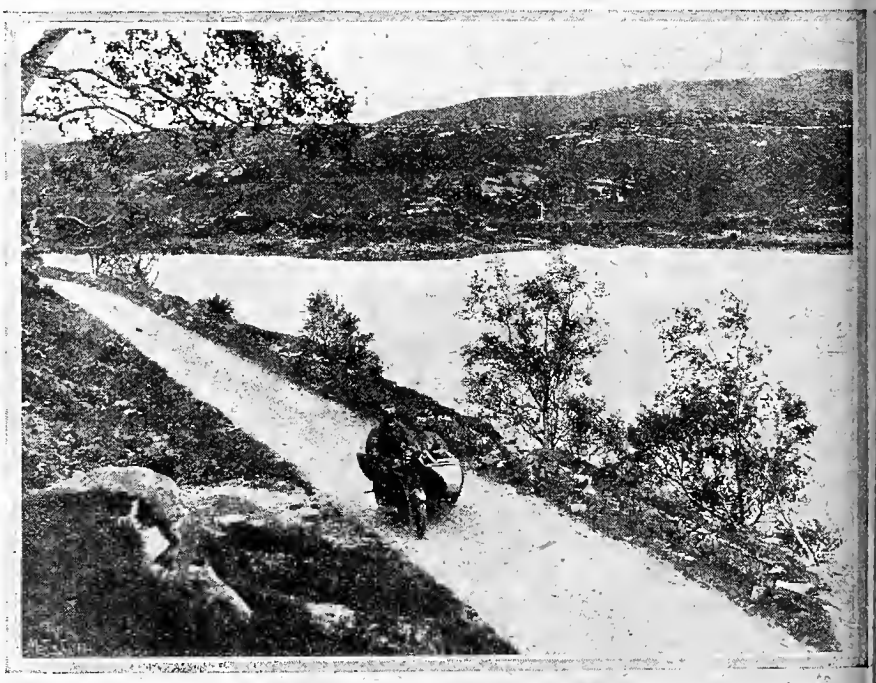
THIRD DAY, 74 MILES.

Route: Inverness, Abriachan, Drumnadrochit, Fort Augustus, Glendoe, Foyers, Inverfarigaig Corkscrew, Inverness.

Test Hills: Abriachan, Glendoe, Inverfarigaig.

The bad going began to tell its inevitable tale on the third day, and many machines showed signs of jury-rigging. Shortly after breakfast, the news of Harry Hawker's tragic end cast a gloom over everyone. He would have been there, riding one of his own solo machines, but for the claims of the Aerial Derby; and W. Peatty (his brother-in-law) left at once for the South.

This day's run was limited to seventy-four miles, nominally to give the men a mid-week "easy" and a chance to change their tyres comfortably in the evening if they so desired; and many of them did! But the "rest" was purely nominal, for the seventy-four miles included several excursions into the "doorstep districts," and no fewer than three test hills.



A big twin's début: the chain-driven 7-9 h.p. Rudge, driven by H. Nelson, at the side of Loch Achanalt.

T.T. Races

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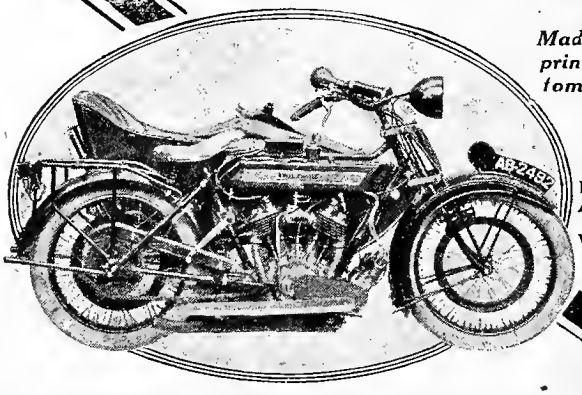

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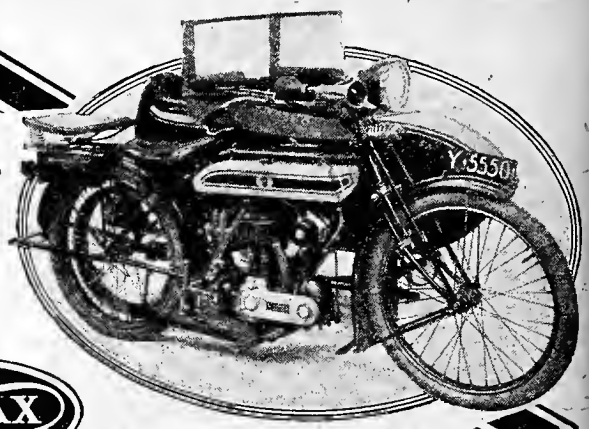

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Junction Box		7	0
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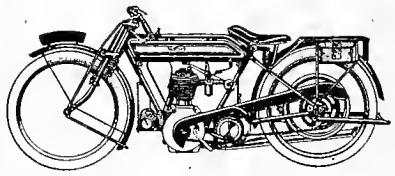

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PLYMOUTH & DISTRICT M.C. & L.C.C. SPEED TRIALS, July, 1921.
Fastest Time of the Day made by Mr. M. Lucy riding a 3½ h.p. Norton.

REDDITCH & DISTRICT M.C.C., June, 1921.
Mr. W. E. Smith, riding a 3½ h.p. Norton, won 4 Firsts and Fastest Time of the Day.

NORTH LINDSEY A.C. SPEED TRIAL, July 2nd, 1921.
R. Towle, 3½ h.p. Norton, 1st; Mr. L. W. Bainton, 3½ h.p. Norton, 2nd in 600 c.c. Class.

EDINBURGH & DISTRICT M.C. ANNUAL TEAM TRIAL for the Dobson Trophy, June 25th, 1921.
G. M. Black, 3½ h.p. Norton, was a member of the winning team, and also made Fastest Time of the Day on the Test Hill.

WESTCLIFF SPEED TRIAL, July 7th, 1921.

500 c.c. CLASS (Flying Start).
G. W. Walker, 3½ h.p. Norton 1st
G. A. Vandervell, 3½ h.p. Norton 2nd
B. S. Allen, 3½ h.p. Norton 3rd

500 c.c. CLASS (Standing Start).
G. W. Walker, 3½ h.p. Norton 1st
B. S. Allen, 3½ h.p. Norton 2nd

600 c.c. SIDECAR (Flying Start).
B. S. Allen, 3½ h.p. Norton 1st

600 c.c. SIDECAR (Standing Start).
B. S. Allen, 3½ h.p. Norton 1st

750 c.c. SOLO CLASS (Flying Start).
G. A. Vandervell, 3½ h.p. Norton 1st
G. W. Walker, 3½ h.p. Norton 2nd

750 c.c. SOLO CLASS (Standing Start).
G. W. Walker, 3½ h.p. Norton 1st
G. A. Vandervell, 3½ h.p. Norton 2nd

750 c.c. SOLO STANDARD TOURING CLASS (Flying Start).
J. Davy, 3½ h.p. Norton 1st

SCOTTISH SPEED CHAMPIONSHIP, July 9th, 1921.

560 c.c. PRIVATE OWNERS' CLASS (6 Miles).
J. G. McEwen, 3½ h.p. Norton 1st

ONE LAP (OPEN) 569 c.c. CLASS (2 Miles).
G. M. Black, 3½ h.p. Norton 1st

CATSASH (S. WALES) OPEN HILL-CLIMB, Saturday, July 9th, 1921.
3½ h.p. Norton won every Class, Solo and Sidecar, from the 500 c.c. to unlimited.
G. W. Walker, 3½ h.p. Norton, secured 5 Firsts.
Dr. A. Lindsay, 3½ h.p. Norton, won 2 Firsts and 2 Seconds.
Jack Thomas, 3½ h.p. Norton, won 9 Firsts and 2 Seconds.
Fastest Time of the Day, both Solo and Sidecar, made by G. W. Walker, 3½ h.p. Norton.

Norton

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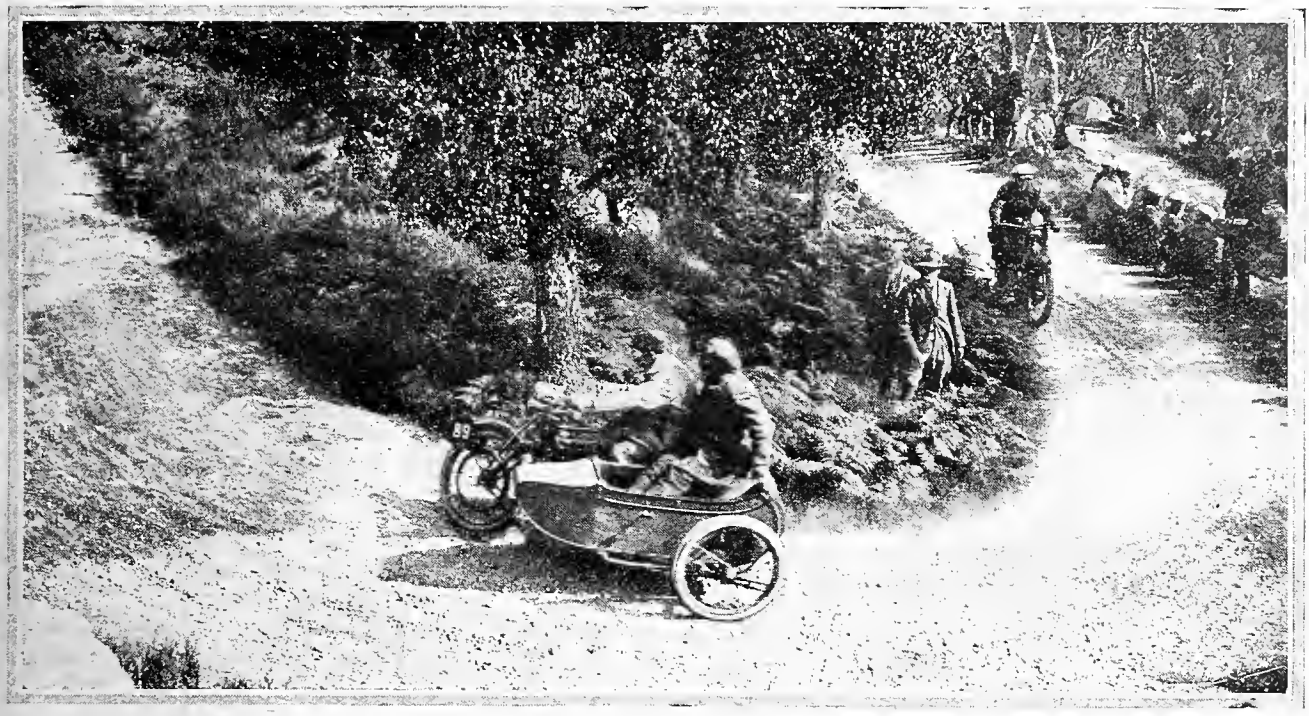


A real corkscrew. W. G. Donaldson (5 Rover sidecar) followed by an Ariel rider on Inverfarigaig hill. This hill tested both engines and riders.

Once again we travelled through some of the most gorgeous scenery in Great Britain, but rough going kept our eyes so glued to the road that we dared not glance at the views.

Of the three hills, Abriachan is an easy second gear climb, with one very dusty hairpin; it accounted for three men. Glendoe is in two halves. The front stairs are smooth and steep; the attic stairs, after the landing, are fearfully rough, and semi-vertical. Here twenty-two good men and true gave up the ghost, nearly all through pure crashes due to the surface; neither loss of power nor clumsy driving was to blame. Meanwhile others had fallen by the way. Moser's Triumph and Miller's Bradbury were unrideable after collisions with banks; and Milne's (6-7 B.S.A. sc.) gear box had wilted at the very base of Abriachan. At lunch there was great "wind up" about the new hill—Inverfarigaig Corkscrew. Worse was to follow, for a special check was organised at Foyers—one and a half mile away—to reduce baulking, and a five-minute interval was allowed after each car was sent off.

Inverfarigaig.

The hill is purely a test of riding, and is easily described. Lay a sheet of note-paper against your coffee-pot, dear reader, at an angle of 45°. Impose upon it three capital letters S, turning the centre one the wrong way round. Let these letters be of the flat or squashed-out type—not as square as those employed by *The Motor Cycle* comps. Imagine a road 6ft. wide, a surface composed as to the centre of soft grey dust 6in. deep and 4ft. wide, and as to each side of hardish smooth stuff 1ft. wide.

The grade at the outside of the six hairpins is about 1 in 8; at the kernel of each hairpin it may be 1 in 5½ for a yard or so. Obviously, if a man went up slowly, and took the outside of each hairpin, this would make an easy climb. Everybody who adopted this plan went up finely, but some hesitated to cross the soft centre between each pair of hairpins, and all this class wobbled and footed. Some appallingly clumsy driving was shown, and none of the twenty-five machines which failed appeared to do so for mechanical reasons. It is emphatically a "rider's hill." Its difficulties can be gauged from the following pointers:

(1.) One can stand at the top and pitch a tennis ball to the bottom.

(2.) Two of the cars reversed on four of the hairpins.

(3.) Quite a lot of the men drove on their clutches.

(4.) Reg. Brown upset his Sunbeam sidecar.

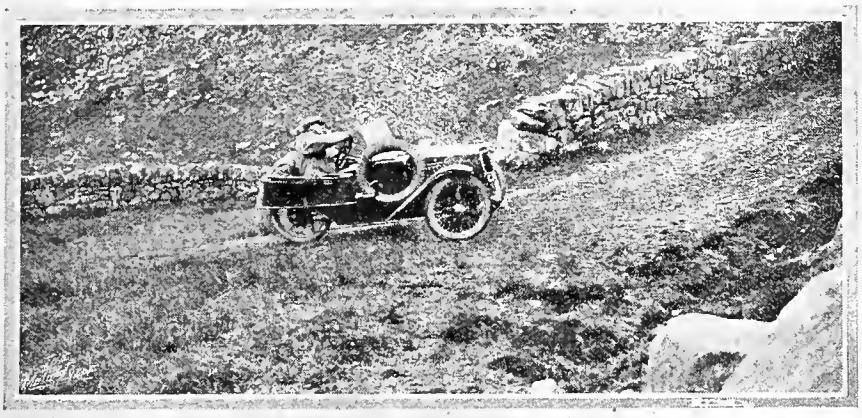
(5.) S. Hall capsized his Morgan, tipping out himself and his passenger.

(6.) The names of the fallen (see below).

(7.) The writer had to put his helm over so hard on two corners that his T.T. bar pinned his thigh to the tank.

Star Performers.

The whole of the six hairpins cannot be watched simultaneously, but if a prize had been awarded for the best solo ascent it might have lain between J. W. Wills (Powell) and G. Dance (Sunbeam). Both picked the correct path to a hair; both accelerated without timidity between hairpins; neither put a foot to earth. Wills had no difficulties. Dance came up 119th,



H. S. F. Morgan, in a characteristic attitude, piloting his little runabout on one of the steepest portions of Tornapress. Observe the acuteness of the hairpin bend.

In Garve. D. Wright, jun. (4 Norton sidecar) returning from Applecross.

when the fifth hairpin was cut to ribbons. His machine was almost stationary in the soft stuff for a second; but, like the past-master in rough-riding that he is, he kept his feet riveted to the rests, and jockeyed the machine up. This pair were run close by Cumming (Sunbeam), Fenn, Holden, and Downie (Raleighs), Clark (Zenith), Hall and Handley (O.K. Unions), Edwards (B.S.A.), and Lindsay (Rover), none of whom footed. The smallest engine of all —Calderon's Velocette—went up surely with a steady foot on one corner, and Hanwell's Cedos did finely, too. Perhaps a dozen of the solos only extended a leg once apiece.

Passenger Ascents.

It is harder to pick out the best passenger ascents. The G.N. was superbly handled; but to reverse on narrow hairpins when one is over-geared and the engine is out of tune spells trouble. Perhaps the honour lay between Newey (Ariel), who appeared to make an absolutely perfect ascent, devoid of front wheel skid or back wheel spin, and Bladder (New Imperial), whose methods were a trifle more ferocious, so that he just grazed the bank at the fourth corner. In any case, this pair were run very close by Downie (A.J.S.), Nott (Matchless), Quaile (New Imperial), and Macrae (Harley-Davidson), all of whom put up magnificent climbs. The three Morgans differed perceptibly. Hall upset, Boddington came up steadily on a Parsons chain, and Morgan skid-cornered in lurid fashion.

A veil must be drawn over 20% of the climbs, in which good machines were dishonoured by sheer bad driving. But several individuals registered rather special ascents. Farr (B.S.A.), Lewis (P. and M.), Wilson (Hobart), and Braid (Douglas) elected to charge the hairpins at speed, and their subsequent antics earned them the soubriquet of "wild men" from the crowd. Possibly their gear ratios compelled speed: but their climbs were more courageous than graceful, and thoroughly scattered the spectators. One unfortunate entrant was handicapped by a frame layout which simply would not steer! When he came up we all took cover behind the nearest trees.

NOTES.

There was a regular mix-up and a wholesale baulk on Glendoe, towards the end of the climb. In the midst of it a lady passenger had a fit of hysteria.

When a Douglas caught fire at Jeantown on Tuesday, another competitor nosedived into an adjacent cottage, and seized the door mat wherewith to put out the flames. Later an ancient Highland dame appeared in search of the missing mat. They solemnly handed her a charred triangle of mat about as big as a sandwich. She said "Hech, sirs. . . . "—and then some!

The G.N. is using a new type of shock absorbers on its front axle.

Inverness boasts a motor cycle of native manufacture. It is made by the official garage people, Macrae and Dick, and has a G.R.I. rotary and poppet valve engine.

Wallis's Bradbury blew out the exhaust valve cap of its front cylinder, and "carried on" with it secured by a neat bridge of spanners, lashed down with wire.

Calderon's sparking plugs had an evil habit of growing metal whiskers on their central electrodes, and thereby shorting. He fell back on an old aero Lodge.

Archie Cocks was riding one of the new Beardmore sports models with a rigid rear frame. He did very well, barring two hill stops, ascribable to the bouncing which a light machine receives on boulder-strewn surfaces.

In addition to the retirements mentioned in Tuesday's notes, there were several other vacant places, revealing that others had "given up." Among these were J. E. Chisholm (Ariel), E. S. Astley (5-6 Rover sc.), and Spence (Harley-Davidson). Wednesday's retirements included D. S. Milne (B.S.A. sc.), C. Moser (Triumph), J. R. Miller (Bradbury),

---

The following lost marks on Wednesday: E. A. Rollason (Ariel), 7; Quaile

L. Newey (6-7 Ariel sidecar) passing *The Motor Cycle* photographer's Matchless near Kingussie.

The Scottish Trials.—

(8 New Imperial sc.), 30; and Bruce (5-6 Monopole), 7.

Hills a Stumbling-block.

The official list of stops on the test hills on Wednesday is as follows:

GLENDOE. — G. Brough (8 Brough Superior), H. Karslake (8 Brough Superior), J. Beck (8 Royal Ruby sc.), H. Nelson (7-9 Rudge sc.), T. Hunter (6-7 B.S.A. sc.), J. Browne (2¾ Douglas), C. Guthrie (8 Royal Ruby sc.), A. G. Cocks (Beardmore-Precision), A. Peffers (4 Indian), W. Handley (2¾ O.K.), G. M. Townsend (3½ P. and M.), D. Parsons (8 Matchless sc.), W. G. Donaldson (5 Rover sc.), J. A. Leyland (3½ P. and M.), W. H. Udall (6 Bradbury sc.), J. Wallis (6 Bradbury sc.), F. E. Marsden (3½ Sunbeam), W. C. Hemy (7 A.J.S. sc.), C. Christie (3½ Douglas), R. J. Braid (3½ Douglas), and J. A. Porter (2¼ Massey-Arran).

INVERFARIGAIG.—G. Brough (8 Brough Superior), H. Karslake (8 Brough Superior), D. C. Sangster (3½ James), R. Carfrae (2¾ A.J.S.), H. Nelson (7-9 Rudge sc.), A. Shepherd (6-7 B.S.A. sc.), K. Holden (5-6 Raleigh), D. K. Morrison (7 A.J.S. sc.), C. Guthrie (8 Royal Ruby sc.), A. Brown (3½ Sunbeam), J. A. Hilger (5 Rover), A. Conville (3½ Lea-Francis), L. A. Welch (4¼ B.S.A.), G. A. Rollason (4½ Ariel), W. G. Donaldson (5 Rover sc.), J. A. Leyland (3½ P. and M.), W. H. Udall (6 Bradbury sc.), J. Wallis (6 Bradbury sc.), R. W. Lockhead (3½ Ariel), Reg. Brown (3½ Sunbeam sc.), W. C. Hemy (7 A.J.S. sc.), C. Christie (3½ Douglas), S. Hall (8 Morgan), J. A. Porter (2¼ Massey-Arran), and W. R. Bruce (5-6 Monopole).

In open country near Carrbridge. J. A. Leyland (3½ P. and M.), followed by W. H. Udall (6 Bradbury sc.).

FOURTH DAY, 165 MILES.

Inverness, Kingussie, Dalnacardoch, Kenmore, Dalmally, Oban.

No Observed Hills.

A perfect orgy of protests was entered against Wednesday's test hill failures, and the following were credited with clean ascents:

GLENDOE.—Brough, Karslake, Beck, J. Browne, Cocks, Peffers, Donaldson, Hanwell, and Braid.

Inverfarigaig Hill is in the midst of sublime scenery, but the beauty could not be appreciated by all the competitors, the hill keeping them very busy. D. K. Morrison (7 A.J.S. sc.) taking one of the many hairpin bends.

INVERFARIGAIG CORKSCREW.—Brough, Karslake, Holden, Wallis, Marsden, and Reg. Brown.

It would be clean contrary to the famous sporting atmosphere of the "Scottish" for a competitor to grumble about official decisions; but a dispassionate onlooker may be allowed to say that, if men who capsize on hairpins are awarded clean ascents, rivals who fail through much pettier errors have an apparent grievance. The organisers have done their best to ensure uniform observation by transporting the same officials from hill to hill. But the system has not been an unqualified success. We know men credited with clean ascents who would have ranked as complete failures under any other management. On the other hand, if an exceptionally lenient standard is to be adopted, it should be applied with uniformity.

Thursday's morning's run was Monday afternoon's trip, taken in the reverse direction. We met a cold head wind, and found the corrugations of the Grampian road very trying, as they have a very short pitch, which makes the back wheel hammer.

Some Lightweight Misfortunes.

On the first section the youngest of our family lost its gold, for the tungsten contacts of the magneto on Calderon's Velocette gave out, and the spare breaker did not fit. So he had to change the points, a finicky job which made him 3m. late at Carrbridge.

J. Browne, on the 2¾ h.p. Douglas, met a car on the wrong side of a corner just before lunch, and looped the loop. He was unhurt, but his machine was in no condition to continue. George Dance arrived outside the lunch check half an hour ahead of time. He explained that he had felt cold on the Grampians, and was in search of a warmer climate.

A hungry official, who arrived early at the lunch hotel, is said to have moved round a table after the fashion of the Mad Hatter in "Alice in Wonderland," and so to have consumed six plates of salmon.

The Scottish Trials.—

(Left) Neville Hall (2¾ O.K. Union) and L. A. Welch (4½ B.S.A.) on the top portion of Abriachan.

(Right) D. Parsons (8 Matchless sc.) near Newtonmore.

From Kenmore into Oban we enjoyed seventy-two miles of gorgeous scenery and decent going. The Pass of Brander was a revelation of beauty, and the newcomers would have liked a longer stay there. Several minor crashes resulted along the curly switchback road, mostly as the result of "blinding" after tyre trouble. But H. S. Heaton, of the Cambridge team, took a more serious toss. Having previously damaged the footrest of his Brough Superior, he stopped to fell a young sapling and construct new ones. The job occupied some time, and he appears to have fallen asleep during the subsequent scorch. At any rate, he was found unconscious on the road at the end of a track which indicated a 300 yards wobble. The G.N. took him into Crianlarich, and his injuries are, fortunately, not important. The G.N. broke both its front springs, which were cleverly jury-rigged with steel plates and wire lashings.

Teams in the Running.

There are said to be eighty hotels in Oban; anyhow, we were all very comfortably bestowed, and no longer sleeping two in a bed, or one on a sofa, or one in a bath, as was the case at Inverness. The drought still continued, at which motor cyclists did not complain, for Highland roads are enough to scare a chamois when they are dry, and when they are greasy! But the lochs and burns were very low, and some of the great salmon rivers were represented by a mere thread of water trickling through an oasis of shingle.

The following teams still boasted three potential "golds" apiece on Thursday night.

SOLO.—B.S.A. No. 1 team and Sunbeam.

PASSENGER.—Rover.

CLUB.—M.C.C., Edinburgh, Redditch, Liverpool, and Glasgow Western.

NOTES.

The luncheon cider at the Breadalbane Hotel, Kenmore, was so heady that a certain teetotal rider is alleged to have covered the first two miles after lunch in 1m. 59s.

Up to Thursday night only one machine had failed on a hill through lack of power: all the other failures (and their name was legion) were due to bad surface or clumsy driving.

Under the latest Edinburgh Club regulations, one may upset a sidecar on an observed hill, and yet score a "clean ascent," provided one keeps the engine running!

Thursday's official score board: M. T. Calderon (2½ Velocette), 3 marks (magneto); E. H. Eaton (8 Brough-Superior), retired; F. G. Boddington (10 Morgan), 12 marks (lost his way); C. Guthrie (8 Royal Ruby sc.), retired (broken chassis); F. T. Sibley (7-9 Rudge sc.), 10 marks; J. Wallis (6 Bradbury sc.), retired; K. M. Quaile (8 New Imperial sc.), 3 marks; and W. C. Hemy (7 A.J.S. sc.), 3 marks.

FIFTH DAY, 180 MILES.

Route: Oban, Kilmelfort, Inveraray, Strachur, Glendarnel, and back to Oban via Dalmally.

Observed Hill: Ballochandrain.

The officials forbade J. Beck (8 Royal Ruby sc.) to start on Friday morning. His outfit had been damaged in a spill when cornering on Wednesday, and had gradually become quite unsafe. The sky was lowering when the survivors started at 7.30 a.m. for their 180 mile run over what the map suggested might prove a very rough trip. Actually 160 miles consisted of main roads with only one badly pot-holed stretch. It is only fair to add that main roads in the Western Highlands would be called serpentine switchbacks anywhere else.

When we at last passed through the usual gate on to the usual moor, about ten miles from Ballochandrain, the solo machines had the time of their lives, for the centre of the cart track was smooth and firm, if the side ruts bothered the passenger outfits at times.

Contrasting Scenery.

Once more we had a perfect glut of marvellous scenery—glen and loch, and moor and forest, and river and mountain, the whole enhanced by diaphanous mist wreaths, spears of sunlight, and occasional palls of thick black cloud. Sky, water, and distant hills furnished every conceivable tint of blue from turquoise to the deepest indigo. We rode through the two most beautiful passes in Scotland, the delicate sylvan prettiness of Melfort, contrasting sharply with the dour majesty of Brander. Shaggy little Highland cattle made a picturesque foreground to some of these pictures—or so we thought until we met a herd of 100 on a steep hill. MacGillivray collided with one of them so heavily that he was forced to retire.

Tortuous Going.

The roads were continuously dangerous, as they twisted perpetually, and whatever lay beyond the next corner was generally hidden behind a steep little hump in the road or a screen of trees. For some reason the men drive much faster in the "Scottish" than in the A.C.U. Six Days—perhaps because the country is thinly populated, perhaps because they are always expecting a piece of vile going, on which progress must be slow. Whatever the reason may be, the driving has been decidedly rash on the average, and the casualty list is absurdly lengthy; many others have had the narrowest escapes, scraping skew bridges with their handle-bars, and so far forth.

The day's test hill, Ballochandrain, bore two distinct reputations till we met it. The officials said it was "easy"; some of the locals (and also *The Scotsman*) described it as "the steepest hill in Great Britain." The truth lies betwixt and between. Being over two miles long

he Scottish Trials.

t is bound to test cooling, especially when a strong wind blows up it, as was he case on Friday. The only hairpin ccurs 800 yards up on a grade of 1 in 0½; the road is wide, and the surface ood. Above the hairpin the grade varies bruptly every few yards, and one or two 'landings" are flat or even downhill for few yards. A Tapley gradometer uccessively registered on the descent 1 n 4½, 5.4, 7.2, 11.3, 8.1, 5, 4.2, 11.0, nd 10.7. The hill owed its selection to n official who went up it in a car on a lark night. As there were only five ailures, it cannot be difficult; and the omparative ease with which it can be limbed is due to the brevity of the few 'steps."

All Sorts of Hill-climbing.

Most of the men took the hairpin at speed, especially the two Scotts driven by Langman and W. F. Scott. Ball's coat sleeve caught his throttle, and stopped him quite low down. Shepherd and his passenger were stopped by overheating beneath the hairpin, and had to run and push most of the way up, finally seizing up the engine. Calderon fell off for no apparent reason, and, having no clutch, could not "keep his engine running"—a famous phrase in the rules which has led to several *very* dubious ascents ranking as officially "clean." Welch (B.S.A.) and Rollason (Ariel) must have stuck towards the top, for they were going well at the hairpin. Christie got his Douglas up, so breaking a long run of hill failures. Hall's O.K. took the hairpin on second gear. Clark's Zenith struck one as the fastest solo, with Sibley's Rudge as a very speedy sidecar. Simms (on the Martinsyde) made a notably masterful ascent. Moore's Scott raced up to the bend as if certain to crash, but his brakes got him round. But it is hardly fair to particularise, for, as usual, all the leading men were extremely workmanlike.

On the return journey there was a good deal of injudicious scrapping, and it is a marvel that no smashes occurred in a dust column, which was over thirty miles long. Several unlucky individuals pegged out on the home stretch. H. F. S. Morgan retired with engine trouble ten miles out, having previously lost no marks. Farr broke the steering head of his B.S.A.; he jury-rigged this very cleverly, and rode pluckily on, only to be stalled with no compression near Dalmally. Reg. Brown's 3½ h.p. Sunbeam sidecar carried on well with a clean sheet. Calderon broke his front chain near St. Catherine's, and finally finished on a flat tyre. Richardson broke all the springs of his Lea-Francis sidecar, and it had a queer, groggy appearance from behind. The end of the matter is that the average Scottish road is now in such appalling condition that any machine which does not drop or break a part is fortunate.

Tourists who intend to go North for their holidays this year should either change their minds or consult the A.A. as to the best routes. The road home on Friday was littered with men busy repairing tyres, and the majority of their troubles were due to cuts from stones. Road repairs over large areas of Scotland take the simple form of barrowing assorted rubble from the nearest river bed or quarry on to the road; and they do not object to flint, or use the ordinary 2in. gauge.

SIXTH DAY, 123 MILES.

Route: Oban, Dalmally, Crianlarich, Lochearnhead, Callander, Stirling, Edinburgh.

Oban was awakened by the unfamiliar sound of rain drumming down in torrents. However, the weather cleared before the start, and the road through the Pass of Brander is too gritty to provoke sideslip. Presently the clouds came down upon the tops of the crags and showers began to pelt us at brief intervals. Towards Callander we ran into a regular deluge, which rapidly flooded the roads, but after lunch the sun shone out again, and the water proved invaluable in helping us to locate potholes.

The scenery was once more gorgeous, but the track and the roads required most of our attention. Nobody had much trouble on the concluding lap. Just as Sproston was riding in at Edinburgh, a car knocked him down, and ran over his ankle; otherwise, apart from the rain, the last stage was a comfortable "blind" for most men. A. F. Downie was an exception, however; his contact breaker spring broke, and a helpful stranger broke the spare spring, and dropped two of the small screws in the grass.

Thanks chiefly to the magnificent weather, the 1921 Scottish may rank as the easiest on record, though the roads were perhaps rougher than ever. The Edinburgh Club and its genial secretary deserve unstinted credit for their splendid organisation. There has not been the tiniest hitch in the arrangements from start to finish, and the medals were all ready, engraved for distribution, by dinner time on Saturday evening, a feat without parallel in such an event.

Apart from the usual handful of disgruntled protests, the competitors immensely appreciated the fairness and sportsmanship with which they were treated, and they all hope to come North again in 1922.

NOTES ON THE AWARDS.

The Sunbeam and B.S.A. teams tied for the team prize, and the judges decided to award it to the former on account of the smaller capacity of the engines. The passenger team prize went to the Rover light cars driven by Featherstonhaugh, O'Connor, and Hill (the only trio to finish with clean sheets in their class). The sidecars were thus defeated by the cycle cars. The club team prize falls to the Glasgow Western Motor Club. This award was made on a tie at the judges' discretion, the promoting club being well in the running for it.

The chief glory of the trials unquestionably adorns the Sunbeam entry of six machines, all of which won golds; whilst Reg. Brown's machine created a new record, being the first 500 c.c. sidecar outfit to make clean ascents of all the observed hills. Several single entries also secured gold medals. The Powell is a *débutante*, and was one of the outstanding machines throughout, especially for its neat, masterful work on hills. The Cedos has not previously graced a Scottish, and had the smallest engine in the trial, except the Velocette. It made light of its job. The two O.K. Unions were splendid, and Neville Hall is going to be famous some day. Two of the three Hawker "babies" romped home comfortably, and climbed excellently. In the 350 c.c. class the Coulson, the two New Imperials, the Metro-Tyler, the Royal Ruby, and the Hobart all defeated many much more powerful solo mounts. It need not be imagined that lightweight riders had a very strenuous time. Most of them pegged along very comfortably, averaging 30 m.p.h., except along the mountainous sections.

Easy going. A trio of solo riders nearing Carrbridge. The riders are (left to right) C. S. Hubbard (2¾ Coulson), J. R. Fellows (3½ Sunbeam), and J. Westwood Wills (4 Powell).

SCOTTISH SIX DAYS TRIALS RESULTS.

Complete List of Motor Cycle Competitors and Awards.

112 Motor Bicycles, Sidecars, and Runabouts Started. 86 Finished. 52 Gold Medals. 21 Silver. 13 Bronze. 26 Retired.

A.J.S.
A. F. Downie (7 sc.). *Gold medal.*
R. Carfrae (2¾). *Silver medal.*
R. K. Morrison (7 sc.). *Bronze medal.*
W. C. Hemy (7 sc.). *Bronze medal.*

ARIEL.
L. Newey (6-7 sc.). *Gold medal.*
A. E. Rollason (4½). *Silver medal.*
R. N. Lockhead (3½). *Silver medal.*
T. Poole (6-7 sc.). *Retired.*
W. T. Woodcock (6-7 sc.). *Retired.*
J. E. Chisholm (3½ sc.). *Retired.*
H. E. MacGillivray (3½). *Retired.*

BROUGH SUPERIOR.
G. Brough (8). *Gold medal.*
H. Karslake (8). *Gold medal.*
R. Banner (8). *Retired.*
H. S. Eaton (8). *Retired.*

BEARDMORE-PRECISION.
A. G. Cocks (3½). *Silver medal.*

B.S.A.
W. M. Buchanan (4¼). *Gold medal.*
L. L. Sealey (4¼). *Gold medal.*
H. F. Edwards (4¼). *Gold medal.*
J. H. Walker (4¼). *Gold medal.*
B. L. Bird (4¼). *Gold medal.*
T. Hunter (6-7 sc.). *Silver medal.*
L. A. Welch (4¼). *Silver medal.*
A. Shepherd (6-7 sc.). *Bronze medal.*
D. S. Milne (6-7 sc.). *Retired.*
A. Farr (4¼). *Retired.*

BRADBURY.
W. H. Udall (6 sc.). *Bronze medal.*
J. Wallis (6 sc.). *Retired.*
J. B. Miller (4). *Retired.*

COULSON.
S. C. Hubbard (2¾). *Gold medal.*

CAMPION.
J. Shepherd (6). *Gold medal.*

COVENTRY VICTOR.
W. A. Davenport (5-6). *Retired.*

CEDOS.
C. H. Hanwell (2¼). *Gold medal.*

CHATER-LEA.
J. Chater-Lea (8 sc.). *Retired.*

DOUGLAS.
J. R. Alexander (3½). *Gold medal.*
R. J. Braid (3½). *Gold medal.*
C. Christie (3½). *Bronze medal.*
J. Browne (2¾). *Retired.*

HUMBER.
L. Crisp (4¼). *Gold medal.*
R. Watson (4¼). *Gold medal.*
H. Crisp (4¼). *Silver medal.*

HOBART.
R. M. Wilson (2¾). *Gold medal.*

HAWKER.
P. R. Dowson (2¾). *Gold medal.*
L. H. Wells (2¾). [illegible]
T. O. M. Sopwith (2¾). *Retired.*
W. Peatty (2¾ sc.). *Withdrawn.*

HARLEY-DAVIDSON.
R. S. Macrae (7-9 sc.). *Gold medal.*
G. Grinton (7-9 sc.). *Gold medal.*
C. A. M'Keand (4). *Gold medal.*
T. Sinclair (7-9 sc.). *Retired.*
R. Spencer (4). *Retired.*

INDIAN.
A. Peffers (4). *Retired.*

JAMES.
D. C. Sangster (3½). *Bronze medal.*

LEA-FRANCIS.
A. J. Sproston (3½). *Gold medal.*
A. Conville (3½). *Silver medal.*
J. Richardson (5). *Bronze medal.*

MORGAN.
F. G. Boddington (10). *Silver medal.*
S. Hall (8). *Silver medal.*
H. F. S. Morgan (8). *Retired.*

MATCHLESS.
G. Nott (8). *Gold medal.*
D. Parsons (8). *Silver medal.*

MASSEY-ARRAN.
J. A. Porter (2¼). *Bronze medal.*

METRO-TYLER.
A. S. Guthrie (2½). *Gold medal.*

MARTINSYDE.
J. T. Bashall (6 sc.). *Gold medal.*
E. Simms (6 sc.). *Gold medal.*
E. H. Gifford (6 sc.). *Retired.*

MONOPOLE.
W. R. Bruce (5-6). *Bronze medal.*

NORTON.
D. Wright, jun. (4 sc.). *Silver medal.*

NEW IMPERIAL.
B. Bladder (8 sc.). *Gold medal.*
B. Kershaw (2¼). *Gold medal.*
W. L. Cowan (2¾). *Gold medal.*
K. M. Quaile (8 sc.). *Bronze medal.*

OMEGA.
Norman Black (5-6). *Gold medal.*

O.K.
Neville Hall (2¾). *Gold medal.*
W. Handley (2¾). *Silver medal.*

P. AND M.
G. M. Townsend (3½). *Gold medal.*
R. Lewis (3½). *Gold medal.*
P. Cunningham (3½). *Silver medal.*
J. A. Leyland (3½). *Bronze medal.*

POWELL.
J. Westwood Wills (4). *Gold medal.*

ROYAL RUBY.
Hugh Gibson (2¾). *Gold medal.*
J. Beck (8 sc.). *Retired.*
M. Fraser (8 sc.). *Retired.*
C. Guthrie (8 sc.). *Retired.*

RALEIGH.
F. W. Viles (5-6). *Gold medal.*
A. L. Downie (5-6). *Gold medal.*
A. G. Fenn (5-6). *Silver medal.*
K. Holden (5-6). *Silver medal.*

RUDGE.
H. Nelson (7-9 sc.). *Silver medal.*
F. T. Sibley (7-9 sc.). *Bronze medal.*

ROVER.
J. W. Morton (3½). *Gold medal.*
R. Elliott (3½). *Gold medal.*
A. J. C. Lindsay (3½). *Gold medal.*
G. L. White (5). *Gold medal.*
J. A. Hilger (5-6). *Silver medal.*
W. G. Donaldson (5 sc.). *Bronze medal.*
E. S. Astley (5 sc.). *Retired.*
D. A. Atkin (5). *Retired.*

SUNBEAM.
G. Cumming (3½). *Gold medal.*
A. Brown (3½). *Gold medal.*
J. R. Fellows (3½). *Gold medal.*
R. Brown (3½ sc.). *Gold medal.*
G. Dance (3½). *Gold medal.*
F. E. Marsden (3). *Gold medal.*

SCOTT.
H. Langman (3¾). *Gold medal.*
W. F. Scott (3¾). *Gold medal.*
R. T. Ball (3¾). *Silver medal.*
W. Moore (3¾). *Silver medal.*

TRIUMPH.
W. Westwood (4). *Gold medal.*
C. Moser (4). *Retired.*

VELOCETTE.
M. T. Calderon (2¼). *Silver medal.*

ZENITH.
R. B. Clark (5). *Gold medal.*

A full illustrated report of the performances of light cars in the trials appears in to-morrow's "Autocar."

A TRIAL IN THE HOME COUNTIES.

South Midland Centre Reliability Trial. Non-stop Rules over Two Circuits of Sixty Miles.

TWO unfortunate incidents were the cause of a most disappointing finish to the South Midland Centre Auto Cycle Union Reliability Trial, for which twenty-six competitors started at 9.30 a.m. from the King's Arms Hotel, Berkhampstead, on Saturday last, July 16th.

Two circuits were to have been covered, of which the morning's run was completed with but little incident. During the afternoon, however, the arrows at various points *en route* were disturbed by some unknown source, and a number of riders lost their way.

Since the route was a secret one, this was the cause of much trouble.

Secondly, there was considerable delay at the finish which caused not a little grumbling.

During the morning's run, Chesham was the first village of any size through which the course lay, and driving was not easy, due to the large number of sharp bends on the bad surfaced road. Turning sharp right in the village, a bee line was made for the well known Kop Hill. Few failures were recorded here. A. H. Harrison's 10 h.p. Henderson sidecar seemed to be troubled with a slipping clutch. Some good ascents were made, and R. H. Baxter (2¼ Radco), although using such a small engine, seemed to enjoy the climb as did S. R. Axford's big Norton.

Skirting Chinnor, a section with ruts inches deep provided much difficulty for the sidecar outfits, whilst the two-wheeled machines had a distinct advantage. A northern road brought the riders back to Little London, and thence, *via* Tring, to the starting point.

None of the hills were abnormally difficult. The loose stony surface of the twisting roads, however, was awkward to negotiate at the schedule speed.

A similar route was, as stated before, covered during the afternoon, but it was difficult, owing to the inaccuracies of the arrows, to trace the whereabouts of a number of the riders.

G. E. Cuffe (Metro-Tyler) was the first to finish, with 45s. to spare, whilst C. Bourlet (3½ Ariel) was trailing his exhaust pipe.

A plucky ride was made by C. B. Smith (6 Zenith), who finished twelve miles on a flat rear tyre.

It is estimated that H. H. Saddington (5 James sc.) would secure the premier award.

At the start of the South Midland Centre Trial. W. Milligan getting under way on his Sunbeam at Berkhampstead.

AMIDST YORKSHIRE HILLS.

A Sporting Trial over Stiff Country, including Park Rash, Harden Bank, and Summer Lodge.

ORGANISED with the energy and thoroughness characteristic of the Northern clubs, the open reliability trial of the Ilkley M.C. and L.C. was carried to a successful conclusion on Saturday last.

Out of an entry of seventy-five and five light cars, sixty-eight actually started on the arduous run, which consisted of a series of severe gradients and rough surfaces, connected occasionally by more or less normal roads.

The first hill up to Keighley Gate is not sufficiently severe in gradient to worry the modern motor cycle, though two of the light cars found it to be beyond their powers. Onward then to Harden Bank, famous for the villainy of its surface and a couple of nasty corners. The drought was responsible for the fact that the surface was looser than usual below the rock outcrop, and the slight rainfall during the night and early morning did little to alleviate the trouble.

Appalling surface formed the chief difficulty of the Stake. F. W. Giles (7 A.J.S. sidecar) is here shown passing a less fortunate fellow competitor.

Light and Medium-weights Successful.

On the whole the performances were wonderfully good, and, as is usually the case on tricky hills, the failures were mostly amongst the high-powered (and high geared) solo machines.

Bradley (7-9 Indian) fell at the first corner, and after restarting failed at the second bend, but Fitton (8 Brough Superior), who fell at the same spot, got away well, and made a good climb. Slater (3½ Sunbeam) fell momentarily at the second corner, but was quickly away again. Gibbon (2½ Calthorpe) ran beside his mount, and Batty (6 Martinsyde sc.) and Walker (2¾ Excelsior) both appeared to be suffering from clutch slip.

Of the more remarkable climbs, the 2½ New Hudsons ridden by Munday and Bourke, the Scotts ridden by Hill, Moorhouse, Clough, Guy, and Miss Dent, Shepherd (2¾ Beaumont), Naylor (3½ Sunbeam), Palmer (3 Ivy), Bointon (2¾ Coulson B), Walkington (2¾ O.K.), and Hanson (3½ Norton) showed up best amongst the solos. The sidecar machines were good almost without exception, but Runsome (5 Lea-Francis sc.), Wilkinson (5-6 Rover sc.), C. P. Wood (3¾ Scott sc.), and Wilkin (6 Martinsyde) were perhaps the best. Grange (6 Bradbury sc.) went up well, but appeared to be troubled with a slight miss, and the passenger of Stacey's Harley gave a notable display of unnecessary acrobatics. The best of the three-wheelers were Ridley's New Hudson with 10 h.p. water-cooled M.A.G. engine, and Bracewell's Scott Sociable.

Park Rash.

Though there was plenty to be seen and achieved in the next fifty-six miles *via* Haworth, Sutton, Skipton, Bolton Bridge, Kex Gill, Yorkes Folly, Greenhow, and Grassington, Park Rash formed the next centre of public interest. Owing to the extraordinary loose state

F. E. Palmer (3 Ivy) performing the usual balancing feat on Park Rash. Every solo rider had to do likewise, in order to get over the boulder-strewn-surface

Miss Dent, on a Scott, made a very plucky attempt on Park Rash, but found the surface too great a handicap.

of the surface, which was considerably worse than it was in the 1920 Six Days, failures were not penalised but bonus marks were awarded for specially meritorious climbs. On reaching Kettlewell the morning mists were dispersed, and the sun shone on a considerable number of spectators who gathered to watch the test. Amongst the early arrivals Bradley (7-9 Indian) enlivened the proceedings by hitting one of the cross gulleys at high speed; his machine leapt high in the air and crashed, and after struggling to the summit he retired. It would be idle to give a list of failures, since so few made clean ascents, even Geoffrey Hill (3¾ Scott), who made the best solo ascent, took his feet off the rests, though it is doubtful if he ever touched the ground. The little New Hudsons again distinguished themselves and reached the top with the aid of a certain amount of foot slogging. Shepherd (2¾ Beaumont) just kept going. Parker (3½ Sunbeam) made a clean ascent, though an anxious official attempted to assist him. Vickers (3½ Norton) managed to get up. Batten (3½ Brough) received slight help on the lower slopes, but climbed steadily and well. Whalley (3½ Sunbeam) made a very good effort. Palmer (3 Ivy), and Clapham, on his T.T. Scott, both made fine ascents and only used their feet for steadying. Backhouse (4 Triumph) made one of the best solo ascents, and Wheatley on a similar mount gained the summit without assistance. Bointon (2¾ Coulson) was not assisted, though his wheel stopped momentarily. Jackson (3½ Norton) and Devey (4 Bradbury) made good attempts, but the former had slight assistance and the latter ended by hitting the wall. Of the passenger machines only Wilkinson (5-6 Rover sc.) and Giles (7 A.J.S. sc.) made clean ascents at the first attempt, and they deserve special credit. Giles's passenger even remained normally seated. C. P. Wood (3¾ Scott sc.) tore off a rear sprocket at his first attempt, but descended the hill and borrowed a complete rear wheel from his brother's machine, and made a wonderful climb. H. Reed (8 Dot) received very little help. Bracewell's Scott Sociable arrived very late, having hit a wall in endeavouring to pass another competitor in a narrow lane.

At the lunch stop at Leyburn forty-two solo riders arrived out of forty-eight starters, fourteen out of fifteen sidecars finished, and only Waddington on a four-speed water-cooled Morgan was left to represent the five three-wheelers.

The Afternoon's Run.

After lunch solo and passenger machines followed different routes to Bowbridge, the former ascending the dreaded Summer Lodge, while the latter made a detour *via* Appletree Thwaite. Summer Lodge, with its carpet of loose stones, was a repetition of Park Rash, and, under the prevailing circumstances, there was some argument as to which was the more difficult ascent.

Summer Lodge is the steeper of the two hills. No single instance was recorded of a really clean ascent with feet on the rests, but the following were perhaps the best performers on the hill: Boston (3¾ Scott), Fincher (4 Triumph), Hawkes (2¾ Excelsior), Hollyoak (2½ Federation), Fitton (8 Brough Superior), Bourke (2¼ New Hudson), Moorhouse (3¾ Scott), Clough (3¾ Scott), Palmer (3 Ivy), Backhouse (4 Triumph), Johnson (3½ Sunbeam), Stanfield (3¾ Scott), Horsley (2¾ New Imperial), Bointon (2¾ Coulson B.), Wheatley (4 Triumph), and Devey (4 Bradbury).

Jackson (3½ Norton) made a gallant attempt to keep his feet on the rests, but fell, though he kept his engine going, and, finally, got up. Miss Dent (Scott) had trouble on the corner, but made a fine ascent of the top part of the hill.

Kidstones and the Stake.

Kidstone's Pass is a good preliminary to the Stake, and helps to warm up the engines before the hardest of the work. However, the majority of the weaklings were now out of the running, and the Stake, though severe, does not compare with Park Rash or Summer Lodge. Miss Dent, who was pluckily continuing after several falls, took the first corner on the wrong side, and failed. Harry Reed attributed a stop to magneto trouble, and Gibbon (2½ Calthorpe) ran up. Except for these few, there was little trouble, and some of the big sidecar machines took the opportunity of showing what they could do, Watson (Harley-Davidson sc.) making a particularly fast ascent. There followed Semmerwater and Countersett Hills and then, on the hill leading out of Gayle, a flexibility test on unusual lines.

This picture conveys a good impression of what competitors had to contend with on the Stake, and shows C. P. Wood (3¾ Scott sidecar) crossing the watercourse on the first "ledge" of the hill.

Amidst Yorkshire Hills.—

After a warning notice, placed 100 yards before the start, came the 150 yards fast section, followed by fifty yards of slow. The test took place on a gradient of 1 in 10, and introduced an interesting deceleration factor.

On the homeward journey we noticed a certain amount of tyre trouble in the neighbourhood of Kettlewell, and then came a most impressive thunderstorm, which precluded all other interests than those of attempting to keep dry. Thus a most successful trial concluded in a torrential downpour, the country being drenched within a minute or two of the first drop of rain. A special welcome was accorded to Miss Dent, who finished to time over a course that anyone might feel proud to have completed. The survivors numbered thirty-seven solos, thirteen sidecars, and one three-wheeler, though not all of these were on time.

The final results are not available, but we are able to append a list of special prizewinners (subject to confirmation).

Special Awards.

THE ILKLEY TROPHY (best individual performance).—F. W. Giles (7 A.J.S. sc.).

THE SCOTT TROPHY (best solo performance).—E. H. Wheatley (4 Triumph).

THE PALMER TROPHY (best passenger motor cycle performance).—H. Pattinson (8 New Imperial sc.).

THE OLAI TROPHY (best amateur performance).—J. R. Wilkinson (5-6 Rover sc.).

THE TRIUMPH TROPHY (best performance by trade rider).—W. Backhouse (4 Triumph).

THE WATSON TROPHY (best performance by 1,000 c.c. motor cycle).—R. A. Stacey (7-9 Harley sc.).

THE TEAM TROPHY.—The Leeds Motor Union, R. Horsley (2¾ New Imperial), W. Clayton Russell (4 Norton sc.), and H. Pattinson (8 New Imperial sc.).

THE SOUTH WALES HILL-CLIMB.

RESULTS of the open hill-climb, which was held at Catsash, near Newport (Mon.), on July 9th, are as follows. As will be seen, it was a field day for Nortons, which were ridden into first place in every class in which they were entered. Fastest time of the day in both solo and sidecar classes was made by G. W. Walker (3½ Norton).

EVENT 1 (Open), up to 250 c.c.—On time: 1, D. G. Prentice (2¼ New Imperial); 2, J. V. Prestwich (2¼ Diamond-Jap); 3, J. Lidstone (2¼ James). On formula: 1, J. V. Prestwich (2¼ Diamond-Jap).

EVENT 2 (South Wales Centre), up to 250 c.c.—On time: 1, W. L. J. Davies (2¼ New Hudson); 2, H. Church (2¼ Velocette). On formula: 1, H. Davies (2¼ New Hudson).

EVENT 3 (Associated Clubs), up to 250 c.c.—On time: 1, H. Church (2¼ Velocette); 2, W. L. J. Davies (2¼ New Hudson). On formula: 1, H. Davies (2¼ New Hudson).

EVENT 4 (Open), up to 300 c.c.—On time: 1, D. G. Prentice (2¼ New Imperial); 2, J. V. Prestwich (2¼ Diamond-Jap). On formula: 1, J. V. Prestwich (2¼ Diamond-Jap).

EVENT 5 (South Wales Centre), up to 300 c.c.—On time: 1, H. Church (2¼ Velocette).

EVENT 6 (Associated Clubs), up to 300 c.c.—On time: 1, R. Morel (2¼ Levis). On formula: 1, H. Davies (2¼ New Hudson).

EVENT 7 (Open), up to 350 c.c.—On time: 1, D. G. Prentice (2¼ New Imperial); 2, H. Davies (2¾ Cotton). On formula: 1, D. G. Prentice (2¼ New Imperial).

EVENT 8 (South Wales Centre), up to 350 c.c.—On time: 1, W. L. J. Davies (2¾ Cotton); 2, R. Ware (2¾ Coulson-B) and F. Buckner (2¾ Douglas). On formula: 1, H. Davies (2¾ Cotton-B).

EVENT 9 (Associated Clubs), up to 350 c.c.—On time: 1, F. J. B. Jones (2¾ Douglas); 2, W. L. J. Davies (2¾ Cotton). On formula: 1, F. J. B. Jones (2¾ Douglas).

EVENT 10 (Open), up to 500 c.c.—On time: 1, G. W. Walker (3½ Norton); 2, C. Sgonina (3½ Triumph); 3, A. Lindsay (3½ Norton). On formula: 1, W. L. J. Davies (3 A.B.C.).

EVENT 11 (South Wales Centre), up to 500 c.c.—On time: 1, A. Lindsay (3½ Norton); 2, J. Thomas (3½ Norton); 3, R. H. Jenks (3½ Norton). On formula: 1, J. Marsh (3 A.B.C.).

EVENT 12 (Associated Clubs), up to 500 c.c.—On time: 1, A. Lindsay (3½ Norton); 2, R. H. Jenks (3½ Norton); 3, J. Thomas (3½ Norton). On formula: 7, H. Davies (3 A.B.C.); 2, W. L. J. Davies (3 A.B.C.).

EVENT 13 (Open), up to 750 c.c.—On time: 1, G. W. Walker (3½ Norton); 2, C. Sgonina (3½ Triumph). On formula: 1, C. Sgonina (3½ Triumph).

EVENT 14 (South Wales Centre), up to 750 c.c.—On time: 1, J. Thomas (3½ Norton); 2, W. I. Thomas (3 Sunbeam); 3, J. Parker (3½ Sunbeam). On formula: 1, D. G. Prentice (2¼ New Imperial); 2, H. Davies (3 A.B.C.).

EVENT 15 (Associated Clubs), up to 750 c.c.—On time: 1, J. Thomas (3½ Norton); 2, R. H. Jenks (3½ Norton); 3, W. I. Thomas (3½ Sunbeam). On formula: 1, H. Davies (3 A.B.C.).

EVENT 16 (Open), unlimited).—On time: 1, G. W. Walker (3½ Norton) and C. Sgonina (3½ Triumph); 3, A. Lindsay (3½ Norton). On formula: 1, D. G. Prentice (2¼ New Imperial).

EVENT 17 (South Wales Centre), unlimited.—On time: J. Thomas (3½ Norton); 2, H. Davies (8 Brough Superior); 3, W. I. Thomas (3½ Sunbeam).

EVENT 18 (Associated Clubs), unlimited.—On time: 1, J. Thomas (3½ Norton); 2, A. Lindsay (3½ Norton); 3, H. Davies (8 Brough Superior). On formula: 1, L. C. Ramsay (3 A.B.C.).

EVENT 22 (Open), sidecars up to 500 c.c.—On time: 1, G. W. Walker (3½ Norton sc.). On formula: 1, G. W. Walker (3½ Norton sc.).

EVENT 23 (South Wales Centre), sidecars up to 500 c.c.—On time: 1, R. H. Jenks (3½ Norton sc.).

EVENT 24 (Associated Clubs), sidecars up to 500 c.c.—On time: 1, J. Thomas (3½ Norton sc.).

EVENT 25 (Open), sidecars up to 750 c.c.—On time: 1, G. W. Walker (3½ Norton sc.). On formula: 1, G. W. Walker (3½ Norton sc.).

EVENT 26 (South Wales Centre), sidecars up to 750 c.c.—On time: 1, J. Thomas (3½ Norton sc.). On formula: 1, H. Davies (3 A.B.C. sc.).

EVENT 27 (Associated Clubs), sidecars up to 750 c.c.—On time: 1, J. Thomas (3½ Norton sc.). On formula: 1, H. Davies (3 A.B.C. sc.).

EVENT 28 (Open), sidecars unlimited.—On time: 1, G. W. Walker (3½ Norton sc.); 2, H. Davies (8 Brough Superior sc.). On formula: 1, G. W. Walker (3½ Norton sc.).

EVENT 29 (South Wales Centre), sidecars unlimited.—On time: 1, J. Thomas (3½ Norton sc.); 2, H. Davies (8 Brough Superior sc.).

EVENT 30 (Associated Clubs), sidecars unlimited.—On time: 1, J. Thomas (3½ Norton sc.); 2, A. Thom (7-9 Harley-Davidson sc.).

EVENT 31 (Open), cycle cars.—On time: 1, W. L. J. Davies (10 Morgan). On formula: 1, W. L. J. Davies (10 Morgan).

EVENT 32 (South Wales Centre), cycle cars.—On time: 1, W. L. J. Davies (10 Morgan). On formula: 1, W. L. J. Davies (10 Morgan); 2, J. G. Winter (——).

EVENT 33 (Associated Clubs), cycle cars.—On time: 1, C. V. Wood (10 J.A.P.); 2, W. L. J. Davies (10 Morgan). On formula: 1, H. Davies (10 Morgan); 2, J. G. Winter (——).

T.T. MACHINES IN MIDLAND HILL-CLIMB.

EXCEPTIONALLY fine weather attended the thirteenth annual hill-climb of the Birmingham M.C.C., held on Camden Hill, Ilmington, on Saturday. This hill has a very good surface with the exception of a slight rut on the extreme left of the first right hand bend. It is about five-eighths of a mile long and has a maximum gradient of approximately 1 in 8.

Amongst the various entrants were H. R. Davies, the T.T. winner on his o.h.v. A.J.S., and T. C. Greenwood, on his special long stroke 4¼ h.p. Sunbeam, with a capacity of 599 c.c. The B.S.A. T.T. model was also competing, together with several other T.T. mounts.

In the first class H. R. Davies beat his follower up, T. C. Greenwood, by the margin of ⅘s. The spectators on the corner were really astounded at the excellent cornering. H. R. Davies, never attempted to cut out at all, taking the bend "all out." In the next class, however, T. C. Greenwood reversed the positions, winning by ⅘s.

Amateur riders put up very good performances in their class.

In the last class some excellent speeds were recorded. Up till now H. R. Davies had recorded the fastest time, but T. C. Greenwood beat all his previous attempts by 2s., thus winning his class and also making the fastest time of the day.

R. E. Pugh is worthy of special mention for his performance. He climbed the hill in 38s. with his 2¼ h.p. Levis, and the fastest time of the day was only a matter of 5⅕s. less.

Full results on time follow:

CLASS 6.—750 c.c. Sidecars (open): 1, H. R. Davies (2¾ A.J.S. sc.), 43.4s.; 2, T. C. Greenwood (4¼ Sunbeam sc.), 44.2s.

CLASS 8.—Unlimited Sidecars (open): 1, T. C. Greenwood (4¼ Sunbeam sc.), 42.6s.; 2, H. R. Davies (2¾ A.J.S. sc.), 43.4s.

CLASS 9.—250 c.c. Solo (amateur): 1, W. F. Smith (2½ Hobart), 45.2s.; 2, A. W. Thrush (2¼ Levis) and W. J. Lord (2½ Hobart), 45.8s., tied.

CLASS 10.—250 c.c. Solo (open): 1, R. E. Pugh (2¼ Levis), 38s.; 2, W. F. Smith (2½ Hobart), 43.8s.; 3, W. J. Lord (2½ Hobart), 47.8s.

CLASS 11.—350 c.c. Solo (amateur): 1, G. Povey (2¾ Massey-Arran), 41.4s.; 2, A. W. Thrush (2¼ Levis), 43s.; 3, W. F. Smith (2½ Hobart), 44s.

CLASS 12.—350 c.c. Solo (open): 1, H. R. Davies (2¾ A.J.S.), 35.8s.; 2, R. E. Pugh (2¼ Levis), 37.4s.; 3, G. Povey (2¾ Massey-Arran), 42.8s.

CLASS 13.—499 c.c. Solo (amateur): 1, A. E. Phillips (3½ Norton), 40s.; 2, A. W. Thrush (3½ Sunbeam), 40.2s.; 3, T. Morton (3½ Norton), 41.8s.

CLASS 14.—499 c.c. Solo (open): 1, H. R. Davies (2¾ A.J.S.), 35s.; 2, G. A. Strange (3½ James) and A. E. Phillips (3½ B.S.A.), 37s., tied.

CLASS 15.—600 c.c. Solo (amateur): 1, A. W. Thrush (3½ Sunbeam), 39.2s.; 2, A. E. Phillips (3½ Norton), 41s.; 3, T. Morton (3½ Norton), 41.4s.

CLASS 16.—600 c.c. Solo (open): 1, H. R. Davies (2¾ A.J.S.), 34.8s.; 2, T. C. Greenwood (4¼ Sunbeam), 36s.; 3, H. Petty (3½ Norton), 37s.

CLASS 17.—750 c.c. Solo (amateur): 1, A. W. Thrush (3½ Sunbeam), 40s.; 2, C. Fisher (3½ James), 46s.; 3, L. E. Cox (3¾ Scott) and L. D. Cuxson (3½ Sunbeam), 55s., tied.

CLASS 18.—750 c.c. Solo (open): 1, H. R. Davies (2¾ A.J.S.), 35s.; 2, T. C. Greenwood (4¼ Sunbeam), 35.8s.; 3, G. A. Strange (3½ James), 36.8s.

CLASS 19.—Unlimited Solo (amateur): 1, A. W. Thrush (3½ Sunbeam), 39.8s.; 2, L. E. Cox (3¾ Scott), 45s.; 3, R. E. Newcombe (3½ Ariel), 47s.

CLASS 20.—Unlimited Solo (open): 1, T. C. Greenwood (4¼ Sunbeam), 32.8s.; 2, H. R. Davies (2¾ A.J.S.), 34.8s.; 3, G. A. Strange (3½ James), 36.8s.

Fastest time of the day.—T. C. Greenwood (4¼ Sunbeam), 32.8s.

Fastest amateur of the day.—A. W. Thrush (3½ Sunbeam), 39.2s.

A HUMBER TRIAL.

THE annual reliability trial for employees of Humber Ltd., held last Saturday, produced sixty-four entries. On the outward trip to Oxford, a "new" climb past a quarry leading to Avon Dassett was included, and most competitors got up well, including the large fleet of riders of 4½ h.p. flat twin Humbers. Only three failed to check in at Oxford, where lunch was taken at the Buol Restaurant, presided over by Lt.-Col. J. A. Cole, O.B.E., who was supported by the Mayor and Chief Constable of Oxford.

The homeward run was *via* Woodstock and Sunrising Hill, the latter gradient assisting in reducing the field, since several failed, two due to gear troubles. Punctures also weeded out three riders, leaving barely fifty to finish a very enjoyable trial. The cup winner should be known in a few days, when the various checking sheets have been examined.

CURRENT CHAT (Continued from p. 76).

Death of a Pioneer Motor Cyclist.

It is with great regret that we have to announce the death of one of the founders of the Motor Cycling Club, Mr. S. H. Fry. He was a member of the M.C.C. Committee for many years, and worked hard in the interests of the club. He had a ready wit, and his speeches at the club's earlier annual dinners were always a delight, and provided much merriment. It is to such pioneers as the late Mr. Fry that younger participants in the pastime owe far more than they can realise, and it is due to their endurance on the old and uncomfortable mounts of 1901 and later that the modern motor cycle has reached the perfection it has now obtained.

The late Mr. S. H. Fry, one of the founders of the Motor Cycling Club.

Mr. Fry was a good sportsman and a true amateur, as he rode for the sheer love of the pastime, and was in no way connected with the motor cycle trade.

His end was particularly sad, as he passed away just after he had found a delightful cottage in Surrey, in which he had hoped to spend a well-earned respite from the business from which he had just retired. In company with many pioneer motor cyclists we extend our sincere sympathy to his widow.

The Scottish Trials.

In this issue will be found a fully illustrated description of the Scottish Trials, together with a list of official awards.

Bradford-London-Bradford

A North-country classic, the annual Bradford - London - Bradford Reliability Trial, takes place this week-end.

The Two Hour Record.

Owing to a misapprehension, F. W. Dixon (7-9 Harley-Davidson) was stated on page 59 of our last issue to have secured the two-hour record. This record, however, still remains in the possession of H. Le Vack, who holds all the 1,000 c.c. figures up to seven hours, with the exception of the 200 miles.

The 1922 T.T.

The A.C.U. has already accepted six entries for next year's Tourist Trophy races.

Speed Trials.

On Saturday next the East Midland Centre A.C.U. holds its open speed trials at Clipstone Park, near Nottingham.

NEXT SUNDAY'S GRAND PRIX RACE.

ON Sunday the classic French road race at Le Mans will be decided, and, as will be seen from the list given below, the entries are fairly representative. The race may be said to be between Great Britain, America, and France—the same countries which were to be represented in the car race on the following day. We understand, however, that the British car entries have been withdrawn, hence the motor cycle race promises to be the more interesting. In our last week's issue, we gave details of the course, which is a triangular circuit of a little over ten miles, to be covered twenty times. A report of the race will appear in next week's issue of *The Motor Cycle*, while *The Autocar* will contain a description of the car event, in which very high speeds are anticipated.

Rider and Machine.

1. Jolley (Alcyon).
2. T. C. de la Hay (Sunbeam).
3. H. Le Vack Indian).
4. Pean (Peugeot).
5. Duverne (Janoir).
6. Pickering (B.S.A.).
7. Naas (A.B.C.).
8. Massein (Bianchi).
9. —— (Triumph).
10. V. Horsman (Norton).
11. Vulliamy (Griffon).
12. A. H. Alexander (Douglas).
13. Delabre (Rover).
14. Trebla (Trebla).
15. Devaux (Alcyon).
16. A. Bennett (Sunbeam).
17. Gillard (Peugeot).
18. Gibbs (B.S.A.).
19. Bartlett (A.B.C.).
20. —— (Triumph).
21. H. Hassall (Norton).
22. Bordotta (Griffon).
23. J. Emerson (Douglas).
24. Marc (Alcyon).
25. Benoit (Peugeot).
26. Poole (B.S.A.).
27. Minzi (A.B.C.).
28. —— (Triumph).
29. G. W. Walker (Norton).
30. Jacquin (Griffon).
31. H. Thorpe (Douglas).
32. Cheppaz (B.S.A.).
33. Rolly (B.S.A.).
34. Bernard (B.S.A.).
35. Verchault (B.S.A.).
36. Ragonnet (A.B.C.).

350 c.c. CLASS.

37. Neunier (Alcyon).
38. Isodit (Douglas).
39. Gard (Thomann).
40. Pierre (D.F.R.).
41. —— (Verus-Jap).
42. Schlee (Douglas).
43. Dubost (D.F.R.).
44. Dombini (Douglas).

250 c.c. CLASS.

45. A. Milner (Levis).
46. Jolley, jun. (Alcyon).
47. —— (Yvel).
48. Clech (Moto Solo).
49. —— (Griffon).
50. Nel (Velocette).
51. Froment (Labor).
52. —— (Yvel).
53. Cottin (Moto Solo).
54. —— (Griffon).
55. G. Denley (Velocette).
56. —— (Griffon).
57. Runton (Velocette).

CLUB EVENTS AT BROOKLANDS.

A VERY representative entry, which included several well known riders and machines, composed the programme of the first annual race meeting of the Ealing and District M.C.C., held at Brooklands track on Saturday last.

Temple (7-9 Harley-Davidson), the winner of the club championship, rode a wonderful race, winning at 91.10 m.p.h., his fastest lap being 94.07 m.p.h.

FIRST RACE (350 c.c.).—1, A. G. Millar (2¾ Martin, 48s. start); 2, S. E. Longman (2¾ Wooler, 1m. 15s.); 3, H. J. Line (2¾ Martin, 48s.). Winner's speed, 57.48 m.p.h.

SECOND RACE (500 c.c.).—1, W. H. Linnett (3 A.B.C., 27s. start); 2, W. L. Gard (3½ Norton, 1m. 3s.); 3, F. A. Longman (3½ Ariel, 51s.). Winner's speed, 67.75 m.p.h.

THIRD RACE (1,000 c.c.).—1, G. J. Read (8 Enfield, 1m. 54s. start); 2, J. C. Watson (7-9 Harley-Davidson, 2m. 30s.); 3, C. F. Temple (7-9 Harley-Davidson, scr.). Winner's speed, 69.10 m.p.h.

FOURTH RACE.—1, G. G. Fowler (2¾ Martin, 2m. start); 2, E. A. Marshall (3 A.B.C., 57s.); 3, W. C. Boyer (3½ Norton, 42s.). Winner's speed, 50.8 m.p.h.

SIXTH RACE (TEAM).—Ealing and District M.C., winners on time: A. G. Millar (Martin sc.), C. G. Pullin (Douglas), C. F. Temple (7-9 Harley-Davidson), and S. E. Longman (7-9 Harley-Davidson).

SEVENTH RACE (1,000 c.c., Sidecars).—1, S. E. Longman (7-9 Harley-Davidson sc., 51s. start); 2, O. de Lissa (8 Motosacoche sc., 30s.); 3, R. Dequin (8 Zenith sc., 1m. 24s.). Winner's speed, 63.20 m.p.h.

EALING AND DISTRICT CLUB CHAMPIONSHIP RACE.—1, C. F. Temple (7-9 Harley-Davidson, scr.); 2, C. G. Pullin (Douglas, 2m. 28s.); 3, O. de Lissa (8 Motosacoche sc., 2m. 50s.). Winner's speed, 91.10 m.p.h.

The start of the handicap for sidecars and three-wheelers with engines not exceeding 1,100 c.c. This race was won by S. E. Longman (Harley-Davidson). W. H. Emery (New Imperial) is seen in the foreground.

On one of the best-known test hills in Yorkshire—Sutton Bank, on the Hambleton hills. Competitors in the recent Yorkshire Centre team trial making light of this once formidable incline.

Aberdare and District M.C.C.

The final results of the second annual trial for the Illtyd Williams Cup are as follows :

1, A. Cranch (3½ Rover sc.), Neath and District M.C.C., 195 marks; 2, T. E. Richards (8 Brough Superior), Builth Wells M.C.C., 193 marks; 3, W. Boyns (4 Triumph), Aberdare M.C.C., 199 marks (also winner of the Illtyd Williams cup); 4, G. T. Bishop (3½ Sunbeam) and I. Parker (8.7 G.N.), Aberdare M.C.C., 189 marks each.

A remarkably good performance was made by E. Colburn on a single-geared Levis. The maximum number of marks obtainable was 200.

Yorkshire Centre A.C.U.

Organised by the Bradford M.C. and L.C.C., the team trial of the Yorkshire Centre (A.C.U.) was held at the beginning of July, over a route which included Sutton Bank and the difficult country in the Pateley Bridge district. Fifteen teams of four (two solo and two passenger) were entered and all started. The results are as follows :

Haggas Shield, gold medals to each rider, and title of champion Yorkshire team 1921: Bradford M.C. and L.C. "B" team, consisting of J. C. Neilson (Harley-Davidson sc.), W. Snowden (Matchless sc.), A. R. Naylor (Sunbeam), and C. B. Haigh (Scott); marks lost, 31.—Silver medals: Leeds and District M.C.C. "J" team—W. T. Brand (Triumph), R. J. Brown (Norton), S. Jepson (A.J.S. sc.), and T. Hardy (Enfield sc.); marks lost, 33. Bronze medals: Bradford Gipsy M.C.C. "D" team—P. Shaw (P. and M. sc.), A. Haigh (Harley-Davidson sc.), H. Barker (Triumph), and R. Clay (B.S.A.); marks lost, 59.

The order of merit of the remaining teams was :

4, Wakefield "H" team; 5, Bradford M.C.C. "T"; 6, Sheffield and Hallamshire "S"; 7, Wakefield "K"; 8, Harrogate "A"; 9, Harrogate "P"; 10, Bradford Gipsy "L"; 11, Ilkley "W"; 12, Ilkley "M"; 13, Leeds and District "E"; 14, Ilkley "C"; 15, York "U" (retired).

A special feature of the event was that a few days after it was held a complete duplicate of the check sheet was forwarded to every competitor, thus showing exactly how many marks were lost by each club and where.

Week-end Club Events.

July 21.—Berwick and District M.C. Flexibility Hill-climb.
July 23.—Western Centre, A.C.U. Team Trial.
July 23.—S.E. Centre, A.C.U. Speed Trials at Brooklands.
July 23.—Loughborough and District M.C.C. A.C.U. Speed Trials.
July 23.—Kidderminster M.C.C. Freak Hill-climb.
July 23.—Taunton and District M.C. and L.C.C. and Exeter M.C. and J.C.C. Joint Reliability Trial.
July 23.—York and District M.C. Social Run to Kirkham Abbey.
July 23.—Worcester and District M.C.C. One Day Trial.
July 23.—Luton and South Beds. A.C. Gymkhana.
July 23.—Bristol M.C.C. Gymkhana.
July 23.—Sheffield and Hallamshire M.C. and L.C.C. Reliability Run to Wales.
July 23.—Surbiton and District M.C.C. Hill-climb.
July 23.—Glasgow M.C.C. Hill-climb.
July 23-24.—Liverpool M.C. Twenty-four Hour Trial.
July 23.—Surrey M.C.C. Crow Cup Trial.
July 23.—Wolverhampton Auto Nomads. Club Run to Bewdley and Arley.
July 23.—East Midland Centre A.C.U. Speed Trials at Clipstone.
July 24.—Harley-Davidson M.C.C. Run to Eastbourne.
July 24.—Stamford M.C.C. Hill-climb.
July 24.—Newcastle and District M.C. Team Trial.
July 24.—Sheffield M.C.C. Fishing Match.
July 24.—Harrogate and District M.C.C. Captain's Competition.
July 24.—Brighton and Hove M.C.C. Hewett Trophy Reliability Trial.
July 24.—Burton and District M.C.C. Club Run to Monsal Dale.
July 24.—Woolwich, Plumstead, and District M.C. Club Run to Ightham.
July 24.—Coventry Triangle M.C. Club Run to Oxford.
July 24.—Halifax and District M.C.C. Reliability Trial.
July 24.—Central London M.C.C. Club Run to Wrotham.
July 24.—Leeds M.U. Club Run to Bridlington.
July 24.—Berwick and District M.C. Team Trial to Edinburgh.
July 24.—Barrow and District M.C. Petrol consumption Test.
July 24.—Canterbury and District M.C.C. Club Run to Margate.
July 24.—Ivy M.C.C. (Wolverhampton). Stourport.
July 26.—Bridgwater and District M.C. and L.C.C. Carver Cup Trial.
July 27.—Burton and District M.C.C. Run to Manifold Valley.
July 28.—Doncaster and District M.C.C. Rally.
July 28.—Canterbury and Dist. M.C.C. Speed Trial.

A Section devoted to Club Announcements will be found on Supp. xlv.

Peterborough and Stamford M.C.C.

A joint hill-climb was held at Tixover, near Duddington, on July 10th. There were several very fast machines present, and the events were run off without unnecessary pauses. Results :

250 c.c., FLYING START.—G. Brown (2¼ Massey-Arran), 19s.; J. Belton (2¼ Levis), 25⅘s.; A. Mason (2¼ Levis), 27⅕s.

250 c.c., STANDING START.—G. Brown (2¼ Massey-Arran), 25⅕s.; A. Mason (2¼ Levis), 31⅗s.; J. Belton (2¼ Levis), 32⅘s.

UNDER 350 c.c., STANDING START.—G. Brown (2¼ Massey-Arran), 26s.; L. Moulds (2¾ Douglas), 29⅗s.; H. Cragg (2¾ Douglas), 31⅕s.

UNDER 350 c.c., FLYING START.—G. Brown (2¼ Massey-Arran), 20s.; L. Moulds (2¾ Douglas), 21⅘s.; H. Cragg (2¾ Douglas), 23s.

UNDER 600 c.c., STANDING START.—B. Stapleton (3½ Sunbeam), 21⅗s.; H. Ludlow (3½ Norton), 21⅘s.; A. Robinson (4 Triumph), 22⅘s.

UNLIMITED CAPACITY, STANDING START.—B. Stapleton (3½ Sunbeam), 21⅗s.; H. Ludlow (3½ Norton), 22s.; E. Vickers (3 A.B.C.), 24s.

UNLIMITED CAPACITY, FLYING START.—H. Ludlow (3½ Norton), 15⅗s.; B. Stapleton (3½ Sunbeam), 15⅕s.; S. A. Cook (4 Triumph), 17⅗s.

Bridgnorth and District M.C.C.

The following is a list of results of a hill-climb held at Copthorne on July 10th :

CLASS 1: TWO STROKES (Open).—1, L. Cooke (3 Ivy), 46⅗s.; 2, Miss Pickering (2¼ Velocette), 73⅕s.

CLASS 2: 350 c.c. (Amateurs, Club Members).—1, H. Edward (2¾ A.J.S.), 51⅗s.; 2, W. Williams (2¾ Douglas), 57⅗s.

CLASS 3: 350 c.c. (Open).—1, H. F. Harris (2¾ A.J.S.), 36⅗s.; 2, L. Cooke (3 Ivy), 44⅗s.

CLASS 4: 500 c.c. (Amateurs, Club Members).—1, S. K. Ridley (3½ Norton), 35s.; 2, A. Wood (3½ Norton), 37⅗s.

CLASS 5: 500 c.c. (Open).—1, F. Collard (3½ Rover), 35⅕s.; 2, H. F. Harris (2¾ A.J.S.), 35⅗s.

CLASS 6: 750 c.c. (Amateurs, Club Members).—1, S. K. Ridley (3½ Norton), 33⅗s.; 2, A. Wood (3½ Norton), 37⅗s.

CLASS 7: 750 c.c. (Open).—1, S. K. Ridley (3½ Norton), 33⅗s.; 2, H. F. Harris (2¾ A.J.S.), 35s.

CLASS 8: 1,000 c.c. (Open).—1, S. K. Ridley (3½ Norton), 32⅘s.; 2, A. Wood (8 Ivy), 36⅗s.

CLASS 9: 1,000 c.c. (Open).—*1, S. K. Ridley (3½ Norton), 32⅗s.; 2, H. F. Harris (2¾ A.J.S.), 34⅗s.

CLASS 10: SIDECARS & THREE-WHEELERS (Open).—1, F. Collard (3½ Rover sc.), 50s.; 2, S. H. Ryder (8 Morgan), 57⅗s.

CLASS 11: CYCLE CARS (Open).—1, C. Williams (8 G.N.), 43⅗s.; 2, C. Potts (8 G.N.), 56⅗s., and D. Stewart (8 G.N.), 56⅗s., tied.

*Fastest time of the day.

Club News.—

Westoe M.C.C.

In the recent speed-judging competition over a measured mile, with speedometers covered, the winning machine was a Harley-Davidson sidecar outfit.

In the club's recent hill-climb at Muggleswick Common a Brooklands-engined Norton was first on time, with a Triumph second.

Wakefield and District M.C.C.

A reliability trial over a course of about 120 miles to Grassington and back was held on July 10th for the Club Trophy, which resulted in a win for G. Smith (4 Triumph), with H. Round (6-7 B.S.A. sc.) and G. R. Grundy (3½ Sunbeam) second and third respectively: unfortunately, several of the competitors went off the course.

Bristol M.C.C.

An evening trial was held on July 13th over a course of 17½ miles, which was covered twice; there were two observed hills in each circuit. The run was on non-stop times, and only thirteen finished out of twenty-five starters. The results were as follows:

1 (Bax Silver Cup), P. G. Chugg (6 James sc.), 5m. 15s. error; 2 (Beardmore Cup), F. A. Simpson (2¾ Douglas), 6m. 15s. error; 3, E. L. Smith (3½ Triumph), 7m. 30s. error; 4, H. J. Hobbs (3½ Sunbeam sc.), 8m. 15s. error.

Surrey M.C.C.

The results of the hill-climb, which was held on July 9th, are as follows:

CLASSES I., II., and III.—Solo Machines.

		Time, secs.	Fig. of Merit.
1.	T. G. Meeten (2¾ O.K.-M.A.G.) ..	44.8	408
2.	G. H. Williams (3½ T.T. Rover) ..	33.4	481
3.	W. J. Collis (3½ Rudge)	37	402
4.	P. M. Walters (3½ Sunbeam)	27.2	362
5.	C. R. Jenkins (4 Triumph)	40.2	343
6.	R. H. Dickinson (3½ T.T. Rover)..	40.4	321
7.	W. P. Wiltshire (8 J.A.P.)	32.4	315
8.	Miss Bewers (4 Triumph)	44.6	271
9.	H. H. Mallet (4¼ B.S.A.)	48.6	265

CLASS IV.—Any Machine.

1.	W. E. Willson (12 A.B.C.)	49.8	504
2.	Mrs. Meeten (2¾ O.K.-M.A.G.) ...	44.2	492
3.	G. H. Williams (3½ Rover)	34	463
4.	R. P. Robinson (10 Buckingham)..	53.8	420
5.	C. R. Jenkins (4 Triumph)	38	383
6.	R. H. Dickinson (3½ Rover)	37.2	379
7.	P. M. Walters (3½ Sunbeam)	37.2	362
8.	W. J. Collis (3½ Rudge)	40.2	348
9.	L. J. Mitchell (8 Zenith)	32.8	345
10.	R. Graham (8.7 G.N.)	55.4	337
11.	F. N. Edney (7-9 Indian sc.)	44.6	319
12.	L. G. Willson (6 Bradbury sc.) ...	51.6	303

CLASS V.—Passenger Machines

1.	W. E. Willson (12 A.B.C.)	49.4	511
2.	R. P. Robinson (10 Buckingham)..	55	406
3.	R. Graham (8.7 G.N.)	56.6	326
4.	L. G. Willson (6 Bradbury sc.) ...	49.8	321
5.	C. J. Feeny (8 Rover)	71.2	290
6.	F. N. Edney (7-9 Indian sc.)	48.2	270

CLASS VI.—1914 or earlier Manufacture.

1.	R. P. Robinson (10 Buckingham)..	54.6	411
2.	R. H. Dickinson (3½ T.T. Rover)..	36	406
3.	W. J. Collis (3½ Rudge)	39.6	351
4.	L. D. Brown (3½ Triumph)	40.6	334
5.	L. G. Willson (6 Bradbury sc.) ...	49	329
6.	*W. P. Wiltshire (8 J.A.P.)	32.4	315
7.	T. H. Broadhurst (3½ B.S.A.)	69.4	168

CLASS VII.—Standing Start, Stop, and Restart.

1.	W. E. Willson (12 A.B.C.)	62.8	310
2.	R. P. Robinson (10 Buckingham)..	89.4	207
3.	F. N. Edney (7-9 Indian sc.)	64	180
4.	W. J. Collis (3½ Rudge)	63	163
5.	C. R. Jenkins (4 Triumph)	64.2	159
	L. G. Willson (6 Bradbury sc.) ...	61.8	—

*Fastest time of the day.

The formula used was:

$$\frac{\text{Total weight}}{\text{Cu. cap.} \times (\text{time} - .6 \text{ fastest time})}$$

Bury and District M.C.

The principal awards in the trial to Windermere on the 10th inst., were allotted as follows:

CLASS A.—A. Cunliffe (2½ Diamond).
CLASS B.—W. Ratcliffe (4 Triumph).
LIGHT CAR CLASS.— J. Pilling (Calthorpe).
Second-class awards were made to S. Graham (4 Norton), C. Major (7-9 Indian) and P. Crompton (4 Triumph).

Surrey M.C.C.

At the beginning of the month a new petrol consumption test formula, evolved by Mr. H. G. Mansell, hon. secretary of the Farnham Centre of the club, was applied to a number of the members' performances. The formula is as follows:

Figure of merit $= \text{m.p.g.} \times \sqrt{\text{weight}} \times \left[\frac{\text{c.c.}}{2{,}000} + 1\right]$, and the undermentioned results were obtained. The figure of merit is added in parentheses, and the total weight and miles per gallon are also shown:

G. J. Heath (3½ Rudge), 345 lb., 212.0 m.p.g. (491).
H. Mansell (8-10 Zenith), 598 lb., 117.0 m.p.g. (428).
F. Edney (7-9 Indian sc.), 787 lb., 90.5 m.p.g. (378).
W. Wiltshire (8-10 Jap), 530 lb., 109.5 m.p.g. (376).
P. T. Mitchell (8 G.N.), 1,448 lb., 57.5 m.p.g. (338).
J. S. Mitchell (10 Horstman), 1,762 lb., 44.5 m.p.g. (327).
R. Graham (8 G.N.), 1,316 lb., 57.5 m.p.g. (322).
R. H. Dickinson (2¼ Triumph), 277 lb., 162.0 m.p.g. (300).
T. Broadhurst (4¼ B.S.A.), 420 lb., 112.0 m.p.g. (286).
C. Feeny (2¼ Triumph), 277 lb., 150.5 m.p.g. (279).
G. Bewers (4 Triumph sc.), 666 lb., 82.6 m.p.g. (271).

Brighton and Hove M.C.C.

At a hill-climb held on July 10th, the principal events resolved themselves into duels between the Nortons and Sunbeams, there being no fewer than five dead heats. The hill was 420 yards long, average gradient 1 in 8, and the timing was electrical. The following are the results:

350 c.c.—Amateur: 1, G. Stacey (2¾ Royal Ruby), 24⅕s.; 2, W. H. Sheraton (2¾ Coulson-B), 28s.; 3, W. Goodrich (2¼ Velocette), 29⅘s. General: 1, S. Dunford (2¾ Royal Roby), 22⅘s.; 2, E. Jenner (2¾ Royal Ruby), 24s.; 3, W. Goodrich (2¼ Velocette), 28s.

600 c.c.—Amateur: 1, B. H. Wood (3½ Norton), 18s.; 2, A. B. Friend (3½ Sunbeam), 19⅕s.; 3, L. Watts (4 Triumph) and A. Koehler (3½ Norton), 20⅘s. General: 1, B. H. Wood (3½ Norton), 18⅘s.; 2, W. H. Sheraton (3½ Norton), 18⅘s.; 3, A. N. Hewett (3½ Sunbeam), and C. Volk (3½ Sunbeam), 19s.

UNLIMITED.—Amateur: 1, W. H. Sheraton (3½ Norton), 18s. (after two dead heats); 2, B. H. Wood, (3½ Norton), 18⅘s.; 3, A. B. Friend (3½ Sunbeam), 19⅘s. General: 1, C. Volk (3½ Sunbeam), 18⅕s. (after dead heat); 2, W. H. Sheraton (3½ Norton), 18⅘s.; 3, B. H. Wood (3½ Norton), 18⅘s.

UNLIMITED (Novices, on formula).—1, G. Stacey (2¾ Royal Ruby), 23⅕s.; 2, C. H. Kleinwort (3½ Norton), 22⅘s.

SIDECARS (Unlimited, on formula).—1, A. N. Hewett (3½ Sunbeam sc.), 25s.; 2, S. Dunford (7-9 Harley-Davidson sc.), 23s.; 3, L. Watts (4 Triumph sc.), 31s.

Heaton Moor M.C.C.

On July 10th a reliability trial was held, in which the premier award was won by F. Slack (2¾ Verus), with F. Bamford (3½ Sunbeam sc.) as runner-up. The course led through Cheshire and Derbyshire, finishing at Buxton. The weather and organisation being excellent, the run was highly successful.

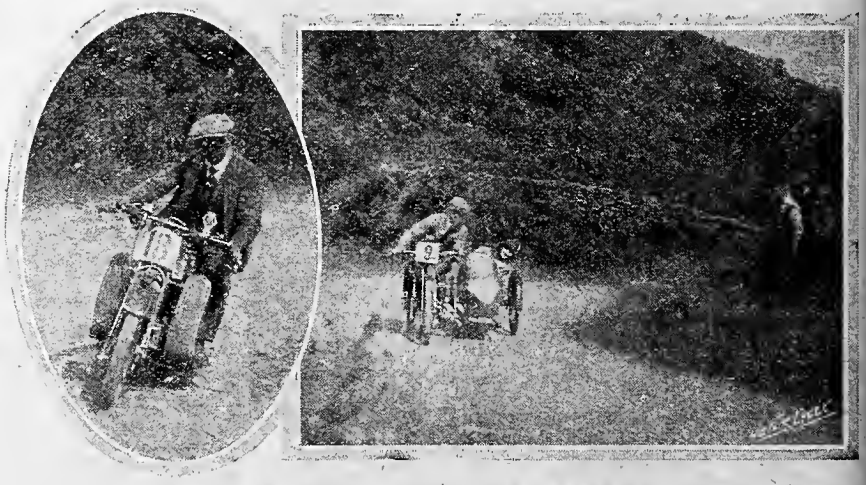
Essex M.C.

In addition to the time and formula results (given in last week's issue) of the Westcliff Speed Trials, we have to record the following awards in the classes reserved for members of the two clubs organising the event (Essex M.C. and Essex County and Southend A.C.). As will be seen, J. V. Prestwich, on his two J.A.P.-engined mounts, was particularly fortunate. Summaries of the winners of the members' classes are as follows:

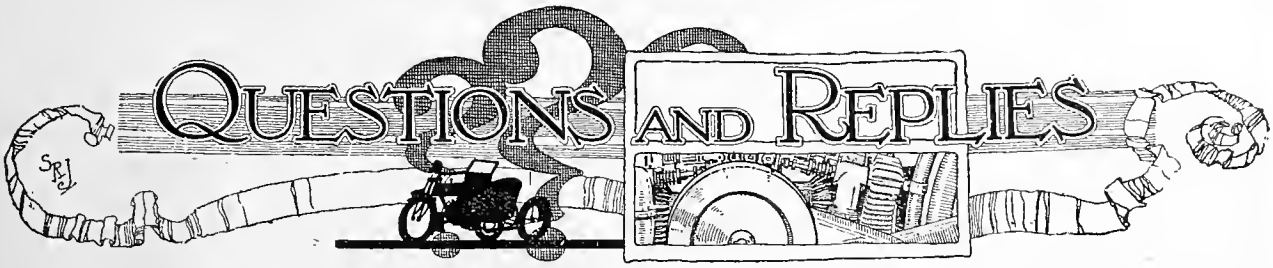
J. V. Prestwich (2¼ Diamond-Jap)..	7	firsts
J. V. Prestwich (2¼ Massey-Arran-Jap)	9	,,
S. M. Greening (2¼ Francis-Barnet-Jap)	3	,,
F. W. Applebee (2½ Levis)	2	,,
G. Strange (3½ James)	4	,,
H. Le Vack (Indian)	4	,,
G. E. Stobart (5-6 James)	6	,,
H. Petty (3½ Norton)	3	,,
A. A. Prestwich (2¾ Dot-Jap)	1	,,
G. A. Vandervell (3½ Norton)	1	,,
A. A. Swann (2¼ New Imperial) ..	2	,,
N. A. Lowe (2¼ Diamond-Jap) ..	2	,,
E. A. Marshall (3 A.J.S.C.)	1	,,
W. Veasey (8 Henderson)	1	,,
S. Croneen (7-9 Harley-Davidson) ..	1	,,
D. H. Davidson (7-9 Harley-Davidson)	1	,,
J. Day (3½ Norton)..	1	,,

Worcester and District M.C.C.

A supper in honour of the club's members, H. R. Davies, E. Williams, and D. G. Prentice, who won the Senior, Junior, and 250 c.c. T.T. Races, was held this month at the headquarters, the Pack Horse Hotel, Worcester. H. F. Harris, one of the A.J.S. team, was also included amongst the guests. During the evening two cups were offered to the club, one by Mr. G. King, for the Junior T.T. winner, and one by Mr. G. Stevens to be competed for as the officials might decide.



Competitors in the Bury and District M.C. sporting trial to Windermere. The riders, whose mounts are a Sunbeam and Triumph sidecar are negotiating a hairpin bend on Tow Top.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

LIGHTING FROM FLYWHEEL MAGNETO WANTED.

Is it possible to run an electric head lamp off a Villiers flywheel magneto?—C.L.

As at present arranged, it is inadvisable to attempt the running of a head lamp from the Villiers flywheel magneto.

RELIABILITY OF HUB GEARS.

I am considering purchasing a three-speed hub gear motor cycle, and am somewhat puzzled by the conflicting opinions current upon hub gears. Some recommend them, while others of my friends condemn them absolutely. As I do not understand the mechanism of a three-speed and clutch hub, I am unable to see for myself whether they are a sound engineering job or otherwise.—D.P.D.

When properly fitted in a frame made to withstand the stresses they set up, three-speed hubs are quite satisfactory, especially on solo machines. It is very necessary, however, that they should never be allowed to get out of adjustment, as the clearances between the parts are very small and damage is easily done. The manufacture of three-speed hub gears was discontinued in 1914, owing to the advent of countershaft gear boxes of less complex and more robust construction.

WHICH IS ADVANCE?

How does one tell, on any magneto, which way the timing lever works? In various makes of magnetos the timing levers not only project either side, but the armatures revolve clockwise and anti-clockwise, so that I cannot find any quick and ready test as to which way is "advance" and which "retard."—M.J.

You can solve the problem by examining the contact breaker of the magneto. Notice the direction in which the contact breaker rotates and the position of the cam in the contact breaker casing. Now operate the control lever and watch the direction in which the cam moves. When the cam moves in the opposite direction to the rotation of the contact breaker the ignition is being advanced, and when it moves in the same direction it is being retarded. Thus, the fully advanced position is that in which the cam has moved as far as possible in a direction opposite to (*i.e.*, meeting) the direction of rotation of the contact breaker.

FOR A SINGLE-CYLINDER CYCLE CAR.

What maximum weight might a four-wheel miniature cycle car be if propelled by a new 4 h.p. Norton engine, air-cooled? Also is there any water-cooled cylinder that would suit this 79×100 mm. engine? What speed and consumption could I expect? Is there any engine-shaft gear on the market for chain drive, with two speeds forward and reverse? Also would a countershaft differential drive be preferable to a solid axle drive? What ratio should I require on top gear? What would be the tax on such a vehicle?—A.W.

A machine to be propelled by a 4 h.p. single-cylinder engine should not exceed 3 cwt. We do not know of any water-cooled cylinder which would suit the 79×100 mm. Norton engine; incidentally, the Norton engine of this size is rated at 3½ h.p., and not 4 h.p. With a machine of this type you might expect about 40 m.p.h., and a consumption of 70 to 80 m.p.g. So far as we know, there is no two-speed and reverse engine-shaft gear on the market. On a very small machine, especially if the track is narrow, there is no absolute necessity to use a differential. Top gear ratio should be about 5¼ to 1.

FITTING A CLUTCH.

Will you help me out of a little difficulty? I have at present a fixed gear machine, and find, owing to having lost a leg in the war, that at times I cannot exert enough of the "toddling" business to start away. I think I shall be able to fit a handle starter all right on a protruding shaft end of the timing gear. What I want to know is: (1.) Can a Triumph clutch wheel be fitted in the ordinary rear stays 6in. between the fork ends? (2.) What is the usual belt rim size of such clutch wheels, also belt line from spokes centre? (3.) Is there any plain countershaft clutch on the market?—W.P.

(1.) You would probably be able to get a Triumph hub clutch into the back forks of your machine if they are 6in. wide at the ends. (2.) About 18in. diameter. We cannot give the belt line definitely, as this varies somewhat. (3.) We do not know of any plain countershaft clutch.

SILENCER IMPROVEMENTS.

The exhaust of my 1913 Triumph is very noisy, and I am desirous of quietening it down a bit, but the silencer is so awkwardly placed that it seems impossible to get it off for alteration without removing the magneto and platform and chain drive. A long fish-tail extension pipe is fitted, and when I purchased it the machine had also a small hole about ½in. in diameter in the right-hand end plate; but I had this tapped and a plug screwed in, but it is still very noisy.—W.S.R.

You cannot remove the silencer of the 1913 Triumph without first taking off the magneto with its chain and case, as the silencer itself embodies the magneto platform. There is no reason why the machine should be excessively noisy, and we are inclined to believe that you are driving with the ignition too much retarded. No doubt the noise of the exhaust would be considerably reduced if you cut several transverse slots in the extension pipe with a hack-saw—about six or eight at 1in. intervals should be sufficient. These saw cuts will allow the pressure to escape more gradually.

Important Dates.

Sat., July 23rd—East Midland Centre A.C.U. Open Speed Trials

Sun., July 24th—Motor Cycle Grand Prix Race in France.

Sat., July 30th—Newcastle and District M.C. Open Speed Trials.

Mon., Aug. 1st, to Sat., Aug. 6th—International Six Days Trial in Switzerland.

Sat., Aug. 6th—B.M.C.R.C. Open Brooklands Meeting.

Sat. Aug. 6th—North Wales M.C.C Open Reliability Trial.

Fri., Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd A.C.U. Six Days Trial.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Mon., Nov. 28th, to Sat., Dec 3rd—The Olympia Motor Cycle Show.

CONVERTING TO COUNTERSHAFT DRIVE

I have a 1914 $2\frac{3}{4}$ h.p. New Hudson motor cycle with a hub gear which is very unsatisfactory. Can a countershaft gear be fitted to this type of frame?—T.H.E.

It would no doubt be possible to fit a countershaft gear to this machine, but, in order to do so, the rear stays would need rebuilding with a suitable bracket, another rear wheel would be required, and a special sprocket for the engine-shaft.

CARBURETTER ADJUSTMENTS ON SINGLE-CYLINDER SIDECAR.

My 1914 Triumph outfit, fitted with three-speed hub gear, has a B. and B. carburetter with adjustable needle jet. As I was not getting power and good running, I fitted a standard No. 32 jet. Even with that size it lacked power, so I fitted a 34, which gives good running, but uses a lot of petrol. The strange thing to me is that it gives more power and good running after I lowered the petrol level about $\frac{5}{16}$in. With the needle jet I adjusted it to $1\frac{13}{16}$ out of slide. Do you think I should get better results from this style of jet than the fixed standard? I could not get it to take much air, although the petrol consumption was high. (2.) What size of standard fixed jet should I use? Do you think 34 too large? (3.) Where should the petrol level be? (4.) What mileage should I get from this machine per gallon of petrol? (5.) The driving pulley is adjustable. I have it five revolutions of the engine to one of the back wheel. Do you think this is about correct? (6.) The dust cap of the carburetter is lost.—J.C.

(1.) You should get quite good results with the B. and B. needle variable jet; but there is no harm in running a fixed jet if you get the necessary amount of power. (2.) A 32 jet should be quite large enough, but there is nothing against using a 33 or 34. (3.) The level should be about $\frac{1}{16}$in. below the top of the jet. (4.) From 55 to 70 m.p.g., according to the condition of the engine. (5.) A 5 to 1 gear is quite in order on your machine. (6.) If the gauze from the air intake has been removed the carburation may be affected, and this possibly results in your having to use such a large jet.

EXPERIENCES WANTED.

"D.G." (Oxford).—Astra dynamo on Zenith machine.

"R.H." (Ludlow).—Balata or any belting other than rubber and canvas for Rudge Multi.

RECOMMENDED ROUTES.

STOCKPORT TO OAKAMOOR.—F.B.

Stockport, Macclesfield, Bosley, Harpens Gate, Leek, Bradnop, Oakamoor. Approximately $26\frac{1}{2}$ miles.

OXFORD TO NORTHAMPTON.—G.W.

Oxford, Gosford, Weston-on-the-Green, Middleton Stoney, Baynard's Green, Brackley, Towcester, Blisworth, Northampton. Approximately 41 miles.

BIRMINGHAM TO ISLINGTON.—J.G.

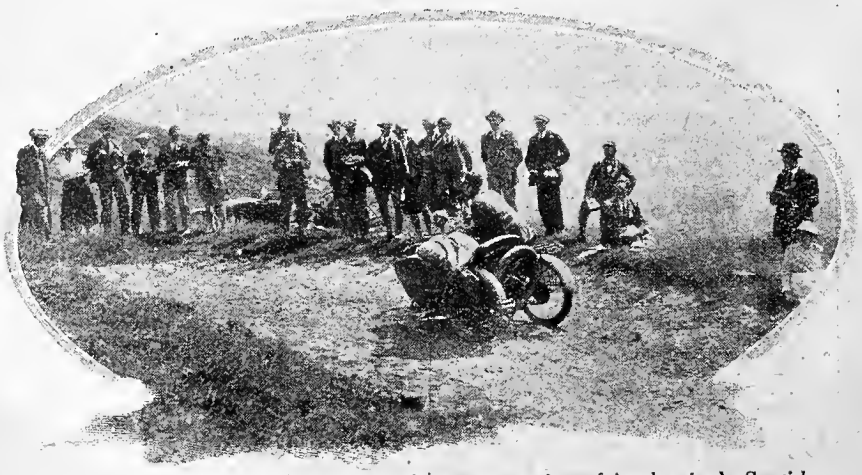
Birmingham, Stonebridge, Coventry, Dunchurch, Daventry, Weedon, Towcester, Stony Stratford, Fenny Stratford, Dunstable, Redbourn, St. Albans, Barnet, Tally Ho Corner, East Finchley, Highgate, Holloway Road, Islington. Approximately $105\frac{1}{2}$ miles.

COWES TO CHATHAM.—R.A.H.

Cowes, Newport, Ryde, Portsmouth, Cosham, Horndean, Petersfield, Liphook, Hindhead, Milford, Godalming, Guildford, Merrow, East Clandon, East Horsley, Effingham, Great Bookham, Leatherhead, Swan Hotel, Ashtead, Epsom, Ewell, Cheam, Sutton, Wallington, Waddon Station, Addington, West Wickham Common, Hayes Common, Locks Bottom, Orpington Station, St. Mary Cray, Bexley, Crayford, Dartford, Gravesend, Rochester, Chatham. Approximately $112\frac{1}{2}$ miles.

WAKEFIELD TO NORWICH.—A.E.L.

Wakefield, Doncaster, Bawtry, Barnby Moor, Retford, Tuxford, Newark, Grantham, Threckingham, Donington, Quadring, Gosberton, Sutterton, Fosdyke, Holbeach, Long Sutton, Sutton Bridge, Terrington St. Clements, King's Lynn, Hardwick Corner, Middleton, East Winch, West Bilney, Narborough, Swaffham, (edge of) Necton, (edge of) Wendling, Scarning, East Dereham, Hockering, Honingham, Easton, Norwich. Approximately 172 miles.



J. Beck (8 Royal Ruby sidecar) on one of the steepest portions of Amulree in the Scottish Six Days Trials. Observe the passenger's effort to keep the sidecar wheel down.

SPARKLETS

More Price Reductions.

N.U.T. models, now made by Hugh Mason and Co., Ltd., Newcastle-on-Tyne, have been reduced in price to £110 for the $3\frac{1}{2}$ h.p. type, and £120 for the 5 h.p. model.

The single-geared O.K. two-stroke is now thirty-eight guineas.

A Sheffield Production.

The Nesthill speedometer lamp recently described in our pages is made by E. H. Hill, Ltd., of 56, Broomhall Street, Sheffield (not Birmingham, as previously quoted).

Triumph Successes on the Continent.

In the Circuit del Pino "Gran Premio Italia," of $225\frac{1}{2}$ kiloms., a Triumph gained first position in the 500 c.c. class. It was the only machine of this make entered, and was ridden by Mr. Piero Opessi. On the other hand, in the Liège-Paris-Liège reliability trial six Triumphs started and six finished, one gaining second place.

Pride of Ownership.

The average motor cyclist's pride in the performance and record of his machine is well exemplified in a letter we have before us from D. S. Parsons, of the Essex Club, to whom we recently referred as having retired from the M.C.C. team trials. It transpires that Parsons did not ride his Matchless according to programme, but gave up his number to another competitor.

Racing Machines for the Public.

New Imperial T.T. three-speed models, similar to those which performed so well in the T.T. (winning *The Motor Cycle* cup) and in the Brooklands 500 miles race, will shortly be available in limited quantities. The prices are:- 250 c.c. model, £93; and 350 c.c., £96.

Another T.T. machine of which replicas may be obtained is the 350 c.c. Dot; price £98. It is claimed for this model that it was the first standard machine home in the Junior T.T.

For Club Secretaries to Note.

Half the prizes won by competition riders have little value from a utilitarian point of view, and this fact is now coming to be appreciated by club secretaries. Last year the Liverpool Club started the fashion of presenting spoons bearing the club insignia. The M.C.C. has offered links in lieu of medals, and the A.C.U. centres are presenting similarly useful souvenirs.

In a recent issue we illustrated the sleeve links which were presented by the A.C.U. at the close of the T.T. races to certain of the officials who rendered yeoman service in the organisation. These links were produced by the Birmingham Medal Co., of 58, Vittoria Street, Birmingham, and this firm specialises in the supply of similar attractive articles suitable for club awards.

A SPECIAL LIST OF HIGHEST VALUES AND LOWEST PRICES

1921 PASSENGER OUTFITS.	
6-7 h.p. **ARIEL** Countershaft, 3-speed gear, kick-starter, all chain-drive	£165
7 h.p. **A.J.S.** Countershaft, 3-speed gear, kick-starter, all chain-drive	£215
6-7 h.p. **B.S.A.** Model A. Countershaft, 3-speed gear, kick-starter, all chain-drive	£175
5-6 h.p. **COVENTRY-EAGLE** Special combination, 3 speeds, kick-starter	£155
3½ h.p. **COVENTRY-EAGLE** Special combination, 3 speeds, kick-starter	£125
*7 h.p. **INDIAN POWERPLUS** Cradle spring frame, clutch, kick-starter, 3-sp., full electrical equipment, speedo.	£198
6 h.p. **MARTINSYDE** Standard combination, 3-speed, clutch, and kick-starter. All chain-drive	£145
8 h.p. **MATCHLESS** Spring frame, countershaft, 3-speed gear, clutch and kick-starter. Detachable wheels and spare wheel	£185
8 h.p. **ROYAL ENFIELD** Chain-drive, 2-speed, and free engine. handle starting	£160
THE ABOVE ARE ONLY A FEW SELECTIONS FROM OUR WONDERFUL STOCK OF SIDECAR OUTFITS.	
CUSTOMERS IN WANT OF SIDECARS ONLY WILL FIND A LARGE RANGE TO CHOOSE FROM.	
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FULL DESCRIPTIVE CATALOGUES POST FREE.	

1921 SOLO MACHINES.	
3½ h.p. **ARIEL** 3-speed gear, chain-cum-belt	£100
2¾ h.p. **A.J.S.** 3-speed gear, chain-drive	£105
4¼ h.p. **B.S.A.** Model K2. 3-speed gear, chain-cum-belt	£107
4¼ h.p. **B.S.A.** Model H.2., 3-speed gear, chain-drive	£110
2¾ h.p. **HAWKER** 2-stroke, 2-speed	£60
4 h.p. **INDIAN SCOUT*** Rigid Frame, 3-speed, kick-starter, clutch and speedometer	£132
2¼ h.p. **LEVIS** Model S. 2-stroke, 2-speed, hand controlled clutch	£68
2¼ h.p. **ROYAL ENFIELD** Chain-drive, 2-speed, free engine. Model 200	£65
3½ h.p. **RUDGE-MULTI** Roadster	£85
3¾ h.p. **SCOTT** 2-stroke, 2-speed	£130
3½ h.p. **SUNBEAM** 3-speed, clutch and kick-starter, chain-drive	£155 8s.
4 h.p. **TRIUMPH** 3-speed, chain-cum-belt. Type H.	£115
5 h.p. **ZENITH** Model D. Gradua gear, clutch and kick-starter	£131
DEFERRED PAYMENTS.	

* Slightly shop-soiled.

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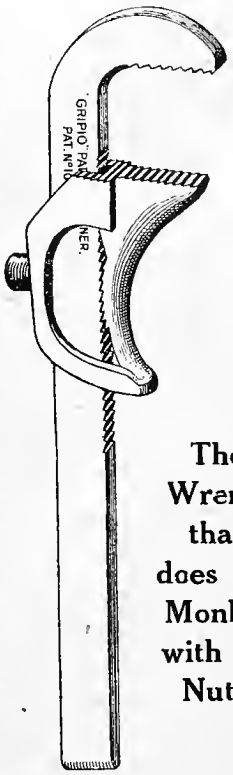

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The last ounce of power applied in a fraction of a second.

The Wrench that does not Monkey with the Nuts.

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DON'T DELAY WRITE TO-DAY

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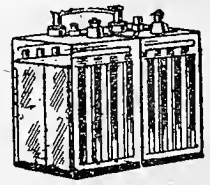
'The CITY'S OWN STORE'



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4 volt.	10 amp.	12/6
4 "	20 "	15/-
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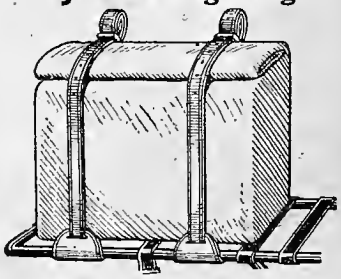

An extremely useful addition to the motor cycle. This bag is made of Brown Mail Canvas, with strong seams. Collapsible—can be carried quite flat. Absolutely Waterproof. Obtainable in two sizes.

Size 11×8, SPECIAL PRICE **10/9**

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Post Free.

Waterproof Motor Cycle Covers.

For use at Home or on the Road. Light and very compact—quite waterproof. The extraordinary response to our advertisements of theses Covers has convinced us that this is a necessity and not a luxury, and we have therefore completed the purchase of a further huge supply of Government Fabric, and shall continue to sell this wonderful line while stock lasts.

Solo size, 9ft.×6ft.
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Eyeletted at end corners.
Combination size, 9ft.×9ft. or 12ft.×6ft.
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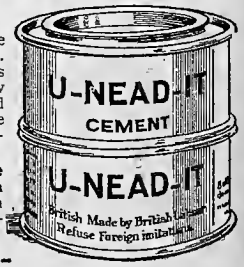
TYRE CEMENT. The finest tyre cement sold. Repairs tyres cut in a few minutes, and tyre can be used immediately after.

Motor Cycle Outfit Solution and Cement in special combination tins). Price **3/-** Post free



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By Best Makers.	In Perfect Condition.
6ft. 6in. × ¾in...	8/9
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Buy YOUR Spare Tyre NOW, and save 50%.

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26 × 2⅜ to fit 2¼	**PALMER,** cord heavy	32/9	79/-
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26 × 2½ to fit 2¼	**HUTCHINSON,** rubber studded	32/6	54/6
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EXCEPTIONAL OFFER TO MOTOR CYCLISTS!!!

We have 105 3½ h p. (Precision Eng.) Two-stroke Motor Cycles to be cleared at the drastically cut price of

The Ideal MACHINE for Solo or Sidecar.

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Fitted with 2-speed Gear, Clutch, and Kick-start.

These machines, which are BRAND NEW, are left over from our export order. They differ only from our standard model (Retailed at £80) inasmuch as they are enamelled black and are less chain cover, front stand, and Licence holder. They are also fitted with 2½in. tyres instead of 2¼in.

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Size.	Price		
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Other sizes in proportion. All standard sizes made.

Price List and Booklet "Testimony," free on request.

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about one-fourth of war-time value.
These coats are ex the Disposal and Liquidation Commission, and are guaranteed to be as described above. They are offered at above low price because they have to be sold at a time when weather conditions are unfavourable for their disposal.
When ordering, state height and chest measurements over jacket. Delivery is generally made in from 12 to 14 days, and is **guaranteed** within 21 days.
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ORDER NOW, as the supply is limited.

Enquiries from the Trade solicited.

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IN MOTOR CYCLES
NEW & SECOND-HAND MACHINES.

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That the Cox "Atmos" Single Lever Carburetters used in competitions are specially made and different from those supplied in the usual course of trade.

We therefore beg to state that every Cox "Atmos" Carburetter, whether supplied by a motor manufacturer, agent, or obtained from us direct, whether for use in motor cycle, motor car, or motor boat racing or competitions of any nature, are all standard productions taken from bulk stock, and no variation is made between those used in competitions and for ordinary touring.

THE RAPID SUCCESS OF THE COX "ATMOS"

is due to its delivery of a correct mixture at all speeds over the full throttle range, thereby keeping the engine cool, clean, and in a condition to give off full power for a prolonged period. Hence the wonderful acceleration, flexibility and power developed. The Cox "Atmos" also enables the rider to tune his engine to the last degree.

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Leaflet containing full particulars and prices will be sent on application.

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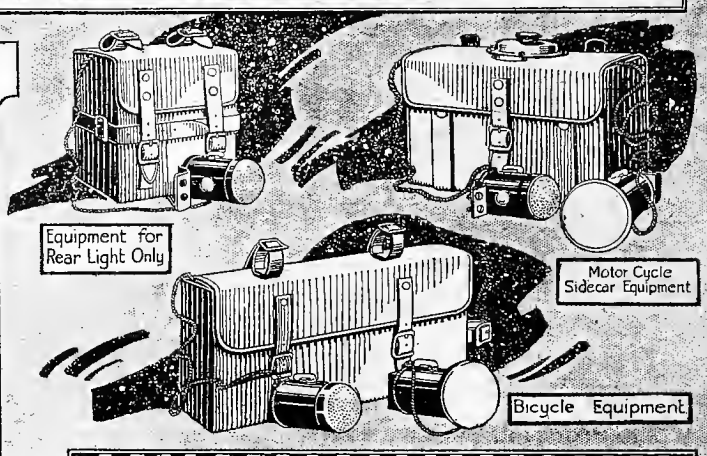

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St. James's 18

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SPECIFICATION: B.S.A. 6/7 h.p. Special Taxi Model. Magdyno Electric Lighting with Inside Roof Light, etc. As Licensed in Birmingham, Brighton, Portsmouth, etc.

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DOUGLAS	ZENITH	CALTHORPE
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P. & M. Combination	£130	10	0	JAMES 4½ h.p. Combination	£140	0	0
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DIAMOND, single-speed	—			CALTHORPE, 2-stroke, 2-speed	—		

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1921 MORGAN, dynamo lighting, hood, cover, watch speedometer, dash lamp, spring gaiters, Klaxon horn, electric hooter, and many spares	£240	0	0	1921 TRIUMPH Junior and accessories	£63	0	0
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1921 DOUGLAS 4 h.p. Combination, expensively fitted up as new	£165	0	0	1921 ENFIELD Combination, Lucas lighting, speedometer, 2-seater Sidecar	£150	0	0
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BRAND NEW 1921 MODELS.

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2½ h.p., 2-stroke, single speed,

38 Gns.

ALSO 2-SPEED MODELS.

Matchless

Model H Combination,

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ALSO 2-SEATER & SPORTS IN STOCK.

Delivered by road up to 150 miles free of charge.

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May we send you Full List of New and Second-hand Machines?

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Deal direct with customers for **EASY PAYMENTS,** and not through a financial house. Terms: **ONE-FIFTH** down and the remainder in twelve monthly instalments. **EXCHANGES** also arranged with the balance payable by extended payments. Write, 'Phone, or Call.

All the best makes supplied promptly. Below is a selection taken from our list.

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ARIEL Combination, 5-6 h.p.	£165	0
ARIEL Combination, 4½ h.p.	£150	0
WOOLER, 2¾ h.p., T.T. model, all on	85 gns.	
WOOLER, 2¾ h.p., touring model, all on	£90	18
RUDGE, 3½ h.p., I.O.M. model	£85	0
CHATER-LEA Combination, No. 10	£160	0
DOUGLAS, 2¾ h.p., clutch, and kick start, all on	£105	0
DOUGLAS, 4 h.p., all on	£130	0
DOUGLAS 4 h.p. Combination, all on	£170	0
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TRIUMPH, 4 h.p., chain drive	£125	0
TRIUMPH, 4 h.p., Model H	£115	0
TRIUMPH 4 h.p. Combination	£165	0
ROYAL ENFIELD, 2¼ h.p.	£65	0
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ROYAL ENFIELD Combination, 8 h.p.	£160	0
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B.S.A., 4½ h.p., Model K2	£107	0
B.S.A., 4½ h.p., Model H2, chain drive	£110	0
B.S.A. Combination, 6-7 h.p., dynamo	£195	15
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OUGLAS 2¾h.p., 2-speed, uncrated August, 1919, very powerful and as new, fully equipped; genuine in; no reasonable offer refused.—Woodridings, nor Rd., Sutton, Surrey. [1180

OUGLAS 1915 2¾h.p., 2-speed, re-enamelled, overhauled, new extra wide mudguards, tax, all on, rs' colours; £47/10.—Tilley, Brent Works, Hendon, 4. 'Phone: Finchley 280. [X5509

17 Douglas 4h.p. Combination, overhauled, new C.B. body, Nov. 20th, fully equipped, insured, paid, owner away, cash wanted; £65.—Wells, Cen- Garage, Dovercourt, Essex. [9715

OUGLAS 1921 T.T. 2¾h.p., 2-speed, complete with Binks carburetter, lamps, horn, etc.; £80, or near owner requires sidecar machine.—Bligh, Elec- n, 2, North Lane, Canterbury. [9208

OUGLAS, 2¾h.p., 2-speed, 1920, engine recondi- tioned, re-enamelled, replated, electric lamps, spares, tax paid, genuine machine throughout. eniogs, 53, Ruskin Walk, S.E.24. [9410

p. Douglas Combination, 1918, 3-speed, clutch, kick start, brand new sidecar, condition splendid ughout; a bargain, £88, or offer.—Blackmore, 769, ford Rd., Manor Park, London, E. [8250

21 2¾h.p. Douglas, 3-speed, clutch, K.S., lamps, horn, tools, speedometer, mileage 700, tax insurance; £100, or nearest offer; leaving try.—Manuel, 1, South St., Crewe. [9642

AR Model 2¾h.p. Douglas, 2-speed, excellent condition, Dunlops, lamps, horn, pump, tools, paid; first reasonable offer secures; evenings.— South End Rd., Hampstead, N.W. [9841

MEDIATE Delivery of any Douglas Model; cash or deferred payments; book your order now and vi disappointment later.—Burlington Motors, Ltd., h Side, Clapham Common, S.W.4. 'Phone: Brix- 2417. [0505

20 4h.p. Douglas Combination, mileage under 4,000, speedometer, lamps, Easting, luggage er, pillion seat, spare tyre, tools, etc., perfect ition; trial by appointment; £125.—21, King's Leytonstone, E.11. [9641

OUGLAS Combination, 4h.p., late 1919, as new, electric lighting, screen, pillion, luggage grid, ion, new spare belt, valve complete, and chain as, etc., tax paid, and fully insured to 1922; 15, or near offer.—Winter, 234, Croxted Rd., ne Hill. [9643

AL 1921 Douglas Models, 2¾h.p., 4h.p., and new improved W.D., at £85, all fully equipped; trade plied. Extended payments taken at one one-fifth on, remainder in 12 equal monthly payments; ex- nges arranged.—Wauchope's, 9, Shoe Lane, Fleet t London. [4538

ECIAL 2¾h.p. Douglas, 1915, hill-climb winner, 2-speed, kick start and clutch, Claudel-Hobson aluretter, special low riding position and saddle nsion, new tyre, belt, and chain, all accessories, osed; £50; not W.D. machine.—Derrington, Graf- Rd., New Malden. [1186

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21 2¾h.p. Douglas, 3-speed, K.S. and clutch, engine No. 47791, Lucas lamps and horn, A.K. grips, complete equipment of accessories and es, mileage 3,000, new rear tyre, an exceptional ne, in perfect mechanical condition; £95.—Lloyd, oms and Excise, Stourbridge. [9454

TE 1920 2¾h.p. Douglas, 3-speed, clutch, kick start, lamps, horn, tools, spares, speedometer, discs, aluminium number plates, tax paid, insured, atched, engine perfect, very smart, owner buying cost £130; best over £82 secures.—Johnson, 23, conmont Av., Waterloo, Liverpool. [9545

Duzmo.

EAPEST 3½h.p. machine on the market.—1921 Duzmo models now available. Distributing agents ted for vacant counties.—John Wallace, Cedar Road ks., Enfield Highway, Middlesex. [9855

ICESTER and County.—Sole distributing agents for Duzmo sporting overhead valves motor cycles, fast; 3½h.p. single speed, speed gear, and 8h.p. els. 3½h.p. models in stock, £84, and fitted Philipson pulley £91.—Naylor's Garage, Anstey, ester. 'Phone: 52. [9292

Edmund.

OURLAY, the spring frame Edmund agent, Fallowfield, Manchester. [6093

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1921 **CALTHORPE,** J.A.P. 2¾ h.p., Enfield 2-speed and K.S.	£73
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1921 **CALTHORPE,** 2-st., 2½ h.p., single-speed	43 Gns.
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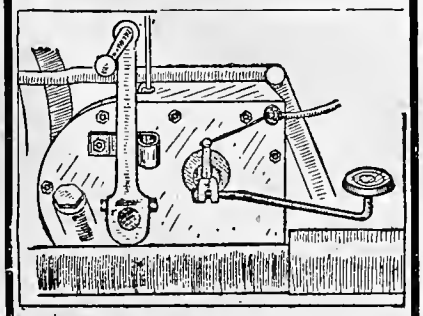
(This machine has only been used for demonstration purposes.)



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6 h.p. Enfield Combination, excellent running order; £65.—Hopkins, New St., Ledbury. [X5651

ONE 6h.p. Enfield Combination, licence paid; £80.—112, New King's Rd., Fulham, S.W.6. [9496

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD 2¼h.p. Twin, Bosch mag., good condition; £20.—Cann, Essex Rd., Romford. [9400

ENFIELD Combination, 1921, absolutely new; £160; evenings.—156, Browning Rd., East Ham. [9458

NEW 1921 Enfield Combination in stock; £160.—Bounds' Garage, High Rd., Kilburn, N.W. [9274

ENFIELD Combination, 6h.p., 1915, late, excellent condition; £90.—37, Wickham Lane, Plumstead. [9582

ENFIELD 6h.p. Combination, 1916, excellent condition; £95.—C. J. Mead, 176, Berkhamstead Rd., Chesham. [9515

ENFIELD 1917 Combination, dynamo lighting; £110; offers.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.1. [9501

ENFIELD 6h.p., 1917, good condition; £75, or exchange Triumph.—Buckland, Plough Lane, Waddon, Croydon. [9337

ENFIELD 2¼h.p. 2-stroke, 2-speed, 1921, in stock, £65; kick starter £5 extra.—Rivett, 236, High Rd., Leytonstone. [5951

1919 Enfield, 2¼h.p., 2-speed, splendid condition, any trial, lamps, horn; £35.—11, Elms Rd., Dulwich Village. [8233

1920 Enfield 8h.p. Magdyno Combination, wind screen, tax paid; £140, or near offer.—23, Hamilton Rd., Reading. [9981

ENFIELD 1921 2-stroke, done 10 miles, tax paid, guaranteed; £55, quick sale.—36, New End Sq., Hampstead, N.W. [9547

6 h.p. Enfield Combination, excellent condition, fully equipped, tax, insurance paid; £120.—7, Cayley Rd., South Hackney. [9181

ENFIELD Combination, 8h.p., late 1915, dynamo lighting, fully equipped; £125, or offer.—70, Rosebery Av., Manor Park. [9445

6 h.p. Enfield Combination, good condition, tax paid, all lamps; price £65.—'Phone: 2431.—63, South End, Croydon. [9650

ENFIELD Combination, 1914, 6h.p., 1920 cylinders, pistons, condition as new; seen after 7; £80.—9, Bridgeman Rd., Teddington. [9296

ENFIELD 1920 Combination, perfect condition, hood, screen, lamps, horn, taxed; £118.—Clark, 7, Exhibition Rd., South Kensington. [9192

ENFIELD, 8h.p., latest 1921 combinations, in stock; £160; exchanges arranged.—Eagles and Co., 275, High St., Acton, London. [1095

ENFIELD Combination, 8h.p., Lucas dynamo lighting, used 3 weeks only, owner bought car; £175.—Pollard, Broomfield Rd., Chelmsford. [1047

3 h.p. Enfield Twin, 1915, in splendid mechanical condition, excellent appearance; seen Saturday, Sunday, Monday by appointment.—8, Hadyn Av., Purley. [9245

ENFIELD 1921 2¼h.p. Model, fully equipped, tax paid, indistinguishable from new; £60.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X5665

1914 6h.p. Enfield Combination, including box carrier, new tyres, 700×80, pillion seat, good condition; £95.—Trigg, Newington, Sittingbourne. [9360

ENFIELD Combination, late 1917, Magdyno lighting, hood, screen, perfect condition, tax paid, any trial; offers.—36, Regina Rd., Southall, Middlesex. [9839

1920 Enfield 6h.p. Combination, Lucas dynamo lighting, Easting screen, Lucas horn, etc., tax paid; £135 cash.—Mercer, Mill House, Capel, Paddock Wood. [9901

1921 8h.p. Enfield Combinations, with or without lighting, in stock; £182 and £160.—D. J. Shepherd and Co., Enfield Highway. Tel.: Waltham Cross 31. [0341

ENFIELD, 1920, 2¼h.p., electric lighting, speedometer, fully insured, licensed, little used; £60; appointment. — Newell, 119, High St., Harlesden, N.W.10. [9932

S.E. London Service Depot.—In stock 8h.p. Enfield combination, £160; tandem sidecar, £164; 2¼ h.p. 2-stroke, £65.—Cleare and Co., 125, High St., Woolwich. [5201

3 h.p. 1917 Royal Enfield, 2-speed, K.S., lamps, horn, speedometer, spare valves, new condition; £52.—W Howe, The Lord Kitchener, Coppermill Lane, Walthamstow. [9760

6 h.p. Royal Enfield Combination, in splendid condition, fully equipped, with C.A.V. lighting set; any trial given; £95, tax paid.—47, Kingsley Rd., Wimbledon, S.W.19. [9276

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Royal Enfield models from stock, combinations and lightweights, from £65; supplied on our easiest of easy payment systems. [4539

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Enfield.

1917 Enfield Combination, electric and acetylene lamps, hood, screen, Tan-Sad, licensed, excellent condition; 90 gns.—Edwards, 50, Harrington Rd., South Kensington, S.W.7. [7955

ENFIELD Combination, total mileage 4,300, complete with lamps, wind screen, speedometer, horns, etc., in first-class condition; price £120.—A.B., 62, Southwark Bridge Rd., S.F. [9203

1921 Enfield 2-stroke, 2-speed, speedometer, lamps, etc., licence and 10 months' insurance, cost over £80, not done 100 miles; best offer over £65.—50, Forest Drive West, Leytonstone. [8650

ROYAL ENFIELD, 6-8h.p., parts new, frame, tank, complete handle-bars, footboards, complete foot brake, £10/10; wheels and other parts in stock.—Evans, Factory, Blackwood, Mon. [9998

1921 Enfield Combination, 6h.p., Lucas dynamo lighting, speedometer, wind screen, hood, luggage carrier, etc., tyres good, condition excellent; trial; £140.—209, Forest Rd., Walthamstow. [9683

1919 Enfield Combination, 6h.p., Bosch mag., electric light, hood, tools, speedometer, etc., new Palmer cord tyres, condition as new; any trial; £130, or nearest offer.—Clarke, 31, Amelia St., S.E. [1192

6h.p. 1915 Royal Enfield Combination, lamps, tools, Bluemel's wind screen, Klaxon horn; this combination is in practically new conditon, guaranteed in absolutely first-class running order and ready for any distance tour; £90.—Motorist, 49, Stanley St., Rochdale. [X5704

ENFIELDS.—The cheapest twin on the road. We are North London agents, and can supply from stock standard models £160, electric £182, cash, or deferred payments. All spares in stock. Trade supplied.—Jones' Garage, Muswell Hill, and at Woodside Parade, N. Finchley. [0380

WANTED, purchasers for any model of new 1921 Royal Enfield motor cycles and combinations for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0645

1921 Enfield Combination, electric lighting, hood and screen, speedometer, Klaxon, child's seat, spares, and tools, 68 m.p.g., mileage 1,400, in excellent condition, and open to any examination; £185, or exchange with cash for 1921 G.N.; seen by appointment.—Searl, The Glen, Putney Heath Lane, S.W.15. [9624

Excelsior.

1920 Britisb Excelsior, Villiers 2-stroke, clutch and kick starter, fully equipped, tax paid; £45.—114, Brixton Hill, S.W. [9732

EXCELSIOR, 8h.p. J.A.P., 2-seater sidecar, screen, electric light, Klaxon, tools, good condition; a bargain. £100.—Cargill, 104, Northumberland Park, Tottenham. [9772

F.N.

F.N., 4-cyl., in good condition; £18.—14, Phœnix St., Euston, N.W.1. [9619

F.N. 5-6h.p., Bosch, B. and B., fast and powerful, ride away; £20.—Kidd, 6, John St., Mayfair, W.1. [9298

F.N. 1920 7h.p. Combination, hood, screen, excellent condition; £140.—125, Princes Parade, Church End, Finchley. [9611

F.N. 1920 7h.p. Combination, hood, screen, electric lighting, Cowey, etc.; £140.—172, Brownhill Rd., Catford. [8417

F.N 4-cyl., enamelled blue, newly plated, tyres new, all on, tax paid; £38.—Barry, 44, Rodwell Rd., E., Dulwich. [9824

F.N., 4-cyl., m.o.v., shaft drive, tax, spare cylinder and valve; £38, first cash secures.—Neal, 38, Bridge St., Derby. [9387

F.N. Combinations in Stock; reduced price, £188; call for a trial run.—Grimes and Co., 18, Bruton Place, Bond St., W. Mayfair 4792. [6071

F.N., 5-6h.p., 4-cyl., 2-speed, hand clutch, in good mechanical order; £42.—Butterworth's Garage, 64, Mill Lane, Brixton Hill. 'Phone. Streatham 2813. [9721

£18.—F.N 2½h.p., variable gear, Bosch, good tyres, sound, reliable, tax paid, horn, really good, splendid condition; genuine bargain; trial.—89 East Hill, Wandsworth. [9609

IMMEDIATE Delivery of any F.N. model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0500

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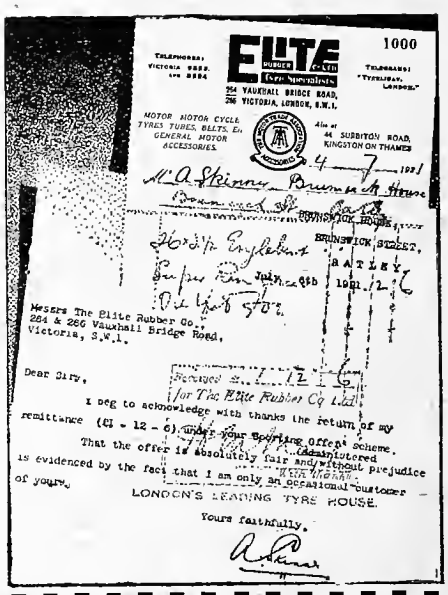
3h.p. Grandex 4-stroke, 2-speed countershaft, hand clutch, complete lighting set, horn, etc., tax paid, enamelling and plating absolutely as new, real smart and fast, beautiful machine, price £55.—Dentistry, 769, Romford Rd., Manor Park, London, E. [9541

Harley-Davidson.

HARLEY-DAVIDSON Combination, 7-9h.p.; £95.—Hopkins, New St., Ledbury. [X5652

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577



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HARLEY Combination, new, any trial; seen 6.30 p.m.; £115; exchange late 4h.p. com tion.—9, Yew Grove, Cricklewood, N.W.2.

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1920 Harley-Davidson 4h.p. Combination (Hend sidecar), all accessories, perfect condition; or near offer.—Apply, Pavilion Garage, Sloane Sq don.

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HARLEY-DAVIDSON, 1919, magneto model touring sidecar, mileage 3,900, lamps, horn, ing; £130; evenings.—Challen, 60, Dyne Rd., Br bury, N.W.6.

HARLEY-DAVIDSON, 1919, with 1921 bram Millford 2-seater to match, cost £50; car; sacrifice £125, perfect.—Doctor Gasteen, Gamm Sandy, Bedfordshire.

HARLEY-DAVIDSON 1920 4h.p. Model, with sporting sidecar, electric lighting, excellen dition; £175.—Parker's, Bradshawgate, Bolton 245, Deansgate, Manchester.

1918 Harley-Davidson 7-9h.p., electric model, hauled and repainted, new tyres, screen, horn, etc., magnificent combination, tax paid; £ 306, High Rd., Lee, S.E.13.

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HARLEY-DAVIDSON 1919-20 Combination, Sad, dynamo (Lucas) lighting, all tyres smart appearance, and in perfect condition; £150, —Colonial Motor Co., 104a, Finchley Rd. Ham 7822.

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AND New Lea-Francis, 4h.p. M.A.G. engine, un-ised, unridden, the last opportunity to obtain a new machine at enormous reduction; cash price —Rhosha Motor Co., South St., Romford. Tel.: [1048

Levis.

N GUY, Weymouth.—Levis 1921 models in stock; £60. [0554

.p. Levis, in good order; £30, offers.—32, Birmingham Rd., Stratford-on-Avon. [X5636

VIS 4½h.p. Flat Twin Engine, mag., carburetter; £15.—2, Bassingham Rd., Earlsfield. [9787

VIS Popular, 2¼h.p., with lamps, good condition; £30.—Hale, Riverside, Whitchurch, Hampshire. [9330

RIL WILLIAMS for immediate delivery of all models Levis.—Chapel Ash Depot, Wolverhampton. [X3819

21 Levis, tax, lamps, all as new; £50.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead [1026

17 2½h.p. Special Levis, Enfield 2-speed gear, perfect; £45; take sidecar.—194, Baker St., En- [9568

VIS, 1916, good condition, lamps, Klaxon, 2 new spare tyres, licensed; £35, or offer.—Lavant, gton Rd., Hendon. [9385

21 Levis 2¼h.p., 2-speed, purchased new May, ridden 25 miles, perfect; what offers?—7, The ie, Claygate, Surrey. [9316

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VIS.—Sole Walsall agents; special exchange and deferred payment terms; immediate delivery.— les', Walsall Garage, Walsall. [2423

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L.M.C.

M.C. 4½h.p. 1919 Combination, 3-speed, K.S., lamps, licensed, perfect condition; £80.—153, well Rd., Peterborough. [9251

Martin.

14 Martin, with 1919 3½h.p. o.h.v. J.A.P. engine, not done 500 miles, 2-speed, new tyres, sed; £52.—Edwards, 50, Harrington Rd., South ington, S.W.7. [1218

Martinsyde.

21 6h.p. Martinsyde Combination from Stock; £145.—Morriss and Co., Ltd., 139, Finchley N.W.3. [9946

ARTINSYDE Combination, in stock; £145; order now.—The Moreton Garage, 2, Moreton Terrace s, Pimlico, S.W. [6495

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ATCHLESS Combination, 8h.p., 2 speeds, V.S.; £55.—43, Russell Av., Wood Green. [9670

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MATCHLESS M.A.G. Combination, 3-speed, C.B. sidecar, tax paid; £88.—234, Belsize Rd., N.W. [9390

1921 Matchless, all accessories, registered; £175.— Smith, 268, Lavender Hill, Clapham Junction. [1216

MATCHLESS 6h.p. Coachbuilt Combination, splendid condition, tax paid; £80.—4, Stanton Rd., West Croydon. [9176

1921 Matchless, for immediate delivery.—Brixton and district agent, Arthur G. Daw, 114, Brixton, S.W. [9730

MATCHLESS 8h.p., double-seater sidecar, excellent condition; £100 or near offer.—120, Battersea Bridge Rd., S.W.11. [9651

1921 Matchless Magdyno Combination, brand new, unused, unregistered, owner must sell; £180.— 41, Madrid Rd., Barnes, S.W. [6786

MATCHLESS 1921, delivery from stock; exchanges; £185.—Geo. Smith (opposite Arding and Hobbs), Lavender Hill, Clapham Junction. [4993

MATCHLESS Combination, 8h.p. J.A.P., recently overhauled, plate, enamelled, tax paid; £55.—16, St. James's Rd., Victoria Park, E.2. [9424

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185. —A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS Combination, 8h.p. o.h.v. J.A.P. engine, 2-speed, all on, good condition; £60; after 5.—King, 10, Langley Lane, Vauxhall S.W.8. [9543

MATCHLESS, 1917, M.A.G., electric, Tan-Sad, hood, screen, just re-enamelled, splendid condition; £120. —39, Kyrle Rd., Clapham Common, S.W.11. [9780

MATCHLESS 8h.p. Combination, Binks, hood, screen, tax; any trial; £85.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9690

1921 Matchless, all models for immediate delivery, exchanges and deferred payments if required.— Edwards, 50, Harrington Rd., South Kensington. [6784

MATCHLESS 1920 Model H Combination, spare wheel, screen, horn, 3 lamps, guaranteed; £135; tax paid.—Featherstone, Woodfalls, Sidley, Bexhill-on-Sea. [9768

MATCHLESS Late 1914 Combination, 8h.p. M.A.G., complete with all accessories and spares, splendid condition; £110, or near.—Pierce, 3, Hillcrest Rd., Acton, W.3. [8846

1921 Matchless Combination, M.A.G., Lucas dynamo lighting, double-seater, everything on, lavishly equipped; £185, bargain.—150, Upper Richmond Rd., East Sheen. [9613

1920 Matchless H2, M.A.G., Lucas Magdyno, hood, speedometer, sidecar step, fully insured June 1922, perfect; £167.—McBain, 19, Henleaze Rd., Bristol. [9881

MATCHLESS H., Nov., 1920, mileage 200, absolutely as new, used few times only, horn, screen, spare wheel, tools; £150, or offers.—Bickmore, Cain's College, Cambridge. [9815

MATCHLESS Combination, 5h.p. J.A.P. twin, 1914, 2-speed countershaft, Bosch, new tyre back, wind screen, hood, sprung wheel sidecar; £90.—44, Dunvegan Gardens, Eltham, S.E.9. [9180

F.O.C.H. have a 1920 Matchless Combination, dynamo, small mileage, hood, screen, luggage grid, spare wheel, tax paid; bargain.—5, Heath St., Hampstead (near Hampstead Tube Station). [9380

LATE 1920 8h.p. Matchless Combination, dynamo lighting, spare wheel, wind screen, sidecar step, legshields, trip speedometer, all tools, etc., low mileage; £155, or near.—436, Whitehorse Rd., Thornton Heath, S.E. [9703

MATCHLESS Combination; £185; best value on market; spring frame, detachable wheels included.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. Kensington 4096. Exchanges arranged. [9194

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MATCHLESS 8h.p. Twin J.A.P. Combination, 2 speeds, chain drive, all accessories, wind screen, luggage grid, excellent condition; £98; tax paid.—Eagles and Co., 275, High St., Acton, London. [1096

SEE This.—Victory model 1918-19 Matchless combination, interchangeable wheels, spare wheel, horn, screen, lamps, mirror, speedometer, etc., any trial; £93.—136, Dalmally Rd., Croydon. [9884

1920 Model H Matchless Combination, dynamo lighting, all spares, perfect condition, any trial or examination; £170, or exchange small car, particularly G.W.K. — Dillon, 133, Regency St., Westminster. [9912

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MATCHLESS Model H., J.A.P. 8h.p., Lucas Magdyno, very little used, perfect condition, rear drive speedometer, electric horn, watch, hood, screen, spare wheel, luggage grid, legshields, electric light for sidecar, any trial, new 6 months ago; £185.—F., 47, Plashet Lane, East Ham. [9434

THE Matchless Agent, Sam E. Clapham. 'Phone: Greenwich 751. Spend your holidays the Matchless way; free from trouble or care; ride with pleasure and comfort, secure satisfaction and service; immediate delivery all models.—Note address, write, call, or 'phone, Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [1107

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

MATCHLESS-M.A.G., late 1914, 3 speeds, stored 4 years, recently thoroughly overhauled, plated, and enamelled, perfect order, double-seater sidecar, 2 wind screens, double hood, electric lighting, Tan-Sad complete, Binks carburetter, Bosch mag., Jones speedometer, full tools and spares, ideal family outfit; price £130.—Tyler, Lynton House, Ewell, Surrey. [9591

MATCHLESS 1921 Model H 8h.p. M.A.G. Combination, used 700 miles, new condition, unscratched, Lucas Magdyno set, guaranteed faultless, showroom condition, handsome turn-out, speedometer, tools, wind screen, hood, spare wheel, tyre, tax paid; trial any time; bargain, £190.—Stepney Garage, 77, Salmons Lane, Commercial Rd., Stepney, London. [9886

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MAXIM-DALM, Dec., 1920, 3h.p. 2-stroke, absolutely new, Amac carburetter, E.I.C. mag., Albion 2-speed, Hutchinson tyres, accessories, £52; ditto, with clutch, kick start, £58/10.—224, Pentonville Rd., London, N.1. [4292

Metro.

METRO-TYLER 2½h.p., 2-speed, brand new; £50 to clear.—Saunders Garage, Parade, Golders Green. [8190

METRO-TYLER, 2¾h.p., 2 speeds, perfect condition; £35, or offer.—71, Poole's Park Rd., Finsbury Park. [9916

METRO-TYLER, 2½h.p., 2-speed, all enclosed, S Type Model, complete with smart float sidecar, very porty outfit; £65.—Cecil House, Hendon Lane, Finchley. [9845

1920 Metro-Tyler, 2 speeds, discs, original tyres, splendid condition; any trial; as new; genuine bargain, £38/10; exchange.—89, East Hill, Wandsworth. 'Phone: Battersea 443. [9635

1919 (Nov.) Metro-Tyler, 2-speed, all red model, discs, in top-hole condition, little used, lamps, licence, insurance paid; £54, or near offer.—45, Knighton Rd., Forest Gate, E.7. [9767

METRO-TYLER, May, 1921, 2-speed, clutch, and kick starter, De Luxe sports sidecar, Lucas electric, hood, wind screen; a snip, £85.—Bailey, Ashley Rise, Walton-on-Thames. [8376

Minerva.

2¼h.p. Minerva, W.T. Bosch mag., smart lot.—44, Thorpe Rd., Kingston, Surrey. [9861

£27.—Minerva 6h.p., special model, tax paid.—Chapman, Mendham, Harleston, Norfolk. [9161

3½h.p. Minerva, Matchless frame, Bosch, Senspray, new horn, bars, engine parts, etc.; £30, or offer.—Hurst, 16, Alloa Rd., London. [9397

2¼h.p. Minerva, new mag., B. and B., very low and light, in good running order; £14, offers.—32, Birmingham Rd., Stratford-on-Avon. [X5639

Mohawk.

SHOP-SOILED Mohawk Combination, 3½h.p. K.D. engine, 3-speed, kick start, hand clutch; £130.—2, 4, 6, Alexandra Rd., N.8. [8281

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or travel in stuffy trains when for 38 guineas you can buy a new 1921 Mark IX. 2½ h.p. O.K. motor cycle

which will transport you in comfort anywhere at a minimum cost. This machine can be supplied on payment of £10, and 12 equal monthly instalments of £2 14s rod. Other models, 48 gns., 57 gns., and 64 gns. Catalogue and order form post free on application.

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1921 New Hudson, Ace, racing, 2-stroke, 2 spares.—Keene, 99, Uttoxeter New Rd.,

NEW HUDSON 1914 3½h.p., 3-speed, good dition; first offer, £47/10.—Geo. Fern, 92, St., Rugby.

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6h.p. New Hudson Twin Coachbuilt Combi 1915, 3-speed, clutch, kick start, chain-cu overhauled, complete with lamps, horn, speedo wind screen, and luggage grid; a bargain, Common, Station Hill, Kidderminster.

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2¾h.p. New Imperial, 2-speed, reduced to ditto, with clutch and kick starter, red £77.

8h.p. Combination; £168; in stock for im delivery; easy payments.—Harrods, Ltd Brompton Rd., London.

NEW IMPERIAL 8h.p. J.A.P. Combinatio order; trial; £90.—177, Westminster Rd., S.E.1.

NEW IMPERIAL 1918 2¾h.p., 2-speed, horn; £50.—Fairmount, Brockley View, Hill, S.E.23.

1920 New Imperial-Jap, 2-speed, as new, £52/10.—Goad, 122, Maida Vale, W.9. Hampstead 1353.

NEW IMPERIAL 1920 2¾h.p., all acc condition as new; £58.—Healey, Ban Kearsley, near Bolton.

1920 8h.p. New Imperial, 3-speed, all-chai perfect condition, small mileage; £125, t —131, Crescent Rd., Middlesbrough.

NEW IMPERIAL, 8h.p., 1918, Montgome Family sidecar, tax paid; nearest £1 trial.—60, Cardigan Rd., Bow, E.3.

NEW IMPERIAL Combination, 1917, 6h.p. full accessories, spares, exchange lig part or sell.—Rees, 65, Clarendon Rd., Southse

1919 (Nov.) 8h.p. New Imperial Combin speeds, Easting, lamps, spares, tax paid condition; any trial; £90.—23, Station Rd., Farnworth, nr. Bolton.

NEW IMPERIAL Combinations at 160 worth looking at. We have them in Newnham Motor Co., 223, Hammersmith R 'Phone: Hammersmith 80.

BARGAIN.—1919 New Imperial-Jap, 2¾ speed, clutch, all accessories, several spa trial; £60, or near offer, quick sale.—Pickett, Court Rd., Tunbridge Wells.

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W IMPERIAL, 1919, 2¾h.p. J.A.P., all accessories, excellent condition, about 1,000; £55, offer.—42, Lillian Rd., Castlenau, Barnes. [9823

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W IMPERIAL 8h.p., 1920, tandem sidecar, wind screen, hood, luggage grid, 2 spare tyres, engine es, Lucas lamps, Klaxon, speedometer, tools; 0.—Scarle, 23, Mandeville Rd., Enfield Wash. [9942

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W RYDER-J.A.P., 2¾h.p., 2-speed, kick starter, clutch, 1921 (February); cost £78, accept £55; er power required.—6, Firs Av., Ripon. [9399

W RYDER de Luxe 2¾h.p., kick starter, 2-speed gear, list 76 gns., slightly shop-soiled; 60 gns; red terms arranged.—Midland Garage, 7, Broad Birmingham. [7353

New Scale.

W SCALE Combination, 3½h.p. 2-stroke Precision, Burman countershaft, lamps, licence, not 500 miles, perfect; £85.—Watton, 108, Upper Mary's Rd., Bearwood, Birmingham. [9586

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EMIER Motor Co. for 1921 Nortons.

Y Model Norton delivered to your address, carriage paid within 24 hours; easy payments only extra.—The Premier Motor Co., Aston Rd., Birgham. [0625

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ORTON Motor Cycles.—Can deliver anywhere, early dates.—Kelly, Bachelor's Walk, Dublin. [4029

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ORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. one: 72. [5005

ORTONS 16H and Big Four, and B.R.S. specials from stock.—Frank Whitworth, Ltd., 139, New Birmingham. [X4160

ORTON.—Sole Walsall agents; exchanges or deferred payments.—Maudes' Motor Mart, Walsall age, Walsall. [2421

3 GNS.—Norton, 1916, B.R.S., Philipson, Stewart, lamps, etc.; Baby Levis, £32.—Weybourne age, Farnham, Surrey. [9858

AY, 1921, Big Four Norton, Henderson sidecar, as new, all accessories; £150, or near offer.—ves, 43, Lithos Rd., Hampstead. [9561

ORTON 16H 3½h.p., 3-speed, immediate delivery from stock, £132; Big Four model, £135.—P. J. s, 81-91, John Bright St., Birmingham. [X5633

20 Big Four Norton Combination, equipped, spares, excellent condition; any examination; £135, or offer.—Gore, 65, Bath Rd., Wolverhampton. [X5675

21 (June) 16H Norton, hardly used, mileage about 100, beautiful engine; £128, or exchange mo model A.B.C.—Kennedy, Hascombe, Surrey. [9532

21 Norton, 3-speed, fully equipped, perfect condition; £100 for quick sale; owner touring pre-tory returning abroad.—W. Carey, Poste Restante, Riff. [9217

20 Big Four Norton Combination, Henderson sporting sidecar, all lamps, speedometer, Klaxon and ssories, tax paid; any trial; £120.—Luff, Woodbury se, Axminster, Devon. [9876

ORTON 1916 3½h.p., combination or solo, Sturmey 3-speed, speedometer, horn, enamel and plating excellent condition; offer.—1, Lunham Rd., er Norwood, S.E. [7480

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ORTON 1921 Combination, Big Four, dickey seat on sidecar, fitted with every conceivable accessory, ctly as new; £175; deferred terms can be arranged. land Garage, 7, Broad St., Birmingham. [8142

20 Big Four Norton, on road Jan, 1921, H.H. electric lighting, Cowey, Sturmey-Archer gear, Henderson sidecar, Cameo, only done 1,500; 5.—Walker, Daisy Mead, Court Rd., Horfield. [9883

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Palmer Cord	32/6
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26 × 2½ to fit 2¼ Rims.	
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Hutchinson Rubber-studded	36/-
Skew Heavy Ribbed	37/6
650 × 65	
Heavy Rubber Non-skid	26/6
Wood-Milne Special	43/6
*Miche in Steel-studded	52/6
*Clincher Steel-studded	47/6
*Wood-Milne Steel-studded	45/-
Burnett Grooved	41/9
Dunlop Steel-studded	55/-
*Voiturette fitting.	
700 × 80 to fit 650 × 65	
Wood-Milne Special	50/-
Wood-Milne Extra Heavy	58/-
Dunlop Steel Studded	—
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Spencer Moulton Ribbed	60/-
Beldam Bulldogs	60/-
Avon Sunstone	60/-
28 × 3	
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Norton.

19 21 Big Four Norton Combination, Lucas lamps, wind screen, Tan-Sad, numerous spares, tyre, etc.; exchange 1921 2¼h.p. A.J.S. or Sports Sunbeam, or sell nearest £150.—Brandreth, Confectioners, High St., Biddulph. [9758

NORTON 3½h.p., 1916 model, Sturmey countershaft 3-speed, clutch, engine overhauled makers £20, splendid condition, tax, lamps, horn, will dismantle inspection; sacrifice £75; genuine.—26, Brett St., Attercliffe, Sheffield. [1030

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NORTON 1921 3½h.p., B.R.S., 3-speed, all-chain, silver plated tank, polished aluminium mudguards, racing steel valves, 3 spare sprockets, Daybeam electric lighting set, horn, several spares, certified over 65 m.p.h. for lap at Brooklands; £135.—Chas. H. Littlewood and Co., Motor Cycle Depot, Sherman Rd., Bromley, Kent. [9491

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6h.p. T.T. N.S.U., 2-speed, splendid condition; bargain, £40, or exchange lightweight.—Cook, 2, Fullmook Mews, Tufnell Park. [9475

N.U.T.

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, indistinguishable from new; £120.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X5666

N.U.T.—Sole agents for nine counties; special exchange or deferred payment terms; immediate delivery all models; trade supplied.—Maudes' Motor Mart, London, Exeter, and Walsall. [2422

O.K.

19 21 2¾h.p. O.K. Junior; £50/8.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [9947

19 21 O.K. Juniors, single speed, brand new; 38 gns.—Kemp's Garage, Official Agents, Louth, Lincs. [X5672

O.K., latest 1921 models in stock for immediate delivery, from 38 gns.—Eagles and Co., 275, High St., Acton, London. [1094

O.K.-VILLIERS, 1921, 2-speed, lamps, cyclometer, full equipment, mileage 400, licensed, insured, absolutely as new; can be seen Young's, Kilburn; outfit cost £72, price £52.—Brewer, 7, Clifton Av., Wembley. [9565

Omega

39 GNS.; 1919 Omega-Jap 2¾h.p., 2 speeds, good tyres, tax paid; bargain; exchanges.—Garage, Hansler Rd., East Dulwich. Sydenham 2452. [9917

OMEGA-J.A.P. 1920 2¾h.p., 2-speed, clutch, kick starter, fully equipped, licensed; £40; great bargain.—Bunting's Motor Exchange, Wealdstone. [1077

Osborne.

OSBORNE-J.A.P. 4h.p., multi-gears, re-enamelled, plated, as new; £38.—Willetts, Rookery, Lanesfield, Ettingshall, Wolverhampton. [X5690

P. and M.

P. and M., as new, K.S., 2 speeds, perfect running; £40.—59, Greyhound Rd., Fulham. [1001

19 20 P. and M., all on, tax paid, as new; £87/10. —Inman, 1, Othello St., Liverpool. [9800

19 17 3½h.p. P. and M., 2-speed clutch, K.S., perfect; £47.—56, Park Lane, Kidderminster. [9985

CYRIL WILLIAMS for immediate delivery of all models P. and M.—Chapel Ash Depot, Wolverhampton. [X3821

P. and M. 1918 Combination, overhauled, perfect, light C.B. sidecar; £65.—38, Sherriff Rd., West Hampstead, N.W.6. [9871

19 18 P. and M., blue enamelled, lamps, horn, tax paid, excellent condition; £55.—37, Treadgold St., Notting Hill. [9765

P. and M., latest 1920 combination, cost £160, used twice, equal new, guaranteed, trial; £125.—41, Ashford Rd., Cricklewood. [9574

P. and M. 1918 Combination, all accessories, licensed, fast and reliable, good condition; £65.—Derrington, Grafton Rd., New Malden. [1184

19 20 Sporting P. and M., complete trip speedometer, and all spares; £90, or offer; approval against cash.—Box 5,311, c/o *The Motor Cycle*. [9484

P. and M. Combination, late, Cameo, lamps, horn, etc., tax paid; any trial; bargain, £56.—Grimes, 32, Fairlight Av., Willesden Junction, N.W.10. [9679

P. and M. Combination, fully equipped, licensed, mileage 1,800; buying car; £90, offer; view after 6.—Letters, 86, Norwood Rd., Herne Hill. [9887

MOTOR CYCLES FOR SALE.

P. and M.

£48.—1918 3½h.p. P. and M., E.I.C. mag., B. and B. carburetter, splendid condition, 40 m.p.h., 95 m.p.g.—Rae, 245, Hammersmith Rd., W.6. [9645

1919 P. and M. Combination, wind screen, electric lighting, overhauled and re-enamelled March, 1921; bargain, £85.—153, Cromwell Rd., Peterborough. [9252

1918 R.A.F. P. and M., lamps, Klaxon, tyres nearly new, tax paid, running splendidly; £50; seen by appointment.—May, 60, Woodland Rise, Muswell Hill. [9444

1920 P. and M. Combination, excellent condition, electric lighting, Easting wind screen, licence paid; £85; owner buying car.—74, Copthall Gardens, Twickenham. [9432

P. and M. Combination, splendid condition throughout, fully equipped; £75.—Speechley, The Motor House, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [1212

P. and M. Late 1919 Combination, perfect, all tyres as new, tax and insurance paid, lamps, separate generators, wind screen, spares; £75; no offers.—100, High St., Tooting. [9533

P. and M., late 1917-18, newly stove-enamelled and plated in makers' 1921 colours, new Dunlop tyres, perfect mechanical condition; £65.—57, Firs Hill Rd., Sheffield. [9639

95 GNS. or Exchange, real bargain; 1920 P. and M. combination, lamps, speedometer, horn, leg-shields, tax paid, splendid condition.—Garage, Hansler Rd., East Dulwich, Sydenham 2452. [9898

P. and M. 1919 Model, overhauled and re-enamelled, splendid condition, beautiful finish, fully equipped, Binks carburetter, spares, etc.; £68.—Carpenter, 95, Leander Rd., Brixton Hill, London, S.W.2. [9655

P. and M. Combination, reconditioned 1919 model, bought March, 1921, from makers, complete lamps, tools, etc., carefully used, splendid condition; 95 gns.—94, Southwark Park Rd., Bermondsey. [9515

1918 P. and M., new Montgomery, Lucas lamps and horn, Watford speedometer, new tyres, complete tools and spares, tax and insurance, excellent condition and appearance; any trial; bargain, £75, or offer.—Matthews, 13, Streatham Place, Brixton Hill, S.W. [9629

P. and S

PEARSON and Sopwith, 1920, Villiers 2-stroke, electric lighting set, Albion 2-speed, exceptionally fast and powerful, perfect; £45.—22, Eswyn Rd., Tooting, S.W. [9656

Paragon.

1920 (£32) Paragon 2-stroke, 2-speed, fully equipped; bargain.—181, Newton Rd., Burton-on-Trent. [9713

Peugeot.

PEUGEOT 2¾h.p., all accessories, good condition, ride away; £28.—122, Brockley Rd., S.E.4. [9549

PEUGEOT 2¾h.p., fixed gear, B. and B. mag., good runner, suit beginner; £14.—Butterworth's Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9723

PEUGEOT 5h.p. Twin Combination, 3-speed Sturmey-Archer gear, Bosch mag., coachbuilt sidecar, runs beautifully; £32.—Butterworth's Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9725

Premier.

PREMIER 3½h.p., N.S.U. 2-speed; £20.—Speechley, 86, Churchfield Rd., Acton, W.3. [1213

3½h.p. Premier Twin, complete, ride away; £30; exchange 2-stroke.—62, Farmer Rd., Leyton. [9580

PREMIER Lightweight, splendid condition; £28; take push cycle part.—57, Kenbury St., Camberwell, London. [9776

3½h.p. Premier, licence paid, P. and H. lamps, new Dunlop tyre front, very good order; £18.—Spark, 1, Sidney St., Cambridge. [9243

PREMIER Combination, 7-9h.p., countershaft, beautiful turnout; 90 gns.; take lower power part.—57, Kenbury St., Camberwell, London. [9777

PREMIER 3½h.p. Coachbuilt Combination, 2-speed countershaft gear, clutch, footboards; £48; tax paid.—Eagles and Co., 275, High St., Acton, London. [1097

BARGAIN.—7-9h.p. Premier Combination, 2-speed, overhauled, re-enamelled, repholstered, spares, accessories; exchange; £85, offers.—105, Balham Park Rd., S.W.12. [9644

PREMIER, 7-9h.p., 3-speed countershaft, Bosch mag., double-seater wicker sidecar, 3-fold wind screen, overhauled, powerful machine, guaranteed running order, tax paid; £70, or offer; photo.—2, Mascotte Rd., Putney, S.W.15. [1022

PREMIER, 1913-14, in splendid condition, 3½h.p., stored 4 years, Bosch mag., B. and B. carburetter, clutch, pedal start, P. and H. lighting set, tyres good, ready to ride away; £38; buying lightweight.—27, Peabody Estate, Lordship Lane, Tottenham. [9498

Quadrant.

3-SPEED Quadrant Coachbuilt Combination, recently overhauled; what offers?—Pollard, High St., Arundel. [9468

EXCHANGES QUOTED

1921 NEW LIGHT CARS.

STANDARD, 11.6 h.p., 4-seater	£610	0
STANDARD, 11.6 h.p., 2-seater	£675	0
AIREDALE, 11.9 h.p., 4-seater	£475	0
AIREDALE, 11.9 h.p., chassis	£400	0
LAGONDA, 11.9 h.p., coupé	£420	0
CALTHORPE, 2-seater. Reduced price	£420	0
CALTHORPE, 4-seater. Reduced price	£450	0

1921 NEW MOTOR CYCLES.

COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£180	0
EDMUND-BLACKBURNE, spring frame	£98	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£165	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four, 3-speed, and Sidecar	£165	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single-speed	£98	0
***DOUGLAS,** 2¾ h.p., 2-speed	£85	0
***DOUGLAS,** 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£170	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON Big Four, 3-speed	£115	0
P. & S., 2 speed, 2¾ h.p., clutch	£55	0
EDMUND, 2¾ h.p., 1920, 300 miles	£89	10
BROUGH, 1916, 3-speed countershaft.	£59	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£85	0
CLYNO, 1920, 2-speed, lightweight	£52	10
ARIEL, 1920, 3½ h.p., 3-speed c/shaft.	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10
TRIUMPH, 3½ h.p., clutch, good	£47	10

PASSENGER MACHINES.

SUNBEAM 8 h.p. M.A.G. Combination	£145	0
HAZLEWOOD-J.A.P. 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting, tax paid	£115	0
MORGAN, 1915, sporting	£130	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£99	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£195	0
HARLEY 1920 Combination, electric	£175	0
READING-STANDARD 3-speed Com.	£100	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£76	0
ALECTO 1920 coach Combination	£82	10
REX 6 h.p. 2-speed Combination	£52	10
ZENITH-GRADUA. 6 h.p., and Sidecar	£57	10
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£85	0
NORTON Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£135	0

Deferred Payments taken.
Cash offers considered for Second-hand Models.
TRADE SUPPLIED.

SUNDRIES.

1920 Amac Automatic Carburetter	£1 17	6
1920 Shop-soiled Capac, 1⅛	£2 12	6
New Electric Head Lights, 6½in. dia., black nickel finish, usual price £3 17 6	£2 19	6
New Saddles, usual price £3 3s.	£2 9	6
New Army Knapsacks, 13½ × 11in.	5	6
New Miller's Lamp Set	£2 4	0
New "Perfection" Sidecar Body	£6 15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£19 10	0
Second-hand Douglas Magneto	£1 17	6
Second-hand Amac Carburetter	15	0
Second-hand B. & B. Carburetter	£1 5	0
Coach Sidecar, for Triumph	£14 15	0

MOTOR CYCLES FOR SALE.

Quadrant.

1920 Quadrant Combination, all accessories, new; £85, or offer.—C.S., 14, Swaton Rd., B E.3. Tel.: E. 3155 [1

QUADRANT 4½h.p., 3-speed, clutch, overhauled, placements, lamps, horn, tax; Sunday morn £45.—33, Sandrock Rd., Lewisham. [9

QUADRANT 1915 4½h.p. Combination, 3-sp clutch, all accessories; any trial; £60.—Trin 75, Princes Av., Alexandra Park, Wood Green, N [9

1914 Quadrant Combination, 3-speed, clutch, tyres, tax paid, good running order; £45 nearest offer.—C. M. Rolfe, Cheveley, Newma Cambs. [1

1920 Quadrant Combination, late September, la Easting, disc wheels, and tools, under 1 miles; £95.—Williamson, Oak Bank, New Mills, Stockport. [9

QUADRANT 1920 4½h.p. Combination, spe meter, lamps, horn, front and side screens, paid, overhauled; £90.—Clifford Wilson, 177, W minster Bridge Rd., S.E.1. [1

QUADRANT Sole Agents and Wholesale Distribu London, Southern, and Eastern Counties. spares stocked. Official repairers.—Clifford W Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Hop. 210. [1

Radco.

RADCO 1921 Lightweights in stock; 42 gns.— Smith (opposite Arding and Hobbs), Lave Hill, Clapham Junction. [

RADCO, single speed, splendid condition, climbs bill, electric lighting, new tyres, spare belt cessories, will ride 40 miles; seen after Saturday; —63, Calabrie Rd., Highbury, London. [

Raleigh.

PREMIER Motor Co. for 1921 Raleighs.

EASY Payments only 4% extra. We can de to your address within 24 hours the new Ra 5-6h.p. flat twin, spring frame, chain drive; solo, gns.; sidecar, 176 gns.; spare wheel and tyre, 6 Sole Birmingham Agents, The Premier Motor Aston Rd., Birmingham. [

THE New Raleigh 5-6h.p. Flat Twin in stock at win Bros., Woking, Surrey. [

RALEIGH Spring Frame Motor Cycles for fine monship. Solo or combination. Best pric your present machine.—Authorised agents: The ham Motor Co., 223, Hammersmith Rd., W.6. 'P Hammersmith 80.

WE can give delivery of this famous mak machine from stock; there is no better q or finish possible; a perfect machine in every and detail; Raleigh 5-6h.p. flat twin solo, 140 combination, 176 gns.—G. and J. Dawson, 60 62, Regent St., Cambridge.

Reading-Standard.

READING-STANDARD Combination, June, cost £230, price £140.—19, Highlever Rd., N sington.

READING-STANDARD Combination, 1920, dynamo lighting, small mileage, perfect cond £150.—Viner, West Malling, Maidstone.

READING-STANDARD Combination, hardly dynamo lighting; £135, or would exchange power and cash.—W., 121, Sheen Lane, Mortla

Rex.

REX 3½h.p., 1912, excellent condition throu what offers?—Burstow, Ivories House, Ho

1914 Rex 4½h.p., clutch, Bosch mag., £26, o offer.—54, Duchess Rd., Edgbaston, Bi ham.

3½h.p. Rex, Bosch, B.B., long exhaust, adju pulley, low sporty mount, in splendid ru order, ride away; £18.—20, Boston Rd., Han

REAL Bargain.—Rex 5-6h.p. coachbuilt combi 2-speed, handle start, just had 2 new piston bearings, in fine going order, with lamps comple paid; 49 gns.—Carslake, Deansbanger, Stony Str

Rover

ROVER 3½h.p. Combination, 3-speed, clutch condition; offers.—16, Brewer St., Pimlico.

5-6h.p. Rover Combination, unissued Army Mo on, tax paid; £110.—Inman, 1, Othello St., pool.

1919 T.T. Rover, discs, lamps, horn, guarant new; offers.—Macarthur, Market Sq., L Buzzard.

LATE 1919 5-6h.p. Rover Combination, bea equipped, tax paid; £90.—24, Balliol Rd., Kensington.

1914 Rover 3½h.p. Coachbuilt Combination, new tyres; £55.—57, St. Ervans Rd., Kensington, W.10.

ROVER, 5-6h.p., brand new, 1920 combinat greatly reduced price.—Eagles and Co., 275 St., Acton, London.

MOTOR CYCLES FOR SALE.

Rover.

ROVER Combination, 1921, only done 500 miles, tax paid; £125.—Grimes and Co., 18, Bruton Place, Bond St., W. [9926

ROVER 3½h.p., 3-speed, complete with special coachbuilt sidecar; £137/10.—P. J. Evans, 81-91, John Bright St., Birmingham. [X5635

5-6h.p. Rover Combination, late model, new condition, lamps, horn, etc., tax paid; £120.—Handslip Fire Station, South Parade, Chelsea, S.W. [9479

1920 Rover 5h.p. Combination, little used, perfect, for 8h.p. 1920 or later, cash adjustment.—51, Hertford Rd., Freezywater, Waltham Cross. [9854

3½h.p. New Rover, 3 speed, clutch and kick starter; reduced to £110; easy payments.—Harrods, Ltd., 118, Brompton Rd., London. [1041

ROVER Combination, twin, late 1919, perfect condition, only 1,300 miles, speedometer, lamps, all accessories; £145.—Randall's, 12, High St., Tonbridge. [9577

ROVER 3½h.p. Combination, machine 1919, sidecar 1920, 3 speeds, kick start, lamps, licence, excellent condition; £105.—Beaumont, Bishop's Castle, Shropshire. [9273

ROVER 3½h.p., clutch, new tyres and belt, in splendid condition, mechanically perfect; £38.—Chas. H. Littlewood and Co., Motor Cycle Depot, Sherman Rd., Bromley, Kent. [9492

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

ROVER Combination, 5-6h.p., W.D., new Feb., 1920, all accessories, perfect condition throughout, spare cover and tube; £95 lowest; bought car.—80, Simrod Rd., Streatham, S.W. [9734

1919 3½h.p. T.T. Rover, delivered 1920, h.b.c. Philipson, Cowey, lamps, speedometer, knee grips, new belt, tyre, tube, insurance, spares, perfect; £69.—Hawthorns, Hoddesdon, Herts. [9817

ROVER 3½h.p., 1919, lamps, horn, speedometer, mileage 3,500, excellent condition and appearance, 75 gns.; Canoelet sidecar if required, 10 gns.; tax paid.—Periman, 41, Grove Rd., Chertsey. [9528

ROVER Combination, 1919, 3½h.p., 3-speed, clutch, kick starter, electric lights, splendid condition; £95, or offer; also wicker sidecar, good condition, £6/10.—8, Rosemary Lane, Richmond, Yorks. [9465

ROVER Combination, 1917, 3½h.p., 3-speed, K.S., speedometer, Easting wind screen, lamps, etc., tax paid, perfect condition; £90, or offer; prepared to bring prospective buyer.—Downsview, Warwick Rd., Coulsdon. 'Phone: Purley 1238. [9204

1918 T.T. Rover, h.b.c. Philipson, 650×65 voiturette rims and tyres, with guarantee over 70 m.p.h., long plated exhaust, large P. and M. lighting set, Lucas horn, special saddle fitting, dropped 4 inches, perfect throughout; any expert trial or examination; £60.—16, Dessamy Rd., Weybridge. [9873

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.—John Aldrich and Co., Diss. [0630

1919 8h.p. Royal Ruby Combination, splendid condition; £120, or nearest offer.—Marshall, 126a, High St., Slough. [9590

ROYAL RUBY 1919 8h.p. Combination, fully equipped; £95.—Braemar, 17, St. Quentin's Av., North Kensington. [9595

LATE 1919 8h.p. Royal Ruby, splendid condition, electric lights, Cowey speedometer, all accessories, tax paid; offers.—Williams, Westbourne, Sitterne Hants. [9976

Rudge.

1921 Rudge Multi, 3½h.p., equipped, 2 months old.—Milward, W.O.S.E., Newmarket. [9191

1921 3½h.p. Rudge Multi; £85.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [9948

RUDGE, clutch model, 1913, in good condition, any trial; £27.—8, Hope St., Maidstone. [9535

£75.—3½h.p. Rudge Multi, 1921, brand new; must sell.—Box 5,325, c/o *The Motor Cycle*. [1015

RUDGE 1914 Clutch Model, fine condition, tax paid; £30.—580, Wandsworth Rd., Clapham, S.W.8. [9343

5-6h.p. Rudge Multi, 1919, C.B. sidecar, as new, all spares; £85; illness cause.—Edwards, Hayes End, Middlesex. [9184

1919 T.T. I.O.M. Rudge Multi, speedometer, all on; £60; exchange twin Zenith or Norton.—49, Well St., Hackney. [9497

1914 3½h.p. Rudge, T.T., Grade, kick start, with sidecar, splendid condition; £40.—Burt, Witherdoor Rd., Bournemouth. [9357

RUDGE Multi, 1920, I.O.M., excellent order, fast, lamps, Tan-Sad, etc.; £65; must sell.—39, Oxford Rd., Putney. (Private owner.) [9505

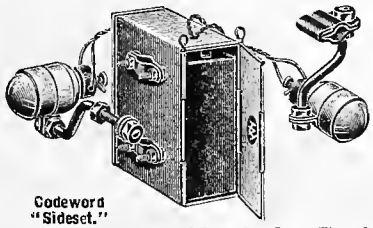
RUDGE Combination, 2-speed, F.E., clutch, overhauled, guaranteed perfect, tax paid; offers.—9, Croydon Rd., Beckenham, Kent. [9784

THE LAST HALF HOUR OF THE EVENING RUN

when lamps must be used makes one appreciate the convenience and reliability of

H.A.H. LIGHTING SETS.

H.A.H. MOTOR CYCLE HEAD, SIDE AND TAIL LAMPS. H.A.H. COMPLETE SIDE AND REAR SET.



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Price **32/-** per set; Metal Carrying Case, Fig. 386, **8/6** extra.—A most convenient form of lighting when a large acetylene head lamp is used. Comprising fig. 573, Rear Lamp, complete, **9/6**; fig. 560, Side Lamp, complete, **8/6**; fig. 386, metal case, **8/6**. "Flash" Genuine Hellesen Dry Battery, **14/7**. Postage extra.

Have you any Lighting Problems — REGISTERED H.A.H. TRADE MARK — **Solving them is our Business.**

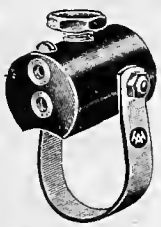

Fig. 428. 1-way Motor Cycle Type. Price **2/-** each. Screw action. Postage extra.

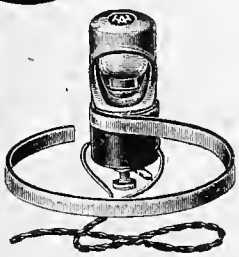

Fig. 347. **'Speedolite.' H.A.H.** Patent Speedometer Lamp, **7/6** each. Clips direct on to Speedometer, and has coloured bulb to prevent glare. Postage extra.

H.A.H. ACCUMULATORS.

Fig. 1162. **Accumulator.** Size 4⅜x3¾x6½. Capacity 4 volt 40 amp. Price **31/6** each. Postage extra.

H.A.H. CARRYING CASES.

Fig. 379, **Case** for 1162 Accumulator. Price **12/-** each.

Fig. 359. **Inspection Lamp,** less bulb, **8/6** each; Postage extra.

Complete Solo and Sidecar Sets. Prices from £5.

A. H. HUNT, LTD.,

H.A.H. Works, Tunstall Road, CROYDON, Eng.

Telephone: Croydon 2225, 2226. Telegrams: "Keyage, Croydon."

MOTOR CYCLES FOR SALE.

Rudge.

I.O.M. Rudge, 1920¾, all accessories, tax paid; any trial; £68, or offer.—Rudge, Fairview, Colindale Av., Hendon. 'Phone: Kingsbury 43. [9285

3½h.p. Rudge, 1916, electric lamps and horn, Tan-Sad, speedometer, clutch, insured £75; 65 gns.—123, Bancroft Rd., E.1. 'Phone: E 1586. [9821

1919 Rudge Multi and coachbuilt Swan sidecar, in perfect condition, all accessories; price £75.—Dickins, 15, St. George's St., Northampton. [X5643

1920 Rudge 5-6h.p. Combination, fine bulbous sidecar, low mileage, excellent condition; £100.—21, Sherriff Rd., West Hampstead, N.W.6. [1164

5-6h.p. Rudge Multi Combination, 1913-14, fully equipped, good running order, tax, insurance (£100) paid; nearest £55.—Davies, Middleyard, near Stonehouse, Glos. [9165

1914 Rudge Combination, tax paid, 1921 cylinder, carburetter, cam, gear wheels; £55; separate, exchange; excellent condition.—Langdon Barton, New Rd., Bedfont. [9233

1920 (Dec.) T.T. Rudge Multi, engine specially tuned by makers, brand new condition, all best accessories; £80, or nearest.—Buckingham, Underriver, Sevenoaks. (P) [9828

£45.—Rudge Multi coachbuilt combination, hand clutch, kick starter, tax paid, good tyres, clean engine, new belt; bargain; trial; exchange.—89, East Hill, Wandsworth. [9634

RUDGE Multi 3½h.p., and C.B. sidecar, wind screen, speedometer, lamps, many spares, excellent appearance and running order, fine climber; £55.—3, Park Crescent, Tonbridge. [9286

1920 Rudge Multi 3½h.p. Combination, fully equipped, only done 300 miles; bargain, £85.—James, c/o Bradmore's, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [9920

RUDGE Multi, 1919 (August), new condition, original tyres, done just over 3,000 miles, Lucas lamp, speedometer, Klaxon, tools; £65, or near offer.—York House, Thames Ditton. [X5676

1920 Late 3½h.p. Rudge Multi, T.T., pedal start, sporting Canoelet sidecar, mechanically perfect, 85 m.p.g., lamps, etc.; best offer.—Wilkes, 1, Naden Rd., Handsworth, Birmingham. [9885

RUDGE Combination, 3½h.p., 1913-14 model, B. and B. carburetter, 2 speeds, clutch, fully equipped, sound condition throughout; bargain, £45; trial.—29, Allsop St., Upper Baker St., London, N.W. [9403

SACRIFICE.—1920 3½h.p. Rudge Multi, I.O.M. model, in perfect condition, Lucas horn, knee-grips, tools, and many spares, including touring handlebars, tax paid; first cheque £68 secures.—Apply, 43, Pontefract Rd., Stourton, near Leeds. [9261

Scott.

SCOTT 1914 3¾h.p., 2-speed, K.S., splendid condition; £38.—47, Edith Rd., S. Norwood, S.E. [9754

3¾h.p. Scott and Coachbuilt Sidecar; £45; excellent opportunity.—Wauchope's, 9, Shoe Lane, London. [9013

SCOTT Combination (engine 4403), 1920, Easting, electric; bargain, 100 gns.—Smith, 229, Mary Vale Rd., Bournville. [X5513

SCOTT and sidecar, engine No. 2970, excellent condition, electric lighting, accessories; £90.—33, Mansell Rd., Acton. [9170

1920 Scott, Reunoe sporting sidecar, disc wheels, just overhauled; first cash £98.—Sellick, 13, Blacker Rd., Huddersfield. [X5565

SCOTT 3¾h.p., excellent running order, fast, powerful, £50; also sidecar, £7.—Longley, 29, Whitmore Rd., Beckenham. [9297

1920 Scott Combination, electric lighting, Bonniksen speedometer, tax paid; £120. — Cockell, Holly Lodge, Dalston. [9840

£90.—Scott, Dec., 1919, special sidecar, Binks, Klaxon, speedometer, spares, perfect.—Thorpe, 92, Colmore Row, Birmingham. [9352

SCOTT 1920 3¾h.p. Solo, lamps, horn, and tax paid; £90.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9693

1920 Scott and Gloria Sidecar, engine No. 4160, mileage 600, Klaxon, Tan-Sad, perfect condition; £120, or near.—2a, Lower Lichfield St., Willenhall. [X5713

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; at £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

1919 Scott Combination, complete, including speedometer, engine No. 3682, overhauled by Scott expert; price 100 gns. or £60 cash and modern 2¾ h.p. Douglas.—H. T. Dale, Little Haven, Pembs. [1057

1920 Scott Combination, Easting, Lucas accessories, spares, small mileage, appearance and condition perfect; must sell, £135, or offer.—Boulton, Avenue Rd., Whittington Moor, Chesterfield. [9977

1914 Scott Combination, tyres sound all round, unused one on rear wheel, Lucas lamps, mechanically sound, tools, pump, and spares, ready to drive away; £65, or near offer for quick sale.—Munro, Tenbury Wells. [9240

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Scott.

SCOTT Combination, 1920, about 2,000 miles, fast and flexible, sweet running, great climber, newly stove enamelled; 100 gns., including tax and insurance; must sell.—12, Hawkesley Crescent, Longbridge Estate, Northfield, Birmingham. [9264

3¾h.p. 1920 Scott 2-cyl. 2-stroke Water-cooled Combination, equipped with electric lamps, batteries, speedometer, horn, Easting screen, tax paid for 1921; £125; easy payments.—Harrods, Ltd., 118, Brompton Rd., London. [1045

1920 Scott, splendid condition, Amac, 1921 lubrication, 3in. extra heavy Dunlop, F.R.S. Major, Stewart horn, Watford trip, etc., licence, insurance, tools, many spares; bargain, £85.—107, Mortimer Rd., N.1. 'Phone: Dalston 48. [9654

SCOTT Motor Cycle and Sidecar, fitted with speedometer and all accessories, licensed to end of 1921, in excellent condition, only run 350 miles; price £130; owner buying car.—The Pytchley Autocar Co., Ltd., 216, Gt. Portland St., W.1. 'Phone: Langham 1800-1. [8461

Singer.

SINGER Combination, 4¼h.p., 2-speed countershaft, just overhauled, rebushed, all on, tax paid, excellent order and appearance, splendid sidecar; £70, near offer.—62, Gondar Gardens, West Hampstead. [9674

Sparkbrook.

SPARKBROOK, 1921 models, 2½h.p., 2 speeds, hand clutch, kick starter, £72/10; also 2-speed model, £65; deferred payments or exchange.—Eagles and Co., 275, High St., Acton, London. [1099

Sun.

SUN-VILLIERS, 2-speed Albion, rebuilt, like a new machine, licensed, new tyre and belt; £39.—Derrington, Grafton Rd., New Malden. [1185

1920 Sun 2½h.p., 2-speed, licensed, lamps, horn, tools, cyclometer, insurance, Sept., mileage 400; £54; offer.—Whitbread, Ovington, Clare, Suffolk. [9581

SUN-VILLIERS, thoroughly overhauled, re-enamelled, tax paid, lamps, horn, pump, etc., very smart machine; £30.—Richardson, Abotsholme, Amersham, Bucks. [9157

Sunbeam.

SUNBEAM Combination, 8h.p., as new; £175.—Hopkins, New St., Ledbury. [X5653

E. KICKHAM for Sunbeam, sole agent for Bristol and district.—Stokes Croft, Bristol. [3352

1914 Sunbeam Combination, tax paid, any trial; £105.—Kimberley, Crescent, Leatherhead. [1199

1920 Late Sunbeam, 3½h.p., Lucas lighting, very fast, licence paid for year; £95.—Picton, Parhold, near Wigan. [9144

1915 3½h.p. Sunbeam, 3-speed and K.S., tax paid, fine condition; 65 gns.—Morriss and Co., Ltd., N.W.3. [9952

SUNBEAM 6h.p. Combination, Bosch mag., Senspray carburetter, tax paid; £100, or near.—Skinner, 556, London Rd., Isleworth. [9422

1920 3½h.p. Sunbeam, legshields, horn, perfect condition; cost £165, accept £119.—Sudbury, 34, Goldhurst Terrace, Hampstead. [9686

1919 Sunbeam Combination, 8h.p., electric lighting, electric horn, mileage 4,600, hood, screen, spare wheel; £175.—Wright, 2, Park Rd., Rugby. [X5712

1921 3½h.p. Sunbeam, fully equipped, licensed and insured for this year; what offers? Not done 300 miles.—T. Turner, 39, Steeley Lane, Chorley. [9265

1921 Sunbeam, perfect condition, mileage 1,400, Lucas lamps, horn, any examination; £130.—Graham, East Lodge, Wargrave Manor, Wargrave. [9759

1919 Sunbeam and Sunbeam sidecar, speedometer, lamps, horn licensed, excellent condition; £108.—Edwards, 50, Harrington Rd., South Kensington. [9130

8h.p. Sunbeam Combination, 1921 (March), electric lighting, most complete accessories; £260, or near offer.—Diamond, 11, Colonnade, Russell Sq., W.C.1. [9430

3½h.p. Sunbeam Combination, 1918, mileage 2,500, electric lighting, hood, speedometer, perfect order; £110, no offers.—Grose, 30, Elmbourne Rd., Tooting Common. [9663

SUNBEAM 8h.p., Sept., 1920, Henderson Elite sidecar, electric lighting, horn, tools, tax paid, perfect condition, equal to new; £195 cash.—Terry, Beoley, Redditch. [0668

LATE 1919 Sunbeam Combination, 3½h.p., tax paid, electric Lucas lamps, perfect condition; bargain, £110; after 6 o'clock.—133, Liverpool Rd., Islington, London, N.1. [1039

SUNBEAM 1915 3½h.p. Model with Sidecar, complete with all accessories, excellent condition; £110.—Parker's, Bradshawgate, Bolton, also 245, Deansgate, Manchester. [X5667

NEW 1921 3½h.p. Sunbeam Combination, delivered 2 weeks ago, licensed; cost £210 (receipt shown), makers' guarantee; genuine bargain, £175.—117, Clarendon Rd., Rugby. [X5514

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SPECIALISTS IN THE REBUILDING AND RECONDITIONING OF

DOUGLAS MOTOR CYCLES.

We claim that our re-built Douglas machines are superior both mechanically and in finish to any other re-built machines on the market. They consist of over 50% new parts, including NEW carburetter, NEW tyres, NEW chain, NEW belt, etc., etc., are practically indistinguishable from NEW, and are complete with NEW F.R.S. equipment of lamps, horn, and licence holder, and also bags, tools, and pump.

2¾ h.p. 2-speed,

£65

4 h.p. 3-speed, kick-start and clutch,

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4 h.p. 3-speed k.s. Combination, with brand new Sidecar in Douglas Saxe blue,

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Guaranteed for 3 months.

Each machine rebuilt in our own extensive up-to-date works, newly stove enamelled, replated, tanks in makers' colours.

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Motor Engineers, WISBECH.

London Office: 50, Pall Mall.

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM, late 1919, 3½h.p., long exhaust, Lu lamps and horn, like new throughout, all too and quantity of spares; £105, or nearest offer Pritchard, Butcher, Hereford. [96

SUNBEAM Combination, 1919, 3½h.p., black a gold, just been overhauled, not W.D. crock, sm lot; £98.—Butterworth's Garage, 64, Mill Lane, Br ton Hill. 'Phone: Streatham 2813. [97

SUNBEAM 3½h.p., late 1919, Millford 1920 sid car, Easting screen, just overhauled, and excellent condition, new rear tyre, lamps, etc.; £1 —16, Randolf Rd., Hampstead, N.W.2. [11

SUNBEAM, latest 3½h.p. touring model, £155; 3½h.p. sports model, £152/5; in stock.—Ca bridge agents, Herbert Robinson, Ltd., 32-35, Gre St., Cambridge. Tel.: 995. T.A.: Bicycles. [12

£140.—1921 3½h.p. Sports Sunbeam, fitted w Lucas lamps and horn, tax paid, cost £162, ab lutely as brand new and unmarked.—Parker's, Br shawgate, Bolton; also 245, Deansgate, Manchester. [X5

1920 Sunbeam de Luxe Combination, 8h.p., M dyno, all accessories, luxurious outfit, insuran tax paid, satisfactory reasons for disposal; £225 Gold, 244, Vauxhall Bridge Rd., Victoria, London [96

GENUINE 1919 3½h.p. Sunbeam Combination, speeds, clutch, kick starter, fully equipped licensed, and absolutely perfect throughout; 95 —C.M., 113, High St., Clapham. 'Phone: Latchm 4290. [14

1921 Sunbeam 8h.p. Combination, Lucas m dynamo lighting, electric horn, speedome Tan-Sad, spare wheel, etc., condition as new, paid; £235, or near offer.—Smith, 98, Tib St., M chester. [99

SUNBEAM 1920 (late) 3½h.p., Lucas dynamo li ing, Lucas electric horn, oversized tyres, in ceptionally good condition; £135 for quick sal Parker's Bradshawgate, Bolton; also 245, Deansg Manchester. [X5

SUNBEAM 8h.p. Combination, 1920, Lucas dyn lighting, hood, screen, speedometer, spare w with new tyre, spare bulbs, in splendid condition; rea able offer entertained.—Wilson, 27, Queen St., G Harwood, Lancs. [9

3½h.p. (June) 1920 Sporting Sunbeam, Lucas Cowey, 700×80 Dunlop, improved steer special carburetter, 52 m.p.h., 105 m.p.g., ow driven throughout; £135; write appointment.—C Smyth, 114, Denbigh St., S.W.1. [8

1916 3½h.p. Sunbeam, in splendid condition, plete with all accessories; sound value money at £80; immediate sale necessary; photog and particulars on application; no delay.—Percy H Bradly, Wylam, Northumberland. [9

1921 8h.p. Sunbeam Combination, 3 Lucas acety lamps and generators, Lucas horn, Cowey s ometer, screen, luggage grid, waterproof cover, 28× Dunlops, condition faultless; trial any evening aft by appointment; £235.—King, Cotlands, St. Jan Rd., Sutton, Surrey. [9

WANTED, purchasers for any model of new Sunbeam motor cycles and combinations, immediate delivery. Your present machine taken part exchange; full market value allowed; distance object.—R. Bamber and Co., Ltd., 2, Easthank Southport. Tel.: 607. [6

SUNBEAM (1918 guaranteed), black and gold speed, kick, oil baths, handle-bar clutch, boards, knee grips, Lucas large lamp set and splendid condition, appearance practically new, sp tax paid; £115, offers; inspection invited; Che ford.—Box 5,327, c/o *The Motor Cycle.* [

Torpedo.

£38.—Torpedo-Precision, 3-speed, clutch, coach sidecar, electric light.—King, Egrove, F Oxford. [X

Triumph.

PREMIER Motor Co. for 1921 Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 h 2¼h.p. lightweight Triumph, £70; W.D.B. (vated), £95; Type H 4h.p., 3-speed, £115; Type chain drive; £125; sidecars from £20 to £50.— your machine direct from the Triumph Specia The Premier Motor Co., Aston Rd., Birminghan [

1918 Countershaft Triumph from £50.—24, B Rd., North Kensington. [

1920 Triumph Model H., new condition; £95 Mann St., Walworth, S.E.17. [

2¼h.p. Baby Triumph, 2-speed gear, 1915; £42/ Wauchope's, 9, Shoe Lane, London. [

1918 4h.p. Triumph, mechanically perfect; £ Brawn, 94, High St., Beckenham. [

1919 Triumph, in splendid order; £70; owner abroad.—19, Wellington Rd., Charlton. [

TRIUMPH 3½h.p., splendid condition, lamps, taxed; £20.—17, Heaton Rd., Mitcham. [

£25.—Sporting 1912 Triumph, discs, splendid tion, fast.—King, Egrove Farm, Oxford. [X

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1913 Combination, splendid condition; £48.—153, Bolingbroke Rd., Stoke, Coventry. [9463

1914 4h.p. Triumph, 3-speed hub gear, in excellent order; bargain, £40.—114, Brixton Hill, S.W. [9731

TRIUMPH, 4h.p., No. 39242, 3 speeds, accessories, condition perfect; 59 gns.—40, Aynhoe Rd., W.14. [9571

ATE Model 4h.p. Triumph and Millford Sidecar, in first-class order; £65.—198, Gt. Portland St., 1. [1131

1918 Triumph, perfect order, good trial given; £65. —Haynes, 28, Church St., Greenwich. 'Phone: 30. [9436

AN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from ck. [0623

1918 Triumph, first-rate condition; £70.—'Phone: Wanstead 48.—374, Grove Green Rd., Leyton- ne. [8388

1918 Triumph, countershaft combination, lamps, etc.; £90; bargain.—249, Junction Rd., Hol- way. [9524

1918-19 Triumph, almost as new, accessories, and £5 worth spares; £69/10.—4, Somerset Rd., New arnet. [9171

TRIUMPH, 1918, countershaft, discs, electric light- ing, fully equipped; £85.—38, Northampton Rd., roydon. [9278

TRIUMPH, 1919 (late), not W.D., sporting sidecar, all accessories; bargain, 90 gns.—Carfax, Cobham. el.: 39. [9182

TRIUMPH 1921 4h.p., chain-cum-belt, in stock; £115.—Clifford Wilson, 177, Westminster Bridge d., S.E.1. [9937

TRIUMPH Junior, 1920, accessories, splendid condi- tion; £55.—Seen any time, 21, Barmouth Rd., andsworth. 9279

1921 Triumph Combination, electric lights, Easting, speedometer; £210, bargain at £180.—Sagar, eatherstone. [9164

1919 Triumph, 3-speed, K.S., lamps, tax, tools, etc., perfect throughout; 75 gns.—20, Inkerman Rd., entish Town. [9818

TRIUMPH, late 1918, done 250 miles since over- haul; first over £60 accepted.—66, Loam Pit ale, Lewisham. [9437

1918 Triumph, countershaft, licensed, new back tyre, new condition; £68.—Derrington, Crafton d., New Malden. [1193

TRIUMPH 3½h.p., Bosch, Mabon gear, just had £7 overhaul; 31 gns., perfect.—58, Cromwell d., Upton Park. [9589

1918 Countershaft Triumphs, guaranteed, from £50, fully equipped.—204, Ladbroke Grove, W 10. 'hone: Park 5541. [9769

TRIUMPH Combination, nearly new, done under 2,000 miles, tax paid; £100.—Grimes, 18, Bruton lace, Bond St., W.1. [9925

TRIUMPH 1920 4h.p., 3-speed, lamp, speedometer, etc., as new; £90.—C.S., 14, Swaton Rd., Bow, .3. Tel.: E. 3155 [1153

3½h.p. Triumph, also 3½h.p. C.B. combination, gear 2 box, all-chain drive; cheap for cash.—C. Fox, ingley, near Wakefield. [9229

1917 Triumph, re-enamelled, replated, perfect, equipped, Binks; £65.—Adeney, 8, Gloucester errace, W. Padd 7214. [9707

TRIUMPH, 1913, clutch, new piston, bush, pin, and tyres, lamps, tax paid; £28; after 7.—43, Stock chard Crescent, Holloway. [9362

1919 Triumph and Coachbuilt Sidecar, wind screen, perfect order, lamps, horn, tax paid; £85.— ustin, 14, Arcade, Chester. [9869

TRIUMPH 3½h.p., h.b.c. clutch, fine condition, re- enamelled; £30, or near offer; licensed.—11, Deni- n Rd., Brentham, Ealing. [9660

1918 Countershaft Triumph, engine 45509, 3-speed, clutch, K.S., Klaxon, licensed; £70.—66, Perry ale, S.E. (Forest Hill Station). [9668

1914 Triumph, 3-speed, Henderson sporting sidecar, Cowey, lamps, horn, tax paid; £50.—Logan, 31, wyther St., Pembroke Dock. [9588

1919 Triumph, 4h.p., 3 speeds, polished discs, appearance and running guaranteed as new; 75.—59, Greyhound Rd., Fulham. [1002

TRIUMPH, Model H, immediate delivery; £115; wants second-hand solo or combination; cash or tchange.—Bunting, Wealdstone. [1075

TRIUMPH, 1913, hub gear combination, good Dun- lops, first-class condition, but dirty in appear- nce; £55.—8, Hope St., Maidstone. [9536

TRIUMPH 1912, single speed, in excellent running condition; price £35, or offer.—East Grinstead otor Garage, Ltd., East Grinstead. [8113

1919 Triumph Combination, perfect order, fully equipped; any trial; £87.—Braemar, 17, St. uentin's Av., North Kensington. [9596

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Here is a very special lot of bargains out of our huge stock, machines we are offering at truly remarkable prices.

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MOTOR CYCLES FOR SALE.

Triumph.

1914 Triumph, 3-speed hub gear, good condition, good running order, lamps, speedometer; £50.—66, Hermon Hill, Snaresbrook, E.11. [9408

1917 Triumph Countershaft, perfect condition, accessories, spares, low mileage; £65; exchange cycle car.—Dean, Barclay's Bank, Lingfield. [9755

TRIUMPH 3½h.p. C.B. Combination, Grade multi gear, overhauled, enamelled, perfect condition; £55.—106, Seely Rd., Tooting, S.W. [9978

TRIUMPH 4h.p., countershaft, 3-speed, K.S., clutch, new tyres, indistinguishable from new; £69/10. —Sibley, 106, Market Place, Romford. [9895

TRIUMPH, 1912-13, Bosch, Dunlops, nice condition; what offers over £30?—Prince, Holmwood, Green Street Green, Farnborough, Kent. [1038

1914 Triumph, accessories, coachbuilt sidecar, luggage grid, 3-speed, just overhauled by makers; trial; £70, or nearest.—Blynne, Glyndyl, Bangor. [9310

TRIUMPH 3½h.p., clutch model, kick start, Bosch mag., Sturmey hub, single speed, recently overhauled; £37.—173, Kentish Town Rd., N.W. [9539

UNRIDDEN, unregistered, countershaft Triumph, 3-speed, K.S., etc., fully equipped; £95; extended payments.—33, Hackford Rd., Brixton, S.W. [1147

TRIUMPH 1918 4h.p. Countershaft, overhauled, enamelled, plated, splendid condition, fully equipped; £68.—30, Crystal Palace Park Rd., Sydenham. [9794

TRIUMPH Combination, 1917, exceptionally good order throughout, lamps, horn, licensed; £65.—Sargent, 72, Lewin Rd., Streatham. 'Phone: 335. [9617

TRIUMPH, 1921 models, in stock for immediate delivery; exchanges arranged, or deferred payments. —Eagles and Co., 275, High St., Acton, London. [1092

F.O.C.H. are Triumph Agents; combinations and solos, new and second-hand in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [9378

1914 Triumph Coachbuilt Combination, 3-speed, clutch, perfect order, tax paid, substantially tyred; £65.—64, Melbourne Av., Bowes Park, N.22. [9862

OXFORD: £55.—Triumph combination, about 1914, 3 speed, clutch, decompressor, Mills-Fulford coachbuilt sidecar, perfect.—King, Egrove Farm, Oxford. [X5680

TRIUMPH, 1918, renovated throughout, brand new S.A. gear box, plated exhaust pipe, lamps, horn, tax paid; £82.—Edwards, Kingston, Radford, Coventry. [X5755

TRIUMPH, 4h.p., 1918, countershaft, 3-speed, sidecar, £4 tax paid, engine etc., excellent condition; £67/10.—Edgerton, 19, Lewis Grove, Lewisham, S.E. [X5090

1913 Triumph, clutch, Tan-Sad, all accessories, perfect condition, modern improvements, tax paid; £42.—Webber, 68, Durants Rd., Ponders End, Middlesex. [9546

4h.p. Triumph, 1914, extraordinary good condition, 3-speed and kick, tax paid, lamps; £45; privately owned.—19, Wilcox Rd., South Lambeth, London, S.W.8. [9792

TRIUMPH, 1918, 4h.p. countershaft, engine No. 52178, perfect condition; 60 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [0658

TRIUMPH 1921 Chain Drive Combination, electric lighting, Klaxon, speedometer, spares, tax paid, condition as new; £150.—Whiley, 125, Adelaide Rd., N.W.3. [9809

TRIUMPH 1921 4h.p., countershaft, Type H; £115. In stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [1207

TRIUMPH 4h.p., 3-speed countershaft, excellent condition; any trial; tax paid; £65, or nearest; not Sundays.—Richmond House Crescent Rd., Shepperton-on-Thames. [8418

1918 Triumph Gloria Combination, sidecar 1920, as new, complete in detail and perfect; will ride to intending purchaser; tax paid; £95.—306, High Rd., Lee, S.E.13. [8562

FOR Sale, Triumph combination, 3-speed, tax paid, sidecar newly upholstered, excellent running order; 60 gns.—Graham, Mining Dept., University, Birmingham. [X5768

TRIUMPH Combination, all accessories, December, 1920, about 1,200 miles, tax and insurance paid; owner going abroad; nearest £140.—Box 5,261, c/o *The Motor Cycle*. [9212

TRIUMPH Countershaft Combination, 1918, perfect condition, little used, equipped, tax paid, insurance; seen by appointment; £95.—13, Rona Rd., Hampstead, N.W.3. [7441

TRIUMPH, 1909, new piston and rings, rebushed throughout, adjustable tappets, also 1920 Mabon variable gear; bargain, £20.—Priest, Cleveland House, Clifton St., Stourbridge. [9231

TRIUMPH Combination, new October, 1919, electric light, speedometer, Easting, legshields, tool kit, complete outfit, fine condition, little used, licensed; £105 lowest.—Simmons, Royal Parade, Blackheath. [9906

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MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH.—Best value in thoroughly overhauled Triumphs, all late models, £58; specially selected, £60.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [9197

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

TRIUMPH 1914 3½h.p., 3-speed gear, not used during war, lamps, horn, tools, etc., in first-rate condition; price £47/10, or near offer.—East Grinstead Motor Garage, Ltd., East Grinstead. [8112

£85.—Sporting Triumph C.B. combination, 3-speed, K.S., etc., aluminium discs, long exhaust, fully equipped, tax paid, 1920 S.A. gear box, splendid condition.—33, Hackford Rd., Brixton. [1146

1920 Triumph 4h.p. Countershaft, speedometer, lamps, tax, absolutely as new, £90; sporting sidecar, brand new, £19.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [1033

TRIUMPH late 1920 4h.p., 3-speed, with nearly new Sandum de luxe sidecar, Easting, lamps, tax, perfect; £120.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9688

1920 Triumph C.S. Combination, Dunhill sidecar, electric lighting, Lucas horn, tools, spares, a first-class combination; any trial; £110; extended payments.—33, Hackford Rd., Brixton, S.W. [1145

TRIUMPHS, Triumphs.—Models from £65, in stock, good selection combinations or solo; deferred payments or cash.—Triumph Specialists, The Hackford Engineering Co., 33, Hackford Rd., Brixton. [1143

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all models in stock, new chain drives, new chain-cum-belts, solos and combinations; immediate delivery; supplied on easiest of easy terms; trade supplied. [4537

TRIUMPH 1920 Model H., with Rideezi sidecar, fully accessoried, Easting screen, luggage grid, lamps, speedometer, etc., tax paid, perfect condition, as new; £120.—Forbes, 25, Flanders Mansions, Bedford Park, London. [1179

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt, and renovated models.—Jones Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

TRIUMPH, 1918, W.D. model, 4h.p., countershaft, rebuilt, new parts, indistinguishable from brand new, tyres, etc., have not been on road; lowest price £78.—Barnett, 21, Rodborough Rd., Golders Green, London. [9389

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

TRIUMPH, late 1919, with Mills-Fulford sidecar, 3-speed countershaft, all lamps, horn, Smith's trip speedometer, all tyres new, excellent condition, tax and insurance paid; £87; ride 60 miles intending purchaser.—Faussett, East House, Jesus College, Cambridge. [9616

TRIUMPH Combination, unscratched, Henderson Elite sidecar, Lucas lamps, legshields, Easting, Bonniksen, mirror, mileage 2,000; selling ill-health; reasonable offer, cost £200, or exchange modern light car; licensed; any trial.—14, South Terrace, Bosham Sussex. [9404

£75.—Triumph combination, 4h.p., 3-speed countershaft, kick start, electric lighting, electric horn, new gears and tyres, roomy coachbuilt sidecar, Bluemel's wind screen, machine 1915, sidecar 1920, periodically overhauled; any trial.—Fairholme, Dollis Park, Finchley, N.3. [9355

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

UNUSUAL Opportunity to secure smartest C.S. Triumph on the road, condition inside and out perfect, ridden and owned and equipped by a previous T.T. winner, going complete with all tools, Lucas lamps, 2 pistons, 2 carburetters, spare chain, new heavy Dunlop cover, etc.; £115.—Box 806, c/o *The Motor Cycle*. [X5626

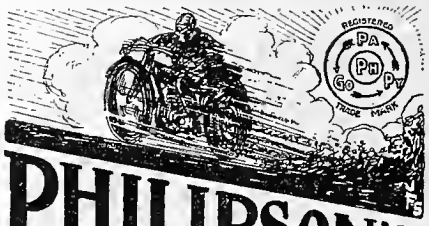
ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

Velocette.

1919 2¼h.p. Velocette, all-chain, tax paid, all on; £37/10.—Inman, 1, Othello St., Liverpool. [9801

VELOCETTE, fine machine, good climber, 120 m.p.g., cash wanted; £35.—92, Savernake Rd., N.W.3. [9810

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822



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VERUS-BLACKBURNE 2¾h.p., 2-speed, clut kick start, tax paid, almost new, ridden miles only; £68.—95, Richmond Rd., Twickenham. [9

1920 2¾h.p. Verus-Blackburne, aluminium di enamelled black, ridden 250 miles, tax pa £80.—Shepherd, Enfield Highway. Tel.: Waltham Cr 31. [06

IMMEDIATE Delivery of any Verus Model; cash deferred payments, book your order now avoid disappointment later.—Burlington Motors, L South Side, Clapham Common, S.W.4. 'Phone: Br ton 2417. [05

Villiers.

1916 Villiers 2-stroke, equipped, perfect, licens £25; exchange.—17, Heaton Rd., Mitcham [9

VILLIERS 2½h.p., brand new, 2-speed and starter, H.B. clutch; £52.—Outram, Rectory Southport. [X5

1916 Villiers 2-stroke, overhauled, lamps, tax pa £28/10.—Goad, 122, Maida Vale, W.9. 'Pho Hampstead 1353. [1

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WALL 2¾h.p. 2-stroke Lightweight, 2-speed coup shaft, lamps, horn, nice condition, excellent ning order; £38, tax paid.—Oable, 89, Grundy St., Por [9

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7h.p. Wilkinson, T.M.C. Combination, C.B., 4- W.C., 3 speeds, shaft drive, 2 horns, lamps, surance and tax paid.—Apply, Box 5,320, c/o *Motor Cycle*. [1

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8h.p. 1914 Williamson Water-cooled Combination, fect.—5, Tidy St., Brighton. [7

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1920 Wolf-Villiers, £39, 2-speed, perfect, wi hill-climb. Douglas wanted.—Argyle Lodge, ton Rd., Burton-on-Trent. [9

WOLF-J.A.P. 4h.p. 1914 Countershaft Coach Combination, wind screen, lamps, tools, sp excellent condition; £50.—17, Carey Place, Wat [9

WOLF 2-stroke, 2-speed, K.S., clutch, lamps, new tyre, spares, licensed, completely hauled, excellent; £35, quick.—Swann, 38, Wellin Rd., Charlton, S.E.7. [9

1921 Wolf, 2¾h.p. Blackburne engine, 2-s Sturmey, clutch, kick start, lamps, horn, grips, licensed; £75.—Edwards, 50, Harrington South Kensington, S.W.7. 'Phone: Kens. 3709. [

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WOOLER, latest flat twin, chain drive, 3-s 95 gns.; also bargain in second-hand, £ Bunting's Motor Exchange, Wealdstone. [

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DAN GUY, Weymouth.—Zenith agent, early livery all models. [

1919 (Late) 6h.p. Zenith, good running nearest £80.—Osbo ne, 21, Norfolk Sq., B ton. [

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Zenith.

ZENITH 1920 8h.p., and Canoelet sidecar, splendid condition; accept £120.—Capt. Findlay, 62, Ashley Gardens, S.W. [9143

BRAND New 8h.p. Zenith Combination, shop-soiled; will accept £150, ordinary price £204.—Egham Motor Co., Egham. [9262

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [9379

8h.p. Zenith Combination, new Feb., 1921, 3,000 miles, every accessory; quick sale; owner bought car.—Joy, Buxted, Sussex. [9680

1921 5-6h.p. Zenith Sports, perfect, owner wants combination; bargain, £85.—Apply, Brynmaer, Throwley Rd., Sutton, Surrey. [1088

ZENITH 6h.p., first-class condition, complete with lamps, speedometer, fast lot, tax paid; £65/10.—198, King St., Hammersmith. [9200

SPECIAL Racing 70×85 Twin Zenith; exchange lightweight, cash; sell £58.—McCartney, Golden Cross Cottages, Church St., Woolwich. [9150

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ZENITH 6h.p. Sports, late model, fitted special racing cams and 3in. exhaust, very fast; £78, near.—Kenneth, Swabey, Ashtead, Surrey. [9449

ZENITH 5h.p. Sports Model C, faultless condition and appearance, as new; £90; exchanges considered.—54, Riverview Grove, Chiswick, W. [9838

ZENITH 8h.p. Sports Model, July, 1920, condition perfect, mileage small, fully equipped, original tyres; £110.—80, Station Rd., Hampton, Middlesex. [9790

ZENITH-GRADUA 7-9h.p. 1914 Coach Combination, newly finished, mechanically perfect, lamps, screen, hood, grid; £90.—14, Cambridge Rd., Bromley. [9805

AN 8h.p. Zenith-Jap Motor Bike and Torpedo Sidecar, very fast, can be seen any evening by appointment.—40, Dyson's Rd., Edmonton, N.18. [1155

JULY, 1920, 5h.p. Sports Zenith, as new, lamps, speedometer, Klaxon, etc., any examination and trial, tax paid; £85.—Capt. Reeves, Man and Saddle Hotel, Dewsbury. [9974

ZENITH 5h.p., late 1920 sports model, special posh machine, new condition, mileage low, fast mount, complete with lamps, speedometer, tax paid; £105.—198, King St., Hammersmith. [9201

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ZENITH 8h.p. 1916 Combination, electric lighting, speedometer, Easting, just overhauled, enamelled and plated, appearance and condition new; £95.—Martin, 13, Sun St., Waltham Abbey. 'Phone: Waltham Cross 99. [9929

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90×77½ o.h.v. Zenith-Gradua Coachbuilt Combination, hood, screen, 3 lamps, generators, Lucas horn, new Dunlop rear, Pedley's knee-grips, long plated exhausts, all enamel and plating like new, special machine, very fast, top gear 3-1; trial willingly; £110, offers; world separate; tax paid; photo; exchange lower power.—1, Boundary Rd., Notting Hill. 'Phone: Park 654. [9304

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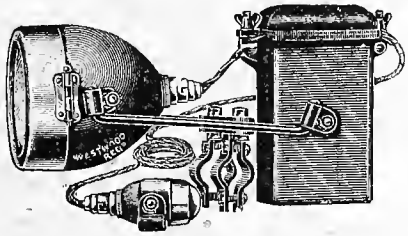
AS a Lady's Motor Cycle, the Ivy is It.—Send for details from the Midland agents, Frank Whitworth, Ltd., Birmingham. [X4180

LADY'S Model 1915 3-speed 2¾h.p. Douglas Motor Cycle, perfect condition, very fast; £42; cheap.—Snewin, Barford Cottage, Little London, Basingstoke. [8715

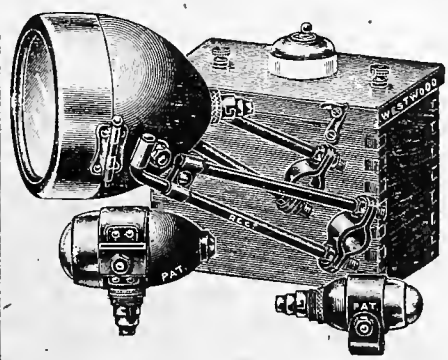
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

Complete Outfit, List No. 30/1, Price £5 5 0
(If tail lamp is not required, deduct 12/6).

"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The Accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting and will give very satisfactory service in use. Many have now been in use two or three years, and are as efficient as when first purchased. **All our Accumulators are specially made to stand vibration.** Ordinary accumulators are never satisfactory for motor cycle work. The hard wood case supplied with this set is finished ebony black, and is specially treated to withstand acid. This outfit is despatched completely assembled with bulbs and all necessary wiring, etc.

Complete Outfit, List No. 30/2, £7 7 0.

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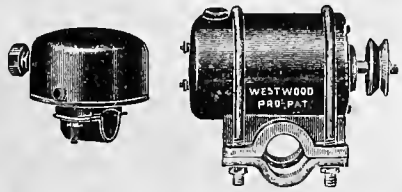

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WALLS Auto-Wheel, fitted to lady-back tandem, good condition; £16/10.—84, Anerley Rd., S.E.19. [9346

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AUTO-WHEEL De Luxe, splendid condition, double control, mudshield, no plates, tax paid; £10.—10, Park Hill, Richmond, Surrey. [9671

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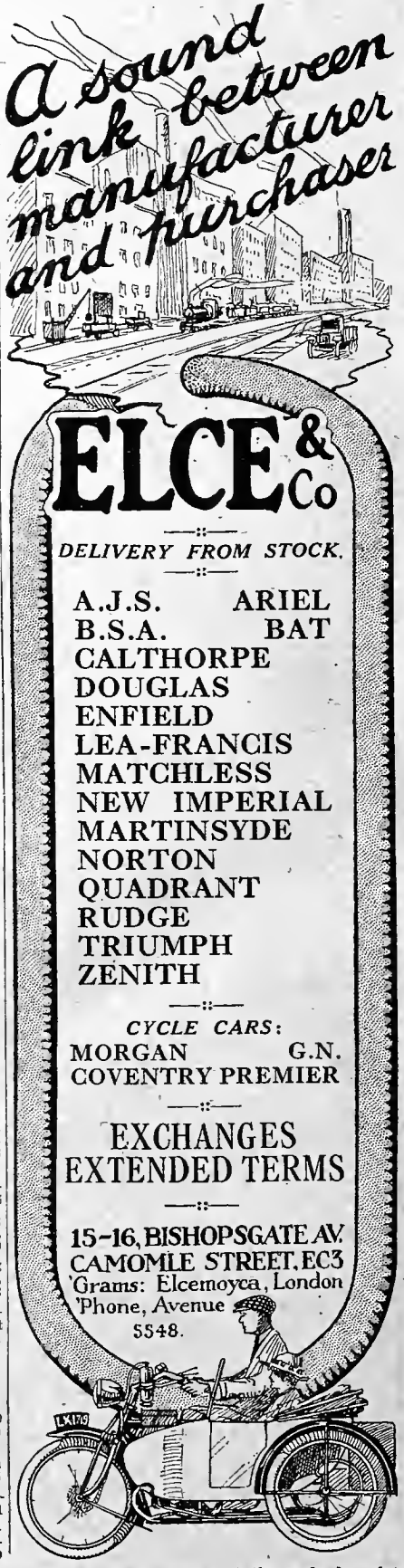

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MIDDLETON'S, London's oldest established s car makers, wholesale, retail, and export, Stroud Green Rd., Finsbury Park (near Tu 'Phone: Hornsey 1584. [0

CANOELET Minor Sidecar, almost new; £11/1 22, Eswyn Rd., Tooting, S.W. [9

CANOELET Minor Sidecar, new; £10/10.—L Arms, High St., Winchester. [9

THE MOTOR CYCLE

ESTABLISHED IN 1903

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The Motor Cycle Grand Prix.

BRITISH manufacturers and the British motor cycle community in general may congratulate themselves warmly on their successes in the premier French speed event of the year. These Continental races do much good, as they promote a feeling of friendly rivalry between the two nations and also tend to improve design. What happier result could be desired, with British motor bicycles first, second, third, fourth, and fifth in the 500 c.c. class, and with a machine built of British component parts first among the miniat . s? One can only wish that the French had set us a harder task in the senior category. Our late allies took their beating like sportsmen, and owned that they had much to learn both as regards design and riding methods. One well-known Continental rider of the old days, a Czecho-Slav, whom we last met at Amiens in 1913, told us he was delighted to see that, while the French machines had become more complicated and less efficient, the English racing motor cycles were enormously improved and very much simplified in design. This was distinctly interesting, as our friend is an authority as well as an enthusiast, and his remarks, after a separation from the pastime for about five years, were very welcome.

English makes have now proved their superiority in speed on the Le Mans course, and it now remains to be seen how they will behave on the Alpine passes in the International Six Days Trials beginning next week. While the Tourist Trophy races have so far improved the breed of racing mounts to enable these victories to be gained, the English and Scottish Six Days have done their good work as regards improving reliability, but there is just a chance that the Swiss trial may teach other valuable lessons, and, if so, the mere handful of English manufacturers who have entered will profit by their enterprise. By continuing to give public demonstrations of the capabilities of British motor cycles our industry will maintain its present position.

Mechanical Noises.

NOISE is the bugbear of motor cycles, and much trade is lost through the fact that the general public is under the impression that motor cycles are essentially noisy vehicles. On the subject of exhaust noises, opinions vary, and many a machine which leaves the works reasonably silenced is modified by its owner to suit his personal tastes, but to the detriment of public opinion. Even those who hold the most heterodox opinions as regards exhaust sounds will agree, however, that it is desirable to eliminate mechanical noises. Apart from the fact that noise is the outward and audible indication of wear, a tap, rattle, or squeak is most aggravating to the mechanically-minded rider. The average two-stroke engine is moderately free from mechanical noises, but is seldom efficiently silenced. A short time ago we were enabled to test an engine which was to all intents and purposes silent, except for the exhaust which, in this case, extended well behind the rider, and was not unduly noisy.

This trial emphasised the fact that, in addition to engine noises, there are many other sounds which should be eliminated. The average mechanical horn rattles badly, tanks are apt to "drum," and primary drive chains are frequently a source of noise unless adequately enclosed and lubricated. Most motor cycle gears are fairly silent, but are still capable of improvement, spring forks clash and squeak, and speedometer drives often grind. All these minor noises combine to form a considerable volume of sound, and all, without exception, are capable of considerable improvement. One has only to take note of a high-class car passing, with only the noise of the tyres on the road audible, to obtain an ideal which motor cycle manufacturers are at present far from realising.

The speed and power of the modern British motor cycle are amply proved in competitions of every kind, and manufacturers who now set out to render their productions silent will score when in sales competition on the open market.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

BY "IXION"

Jets and Consumption.

THE other day I took delivery of a new 3½ h.p. T.T. 'bus, and the first trick it served me was to leave me stranded—on the Fosse Way, of all lonely places—with an empty petrol tank, for its consumption varied from 45-60 m.p.g. on the makers' jet, a 36 Amac. Having a bagful of jets, I began to experiment, and found that with a 32 I could indulge in a fair amount of scrapping and fast hill-climbing without exceeding a gallon in eighty miles. But the most amazing discovery came when a Sunday trip led me into regions where you cannot reckon on finding the garages open. On this occasion, I installed a 28 jet, and half a gallon took me eighty-two miles = 164 m.p.g. Moreover, on this 28 jet, I got quite as much speed and quite as good climbing as the average man requires; its main defects were that it stole away the frantic acceleration which hall-marks this machine on a standard jet, and, incidentally, rendered my nickel-plated exhaust pipe remarkably iridescent. I begin to pine for a variable jet with handle-bar control, and, on the whole I do not marvel at the popularity of the W.S.R. variable jet attachment.

The Foot of a Test Hill.

IN the bad old long ago, we used to see riders making a longish pause at the foot of a test hill in big reliability trials, what time they unscrewed their adjustable pulleys and fitted thinner belts to furnish a lower gear. Time changes all things; but if the hill be a real corker, we still sometimes see a clever rider halt. Should he do so, he drains the crank case, replenishes with fresh, cool oil, and swops his running jet for a thirty-sixer.

"Ta Gaelic."

ALL of us at the office are very bored with the members of the staff who represented our interests in the Scottish Six Days. They have learnt a lot of new words, mostly ending in some such combination of consonants as "nchdgt" or something to that effect. They throw them at us, and we do not know whether we are being insulted or not. Moreover, in this hot weather they retard the ardently anticipated moment at which the typical journalist's thirst-quencher (iced lemon squash) is delivered to us, by ordering "a glass and a chaser," or "a wee deoch an doris." They learnt these bad habits in the Highlands, of course, and we are slowly weaning them back to civilised ways. A "glass and a chaser" means a tot of whiskey, followed by a pint of beer in a separate receptacle, and is obviously unwholesome in a heat wave. I always thought "deoch and doris" was Gaelic for whiskey and soda, but it apparently means "last before door." The worst of many a Scot is that it takes too many deochs to get him outside the doris.

Gripping the Tank.

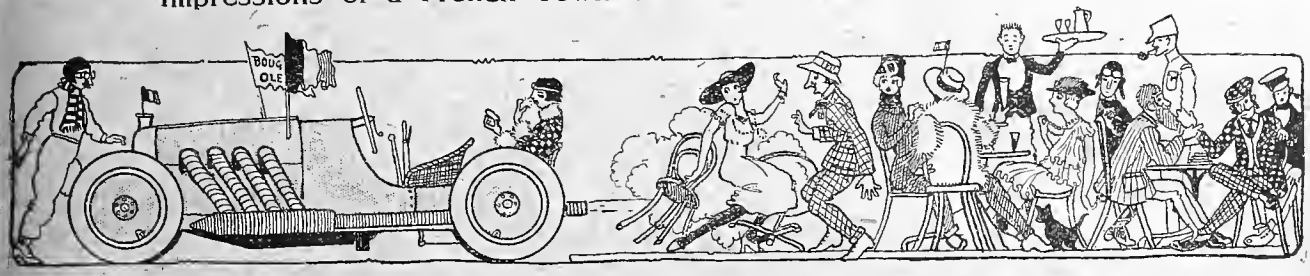
HOW many of our readers grip the tank with their thighs, or knees, or both? I know lots of keen amateurs who consider that good riding is impossible without such a grip, either in speed work on a good surface or in rough-riding on a one-day trial. Well, here's a test of the matter. The next time you witness a one-day trial, go carefully over the 'buses at the finish, and you will find that a lot of the very best riders never use any leg grip at all. The reason is almost invariably the same—they began life as factory testers, and got into trouble if their breeches rubbed the gold lining off the tank.

About Saddles.

SPRING frames may come, and 3in. tyres may be adopted as standard; but I rather fancy that bigger saddles will bulk largely in the next year or two—the leaf-mounted Brooks, the huge coil spring Terry, and suchlike. During my latest wandering I got into a county where they keep a type of road which is mercifully uncommon. Most of its surface is excellent, and tempts you to speed up a bit. Suddenly, without any warning at all, you encounter an isolated but gigantic pot-hole—soft patches in the subsoil are possibly to blame. Bang goes your front wheel into it. If you are seated on one of the modern super-saddles you do not feel the terrific impact more than if you hit an ordinary bump on an ordinary saddle. But if you are perched on one of the cheap saddles which are usually standardised by motor cycle makers, your internal organs get almost as big a shock as if you had stopped a real vicious jab from Dempsey. I saw a youthful tennis player put a well-known 'bus into such a pot-hole just as I met him. He looked quite old and grey when he came out of the pot-hole. I struck a similar hole four hundred yards on, so I know how he felt. Of course, the comparatively low-priced saddles soften down a lot in use, and after the first year form tolerable shock absorbers. But when they are new! Two of us had occasion to lower the saddle of my new 'bus last week, and it took all our muscle to bend the leather back enough to clear the nuts and bolts concerned. When I next change mounts, I shall keep my old saddle.

LE MANS—THE NIGHT BEFORE.

Impressions of a French Town on the Eve of a Great Road Race.



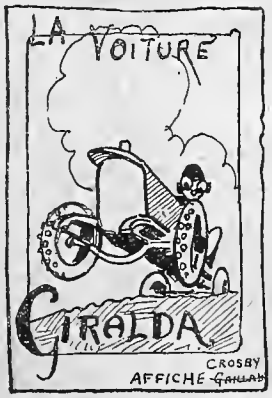
IN England it would be impossible to reproduce the atmosphere so apparent in France on the night before a great road race. For one thing, the national fear of appearing absurd is a constraint, while nearly every Englishman desires to go to bed for at least a few hours during the night.

Far otherwise is it in France, where one may do just what one likes, even if in the doing certain minor restrictions of the law are broken. Manifestations of glee or excitement may be indulged in to any length one pleases, and, if the thing be done properly, one does not go to bed at all.

Advertising—Personal or Otherwise.

For some time the little town which is the centre of racing activity has shown unmistakable symptoms of a coming *fête*. Flags, many of them advertising oil or plugs, appear on every house or *café*; and even on the tramway poles there are mysterious placards, 6ft. high, vaunting the claims of the accessory firms. Then there are extraordinary pictures of quite ordinary makes of French cars proceeding at incredible speeds, and driven by young women who usually grace the pages of *La Vie*.

Every third person wears the *type sport* clothes beloved by our Gallic allies when motoring, varying from a goatskin coat to the loudest checks. Then the cars are inimitable. There are, of course, no genuine racers, since these are safe in bed: but every four-wheeled vehicle which can bear a huge exhaust pipe and four wicker seats is out, driven by a man sincerely hoping to be mistaken for one of the heroes of the past or of to-morrow. The French counterpart of Britain's motor cycle "knut," too, is there in numbers.



". . . extraordinary pictures of quite ordinary makes of French cars."

Every *café* is brimful, the little iron tables spread out to the kerb, and all the chatter is about the races. At one table a huge and burly Frenchman, bearded as the original *Poilus*, holds forth on the certainty of one machine winning, until one is tempted to apologise for ever having doubted the result. A few seconds later, one hears a man on the left divulging state secrets about another mount, which the designer himself would learn with interest, and so the chatter goes on, intermittently audible, amid the tempestuous roar of open exhausts, as cars, backed against the pavement, get away. In the streets, newsboys, inconceivably ragged, emit shrill cries of "*L'Auto*" and "*Le Journal*." It is the Isle of Man over again—only more so!

In England next-door neighbours are regarded with suspicion, especially if they speak without an introduction; but here one can—and does—talk to anybody as fancy pleases; and whether he understands or not, he will be most entertained. Indeed, the language does not matter much, for if the genders of motoring technicalities are a stumbling-block, it is only necessary to discover in which sector one's new friend served, and the *argot* of the trenches will cover all grammatical errors.

By midnight coloured streamers are being thrown about in the principal *cafés* of the town: the cars, bearing twice their normal load, are rushing here and there to the continuous shriek of electric horns, and everybody is supremely happy.

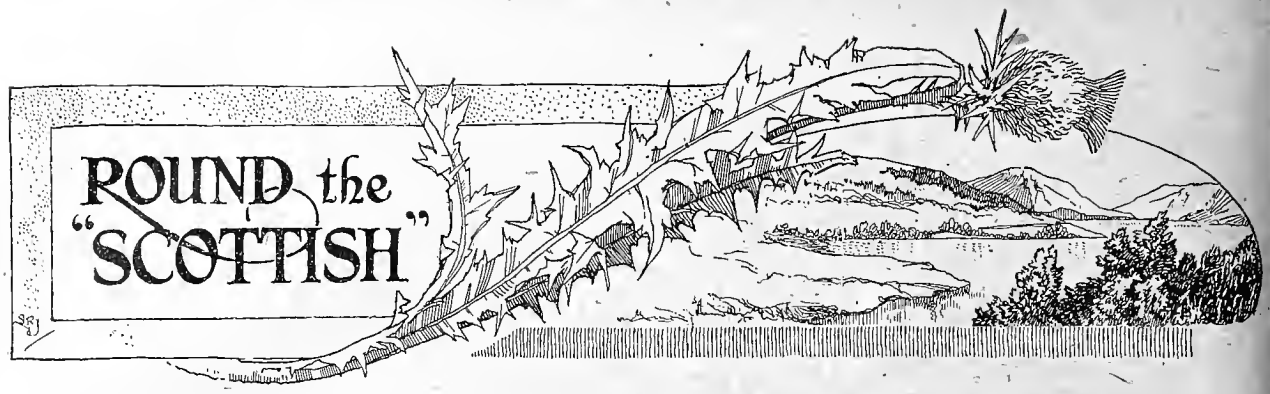
At a very early hour a stream of people sets out for the course, each man, woman, or child bearing a basket, in which, covered by a clean white cloth, is bread in long rolls and bottles of wine. Whatever happens—cold or wet, or darkness of unusually pitch-like variety—off they go, the throng increasing every moment, till the tramp of feet rouses those optimists who thought they would sleep a little. Men on bicycles — the peculiar scraggy French bicycles—motor cycles, cars from Paris, and even decayed taxicabs, all pour out of the town for the course, becoming a rolling multitude as the grey light of dawn spreads over the scene.

WHERE ABSOLUTE CONCENTRATION IS NECESSARY.

A MEMBER of *The Motor Cycle* staff had an interesting chat with George Dance the other day, and learnt the inner history of his failure to win the Senior T.T., which was such a disappointment to Sunbeam enthusiasts, and no less to Dance's many personal friends.

Dance was riding a very careful race, and, when he was leading at the end of the fourth lap, he had never really opened his engine out. Even on the straight towards Sulby he had not used more than threequarter throttle on any lap, so that he had a good reserve in hand if the final lap should prove tight. On a certain bend in Glen Helen there is a particular line which must be taken if the corner is to be rounded at the speed which Dance considers the safe maximum. He struck the desired line accurately enough, and got a tremendous ovation from the crowd, with whom he would certainly have been a very popular winner. The noise made him take his eyes off the road for the fraction of a second, and he was in the ditch like greased lightning. A large stone tore the bottom clean out of his gear box, and bent the perpendicular control rod, so that he was restricted to top gear for the rest of the distance. Dance says grimly that he will not look off the road in 1922 even if somebody lets a maroon off. Under the circumstances, Dance was naturally rather proud of finishing, and the fact that the machine safely accomplished the remaining lap and a half is much to the credit of the Sunbeam gear box.

The Sunbeam exponent was not the only rider in the T.T. to suffer through the goodwill of the crowd, although perhaps the consequences were not so important. At several points we observed that the shouting and excitement of the spectators caused many a man to wobble.



First-hand Impressions of Men, Machines, and Organisation in the Scottish Six Days Trials. By B. H. Davies.

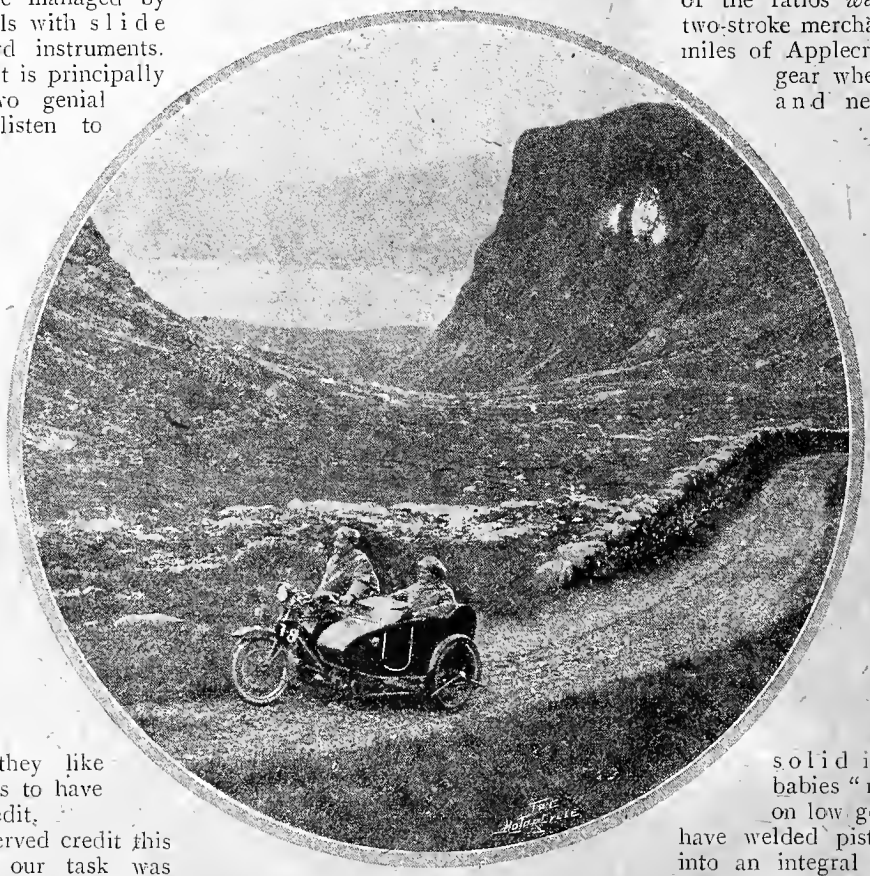
TO the stay-at-home reader one Six Days must appear very like another; we, who travel through most of them, recognise a profound difference between the "Scottish" and the "A.C.U." The northern event, naturally, has the better of any comparison in air (*what* an appetite it gives us); in hills ("Hech! sirs!"); and in scenery (if only the roads ever allowed us to deflect our eyes from the going for more than a split second).

There are also differences of administration. The English trials are managed by a horde of officials with slide rules and weird instruments. The Scottish event is principally bossed by two genial amateurs, who listen to your tale of woe, look at each other, and remark blandly, "Och, well, he's a'guid lad, give him his medal!" They know that any 'bus which can do 900 miles approximately to schedule over their appalling roads cannot have many flies on it; and, provided you ride like a sportsman, don't cheat and don't bring your solicitor up with you to frame windy protests—they like you and your 'bus to have every possible credit.

The 'buses deserved credit this year. Perhaps our task was lightened by the absence of rain until Saturday—only the veterans of the Scottish know what the 183 miles of the Applecross run are like when they are greasy. But there are others who say the perpetual dry skids of this year's bone-dry going were worse than any grease. And the dust! Unco' bad for engines, and unco' bad for the men—at least one poor chap lost his "gold" because his eyes got so inflamed that he could hardly see the road.

The high spot of the week was the fact that the little 'uns ate up the roads and the gradients better than the 500 c.c. machines were doing a year or two back. Low gear ratios, do you say, sir? Well, some of the ratios *were* low; ask the two-stroke merchant who took four miles of Applecross on a 17 to 1 gear whether he had pins and needles in all his fingers at the top. But the technical feature is that the 1921 engine does not distort even if it is set to cover four miles on a 17 to 1 gear under a blistering sun. The contrast with the old days was simply colossal. The 500 c.c. machines pobbled round the 1 in 5 hairpins with their throttles in slow running position on gear ratios which would have seized them solid in 1914; and the babies "revved" eternally on low gears which would have welded piston and cylinder into an integral mass before the war. *For roadster purposes distortion has been eliminated.*

Nothing proves this more forcibly than the feats of the Rover



On the upper reaches of Tornapress, showing Loch Kishorn in the distance. J. T. Bashall (6 Martinsyde sidecar) draws near to the summit of the strenuous six-mile climb.

Round the "Scottish."—

Photographed immediately on its return from the "Scottish," the rear Dunlop tyre of the Sunbeam.

cycle cars. The Rover drivers were not too confident at the start. Low be it whispered, they took spare cylinder heads to Edinburgh just in case. The officials said: "We have no wish to stall you in the wilds—you may carry these spare heads lest evil befall you; but we shall seal your heads." In the event the six Rovers earned four "golds" and a "silver" without distorting their original heads. One little spot of extra luck would have given them six "golds"; for the car which retired did so owing to a steering mistake, and the "silver" merchant had one of those momentary engine stops which occasionally occur in the best families. Incidentally, the small car mopped up the three-wheelers à l'Allenby. Fourteen four-wheelers entered, mostly of the cheaper types, and ten won their "golds"—70%; thirty-six three-wheelers entered, and nine won "golds"—25%. The three-wheeler (cycle car or sidecar) is not quite in its element on roads which are both bad and difficult, and chassis fractures were all but universal; in this *débâcle* the 3½ h.p. Sunbeam outfit earned undying fame.

The Tapley gradometer, which registered the gradients on the Scottish test hills for the benefit of *The Motor Cycle* readers.

The roadsters of 500 c.c. and over were so obviously master of the conditions that the dread of being reduced to a mere silver or bronze award depended on two "ifs." The one was tyres, and the other was driving skill. Crashes were frequent—there must have been at least fifty of one sort or another. Of course, the biggest "if" in driving concerns the clean ascent of the official hills. None of them had quite such appalling surfaces as the precipices which the A.C.U. loves. They were altogether fairer and better hills—quite reasonably climbable even by a total stranger, calculated to punish any "dud" engine, and quick to impose penalties if you did a bit of bad pathpicking or went up too fast. I suppose the standard of driving was as good as one can expect in a large entry over very trying routes; but the fact remains that at least another thirty machines would have secured "golds" if they had been handled by men of the calibre of George Dance, or Westwood Wills, or Neville Hall, or young Downie. There was much clumsy hillwork, and lots of wildly injudicious "blinding" on surfaces which were dangerous and on roads which dipped and twisted in a manner that shrieked for caution. *It is just that extra 5 m.p.h. which does it.*

The Element of Luck.

Once or twice I let myself be tempted by a horde of scorching maniacs into putting up the pace a trifle, and at such times I was in constant touch with danger to myself and my mount; but so long as I rested content to let these fellows rip past me in clouds of dust and small stones, a calm finish was a certainty. Two of the leading trade teams consisted entirely of riders who failed to impress me by either their skill or their sense.

Then there is always luck to be reckoned with. One man's coat sleeve caught his throttle on a test hill. Another who was tuned for petrol got a jug of benzole in his tank, and could not find a mixture all day (the fuel man had the juice waiting for us in jugs). Fenn had a back tyre which was oversize in the beads, and came out of the rim if he used his brakes hard. Shepherd's twin B.S.A. sidecar was brand new, and its lubrication system had a wee defect which starved the front cylinder of oil; so he had to over-lubricate, and used from eighteen to twenty-five plugs per day. Fairley's A.B.C. car had a barrowful of sand in the petrol tank; when he was not taking his jets out, he was scrapping at 50 m.p.h. over bleak moors to catch up time.

In one such scrap along a six-inch fairway between two deep ruts my horrified eyes spotted a huge rock shaped like a shark's fin projecting clean across my path—its roots probably went down to New Zealand. I might have broken a wheel on it if I had not seen it; having seen it, I might have got a terrible wobble on in the ruts, and buckled my frame in the resulting toss. As it was, more by luck than judgment, I swerved into a rut and out again like a flash; but it is just such little incidents which decide whether "Gold" or "Retired" is to adorn your name in the final list.

I hate to say it, for our hosts are such excellent sports; but I soberly consider that the judging went a trifle astray, to the benefit of one or two men and the detriment of others whom I deemed more deserving. With many test hills of

Looking at this kinked rim, one can only marvel at the excellent condition of the tyre in the upper picture.

Round the "Scottish."—

extreme length it is certainly next to impossible to ensure a uniform standard of observation, as every harassed trials secretary knows full well; and in a big trial which includes fifty three-wheelers and four-wheelers the problem of "baulks" is added to the old cruxes of foot-slogging and wheel slip. My personal impression is that the penalisation grew more lenient as the week wore on. On the first day or two hill failures were few in number and more or less obvious in character; a stern standard was applied. On Wednesday we had three hills, of which Glendoe was the scene of a dreadful baulking mix-up, and Inverfarigaig Corkscrew was a bit of a freak. Fifty-two adverse reports were received from the observers on these three hills, and were officially posted that night. A crop of protests immediately resulted, and the spirit of genial sportsmanship led to some of them being very favourably received. Then the men who had sustained not too obvious stops on the earlier hills chewed the cud a bit, and got out their pens. You know the first essential in entering a protest? "Make a noise like a grouse." Some of them did.

"Reminiscing."

In between times we had lots of fun, especially at night when, over the national drink, competitors described the ardours of their day, or "reminisced" about previous experiences in all parts of the world. We chaffed each other. Calderon had a cigarette tin fixed to the middle of his top tube; it held fifty at the start each day, and about three at the night check, so the week cannot have been one long scorch for the Velocette. The modern "baby" is capable of the most astounding speeds. Harry Macrae and I refreshed Calderon after he had been stopped with a broken chain. We pushed him off, topped the next rise, beheld half a county, but no Calderon! I never saw a landscape vacated so rapidly. About Friday three of us fell to bragging that we looked like completing a Scottish without a spill. That afternoon, on a lonely moor track, Hugh Gibson overhauled Christie, whose forks had bent in a crash, and rendered his steering "serpentine." Gibson made the mistake of steering a course which was a tangent to one of Christie's arcs—both men flew. I myself was pottering gently through the lunch check on Saturday on the extreme right of the road when young Downie took a sudden dislike to me, and tried to turn his Raleigh round under my front wheel. We both flew. Sproston lasted longest. He was in the very act of handing his card to the finish checker at Edinburgh when a taxi resented the natty appearance of "Spross" and his Lea-Francis. They both flew.

Repartee—assorted!

George Brough is one of the clever lads. He started No. 1 on Wednesday, and, having heard fearsome yarns about the Corkscrew, he decided to reach it early, dismount, and walk up before he rode it. When ochre and arrows diverted us through the usual gate, the side track consisted of nine inches of loose sand. This so occupied George that he never saw the placard "Observed Hill Begins Here." So for the time being he was posted as a failure. That night . .

Kind Friend: "Sorry you failed on the Corkscrew, George."

George (irately): "I didn't. I only failed *on the handle!*"

Saturday morning brought us a baby two-stroke size in cloudbursts near Callander, and the dips of the road were flooded. In one of these ponds I met a motor char-à-banc. When I emerged I resembled a survivor from the Lusitania.

"How's your engine going, Tom?" was a frequent query in one of the cigarette intervals outside a check twenty minutes ahead of time. The prize answer was, "Wouldn't pull the skin off a rice pudding."

If you should hear that an innocent Highland gillie met a violent death at the hands of one of the boys, the verdict will be justifiable homicide. The boy had just stuck on Glendoe, and the gillie asked, "Wull she no tak' yon bit brae?"

Who was Next?

The last contact with civilisation *en route* to Applecross is a lochside village yclept Jeantown. But you must not pronounce it "Jeantown," or none of the natives will be able to tell you the way. You must practise till you can articulate "J'n't'n" with a strong flavour of peat and whiskey. A week ago I could recommend Mr. Mackenzie's stores in that burgh. I ordered a large crate of sandwiches for the observers on the hill. "Wull tenpence be ower much?" asked the shy maiden. I carefully paid up before remarking, "Any hotel would charge me 5s." She replied demurely, "I'll be knowing when the next one calls."

Ballochandrain aroused mixed emotions. Some men found this hill very easy, and circulated a yarn that it owed its inclusion to the fact that a search party from the Edinburgh club explored it in the dark—after a Highland dinner. Others regard it as a better engine heater than Tornapress. I took the trouble to put my Tapley gradometer on it, and found that the steeples ran as steep as 1 in 4.2, but the dips between the steeples were numerous, so that a climb becomes a series of short rushes; I think a following wind was responsible for the only excitements which it caused. I arrived on this hill hot, thirsty, and lunchless. After a time I noticed that Harry Macrae, the genial O.C. Hill Observation, had half a bottle of Bass remaining. I had never previously supposed that he was so flinty-hearted a fellow. Presently I saw his brother, R. S. Macrae, ascending at speed on his Harley sidecar. Moreover, Harry had temporarily relaxed his guard on the precious bottle. "R.S." completed the hill rejoicing. Revenge is sweet.

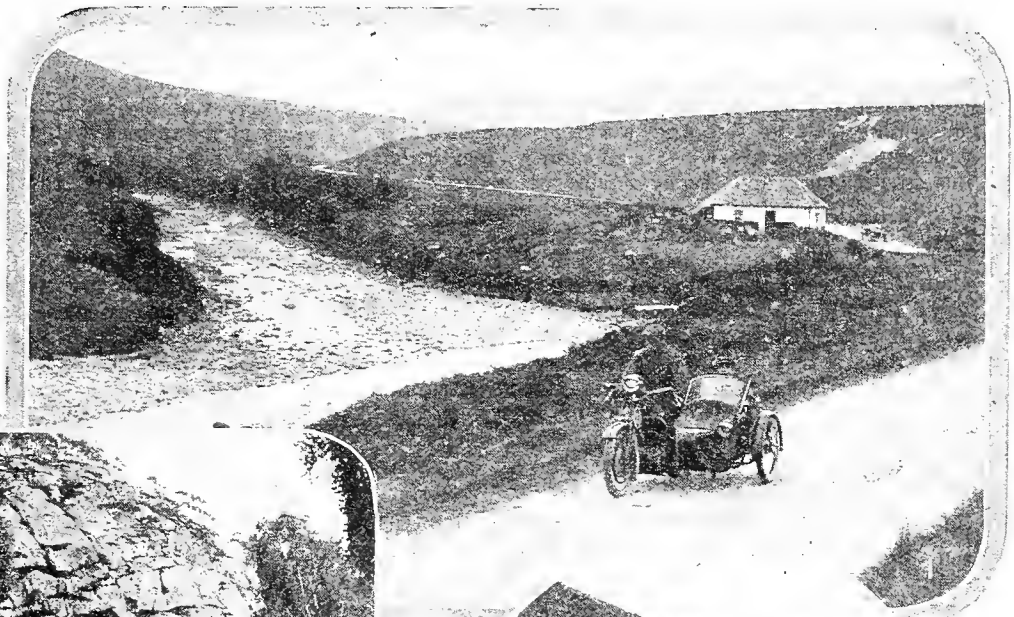
How the Sunbeam behaved.

I had almost forgotten my own mount. Sunbeams are officially credited with six entries and six "golds." It ought to be eight "golds." I myself rode a brand new standard sports Sunbeam round the course, as did another knight of the pen. Both of us enjoyed a picnic. When A. L. Downie bowled me over, he broke my inlet valve spring; and, oddly enough, the corresponding spring broke on the other press Sunbeam. Apart from that I did not have a mite of trouble, and the general conduct of the machine was such that Great Britain would have held no more astounded man than myself if any mishap had occurred. The gears were approximately 5, 9, and 12; and the slow running position of the throttle on the lowest gear amply sufficed for all gradients. The

BY MOUNTAIN AND LOCH IN THE HIGHLANDS.

Scenes in the Scottish Six Days Trials.

(1) J. Richardson (5 Lea-Francis sidecar) alongside the river Garry, near Dalnacardoch. (2) 'Midst the silver birches. G. Nott (7 Matchless sidecar) on an easy portion of Inverfarigaig. (3) A quartette near Aviemore. G. M. Townsend (P. and M.), R. Watson (4½ Humber), J. R. Fellows (3½ Sunbeam), and C. Moser (4 Triumph). (4) Norman Black (5 Omega) climbing Inverfarigaig in good style.



Round the "Scottish."—

steering at speed is rock-steady, and at ordinary speed on rough surfaces I managed to hold it up quite successfully, though I had enjoyed no rough-riding practice for many months. The brakes and controls are all admirably thought out, whilst the engine is remarkably well balanced for a "hot-stuff" single-cylinder. I could not make the engine smoke, so that the Lodge racing plug took me 1,500 miles without a misfire and without being looked at. There cannot be a better 'bus in its class, and if any novice wishes to begin earning gold medals in the big trials, he can buy a Sunbeam and be sure that if he fails to secure a "gold" it will be his own fault. I feel almost equal admiration for my Dunlop tyres, which were 26 × 2½in. heavy pattern. Never before have I got through a Scottish without more punctures than I care to remember. This year I went up from Coventry by road, round the trials, and back by road to Coventry without any tyre trouble. The accompanying illustration shows the condition of the tread at the end of this distance; it is notably free from stone cuts, though another picture—showing a kink in the rim—indicates how rough some of the going was.

Any tourists who purpose travelling north for their holidays should consult the A.A., as road conditions are very variable, and, since repairs are now in progress at many places, the surfaces vary from week to week. The Great North Road is mostly rough north of Doncaster, though not so atrocious as it was last year. The best way into Scotland is probably to cut across Durham county (*e.g.*, by Bishop Auckland) to Corbridge, and thence to take the Carter Fell route. The A.A. recently reported that this route was in bad order. Doubtless they had the Newcastle-Elishaw section in mind, for, if one travels by Corbridge, one dodges the Newcastle tramlines and gets splendid going except for three miles.

LONG DISTANCES AT SPEED.

The Grand Prix, Tourist Trophy, and 500 Mile Races Compared.

ELSEWHERE in this issue will be found a description of the Grand Prix Race over the Circuit de la Sarthe—the French classic event, second in importance to the Tourist Trophy Races in the Isle of Man. At the time these notes are penned, the results are not known, and they have been inspired by speculation as to the speeds at which the various classes will be won.

Whatever the speeds attained, they no doubt will be compared with the performances of similar machines in the Isle of Man and during the 500 mile race at Brooklands. The conditions in the three events are very dissimilar. The Tourist Trophy Races are held over a twisting course with many awkward bridges and corners. In addition, there is a long trying climb "up the mountain" and then the descent.

The 500 mile race was held on the Brooklands Track, where speeds of considerably over 100 m.p.h. are possible. In other words, Brooklands places no handicap on the machine on the part of speed, whereas it is maintained by many that the I.O.M. course is of such a nature that much faster machines than those which have competed in the races could not materially improve the times.

Only Three Acute Corners.

The Grand Prix course at Le Mans is the third proposition. Roughly triangular, it has but three acute corners, and therefore the speeds attained should be higher than those of the T.T. winners, but lower than those attained in the 500-mile race. As a means of comparison, we give below some of the performances put up by the various size machines in the two British events.

Tourist Trophy Races.

250 c.c. (distance 188 miles 6 furlongs).—D. G. Prentice (2¼ New Imperial-Jap); speed 44.9 m.p.h.

350 c.c. (distance 188 miles 6 furlongs).—Eric Williams (2¾ A.J.S.); speed 52 m.p.h.

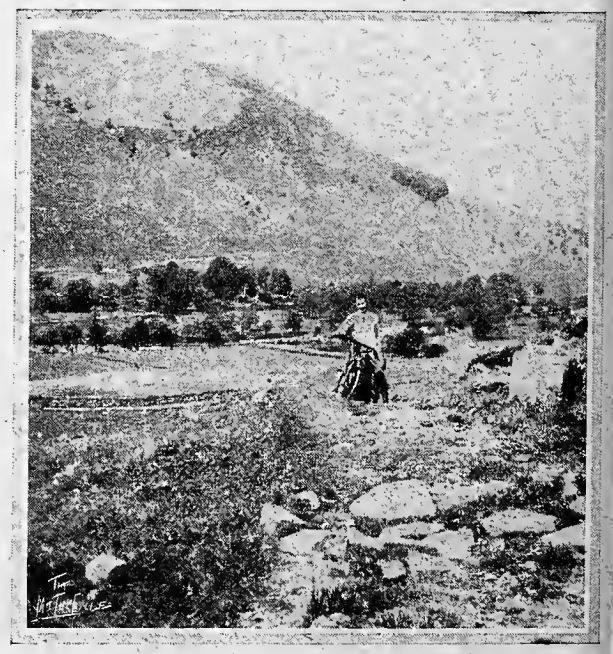
500 c.c. (distance 226 miles 4 furlongs).—H. R. Davies (2¾ A.J.S.); speed 54.49 m.p.h.

Five Hundred Mile Race.

250 c.c.—B. Kershaw (2¼ New Imperial), 100 miles, 57.42 m.p.h.; 200 miles, 51.26 m.p.h.; 300 miles, 51.26 m.p.h.; 500 miles, 50.34 m.p.h.

350 c.c.—N. Norris (3 Ivy two-stroke), 300 miles, 51.64 m.p.h.; 500 miles, 51.69 m.p.h.

500 c.c.—V. Horsman (3½ Norton), 100 miles, 65.01 m.p.h.; 200 miles, 62.75 m.p.h.; 300 miles, 62.5 m.p.h.; 400 miles, 61.76 m.p.h.; 500 miles, 62.31 m.p.h.



ON BRITAIN'S HIGHEST MOUNTAIN.

It is highly improbable that Ben Nevis will again be conquered by a motor vehicle, as the bridges on the track have been carried away by mountain torrents. A local Beardmore-Precision rider discovered this on the occasion of a recent attempt. He is shown on the lower reaches.

COMPETITIONS ALL OVER THE WORLD.

The Motor Cycle Movement Expanding from "China to Peru."

As a sport motor cycle competition riding enjoys a world-wide popularity. It is only natural, however, that "different countries, different methods" should be the rule regarding the best, most enjoyable, and most useful form which these events should take. At the same time, it is gratifying to note that more and more are the other countries of the world following the lead set by Britain.

Not only is this so in the case of reliability trials; it also applies to racing. For example, America is now considering the formation of a central club on the lines of The British Motor Cycle Racing Club. It is a project that we feel sure will meet with success.

When all things are considered, the leading position that Britain holds in the world of competitive motor cycledom has been gained simply by reliability trials on sensible lines. If we except the T.T., road racing is unknown in England; yet abroad, in South Africa, Australia, and New Zealand, and on the Continent, in France, Italy, Sweden, Germany, Austria, and even Czecho-Slovakia, this branch of the pastime is probably the more popular of the two. Of course, in the majority of these countries the authorities do not look unfavourably on using the roads for speed events.

Trial and Road Race in South Africa.

We give below a number of reports of important competitions held in widely varying localities. They are doubly interesting in that they illustrate the universal popularity of motor cycling, and indicate the form the sport most generally takes in various places.

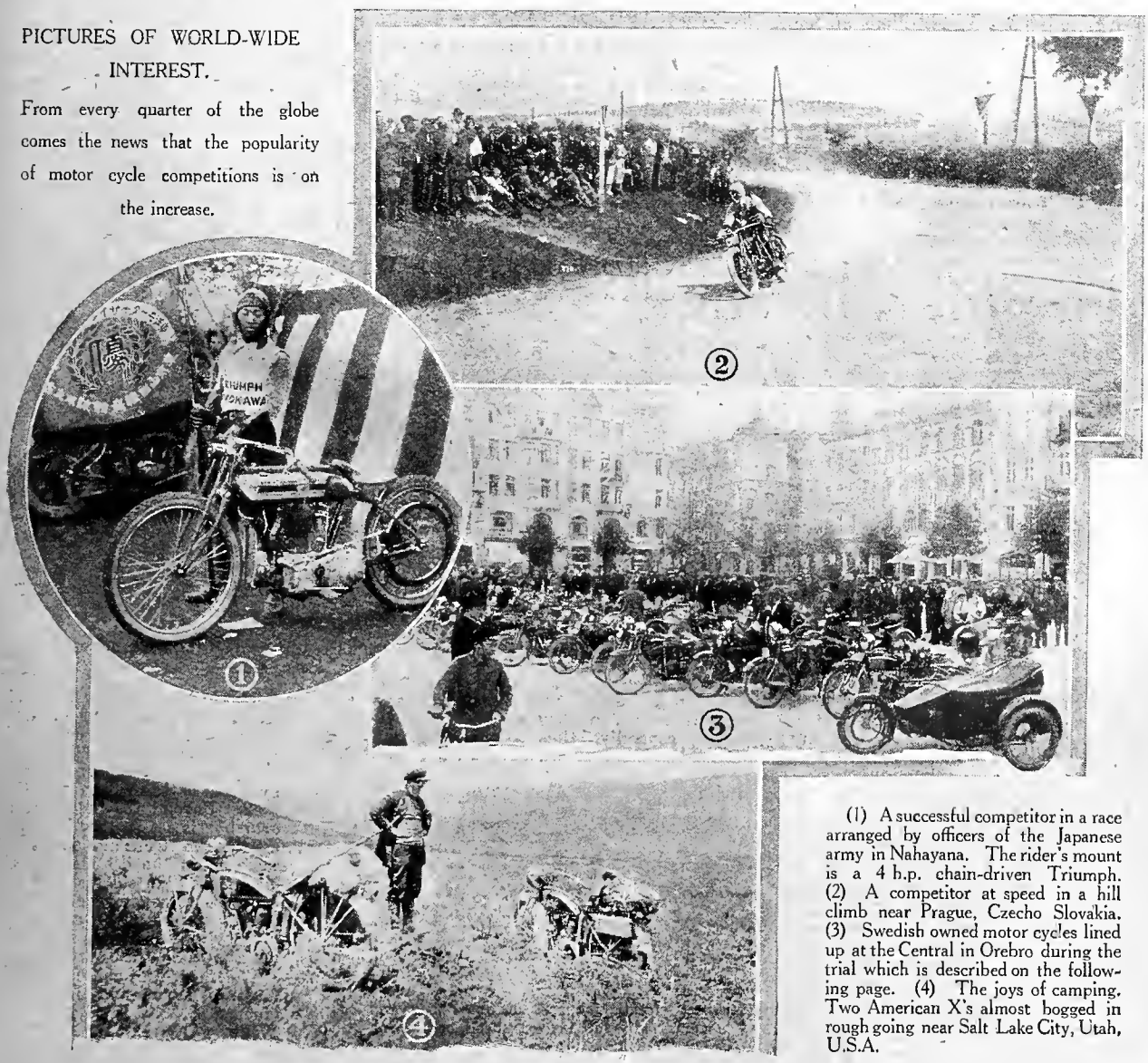
An important competition in South Africa, the combined reliability trial and hill-climb for the Vacuum Cup, was held recently by the Cape Peninsula M.C.C.

Most of the competitors lost no marks for reliability, and therefore the destination of the cup was decided by the formula performances in the timed ascent of Sir Lowrey Pass. F. J. Harrison (7-9 Harley sc.), winning for the second time, secured the cup outright. Second and third respectively were J. W. du Toit (7-9 Harley-Davidson) and L. M. Cran (4 Harley-Davidson). J. W. du Toit also won the special prize for fastest time of the day. A Triumph and sidecar was fifth.

The Pass is 3¼ miles long, and in the words of a South African correspondent, is "just a good old grind all the way, with two or three sharp bends."

PICTURES OF WORLD-WIDE INTEREST.

From every quarter of the globe comes the news that the popularity of motor cycle competitions is on the increase.



(1) A successful competitor in a race arranged by officers of the Japanese army in Nahayana. The rider's mount is a 4 h.p. chain-driven Triumph. (2) A competitor at speed in a hill climb near Prague, Czecho Slovakia. (3) Swedish owned motor cycles lined up at the Central in Orebro during the trial which is described on the following page. (4) The joys of camping. Two American X's almost bogged in rough going near Salt Lake City, Utah, U.S.A.

Competitions all over the World.—

Durban-Johannesburg Race.

What is regarded as the South African T.T.—a race from Durban to Johannesburg—attracted fifty-nine entries in the solo (handicap) and twelve for the sidecar (scratch) event. Locally built, British and American machines were represented, and the handicapping was apparently on a very fair basis.

E. Blackburn, a nineteen year old rider on a 7-9 h.p. Harley-Davidson, secured a very popular win in the solo class in the net riding time of 10h. 12m. 19s.—an average speed of 40 m.p.h., breaking all previous records.

A. Hildebrandt (2½ Hilda) was second, and L. R. Cohen (4 Triumph) ran into third place.

An 8 h.p. American X sidecar, ridden by A. Long, was first in the sidecar class with a 7-9 h.p. Harley-Davidson sidecar a good second.

British Machines in Toronto Hill-climb.

Triumph motor cycles made a good showing in the recent hill-climb of the Toronto M.C.C. In the 1,000 c.c. classes, however, American machines had things all their own way, and Kipp's ascent, when he made fastest time on his Indian, was spectacular to a degree. Results:

600 c.c.—1, C. Tockey (4 Triumph), 13⅛s.; S. Orange (4 Triumph) and W. St. George (4 Triumph), 17⅜s., tied for second place.

PRIVATE OWNERS.—1, W. Ward (7-9 Excelsior), 13⅜s.; 2, T. Cassidy (7-9 Indian), 15⅛s.; 3, T. Brown (7-9 Harley-Davidson), 15⅜s.

AMATEURS (Open).—1, G. Orange (7-9 Reading), 10s.; 2, T. Brown (7-9 Harley-Davidson), 12⅜s.; 3, A. Shuttleworth (7-9 Jefferson), 14⅜s.

OPEN.—1, H. M. Kipp (7-9 Indian), 9⅜s.; 2, T. Eisenbise (7-9 Reading), 10⅜s.; 3, A. O. Donnell (7-9 Harley-Davidson), 10⅜s.

SLOW CLIMB (Open).—1, T. Eisenbise (7-9 Reading), 68s.; 2, C. Tockey (4 Triumph), 56⅜s.

Hill-climb at Prague.

Post-war roads in Eastern Europe are not all that might be desired, but nevertheless Czecho-Slovakia is going ahead with a strong programme of competitive events.

Over the well-known Prague-Jiloviste-Kœnigsal course the first annual motor cycle race meeting was held on May 22nd by the Automobile Club of Czecho-Slovakia. An immense crowd of spectators was attracted to the picturesque course (of approximately three and a half miles) on the hills just outside Prague.

It was splendidly managed by the progressive and enterprising club, which, although its chief interest lies in the car world, exerts every resource to make the motor cycle classes a success and to propagate the movement. Results:

SCOOTERS.—Reckzuegel (C.A.S. scooter).

MOTOR CYCLES.

350 c.c.—1, Krzmar (2¾ Douglas); 2, Smikal (2¾ Moser); 3, Deyl (2¾ Diamond).

500 c.c.—1, Desensky (Frera); 2, Gerget (N.S.U.); 3, Michel (Orion).

600 c.c.—1, F. Marik (Indian Scout); 2, Gut (Frera); 3, Spatny (Indian).

750 c.c.—1, Boehm (James); 2, Knapp (A.J.S.); 3, Wanek (Walter, a Prague make).

1,000 c.c.—Chlad (Indian).

OVER 1,000 c.c.—1, Hartmann (Sascha); 2, Stibral (Henderson).

1,000 c.c. SIDECARS.—1, Pan Dietz (Frera sc.); 2, Konecny (N.S.U. sc.).

Justice requires us to point to the fact that the British-built machines participating in the race were all in the hands of private owners, and mostly were war-worn 1913 and 1914 models.

Four-day Swedish Trial.

Sixty competitors supported the big event of the year in Sweden—the trial organised by the *Svenska Motorcykel Klubben*. Approximately 1,000 miles were covered in four days.

Although the intention of the ruling club was to make the event an international one, owing to the difficulties in getting the rules ready in time only two (Norwegian) riders supported the trial from outside. A.B.C., B.S.A., Royal Enfield, O.K., and Rudge machines were represented, but American makes were in the majority.

Starting from Stockholm, the route included many of the most difficult test hills in Sweden, and, incidentally, practically all the country was visited by the competitors. A 23 m.p.h. schedule was set, and proved very difficult to maintain. Results:

250 c.c. CLASS.—Sarnmark (O.K.).

350 c.c. CLASS.—Lundgren (Wanderer).

500 c.c. CLASS.—Kleine (Invicta).

750 c.c. CLASS.—1, Larsson (Indian Scout); 2, Westerberg (Harley Sports).

1,000 c.c. CLASS.—Forssing (American X).

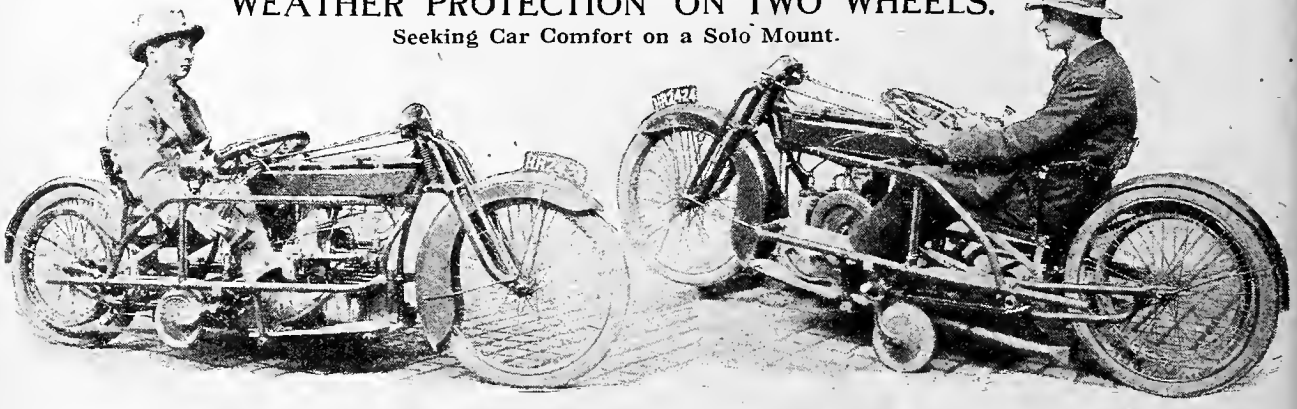
OVER 1,000 c.c. CLASS.—Lindholm (Henderson).

PASSENGER MACHINES (1,000 c.c. Class).—Westerberg (Harley-Davidson).

PASSENGER MACHINES (over 1,000 c.c. Class).—Svanback (Henderson).

WEATHER PROTECTION ON TWO WHEELS.

Seeking Car Comfort on a Solo Mount.

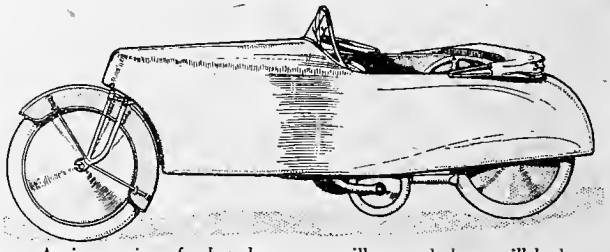


In this illustration the driver's hand is resting on the lever which raises and lowers the side wheels.

Showing how the trailer wheels adjust themselves to road inequalities.

FOR years the motor cycle has been accused of lack of weather protection for the driver; therefore, any attempt, such as that we describe, to give the rider something approaching "limousine comfort" must be regarded seriously.

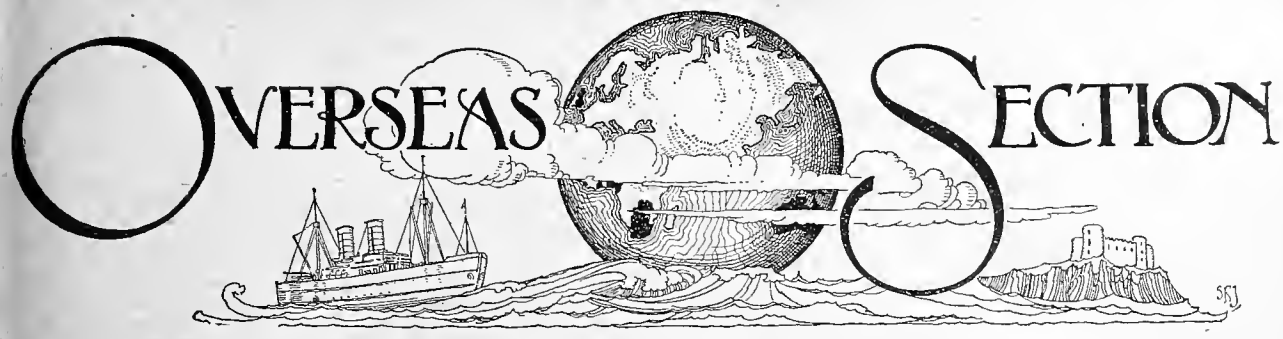
Messrs. Brown and Roper's vehicle is rather difficult to classify, but the design is easily followed from the illustrations. A 4 h.p. Douglas engine and frame form the basis, but the wheelbase has been lengthened and a form of chassis attached to take the two trailer wheels. These wheels may be raised or lowered instantaneously by means of a single hand lever. An important point about these wheels is that the axle to which they are attached is pivoted centrally, thus allowing automatic adjustment on corners and uneven surfaces. The body is readily removable to allow access to the engine or transmission. A very low seating position also tends to give freedom from skidding.



An impression of what the monocar illustrated above will look like when completed with bodywork, hood, and screen.

Steering is by wheel connected by rods in tension to the front fork. Beyond the fact that the gear box is set further back than usual, the transmission is the same as on the original Douglas machine. Side shields and footboards are so designed that an adequate current of air reaches both cylinders. These shields are not shown in the illustrations.

The designers and makers are Messrs. Brown and Roper, engineers, 43, The Canal, Salisbury, Wilts.



A Commentary based upon Practical Experience and a Study of Overseas Opinions.

Lack of Information for Overseas Buyers.

THAT the majority of motor cycle and accessory manufacturers' advertisements are far from informative is an increasingly common plaint from readers in distant corners of the world. Yet it should not be difficult for the advertisement writer in his office in England to realise how irritating it is for the motor cyclist in, say, Siam to see advertised apparently just the article he requires, but with some vital descriptive point omitted.

In six cases out of seven the missing factor will be price; but the other may be any equally essential item of specification. Most probably the makers' catalogue contains all the desired information, but a three months' wait for a list on the top of the inevitable three months' wait for the article itself is calculated to discourage the most enthusiastic potential buyer.

This may appear a minor point, but the many references to the subject contained in our overseas post bag indicate that a change would be much appreciated by both exiled British riders and the majority of motor cyclists abroad. It has been suggested that, say once a month, manufacturers should substitute veritable catalogues for their present artistic, if bald, page and half-page efforts to convince the public of the supremacy of their goods.

Steel Sidecar Bodies for the Tropics.

AUTOMOBILE manufacturers discovered some time ago that coachbuilt bodies were not ideal for cars intended for tropical and sub-tropical areas. Ordinary coachwork splits and ordinary varnish peels when subjected to prolonged exposure to a blazing sun; as a consequence cars with aluminium and all-steel bodies are becoming increasingly popular for export, particularly to India and the Far East.

What applies in this respect to cars also applies to sidecars, and already American sidecars with steel bodywork are freely available on the near and far eastern markets. Standard British sidecar outfits, however, are almost invariably equipped with coachbuilt bodies, and in most cases the makers are very loth to depart so greatly from their catalogue specification as to substitute a special weather-resisting body.

Of course, British aluminium and steel sidecars can be obtained, but the average buyer of a sidecar outfit naturally prefers the attachment to be that supplied by the makers of the machine, and his choice is therefore limited to the one or two firms who offer steel bodies.

It is in details such as this that the greater enterprise and closer study of specific conditions by the American maker gain for him a secure position in many overseas markets.

Representative British Machines in a Six-mile Climb.

IT is not unusual nowadays to hear it remarked that the average British motor cycle engine of 1921 is no more efficient than, and is no improvement on its prototype of, 1914. How erroneous is this widely held supposition was amply proved this month, when the Scottish Six Days Trials included the six-mile Tornapress-Applecross climb for the first time for seven years.

In 1914 this long mountain pass—perhaps more nearly approximating certain overseas conditions than any other in Great Britain—proved the Waterloo of more than 50% of the entry; this year it was monotonous to watch the long procession of machines—including a $3\frac{1}{2}$ h.p. and a $2\frac{3}{4}$ h.p. sidecar—simply toying with the gradient.

Those of our readers who have been somewhat out of touch—except on paper—with the progress of the modern British motor cycle and who are now riding pre-war machines in out-of-the-way corners of the world do not realise how wonderfully efficient the 1921 motor cycle is. Externally there may be little change in pre-war and post-war power units; actually the improvement is immense.

Such comparative data as that referred to above help to convince even the most remote backwoods settler of the efficiency of the modern British motor cycle.

Effects of the Tourist Trophy.

VISITORS from overseas who were able to witness this year's Tourist Trophy races in the Isle of Man agree that it has been the finest test of the year, both from the sporting and manufacturing viewpoint. They have been much impressed by the amount of energy and care displayed by both riders and entrants, and by the lessons learned, which have a direct bearing on the products of the competing firms. Parts which have stood up to normal wear and tear at home and abroad have given trouble in the Isle of Man, and a rectification of these faults is all to the good of the user, especially of the rider who dwells in out-of-the-way places, where repairs are difficult and spares take many weeks to arrive. Engines and transmissions which can stand 200 miles of race driving with constant and violent accelerations and decelerations, will withstand any work that is likely to be encountered

Overseas Section.—

throughout the world. For the benefit of those who are not familiar with the Manx course, it should be explained that, roughly speaking, there is a corner for every mile, that there is a seven-mile climb, and that two of the corners are real hairpins—the road doubling back on its tracks in each case. Consider then the fact that the winning machines averaged about 54 m.p.h., and some conception may be obtained of the strain on man and machine.

That a 350 c.c. A.J.S. should be able to defeat a field of picked 500 c.c. machines is a wonderful tribute to the manufacturers, but, without wishing to detract from this wonderful performance, it is only fair to add that many crack machines experienced bad luck. The element of luck enters largely into a race of this description, and Sunbeam, Triumph and Indian were all close contestants for the lead at various points. To cut an hour off last year's "Junior" times is no mean performance, and gives some indication of progress made; but, when the lessons of this year's race have been duly assimilated, it is safe to conclude that we shall witness even better speeds in the 1922 event. Overhead valves were successful in both Junior and Senior events, and it is to be hoped that in the interests of efficiency and economy, even more attention will be paid to a study of this important feature of design.

A Selection of Letters from Readers scattered all over the World.

Conditions in Nigeria.

A Nigerian reader, "WELLWISHER," speaking of tyre sizes, says:

"I am very glad to note, in your excellent journal, which I read constantly, that the English makers are fitting larger tyres to their machines. There is a large and increasing demand for motor cycles in Nigeria, not for racing, but for getting about on business, and it would be an excellent thing for them, and for us, if some of the makers specialised on machines for the Colonies, bearing in mind that riders are generally many miles from any sort of garage or motor mechanic; and that large tyres are necessary for any degree of comfort. There are many American machines in use here, their chief attraction being the size of the tyres."

"Roads" at Mossel Bay, South Africa.

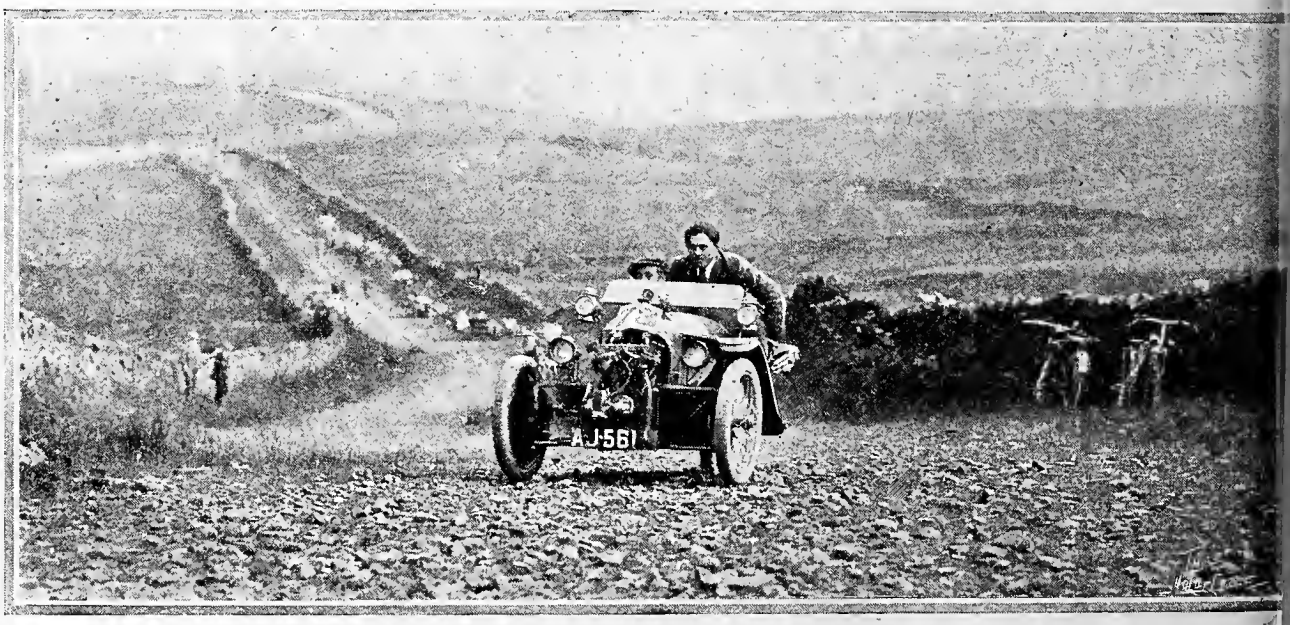
Writing from Mossel Bay, South Africa, "JACOBUS" sends the following interesting commentary on one species of overseas road: "Having read various bewailings and bemoanings in the correspondence columns of your paper, anent the atrocious surface of the roads in England, I feel it encumbent upon me to unburden myself of a monologue on *real* Colonial roads.

"We have three kinds of roads in this country. (1.) Rotten. (2.) Darn rotten. (3.) Asterisk, blank rotten. Most of them are in categories (2) and (3).

"To state my own distressing case. One evening, while riding the sturdiest of sturdy 4¼ h.p. singles, a machine which I have always considered the ideal mount for this country—your readers have probably guessed the make, so I will leave it at that—I experienced an unbelievable thing. I fractured the fork in *all four down tubes*. I was travelling at about 25 m.p.h. on a lonely (and, therefore, atrocious) road, when, wallop! Mark you, it was no fault of the bicycle. It has been the faithfullest of faithful friends, but it met a road the awfulness of which the makers had never dreamed of.

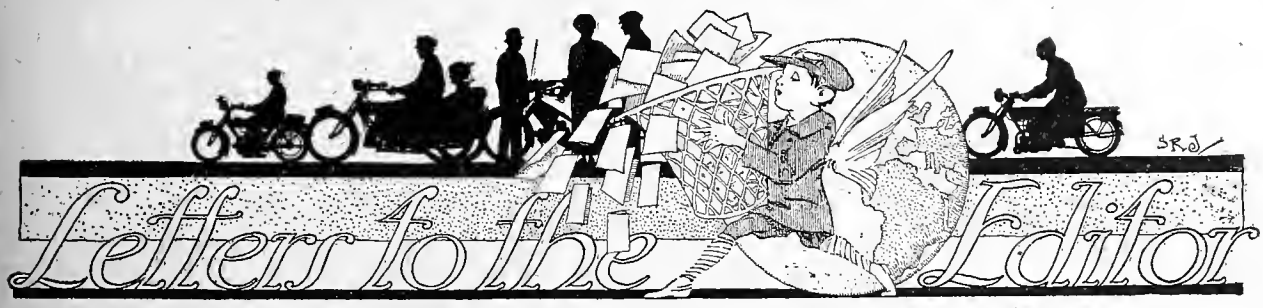
"Seriously, though, your riders in England have nothing to wail about. Take any two miles of Colonial road and see what horrors it contains. First, drifts. Not nice polite water-splashes such as figure in the big trials in England, but perhaps thirty yards of water with a descent down a bank of 1 in 3, of unknown depth and bottom surface, and an ascent of 1 in 3 on the other side.

"Take sand. Sometimes two miles of thick white sand, which traversed on a real karroo, windless day, travels with you in a species of smoke screen, filling your eyes and nose and ears and aggravating the skidding sliding tenor of your course. Take mud. A cousin of mine was recently bogged up to his axles in slimy ooze. Your trials are, to us, tours over our usual roads, and therefore to be laughed at. One photograph in a recent issue tickled me immensely. The hill in a certain club event was in such good condition that barricades of boulders had been placed on the good surface to drive riders into the rough. Out here, barricades of boulders would have to be placed on the sides of the roads to prevent competitors taking to the smoother veldt."



TYPICAL CONDITIONS IN THE ILKLEY OPEN TRIAL.

A characteristic panorama on the Yorkshire moors, showing C. R. Waddington (Morgan) on the lower portion of The Stake.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

BRITISH MACHINES IN SWITZERLAND.

Sir,—In *The Motor Cycle* of June 30th you quote a correspondent from here who says there are very few English motor cycles in Geneva and only one agency. In town recently I noticed the following makes, viz.: Hobart, Clyno, New Imperial, Royal Ruby, Scott, Norton, Douglas, Enfield, Omega, and three or four Triumphs, big and little, all of which have their agents here in Geneva. Your correspondent is not exactly *au courant*. EDMUND CANBY.

Geneva, Switzerland.

FASCINATING BELT DRIVE.

Sir,—As a rider of a Zenith Gradua for the past two years, I too, like "Medicus," have often wished for some form of handle-bar control for this type of gear change, and it may be of interest to him and other users to know that I have devised and partly constructed a means whereby this is possible from a thumb and finger lever on the handle-bar.

At the present time I have not got the opportunity nor the accommodation to complete the model for experiment, and its only drawback, so far as I can see, will be its costly construction. ERNEST LEWIS.

BRITISH BIG TWINS.

Sir,—The 500 mile race was recently held at Brooklands, and no British big twin put up any performance to compare with that of the leading American machines.

I know many motor cyclists who have been waiting for the Brough-Superior to distinguish itself, and they are surprised that one or two were not entered. If they are guaranteed to do 80 m.p.h., as I understand is the case, surely they should put up a good performance in expert hands. May we hope to see some of these machines during this season's racing? G. WAKE.

Sir,—In your issue of July 14th, "Ixion," under the heading of "Wanted, a British Super-twin," laments that there is not a British-built machine able to come into this category.

Possibly the heat wave is connected with the fact, that in this instance, "Ixion's" memory is not "revving" up to its accustomed standard. There *is* a British super-twin, and its name is "Brough-Superior." A fledgling admitted, but a remarkably precocious infant withal. Give it a season in which to shake its feathers, and we shall then probably see the Yankees leaving Brooklands somewhat depressed.

CLIFFORD WILSON.

WHERE TO GO FOR SUMMER.

Sir,—As a reader of *The Motor Cycle*, I should like to take this opportunity of telling your London and district readers of a county in England really worth visiting.

Residents of London most probably take their motor cycle rides in such counties as Surrey, Sussex, Essex, and others. Though I must admit that the scenery there is very beautiful, yet I fully believe that Derbyshire stands foremost as England's most beautiful county.

In spite of its hills, Derbyshire is a very pleasant county in which to motor cycle; in fact, nearly all the hills have an "opposite," before and after, so they may be easily "rushed."

Such places as Haddon Hall, Chatsworth House, and all places round Buxton and Matlock are perhaps the best parts of Derbyshire.

Finally, the moors are not, as everyone supposes, the northern lands corresponding to the southern downs. On the contrary, they are very picturesque, having a beauty of their own. They are also very healthy, and have an ideal summer temperature.

I strongly advise anyone who has not been to this county, prior to reading this, to go. A. R. INNES-SMITH.

HEAVY HAULAGE WORK BY A SIDECAR.

Sir,—Noticing in a recent issue of *The Motor Cycle* that a 7-9 h.p. Indian sidecar, driven by Mr. Hugh Sharrock, towed a 44 ton barge a distance of one mile on the Leeds-Liverpool canal, it may be of interest to your readers to hear that I recently towed a Sizaire-Naudin two-seater motor car (having a broken shaft), weighing about 15 cwt., with its driver, Mr. H. J. Palmer, weighing 13½ stone, with my 1915 7-9 h.p. Harley-Davidson sidecar, from Fenny Stratford to Streatham Hill, a distance of fifty-five miles.

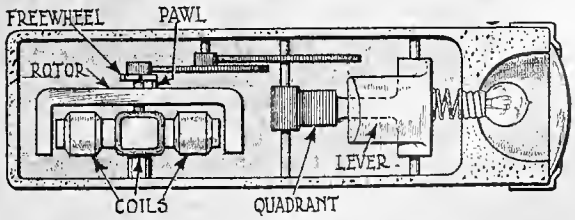
We had to invite the kind assistance of motorists with high-powered cars up four hills, but, with these exceptions, the H.D. was quite equal to its difficult task, and is none the worse for its "day out." My own weight is nearly 12 stone and the outfit over 3 cwt., so that the entire load was over 1 ton, and for a considerable part of the journey we were doing twenty miles per hour, and at times reached twenty-three.

I think the performance says volumes for the power and reliability of the Harley-Davidson. I might mention that I have no interest in the Harley-Davidson Motor Co.

FREDK. S. HENNIKER.

LEVER-OPERATED FLASH LAMPS.

Sir,—With reference to "Ixion's" remarks on the repair of lever-operated flash lamps, I experienced the same trouble on dismantling mine, but found that if the lever is allowed to remain out, instead of pressed home, the pressure on the



This diagram explains Mr. Henderson's remarks in reply to "Ixion's" query regarding hand-operated flash lamps.

spring inside will be removed, allowing the cover to be dismantled easily without the movements jumping out. The chief trouble is in the free wheel gear, which is of poor design, no doubt for cheapness sake. I wear one out in a fortnight, but retailers, I understand, repair these free for twelve months, so buyers should see that they keep their receipt. The magnets used are of the permanent type, and after much use may need remagnetising. The lamp has severe usage due to the excessive voltage at times when the lever is worked hard, so a new lamp might be necessary after a time, otherwise candle-power should not drop with use as batteries do. A new type of lever flash lamp has a flywheel which keeps the light going for thirty seconds after one has pressed the hand lever. S. HENDERSON.

THE CHAIN DRIVE TRIUMPH ON THE ROAD.

Sir,—I fear Mr. Heath has misread my letter.

I have every reason to believe that my gear box is not "mechanically wrong" in the sense in which your correspondent uses the expression.

It is a fact that: *(a)* I found a clutch lever quite soon after receiving the machine.

(b) I cannot change down without using the exhaust lifter. The Triumph instruction book definitely tells one to use the exhaust.

(c) I cannot move the gears into neutral when the engine is running and the machine stationary. Mr. Heath says the last statement is "ridiculous," which is, I think, not very courteous of him.

I must point out that your correspondent's ideas on changing down are a little hazy. He says: "When using the exhaust . . . the action . . . is too quick to cause any check in the acceleration of the machine."

Now,

(1.) One does not change down when the machine is accelerating.

(2.) The shock which occurs on changing down "on the exhaust" is due to the sudden speeding up of the engine by the machine. In order to change down without a shock the speed of the engine must be increased about 70% whilst the gear is being moved. It is obviously impossible to obtain this increased engine speed by raising the exhaust. As I pointed out before, it would be fairly easy to change down if a neutral position could be obtained between the gears.

It would certainly appear that Mr. Heath's machine is of later date than mine and that the obvious defect has been removed. It certainly was present in some of the S.D. machines, and I still think it is incomprehensible that the manufacturers should have overlooked it.

As to gear ratio, Mr. Heath misses the point entirely.

A 4.75 to 1 gear is not comfortable on a solo single-cylinder machine. It is a question of engine balance and not of chain snatch. I feel sure that the Triumph drive is so excellent that it would easily stand a 4.25 to 1 ratio, and, after all, there is the gear box for very low speed work.

I think I expressed my admiration of the Triumph Co.'s products (I have ridden them since 1906), but I do not think that honest adverse criticism should be withheld or considered unfair.

The use of the exhaust lifter for changing down (unless an inter-gear "neutral" be possible) is absolutely wrong and in direct opposition to the most elementarry principles of gear box operation. C. H. STEPHENSON.

Sir,—Mr. Heath seems rather scornful of Mr. Stephenson's remarks *re* gear changing in the chain drive Triumph, and I would like to support Mr. Stephenson in what he says. I have ridden a chain-driven Triumph every day for the last six months, pottering around mostly in hilly country (I am a doctor). I find that gear changing with the clutch may be managed occasionally, but is not to be depended on, and until I found this out I was baulked on many a hill and corner. The Triumph depot informed me that the clutch is only meant for starting away on. One can change through neutral into second on the clutch, but, apart from that, one must depend on the exhaust lifter, which gives a harsh change in changing down, so harsh sometimes (depending on one's speed) that the spring drive will not take it all up, and the tyre can be heard to "rip"—a momentary skid. If one wishes to coast downhill one cannot come from top to neutral without coming through second; the engine "revs." furiously then for a few seconds; then the gears subside into neutral. This with the clutch well out.

I am sorry I have not been so fortunate as Mr. Heath or Mr. Stephenson with my chain case, which leaks oil steadily, and has done since the first day I filled it.

But even with these drawbacks I would not change my mount for another. DOC.

Leeds.

Sir,—With reference to Mr. H. Heath's letter, I should like to endorse thoroughly his remarks *re* the absolute reliability of this machine. I have now had my machine some four months, having covered in that time nearly 4,000 miles without any mechanical trouble whatever, and the machine still runs as well as ever.

During Whitsun week I made the journey from Birmingham to Aberdovey and back four times, including trips around some stiff portions of the Welsh roads, and the outfit took me there and back each time in five and a half hours, without trouble or effort.

I experienced a little trouble with changing down the gears when the machine was new, but by adjusting the clutch to pull well out I can now change down very easily, using the exhaust lever for starting purposes only. To ease the gears when the machine was new, I always pulled the lever from high to neutral and then into middle in one back and forward motion, *i.e.*, no stop in neutral.

I find, however, that my machine makes carbon very quickly, although I only give it a half pump of oil each five miles; and shall be glad if any of your correspondents can give me any tips *re* this. Possibly using the machine for constant town work with much stopping and starting, and the resultant rich mixtures, may account for this.

Like Mr. Heath, I find the chain drive wonderfully sweet and efficient, whilst the brakes are excellent, and such little items as the decompressor, sprung footboards, absence of vibration, etc., are boons that can be thoroughly appreciated. I may say that, pulling a well-laden Cooper sidecar, I average seventy-five miles per gallon. I have no connection with the Triumph Co. beyond being another satisfied user of their productions. A. V. BASE.

THE T.T. RACES.

Sir,—Your correspondent Mr. H. G. Kelley, writing about the T.T. races, makes the common error in condemning the races as valueless to the ordinary purchaser, simply because in many cases the T.T. models bear very little external resemblance to the model sold to the public.

The races are undoubtedly a means of testing the efficiency and reliability of new designs, portions of which will find their way into the touring models.

Surely the firm able to produce a design capable of the performance of the little A.J.S. in the T.T. races is also capable of benefiting by such experience, and putting on the road a touring machine of equal reliability.

Mr. Kelley would have our manufacturers stick in the rut, and evidently conduct no experiments in public, which is surely the correct use of the T.T. Usual disclaimer.

T. F. GROOCOCK.

Sir,—I have been keenly interested in the T.T. races, both Junior and Senior, but have come to the conclusion that they are rather more like speed races than efficiency tests.

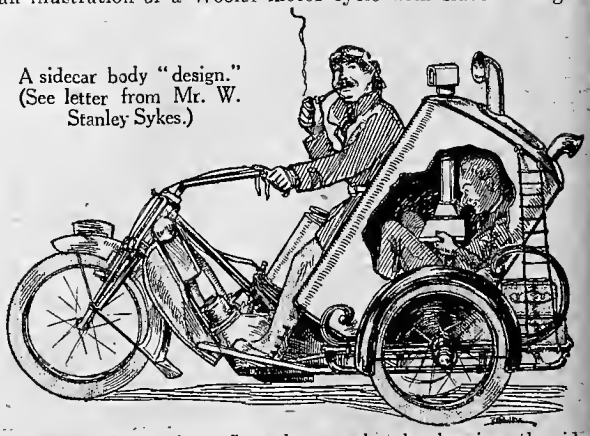
In most cases the motor cycle entered is manufactured especially for the occasion, and as soon as the race is over the machine is forgotten (except for advertising purposes), and the manufacturers go on making the same old type, with no improvements whatsoever, which points that they enter their machines just for the advertisement. How, therefore, can this make machines more efficient?

Why not make it a rule to have a stock machines only, also have riders not quite so expert, but by all means capable of the job? Then, perhaps, several machines will be improved.

CHARLES SANDERS.

MATCHING THE TANK—ON A SCOTT SIDECAR!

Sir,—In a recent number of *The Motor Cycle* there appeared an illustration of a Wooler motor cycle with sidecar designed to match the tank. I enclose a sketch showing the idea applied to a Scott. W. STANLEY SYKES.



A sidecar body "design." (See letter from Mr. W. Stanley Sykes.)

JOURNAL BEARINGS FOR HUBS.

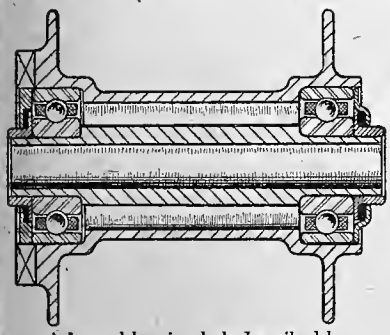
Sir,—We have been interested to read the letters in recent issues of *The Motor Cycle* dealing with the question of ball bearings in motor cycle hubs, and we are sure that your correspondents will be interested to hear our experience as bearing manufacturers with this particular type of application.

In the first place, there is no reason at all why the recognised type of ball bearing as used in gear boxes should not be a success for this purpose; and, in fact, it is infinitely superior.

The cup and cone type of bearing is wrong in design and principle, and in addition to this is usually made of inferior material and not made by a ball-bearing manufacturer.

We feel sure that if the average motor cyclist who takes a personal interest in his machine once had standard bearings fitted he would never consider buying a machine fitted in any other way.

The results of our own experience will undoubtedly be of interest to your readers, and we give you as follows particulars of an experimental test which we recently completed with an 8 h.p. 1921 side-car outfit.



A journal bearing hub described by Ransome and Marles.

This machine was delivered to our works fitted up with the old-fashioned type of cup and cone ball bearings in all three wheels. After 1,500 miles these had worn badly, and we replaced them with the same type of bearing which failed again at a further 1,400 miles. We then dismantled the hubs in question, and fitted them up with our standard ball bearings on the lines which we recommend to all our customers who are interested. This last set of bearings, which were of our standard single row type, have now completed nearly 4,000 miles, and their condition is as perfect as the day in which they were put in.

In addition to this, we have never oiled or lubricated the hubs in any way, and the amount of vaseline grease which has worked out during this period is practically negligible.

We are enclosing a drawing on which we show the way in which we mount our bearings for this purpose, and in conclusion we would state that there are three main conditions which are necessary to obtain good results, namely: (1) The bearings must be fitted correctly, both with regard to the inner and outer races; (2) the thrust should be taken on one race only; and (3) ample and adequate provision must be made for excluding road dirt and water, and retaining the original pure mineral grease which we use for ball bearings.

If these conditions are complied with there is no reason whatever why the hub fitted in this way should not run for the life of the machine without any attention whatever. Not even lubrication is necessary, which frequently does more harm than good.

If any of your correspondents would care to send their bearing problems to us we are ever ready to give the best of our advice and experience.

RANSOME AND MARLES BEARING CO., LTD.

Sir,—Your correspondent "G.M.R." is, I notice, an ardent supporter of the cycle-type design of ball bearing.

Applied to cycles, and made of the best materials, and to fine limits and finish, this type of bearing will give good service, in such an application. The design is all right.

This type often suffers because the nature of the bearing—with its adjustability and accommodating nature—is apt to invite a degree of coarseness in manufacture, which would either prevent assembly or give rise to an unacceptable slackness in the journal type. It is not uncommon to find unground cups on some of the cheaper cycles, cones are out of truth relative to the spindle, hardening is "doubtful," and the bearing is handicapped from the start. The journal bearing, on the other hand, is most precisely made by specialists who have evolved it and its manufacturing processes through many years of tedious experimenting.

Your other correspondent "Draughtsman," in expressing his view that the motor cycle designer has not sufficient ability to design journal bearings, errs chiefly in the use of the word "ability" in place of "experience," although the lack of ability, characterised by many designs, is certainly apparent.

Every engineering and motor car firm, and even aero engine manufacturers, are content to purchase their journal ball-bearings from specialists, and glad they haven't got to make them.

It is unfortunate for the arguments of "G.M.R." that, of the firms listed in his very superior manner, the very first, the A.J.S.—which was so consistently brilliant in the T.T.—was equipped with Skefko ball-bearings, and not with the cycle type.

The extraordinary care and ability displayed in the preparation and design of these machines appear to indicate that their experienced manufacturers had their doubts about the suitability of the cup and cone type.

I have no axe to grind for A.J.S. or Skefkos, neither am I prejudiced against people from Dalmuir, but I have suffered much from the defects of cup and cone bearings on push bicycles, motor cycles, and the stub axles of cars. R.M.

West Hampstead.

FROM THE MECHANICAL ENGINEER'S POINT OF VIEW.

Sir,—I agree with "Aileron's" remark about two-stroke machines being a "breed" of "cycle." May I say that motor cycles should be designed to be driven by the average man along the King's highway, not coddled and driven by men with technical knowledge. It is an advantage to have such knowledge, but should not be a necessity.

I should like to see a 26in. × 2½in. wheel standardised for lightweights, using the new type Dunlop cover (with flat base rim detachable flange) and fitted with the Schrader valve, thereby enabling the tyre to be pumped to the correct pressure by using the Schrader pressure gauge.

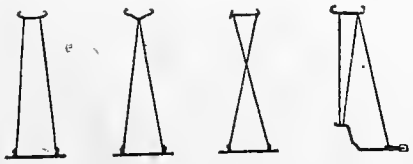


FIG 1 FIG 2 FIG 3 FIG 4

With the use of this rim comes the problem, Which spoke system should be used? The illustration (fig. 1) shows the round base pattern. This type supports the rim well, but is not so strong laterally as the "cycle" type (fig. 2), which type, however, does not support the rim well.

Is it possible that it would be found better to construct the wheel as in fig. 3, thereby making the wheel stronger. Fig. 4 shows the R.W. detachable wire wheels.

Salford. DRAUGHTSMAN.

[Specialists in wire wheel building have found the type suggested to be prone to rim buckling.—ED.]

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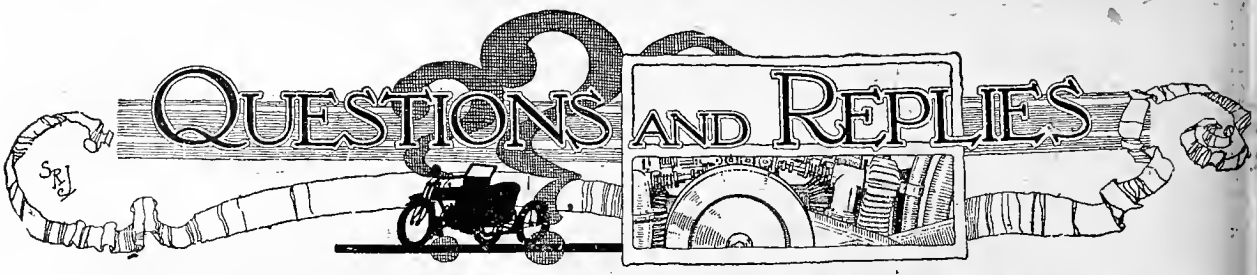


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

CONVERTING MAGNETO TO DYNAMO.

Would it be possible and require much alteration to convert an ordinary single magneto into a dynamo to change a six-volt 80 amp. accumulator?—J.K.

Possibly the magneto can be converted into a charging dynamo, but it is doubtful whether it would be suitable for charging a six-volt accumulator, as the H section armature and permanent magnets are not particularly efficient for this purpose. A commutator would also be required in order to rectify the alternating current, and this has to be of special design to avoid shorting the battery at certain positions.

M.E.P.

Will you advise me what is meant by "the mean effective pressure" of an internal combustion engine?—W.J.C.

The expression "mean effective pressure" refers to the average pressure in lb. per square inch exerted on the piston throughout the complete cycle of operations. The formula giving m.e.p. at any r.p.m. is:

$$\frac{16{,}520{,}000 \times \text{B.H.P.}}{D^2 \times S \times N \times n}$$

Where D = cylinder bore, S = stroke, N = r.p.m., and n = number of cylinders.

VALVE TIMING AND ADJUSTMENTS.

(1.) What is the correct timing of the 1914 single-cylinder $3\frac{1}{2}$ h.p. Rover? (2.) The two cam wheels which operate the rocker arms are not quite alike; one lifts the rocker arms for a longer period than the other. Which one belongs to the inlet and which to exhaust? (3.) After two or three miles running, a grating, unpleasant sound develops in or about the inlet valve or tappet. Could you suggest a remedy?—R.W.

(1.) Time the valves so that the exhaust is just closing and the inlet just about to open when the piston is on top dead centre. (2.) The cam which gives the shorter period of lift is the inlet. (3.) The noise is probably due to the unlubricated state of the valve stem or the tappet; if the latter, a cure should be effected by introducing oil to the tappet guide. If the noise arises from the valve stem itself, it may best be lubricated by the addition of a small quantity of lubricating oil to the petrol; very little should be used, merely sufficient to give the petrol a pale yellow colour.

TWIN FIRING ON ONE CYLINDER.

A $2\frac{3}{4}$ h.p. Douglas recently refused to run with the air control open, and misfires on the front cylinder, which makes the machine noisy, excessively hot, and lacking in power. I have had the engine down, decarbonised cylinders, piston heads, and inside piston, scraped piston rings, reground all valves, adjusted tappets, and can confidently state that there are no leaky joints. The carburetter is a 1921 Amac, recently fitted; the magneto has been examined, and the collector ring and carbon brush cleaned. After reassembling, the same misfiring and refusal to take air occurred.—W.H.D.

If you are quite sure that there are no air leaks between the carburetter and the cylinders, it would appear that the jet is too small, or that the fuel supply is restricted. These details should be carefully checked. We presume that the carburetter is one specially made to suit the Douglas engine, as it is very necessary that it should have the correct size of choke. The details you give are so complete that there is apparently nothing wrong with the engine, and it is, therefore, extremely difficult to suggest even a possible cause of the trouble. You might, however, verify the petrol sup and see that it is unrestricted. A tig fitting tank filler cap, causing air lock a partially choked filter in either pe tap or float chamber union, would doubt cause the trouble.

GEAR RATIOS FOR SMALL TWIN SIDE

What number of teeth required on an engine spro of a 4 h.p. twin Precision en to get a 5 to 1 top gear wi Sturmey-Archer gear box, $\frac{5}{8}$ chain, 8in. pulley, and 16in. belt w on a $26 \times 2\frac{3}{8}$in. tyre? I drive a coach sidecar, and if you think this gear high or low, will you say what w be best?—F.K.

Preferably, the top gear should be a $5\frac{1}{4}$ to 1; but if you must use the belt pulley with back wheel you require a 12 T. sprocket on the engine in order to obtain a gear of 5 to 1, a is inadvisable to use a smaller spro We would recommend you to u much larger belt drum on the back w We assume, of course, that your gea has a 30 T. sprocket on the cl although you do not mention Instructions as to the determinati gear ratios will be found in the edition of "Motor Cycles and Ho Manage Them."

T.C Greenwood ($4\frac{1}{2}$ Sunbeam) making fastest time of the day at the Birming M.C.C. hill-climb at Camden Hill, Ilmington.

HIGH PETROL CONSUMPTION.

At Easter I purchased a new 2½ h.p. two-stroke machine, and, using a No. 25 jet, the petrol consumption has been 50-60 m.p.g. throughout. Can you tell me how to improve this? There is no flooding at the carburetter, and I always run with the air fully open. There is no undue friction in the machine, and the compression appears to be quite good.—F.C.W.

Two-stroke engines consume a greater quantity of petrol than four-stroke machines of similar size, and we do not think that you will improve matters by using a smaller jet, as the one you have is slightly smaller than the size usually used to give maximum power. It is, of course, necessary that the ignition should be as far advanced as possible; belt slipping also should be eliminated. Try the effect of lowering the level slightly.

AN UNEXPLAINED BREAKAGE.

The engine of my 1916 3½ h.p. outfit was overhauled at the makers' works, and the machine then went splendidly for 700 miles with no trouble at all. I took the machine to a garage to have two new spokes in the back wheel. When driving it home, about a mile from the garage, there was a short preliminary grating, and then the engine stopped. I pushed it home, and, after dismantling, it was found that the ball bearing on the timing side of the engine was disorganised (broken balls and ball races). On examining the back wheel, it had been replaced at quite an appreciable distance behind the usual position, thus tightening both chains. Do you think this is the cause of the broken ball bearing? There was plenty of oil inside the engine.—NOVICE.

We fail to see how the readjustment of the back wheel could in any way affect the tension of the front chain and so cause the damage to the engine, unless the gear box also was moved. Probably the trouble is one of the variety which occasionally arises, and for which there is no satisfactory explanation. It would be best to return the broken ball race to the manufacturers for their inspection.

EXPERIENCES WANTED.

"F.C.C." (Leeds).—A.B.C. (1920 model), valve and ignition timing, most suitable gear oil and chain lubricant; possibility of obtaining an instruction booklet.

"C.V." (Highgate, N.19).—Raleigh used with sidecar, especially the comfort of spring frame.

READER'S REPLY.

VIBRATION AND LACK OF POWER.

Regarding "H.P.W.'s" query concerning the 3½ h.p. 1911 Humber, I am also in possession of one, and I always ride with one passenger (sometimes two), and often with a quantity of luggage in the sidecar, which is coachbuilt. I never go out of my way to avoid a hill, and have had no overheating trouble; only once, at midnight, on a strange hill, have I failed. I have never had the slightest trouble with vibration. Are your querist's ball races on mainshaft in good order? I time my inlet to open ⅛in. before top centre, and I use a Senspray carburetter, paying no special attention to the make of oil, and using any brand of petrol.—C. CLARK.

Important Dates.

Sat., July 30th—Newcastle and District M.C. Open Hill-climb.

Mon., Aug. 1st, to Sat., Aug. 6th—International Six Days Trial in Switzerland.

Sat., Aug. 6th—B.M.C.R.C. Open Brooklands Meeting.

Sat., Aug. 6th—North Wales M.C.C Open Reliability Trial.

Fri., Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept. 3rd—A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—North-Western Centre A.C.U. Open Speed Trials.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

RECOMMENDED ROUTES.

GRANTHAM TO GUILDFORD.—J.H.B.

Grantham, Colsterworth, Stamford, Wansford, Peterborough, Norman Cross, Stilton, Alconbury Hill, Buckden, Eaton Socon, Biggleswade, Baldock, Stevenage, Welwyn, Hatfield, St. Albans, Radlett, Elstree, Bushey Heath, Harrow and Wealdstone Station, Sudbury, Ealing Common, Gunnersbury Avenue, Gunnersbury Lane, Kew Bridge Station, Kew Bridge, Kew, Richmond, Petersham, Kingston-on-Thames, Esher, Cobham, Ripley, Clandon Cross Roads, Guildford. Approximately 148½ miles.

LEICESTER TO PORT SUNLIGHT.—AY 5979.

Leicester, Groby, Hugglescote, Ashby-de-la-Zouch, Burton-on-Trent, Tutbury, Sudbury, Uttoxeter, Longton, Stoke, Newcastle-under-Lyme, Betley, Nantwich, Tarporley, Tarvin, Chester, Eastham, Port Sunlight. Approximately 104 miles.

KING'S NORTON TO CATFORD.—P.E.P.

King's Norton, Studley, Alcester, Stratford, Wellesbourne, Kineton, Warmington, Banbury, (near edge of) Adderbury, Aynho, Souldern, Bicester, Waddesdon, Aylesbury, Wendover, Great Missenden, Amersham, Beaconsfield, Farnham Common, Farnham Royal, Salthill, Eton, Windsor, Staines, Sunbury Common, Hampton, Hampton Court, Kingston, Norbiton Church, New Malden, Worcester Park Station, Cheam Common, Cheam, Sutton, Carshalton, Wallington, Waddon Station, Coombe Lane Station, Addington, Bromley, Catford. Approximately 140½ miles.

SPARKLETS

Sidecar Taxis for Northampton.

A County (B.S.A.-Canoelet) taxi-sidecar outfit has received the approval of the Watch Committee and the Chief Constable of Northampton.

Tyre Successes in Racing.

After successes in the T.T. and the 500 miles race at Brooklands, Hutchinson tyres were used with success at St. Andrews, when they were fitted to all three machines, winning the various Scottish speed championships.

Over One and a Half Million Sparks.

A twin-cylinder machine which completed the 500-mile race at Brooklands would require approximately 1,698,750 sparks from its magneto. This quantity was evidently delivered by the M-L magnetos on each of the three Martinsyde machines which comprised the only team to finish complete. How was the number arrived at? We did not count, but perhaps the riders relieved the monotony by working it out!

Chain Improvements.

Chains would not seem to be capable of much improvement, but Hans Renold, Ltd., of Manchester, have found means to better their products, which are already accepted as a standard of quality all over the world. A considerable increase in the breaking strength of all the chains has been effected, and a much improved form of spring connecting clip has been standardised. The latter was illustrated in our Olympia Show reports last December, when it was first shown to the public. Chain users should make application for the latest price lists, and the recently published leaflet entitled "Progressive Design."

A Lightweight Sidecar.

In response to requests from riders of Silver Prince lightweights, the makers (the Tryus Cycle Co., of Johnstone Street, Birmingham) have introduced a suitable sidecar, equipped with apron, small celluloid screen, and lamp-bracket; quickly detachable fittings are included. Legshields to suit these motor bicycles also are now available.

Makers of a Popular Flat Twin.

The Coventry-Victor motor cycles are manufactured by the Coventry-Victor Motor Co., Ltd., of Cox Street, Coventry, and not by Morton and Weaver, Ltd., who are associated with them in the production of the Coventry-Victor flat-twin engine only.

Catalogues Received.

Wulfruna Engineering Co., Ltd., Wolverhampton: A new catalogue of Wolf motor cycles announces that the model fitted with 2¾ h.p. Blackburne engine, Sturmey-Archer two-speed gear, clutch, kick-starter, and long exhaust pipe, is reduced in price by £15 15s.

Club News

A popular Midland "works" event is the Humber Trial, held annually for the Humber Challenge Trophy. The illustration depicts some of the 69 competitors at the start.

Manchester M.C.

The postponed trial for the Ferodo Cup was held on July 10th. There were thirty-five entries for the run over a course of seventy-six miles. Of the twenty survivors the best performance was put up by O. E. Carter (3½ O.C.-J.A.P. sc.) with an error of 8s.; E. F. Gunton (3½ Duzmo) came second with an error of 21s.; and M. Gavson (4 Triumph) third with an error of 50s. The Orr gold medal for the best "novice" was won by H. Scholes (4 Triumph) with an error of 1m. 39s.

Lewes and District M.C.C.

A reliability trial on the 13th inst. followed a sixty-mile secret course. There were several observed hills and secret checks. Results:

1, Lewis Humphries Cup, G. Patrick (3½ Bradbury); 2, silver medal, E. Jenner (2¾ Royal Ruby); 3, bronze medal, V. H. Danes (2¾ Alldays Allon).

Taunton and District M.C. and L.C.C.

A hundred miles reliability trial was held on a recent afternoon. The course was divided into two sections; the first included the famous Brendon and Elworthy Hills, whilst the evening course took the competitors up Snowdon and across the top of the Blackdowns. There were six checks, and the awards were given on points. Twenty competitors started, including one light car, and fifteen checked in at night. Provisional results: Silver medal, S. Goodman (3½ Sunbeam); bronze medals, S. H. Easton (3 A.B.C.) and W. T. Drayton (3½ Triumph). Drayton was the only competitor to ride a pre-war machine, his mount being a 1914 hub gear model.

On the evening following the A.C.U. general meeting, which was held at Taunton, the members of the committee were taken for a run by members of the club, after which they were entertained to an enjoyable musical evening at the local headquarters, Col. Brereton presiding.

Scarborough and District M.C.

The results of the trial held at the beginning of the month are as follows:

CLASS 1 (up to 350 c.c.).—1, G. Jackson (3½ Beardmore-Precision); 2, M. Huntrod (2½ Sun-Villiers); 3, D. Brigham (2¾ Omega-Jap).

CLASS 2 (Solo Machines, any c.c.).—1, B. Wilson (4 Blackburne); 2, H. Blackburn (4 Triumph); 3, P. H. English (4 Triumph).

CLASS 3 (Sidecars and Runabouts up to 1,000 c.c.).—1, F. Waters (8.7 G.N.); 2, W. Marriott (4 Norton sc.); 3, J. Horner (3½ Norton sc.). Waters and Marriott tied, but the former wins on secret check.

Week-end Club Events.

July 30.—Harley-Davidson M.C.C. Run to Margate.
July 30.—Saltcoats and District M.C.C. Sporting Trial.
July 30.—Bishop Auckland and District M.C. Run to A.C.U. Hill-climb.
July 30.—Public Schools M.C.C. Night Trial.
July 30.—Dewsbury and District M.C.C. Picnic.
July 30.—North Lindsey A.C. Run to Rosedale Abbey.
July 30-Aug. 1.—Berwick and District M.C. Three Days Trial.
July 30-Aug. 1.—Northern M.C. (Newcastle). Week-end at Edinburgh.
July 30.—Wallington and District M.C.C. Reliability Trial.
July 31.—Bridgnorth and District M.C.C. Rally.
July 31.—Halifax and District M.C.C. Run to Morecambe.
July 31.—Central London M.C.C. Run to Frensham Ponds.
July 31.—Essex M.C. Picnic.
July 31.—Kidderminster M.C.C. Social Run.
July 31.—Canterbury and District M.C.C. Hill-climb.
July 31.—Exeter M.C. and J.C.C. Run to Dulverton.
July 31.—Helensburgh M.C.C. Club Run.
July 31.—Shepley and District M.C. Club Run to Snake and Glossop.
July 31.—Wakefield and District M.C.C. Club Run to Skegness.
July 31.—Woolwich, Plumstead and District M.C. Club Run to Hastings.
July 31.—Basingstoke and District M.C. and L.C.C. Club Run to Alms Hill.
Aug. 1.—Ilkley M.C. and L.C.C. Social Run and Gymkhana.
Aug. 1.—Liverpool M.C. Impromptu Programme.
Aug. 1.—Bristol M.C.C. Club Run and Picnic.
Aug. 1.—York and District M.C. York-Edinburgh-York Trial.
Aug. 1.—Taunton and District M.C. and L.C.C. Inter-club Reliability Trial.
Aug. 1.—Doncaster and District M.C.C. Third President's Cup Trial.
Aug. 1.—Neath and District M.C. Reliability Trial.

A Section devoted to Club Announcements will be found on Supp. xliii.

Surbiton and District M.C.C.

On the 6th of this month, as reported in our issue of the 14th inst., a reliability trial for the Butler Cup was held. In the paragraph in question, the name of this award was inadvertently referred to as the Briller Cup.

Abergavenny and District M.C. and L.C.C.

On August 11th this club is holding a hill-climb at Plough Hill, near Abergavenny, open to members of affiliated clubs of the South Wales Centre A.C.U. Mr. W. H. Powell, The Garage, Abergavenny, is joint hon. secretary for the event.

West Fife M.C.

Over ninety entries were received for the very successful hill-climb, held under the auspices of the above club at Powmill. The hill is approximately 600 yards long with a gradient of 1 in 14. Some excellent times resulted.

SOLO CLASSES.

350 c.c.—Confined: 1, J. Inglis (2¾ H.B.); 2, D. Dougal (2¾ H.B.). Open: 1, W. Peet (2¾ H.B.); 2, C. Cardosi (2¾ Douglas).

600 c.c.—Confined: 1, J. Morgan Philipps (3½ Sunbeam); 2, J. Reid (3½ Norton). Open: 1, J. Morgan Philipps (3½ Sunbeam); 2, J. Reid (3½ Norton).

1,000 c.c.—Confined: 1, J. Morgan Philipps (3½ Sunbeam); 2, J. Reid (3½ Norton). Open: 1, J. Morgan Philipps (3½ Sunbeam); 2, R. Stewart (3½ Norton).

SIDECAR CLASSES.

Confined: 1, C. Cardosi (7-9 Harley-Davidson sc.); 2, M. Matroni (7-9 Harley-Davidson sc.). Open: 1, C. Cardosi (7-9 Harley-Davidson sc.); 2, M. Matroni (7-9 Harley-Davidson sc.).

Humber M.C. (Coventry).

Results of the trial referred to last week are now to hand, and are as follows:

WINNER OF CHALLENGE CUP.—C. Gore Brown (4¼ James).

CLASS A: SOLO MACHINES.—1, W. Sleath (2½ Sun-Precision); 2, C. Merrett (4½ Humber); 3, E. Marshall (4½ Humber).

CLASS B: SIDECARS.—1, F. Arbuckle (4½ Humber sc.); 2, A. Edwards (4½ Humber sc.); 3, F. W. Norris (4½ Humber sc.).

MEDAL for Best Performance on a Lightweight—N. W. Drake (2¾ Allon).

All decisions arrived at as results of two secret checks. Eighteen lost no marks.

Club News.—

Sheffield and Hallamshire M.C. and L.C.C.

On Friday midnight sixteen competitors started from Sheffield for Holyhead and back; they were faced with a gusty wind and a promise of rain, which rendered the journey a strenuous one.

North London M.C.C.

A merry little party left the "Cherry Tree," Southgate, during last week-end, for a run to Epping Forest. An enjoyable picnic was held beneath the shady trees, and after a "look round" the route home was taken through Waltham Cross and Enfield.

Ulster M.C.C.

The two-day open speed trials held on Magilligan Sands on the 15th and 16th inst. attracted a large entry, and some very keen racing was witnessed. Friday's three scratch races resulted as follows:

FIVE MILES SCRATCH RACE (350 c.c.).—1, H. Chambers (2¾ A.J.S.); 2, J. Calder, Edinburgh (2½ New Imperial); 3, F. J. Newell (2¾ Beaumont).

FIVE MILES SCRATCH RACE (UNLIMITED).—1, J. W. Shaw (3½ Norton); 2, S. J. Redmond, Dublin (3½ Indian).

FIFTY MILES CHAMPIONSHIP OF ULSTER.—1, H. Chambers (2¾ A.J.S.), time 55m. 25s.; 2, J. W. Shaw (3½ Norton), 56m. 5s.; 3, J. Calder (2½ New Imperial).

On the following day H. R. Chambers (2¾ A.J.S.) was again successful, winning the 350 c.c. mile handicap. J. W. Shaw (3½ Norton) won the other two events—the unlimited flying mile and the fifty miles handicap.

Rochester, Chatham, and District M.C. and L.C.C.

Among the 500 or so spectators who witnessed the recent hill-climb was a char-à-banc party, making it appear that the day tripper is getting interested in "things motorish." There were seventy competitors, including one lady, Mrs. Lawson (4 Triumph), who made quite a good performance. Results:

CLASS 1: 350 c.c.—1, A. Rumens (Ivy), 36s.; 2, B. Ball (Douglas), 39⅘s.; 3, C. Watson (A.J.S.), 40⅘s.

CLASS 2: 600 c.c.—1, E. Newman (Sunbeam), 29⅘s.; 2, A. J. Clarke (Triumph), 32⅘s.; 3, E. Wells (A.B.C.), 32⅘s.

CLASS 3: TOURING.—1, G. Skinner (Triumph), 33⅘s.; 2, A. J. Clarke (Triumph), 34⅘s.; 3, H. Bradley (Indian), 36s.

CLASS 4: SIDECARS.—1, D. Potts (7-9 Harley-Davidson), 39⅘s., and A. J. Clarke (Triumph), 39⅘s., tied; 3, B. Ball (Indian), 40⅘s.

CLASS 6: UNLIMITED SOLO.—1, E. Newman (Sunbeam), 28⅘s.; 2, G. Maund (A.B.C.), 29⅘s.; 3, B. Ball (Indian), 31⅘s.

Stafford and District M.C.C.

The results of the hill-climb held on July 9th at Cromber Hill, Milwich, are as follows:

275 c.c. CLASS.—1, N. Savage (2½ Sun-Villiers), 38⅘s.; 2, T. Venables (2½ Sparkbrook), 44⅘s.

350 c.c. CLASS.—1, D. Amies (2¾ Hoskison), 36⅘s.; 2, K. Amies (2¾ Royal Ruby), 38⅘s.

600 c.c. CLASS.—1, E. H. Bunn (3½ Norton), 27⅘s.; 2, R. Simpson (4 Triumph), 32⅘s.

UNLIMITED SOLO.—1, E. H. Bunn (3½ Norton), 28⅘s.; 2, R. Simpson (4 Triumph), 30⅘s.

SIDECARS (600 c.c. CLASS).—1, R. Spooner (4 Triumph), 51⅘s.; 2, R. H. Leech (4 Douglas), 54⅘s.

SIDECARS (UNLIMITED).—1, H. D. Clewlow (4 Blackburne), 36⅘s.; 2, R. Bassett (5-6 Zenith), 38⅘s.

The Pyrah Challenge Cup for two-strokes under 275 c.c. was won by N. Savage (Sun Villiers) in 38⅘s. Fastest time of the day was made by E. H. Bunn (Norton) in 27⅘s., thus winning the President's Prize, also the Attwood Challenge Cup for solos under 600 c.c.

North-western Centre A.C.U.

On the 7th prox. a hill-climb will be held on Axe Edge, near Buxton, commencing at noon. Mr. G. E. Watts, Balmoral House, Mottram Road, Stalybridge, is secretary for the event.

Evesham M.C.C.

There were between thirty and forty entries for the first reliability trial of this newly formed club, held on Friday evening. The course, which was over some rough Cotswold country, included Sudeley Hill and a watersplash, and was of about thirty miles in length. The results were:

LIGHTWEIGHTS.—1, G. C. Hill (2¾ Spartan-Blackburne), 95 points.

UNLIMITED SOLOS: 1, Tim Robbins (4¼ B.S.A.), 100 points; F. G. C. Phillips (4 Triumph), V. Morrall (4¼ B.S.A.), A. Haines (4¼ B.S.A.), D. W. Knott (3¾ Scott), and J. A. Chadwick (4 Wilkin-Blackburne), 99 points each.

SIDECARS UP TO 5 H.P.—1, A. Sharp (4 Triumph), 99 points.

SIDECARS OR LIGHT CARS UP TO 10 H.P.—1, J. M. Bacon (8 Enfield).

Ipswich and District M.C.C.

The club held its first speed trials at East Bergholt on July 9th. There were seventy-seven entries, but the electrical timing apparatus failed at the last moment, and this caused some delay. The distance was 1,093 yards over a straight and level course. The surface was rather loose in places. Results:

600 c.c. SIDECARS.—1, R. F. Fenn (3½ Triumph sc.), 45s.; 2, E. C. Rose (3½ N.U.T.-J.A.P. sc.), 45⅘s.; 3, C. O. Rose (4½ Dunelt sc.), 51s.

750 c.c. SIDECARS.—1, R. F. Fenn (3½ Triumph sc.), 46⅘s.; 2, E. C. Rose (3½ N.U.T.-J.A.P. sc.), 47s.; 3, G. Coddard (4 Triumph sc.), 50⅘s.

1,000 c.c. SIDECARS.—1, C. Dansie (7-9 Harley-Davidson sc.), 41s.; 2, A. G. Mann (5 Zenith sc.), 45s; 3, D. Cornell (8 New Imperial sc.), 46s.

SOLO TWO-STROKES.—1, J. F. Rose (4½ Dunelt), 47s.; 2, C. O. Rose (4½ Dunelt), 50s.; 3, B. Adams (2¾ Excelsior), 52⅘s.

350 c.c. SOLO.—H. R. Keer (2¾ Douglas), 45s.; 2, D. Potter (2¾ Douglas), 47⅘s.; 3, H. B. Pick (2¾ Douglas), 51⅘s.

600 c.c. SOLO.—1, B. A. Hatcher (4 Triumph), 34⅘s.; 2, L. C. Soloman (3½ Norton), 35s.; 3, F. K. Portway (3½ Norton), 36s.

750 c.c. SOLO.—1, B. A. Hatcher (4 Trinmph) and L. C. Soloman (3½ Norton), 34⅘s.; 3, A. G. Mann (5 Zenith), 37s.

C. Dansie (7-9 Harley-Davidson sc.) secured the special prize for fastest sidecar time, and L. C. Soloman (3½ Norton) was awarded the special prize for fastest time on a gear box model.

Triumph Club (Motor Section).

Over 150 employees of the Triumph Co. and their friends attended the inaugural run of this club. Several interesting competitions were held during the afternoon, which concluded with tea at the Round Tower, Edge Hill. Mr. Harold A. Smith is honorary secretary.

West Birmingham M.C.C.

Results of the trial for the Hereford Cup, held on the 17th inst., have now been confirmed.

THE HEREFORD CUP.—T. A. Mackenzie (3 A.B.C.), with 100% marks and first on acceleration.

OVER 450 c.c.—Silver medal: 1, R. G. Smith (3½ Sunbeam). Bronze medal: 2, J. A. Ainscow (4 Triumph).

UNDER 450 c.c.—Silver medal: 1, T. A. Mackenzie (3 A.B.C.). Bronze medal: 2, Mrs. H. G. Gale (2¼ Velocette).

BEST SIDECAR PERFORMANCE. — Silver medal: 1, S. H. Brand (4 Indian Scout).

Doncaster and District M.C.C.

Closed speed trials were held recently on the Sandall Beat Road, Doncaster—the same course as will be used for the open speed event on October 1st—with results as under:

250 c.c. SOLO MACHINES.—1, A. Dodds (2¼ Levis), 42⅘s.; 2, H. Dodds (2¼ Radco), 47⅘s.; 3, T. Hillary (2¼ Triumph), 50⅘s.

300 c.c. SOLO MACHINES.—1, A. Dodds (2¼ Levis), 44⅘s.; 2, E. Sayles (2¼ Triumph), 46⅘s.; 3, H. Dodds (2¼ Radco), 47⅘s.

350 c.c. SOLO MACHINES.—1, R. S. Gray (2¾ New Scale), 34⅘s.; 2, H. Thomas (2¾ Douglas), 35s.; 3, C. Wilson (2¾ Douglas), 40s.

550 c.c. SOLO MACHINES.—1, J. E. Claybourn (4 Triumph), 28s.; 2, E. Keyzer (3½ Sunbeam), 29s.; 3, F. B. Leach (3¾ Scott S.), 30⅘s.

750 c.c. SOLO MACHINES.—1, J. E. Claybourn (4 Triumph), 27⅘s.*; 2, E. Keyzer (3½ Sunbeam), 28⅘s.; 3, J. H. Wilkinson (3½ Norton), 29s.

UNLIMITED SOLO MACHINES.—1, J. E. Claybourn (4 Triumph), 28⅘s.; 2, E. Keyzer (3½ Sunbeam), 29s.; 3, F. B. Leach (3¾ Scott S.), 30s.

550 c.c. SIDECAR MACHINES.—1, H. Uppadine (4 Triumph sc.), 40⅘s.; 2, E. Sayles (4 Triumph sc.), 44⅘s.; 3, J. L. Brown (3½ B.-Metric sc.), 45⅘s.

750 c.c. SIDECAR MACHINES.—1, J. H. Wilkinson (4 Norton sc.), 38⅘s.; 2, H. Uppadine (4 Triumph sc.), 46s.; 3, E. Sayles (4 Triumph sc.), 46⅘s.

UNLIMITED SIDECAR MACHINES.—1, J. H. Wilkinson (4 Norton sc.), 37⅘s.†; 2, H. Uppadine (4 Triumph sc.), 38⅘s.; 3, J. L. Brown (3½ B.-Metric sc.), 46⅘s.

*Fastest solo time of the day.
†Fastest sidecar time of the day.

A scene at last Saturday's rally at Stratford-on-Avon, which was organised by the manufacturers of the Easting windscreen.

Current Chat

Times to Light Lamps.

July 28th	...	...	9.24 p.m.
,, 30th	...	...	9.21 ,,
Aug. 1st	...	...	9.18 ,,
,, 3rd	...	...	9.14 ,,

The Grand Prix for Cars

To-morrow's issue of *The Autocar* is a special number containing a full report of the Grand Prix race in France. Readers of *The Motor Cycle*, who are also interested in this big event, will recognise *The Autocar* by the artistic three-colour cover.

Important Northern Hill-climb.

Next Saturday the Newcastle and District Motor Club will hold an open hill-climb at Muggleswick Common, Stanhope, Co. Durham. Some excellent sport is anticipated.

Careless Driving in Ealing.

An Ealing resident writes us drawing attention to the increase of careless and thoughtless driving through that place. As the imposition of a ten-mile limit is under consideration, it is in the interest of all to exercise greater road caution in future.

A Change of Mounts.

One of the most successful riders in the country, latterly on Royal Ruby machines, Hugh Gibson has now joined the Raleigh Cycle Co., making his *début* with the big flat twin (and sidecar) in the International Six Days Trial next week.

96 m.p.h. in Italy.

On the Monday morning, after the Circuit di Cremona, described elsewhere in this issue, Nazzaro, riding a 7-9 h.p. Indian, attempted the flying kilometre mean speed record. His best times were 23.2s. and 23.4s., an average of 23.3s., and equalling a speed of 95 m.p.h. Although not a world's record, this is certainly a marvellous performance for a road attempt.

Scottish Trials Addendum.

K. M. Quaile (8 New Imperial sc.) has now been officially accredited a silver medal winner.

Open Trial in North Wales.

No fewer than thirteen trophies adorn the prize list for the open trial to be held by the North Wales M.C.C. on the 6th prox. Entries nominally closed on the 23rd, but may be accepted at double fee until next Saturday. Mr. J. Howard Davies, 1, Ruthin Road, Denbigh, N. Wales, is secretary for the event.

Invalid Vehicles.

There are now 240 invalid vehicles licensed, bringing in a revenue of £60 to the Ministry of Transport.

Another Welsh Hill.

A reader in British East Africa writes that he knows of a hill in Wales even more difficult to climb than Screw Road.

Police Activity on the North Road.

For such offences (according to a local newspaper, sent us by a reader) as "allowing the exhaust gases to escape", a number of motor cyclists have recently been fined at the Weatherby Police Court.

87.76 Miles in an Hour!

At Brooklands on Friday last C. F. Temple, riding a 7-9 h.p. Harley-Davidson, beat the following records:

50 miles, 33m. 6.8s. = 90.59 m.p.h.
100 miles, 1hr. 8m. 22.1s. = 87.52 m.p.h.
1 hour, 87 miles, 922 yards = 87.76 m.p.h.

C. F. Temple, who broke three long distance records at Brooklands last Friday on a 7-9 h.p. Harley-Davidson.

Special Features.

THE GRAND PRIX.
AN ITALIAN T.T.
ROUND THE "SCOTTISH."

Overseas Visitor.

Mr. W. Stewart Wilson, president of the Motor Traders' Association of Wellington, New Zealand, is on a six weeks' visit to this country. Letters to the Overseas Club will reach him.

Body Design.

During this month a series of three long articles by Gordon Crosby on the harmony of outline in car bodywork has been published in *The Autocar*. Many of the arguments advanced apply equally to sidecar body design.

The Novice on the Road.

"Every time a new licence is issued, the recipient of the authority to drive should also receive a list of instructions and hints clearly setting forth the ordinary rules of the road. It may sound puerile to suggest this, but the fact remains that the majority of the accidents are caused either by indifference to or a want of knowledge of the common rules of the road."—*Express and Star*, Wolverhampton.

Metal Discs for Licences?

Writing regarding the many cases recently of faded licence cards, a reader, Mr. Ian R. MacIntyre, of Glasgow, suggests that if these were stamped on metal discs they would not become indecipherable from prolonged exposure to the elements. Additionally, licence holders might be entirely dispensed with. The idea appears to be an excellent one.

Presentations.

The T.T. winners this year came in for even more than the usual amount of lionising. At a recent T.T. dinner, given by the directors of the A.J.S. firm, H. R. Davies, the Senior winner, received a handsome dressing-case from A.J.S. agents, a shaving set from Mr. H. Taylor, a gold cigarette-case from Mr. Osborne (of Druid forks fame), and a silver rose-bowl from Mr. P. J. Evans.

Eric Williams, the Junior winner, received an alabaster clock and ornaments from A.J.S. agents, a silver cigarette-case from Mr. H. Taylor, and a gold cigarette-case from Mr. Osborne. Mr. Alec Ross presented a cheque for twenty guineas, to be divided among the A.J.S. riders who did not win

The ITALIAN "T. T."

The start of the Circuit di Cremona. British, French, American, Swiss, and Italian machines lined up preparatory to the most important Italian event of the year.

All Records Broken in the Circuit di Cremona. British Successes.

THE most successful and important motor cycle race ever held in Italy took place on the 10th inst., this being the Circuit di Cremona, a road race of 160 miles, run off on a flat, triangular course of approximately forty miles. One hundred entries, representing the products of five countries—England, France, Italy, Switzerland, and America—and Swiss riders besides the Italians, gave an international character to the event.

English machines were most numerous, there being Douglas, Wooler, Verus, Calthorpe, and Excelsior machines in the 350 c.c.; Sunbeam, Ariel, Norton, and Douglas in the 500 c.c.; and Hazlewood and Douglas in the 750 c.c. classes; whilst the 1,000 c.c. class was a duel between the two strong teams of Harley-Davidsons and Indians, representing America.

Italy's Most Famous Rider.

Great interest attached to the reappearance of Italy's most famous rider, Carlo Maffeis. It was, therefore, expected that long-standing records would be beaten, especially the one for the fastest lap, which, established in 1914 by MacDonagh on a Rudge, in 39m. 19s., had never been beaten, even by the 1,000 c.c. machines.

This prophecy was soon realised, because, a few minutes after all the riders had started, Maffeis (3½ Bianchi), who started twentieth, arrived at a tremendous speed, having passed all the other competitors who had left before him. In a few seconds his time (37m. 15s.) went up on the board, and was greeted with great enthusiasm by the public in the stands. The long-standing record had been beaten by 2m. 4s. at a speed of 63.3 m.p.h. This was the fastest lap of the day for this class, but more surprises were in store, for, in the second lap, Winkler (on a 7-9 Harley-Davidson) created another record by covering the lap in 31m. 25s. at a speed of 75 m.p.h.—a speed never before attained during an Italian road race.

The whole race was sternly contested from start to finish, riders changing positions at almost every lap. The final results were as follows:

1,000 c.c. CLASS.

		h. m. s.	Ave. speed.
1. Winkler (7-9 Harley-D.)	2 17 17		68.64 m.p.h.
2. Maffeis (7-9 Harley-D.)	2 20 50		
3. Malvisi (7-9 Harley-D.)	2 21 49		

Fastest lap: Winkler, 31m. 25s. (speed =75 m.p.h.).

Eighteen riders started in this class, and thirteen finished.

750 c.c. CLASS.

	h. m. s.	Ave. speed.
1. Rava (4 Indian)	2 46 10¾	56.7 m.p.h.
2. Tanzi (5 Motosacoche) ..	2 57 8¾	
3. Fiaccadori (5 Frera) ..	3 8 25½	

Fifteen started, and six finished. Fastest lap: Rava, 39m. 44⅖s. (speed=59.3 m.p.h.).

500 c.c CLASS.

	h. m. s.	Ave. speed.
1. Vailati (3½ Sunbeam) ..	2 42 11	58 m.p.h.
2. Bassini (3½ Norton) ..	2 42 39	
3. Maggi (3 A.B.C.) ..	2 50 26	
4. C. Maffeis (3½ Bianchi)	2 54 29	

Fastest lap: Maffeis, 37m. 15s. (speed =63.6 m.p.h.). Both fastest lap and whole distance times bettered the 750 c.c. class. Forty-two started, and twenty-one finished.

A characteristic Italian street scene, showing Vailati (3½ Sunbeam) rounding a bend during the Circuit di Cremona.

The Italian T.T.—

350 c.c. CLASS.

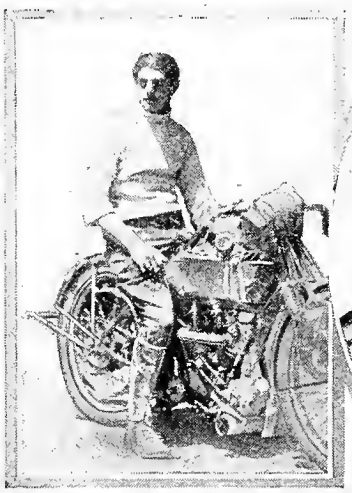
	h. m. s.	Ave. speed.
1. Franconi (2¾ Motosacoche)	3 10 6	50 m.p.h.
2. Gambini (2¾ Douglas)..	3 18 12	
3. Garanzini (2¾ Verus) ..	3 22 11⅘	

Fastest lap: Franconi, 44m. 19s. (speed =53 m.p.h.).

Despite the large number of competitors and the dust on the roads owing to the dry weather, no serious accidents happened.

The Italian Championship.

This race was the seventh for the Italian championship, a much-coveted honour, which is now decided on points over twelve events, instead of a single race as previously. All these events, being officially supported by the Italian Union of Motor Cycle Manufacturers and Traders, are naturally very keenly contested and followed with great interest by the press and public.



Franconi (2¾ Motosacoche), winner of the 350 c.c. class

Vailati (3½ Sunbeam), who won the 500 c.c. class.

Rava (4 Indian), victor in the 750 cc. class.

Winkler (7-9 Harley-Davidson), winner of the 1,000 c.c. class.

THE INTERNATIONAL SIX DAYS TRIAL.

As the Swiss team last year won the manufacturers' trophy in the International trials, this year the trial will be held in Switzerland from August 1st to 6th, starting from Geneva. The following entries (thirty-three solo and eleven sidecars) have been received:

MOTOR BICYCLES.

1. Morand (Condor).
2. Wuillemin (Condor).
3. Clerc (Condor).
4. Eric Williams (A.J.S.).
5. Bally (Hobart).
6. A. Demoot (New Imperial).
7. Magnin (New Imperial).
8. Jean Wolteclagel (Condor).
   Three Viratelles (drivers not specified).
9. Dawson (P. and M.).
10. Guiguet (Motosacoche).
11. Robert (Motosacoche).
12. J. G. Neher (Motosacoche).
13. Pictet (Norton).
14. Staub (Norton).
15. Tschudy (Norton).
16. F. P. Dickson (Brough).
17. E. H. Lees (Sunbeam).
18. Egger (Triumph).
19. Cossetto (Douglas).
20. Huzli (Douglas).
21. Schlée (Douglas).
22. Gafner (Indian).
23. Wiedmer (Indian).
24. Nussle (Moto-Rêve).
25. Alfter (Scott).
26. —— (Scott)
27. —— (Scott).
28. Leslie Guy (Scott)
29. Haseler (Triumph).
30. Zysset (Triumph).
31. Bolthauser (Triumph).
32. Bersetti (Motosacoche).
33. Rothenbach (Motosacoche).

SIDECARS.

34. H. Dinckel (Condor).
35. Henry (Indian).
36. Moebus (Indian).
37. Verlet (Janoir).
38. Chappaz (Janoir).
39. Penet (Janoir).
40. Hugh Gibson (Raleigh sc.).
41. Gex (Motosacoche).
42. Bonvin (Motosacoche).
43. Rolland (Motosacoche).
44. H. R. Davies (6 A.J.S. sc.).

S.E. CENTRE (A.C.U.) SPEED TRIALS AT BROOKLANDS.

No fewer than 400 entries were received for the South-Eastern Centre A.C.U. speed trials held at Brooklands on Saturday last.

The Surbiton and District Club, who, incidentally won the team race, were responsible for its promotion, and may be congratulated on its success.

Time results printed below show that speeds over the kilometre were particularly good for a club meeting. Results:

CLASS 1 (Touring machines not exceeding 250 c.c.).—Standing start: 1, S. M. Greening (2¼ Francis-Barnett-Jap), 47⅘s.

CLASS 2 (Touring machines not exceeding 350 c.c.).—Standing start: 1, J. Vivian Prestwich (2 Massey-Arran-Jap), 49s.

CLASS 3 (Touring machines not exceeding 500 c.c.).—Standing start: 1, G. A. Vandervell (3½ Norton), 40s.

CLASS 4 (Touring machines not exceeding 750 c.c.).—Standing start: 1, G. A. Vandervell (3½ Norton), 38⅗s.

CLASS 5 (Touring machines, unlimited).—Standing start: 1, G. A. Vandervell (3½ Norton), 38⅘s.

CLASS 6 (Touring sidecar machines not exceeding 600 c.c.).—Standing start: 1, H. H. Beach (3½ Norton sc.), 48⅕s.

CLASS 7 (Touring sidecar machines not exceeding 750 c.c.).—Standing start: 1, H. H. Beach (3½ Norton sc.), 47⅕s.

CLASS 8 (Touring sidecar machines, unlimited).—Standing start: 1, B. S. Allen (3½ Norton sc.), walk over.

CLASS 9 (Sidecar machines not exceeding 600 c.c.).—Standing start: 1, D. R. O'Donovan (3½ Norton sc.), 47⅕s.

CLASS 10 (Sidecar machines not exceeding 750 c.c.)—Standing start: 1, D. R. O'Donovan (3½ Norton sc.), 47⅕s.

CLASS 11 (sidecar machines, unlimited).—Standing start: 1, W. D. Marchant (8 Zenith), 40⅘s.

CLASS 12 (Solo machines not exceeding 250 c.c.).—Standing start: 1, H. A. Reyre (2½ Reyre-Newson), 44⅘s.

CLASS 13 (Solo machines not exceeding 350 c.c.).—Standing start: 1, Kaye Don (2¾ Massey-Arran), 41⅕s.

CLASS 14 (Solo machines not exceeding 500 c.c.).—Standing start: 1, G. A. Vandervell (3½ Norton), 38⅘s.

CLASS 15 (Solo machines not exceeding 750 c.c.).—Standing start: 1, G. A. Vandervell (3½ Norton), 38⅕s.

CLASS 16 (Solo machines, unlimited).—Standing start: 1, G. A. Vandervell (3½ Norton), 38⅕s.

CLASS 17 (Touring machines not exceeding 250 c.c.).—Flying start: 1, J. Vivian Prestwich (2 Massey-Arran-Jap), 43⅘s.

CLASS 18 (Touring machines not exceeding 350 c.c.).—Flying start: 1, A. A. Prestwich (2¾ Dot-Jap) and H. F. Edwards (2¾ Coulson), 40s.

CLASS 19 (Touring machines not exceeding 500 c.c.).—Flying start: 1, G. A. Vandervell (3½ Norton), 31⅗s.

CLASS 21 (Touring machines, unlimited).—Flying start: 1, G. Packman (8 Sunbeam-Jap), 30s.

CLASS 22 (Touring sidecar machines not exceeding 600 c.c.).—Flying start: 1, H. H. Beach (3½ Norton sc.), 36⅘s.

CLASS 24 (Touring sidecar machines, unlimited).—Flying start: 1, E. A. Bridgman (7 Indian sc.), 41⅕s.

CLASS 25 (Sidecar machines not exceeding 600 c.c.).—Flying start: 1, D. R. O'Donovan (3½ Norton sc.), 37s.

CLASS 26 (Sidecar machines not exceeding 750 c.c.).—Flying start: 1, D. R. O'Donovan (3½ Norton sc.), 37s.

CLASS 27 (Sidecar machines, unlimited).—Flying start: 1, W. D. Marchant (8 Zenith sc.), 33s.

CLASS 28 (Solo machines not exceeding 250 c.c.).—Flying start: 1, W. Julian (2¼ Levis), 32⅘s.

CLASS 29 (Solo machines not exceeding 380 c.c.).—Flying start: 1 Kaye Don (2¾ Massey-Arran), 33s.

CLASS 30 (Solo machines not exceeding 500 c.c.).—Flying start: 1, G. A. Vandervell (3½ Norton), 30⅕s.

CLASS 31 (Solo machines not exceeding 750 c.c.).—Flying start: 1, C. G. Pullin (3½ Douglas), 31⅘s.

CLASS 32 (Solo machines, unlimited).—Flying start: 1, F. C. Townshend (8 Zenith), 29⅕s.

CLASS 57 (Ladies' class, sports cycle cars up to 1,500 c.c.).—Standing start: 1, Miss D. Addis-Price (10.5 Douglas), 49⅕s.

CLASS 58 (Ladies' class, sports cycle cars up to 1,500 c.c.).—Flying start: 1, Miss D. Addis-Price (10.5 Douglas), 40⅘s.

CLASS 59 (Three-wheeled touring cycle cars up to 1,100 c.c.).—Standing start: 1, E. B. Ware (8 Morgan-Jap), 60⅕s. (walk over).

CLASS 60 (Three-wheeled touring cycle cars up to 1,100 c.c.).—Flying start: E. B. Ware (8 Morgan-Jap), 36⅘s. (walk over).

CLASS 61 (Three-wheeled racing cycle cars up to 1,100 c.c.).—Standing start: E. B. Ware, walk over.

CLASS 62.—Ditto.

TEAM RACE.—1, Surbiton and District M.C.C.; 2, Brighton and Hove M.C.C.; 3, Ealing and District M.C.C.

MOTOR CYCLE WINNERS' HANDICAP.—Standing start: 1, Kaye Don (2¾ Massey-Arran), 19s.

FASTEST CAR *v.* FASTEST MOTOR BICYCLE.—1, A. F. Nash (8.7 G.N.) wins 1⅘s. ahead of G. A. Vandervell (3½ Norton).

A KILOMETRE IN 24$\frac{3}{5}$ secs.

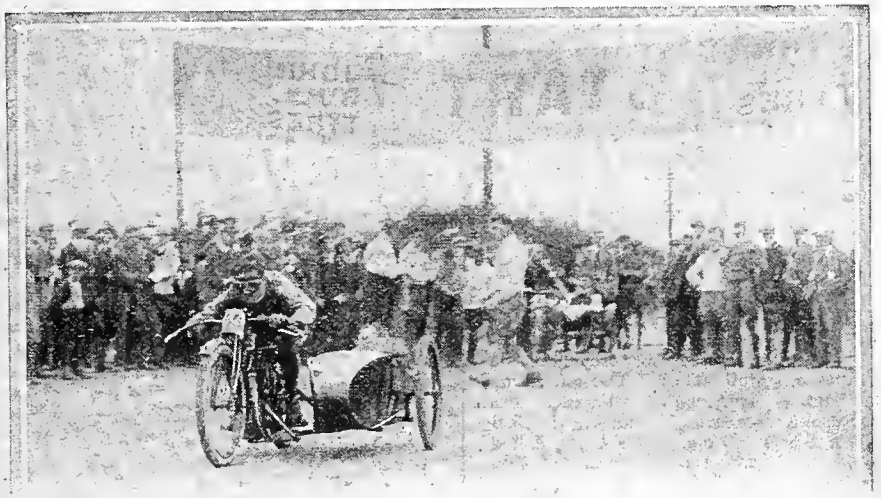
North Country Norton Rider makes a Game Second to G. Dance on the Sunbeam, in East Midland Centre Speed Trials.

OUTSTANDING impressions given by the East Midland Centre (A.C.U.) speed trials in Clipstone Park, near Mansfield, on Saturday, were that such events tend to become unwieldy, and that there appear to be few really top notch speedmen.

In a seemingly interminable succession of contestants, running from 1.40 in the afternoon until 9.30 in the evening, George Dance, with his 2¾ h.p. and 3½ h.p. Sunbeam, was unquestionably the premier rider of the day. His supremacy was never seriously challenged, but R. T. Cawthorne, a Yorkshire rider of a 3½ h.p. Norton, struggled hard to equal Dance's performances. Cawthorne did not even make the second fastest time of the day; but his consistent attempts merit special comment. H. R. Davies (2¾ A.J.S.) seemed just short of the necessary "last ounce"; but it appears doubtful if the peculiar riding position he adopted in the passenger classes had any serious justification.

In the matter of riding attitude, Dance is worthy of study. He sits his machine to perfection, and, incidentally, his manner of returning down the course is exemplary. Mary Jennison (2¼ Velocette), T. C. Greenwood (4 Sunbeam), and R. Flint (3 A.B.C.) made good times; the first mentioned rode her machine with great skill and judgment. The remainder of the entrants, who comprised the 550 and upwards, who ran during the proceedings, were chiefly local riders whose performances, while no doubt excellent in club events, served to show by contrast how really fast the experts were; this is specially true of the high-powered twins, which, with a single exception—R. Stacey (7-9 Harley-Davidson)—were quite outclassed by the smaller singles.

First and second places are given below in the classes which were run off before darkness came on and ended the meeting. A slightly falling gradient and a following wind assisted the riders to some extent.



At the starting line in Clipstone Park. G. Dance (3½ Sunbeam sidecar), who was first in every class in which he ran. On the same machine solo his best speed exceeded 91 m.p.h. over the flying kilometre.

Sidecar Classes (Standing Start).

CLASS 1 (under 500 c.c.).—General: 1, L. Padley (3½ Norton sc.), 41⅘s.; 2, E. Searle (3½ Sunbeam sc.), 44s. Expert: 1, G. Dance (3½ Sunbeam sc.), 37s.; 2, R. T. Cawthorne (3½ Norton sc.), 40⅘s.

CLASS 2 (under 550 c.c.).—General: 1, J. Haslam (3½ Douglas sc.), 43⅘s.; 2, L. Padley (3½ Norton sc.), 46⅘s. Expert: 1, G. Dance (3½ Sunbeam sc.), 37⅘s.; 2, R. T. Cawthorne (3½ Norton sc.), 41⅘s.

CLASS 3 (under 750 c.c.).—General: 1, T. C. Greenwood (4 Sunbeam sc.), 40⅘s.; 2, C. Bullough (3½ Norton sc.), 46s. Expert: 1, G. Dance (3½ Sunbeam sc.), 36⅘s.; 2, R. T. Cawthorne (3½ Norton sc.), 40⅘s.

CLASS 4 (Unlimited).—General: 1, T. C. Greenwood (4 Sunbeam sc.), 39⅘s.; 2, P. Baron (7-9 Indian sc.), 41⅘s. Expert: 1, G. Dance (3½ Sunbeam sc.), 37s.; 2, H. R. Davies (2¾ A.J.S. sc.), 42⅘s.

Sidecar Classes (Flying Start).

CLASS 5 (under 500 c.c.).—General: 1, J. Haslam (3½ Douglas sc.), 34⅘s.; 2, E. Searle (3½ Sunbeam sc.), 35⅘s. Expert: 1, G. Dance (3½ Sunbeam sc.), 28⅘s.; 2, R. T. Cawthorne (3½ Norton sc.), 31⅘s.

CLASS 6 (under 550 c.c.).—General: 1, L. Padley (3½ Norton sc.), 34s.; 2, J. Haslam (3½ Douglas sc.), 35s. Expert: 1, G. Dance (3½ Sunbeam sc.), 29⅘s.; 2, R. T. Cawthorne (3½ Norton sc.), 33s.

CLASS 7 (under 750 c.c.).—General: 1, L. Padley (3½ Norton sc.), 35s.; 2, C. Bullough (3½ Norton sc.), 35⅘s. Expert: 1, G. Dance (3½ Sunbeam sc.), 29⅘s.; 2, H. R. Davies (2¾ A.J.S. sc.) and G. Stobart (5-6 James sc.) tied, 35⅘s.

CLASS 8 (Unlimited).—General: 1, T. C. Greenwood (4 Sunbeam sc.), 31⅘s.; 2, R. Stacey (7-9 Harley-Davidson sc.), 32⅘s. Expert: 1, G. Dance (3½ Sunbeam sc.), 29⅘s.; 2, R. T. Cawthorne (3½ Norton sc.), 32⅘s.

Solo Classes (Standing Start).

CLASS 9 (Two-strokes under 350 c.c.).—General: 1, J. R. Sylvester (2¼ Velocette), 46s.; 2, F. Wilkinson (2¼ Cedos), 54⅘s. Expert: 1, R. E. Pugh (2¼ Levis), 42⅘s.; 2, Mary Jennison (2¼ Velocette), 43s.

CLASS 10 (Two-strokes, unlimited).—General: 1, J. R. Sylvester (2¼ Velocette), 46s.; 2, F. Wilkinson (2¼ Cedos), 54s. Expert: 1, G. Mills (3½ Scott), 41⅘s.; 2, R. E. Pugh (2¼ Levis), 43⅘s.

CLASS 11 (under 275 c.c.).—General: 1, J. N. Roberts (2¼ New Imperial), 43s.; 2, N. Black (2¼ Omega), 44⅘s. Expert: 1, B. Kershaw (2¼ New Imperial), 39⅘s.; 2, R. E. Pugh (2¼ Levis), 42⅘s.

CLASS 12 (under 350 c.c.).—General: 1, R. Lucas (2¾ Coulson B), 41⅘s.; 2, J. N. Roberts (2¼ New Imperial), 42⅘s. Expert: 1, G. Dance (2¾ Sunbeam), 34⅘s.; 2, B. Kershaw (2¼ New Imperial), 42⅘s.

CLASS 13 (under 500 c.c.).—General: 1, R. G. Flint (3 A.B.C.), 35⅘s.; 2, F. Hatton (3½ Douglas), 37⅘s. Expert: 1, G. Dance (3½ Sunbeam), 32⅘s.; 2, T. Simister (3½ Norton), 35s.

CLASS 14 (under 550 c.c.).—General: 1, R. Flint (3 A.B.C.), 36s.; 2, F. Stevenson (3½ Brough), 37⅘s. Expert: 1, G. Dance (3½ Sunbeam), 32⅘s.; R. T. Cawthorne (3½ Norton), 36s.

CLASS 15 (under 750 c.c.).—General: 1, T. C. Greenwood (4 Sunbeam), 34s.; 2, R. Flint (3 A.B.C.), 35⅘s. Expert: 1, G. Dance (3½ Sunbeam), 32⅘s.; 2, R. T. Cawthorne (3½ Norton), 35⅘s.

CLASS 16 (Unlimited).—General: 1, T. C. Greenwood (4 Sunbeam), 34⅘s.; 2, R. Carter (7-9 Indian), 36⅘s. Expert: 1, G. Dance (3½ Sunbeam), 31⅘s.; 2, H. R. Davies (2¾ A.J.S.) and H. Petty (3½ Norton) tied, 36s.

Solo Classes (Flying Start).

CLASS 17 (Two-strokes under 350 c.c.).—General: 1, J. Sylvester (2¼ Velocette), 36⅘s.; 2, S. Clarke (2½ Levis), 44⅘s. Expert: 1, Mary Jennison (2¼ Velocette), 35s.; 2, R. E. Pugh (2¼ Levis), 36⅘s.

CLASS 18 (Two-strokes, unlimited).—General: 1, G. Mills (3½ Scott), 32⅘s.; 2, J. Sylvester (2¼ Velocette), 37⅘s. Expert: 1, Mary Sylvester (2¼ Velocette), 35⅘s.; 2, R. E. Pugh (2¼ Levis), 40⅘s.

CLASS 19 (under 275 c.c.).—General: 1, J. N. Roberts (2¼ New Imperial), 34⅘s.; 2, N. Black (2¼ Omega), 35⅘s. Expert: 1, J. N. Roberts (2¼ New Imperial), 34⅘s.; 2, Mary Jennison (2¼ Velocette), 35⅘s.

CLASS 20 (under 350 c.c.).—General: 1, R. Lucas (2¾ Coulson B), 30⅘s.; 2, N. E. Jones (2¾ Blackburne), 32⅘s. Expert: 1, G. Dance (Sunbeam), 26⅘s.; 2, H. R. Davies (2¾ A.J.S.), 28⅘s.

CLASS 21 (under 500 c.c.).—General: 1, R. Flint (3 A.B.C.), 28s.; 2, H. M. Barron (3½ Norton), 30s. Expert: *1, G. Dance (3½ Sunbeam), 24⅘s.; 2, R. Cawthorne (3½ Norton), 27s.

*Fastest time of day (90.94 m.p.h.).

CLASS 22 (under 550 c.c.).—Cancelled.

CLASS 23 (under 750 c.c.).—Cancelled.

CLASS 24 (Unlimited).—General: 1, R. Stacey (7-9 Harley-Davidson), 25⅘s.; 2, T. C. Greenwood (4 Sunbeam), 26⅘s. Expert: 1, R. Cawthorne (3½ Norton), 27s.; 2, H. Petty (3½ Norton) and T. Simister (3½ Norton) tied, 28⅘s.

THE OVERSEAS MOTOR TRADE CONFERENCE.

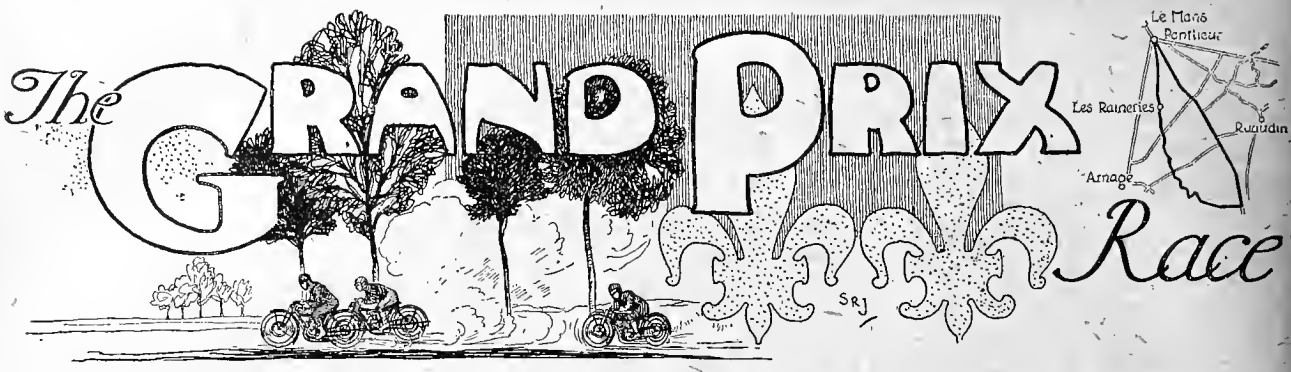
THE universal preference for British-made machines, which, by their high quality, finish, and general design, prove more suitable for overseas conditions, was the ruling theme of the First Overseas Motor Trade Conference, held on Thursday last at the Hotel Cecil.

This innovation, which was heartily appreciated by both the British manufacturers and the overseas delegates, was convened by our contemporary *The Motor Export Trader*, for the purpose of establishing greater co-operation between the Home and Overseas markets.

In his speech on behalf of the Department of Overseas Trade, Sir Philip Lloyd-Greame, K.B.E., emphasised the great importance of bringing the manufacturers of home products in close touch with the representatives of the foreign markets, and wished to congratulate the conveners of the conference.

From 1913 to 1920 the importation of motor vehicles had exceeded the export figures, and that position must be reversed. To do this, he pointed out, it was essential to study closely the requirements of this particular market, and not, as hitherto, be satisfied with the identical machine as sold in this country. Some interesting figures were quoted, which showed that to each British vehicle registered there were also licensed thirty foreign machinee.

Major H. R. Watling, whilst limiting his views to those pertaining to motor cycles, was convinced that we have closely studied the requirements of the overseas buyer.

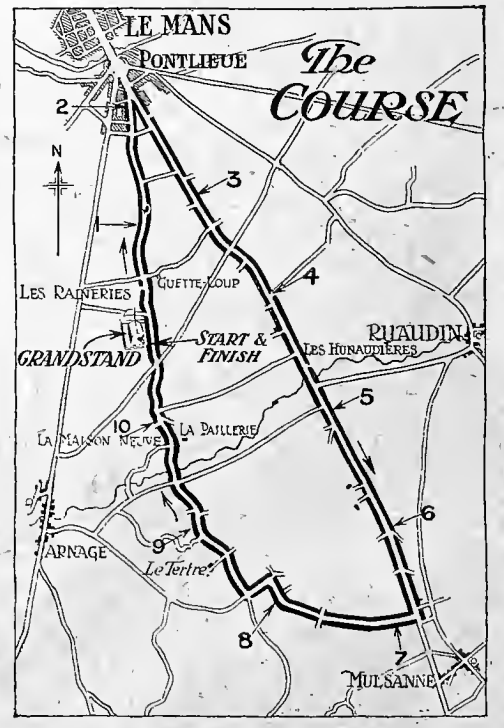


French Classic Race over the Circuit de la Sarthe results in Win for Great Britain. Record Lap at 62.48 m.p.h.

FIFTY-TWO motor cyclists competed in the Grand Prix race, organised by the Union Motorcycliste de France on Sunday last. The circuit de la Sarthe, over which the race was contested, measures 10¾ miles, the 500 c.c. and the 350 c.c. riders being called upon to cover eighteen circuits (193½ miles), and the 250 c.c. lightweight riders fifteen laps (161¼ miles). Le Mans attracted thousands of visitors for the motor cycle race and the car race on Monday. Although the course had been excellently treated, it was, perhaps, natural that the 100 m.p.h. cars had cut up the surface badly in practice, patches of sharp flints being encountered at intervals. Except for half-a-dozen or so difficult turnings, the course is extremely fast, with its long straight stretches, higher gears being possible than on the Manx T.T. circuit.

A striking success was scored by British riders and machines, representatives of the home country occupying the first five places in the chief class for 500 c.c. machines, France claiming honours in the 350 c.c. event, and a French rider mounted on a machine assembled from British components winning the 250 c.c. category.

The race opened in dull weather, a southerly breeze tempering the atmosphere. Interest in the race was strikingly evident. The decision to start all the 500 c.c. competitors in a bunch, the 350 c.c. men a minute or so later, and the 250 c.c. class next will no doubt cause consternation in Britain, particularly as the difficult bend came in three kilometres. But the practice has much to recommend it. Actually it worked splendidly, for at the fall of the flag all the riders shot away, and a most impressive spectacle was the result, for all but one rider got their engines going immediately. There was a hubbub among the crowd as the men jockeyed for positions, No. 7, Naas (A.B.C.), forging ahead of the rest; the unfortunate one left behind was Borgotti (Griffon). There were but eight in the 350 c.c. class, as against the twenty-eight senior starters.



THE LE MANS CIRCUIT.

The Grand Prix course, each lap of which is 10¾ miles. The 500 c.c. and 350 c.c. classes covered the course eighteen times—a total distance of 193½ miles. The 250 c.c. class went round fifteen times: 161¼ miles.

Another interval, and the very fine total of thirteen 250 c.c. lightweight riders got under way, Milner (Levis) making a sluggish start. But two or three minutes elapsed before a procession of riders was seen proceeding at speed nearly a mile distant. Twos, threes, then a long string, followed by other bunches sufficed to work up enthusiasm thus early.

The first man past the grandstands was Bennett (Sunbeam), followed at 100 yards interval by Edmond (Triumph) and de la Hay (Sunbeam). A further interval, and Naas (A.B.C.), Finzi (A.B.C.), and Jolly (Alcyon) passed at a good pace. The advantage of a scratch start for all riders was now appreciated, for there was no subtracting of time or doubt as to the correct order. Walker (Norton) was the first to pull in at the depots for some adjustment.

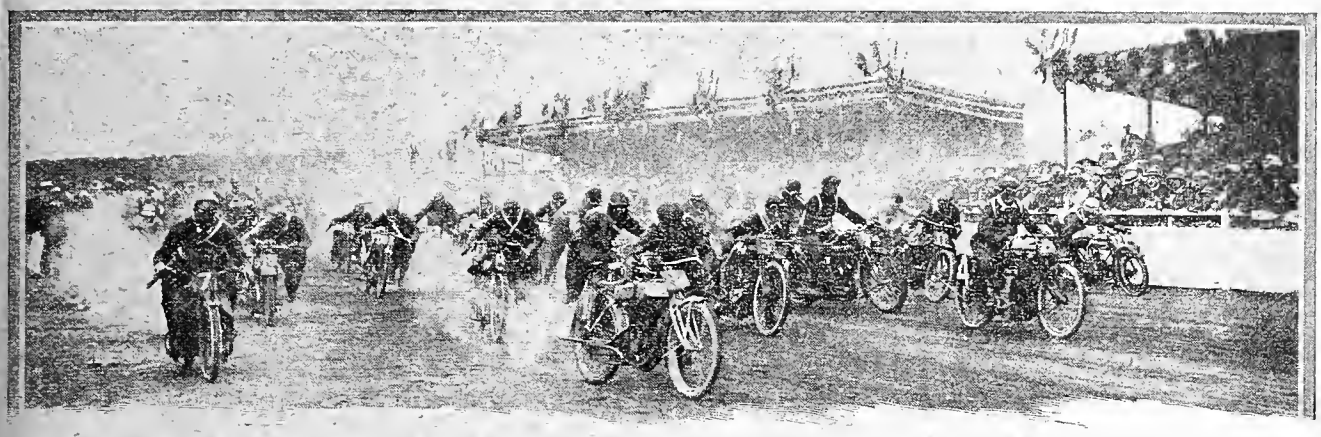
Of the 350 c.c. riders, Meunier (Alcyon) led on the first lap, Gambini (Douglas) being second, and Isodi (Douglas) third, whilst among the 250 c.c. riders, Milner (Levis), notwithstanding the seconds he lost at the start, had forged ahead of his *confrères* and led past the stand, closely pressed by Bauer (Yvels) and Vernisse (Yvels-Jap).

From the beginning, it was evident that there was to be no flagging of interest, for the riders in one or other of the classes were almost continually in sight, the leaders of the 500 c.c. class by the end of two laps being on the tails of the miniatures.

First Lap Order Maintained.

Bennett (Sunbeam), Edmond (Triumph, and de la Hay (Sunbeam) had maintained their order at the end of two laps, and, indeed, Bennett was virtually acting as pacemaker, for less than forty yards separated the trio. Bennett's time for two laps—20m. 57s.—equals a speed of 61.54 m.p.h. Others maintained their positions, except Hassall (Norton), who, though speedy at the

Contour of the Grand Prix course, which reveals the totally different conditions from those prevailing on the T.T. course in the Isle of Man.



Partez! It would be difficult to imagine a more animated scene than the simultaneous start of 28 machines in the 500 c.c. class.

stands, had evidently stopped, for he was last. Le Vack (Indian), of whom much was expected, despite a damaged leg sustained in practice, was well up.

First Lap Order and Times.

500 c.c. CLASS.

		Time.
1.	A. Bennett (Sunbeam)	20m. 57s.
2.	F. G. Edmond (Triumph)	20m. 58s.
3.	T. C. de la Hay (Sunbeam)	21m. 1s.
4.	Naas (A.B.C.)	21m. 21s.
5.	F. W. Dixon (Douglas)	21m. 30s.
6.	Jolly, sen. (Alcyon)	21m. 34s.
7.	H. Le Vack (Indian)	21m. 38s.
8.	Finzi (A.B.C.)	21m. 57s.
9.	A. H. Alexander (Douglas)	22m. 16s.
10.	Pinney (Triumph)	22m. 42s.
11.	Borgotti (Griffon)	22m. 43s.
12.	J. L. Emerson (Douglas)	23m. 1s.
13.	Vuillamy (Griffon)	23m. 8s.
14.	Sgonina (Triumph)	23m. 9s.
15.	Desvaux (Alcyon)	23m. 28s.
16.	Gillard (Peugeot)	23m. 49s.
17.	Bartlett (A.B.C.)	24m. 7s.
18.	Pean (Peugeot)	24m. 17s.
19.	Delabre (Rover)	24m. 54s.
20.	Rolly (A.B.C.)	25m. 45s.
21.	Perrin (A.B.C.)	25m. 46s.
22.	Jacquin (Griffon)	26m. 20s.
23.	V. Horsman (Norton)	29m. 45s.
24.	Walker (Norton)	32m. 47s.
25.	Agnero (A.B.C.)	36m. 29s.
26.	Hassall (Norton)	64m. 57s.

350 c.c. CLASS.

1.	Meunier (Alcyon)	25m. 38s.
2.	E. Kickham (Douglas)	26m. 26s.
3.	Millard (Douglas)	27m. 1s.
4.	Dubost (D.F.R.)	28m. 55s.

250 C.C. CLASS.

1.	H. Milner (Levis)	26m. 35s.
2.	Froment (Labor)	27m. 36s.
3.	Bauer (Yvel's-Jap)	27m. 39s.
4.	Vernisse (Yvel's)	28m. 37s.
5.	Jolly, jun. (Alcyon)	28m. 45s.
6.	Clech (Moto-Solo)	29m. 17s.
7.	Cottin (Moto-Solo)	29m. 34s.
8.	Coudert (Griffon)	29m. 38s.
9.	Nel (Velocette)	29m. 40s.
10.	Denley (Velocette)	30m. 46s.
11.	Runton (Velocette)	31m. 3s.
12.	Colombel (Griffon)	33m. 10s.

Gaps now began to appear, but were not nearly so pronounced as in the T.T., for, with machines of such varying speeds, the riders were bound to be scattered over the short circuit, and frequent passing occurred. News arrived that Maffeis, the Italian champion, riding a Bianchi, fell at the acute bend at Pontlieu, buckling his front wheel and hurting himself rather badly.

The leaders on the third lap now appeared in sight, and it was observed that de la Hay (Sunbeam) now led the procession, another Sunbeam rider, A. Bennett, was second, and Edmond (Triumph) third, though he had lost but 200 yards or so. Vuillamy (Griffon) stopped twice at his depot in the first three laps, experiencing difficulty in restarting.

A short interval, and once again six machines appeared in sight on the red ribbon of road in the distance, Emerson (Douglas) passing one or two. The two Ricardo-engined Triumphs could always be detected by their clean, soft note, and they, too, were running very consistently. From the stand, the speeds were not impressive, due, no doubt, to the very wide course.

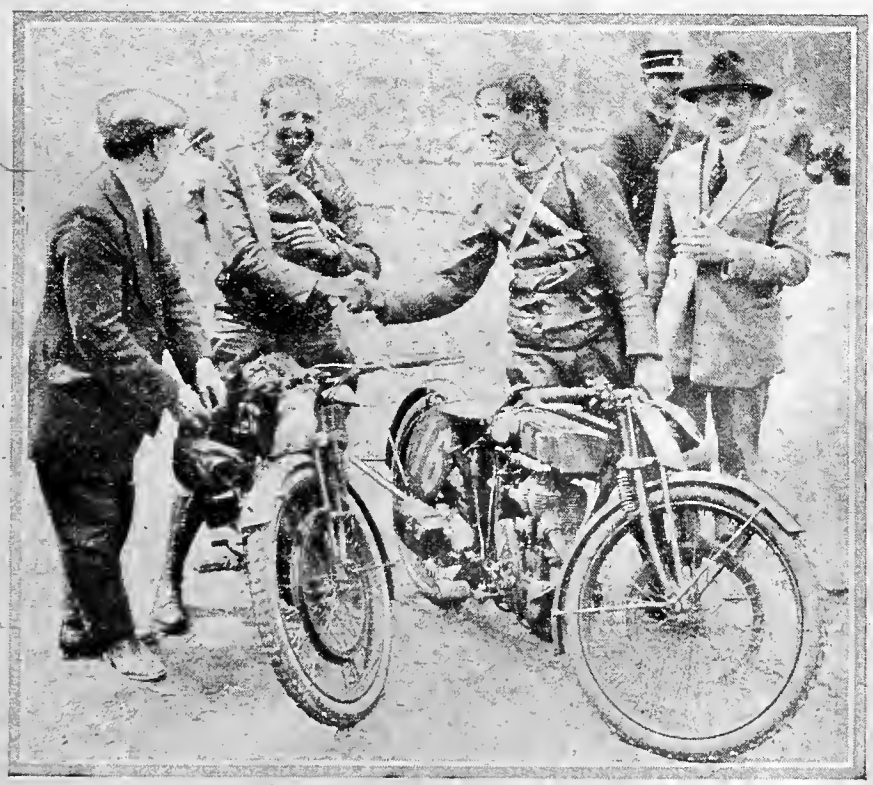
Speeds on the Fast Stretches.

The 500 c.c. leaders were averaging about 10m. per lap, so that, approximately, they passed the stands at 70 m.p.h.

Bennett again changed places with de la Hay for leadership after four laps, Edmond still lying third, two or three hundred yards away. After five laps Bennett and de la Hay (Sunbeams), having thoroughly grasped the position, shot by almost abreast, though neither apparently was coaxing his machine to the full.

O. Feeny (Verus-Jap) stopped at his depot for adjustments, but was soon off again. A French machine going well was a side-by-side twin-cylinder Peugeot ridden by Gillard. Stops at this stage were infrequent. For instance, twelve of the thirteen 250 c.c. riders had completed four laps, likewise six of the seven 350 c.c. men. The missing 250 c.c. man, Cottin (Moto-Solo), fell without hurting himself at Hunandières and retired.

De la Hay and Bennett on Sunbeams were now due on their seventh lap, and



Bennett, on the right, and de la Hay (first and second, on 3½ Sunbeams) exchange mutual congratulations after the race.

The Grand Prix.—

pulled in side by side for replenishments; but Edmond (side-by-side Triumph), ever on their heels, elected to continue, and so led the throng. The Sunbeam men were away again in double quick time. Le Vack (Indian) also halted a few seconds to replenish his tank. The telephone announced that Dard (Thomann) was in difficulties near Mulsanné corner. Later he came into the depot to retire. Six laps were evidently sufficient to cause anxiety about petrol, for Alexander (Douglas) stopped, and then Walker (Norton) walked in, pushing his machine, with a cigarette in his mouth, evidently having retired. Meanwhile, J. Meunier (Alcyon) was leading the 350 c.c. group, and Milner, going strong on his Levis, had established a two minute lead among the babies. Milner, ever dogged with ill-luck in racing events, had broken the platform of his magneto clean off during practice, and had arranged a clever makeshift repair by fixing another platform for the magneto behind the cylinder. Clearly, it was serving splendidly. Mud on the riders, considering the heat and sun, caused some surprise, and it appears that the calcium chloride used to prevent dust was so thick in parts as to resemble porridge.

Edmond (Triumph) was round first after seven laps, and, after he had gone, one saw a pair of riders at full speed in the distance. As expected, they were 2 and 16 (de la Hay and Bennett), riding wonderfully and ready to take up the leadership, when Edmond found it necessary to stop for petrol. But they had nearly a mile to make up. In another minute, Le Vack (Indian) came along, followed by Sgonina (o.h.v. Triumph). Horsman (Norton) was hot on their trail, but Alexander (Douglas) stopped for petrol, also Denley (Velocette) and Dupont (Griffon). Delabre (Rover with Philipson pulley) was going well, always conspicuous in his primrose "woolly." Colombel's two-stroke Griffon was making an excellent impression. Agnero (A.B.C.) toured in on one cylinder and stopped at his depot, Perrin on another A.B.C. going great guns, though he was about to be lapped by the leading men.

British Supremacy.

Again Edmond led, this time with Bennett (a mile behind), having left de la Hay a hundred yards or so. It was remarkable that the same three had led throughout, an excellent example of British supremacy, which was not lost upon the spectators. In close company, F. W. Dixon (Douglas) and Sgonina (Triumph) dashed up, the latter halting to replenish his tank. He was quickly away again.

(Left) Naas (A.B.C.), first away at the start from the big bunch of 500 c.c. riders; he had subsequently tyre trouble.
(Right top) Riding position of British and French riders compared; short v. long wheelbase.
(Bottom) Bennett and de la Hay, first and second, rode abreast for many laps.

The Grand Prix.—

When Meunier (350 c.c. Alcyon) passed, still leader of his class, with eight laps, Edmond (500 c.c. Triumph) was hot on his heels, leading the whole van after ten laps accomplished non-stop. The inevitable Sunbeams were as usual but a mile behind with tanks almost full. Harveyson (350 c.c. Douglas) rode in slowly, his back tyre flat, and reported an accident to Kickham. Walker (Norton) was now creeping up. A.B.C. hopes began to vanish when Verpault (A.B.C.) toured in on a flat back tyre. There was a thrill when Le Vack (Indian), doing nearly eighty miles an hour, passed Sgonina (Triumph) in front of the stands. In a minute or two Milner came along still leading on his game little Levis—French official Lewis! Pinney on his silent running o.h.v. Triumph followed, at a faster speed, of course. Vernisse (Yvel's) seemed to be misfiring, but was going excellently.

After Twelve Laps.

At the end of twelve laps, de la Hay led by quite a mile, so that he no doubt knew the fate of Edmond, of whom news had not reached the stand. Second in order was Bennett (Sunbeam). Pean (Peugeot) was in close company, though a complete lap in arrears. Walker (Norton), occasionally misfiring, now passed, followed by a trio composed of Dixon (Douglas), Perrin (A.B.C.), and Sgonina (Triumph)—who had crept up to third place.

After thirteen laps, with almost monotonous regularity, de la Hay came along and in less than 30s. Bennett on the other Sunbeam—thus, barring ill-luck, with but

A characteristic snap of C. Sgonina, who piloted a 3½ o.h.v. Triumph into third place. His total time was 3 hrs. 24 min. 58⅕ secs.—56.96 m.p.h.

five laps to go, a victory appeared to be a certainty for England, but the Sunbeam-Triumph duel was clearly at an end, as Edmond did not observe the signals for him to stop for petrol.

Le Vack (Indian), much overdue, now toured in, and proceeded leisurely to remove his gloves, which suggested abandonment; it transpired that an exhaust roller had broken. Sgonina's prospects thereby brightened considerably, for he flew past, going better than ever. The regrettable news was now posted that E. Kickham (Douglas) had fallen, breaking his leg at the turning to Arnage.

Still leading, de la Hay dashed in to replenish after fourteen laps, his usually inseparable companion, Bennett, continuing, and thus taking up the lead once again. One of the French experts, Péan (Peugeot) was still lapping consistently, though noticeably more slowly than the leading Britishers. Milland (350 c.c. Douglas) followed, with Perrin (A.B.C.) hard on his heels. Emerson (500 c.c. Douglas) halted for petrol.

Leadership Unchanged.

Bennett was round first again, and 1m. 35s. later de la Hay (Sunbeam) came along. Some idea of the weeding out process now proceeding may be gained from the fact that of the fifty-two starters forty-six completed two laps, forty-one covered four laps, thirty-six six laps, and thirty-two eight laps. Delabre (Rover), going much better, completed a fast lap, also Milland and Thorpe (Douglases).

The leader of the 350 c.c. section, Meunier (Alcyon) halted after thirteen laps for replenishments. In five seconds Bennett (Sunbeam), still ahead of the field, came along, followed by Marc (Alcyon).

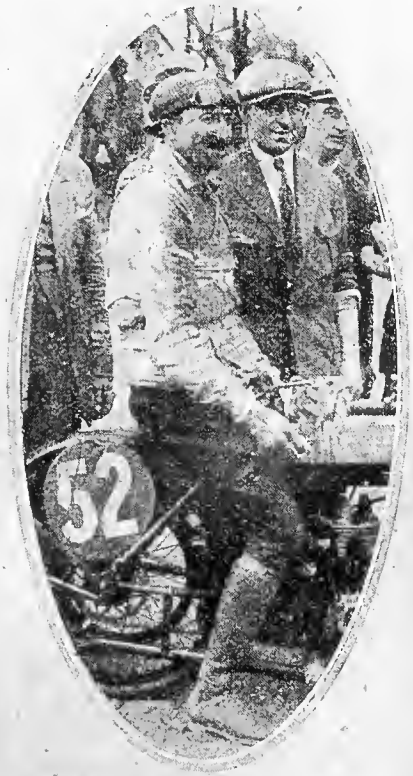
Edmond (Triumph) now toured into his depot with another competitor sitting on his carrier. The hope of the Triumph entry was thus dashed through nothing more serious than running short of petrol.

Horsman (Norton) arrived on a flat back tyre and retired, completing the Norton cup of bitterness, for their team's chances generally had been jeopardised by tyre troubles. In this connection the numerous sharp flints on the course proved a great trouble to the riders. A record lap by Bennett increased his lead over de la Hay (Sunbeam), and there was great enthusiasm and cheering when an official announced that Bennett had beaten the record, averaging over 62 m.p.h. French chances rested with the Alcyon, A.B.C., and Peugeot riders. Their machines were noticeably of much lighter construction than the British mounts, and their short wheelbases did not enable their riders to lie down along the top tube in the businesslike way that Britishers adopt.

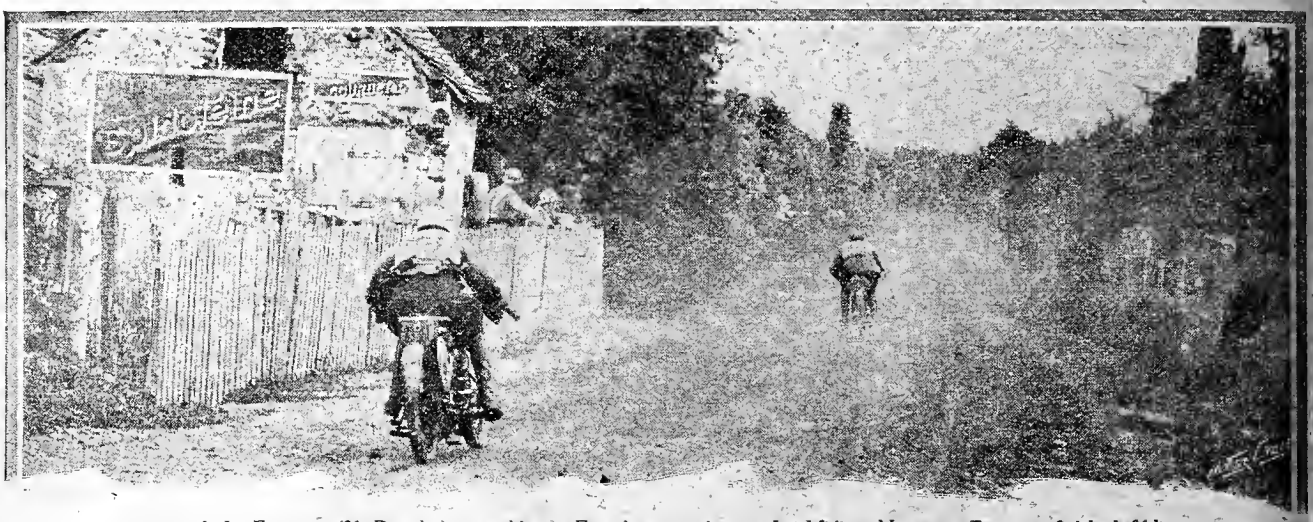
With the end near, Bennett (Sunbeam), and a mile or so behind de la Hay on a duplicate mount, formed the vanguard once again, with their engines as fresh as ever. Officials announced that they were on their last lap, and two others stepped forth with huge red and yellow flags to signal them to stop.

Amidst a yell of cheering, Alec Bennett dashed over the finishing line on his

Winner of the 350 c.c. class—Meunier, on an overhead valve twin Alcyon.



Vernisse, who won the 250 c.c. class on a 2¼ h.p Yvels-Jap, a machine closely following British lines, and constructed from British units.



J. L. Emerson (3½ Douglas) overtaking a French competitor at Le Maison Neuve. Emerson finished fifth.

3½ h.p. Sunbeam, scoring a magnificent British victory. Of course, he received the inevitable embraces, and was immediately surrounded by an army of photographers and cinema operators.

Sgonina (Triumph) meanwhile passed on his last lap, and in three minutes or so, T. C. de la Hay (Sunbeam) finished amidst cheering to occupy second place. Both Sunbeam men enjoyed no trouble runs, though Bennett fell once in passing a French rider on a corner. Still another rider of a British machine occupied third place—Sgonina (on a Triumph with Ricardo four-valve engine), who is a Welshman, *not* Italian as many supposed. The remarkably consistent running of the Sunbeams, which we have indicated in this narrative, is emphasised by the fastest lap times, for de la Hay on the second and third laps clocked 10m. 21s., A. Bennett recording precisely the same time on the fifteenth lap, average speed 62.48 m.p.h.

Of the 350 c.c. riders, Meunier (Alcyon), who rode excellently and, indeed led throughout, was 32m. 1s. slower than Bennett after the fourteenth lap. Albert Milner (250 c.c. Levis) stopped on the twelfth lap with a flint clean through the back tyre. A gaitered repair would not pass the chain stays, and so he had to withdraw. Jolly (250 c.c. Alcyon) now assumed the lead in this class, having an 8m. advantage over the next man—Vernisse (Yvél's). Meanwhile Dixon (3½ Douglas) arrived home in fourth position, 24m. behind Bennett, whilst Emerson finished fifth on another Douglas.

The thinning out process wae perhaps naturally more evident among the smaller mounts, for only four times were posted for fourteen laps in the 350 c.c. class and six in the 250 c.c. section. As was generally expected, Meunier (Alcyon) arrived home a comfortable winner of the 350 c.c. section, scoring a deserving victory, his time, 3h. 55m., being 42m. 36s. slower than the winning 500 c.c. mount.

Vernisse Yvél's-Jap)—a French machine of British components—was first home of the 250 c.c. riders, Clech (Moto-Solo) gaining second place, with Jolly (Alcyon) as a close third.

Thus, Great Britain scored a decisive victory among the 3½ h.p. machines, France claiming premier place in the 350 c.c., and a combination of interests in the 250 c.c. categories.

Order and Time of Finishers.

500 c.c. CLASS.

		Time.
1.	A. E. Bennett (Sunbeam) ..	3h. 13m. 24⅘s.
2.	T. C. de la Hay (Sunbeam)	3h. 15m. 51⅕s.
3.	T. Sgonina (Triumph) ..	3h. 24m. 58⅘s.
4.	F. W. Dixon (Douglas) ..	3h. 38m. 1⅘s.
5.	J. L. Emerson (Douglas) ..	3h. 48m. 3s.
6.	Perrin (A.B.C.)	3h. 58m. 20s.
7.	Jacquin (Griffon)	4h. 3m. 32s.
8.	Delahre (Rover)	4h. 18m. 24s.
9.	Rolly (A.B.C.)	4h. 21m. 10⅘s.
10.	A. H. Alexander (Douglas) ..	5h. 2m. 12⅗s.

350 c.c. CLASS.

1.	Meunier (Alcyon)	3h. 55m. 0s.
2.	Milland (Douglas)	4h. 14m. 0⅘s.
3.	H. R. Harveyson (Douglas) ..	4h. 38m. 40s.

250 c.c. CLASS.

1.	Vernisse (Yvel's-Jap)	3h. 44m. 49s.
2.	Clech (Moto-Solo)	3h. 48m. 39⅘s.
3.	Jolly (Alcyon)	3h. 49m. 1s.
4.	Condert (Griffon)	3h. 57m. 13s.
5.	Denley (Velocette)	4h. 1m. 0⅘s.
6.	Colombel (Griffon)	4h. 6m. 22⅘s.

After the race the leading machines were examined and measured. The Sunbeam riders used 4 to 1 gears and aluminium pistons, whilst the four-valve Triumph had a Ricardo aluminium piston.

A CHAT WITH THE WINNERS.

First in the 500 c.c. Class.

"IT certainly is a wonderful old engine, this Sunbeam," remarked Bennett as he dismounted and wiped the oil and dust out of his eyes.

It was easier to get the winner of the Grand Prix race to talk of his machine than of himself. He quickly remarked, however, "I am not an American, as some of you seem to think. I was born in Canada, raced an Indian on the Canadian tracks, came over with the Canadian Army in 1915, and, well, I married an English girl, and that is sufficient reason for staying, even if I did not like the country so well as I do."

"Yes. it is harder than the T.T., for the speed is so consistent; but I do not think that it requires so much skill. Undoubtedly, it is harder on the engine, for there is no 'let up' from beginning to end. I knew I was in the lead for the first six laps, but after that I was not quite so sure of my position. However, I was satisfied to run on threequarter throttle until I had covered fourteen laps, and for the last four ran all out." His Sunbeam was equipped with Dunlop 26 × 2⅜in. heavy tyres, K.L.G. plugs, Amac carburetter, M-L magneto, Brooks saddle, Pedley knee grips, and used Castrol oil.

A Popular Second.

De la Hay, who came in second a little more than two minutes behind his team mate, was bubbling over with enthusiasm for his mount. "I blew a cylinder in practice, you may be interested to know," he said, "but had no trouble in the race. I made two stops for petrol, but had no need to stop the second time, and might have won if I had gone on. But what do I care, so long as a Sunbeam got the Grand Prix?"

Leader of the 350 c.c. Mounts.

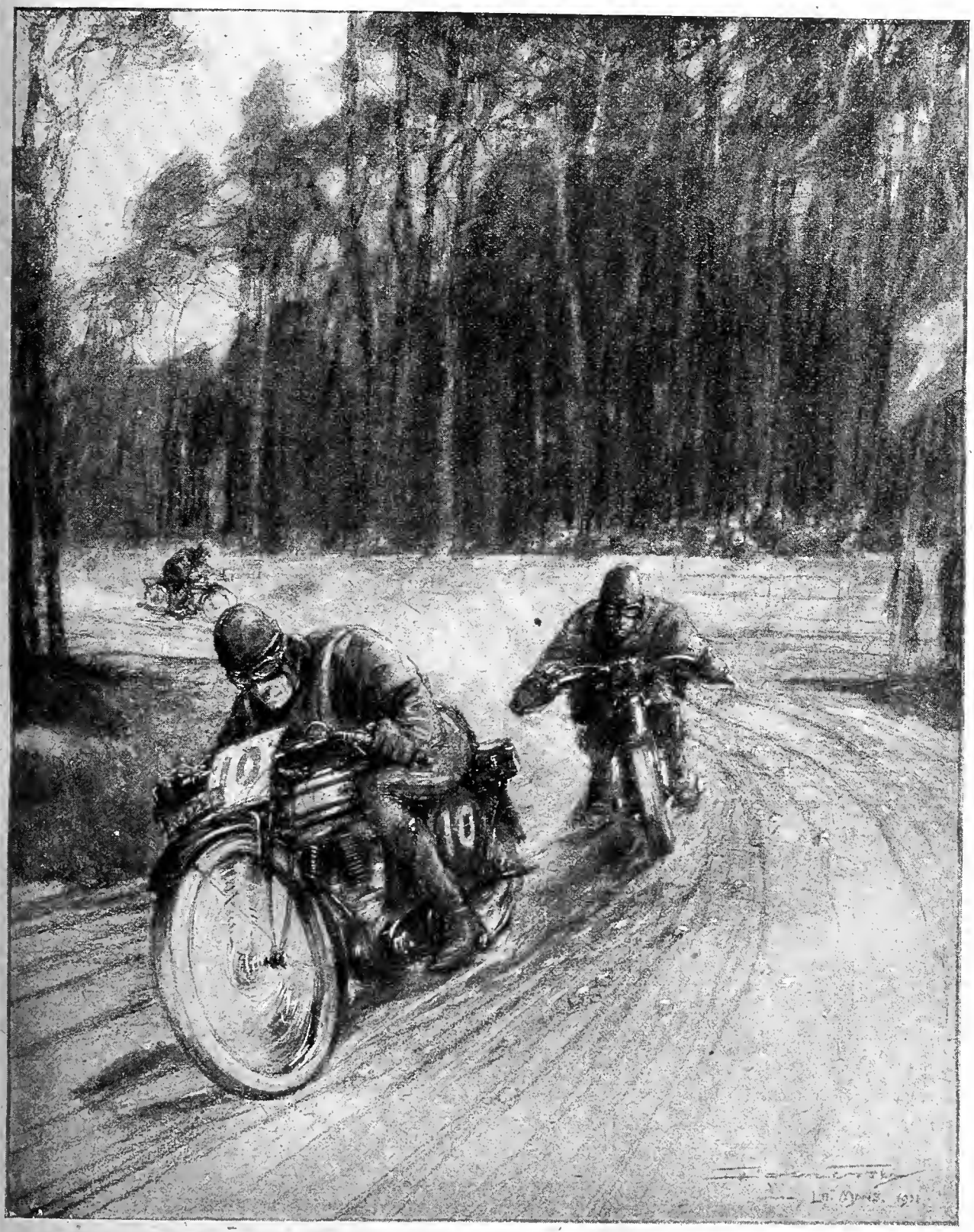
Paul Meunier, on a twin-cylinder overhead valve Alcyon, remarked that he led the race from beginning to end. "Although I do not think I was ever seriously threatened," he said, "I drove hard, getting all the speed I could out of my machine, according to the road conditions. Except when I overtook them I never saw the competitors in my class. I made two stops for petrol and oil, and never touched my tyres."

The winning Alcyon was equipped with Dunlop 26 × 2¼in. tyres, used Claudel carburetter, Renold chains, John Bull handle-bar grips, and Brooks saddle.

Anglo-British 250 c.c. Success.

The Yvél's, which won the 250 c.c. class, is a comparatively new machine on the French market, and is built up of English components, the engine being J.A.P. (side-by-side valve) with B. and B. carburetter, Enfield gear, and Druid forks. Dunlop tyres, K.L.G. plugs, Renold chains, and Castrol oil, were used in the race.

THE GRAND PRIX.



An impression of competitors at Le Tertre corner by "The Motor Cycle" artist on the course.

Features of This Year's A.C.U. Six Days Trial.

Team Prizes for each Class. Higher Speeds for 25 Laps at Brooklands.

PRELIMINARY regulations for this year's Six Days Trial, organised by the Auto Cycle Union, have now been issued, and reveal that the trial will be of a more technical nature than hitherto.

Starting from Brooklands on Monday, August 29th, there will be a preliminary test on the track before setting out on the first day's route, which will be as follows :

FIRST DAY.—Brooklands, Staines, Maidenhead, Oxford, CHIPPING NORTON, Cirencester, Malmesbury, Slaughterford, Colerne *(Ditteridge)*, Bath—138 miles.

SECOND DAY.—Bath, Weston *(Weston Lane)*, Toghill, Dursley, Wickwar, Chipping Sodbury, Keynsham *(Darley Hill)*, Whitchurch, Bishopsworth *(Dundry Hill)*, Chewstoke, CHEDDAR GORGE, Bridgwater, Spaxton *(Collier's Hill)*, Kingston *(Cothelstone Hill)*, Crowcombe, Stogumber *(Pitsford Hill)*, Wiveliscombe *(Axford Hill)*, Taunton—155½ miles.

THIRD DAY.—Taunton, Wiveliscombe *(Whitefield Rocks)*, Haleigh's Cross, Luccombe *(Porlock)*, Lynmouth *(Lynmouth)*, *(Lynton Station Hill)*, *(Parracombe)*, South Molton *(Ash Mill)*, *(Frankhill)*, TIVERTON, *(Newtes Hill)*, Honiton *(Station Hill)*, Sidford, Lyme Regis, Morcombelake *(Baker's Cross)*, *(Thistle Hill)*, Axminster *(Sector Hill)*, *(Stammery Hill)*, Marshwood, Broadwindsor, Chard *(Coombe Head)*, Taunton—178 miles.

FOURTH DAY.—Taunton, Blagdon Hill, Wellington Hill *(Monument Hill)*, Dunkeswell, Honiton, Crewkerne, YEOVIL, Sturminster Newton, Shaftesbury, Warminster *(East Knoyle)*, Frome, Radstock, Bath—135½ miles.

FIFTH DAY.—Bath, Trowbridge, Maddington, Castle Hill, WINCHESTER, Petersfield *(Wheatham Priors Dean)*, Alton, Binstead *(Crooksbury Payle Hill)*, Guildford, Ripley, Brooklands—132¼ miles.

SIXTH DAY.—Twenty-five laps on Brooklands at minimum speeds varying from 30 m.p.h. in Class A to 45 m.p.h. for the largest solo machines. These speeds are approximately 5 m.p.h. faster than those set for the corresponding test last year, but are generally slightly below the average speed that was reached by those who completed the test in 1920.

Note.—The names given in italics and parentheses are test hills over 1 in 7 gradient. Those in capitals, luncheon stops.

The order of starting will be varied each day, and all fuel and oil replenishments will be carried out by the Union in the presence of a member of the trade.

Five team prizes will be offered. One each for solo lightweights, solo mediumweights, and solo heavyweights, and also one each for light and heavy sidecar outfits.

The awards will be made on a machine's general reliability, hill-climbing, silence, brakes, economy, and condition, but the regulations are so framed that it is deemed impossible for a machine to qualify unless it reaches a certain standard on all counts.

Maximum rates of consumption of petrol and oil vary in each class, from 100 m.p.g. petrol and 1,800 m.p.g. oil for solo lightweights, to 45 m.p.g. petrol and 500 m.p.g. oil for the heavy sidecars.

No freak hills such as last year's Park Rash and Summer Lodge are included.

OFFICIAL RESULTS OF THE ILKLEY TRIAL.

OFFICIAL results of the one day sporting trial of the Ilkley M.C. and L.C.C., described in *The Motor Cycle* of the 21st, have now been announced. They are :

ILKLEY TROPHY (to be held for one year, together with gold medal and first-class certificate, for the best individual performance).—F. W. Giles (7 A.J.S. sc.).

SCOTT TROPHY (to be held for one year, together with gold medal and first-class certificate, for the best individual solo performance).—E. H. Wheatley (4 Triumph).

PALMER TROPHY (to be held for one year, together with gold medal and first-class certificate, for the best performance with a passenger machine).—H. Pattinson (8 New Imperial sc.).

OLAI TROPHY (to be held for one year, together with gold medal and first-class certificate, for the best amateur performance).—J. R. Wilkinson (5-6 Rover sc.).

TRIUMPH TROPHY (to be held for one year, together with gold medal and first-class certificate, for the best trade performance).—W. Backhouse (4 Triumph).

WATSON TROPHY (to be won outright, for the best performance in the 1,000 c.c. classes).—R. A. Stacey (7-9 Harley-Davidson).

TEAM PRIZE (solid silver cigarette cases).—Leeds Motor Union: R. Horsley (2¾ New Imperial), W. N. Clayton-Russell (4 Norton sc.), and H. Pattinson (8 New Imperial sc.).

GOLD MEDALS AND FIRST-CLASS CERTIFICATES (FOR THE BEST PERFORMANCES IN THE FOLLOWING CLASSES).

SOLO CLASSES.—250 c.c.: E. Munday (2¼ New Hudson). 350 c.c.: F. E. Palmer (3 Ivy). 560 c.c.: W. L. Fincher (4 Triumph). 1,000 c.c.: A. K. Fitton (8 Brough Superior).

PASSENGER MACHINE CLASSES.—Sidecars, 1,000 c.c.: G. W. Wilkin (6 Martinsyde sc.). Three-wheeled runabouts: C. R. Waddington (9 Morgan).

FIRST-CLASS CERTIFICATES.

SOLO CLASSES.—G. Hill (3¾ Scott), E. Hawks (2¾ Excelsior), A. R. Naylor (3½ Sunbeam), G. S. Boston (3½ Sunbeam), E. L. Boston (3¾ Scott), R. C. Bennett (2½ Federation), C. F. Hollyoak (2½ Federation), G. W. Shepherd (2¾ Beaumont), C. B. Haigh (3¾ Scott), S. Parker (3½ Sunbeam), J. P. Vickers (3½ Norton), J. Whalley (3½ Sunbeam), H. S. Moorhouse (3¾ Scott), W. Clough (3¾ Scott), H. E. Ellis (3¾ Scott), F. E. Palmer (3 Ivy), S. A. Fearnley (3¾ Scott), R. Horsley (2¾ New Imperial), B. B. Bointon (2¾ Conlson-B.), A. Mercer (3¾ Scott), W. L. Guy (3¾ Scott), G. Hanson (3½ Norton), and J. Whitley (4 Norton).

PASSENGER MACHINE CLASSES.—R. P. Runsome (5 Lea-Francis sc.), W. N. Clayton-Russell (4 Norton sc.), W. E. Grange (6 Bradbury sc.), H. Read (8 Dot sc.), and W. Marriott (4 Norton sc.).

SECOND-CLASS CERTIFICATES.

SOLO CLASSES.—W. Bell (2¼ Hudson), H. M. Batten (3½ Brough), R. W. Stanfield (3¾ Scott), W. Johnson, jun. (3½ Sunbeam), J. E. Slater (3½ Sunbeam), A. Jackson (3½ Norton), and G. A. Cox (2¾ O.K.).

PASSENGER MACHINE CLASSES.—W. Mitchell (7-9 Harley-Davidson sc.).

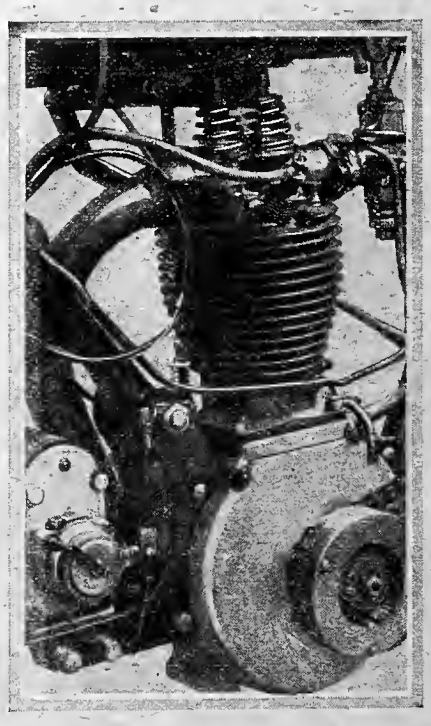
THIRD-CLASS CERTIFICATES.

SOLO CLASSES.—G. Clapham (3½ Scott) and Miss Dent (3¾ Scott).

POSITIONS FOR THE TEAM PRIZE.—1, Leeds Motor Union, 595 marks; 2, Harrogate M.C.C., 590 marks; 3, Scott Motor Cycle Co., 588 marks; 4, Bradford M.C. and L.C.C., 580 marks; 5, Ilkley M.C. and L.C.C., 570 marks.

STIFF TRIAL IN IRELAND.

THE Leinster Club ran off a trial for the Patland Cup on Saturday over a course of exceptional severity in the neighbourhood of Dublin. It was significant that only two entrants elected to run sidecar machines, and both were non-starters. The proportion of non-finishers was high. The following completed the course: Greene (Enfield), Hill (Douglas), McGlade (Triumph), Parkes (Triumph), Carville (Triumph), Gilmour (Douglas), Murphy (Triumph), Rogan (——), Johnston (New Scale), Hemfrenshall (Rudge), Tracey (Sparkbrook), Fagan (Indian), Slevin (Velocette), Woods (Harley), Thompson (N.U.T.), and Daly (Triumph).



An ordinary side-by-side B.S.A. converted to the overhead valve type by W. J. Chambers, of Belfast, who made the new parts necessary for the conversion, including the cylinder head.

WESTERN CENTRE A.C.U. ELIMINATING TRIAL.

TO find a winner of the event, several interesting features were included in the Western Centre A.C.U. Trial on Saturday. The object of the trial was to find a "champion" for the centre.

First, two difficult circuits, of approximately fifty miles, and including eight test hills, had to be ridden non-stop. There were thirty-five entries, but only eleven qualified in the initial test. They were: L. Blick (7-9 Harley-Davidson), E. Jellyman (3½ Norton), V. Austie (3 A.B.C.), S. Lewis (6 B.S.A.), F. S. Barnes (3½ Sunbeam), J. A. Newman (7 A.J.S.), L. Paynter (3½ Norton), F. Morgan (2¾ Cotton-Blackburne), Eric Williams (3½ Sunbeam), C. H. Dickens (4 Dene), E. Colmer (3½ Norton), and H. M. Goddard (4 Triumph.)

Finding a Winner.

Next came six circuits of a short route, with one test hill to be covered without removing the feet from the footrests. Finally a formula, based on petrol consumption, horse-power, and weight, was used.

J. A. Newman (7 A.J.S.) gained the honour, with L. Paynter (3½ Norton) and H. M. Goddard (4 Triumph) as runners up.

The team prize went to the Stroud club, with Gloucester and Stourbridge second and third respectively.

Members of the winning team were L. Blick (7-9 Harley-Davidson), E. Jellyman (3½ Norton), H. M. Goddard (4 Triumph), and N. W. Smith (4 Triumph).

Tear this page out for future reference.

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35/-

MEN'S WOOLLIES

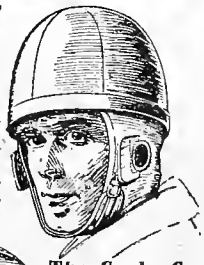
A really good cardigan coat. slightly brushed, with two pockets and ribbed borders. In Canary and the new Maize shade. The ideal golf coat. Worth 30/-. Post 6d. **19/11**

Brooklands Motor Cyclist's HELMET

Made in fine quality soft skins, very durable. No ugly fixed rolls, but a neat fitting flap opened or closed as desired, and can be neatly rolled. Fastens under chin with buckle and strap. Fleecy lined. Post 4d. Our price **6/6**

The "TT" Safety Helmet

Successfully used at the T.T. Races, Isle of Man, 1914, 1920, and 1921. Price Complete **55/-** For flying, motor racing, etc., this helmet is unrivalled for protection



Motor Cyclist's HELMET.

Similar shape to above. Made in Holland. Crash material. Light and comfortable, ideal for summer wear. Roll at ears, buckle fastening under chin. **4/6**

The Cycle Car CAP.

Fawn, Waterproof, Light weight, Ear and Neck Flaps. **10/6**
Also in Holland Crash Material **4/6**

SLEEVELESS WOOLLIES
(As illustration above).

A cardigan coat without sleeves, giving perfect freedom to the arms. Made with two pockets and woven border, in brown, canary, camel, and grey shades.
Special Price Post free..... **17/11**
With contrasting coloured border. Well worth 25/6 today. Post free.... **18/11**

GAUNTLETS

For ladies or gentlemen. Made from English tan cape, unlined, with deep gauntlets. Dents best make. **14/11**
Lined Fleece **16/11**

Chamois GLOVES.
For Ladies or Gentlemen

English made selected skins, with pull-on elastic wrists. Price, per pair, **4/11**
Post 4d.

The "SUSSEX" LADIES' RIDING OUTFIT
Suitable for Motor Cycling
(As illustration).

Comprising COAT and BREECHES. Made from Super Quality GOVERNMENT KHAKI PROOFED DRILL. Unsurpassed for real hard wear. Ideal Garments for land work, cycling, riding, etc. COAT has 2 pockets, all-round belt, and finished detachable buttons. BREECHES laced at knee. All perfect garments, but in some instances breeches are slightly lighter shade than coat.

Sizes—Women's and Outsize Women's.	Usual Price.	Special Price
Coat	25/6	**9/6**
Breeches	12/9	**8/6**
The Outfit		**17/6**

GENTS FOOTWEAR.

REAL SCOTCH BROGUES.

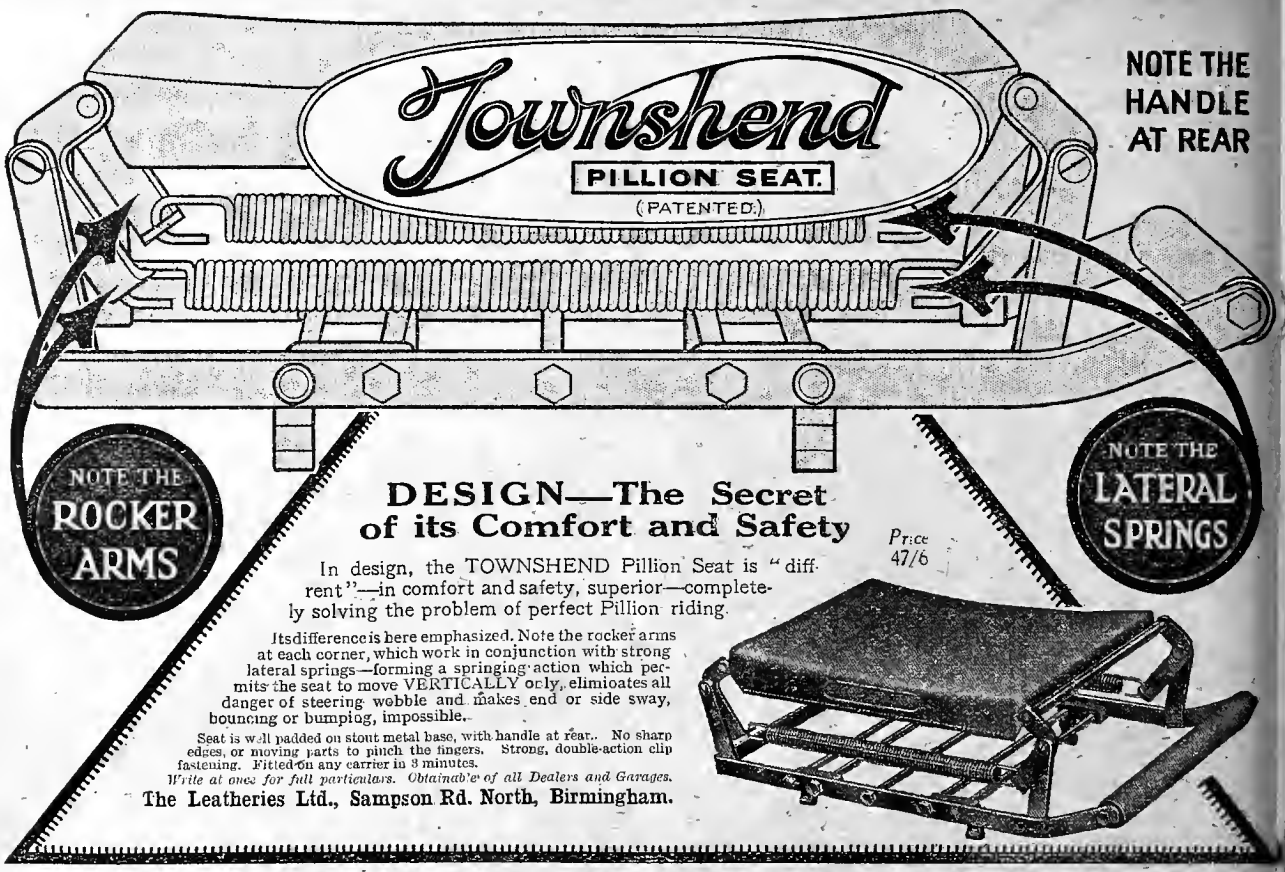
In tan or black leather. Wear guaranteed. Exceedingly comfortable. All sizes from 6 to 11 .. **19/11**
Superior quality **35/-** per pair.

GENTLEMEN'S SHOES.

Fine quality black box calf or tan willow calf shoes, solid oak back tanned soles. Wear and comfort guaranteed. In all sizes from 6 to 11 .... **37/6**
Post free.

GAMAGES, HOLBORN, LONDON, E.C.1.

In answering this advertisement it is desirable to mention "The Motor Cycle."



DESIGN—The Secret of its Comfort and Safety

Price 47/6

In design, the TOWNSHEND Pillion Seat is "different"—in comfort and safety, superior—completely solving the problem of perfect Pillion riding.

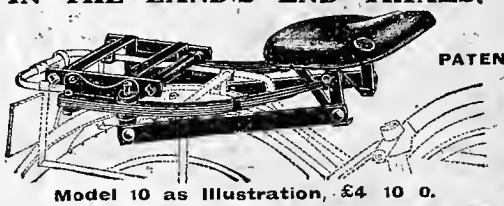
Its difference is here emphasized. Note the rocker arms at each corner, which work in conjunction with strong lateral springs—forming a springing action which permits the seat to move VERTICALLY only, elimioates all danger of steering wobble and makes end or side sway, bouncing or bumping, impossible.

Seat is well padded on stout metal base, with handle at rear. No sharp edges, or moving parts to pinch the fingers. Strong, double-action clip fastening. Fitted on any carrier in 3 minutes.

Write at once for full particulars. Obtainable of all Dealers and Garages.

The Leatheries Ltd., Sampson Rd. North, Birmingham.

THE SADDLE THAT WON THE SANGSTER CUP & 3 GOLD MEDALS IN THE LAND'S END TRIALS.



PATENTED

Model 10 as Illustration, £4 10 0.

ABSOLUTELY SHOCK PROOF.

Read what Mr. Short says—
Having ridden your Tan-Sad "No Hurts" Saddle in the recent Land's End Trials and being awarded 2 gold medals and the Sangster Cup, I feel it my duty to tell you again what I think of the Saddle. Having covered well over 600 miles in 2 days' riding, *I think it is the most comfortable seat* I have struck and I can honestly say I did not have the least sign of soreness, or stiffness in the back, *nor did I receive a bad jolt the whole journey.*

Wishing you every success,
Yours faithfully (signed) F SHORT.

And what Mr. Boynton says—
I have pleasure in informing you that I used one of your "NO HURTS" Saddles through the Land's End Trials this Whitsuntide and have much to thank same for. Although some of the roads were absolutely vile, the comfort was a revelation unimaginable, and unless one had the actual experience of riding one of your saddles is almost unbelievable.

THE FAVOURITE PILLION SEAT THAT GIVES JOY TO EVERYONE—

BE SURE TO ASK FOR TAN-SAD FOR SAFETY AND COMFORT.

TAN-SAD

Pillion Seat	38/-
Foot Rest	6/-
Back Rest	9/-
Handles	2/6

The Tan-Sad Insurance covers Pillion Riding without extra charge.

Model 0, 2, 2 & 4 (as illustration) **49/-**

Send for lists to—

TAN-SAD
FREEMAN STREET, BIRMINGHAM

Obtainable from all Agents.

Immediate Delivery

RE-PLATED.
RE-ENAMELLED.
RE-BUILT.

Perfect finish in 1920 Colours.

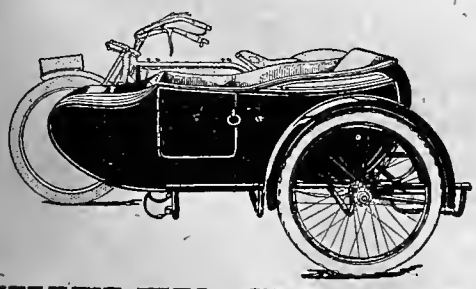
3½ h.p. P. & M.—2-speed, kick-start and clutch—Solo—**£30 down** and 12 monthly payments of £2-12-6, or Fitted with well upholstered and roomy new sidecar and chassis, **£40 down** and 12 monthly payments of £3-10-0

Cash: Solo **£60** Combination **£80**

LIMITED NUMBER ONLY.

Acetylene generator, head and tail lamps, tools, pump, and mechanical horn, £5 the set.

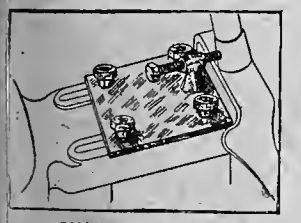
MOTOR VEHICLES (Engineering and Supply) ASSOCIATION, Ltd.
15, 16 & 17, Eldon Street, London, E.C.2.
'Phone: Wall 5436.



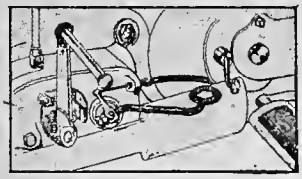
WHITLEY SIDECARS.

Produced for the MAN who must have the BEST.

Catalogues from all reputable Garages.



CHAIN ADJUSTER.
Price **6/6** post paid.



CLUTCH CONTROL PEDAL.
Price **5/-** post paid.

For use with Sturmey-Archer Gear Boxes.

THE WHITLEY MANFG. CO., LTD.,
LONDON ROAD, COVENTRY.
'Phone: No. 835. Wires: "Whitcars."

BENETFINKS

Motor Cycling can be made Economical if you purchase your accessories from

'The CITY'S OWN STORE'

GENUINE YALE MOTOR CYCLE LOCK.

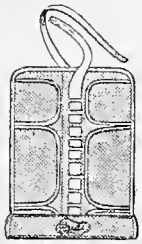
A thoroughly dependable lock with ⅛in. steel shank. Will make any machine thief-proof by passing the shank through wheel and stays.

Complete with two keys Post free ..... Price **12/9**

Cheaper Quality.
Genuine Yale **5/9**

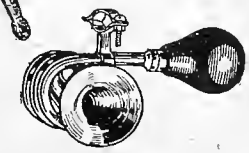
CLAYRITE Observation Mirror.

Adjustable to angle. Big field of vision. Black Nickel Finish. Price, post free **13/-**



SPECIAL LINE!!
Strong Canvas TOOL ROLLS

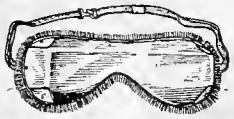
with pocket. Size, 18×7 To take 10 tools. Post free ... price **4/6**



Special Purchase of MOTOR CYCLE BULB HORNS.

Very deep note. Large Bulb. Nickel-plated, double twist trumpet. Post free. Price **7/6**

Celluloid FACE SHIELD



Very light and compact, bound chenille..... .....Post free **1/6**

PETROL INJECTORS.

All brass. Very useful for priming and flushing out bearings. Post free **1/9**

AMAZING OFFER OF

TYRES!

Buy YOUR Spare Tyre NOW, and save 50%.

All Ex-Government Stock, in Perfect Condition.

Size.	Make	Our Price.	List Price
24 × 2	**WOOD MILNE,** special	**23/9**	42/9
26 × 2	**WOOD MILNE,** special	**25/-**	45/3
26 × 2	**WOOD MILNE,** extra strong	**31/6**	55/-
26 × 2¼	**BATES,** special heavy	**31/-**	63/-
26 × 2¼	Heavy rubber studded	**33/9**	51/6
26 × 2¼	**WOOD MILNE,** special	**26/1**	48/6
26 × 2¼	**WOOD MILNE,** extra strong	**34/-**	55/-
26 × 2⅜ to fit 2¼	**PALMER,** cord heavy	**32/9**	79/-
	Heavy best rubber studded	**35/9**	—
	CLINCHER, extra heavy de Luxe	**35/-**	59/6
	WOOD MILNE, extra strong	**31/6**	62/6
26 × 2⅜ to fit 2¼	**HUTCHINSON,** rubber studded	**32/6**	54/6
26 × 2½	**WOOD MILNE,** extra strong	**36/1**	65/-
650 × 65	**WOOD MILNE,** special	**32/4**	64/8
"	**WOOD MILNE,** extra strong	**38/3**	76/6
28 × 3	Extra heavy, **WOOD MILNE**	**29/9**	79/-
	INNER TUBES.		
26 × 2¼ or 2⅜	Endless	**6/6**	10/-
26 × 3 × 2½	"	**6/6**	10/-
26 × 3	"	**6/6**	10/-
28 × 3	"	**7/6**	10/-

BENETFINKS, 107, CHEAPSIDE, LONDON, E.C.2.

RECENT **Radco** SUCCESSES

THE KING OF LIGHTWEIGHTS.

No. 2 **42 Gns.**

London - Edinburgh—Gold Medal (One Entry).
Silver Cup & Gold Medal—North London Reliability Trial (Easter Monday).
Paris-Nice, 1921 - - 2 Started - - 2 Awards.

No. 1 **£52**

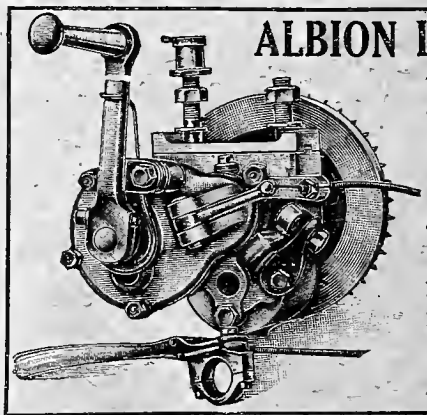
E. A. RADNALL & CO. - - Dartmouth Street - - BIRMINGHAM.

E·I·C MAGNETOS

FULLY GUARANTEED
IMMEDIATE DELIVERY
FOR ALL MAKES OF MOTORCYCLES
ASK YOUR DEALER FOR PRICES

"can be depended upon" to cure your troubles.

E·I·C MAGNETOS L^D Sampson Rd. North, BIRMINGHAM



ALBION Lightweight

Two-speed Gear with Clutch and Kick-starter.

Price:
£12-0-0

ALBION
Eng. Co., Ltd.,
Upper Highgate St.,
BIRMINGHAM.
'Phone: Mid. 1017.
'Grams: "Eastart."

Just in time for the Holidays.

You can go farther and fare better by fitting a sidecar to your motor cycle, one in which you can pack all your luggage out of the way and so have the appearance of travelling light.

The "Cooper" Lightweight Sidecar

Fitted to your solo machine, and a holiday for two, settles the question of where to go, the "Cooper" places the open road at your disposal—and there is just time to fit one.

Cooper Sidecars,
BELGRAVE ROAD, BIRMINGHAM.

THEY ALL USE —
SPEEDON
MOTOR OILS
HIGH GRADE AND UNEXCELLED FOR CYCLES.

John S. Morris & Son (Oils), Ltd., Cross Lane Oil Works, Manchester

The **Wright**

Neat, Light, Clean, Bright, Cheap.

Embossed Aluminium
DOUBLE-SIDED, FRONT & SQUARE REAR NUMBER PLATES
for
Motor Cycles

With or without Licence Holder.
Delivery by return
WRIGHT & SON,
Dept. C2
Edgware, Midd'x.
'Phone: "Edgware Four."

17/6 A PAIR *postage & packing paid*

Licence Holder 5/- extra.

Hackney Carriage and other plates supplied.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns—first 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers, who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays postage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited. The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally willing, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., late 1920, little used, fully equipped, licensed; £85, bargain.—Moss, Wem. [X6107

1920 A.B.C., Lucas dynamo lighting, speedometer, licence; £100, or near.—8, Manor Rd., Coventry. [X6104

A.B.C. Combination, Aug. 1920, dynamo lighting, speedometer, horn, many spares, good condition, one 2,000 miles; £145, or offer.—Harrison, 21, Wicker St., Sheffield. [X6157

WHY GODFREY'S ?

Exactly the same Machine!

Exactly the same Price!

Then why Godfrey's in preference to any other agent?

Because Godfrey's are experts with achievements on road and track behind them who can advise from practical experience.

Because of their all-embracing service which includes instruction in driving if required, attention to registration licence, and insurance free of charge.

And afterwards—willing assistance in any little difficulty which the novice may experience.

Our stock of 1921 models include—

A.B.C.	Indian
A.J.S.	Lea-Francis
Ariel	Levis
Allon	Martinsyde
B.S.A.	Matchless
Blackburne	New Imperial
Calthorpe	Radco
Chater-Lea	Royal Enfield
Coulson B.	Royal Ruby
Coventry Eagle	Scott
Douglas	Sunbeam
Hawker	Triumph

Zenith

SHOP-SOILED BARGAINS.
SECOND-HAND GUARANTEED MACHINES.

EXCHANGES.
EASY PAYMENTS.

Write for full lists and particulars of special values in passenger outfits.

GODFREY'S LTD.,

208, Great Portland Street, LONDON, W.

'Phone: Langham 1300 (2 lines).

IMPORTANT NOTICE.

Owing to the August Holidays, the issue of "The Motor Cycle" for August 4th must be closed for press earlier than usual. Insertion of **Miscellaneous Advertisements** in that issue can only be guaranteed if in our hands by first post, Thursday, July 28th.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., brand new, £105; or with A.B.C. sidecar, £137.—Edwards, 50, Harrington Rd., South Kensington. [2321

A.B.C., 1920, equal to new, only run 500 miles; owner abroad; £90, or nearest offer.—Box 821, c/o *The Motor Cycle.* [X5862

1920 (late) A.B.C. Combination, sporting, very fast, as new, Lucas dynamo, Cowey; £165.—43, Landguard Rd., Southampton. [1229

A.B.C., 1921, small mileage, perfect condition, fully equipped, tax paid; Birmingham; £110.—Box 5,429, c/o *The Motor Cycle.* [1664

A.B.C., 1920, dynamo lighting, fully equipped, tax paid; £100.—Davies, c/o Chase Engineering Co., Barras Bridge, Newcastle. [1960

1921 A.B.C. Machines in stock, complete stock of spares stocked.—W. Luther J. Davies, 71, Commercial St., Newport, Mon. 'Phone: 2488. [0639

A.B.C. Combination, 1920½, lamps, Klaxon, speedometer, wind screen, licence, spares, perfect condition, small mileage; £100.—Armytage, 2, King John's Court, Great Eastern St., London. [1562

A.B.C. Canoelet Sporting Combination, lamps, Klaxon, licence, complete thorough overhaul, 1,500 miles, perfect order and appearance; £100; getting car.—20, Cleveland Rd., South Woodford, Essex. [1475

1920 3h.p. A.B.C., best lamps, speedometer, horn, spares, including open copper exhaust pipes, T.T. bars, etc., small mileage, perfect condition, very fast, would ride to buyer; £95, or offer; must sell.—Shaw, 5, Western St., Bedford. [2136

Abingdon.

ABINGDON 3½h.p., 2-speed, overhauled June, costing £16, speedy, perfect condition; 55 gns.—Further particulars apply, Bennett, South View, Garden Suburb, Darlington. [1280

Acme

1920 Acme-Jap 8h.p. Combination, spare wheel, lamps, horn, hood, Tan-sad, excellent condition; £125.—Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [2320

ACME 1920 Combination, 8h.p., detachable wheels, spare wheel, Easting screen, done 700, all accessories; £125, or offer.—Lloyd Jones, 75, Marchmont Rd., Wallington, Surrey. [1739

SPECIAL Offer of brand new 8h.p. Acme-Jap combination, detachable wheels, spare wheel, 28×3 tyres; list price £213; reduced to £170 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham [1259

A.J.S.

DAN GUY, Weymouth.—1921 A.J.S. in stock; £215. [0549

A.J.S. 1921 2¾h.p. Model actually in stock; no waiting.—Moss, Wem. [X6105

J. C. PICKERING, Shrewsbury, agent A.J.S.—Immediate delivery all models. [X6117

2¾h.p. A.J.S. Sports Model in Stock; 100 gns.—Cross, agent, Rotherham. [X6140

A.J.S., best after test, all models.—Merrick's Stores, 174, Listerhills Rd., Bradford. [2219

1920 A.J.S. Combination, excellent condition; £150.—Mallett, Preswylfa, Portonadoc. [1307

2¾h.p. A.J.S., perfect, 3-speed, clutch, K.S.; £68.—Hopwood, Rainow, Macclesfield. [1373

1920 6h.p. A.J.S. Outfit, spare wheel, tax paid, etc.; £175.—Cross, agent, Rotherham. [X6139

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

A.J.S. 1913 6h.p. Combination, very sound order; £75.—The Layton Garages, 90, High St., Oxford. [2170

A.J.S. 6h.p., solo, countershaft gears, kick-starter, dual clutch, recent £30 overhaul, reliable; sacrifice £47/10.—53, Watling St., Wellington, Salop. [1519

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S., 2¾h.p., 3-speeder, and 6h.p. combination, with dickey, in stock.—Crow Bros., Guildford. [1111

DAN GUY, Weymouth.—A.J.S. 6h.p. combination, 1917, recently re-enamelled, splendid condition throughout; £120. [0558

2¾h.p. A.J.S., brand new, for immediate delivery; first cheque £105 secures.—Wilderspin, Chatteris. 'Phone: 34. [1087

2¾h.p. A.J.S., 1915, 2-speed, clutch, K.S., appearance and condition equal new; £55.—13, New St., Wellington, Salop. [X6075

A.J.S., 2¾h.p., immediate delivery, £105; 7h.p. combination, £215.—Arthur G. Daw, A.J.S. agent, 114, Brixton Hill, S.W.2. [1889

A.J.S. 6h.p. Combination, perfect, tax paid; £95, or near; seen after 7 p.m. any evening.—206, Acre Lane, Brixton, S.W.4. (P) [1485

A.J.S.—London and Walsall agents; immediate delivery; exchanges or deferred payments.—Maudes' Motor Mart, London and Walsall. [2420

5-6h.p. A.J.S., only done 2,000 miles, take 4 anywhere, all on, wind screen; £140 lowest.—E. de Cort, 39, Essex Rd., Islington, N. [2130

1914 A.J.S., 2-seated sidecar, perfect order and condition; any trial or examination; spares; accept £75.—33, Richmond Park Rd., S.W.14. [1652

BRAND New 1921 2¾h.p. A.J.S., 3 speeds, in stock; £105; exchanges.—Walbro Motor Cycle Co., Saffron Walden, Essex. 'Phone: 45. [X6095

1916 6h.p. A.J.S. Combination, spare wheel, screen, overhauled; £110, or exchange solo Triumph and cash.—Sutton, 97, Oxford Rd., Gunnersbury, W. [1310

1920 6h.p. A.J.S. Combination, 3 lamps, horn, spare wheel, etc., condition as new, not been used this year; £165, cost £220.—F.E.W., 55, High St., Oxford. [1447

A.J.S. 1920 6h.p. Combination, electric lighting and full accessories, makers' demonstration model, small mileage; £155.—Beney, 13, Spenser St., Victoria St., S.W.1. [0674

DAN GUY, Weymouth.—1920 6h.p. A.J.S. Combination, purchased November, as new, guaranteed condition, fitted Lucas Magdyno, small mileage, tax paid; £195. [0596

A.J.S. Combination, 1919, as new, spare wheel, lamps, speedometer, new tyres, tax, genuine bargain; £132.—F. Lester, Manor House, Radclive, Buckingham. [1517

A.J.S. Combination, late 1920, mechanical condition perfect, tyres good, screen, spare wheel, luggage carrier, Lucas lamps and horn; £150, or very near offer.—Monro, Tenbury Wells. [1254

A.J.S. 1921 brand new Combination, 7h.p., complete with interchangeable wheels and spare, immediate delivery from stock; £215; no waiting.—Wilkins Simpson, opposite Olympia, London. [1464

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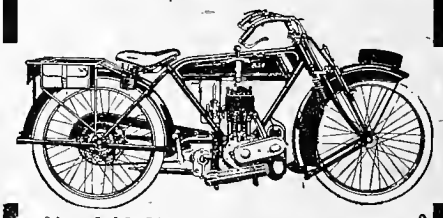

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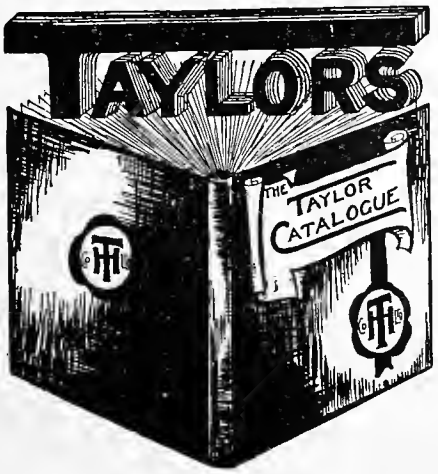

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DOUGLAS, 1916, new condition, fast machine; £38 complete.—Johnson, 15, The Promenade, Palmers Green. [1745

DOUGLAS 4h.p. Combination at £145, makers' list price £170.—Brandish and Sons, Foleshill Rd., Coventry. [X6161

DOUGLAS, 2¾h.p., 1916, splendid condition; any trial; lamp, tools, etc.; offers.—17, Valnay St., Tooting. [2220

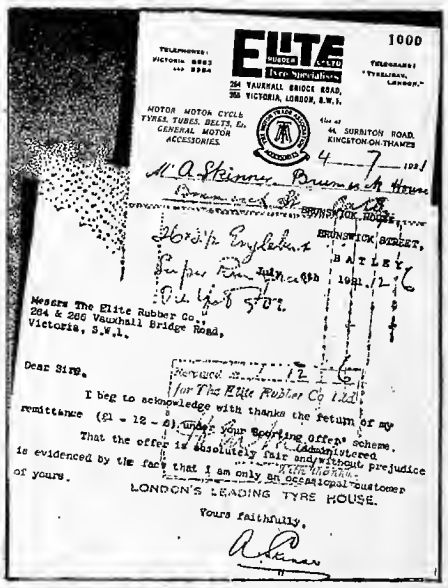
DOUGLAS 2¾h.p., 2-speed, perfect, ready holiday run; any trial; £35.—37, Leamington Road Villas, W.2. [2065

DOUGLAS 1919 2¾h.p., 2-speed, horn, lamps, in perfect condition; £58.—Michell, Croydon Rd., Caterham. [1753

1921 2¾h.p. Douglas, 3-speed, kick starter, hand clutch, lamps, etc.; £93.—R. Hole, Broadway, Burgess Hill. [2098

DOUGLAS 1916 2¾h.p., 2-speed, every accessory, splendid condition, tax paid; £46.—365, King St., Hammersmith. [2116

1919 2¾h.p. 2-speed Douglas and accessories, in good condition; £65.—Bounds, 223, High Rd., Kilburn, N.W. [1459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1919 Douglas 2¾h.p., 2-speed, lavishly equipped, u scratched; £50.—17, St. Charles Sq., North Ke sington, W.10. [200

GIBB, Gloucester, can give immediate delive Douglas 1921 models and spare parts from stoc —'Phone: 852. [63

DOUGLAS, 1911-12, 2-speed, overhauled, new cran shaft, etc.; £18, or nearest.—Melhuish, High R Whetstone, N.20. [20

1919 Douglas 2¾h.p., perfect condition, lamps, hor footboards, all spares; £65.—Hare, Norfo Hotel, Arundel. [12

DOUGLAS 2¾h.p., 1919, 2-speed, accessories, lam tax, excellent condition; £50.—Post Offic Cowley, Uxbridge. [13

TWO 1915 2¾h.p. Douglases, good condition, on, ready to ride away, no dealers.—53, Wyndha Crescent, Cardiff. [17

4h.p. Douglas Combination, 1915, 3-speed and clut and kick starter model; £65.—Wauchope's, Shoe Lane, London. [90

1920 2¾h.p. 3-speed Douglas and accessories, in go condition, tax paid; £75.—Bounds, 223, Hi Rd., Kilburn, N.W. [14

DOUGLAS, 2¾h.p., 1916 (October), 2 speeds, ve fine condition, licensed; £48.—Bunting's Mot Exchange, Wealdstone. [22

DOUGLAS 1915 2¾h.p., 3-speed, clutch, kick sta perfect running order; £35.—100, Northumbe land Park, Tottenham. [15

DOUGLAS 2¾h.p., 1919, lamps, tools, tax pa perfect running; £55; after 6.30.—Lepage, Holland Park Gardens, W. [20

2¾h.p. Douglas, just overhauled, tax paid, lamp horn, tools, etc.; £45; after 6 p.m. any eve ing.—60, Cecil Av., Barking. [18

KEMP'S Garage, Louth, Lincs, Douglas agents a experts.—Immediate delivery of all models revised prices. Lists free. [X61

1914 Douglas, 2¾h.p., recently new cylinder pistons, tyres, perfect condition; £35.—Nee ham, 38, St. Aubyns, Hove. [16

2¾h.p. Douglas, 2-speed, clutch, K.S. fully equipp spares, condition excellent; £45, offers.— Thrale Rd., Streatham. [14

DOUGLAS 2¾h.p., 1916, licensed, Binks, long e haust, racing cams, overhauled makers; £46 32, Mason's Hill, Bromley. [16

DOUGLAS Combinations, 4h.p., 1919, electric ligh ing, in perfect condition; any trial; £95.— Moscow Rd., Bayswater, W. [14

DOUGLAS 2¾h.p., 1919, 2 speeds, all accessori ride away, guaranteed; £50.—Champion, Nevada St., Greenwich, S.E. [18

4h.p. Douglas Combination, mechanical horn, all cessories, tax, original transfers; 75 gns.— Windermere Rd., South Ealing. [17

BRAND New 1921 2¾h.p. Douglas, all lamp in stock; £85.—Walbro Motor Cycle Co., Saffr Walden, Essex. 'Phone: 45. [X60

DOUGLAS 4h.p. Combination, good as new, 19 W.D., everything on; £110; any trial.—G.H. Dordrecht Rd., Acton Vale, W. [93

ALL-ON Douglas Models from Stock; 2¾h.p. 2-spe £85; 3-speed clutch, £105; combination, £1 —Moffat, Yeovil. 'Phone: 50. [50

1915 2¾h.p. Douglas, 2-speed, all accessories, fir class condition; £28, or exchange for 2-stroke 64, Church St., Edgware Rd., N.W. [22

DOUGLAS 2¾h.p., 1914, Bosch, Tan-Sad, Stewa Warner, good condition; £39, or near offer Birt, 339, Central Markets, E.C.1. [20

DOUGLAS Combination, 1920, excellent conditi licence and insurance, spares, at £105.—Apr Brockes, Stationer, Oxted, Surrey. [17

DOUGLAS 4h.p., 1918 model, tyres unpunctured good condition, with sidecar chassis; £65 Gregory, 157, Leander Rd., S.W.2. [16

DOUGLAS 2¾h.p. 2-speed All-on Models, £ exchanges considered.—R. B. Clark and Co., Exhibition Rd., South Kensington. [22

DOUGLAS 2¾h.p., 1920, 3-speed, all on, splen condition; £68 cash required; insured, tax pa —15, Smallwood Rd., Tooting, S.W.17. [19

DOUGLAS 1921 2¾h.p., all on; £85; cash, exchan or deferred payments.—Clifford Wilson, 177, We minster Bridge Rd., S.E.1. Hop 210. [18

DOUGLAS Special 2¾h.p., 1916 W.D., uncra 1920, buffer forks, complete; bargain, £68.— kinson, Station Hotel, Corbridge-on-Tyne. [12

2¾h.p. Douglas, 1916, all black, lamps, horn, el good condition; £40.—Johnson, 18, Marlbo Flats, Walton St., Chelsea. After 5.30. [18

1920 Douglas Combination, electric light, di screen, just overhauled; best over £105; part.—County Medical Officer, Huntingdon. [X55

£43.—Douglas, 2¾h.p., 2-speed, late model, in tinguishable from new, guaranteed, licensed; m sell.—20, Treen Av., Hoggers Corner, Barnes. [1

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY-DAVIDSON Combination, 7-9h.p.; £95.—Hopkins, New St., Ledbury. [0677

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

7-9h.p. Harley-Davidson Combination; £55; tax paid.—373, Katherine Rd., Forest Gate. [1731

HARLEY Sports, brand new, equipped; £125, bargain.—Clark, 7, Exhibition Rd., S.W.7. [9196

1921 New Flat Twin Harley, sporting sidecar, £140; also 1920 model, £140.—Ross, 86, High Rd., S.E. [1602

1919 Harley-Davidson 7-9h.p. Combination, complete; real bargain, £130.—30, Lansdowne Hill, Norwood. [1478

HARLEY-DAVIDSON Flat Twin at £120, makers' price to-day £137.—Brandish and Sons, Foleshill Coventry. [X6162

1918-19 Harley Combination, as new, all on, tax paid; £125.—59, Palfrey Place, Dorset Rd., Fulham Rd., S.W.8. [1924

T.C.H. have several Harley-Davidson combinations; bargains; tax paid.—5, Heath St., Hampstead (near Hampstead Tube Station). [1582

1920-21 Harley Combination, Rennoc sidecar, aluminium discs, dissolved acetylene lighting; £—37, Arlington Rd., Surbiton. [1896

1919 Harley-Davidson and Sidecar, lamps, horn, tax paid; £110 lightweight wanted.—J. Hanlion, Mt. Pleasant Rd., Tottenham. [1733

HARLEY-DAVIDSON M.C., 8-9h.p., with Canoelet sidecar, new M.C., 1919 make; £180, or near offer.—Dr. Williams, Isallt, Portmadoc. [1295

1921 7-9h.p. Harley-Davidson Combination, electric standard model, all complete, new; no dealers; £—Write, S.B., 36, Alkham Rd., N.16. [9414

£25, or near offer.—1918 Harley-Davidson combination, Grindlay sprung sidecar, lamps and horn, for tour.—Foreman, 83, Blackheath Rd., S.E.10. [1289

1918 Harley, double-seater sidecar, Cameo screen, D.A. lighting, disc, small mileage; bargain, £—Woodcote House, Norlington Rd., Leyton. [1634

HARLEY-DAVIDSON Combination, 1919, condition equal to new, guaranteed perfect, any trial; £—61, Mayfair Av., Ilford. 'Phone: Central [X6037

HARLEY-DAVIDSON 1918 7-9h.p. Combination, acetylene lighting, good condition; £110.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6056

MR. S. E. LONGMAN'S Winning Harley Combination is for sale; best offer over £150; condition as new, and exceptional tune.—17, Bond St., Ealing. 'Ph: 689. [2217

HARLEY-DAVIDSON Combination 7-9h.p., speedometer, lamps, wind screen, hood, spares, ready for riding, and fine condition; £95.—King, Scotland Place, Rishbottom. [X6014

HARLEY-DAVIDSON Combination, 1920, dynamo model, screen, Tan-Sad, speedometer, first-rate condition, original tyres; £160.—Bunting's Motor Exchange, Wealdstone. [2204

HARLEY-DAVIDSON Combination, 7-9h.p., 1920, perfect running order; what offers? Entertain lightweight in part payment.—Kirk, 40, Kathleen Rd., H Mills, Birmingham. [1255

LATE 1920 Harley-Davidson 7-9h.p. Combination, very small mileage, speedometer, Klaxon horn, lighting set, as new; £150, or nearest.—Baston, Yeo's Farm, Alphington, Exeter. [1929

HARLEY-DAVIDSON 1920 4h.p. Model, with Swan sporting sidecar, electric lighting, excellent condition; £175.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6055

1919 Harley-Davidson 7-9h.p. and Matchless sidecar electric lamps and horn, wind screen, speedometer, fine condition; £116 lowest.—12, Lancaster Rd., West Norwood. [1642

1918 Harley-Davidson 7-9h.p., electric model, overhauled and repainted, new tyres, screen, Apollo horn, etc., magnificent combination, tax paid; £145.—31, High Rd., Lee, S.E.13. [8563

1919 Harley-Davidson Combination, dual electric and acetylene lighting, legshields, Tan-Sad, new tyres, splendid order, just overhauled, tax paid; £130.—Morriss, 8 Victoria Rd., Finsbury Park, N. [1495

HARLEY-DAVIDSON Combination, 1920, electric model, all accessories, tax and insurance paid, as new; no reasonable offer refused; no dealers.—54, Coombe Lane, Raynes Park. [1624

HARLEY-DAVIDSON, new 1919, mag., Lucas dynamo lighting, Easting wind screen, bulbous sidecar, new tyres, horn, tax paid, perfect everywhere; £5.—38, Lordship Lane, S.E.22. [X5861

HARLEY-DAVIDSON 1918 7-9h.p. 3-speed Combination, completely equipped, including licence, condition and appearance faultless; £110.—The Laytons Garages, 90, High St., Oxford. [2171

HARLEY-DAVIDSON (Nov., 1919) Combination, new condition, hood, screen, speedometer, special lamps, mechanically perfect; £140; seen Oxford Circus.—Wilson, 289a, Regent St., W.1. Mayfair 6666. [1666

Whatever tyre mileage you have obtained

These tyres are "good for more."

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THE cover that has been designed to withstand any strain that it is possible to put it to—that will stand the kick of any motor cycle engine yet made—that will last out any other make. These covers are a combination of everything that is best in tyre manufacture. The finest possible rubber, the strongest possible walls, and the best brains to make the "best out of them."

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"	Passenger 4-ply Rubber Studded	27/9	55/6
26×2½	Touring 3-ply Rubber Studded	28/6	53/-
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28×3	Racing Rubber Bars and Studs	50/6	100/9

We guarantee these Covers to give a minimum mileage of 3,000 miles and will replace any proving faulty on this basis. These goods are sent on 7 days' approval against remittance. Carriage paid. For particulars of our "sporting offer," see other advertisements appearing in this issue.

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MOTOR CYCLES FOR SALE.

Harley-Davidson.

1921 Harley Combination, 2-seater, 2 screens, hood, also tradesman's parcel carrier body, bought May, £300, insured all risks, accept £250.—136, Upper Clapton, E.5. Reason of selling, ill-health. [1317

1920 Harley-Davidson Combination, electric lights and horn, 2-seater sidecar, 2 wind screens, hood, disc wheels, Tan-Sad, real family man's 'bus; £180.—156, Walkley Lane, Hillsboro', Sheffield. [1363

HARLEY, 7-9h.p., genuine 1915, mag. model, with Swan sporting sidecar, both just repainted and all worn parts renewed, very fast, smart, and complete, tax paid; £110.—Engineer, Huntington, Chertsey, Surrey. [2033

HARLEY 1918 Combination, 7-9h.p., Easting, Tan-sad, electric lighting, speedometer, chains new, tyres, condition inside and out perfect, tax paid; £115; after 7 or week-end.—29, St. Albans Rd., Harlesden, N.W.10. [2287

7-9h.p. Harley-Davidson Combination, 1918, mag. model, excellent running order, new H.D. sidecar, hood, wind screen, lamps, horn, tax paid, insured to June, 1922; £130.—Mess Secretary, St. Mary's Barracks, Chatham. [1403

HARLEY-DAVIDSON 1919-20 Combination, Tan-Sad, complete Lucas dynamo lighting, all tyres perfect, smart appearance and in perfect mechanical condition; £150.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [2251

HARLEY-DAVIDSON.—Bargains, brand new, only 3 left: sports model, £125; Model J, electric combination, £199; Model F, solo, complete with lamps, £159; first cheque secures any of these bargains.—Mastin, Gosberton, Spalding. [1938

7-9h.p. Harley-Davidson, Henderson Elite sidecar, bought new March, 1920, magneto model, makers' recent overhaul, fitted Lucas lamps and horn, excellent condition; any trial; as new; sacrifice £130, tax paid.—Manager, Co-operative, Crynant, Glamorgan. [1251

1919 Harley-Davidson Combination, luxurious bulbous back sidecar, lamps, horn, Eastiog, tax paid, mileage under 4,000, guaranteed perfect throughout; £135, near offer.—Langford's, 37, Cricklewood Broadway, N.W.2. 'Phone: Hampstead 8616. [2043

Henderson.

E. KICKHAM for Henderson, sole agent for Bristol and Bath districts.—Stokes Croft, Bristol. [3354

4-CYL. Henderson, Model Z, with all accessories and Montgomery sidecar, £145; solo, £125.—Pickering, Mardol, Shrewsbury. [X6114

HENDERSON 4-cyl. Combination, all accessories; any trial; £65; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E 3155. [2051

1920 Henderson 4-cyl. Combination, as new, will ride 150 miles to purchaser; any trial; must sell, sacrifice £155.—13, Victoria Rd., Sheffield. [1465

HENDERSON 10h.p., 4-cyl., late 1920, Capjon Mudd coachbuilt sidecar, disappearing hood, electric lighting, all accessories, tax, insurance paid; £160, offers.—Major Bell, 191, Coleherne Court, S.W.5. [1324

1919 4-cyl. Henderson and 65 gn. 2-seater Sandum spring wheel sidecar, 3-speed gear box, hand and foot clutch, pillion seat, lamps, Klaxon, wind screen, tools, spares, luxurious outfit; £130, or near.—436, Whitehorse Rd., Thornton Heath, S.E. [2203

1921 4-cyl. Henderson, with tandem sidecar, illustrated in this paper on March 3rd and 24th, and claimed to be one of the most handsome turnouts, electric model, reverse gear, disc wheels, electric horn, 2 electric lights inside sidecar, speedometer, hood, side curtains and wind screens, grid, Tan-Sad, only ridden 3 weeks, selling by doctor's orders; sacrifice £240; cost £350; guaranteed perfect order.—Taplin, 7, York Buildings, Hastings, Sussex. [1381

Hobart.

HOBART-VILLIERS, 1921, 2-speed, fully equipped, tax paid, nearly new; £55.—114, Brixton Hill, S.W.2. [1893

HOBART-VILLIERS 2¾h.p., 1919, 2-speed, legshields, lamps, horn, licensed, perfect condition; bargain, £45.—25, Great Kingwood Rd., Fulham. [1483

Hockley.

1918 Hockley 2-stroke, 2-speed, splendid condition, tyres new, registered; £36.—2, Lowhall Farm, Markhouse Rd., Walthamstow. [1956

HOCKLEY Combination, 2¾h.p., 2-speed, Canoelet, Easting, fully equipped, as new; bargain, £55.—134, Church Rd., Canonbury, Islington. [1525

Humber.

HUMBER 4½h.p. Flat Twin at £125, makers' price £140.—Brandish and Sons, Foleshill Rd., Coventry. [X6164

1920 4½h.p. Humber Flat Twin, unscratched; £110.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0655

HUMBER 3½h.p., 2-speed, handle start, excellent order; £32, or offer; after 8 p.m.—108, St. Mary's Rd., Ilford. [1438

HUMBER Combination, 3½h.p. flat twin, 3-speed, clutch, handle start, lamps, horn, spare chains, excellent condition; £75.—Howard, 315, Stanstead Rd., Forest Hill. [1757

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MOTOR CYCLES FOR SALE.

Humber.

2h.p. Humber Lightweight, single speed, new condition, tax paid; £25, or offer.—Monk, Cycle Agent, Waltham Abbey. [X6053

1920 Flat Twin Humber Combination, hood, wind screen, etc., gift; 79 gns.—Ramsden's, 8, Maybell Av., Blackpool. [1541

SPORTING Solo Humber, 3½h.p., tyres unpunctured (Dunlops); exchange lightweight or sell; £35.—17, Little Ealing Lane, W.5. [1868

3½h.p. Humber, 2-speed, overhauled, new belt, all on, excellent condition; £35, or offer.—20, Forthbridge Rd., Lavender Hill, S.W.11. [1527

£19/10.—2h.p. Humber, splendid condition, good tyres and belt, absolute bargain; after 6.—27, Wardle Rd., Wandsworth Common, S.W. [1528

2¾h.p. Twin Humber, B.B., Grado, F.E. clutch, pedol start, lamps, tax paid, perfect order; £37/10.—Green, Helston, Greenway, Gerrards Cross, Bucks. [1273

3½h.p. Humber, 3-speed, coachbuilt sidecar, guaranteed all perfect condition, lamps, tools, and horn, tax paid, trial given; £45, bargain; stamp reply.—Beecher, 472, Archway Rd., London, N.6. [1722

1920 4½h.p. Flat Twin Humber, condition as new, not run 3,000 miles, flexible, fast, powerful, and absolutely free from vibration, complete with licence holder and bulb horn, tax paid to December; must sell at once; list price £140, will accept £105, or near offer. Write or 'phone for appointment.—J. Hutchings, Hillsborough, Frodsham. [1416

Indian.

7-9h.p Indian Combination, 1912; £55 cash.—Wauchope's, 9, Shoe Lane, London. [9015

E. KICKHAM for Indian, sole agent for Bristol and district.—Stokes Croft, Bristol. [3353

£35.—7-9h.p. Indian, 1914, clutch model, splendid running order.—King, Egrove Farm, Oxford. [X6167

5-6h.p. Indian Twin Motor Cycle, going order, Bosch, Binks; £25.—Berry, Gt. Rissington, Gloucestershire. [1257

7-9h.p. Indian, 1915, clutch model, discs, fast, equipped; £37/10.—Shaw, Regent St., Wellington, Salop. [X6074

7-9h.p. Indian Sporting Combination, 2-speed, C.S., tax paid; 45 gns.—Ramsden's, 8, Maybell Av., Blackpool. [1543

1915 5-6h.p. Indian, 3-speed, clutch, just overhauled, fast 'bus, licensed; £50.—Warwick, Hinckley Rd., Leicester. [X6034

INDIAN 7-9h.p. Combination, electrically equipped, hood, screen, tax paid; real bargain, £68.—69, Ferndale Rd., Brixton. [1440

1916 5-6h.p. Indian, 3-speed, good running order, just overhauled; £60.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

INDIAN 3½h.p. Twin, 3-speed, clutch, as new, under 4,000 miles, all accessories; £60.—Apply, 213, Bowes Rd., New Southgate, N.11. [2327

£55.—7-9h.p. Indian, 1915, spring frame, 2-speed, clutch, K.S., appearance and condition as new, overhauled.—Gower, Bridport, Dorset. [1366

T.T. Indian 7-9h.p., clutch model, horn, speedometer, lamps, and tools, almost equal to new; £60.—Howarth, Castle Mill St., Mumps, Oldham. [X6066

INDIAN Combination, 3-speed, kick start, screen, just overhauled, licence paid; don't miss it; £65.—72, Mill Lane, W. Hampstead, N.W.6. [1736

7-9h.p. Indian Combination, 2-speed model, with sporting sidecar, and and foot clutch, in good working order; £75.—W., 30, Vauxhall Walk, S.E.11. [1297

INDIAN 1920 Powerplus Combination, completely equipped; £120; full particulars with pleasure.—The Layton Garages, 90, High St., Oxford. [2167

INDIAN 7-9h.p. Combination, wants slight adjusting, smart appearance; must sell, what offers?—After 8 o'clock, 52, Sharndean St., Catford. [2284

INDIAN 5-6h.p., 3-speed, clutch, K.S., discs, fully equipped, spares, excellent condition; best offer, or exchange lighter.—11, Elm Rd., New Malden. [1920

INDIAN 1919 Powerplus Combination, electric lighting, new tyres, all in new condition, tax paid; £140; after 6.—Field, 448, Wandsworth Rd., Clapham. [1778

INDIAN Combination, 5h.p., 1916, unused 2 years, Easting screen, plenty spares, fine condition.—Gront, 25, Ashburton Av., Shirley Rd., Addiscombe. [1502

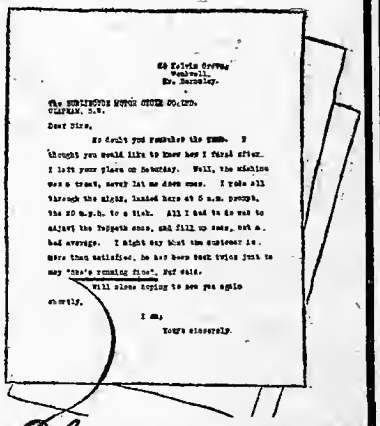
INDIAN 1915 7-9h.p. Combination, 3-speed, kick starter, spring frame, excellent condition, tax paid; £90.—73, Alderbrook Rd., Balham, S.W.12. [2301

1915 7-9h.p. Powerplus Indian Combination, electric lighting, in good running order, privately owned.—Apply, Lankester Engineering Co., 63, Brighton Rd., Surbiton. [2113

1920 7-9h.p. Indian Combination, electric, Millford hulbous sidecar, legshields, luggage grid, Easting, 4,300 miles, perfect condition, tax paid; offers over £120.—Capt. Ives, 30, Preston Rd., Tonbridge. [1227

INDIAN 1919 Powerplus Combination, complete with dynamo lighting, speedometer, Cameo screen, licence, etc., very fine outfit at bargain price of £90.—The Layton Garages, 90, High St., Oxford. [2168

The Burlington MOTOR CYCLE Co. Ltd.



She's running fine

THE BURLINGTON
Re-conditioned
DOUGLASES

Indistinguishable from new. Fitted with New Carburetter, New Tyres, New Belt, New Chain, etc., and fully equipped for immediate service on road.

2¾ h.p., 2-speed.....£65
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4 h.p., 3-speed, k.s., comb., with Brand New Burlington Sidecar.....£110

NOTE!
2¾ h.p. Reconditioned Douglases are fitted with VICI Single Lever Carburetter. All the above machines are absolutely complete, including licence holder.

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Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

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1919 7-9h.p. Powerplus Indian Combination, s did condition, overhauled and recommended M fitted with wind screen, horn, and electric side l best offers.—H. Kirby, North St., Bourne, Lincs. [

BARGAIN; 1920 engined Powerplus Indian, frame, 3 speeds, clutch, kick starter, coach sidecar, T.T., splendid condition, Binks, hood, per £70; exchange or separate.—89, East Hill, W worth. [

INDIAN 7-9h.p., electric light, Cox-Atmos c retter, with special Henderson sidecar, Ea screen, and luggage compartment, in splendid c tion; bargain at £85.—Thos. Booth, Main St., sham.

1921 4h.p. Indian Scout and Milford de luxe sid dynamo lighting, electric horn, speedom driven 200 miles, unscratched, tax paid, inst £170, or near offer.—Write, Box 5,433, c/o *The M Cycle*. [

INDIAN Combination, 7-9h.p., powerplus, Mills-Fulford sidecar, all accessories, perfect dition, tax and insurance paid, only done 2,300 m £110.—Latley, Ellesmere, Camborne Rd., Su Surrey. [

1919 7-9h.p. Indian Combination, dual electric acetylene lighting, legshields, speedometer, tion and appearance as new, only done 500 m £130; tax paid.—Morriss, 8, Victoria Rd., Fin Park, N.

INDIAN, 7-9h.p., 1919, spring frame, 3-speed, starter, with coachbuilt sidecar, tax paid, £7/11/3 insurance policy; £90.—Smith's, 86, Farm Rd. (opposite Chalk Farm Tube Station), don. 'Phone: Hampstead 2767.

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7-9h.p. Indian Combination, N.E. 20 model, new 1920, mileage 6,800, 3-speed, dynamo lig Mills-Fulford de Luxe sidecar, Easting wind s canvas cover, tyres good, perfect mechanical cond open to any examination or trial, spare chains, price £160.—Wright, Amberwood, The Avenue, borne, Dorset.

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INVICTA-VILLIERS, 1919, 2-speed, lamps, guaranted perfect, £45; new light sidecar same, £19.—Goad, 122, Maida Vale. 'Phone: H stead 1353.

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IVY 2-stroke, 2-speed, all on, perfect, tax paid, —Lees, 17, Fairbridge Rd., Highgate, N.19.

IVY, 2½h.p., 1916, Bosch, Amac, Albion 2-spee bushed; £20.—82, Gough Rd., Edgbaston, mingham. [

IVY 1921 Models.—Sole district agents, W Motors, Ltd., 60, Catherine St., Salis 'Phone: 72.

IVY, 1919, 2½h.p., 2-speed; licence, insurance, tools, good condition, going well; £40, or n Gould, 4, Bedford Place, London, W.C.1.

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IXION 2¾h.p., 2-stroke, only run 300 miles; £ clear.—Saunders Garage, Parade, Golders G

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DAN GUY, Weymouth.—James agent; early de dates given.

JAMES 1918 2-stroke, just overhauled; £40 gain.—83, Union Rd., Boro, S.E.1.

JAMES 2¼h.p. 2-stroke, 1920, little used, tax fully equipped; £50.—114, Brixton Hill, S

JAMES 4h.p. G.B. Sidecar, good condition, 3- all on, licensed; £50.—2, Howard Rd., side, S.E.25.

5-6h.p. James Combination, Lucas dynamo lig hood, screen, tax paid, etc.; £125.—Pick Shrewsbury. [

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£147; 1920½ 4¼h.p. James Combination, equipped, condition perfect, mileage 200 paid.—Bolwell, Woodborough Rd., Radstock, Som

JAMES 4¼h.p. 1916 Combination, 3-speed, hauled, splendid condition, new tyres; r £65.—7, South Villas, Camden Sq., N.W.1. (Aft

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20 5-6h.p. James with De Luxe sidecar, Easting, luggage grid, all accessories, not used since last ust, owner deceased, mileage under 1,000; any r £130.—Blackburn and Sons, Spalding. [X5877

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EVIS, 1921, all on, perfect; £48/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2235

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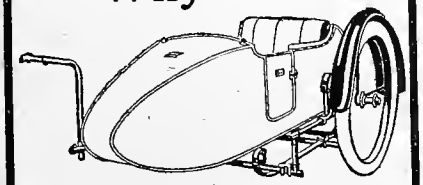

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MATCHLESS Combination, £185; sports, £180.—Arthur G. Daw, Matchless agent, 114, Brixton Hill, SW.2. [1890

MATCHLESS H., hood, screen, speedometer, lamps, windshield, step, spare wheel, licence; trial; £155.—51, Raglan Rd., Plumstead. [1407

MATCHLESS Combination, J.A.P. twin engine, gear overhauled, first-class condition, licence paid; £85, or nearest offer.—Strond, Hellingly. [1368

MATCHLESS, 8h.p. J.A.P., grand engine, Grado, h.s., Fulford new coach, taxed; £55.—Taylor, 637, Seven Sisters Rd., Tottenham. [1675

£60.—Matchless-Jap 8h.p., V.S. 2-speed, new coach sidecar, tyres good, lamps, etc.; exchange solo.—52, Solon New Rd., Clapham, S.W. [1284

MATCHLESS Combination, 8h.p., 1914, M.A.G. engine, fully equipped, lamps, speedometer, etc.; bargain, £80.—Fowlers' Garage, Cowes. [1468

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1919 Victory Model Matchless Combination, in 1921 colours, all on, tax paid; £150.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [1923

MATCHLESS, 1920, dynamo lighting, hood, leg shields, step, pillion, perfect condition, trial; £150.—17, Barnham St., Tooley St., S.E. [1856

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS 7-9h.p. M.A.G. Combination, 3-speed C.S., speedometer, lamps, horn, screen, tax paid; any triel; £80.—10, Crowborough Rd., Tooting. [X6178

MATCHLESS.—Try R. B. Clark and Co. for your Matchless; best price allowed for your old machine.—7, Exhibition Rd., South Kensington. [2247

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MATCHLESS 8h.p. Combination, Binks, hood, screen, tax; any trial; £85.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9690

MATCHLESS 8h.p. Overhead Valve Sporting Combination, multi speed, streamline exhausts, Canoelet sidecar, complete discs; 63 gns.—Cotton, Burtons, Ledbury. [1557

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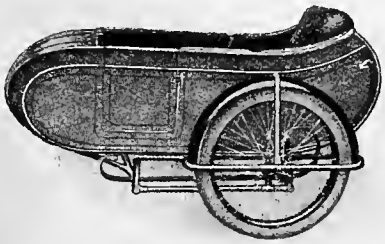

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O.K.-UNION, 2¾h.p., 1920, good condition; must sell.—93, Willes Rd., Leamington. [X6156

19 20 O.K.-Union, perfect, as new; £35, or near.—Allston, Bergholt, High St., Harpenden. [2139

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19 20 O.K.-Villiers, lamps, horn, licence, splendid condition; £30.—50, Merridale Rd., Wolverhampton. [X6200

19 20 O.K. Junior, 2-speed, as new, stored since August, owner abroad; £50.—41, Tewkesbury St., Cardiff. [1500

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BRAND New 1920 O.K. Junior, single-speed; £35.—Walbro Motor Cycle Co., Saffron Walden, Essex. 'Phone: 45. [X6097

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39 GNS.; 1919 Omega-Jap 2¾h.p., 2 speeds, good tyres, tax paid; bargain; exchanges.—Garage, Hansler Rd., East Dulwich. Sydenham 2452. [9917

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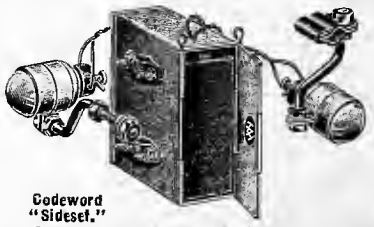

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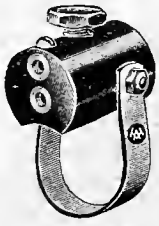

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COMBINATION Complete as No. 1, and including the wonderful "PLUS ONE" single or double seater at will, fitted with hood to cover one or two passengers, folding screen, sidecar lamp and bracket, step plate, stand, and cover-all apron **£225**

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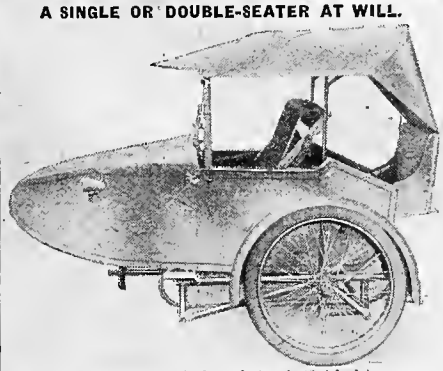
"PLUS ONE" SIDECAR

A SINGLE OR DOUBLE-SEATER AT WILL.



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MOTOR CYCLES FOR SALE.

Rex.

REX 6h.p. Twin, 2 speeds, free engine, handle starting, simple, fast, powerful, new tyres, low and coachbuilt bulbous back sidecar, perfect, guaranteed, lamps, etc., trial any time; bargain, £48.—Stepney Garage, 77, Salmons Lane, Commercial Rd., Stepney, London. [1967

Rover

3½h.p. 1919 Rover Combination, tax paid; £90.—Pickering, Mardol, Shrewsbury. [X6111

ROVER 3½h.p. 1919 Model, in first-class condition; price £50.—Surrey Motors, Ltd., Sutton, Surrey. [1451

1920 Rover 5-6h.p., small mileage, every accessory; wants seeing; £98.—365, King St., Hammersmith. [2118

ROVER 5-6h.p. Combination at £150, makers' price £167/10.—Brandish and Sons, Foleshill Rd., Coventry. [X6163

1914 Rover Coachbuilt Combination, 3-speed, must sell; bargain, £42.—Shaw, New St., Wellington, Salop. [X6076

ROVER Combination, 3½h.p., late 1919, fully equipped, spares, as new; £100.—Pomeroy, 92a, Loampit Vale, Lewisham, S.E. [1734

ROVER 1914, 3-speed hub, clutch, splendid condition, mechanically sound; £50; write appointment.—Jull, 14, Melford Rd., E. Dulwich. [1857

ROVER 5-6h.p. Combination, 1920, Easting, lamps, tax paid, chain drive, £20 spares, guaranteed perfect; £120.—1, Snowbury Rd., Fulham, S.W.6. [1443

BRAND New 1921 3½h.p. Rover, 3 speeds, all-chain drive, slightly shop-soiled; special price, £105.—Walbro Motor Cycle Co., Saffron Walden, Essex. 'Phone: 45. [X6096

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

ROVER Combination, 5-6h.p., W.D., new Feb., 1920, all accessories, perfect condition throughout, spare cover and tube; £95 lowest; bought car.—80, Nimrod Rd., Streatham, S.W. Streatham 1984. [2188

1918 Rover Combination, 5-6h.p. J.A.P. twin engine, enclosed chain drive, 3-speed gear, kick starter, clutch, lamps, spare tyre, Mills-Fulford sidecar, mechanically perfect; after 6 o'clock; £65.—Cooke, 8, Mildmay Park, Islington. [2215

ROVER Combination, 3½h.p., coachbuilt sidecar, countershaft 3-speed, clutch, speedometer, fitted with Lucas dynamo lighting set and electric horn, splendid condition; £130, or nearest.—Robinson, 12, Gosford Bridge, Coventry. [X6179

1918 T.T. Rover, h.b.c. Philipson, 650×65 voiturette rims and tyres, with guarantee over 70 m.p.h., long plated exhaust, large P. and M. lighting set, Lucas horn, special saddle fitting, dropped 4 inches, perfect throughout; any expert trial or examination; £60.—16, Jessamy Rd., Weybridge. [9875

SPECIAL Competition 5-6h.p. Rover, new July, 1920, unused from September, 1920, to May, 1921, gained gold medal Scottish and English Six Days Trial, sound condition, specially tuned by Rover Co.; bargain, 100 gns., cost £182/10.—Apply, Cranch, Radiographer, Hospital, Neath, Glam. [1336

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.—John Aldrich and Co., Diss. [0630

ROYAL RUBY 2¼h.p., new engine, electric lighting; £35.—31, Hosack Rd., Balham. [1670

£38.—1915 Royal Ruby, 2¾h.p. Villiers, 2-speed, clutch, Dunlops; trial.—Hillier, Wilton, Wilts. [1784

1919 8h.p. Royal Ruby Combination, well equipped, original tyres; any trial; £95.—24, Balliol Rd., North Kensington. [2073

1920 Royal Ruby 8h.p. Combination, Lucas dynamo lighting, mileage under 500, beautifully equipped; £150.—17, St. Charles Sq., North Kensington. [2005

ROYAL RUBY 3½h.p. I.O.M. Model, 2-speed and clutch, sidecar new; first offer over £85; fast; after 5.30.—Mitchell, 19, Andalus Rd., Stockwell. [1921

ROYAL RUBY Combination, 1920, 8h.p., 3 speeds, lamps, accumulator, horn, Tan-Sad, original tyres unpunctured, tax paid; £130.—130, Northfield Av., Ealing. [1687

ROYAL RUBY 3h.p., 1920 model, spring frame, Stumey gear, in perfect condition, tax paid, very little used; bargain, £65.—P. J. Evans, 81-91, John Bright St., Birmingham. [1577

ROYAL RUBY 3h.p., spring frame, 2-speed, kick starter, clutch, 1920 model, electric lamps, Binks, new condition; bargain, £85.—24, Page St., Westminster. Tel.: 1977 Victoria. [1939

1919 Royal Ruby 8h.p. Combination, fully equipped, 3 new Dunlop tyres and tubes; snip, £95, or exchange for lower power combination.—Braemar, 17, St. Quintin's Av., North Kensington. [1901

Rudge.

£75.—3½h.p. Rudge Multi, 1921, brand new; must sell.—Box 5,325, c/o *The Motor Cycle*. [1015

1920 I.O.M. Rudge Multi, tax paid, a beauty; 49 gns.—Ramsden's, 8, Maybell Av., Blackpool. [1540

MOTOR CYCLES FOR SALE.

Rudge.

1917 Rudge Multi, really splendid condition, little used, lamps; £49.—M. Pratt, High St., Reigate. [1595

RUDGE Multi, lamps, discs, Tan-Sad, etc.; best offer over £30.—71, Paignton Rd., St. Anns, Tottenham. [1291

RUDGE Multi 5-6h.p. 1920 Combination, all on, tax paid, unused; offers.—S., 33, Portland St., Brighton. [1223

1916 3½h.p. Rudge Multi, perfect condition, lamps; bargain, £45.—Latham, 114, Junction Rd., Highgate. [1905

1914 Rudge Multi Coach Combination, tax paid; first 39 gns. gets it.—Ramsden's, 8, Maybell Av., Blackpool [1542

£70.—Rudge Multi, 3½h.p., 1921, only ridden few times, equal new all respects, tax paid.—15, Ebury Bridge Rd., S.W.1. [2015

1921 Rudge Multi, I.O.M., new condition, accessories, licensed, unpunctured; 70 gns.—Fersfield, Westbury Rd., New Malden. [1773

RUDGE Multi 3½h.p., 1919, and Gloria sidecar; £65; fine condition.—Major, West Close, Avenues Estate, Fartown, Huddersfield. [1267

RUDGE Multi 1920 7-9h.p. Combination, equipped, including lamps and licence; £90.—The Layton Garages, 90, High St., Oxford. [2176

RUDGE 3½h.p., very fast, just overhauled; £35; privately owned; trial.—Silverthorne Garage, Broughton St., Queen's Rd., Battersea. [1922

1917 Rudge Multi Combination, 3½h.p., accessories, perfect; £69; would exchange higher power.—Lynton, Park Crescent Finchley. [1640

RUDGE Multi 1920 5-6h.p. Touring Combination, luxuriously equipped, would pass for new; £110. —Bunting's Motor Exchange, Wealdstone. [2205

1914 Rudge Multi 3½h.p., coachbuilt sidecar, Easting, speedometer, lamps; £60; after 6.30 p.m.—26, Dynevor Rd., Stoke Newington, N.16. [1433

3½h.p. Rudge and Watsonian Sidecar, lamps, horn, running order; price £45.—Duncan and Shepherd, 33, The Parade, Golders Green, N.W.4. [2229

1921 5-6h.p. Rudge Multi Combination, lamps, horn, purchased March, small mileage; too powerful for owner; £125.—88, Leytonstone Rd., Stratford, E.15. [1245

RUDGE Multi 1920 3½h.p., I.O.M., T.T. bars, lamps, mechanical horn, knee-grips, spare belt, excellent condition; £70.—Bird, 188, Westbourne Grove, W.11. [1396

1921 Rudge Multi 3½h.p., Lucas lamps and horn, delivered June, absolutely as new and in perfect condition, all on, tax paid; £90.—Bayles, Ownby, Lincoln. [1384

1921 Rudge Multi, only done 500 miles, guaranteed perfect; seen and tried any time; genuine bargain, £75.—A. Hadlow, High St., Lenham, near Maidstone, Kent. [1393

RUDGE Multi Combination, delivered August, 1920. Easting screen, lamp set, tax paid, under 2,000; 100 gns.—18, South Bruton Mews, Bond St., W. 'Phone Mayfair 4282. [1253

1921 I.O.M. Model Rudge Multi, with pedal start and clutch, unregistered, slightly soiled, complete with all accessories, and carriage paid; £88.—Blackburn and Sons, Spalding. [X5874

3½h.p. Rudge, clutch model, C.A.V. mag., B.B. carburetter, variable jet, long flex exhaust, fast, reliable, tax paid, tyres good; price £33.—Apply, Westroyd, Weydon Hill, Farnham, Surrey. [1371

BARGAIN; 3½h.p. Rudge Multi, wide tank, foot oiler, clutch, kick start, tax paid, lamps, horn, toolbags, sound, reliable, fast; £42/10; with sidecar £48; exchange.—89, East Hill, Wandsworth. [2093

£45.—1916 3½h.p. Rudge, recently overhauled, stove enamelled, new tank fitted, etc., condition perfect, lamps, horn, pump, tools, spare belts, etc., tax paid; London.—Box 5,373, c/o *The Motor Cycle*. [1293

I.O.M. 1920 Rudge Multi, new condition, £10 accessories, F.R.S. Major lamps, Stewart trip speedometer, Klaxon, Brooks belt case, pan seat, and full tool kit, fast and 100 miles to gallon; £70, or offer; appointment.—214, Castellain Mansions, Maida Vale. [2252

48 GNS.—3½h.p. Racing T.T. Rudge Multi, 1916, very fast, low petrol consumption, all accessories including Cowey speedometer, mechanical horn, Binks carburetter, long exhaust, rear wheel respoked, mechanically perfect, tax and full insurance paid.—R. Pettyfer, Cleveland House, Portslade, Sussex. [1300

Scott.

SCOTT 1920 Sports, Cowey, mileage 900, as new; £95.—12, Aberfan Rd., Merthyr Vale. [2012

1921 Scott Squirrell, brand new, unused; price £110.—Welford, St. James's St., Brighton. [1422

1920 Sports Scott, all lighting, licence paid; price £87/10.—Welford, St. James's St., Brighton. [1423

3¾h.p. Scott and Coachbuilt Sidecar; £45; excellent opportunity.—Wauchope's, 9, Shoe Lane, London. [9013

SCOTT 1920 Combination, fully equipped, including licence, fine condition; £110.—The Layton Garages, 90, High St., Oxford. [2178

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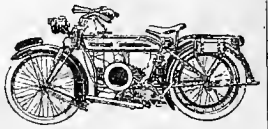
DOUGLAS



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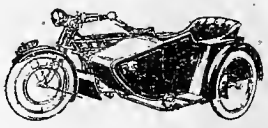

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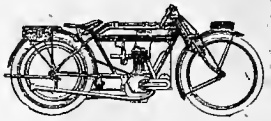

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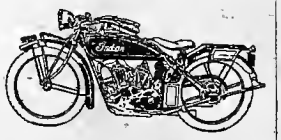
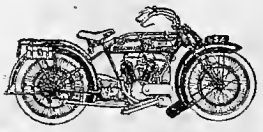
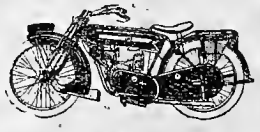


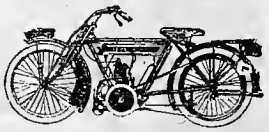
B.S.A.



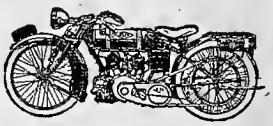
P. & M.



LEVIS



N.U.T.



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MOTOR CYCLES FOR SALE.

Scott.

SCOTT 1920 3¾h.p. Solo, lamps, horn, and tax £90.—Newnham Motor Co., 223, Hammer Rd., W.6. 'Phone: Hammersmith 80.

SCOTT Standard Combination, October, 1919 chanically sound, perfect order, many s nearest £120.—Jones, Bushmoor House, Craven

SCOTT, 2-speed, kick start, 3¾h.p., excellent tion, perfect sidecar machine, climb any any trial; £58; lightweight part.—28, Bourne Bexley, Kent.

SCOTT Sports Model, 1920, 2-speed gear, s shop-soiled, and unused; at £130.—Hor Motors, Ltd., South Side, Clapham Common, 'Phone: Brixton 2417.

SCOTT Solo, speedy machine, excellent con plating and enamel new, tools, lamps, lic £65; view and trial.—18, Junction Rd., Bren Essex (nr. station).

1919 Scott Combination, complete, including s meter, engine No. 3682, overhauled by expert; price 100 gns. or £60 cash and mode h.p. Douglas.—H. T. Dale, Little Haven, Pemb.

SCOTT Specialist, E. W. Ball, 6, Wheeley's Edgbaston.—Buy your new or second-hand from the Birmingham agent, who knows thoroughly. Genuine Scott spares in stock.

SCOTT Sports Model, late 1919, and light Hen sidecar, speedometer, lamps, Tan-sad, Bin spares, tools, etc., perfect mechanical condition or offer.—Penn, Charlton House, Old Charlton, (D)

Singer.

2½h.p. Singer, clutch model, as new; £30. Hall, Broughton Astley, Leicester.

SINGER 2¼h.p., lamps, tools, in perfect £27/10.—168, Wandsworth Rd., S.W.8.

3½h.p. Singer, special racing model, tax paid tyres, very smart; 26 gns.—Ramsden's, 8, bell Av., Blackpool.

SINGER 1914 2¾h.p., new Senspray, Grade, lent condition, discs; £25.—Garage, Temp tune Lane, Golders Green.

SINGER 4½h.p., 2-speed, clutch, pedal start, series, good order, licensed; £38.—Ockende Wimbam Grove, Clapham Common, S.W.11.

3½h.p. 3-speed Singer Coachbuilt Combination, mag., everything complete, ready ride away —Hamon, 373, High Rd., Willesden, N.W.10.

£45.—1913 Singer 3½h.p. motor cycle and built sidecar, 3 speeds, hood, screen, all speedometer, 2 horns, new tyres, in perfect order; £45.—Wright, 12, Albert St., Poplar, I

Southey.

SOUTHEY 2½h.p. 2-stroke, 2-speed, Chater Sturmey-Archer gears, clutch and kick lamps, horn, licence holder, tools; £67.—Southe Co., Berkhamsted.

Sparkbrook.

SPARKBROOK 2½h.p., light touring model to clear, £60; brand new, fully guar slightly soiled.—89, Wigmore St., W.

Sun

2¾h.p. Sun 2-stroke, as new; £28.—E. de Co Cumming St., King's Cross.

1918 Sun-Villiers, perfect; must sell, 27 gns ings.—67, Fernlea Rd., Balham, S.W.12.

1916 Sun-Vitesse, equipped; £35, offers; ex Watsonian.—43, Bushey Grove Rd., Wa

1921 Sun Vitesse, 2-speed, accessories, licence mileage, fast; offers.—Prout, Canon St., Ta

1921 Sun Vitesse 2-stroke, brand new, never used, unregistered; £45.—53, Leslie Par Croydon.

SUN-VILLIERS, 1916, 2-speed, new condition oughly overhauled, new tyre and belt, lic £36.—Derrington, Grafton Rd., New Malden.

1920 Sun-Vitesse, 2-speed, very fast, electric ing, Tan-Sad, tax paid, recently overhaule take 2 anywhere; £55.—7, Southfield Rd., Tu Wells.

SUN-VILLIERS, splendid condition, nearly Dunlop covers, tubes, belts, fully eq licenced; first cheque nearest £30 secures.— 146, Huish, Yeovil.

Sunbeam.

1921 3½h.p. Sunbeam in Stock; list price agent, Rotherham.

SUNBEAM Combination, 8h.p., as new; £175 kins, New St., Ledbury.

1914 2¾h.p. Sunbeam, 2 speeds; £50.—Bu Wadworth Bar, Doncaster.

SUNBEAM 2¾h.p., 2-speed, new condition; 365, King St., Hammersmith.

E. KICKHAM for Sunbeam, sole agent for and district.—Stokes Croft, Bristol.

1921 3½h.p. Sunbeam, new April, Lucas horn; £130.—Graham, East Lodge, War

MOTOR CYCLES FOR SALE.

Sunbeam.

p. Sunbeam Combination, black and gold, tax paid, only 85 gns.—Ramsden's, 8, Mayball Av., ool. [1549

1. Sunbeam Combination, 1919 French Military Model, chain-cum-belt; price £110.—Southey, amsted. [X5991

0. 8h.p. Sunbeam Combination, show model, magnificent turnout.—Particulars, Leath, 23, Sleepers Liverpool. [1427

BEAM 8h.p. Combination, 1916, very good condition; what fair offers?—W. P. Smith, 5, Godd., Croydon. [1851

6 3½h.p. Sunbeam, good condition, accessories; £65, or offer; will send photo.—Box 5,430, c/o *Motor Cycle.* (D) [1638

BEAM 1920 3½h.p., mileage 600, hardly soiled, Lucas accessories; £120.—Beagley, 43, East Dulch Rd., London, S.E. [2315

AND New 8h.p. Sunbeam Sidecar Combination, unridden, unregistered; £175.—Fitt, Near Pikes, Church St., Chelsea. [1563

. DE LA HAY'S Reliability Sunbeam Combination, 3½h.p., late 1919; £125, or nearest.—Knowles ayleigh Rd., Wolverhampton. [X6072

8 3½h.p. Sunbeam Combination, overhauled, re-enamelled and plated, all new tyres; £120.—1, Bellingham Ter., Catford. [1853

BEAM 3½h.p., 3-speed, 1914, re-enamelled, mileage 50 since 1917; over £78; evenings.—120, borough Flats, Walton St., Chelsea, S.W.3. [X6160

BEAM Combination, new appearance, 8h.p. J.A.P., completely overhauled by makers, spare etc.; £165.—Pickering, Mardol, Shrewsbury. [X6120

E (1921) Sunbeam 3½h.p., semi-sports, run in carefully, Lucas Magdyno, Bates; cost £181, best £170 secures.—Wheeler, 145, Sultan Rd., Portsea. [1236

BEAM 1919 3½h.p., black and gold, all-chain drive, 3-speed countershaft, splendid condition; bargain.—Pike, 102a, Church St., Chelsea. 'Phone: 137. [1413

BEAM 8h.p., Sept., 1920, Henderson Elite sidecar, electric lighting, horn, tools, tax paid, perfect ition, equal to new; £195 cash.—Terry, Bedley, tch. [0666

BEAM 1920 3½h.p. Combination, 3-speed, kick starter, Rotax electric lighting set, mileage under tax paid; £165.—Nichol, 1, Hogarth Place, Earl's , London. [1301

BEAM 1915 3½h.p. Model with Sidecar, complete with all accessories, excellent condition; —Parker's, Bradshawgate, Bolton, also 245, Deansate, Manchester. [X6058

; 3½h.p. late model Sunbeam, in pieces, perfect engine, requires tyres and sundries to complete; cheap for postal enquiries.—Snow, Laurel St., un's Rd., Dalston, E.8. [2256

BEAM 1921 Sports Model, mileage 100, Lucas accessories unused, speedometer, licence, knee-grips, t; cost £168, accept £154.—Heath, 168, Wellingd. South, Hounslow, Middlesex. [1382

BEAM Combination, 1919, 3½h.p., black and old, just been overhauled, not W.D. crock, smart 283.—Butterworth's Garage, 64, Mill Lane, Brixill. 'Phone: Streatham 2813. [9720

BEAM 1921 3½h.p. Sports, fitted with Lucas. lamps and horn, tax paid; cost £162; absolutely and new and unmarked; £140.—Parker's, Bradate, Bolton; also 245, Deansgate, Manchester. [X6060

0 3½h.p. Sunbeam Combination, mileage 500, condition perfect, appearance as new, intereable wheels, insured, tax paid; accept £140; rial, owner buying car.—G.H.M., 86, Eltham Rd., 2. [1511

BEAM 1920 (late) 3½h.p., Lucas dynamo lighting, Lucas electric horn, oversized tyres, in exally good condition; £135 for quick sale—r's Bradshawgate, Bolton; also 245, Deansgate, hester. [X6059

21 Sunbeam Combination, 3½h.p., new April, appearance, condition perfect, lamps, complete Cowey horn, Stewart speedometer; cost £218. t £175.—Plowman, 6, Clarence Crescent, Windor (See Triumphs.) [2274

BEAM Combination, 7-9h.p. M.A.G. engine, interchangeable wheels, fitted with best Gloria wheel sidecar, complete with hood, 3 lamps, ometer, and Stewart horn, tax paid; £150.—53, Park Rd., Croydon. [1849

BEAM 1920 8h.p. Combination, completely equipped, including wind screen, speedometer, ic lighting, detachable wheels, etc., not used October, 1920, possibly the best 1920 Sunbeam obtainable; £180.—The Layton Garages, 90, St., Oxford. [2181

ANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for diate delivery. Your present machine taken in exchange; full market value allowed; distance no t.—R. Bamber and Co., Ltd., 2, Eastbank St., port. Tel.: 607. [0648

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marked the conclusion of another strenuous SCOTTISH SIX DAYS TRIAL.

One can imagine the relief of each Competitor when our last Milestone was in view, and the goal reached.

While making due acknowledgment to *John Bull Tyres* from whom we got the idea at Isle of Man Races, we trust that our Milestones, which were distributed over the course each day, were of some slight service to Competitors in this Trial, if so—we are satisfied.

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272-274, Gt. Western Rd., GLASGOW.

MOTOR CYCLES FOR SALE.

T.D.C.

T.D.C., 1916, tax paid, new tyres, good condition; £25.—Neades, South Petherton, Somerset. [1391

Terrot.

2¾h.p. Terrot, very fast, sporty, take 2 anywhere; sell £25, or exchange anything.—L. Britton, Pitt's Farm, Shepton Mallet, Somerset. [1934

Torpedo.

TORPEDO Precision 3½h.p., 3 speeds, ride away; £32.—46, Wellington St., Camden Town. [1632

Triumph.

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TRIUMPH, C.S., equal new; £60; cash wanted.—Wilton, White Swan, Crystal Palace. [2299

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£22.—Decent 3½h.p. Triumph, in splendid running order.—King, Egrove Farm, Oxford. [X5169

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TRIUMPH, 1911, good running order; £19.—Adams, 14a, The Promenade, Palmers Green. [1744

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1918 Triumph Combination, perfect throughout; £83, or near offer.—25, Princes Av., Chester. [X6038

TRIUMPH, 1913, clutch, lamps, horn, and tools; a bargain, £38.—19, Wellhall Parade, Eltham, S.E.9. [2083

1918 Countershaft Triumph, engine 55415, fully equipped; £60.—204, Ladbroke Grove, W.10. [1965

TRIUMPH 1921 Models in stock, immediate delivery; exchanges.—Rose's Garage, Uxbridge. [1707

DAN GUY, Weymouth.—1921 Triumph all chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH, 3½h.p., 2-speed, free, Bosch, perfect order, Tan-Sad; £30.—63, Surrey Sq., Walworth, S.E. [1887

1918 Triumph, lamps, horn, tax paid, splendid condition, as new; £70.—37, Canterbury Rd., Dalston. [2289

1914 Triumph Combination, 3-speed, accessories, perfect condition; £50, offers.—Trower, South St., Epsom. [1532

1920 Countershaft 3-speed Triumph Combination, unscratched, well equipped; 100 gns.—17, St. Charles Sq., W.10. [1292

1920 Triumph Combination, Lucas accessories, better than new; £110; after 6.—56, Malyons Rd., Lewisham. [1931

£48.—4h.p. Countershaft Triumph, 3-speed, clutch, splendid running order.—156, Stockwell Rd., Brixton, S.W. [1998

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1920 Triumph 4h.p., countershaft, perfect condition, well equipped; £80.—17, St. Charles Sq., North Kensington, W.10. [2004

COUNTERSHAFT Triumph, 1916, Bosch, late decompressor; £55 cash.—Simpson, Orchard Rd., Sunbury-on-Thames. [1573

TRIUMPH, 1914, perfect condition, Bosch, offer; also Amac carburetter, 2 new tyres.—119, Brecknock Rd., N.19. [2134

1918 Countershaft Triumph, 1921 Sturmey gear box, all accessories; £55.—64, Church St., Edgware Rd., N.W. [2279

1914 4h.p. Triumph, 3-speed hub gear, fully equipped, perfect; £40.—155, Ladbroke Grove. 'Phone: Park 5541. [1966

TRIUMPH.—Wonderful value in overhauled W.D. models, from £57.—Clark, 7, Exhibition Rd., South Kensington. [2246

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TRIUMPH 3½h.p. Clutch Model, 2-speed gear, good condition, sidecar, tax paid, accessories; £40.—Bostock, Mission, Bawtry. [1387

TRIUMPH 1920 4h.p., countershaft, lamps, tax, complete with sidecar; £90.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2238

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TRIUMPH 1919 4h.p., countershaft, mechanically perfect, tax paid; £75; no dealers.—33, Hayden Park Rd., Wimbledon, London. [1630

BABY Triumph, 1915, 6,000 miles, Bosch, lamps, horn, tax paid; first offer £35 accepted.—E. Preston, Curlew Hope, Weybridge. [1806

1920 T.T. Triumph, low mileage, beautiful condition, fully equipped; low price quick sale; offers.—Bentley, Glenholme, Shenfield, Essex. [1531

TRIUMPH 1918, C.S., as new; £70; owned by mechanic, tax paid, sporting; call or appointment.—76, Cornwall Rd., Bayswater, W. [1912

LATE Countershaft Triumph, lamps, horn, tax, excellent condition, trial 2 up; £70.—Fitt, near Pike's, 102a, Church St., Chelsea. [1564

3½h.p. Clutch Triumph, excellent running order; nearest offer to £30, tax paid.—C. H. Collis, 59, Longfield St., Southfields, S.W.18. [2312

1920 Triumph 4h.p., splendid appearance and condition, registered £4, all on; must have cash; 84 gns.—4, Elm Gardens, Hammersmith. [1439

1913 Triumph 3½h.p., clutch model, all accessories; any inspection; excellent order.—47, Shakespeare Rd., Gillingham, Kent. [1877

TRIUMPH Gloria Combination, late 1919, new condition, fully equipped, screen, etc.; £130, or offer.—15, Stoneley's Rd., Tottenham, N.17. [1523

TRIUMPH 1912, single speed, in excellent running condition; price £35, or offer.—East Grinstead Motor Garage, Ltd., East Grinstead. [8113

TRIUMPH Junior, as new, latest model, used demonstration, perfect, licensed; £60, or offers.—Southern Cycle Co., Church St., Basingstoke. [1489

TRIUMPH, Armstrong 3-speed clutch, new bulbous back sidecar, smart lot; £55; bargain.—Taylor, 637, Seven Sisters Rd., Tottenham. [1676

1914 4h.p. Triumph Coachbuilt Combination, 3-speed hub, clutch, all on, tax unpaid; £53, offers, exchange.—37, Green Walk, Crayford. [1730

TRIUMPH, 1918, excellent condition, speedometer, lamps, licensed, new Dunlop, trial willingly; £70.—Howard, Broad St., Chesham. [1514

1916-17 4h.p. Triumph, countershaft, and coachbuilt sidecar; £85; tax paid; any trial.—Burley, 14, Mason Terrace, Herne Bay. [1772

1919 Triumph 4h.p., 3 speeds, polished discs, appearance and running guaranteed as new; £75.—59, Greyhound Rd., Fulham. [2105a

TRIUMPH 4h.p. 1920 Model, complete with sidecar, in first-class order throughout; price £120.—Surrey Motors, Ltd., Sutton, Surrey. [1452

TRIUMPH, 1919, indistinguishable from brand new, new special sidecar; 100 gns.; will separate; any time.—69, Stanley Rd., Coventry. [X6094

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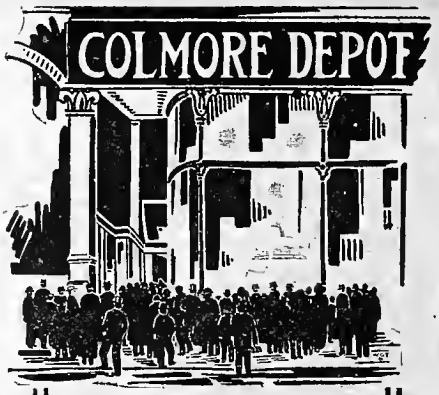
TRIUMPH, 4h.p., 54459, 3 speeds, countershaft, all on, spare tube, with C.B. sidecar, tax paid; 70 gns.—22, Estelle Rd., London, N.W.3. [1907



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TRIUMPH 1921 4h.p., chain-cum-belt; £115; exchange, or deferred payments.—Clifford W 177, Westminster Bridge Rd., S.E.1. Hop 210. [1

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ZENITH, all models.—Sporting 5h.p., £115. Consult the man who rides one.—R. B. Clark, 7, Exhibition Rd., South Kensington. [2248

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ZENITH 1920 8h.p. Sports Model, sold new 1921, mileage 700 only, scarcely soiled, licensed; £85, bargain.—The Layton Garages, 90, High St., Oxford. [2173

ZENITH 6h.p. Combination, K.S., clutch, luxurious sidecar, hood, screen, etc., overhauled, licensed; £110, or exchange 2-seater.—292, Wandsworth Rd., S.W. [1441

£35, bargain; 1914 4h.p. Zenith, Gradua gear, tax paid, knee grips, discs, T.T., fast, sporty, sound, excellent condition, trial; exchange.—89, East Hill, Wandsworth. [2092

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ZENITH 4h.p., twin engine just overhauled J.A.P., K.S. and clutch, tyres and belt alm new, all accessories and speedometer, tax paid, trial; 65 gns.; after 6 p.m.—B., 11, Pleasant Pla [2

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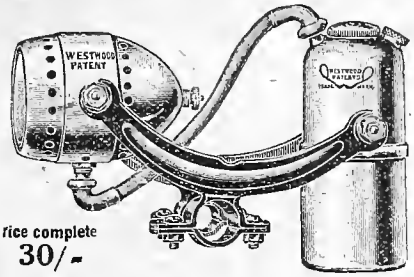

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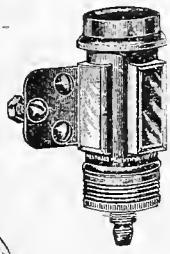

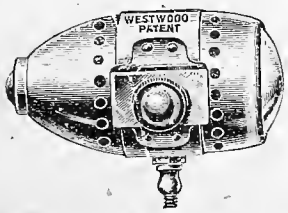

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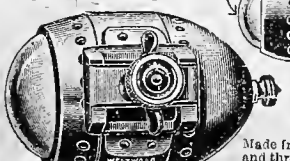

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KINGSBURY Scooters and Spare Parts.—3, Kendall Mews, George St., W.1. [1442

A.B.C. Skootamota, 1921, new; £33.—Frank Whitworth, 139, New St., Birmingham. [X4178

AUTOPED Scooter, 1920, almost new dynamo; £20. —Wauchope's, 9, Shoe Lane, London. [9011

AUTOGLIDER, 2¾h.p., bargain, £21; nearly new, Model A.—2, Union Terrace, Torquay. [1559

MOBILE Pup, new, with seat, tax paid, electric light; £22.—27, Victoria St., Redditch. [X5985

A.B.C. Skootamota, 1920, hardly soiled; quick sale, £29/10; perfect.—Webb, Warmley, Bristol. [1503

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A.B.C. Skootamota, in perfect condition, hardly used; £30, or near offer.—Walton, Bohemia, Marlow. [1932

1921 Skootamota, just received from works, in crate; £31/10. — 54, St. James St., Ashted, Birmingham. [X4179

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The A.C.U. Six Days Trials.

IT is unfortunate in many respects that this year's A.C.U. Six Days Trials will not receive the full support of motor cycle manufacturers. It is the most important event of the year, and the publicity accorded it brings before the public the capabilities of the modern motor cycle. For this reason, it is natural that the manufacturers hesitate when the regulations are considered to be of a nature tending to place their productions at a disadvantage.

It is the feeling that A.C.U. Six Days Trials have become too technical, and awards have been lost on technical grounds which are not understood by the public. We refer to this matter more fully on page 156 of this issue.

A Paradox.

A LONG letter from a prominent manufacturer, which appears elsewhere in this issue, shows very clearly in what way speed trials may become, from a spectator's point of view, the "slowest" of competitive events.

Such affairs do, indeed, tend to become unwieldy, especially if they are open to all, as the usual multiplicity of classes in which the same riders figure in each becomes a monotonous procession in which interest rapidly wanes; while, if the meeting is marred by defective organisation or unwillingness to undertake a proper share of the work on the part of officials, the affair may rapidly fall into chaos, and the results be valueless or the continuation of the meeting dangerous to riders and public.

The latter state of affairs may easily arise if the spectators become bored and restive, for it rapidly becomes increasingly difficult to keep them off the course; the lack of value in the results likewise may easily be the result of a protracted meeting, especially if hand timing be employed, for no one can expect a timekeeper to remain in the state of mental activity necessitated by his duty when at his post upwards of eight hours.

A wise ruling in all open speed trials would be that no rider should make more than three attempts on a machine of given capacity, no matter what number of classes he enters; his best time would then be counted. The running of both standing and flying start classes is surely unnecessary.

Too Much Running-in Required?

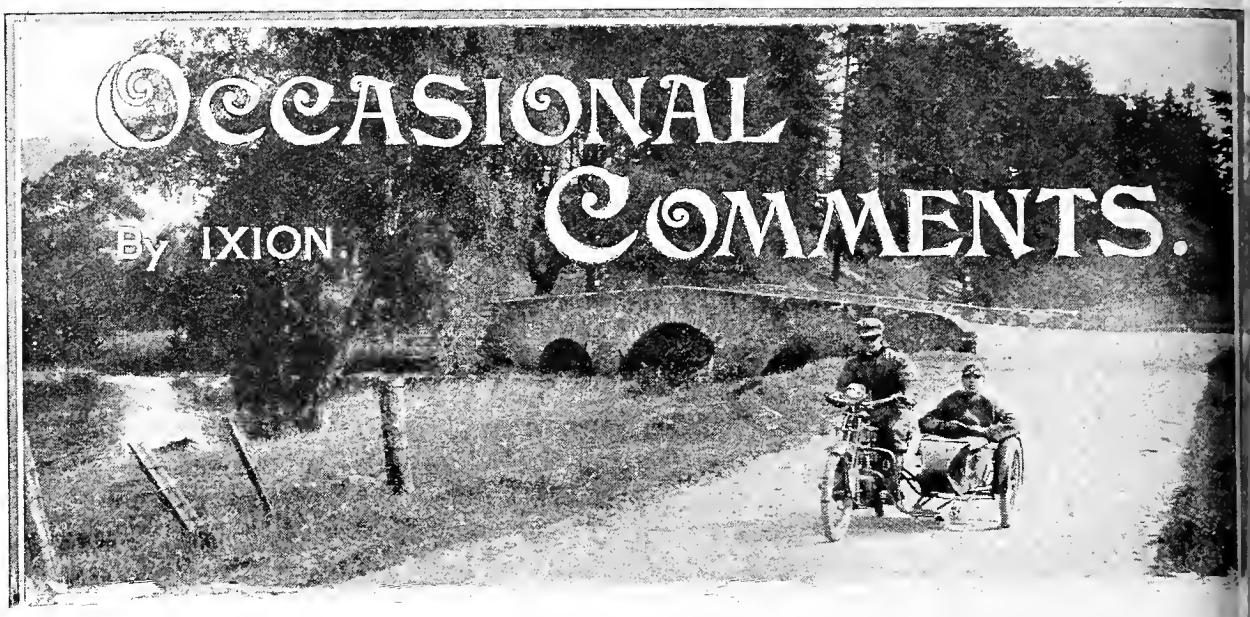
THAT every new motor cycle should be delivered to its buyer in a condition in all ways ready for road use is an ideal that is becoming daily more generally fulfilled.

Only in rare cases nowadays is "delivery tune" a legitimate subject for complaint by disgruntled riders who have discovered slack nuts or tappets out of adjustment during the maiden voyage of a glittering outfit, just uncrated. Careful workshop inspection systems, rigorous road tests, and, usually, the maker's keen regard for his reputation, save the 1921 rider from most of the post-delivery tuning that, rather less than a decade ago, formed the common lot of the enthusiastic buyer.

There is one detail, however, that still calls for improvement if motor cycling is to be the pastime of the million. We refer to the somewhat prevalent practice of delivering engines with very tight pistons and bearings, and relying on the commonsense and patience of the buyer to run them in with care—a process that may extend over nearly a thousand miles before the risk of seizure is entirely absent.

Admittedly, an engine made to fine clearances eventually becomes a far more efficient unit than one which is sent out in a condition popularly termed "sloppy"; the point is, however, that the running-in should be done, preferably, by some external mechanical means, before the engine leaves the works. One or two firms do this; but others, just as highly placed in the industry, are notorious for the long period of careful driving that must elapse before the throttle of one of their new machines may be opened with impunity.

An index to the advertisements in this issue will be found on the page facing the back cover.



OCCASIONAL COMMENTS.

By IXION.

A Prop Stand.

SOME while ago I pointed out that many utilitarian riders, especially doctors, would appreciate a single-leg prop stand for their solo mounts. Mr. Alfred Chater, of 90, President Street, Johannesburg, manufactures such a stand, employing a ball joint at the top of the near side rear fork, and a spring clip near the fork ends to hold the stand when out of use. Does any South African reader know this stand?

Instep Straps.

I KEEP a special cubby hole for motor cycling garments, which are normally too filthy to be stored in an ordinary wardrobe. The other day I sorted them over in search of wear for a trip which promised to need protection. The corner contained half a dozen pairs of waterproof leggings, and every single pair had at least one dud instep strap. Manufacturers still make these straps of leather. The strap is subjected to much friction in every case; to the maximum of wet whenever rain falls; and very often to heat and oil as well. No sane man would advise leather for such conditions; and the result is that the straps always give out long before the leggings themselves need be written off. Can no genius devise some more durable method of hitching the leggings to the insteps?

The Temple of the Sword.

AN old Roman religious cult maintained a solitary temple in a lonely grove, where an armed priest lived alone, sleeping and eating with a drawn sword ready to his hand. It was the law of the cult that whoever could vanquish the priest in fair fight might succeed to his post and the offerings of the faithful. Which things are a parable. There was a time when the Excelsior motor bicycle had the British market at its feet. Then came a time when Quadrants easily outnumbered all their rivals alike in competition entries and in private sales. Even to-day there are firms who, because their market has been good for a year or two, fancy that the agents will always compete frantically for their output. The real fact is that a short period of unparalleled competition is at hand in the motor cycle industry, and that some of the young and newer firms are evincing unsuspected brains and enterprise. *No firm's market is assured for next summer.* Let them sleep with a drawn sword across their knees, or their temple will fall to another.

Those Long Exhaust Pipes.

THERE is a painful burn across all my fingers so manufacturers will pardon the somewhat acrid tone of this paragraph. I have been riding a trade 'bus of first-class make, and for some miles I was worried by a grinding squeak which defied location. Ultimately (I like that word, it can cover a lot) I found that the long exhaust pipe had a lot of "give" in it, and was designed to clear (a) the leg of the stand and (b) the belt rim by ⅛in. respectively. Needless to say, it waggled against one or the other, against the spinning belt rim for preference whereupon the friction created a whining suggestion of a main bearing on the verge of seizure. No remedy was possible, except to wire the fishtail to the stand leg for the period of the loan.

Pot-holes and Backache.

I AM no longer a blithe boy of twenty, and this paragraph must be taken as the opinion of a weak, timid old man. I am sitting hunchbacked to write it. I have just done 210 miles of pot-holed main roads on one of our best standard touring machines—that is to say, a machine with a first-class fork, a standard saddle, and a rigid rear frame. After twenty-five miles my spine developed such an awful ache that I was fain to dismount and smoke a pipe whilst my vertebræ settled back into their sockets. This is not good enough. Our roads are not likely to get better. Keen surveyors do their best, and the taxpayer finds millions of money, but the fast, heavy traffic of to-day only takes three months to batter the best road we can make into the semblance of a pebble beach after a short-ripple tide has ebbed. The future of motor cycling will be largely restricted unless

(casional Comments.—

ade tackles the comfort problem good and hard. I ould go so far as to say that it is the outstanding roblem of motor cycle design. It is not for me to y whether we need spring frames, or softer saddles, bigger back tyres. But I am quite emphatic on e principle—the modern road is far too rough for e modern machine.

Wanted, a Freak Hill for Practice.

WONDER if any hotel proprietor in the home counties has a really steep hill-side at the back of his house? What fun we could have if some terprising person would lay out a short fancy freak ll with about eight hairpins in quick succession in me locality easily reached by the big clubs. Club eets could then include a pattern ascent by one of r rough-riding experts, followed by a sweepstake imb among the ordinary members. If such a hill uld be laid out at Brooklands, say up to the popular ands near the members' bridge, we should be able add a fresh attraction to club meets on the mous track.

Clean Ascent "With Palms."

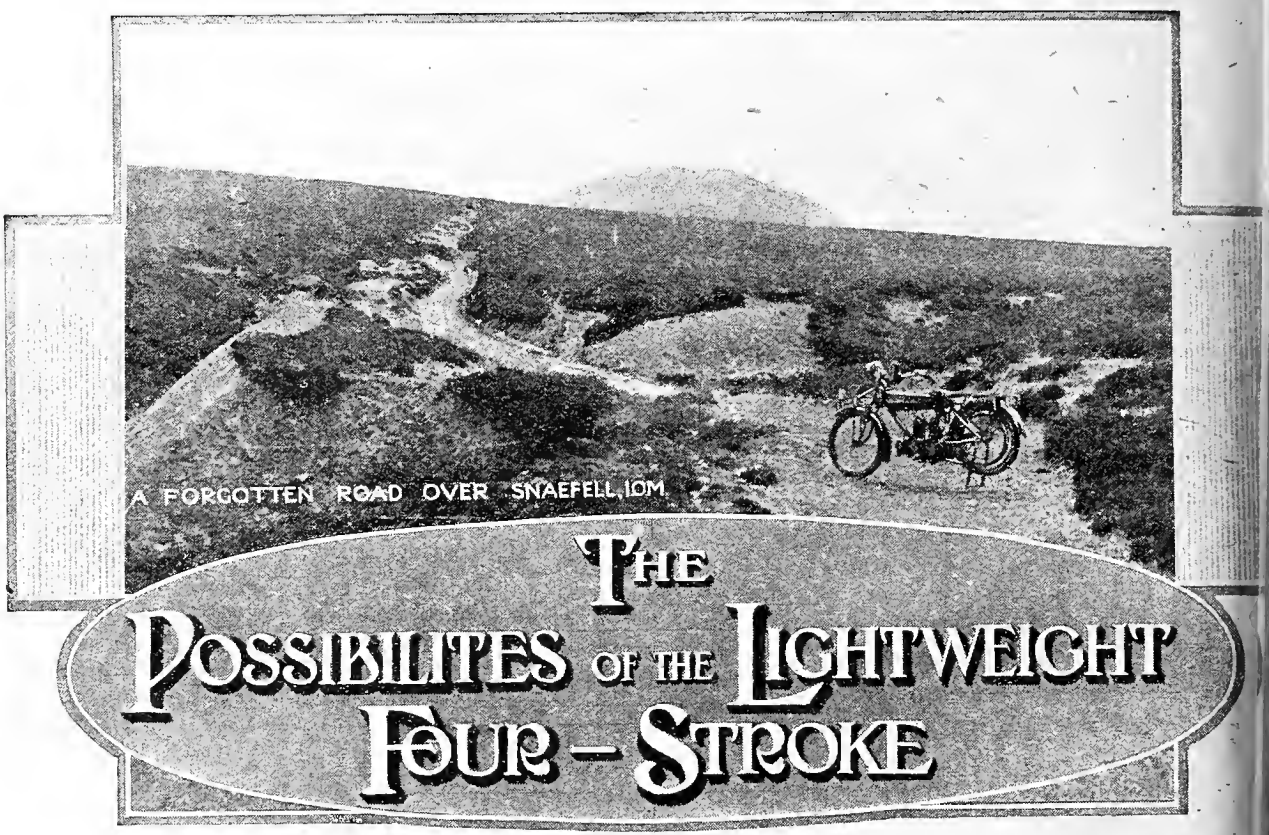
N the war various wanglers secured sundry foreign decorations with such extras as palms or oak leaves or crossed swords. When I see a trial go a freak hill, I always think that the 5% of the try who go up with their feet on the rests ought have a little extra credit. The common or rden motor cyclist plunges and wobbles about, th his legs waving madly and thrusting his machine ck to the perpendicular. The super-expert steers with his feet where they ought to be. In the ficial results both climbs figure equally as "clean cents." The difficulty of distinguishing between oting (to steady the machine) and foot-slogging (to sist a weary engine) is eternal, and made for trouble the Scottish Six Days. So did the old bugbear of ying to differentiate between wheelspin and a good d-fashioned conk out. To my mind, whether a side- r or a solo mount is concerned, there are just o sorts of climbs which are fit to be recognised, viz. .) Any old way of going up, provided your machine never becomes even momentarily stationary. (2.) An ascent with your feet on the rests from start to finish.

The first might qualify for a gold medal; the latter deserves a gold medal with palms. Wheelspin ought not to be accepted as a mitigating circumstance. It is always due to one of three things—bad driving (too much throttle), bad path-picking, or bad design of the machine. In either case it deserves no mercy. If it is acute enough to bring the machine to a standstill, let the climb be recognised for what it is—a failure. If a club adopts some such principles, it will save itself no end of trouble, it will set its observers a simple task, and it will encourage good machines and good riding.

An Old Problem.

A BEGINNER has written me a rather priceless letter in which he enquires what road troubles he may expect. He has done pretty well in his first three months, except that his magneto switch shorted one day—*why* do people fit magneto switches anyhow? They are not the least use, and can puzzle a novice tremendously if they go dud. His main trouble has been lamps—of the gas variety, with side and tail specimens which jolt out at the least provocation. He has my hearty sympathy, especially as they now compel him to terminate his trip before moonrise, and convey his fairy to her parental domicile two miles away on the back step of his push bicycle. Does anybody know a really guaranteeable method of keeping these tiny gas burners alight on rough roads? I once got so pessimistic on the subject that I converted all my small lamps to the dry battery. On the other hand, I have had fairish service from D.A. and eke from using three separate generators—a big fellow for the head lamp, and toy sizes for the small lamps. But I have now been on electricity so long that my memories are rather blurred. Will somebody give my young friend sound advice?—that push bicycle step business is *too* heartrending, especially in a heatwave. [Yes. Let your friend fit one large generator for all lamps. At least two members of *The Motor Cycle* staff use gas lamps, and are just as keen on them as "Ixion" and others are where electrical installation is concerned.—ED.]

ENTHUSIASTS IN ADEN, where roads are few and far between, where riding is done at night because of the intense heat during the day, and where vegetation is so scarce and the only example in the neighbourhood is so prized that the riders shown insisted upon it being included in the picture! The motor cyclists shown are members of the Eastern Telegraph Co.'s staff. Their names, from left to right, are: Salt (4 Triumph), Taylor (4 Douglas sc.), Wilkinson (6 Zenith), Chambers (4 Triumph), Insall (2½ Royal Ruby), Blunder (2¾ New Imperial), Fox (2¾ Douglas), Laycock (4 Triumph), Redman (Triumph Junior), Gordon (2¾ Indian), Moores (3½ Norton), Wilkin (4 Douglas sc.), Dobie (4 Triumph), Saunders (2¾ Douglas), Jeffery (2½ Wolf), Kime (3½ Indian), Drucquer (Triumph Junior), and Loveday (2¼ Royal Enfield).



THE POSSIBILITES OF THE LIGHTWEIGHT FOUR-STROKE

A 350 c.c. Lightweight for Go-anywhere Service—Its Charms and Advantages.

SOME weeks ago the writer "covered" the Western Centre Two-day Open Trial in Wales on a 350 c.c. two-stroke machine with much less fatigue than would have been experienced with any but the most manageable of higher-powered mounts.

That experience made a great impression, and, when another occasion presented itself wherein the advantages of a small machine would be desirable, he decided to avail himself of the opportunity of testing a four-stroke of similar capacity.

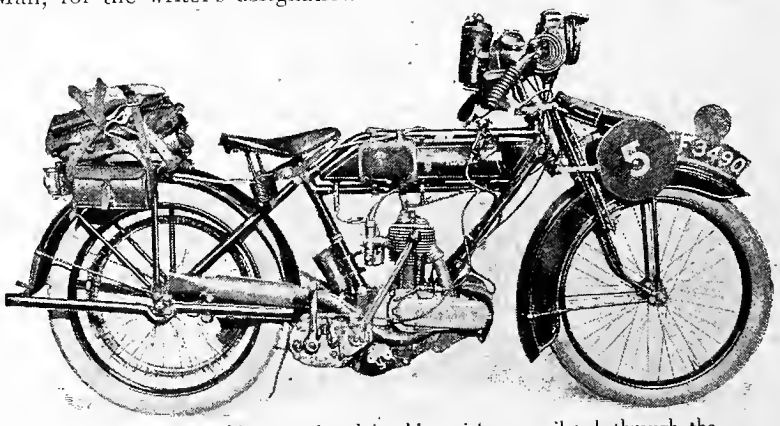
The opportunity arose during the recent T.T. Races in the Isle of Man, for the writer's assignation in connection with that event was to be responsible for *The Motor Cycle* photographs over the "far" side of the course, from Kirkmichael, through Ramsey, and up to the Bungalow on the summit of the Snaefell Road. Such a roving commission demanded great mobility, for, as the races promised to be run off in shorter time than ever, as little of the precious hours as possible would ha to be lost in moving from point to point, thus ruli "foot-slogging" out of the question.

To shorten a long story, it suffices to say that 2¾ h.p. sports model Royal Ruby with three-spe gear box was taken out from Liverpool to Dougl where it commenced a really hard week's service.

Exploring Forgotten Tracks.

In order to determine the best plan of campai two days were spent in exploring the various ro over the Snaefell mountain: there are two ro normally used, b having severe gr ents, bad surfac and a number gates to be ope and closed, but, addition to th the ordnance m indicate a num of tracks now fa into disuse, every one of t was tried.

The buffe which the R received on t tracks was eq lent to the roug of "find-a-win

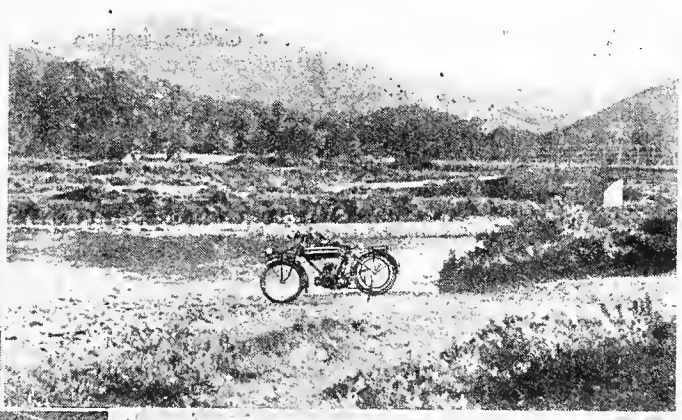


The actual machine mentioned in this article was piloted through the Scottish Six Days, and obtained a gold medal. As a "one factory" product, the 2¾ h.p. Royal Ruby appeals to those who do not favour machines assembled from proprietary components.

The Possibilities of the Lightweight Four-stroke.—

trials, and on one particular track, over which it is doubtful whether a motor cycle has ever been before, there was great danger of the machine being lost altogether, because the road had degenerated into a watery morass, into which a plunge was made in the effort to get across by sheer impetus. The machine stopped, of course, and commenced to sink until even the hubs showed signs of disappearing beneath the surface. Standing on a tuft of reeds, frantic efforts were made, and, in hauling out the machine by main force, both hands on the left handle-bar, the latter was pulled so far up that, finally, it cracked; however, the machine was rescued and dragged to firmer ground, but the next mile, driving with one hand, over boulders and moss and stopping every few yards with the footrests wedged at each side of a deep rut and the back wheel spinning high and clear (notwithstanding that the Ruby's clearance is greater than most) was a nightmare. In all, that particular stretch of road, five miles in length, occupied about threequarters of an hour, during which the engine revved continuously on low.

THE FOUR-STROKE LIGHTWEIGHT GOES EVERYWHERE.



As described, a 2¾ h.p. Royal Ruby was used for visiting many points during the T.T. races. (Top) Sulby River, easily forded, despite belt drive. (Left) A hairpin bend on the Sulby-Snaefell road. (Bottom) Garwick Bay, reached by a rough footpath of severe gradients and hairpin bends.

On normal roads, the speed of the 350 c.c. machine need be little short of that of mounts with larger engines, and it was found that, on give-and-take roads, an average of 30 m.p.h. could be attained when desirable, and that the maximum speed was about 42 m.p.h.; curiously enough, too, the steering improves as the speed increases.

Such an engine, too, is very economical, both petrol and oil consumption being extraordinarily good. The three-speed gear worked admirably, but the control is too low to be conveniently operated by hand, and so the foot was invariably used, and it was brought home to the rider that the middle gear location on the quadrant was not sufficiently positive.

Not a New Machine.

In all, some 250 miles of roads were covered, many, probably a third, being of the freak variety, and, beyond repairing the damaged handle-bar, nothing was done to the machine in any way: this is satisfactory, because the machine was by no means new, being a works "hack," which was destined to go through the Scottish Six Days, in Hugh Gibson's hands, as soon as it had served our purpose.

The only points we can criticise adversely are the possibility of missing the middle gear, and the lack of flywheel weight, which makes a generous throttle opening necessary when starting from a standstill. In other respects, the machine was as fast, reliable, smooth running, powerful, and economical as one could wish a solo machine to be.

Standard Gear Ratios.

Incidentally, the gear ratios are 5¾, 8, and 12 to 1, and the chain-cum-belt drive is smooth and apparently trouble-free; no belt slip was experienced even after crossing the many watersplashes which were encountered during the various explorations described.

THE GRAND PRIX IN RETROSPECT.

Successes by British Machines leave a Lasting Impression in the Minds of French Enthusiasts. A Mile-a-minute Average on Loose Roads.

QUITE the most convincing demonstration of British motor cycle efficiency occurred in the French Grand Prix race last week. The event was described and illustrated in *The Motor Cycle* last Thursday, and of which the outstanding facts were that the

500 c.c.	winner averaged	... ...	59.9 m.p.h.
350 c.c.	,, ,,	... ...	49.4 ,,
250 c.c.	,, ,,	... ...	43.0 ,,

In the two larger classes eighteen circuits had to be covered—193½ miles—and in the 250 c.c. section fifteen circuits—161¼ miles.

Throughout the long race three or four British 500 c.c. machines led the field, Bennett and de la Hay, though riding within twenty yards of one another, alternating for first position. After two laps only four seconds separated Bennett (Sunbeam), Edmond (Triumph), and de la Hay (Sunbeam). The pace was hot at all times, many of the fastest men averaging a mile a minute for the laps, notwithstanding three difficult corners and two "S" bends.

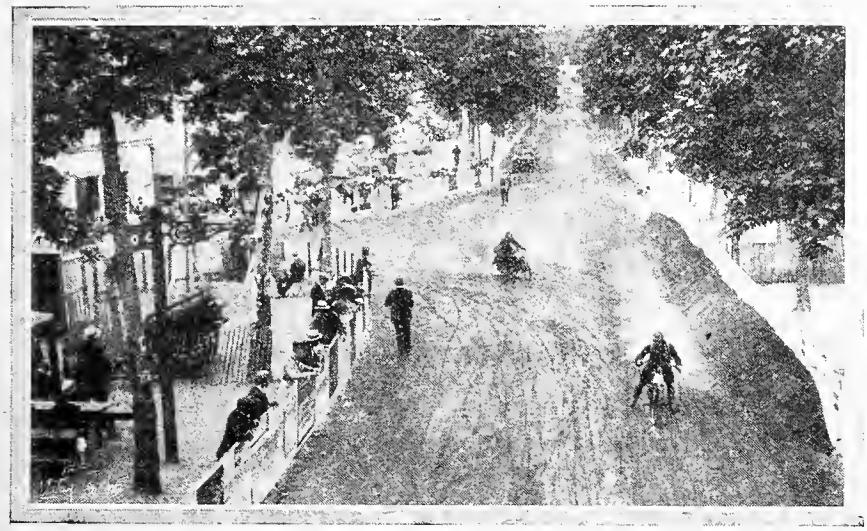
In the 350 c.c. class Meunier's twin Alcyon early forged ahead, and maintained its position to the end. His average speed was 10 m.p.h. less than Bennett's (49.4 m.p.h. for 193½ miles to be exact); but his performance was none the less a fine one. This is the first time for quite a considerable period that a small V twin has scored such a distinct success in a classic speed event. It was also a victory for overhead valves. Douglases were second and third, but were unfortunate in losing Kickham comparatively early in the race, due to a bad fall as a result of which Kickham will remain in France for three months. H. R. Harveyson (third) is the erstwhile successful rider of Indians; he crossed the Channel as a spectator, and only decided to ride at the last moment, and had not, in fact, seen the course before the day of the race.

Small British Engine Does Well.

A. Milner (Levis) led the "two-fifties" for more than ten laps, but fate in the shape of a very large flint eliminated him on his twelfth circuit. The Yvel's J.A.P., which won this class, however, is as British as its name is not—being assembled almost exclusively from British components; the engine, in fact, was transported by aeroplane a few days before the race. It averaged 43.0 m.p.h.

Scot *versus* Frenchman—a duel between A. H. Alexander (3½ Douglas) and a Gallic competitor on an Alcyon. (Inset) An impression of Le Vac (3½ Indian) at speed.

To return to the big event of the day, both Sunbeams rode a wonderfully consistent race—noticeable even to the most disinterested spectator — and thoroughly deserved to win; but had Edmond (Triumph) not apparently forgotten that the largest tank does not hold sufficient petrol for nearly two hundred miles at 60 m.p.h. "there might have been" the closest finish known in motor cycle racing history. Neck and neck finishes in long road races are a rarity, and it requires little imagination to picture the excitement of the French crowd had the two Sunbeams and the side-valve Triumph entered on their last lap in the same close formation that they held for so long. (What a pity that it is not possible to start the T.T. riders simultaneously as in the Grand Prix!)



Two French lightweight competitors rounding the acute bend at Pontlieue. The leading rider has slowed down, so much so that he has found it necessary to assist with his feet. Note the artificial banking on the right.

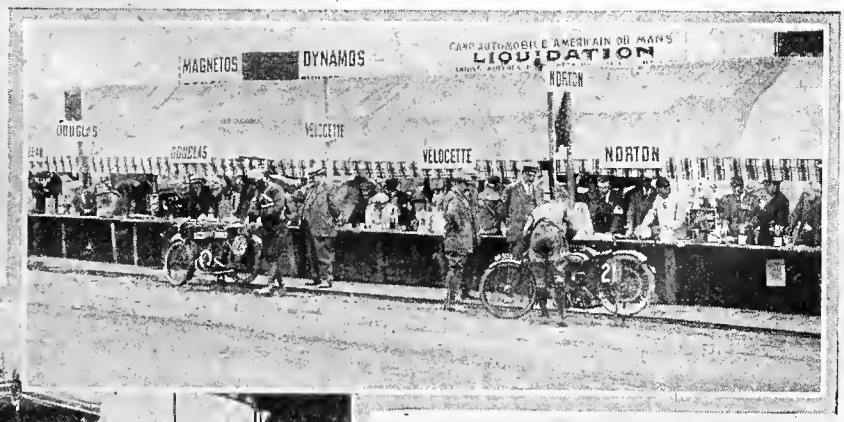
Nortons at one time were well in the picture, but unluckily experienced tyre troubles, though one rider changed a piston during the race. Douglases, too, were handicapped by tyres due to the stony nature of the course. A.B.C.'s were greatly fancied in France, as they had performed so well in practice. Actually their first man —Perrin—was sixth at the finish.

Fast Side-valve Engines.

Although fitted with aluminium pistons, the engines of two Sunbeams and Edmond's Triumph were of the standard side-by-side valve type, and the impression their exhibition made on the French spectators cannot be over-estimated, but Sgonina's mount was fitted with the overhead four-valve Ricardo engine. He was somewhat slower than Bennett, de la Hay, or Edmond —as a matter of fact, he was but fourteenth at the end of the first lap, but he rode very consistently, and should succeed in carrying off premier honours one of these days. F. W. Dixon did well to gain fourth position in his first appearance on a Douglas, since trouble with a back wheel bearing caused him several stops.

Apart from the Franco-British nature of the event, additional international flavour was supplied by the presence of a fast American machine—Le Vack's T.T. Indian. He was well in the running for third place when he broke an exhaust roller. Maffeis, the Italian Bianchi rider, met his Waterloo at Pontlieue quite early, which minimised the international interest of the event.

Next year it is to be hoped that there will be an even larger entry from all four great nations, although, in that case, it is to be regretted that it might not be possible to employ the excellent simultaneous start!



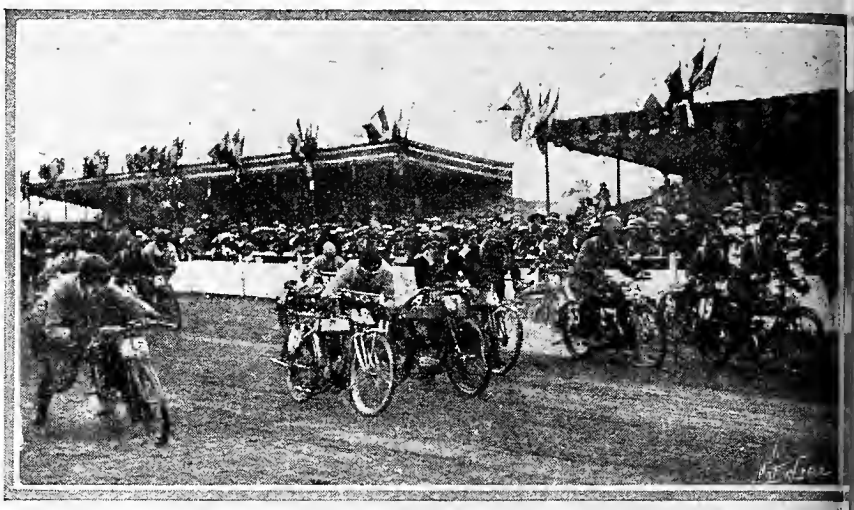
(Left) Competitors lined up a few minutes before the start of the "Senior" class.

(Above) Replenishment depots for men and machines—the majority appeared to be fully licensed bars, but both J. Emerson (3½ Douglas) and H. Hassall (3½ Norton) are wisely intent on their mounts.

The Grand Prix in Retrospect.—

Noteworthy this year, also, was the large representation of 250 c.c. lightweight machines; France continues to appreciate and specialise upon the true lightweight, and that is why Milner's lead was so pleasing.

Many British readers and some British manufacturers do not, even now, realise the importance of the Grand Prix, the intense interest taken in it, and the enormous amount of preparatory work carried out on the course. For instance, very substantial barricades were erected by the mile, and literally regiments of soldiers kept the roads clear of casual civilians.



THE START OF THE 250 c.c. CLASS.

France has always shown affection for light motor cycles, the enthusiasm for these miniatures being exemplified in the entry of thirteen machines for this class as against seven for the 350 c.c. class.

Practising Cars Maul the Roads.

It was not the fault of the organisers that the roads were covered with stones at many points; 100 m.p.h. cars practising for the car race on the succeeding day were responsible for that. Some idea of how rough the surface was in places may be gathered from the fact that the winning Sunbeam's back rim had one kink so huge as to show light under one side of the tyre beading! Apart from Bennett's one fall, the two Sunbeams enjoyed no-trouble runs. One well-known rider expressed the opinion that large tyres, ridden soft, were best for the existing conditions.

The spectators included many prominent Continental motorists—we noted Count Kolowrat, the well-known Austrian sportsman, following the proceedings keenly—and all were impressed by the sturdy and symmetrical appearance of the British machines in comparison with the squat and complicated-looking French mounts, no less than by their remarkably superior reliability as evidenced in the results.

* * *

BREVITIES.

Sunbeams used transparent filler caps; Edmond's Triumph did not; Edmond ran out of petrol. Is this a case of cause and effect?

* * *

Heard a little way down the course, the mingled sound of the exhausts in the massed start suggested an imminent attack by a very large swarm of bumble bees about the size of elephants!

* * *

How the race progressed may be gathered from the following tables of lap positions at various periods during the contest:

SIXTH LAP.

500 c.c. CLASS.

		Time.
1.	A. Bennett (3½ Sunbeam)	1h. 3m. 33s.
2.	T. C. de la Hay (3½ Sunbeam)	1h. 3m. 38s.
3.	F. G. Edmond (3½ Triumph)	1h. 3m. 47s.

350 c.c. CLASS.

		Time.
1.	Meunier (2¾ Alcyon)	1h. 16m. 44s.
2.	Milland (2¾ Douglas)	1h. 19m. 51s.
3.	Dubost (2¾ D.F.R.)	1h. 27m. 3s.

TENTH LAP.

500 c.c. CLASS (All under two hours).

		Time.
1.	F. G. Edmond (3½ Triumph)	1h. 46m. 42s.
2.	A. Bennett (3½ Sunbeam)	1h. 47m. 56s.
3.	T. C. de la Hay (3½ Sunbeam)	1h. 47m. 57s.
4.	Marc (3½ Alcyon)	1h. 51m. 23s.
5.	F. W. Dixon (3½ Douglas)	1h. 52m. 47s.
6.	C. Sgonina (3½ o.h.v. Triumph)	1h. 53m. 59s.
7.	H. Le Vack (3½ Indian)	1h. 54m. 0s.
8.	Pinney (3½ o.h.v. Triumph)	1h. 55m. 58s.
9.	Pean (3½ Peugeot)	1h. 58m. 46s.

350 c.c. CLASS.

		Time.
1.	Meunier (2¾ Alcyon)	2h. 10m. 34s.
2.	Milland (2¾ Douglas)	2h. 16m. 4s.
3.	Dubost (2¾ D.F.R.)	2h. 33m. 6s.
4.	H. R. Harveyson (2¾ Douglas)	2h. 48m. 47s.

FOURTEENTH LAP.

500 c.c. CLASS.

		Time.
1.	T. C. de la Hay (3½ Sunbeam)	2h. 31m. 36s.
2.	A. Bennett (3½ Sunbeam)	2h. 31m. 39s.
3.	C. Sgonina (3½ o.h.v. Triumph)	2h. 39m. 12s.

350 c.c. CLASS.

1.	Meunier (2¾ Alcyon)	3h. 3m. 40s.
2.	Milland (2¾ Douglas)	3h. 16m. 32s.
3.	H. R. Harveyson (2¾ Douglas)	3h. 40m. 49s.

EIGHTEENTH LAP.—FINAL POSITIONS AND TIMES.

500 c.c. CLASS.

		Time.
1.	A. E. Bennett (3½ Sunbeam)	3h. 13m. 24s.
2.	T. C. de la Hay (3½ Sunbeam)	3h. 15m. 51s.
3.	T. Sgonina (3½ o.h.v. Triumph)	3h. 24m. 58s.
4.	F. W. Dixon (3½ Douglas)	3h. 38m. 1s.
5.	J. L. Emerson (3½ Douglas)	3h. 48m. 9s.
6.	J. Perrin (3½ A.B.C.)	3h. 58m. 20s.
7.	Jacquin (3½ Griffon)	4h. 3m. 32s.
8.	Delabre (3½ Rover)	4h. 18m. 24s.
9.	Rolly (3½ A.B.C.)	4h. 21m. 10s.
10.	A. H. Alexander (3½ Douglas)	5h. 2m. 12s.

350 c.c. CLASS.

		Time.
1.	Meunier (2¾ Alcyon)	3h. 55m. 0s.
2.	Milland (2¾ Douglas)	4h. 14m. 0s.
3.	H. R. Harveyson (2¾ Douglas)	4h. 38m. 40s.

250 c.c. CLASS.

FOURTH LAP.

		Time.
1.	A. Milner (2¼ Levis)	53m. 7s.
2.	Bauer (2¼ Yvel's-Jap)	55m. 59s.
3.	Vernisse (2¼ Yvel's-Jap)	56m. 29s.

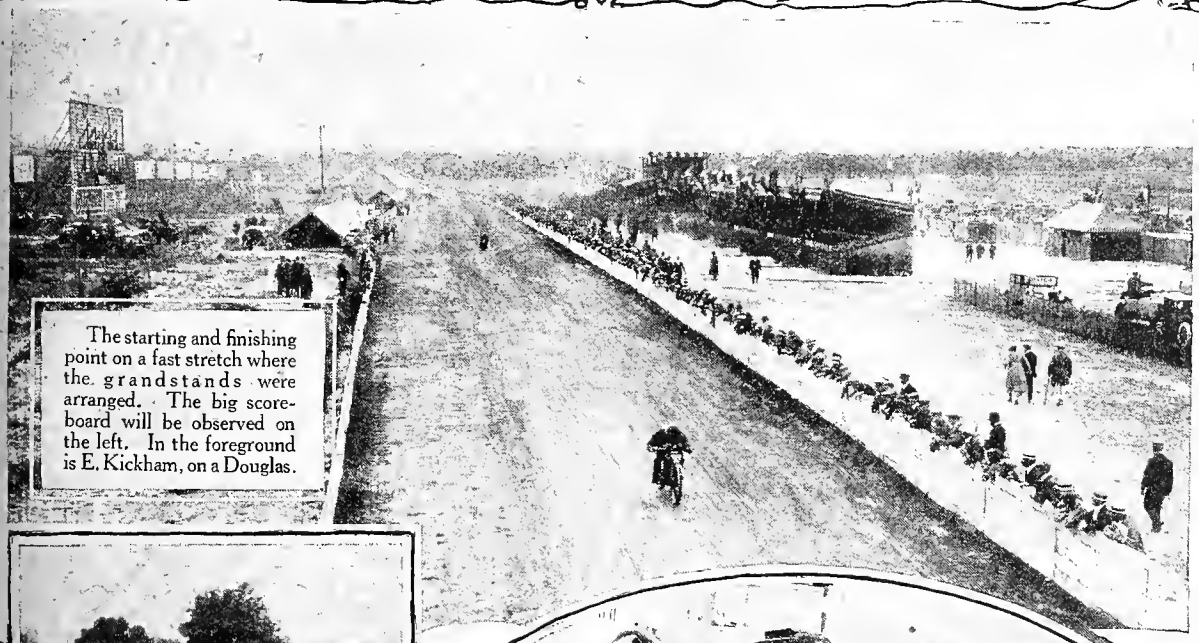
EIGHTH LAP.

		Time.
1.	A. Milner (2¼ Levis)	2h. 17m. 25s.
2.	Jolly (2¼ Alcyon)	2h. 24m. 7s.
3.	Vernisse (2¼ Yvel's-Jap)	2h. 29m. 21s.

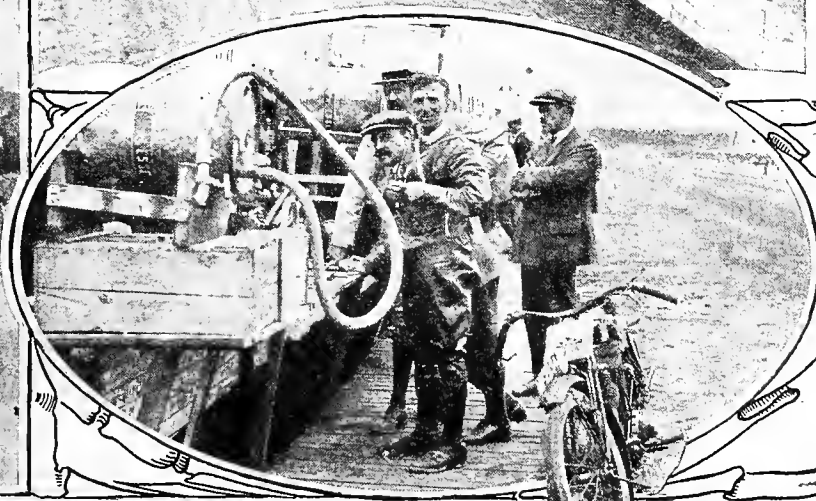
FIFTEENTH LAP.—FINAL POSITIONS AND TIMES.

		Time.
1.	Vernisse (2¼ Yvel's-Jap)	3h. 44m. 49s.
2.	Clech (2¼ Moto-Solo)	3h. 48m. 39s.
3.	Jolly (2¼ Alcyon)	3h. 49m. 1s.

IMPRESSIONS OF THE GRAND PRIX RACE.



The starting and finishing point on a fast stretch where the grandstands were arranged. The big score-board will be observed on the left. In the foreground is E. Kickham, on a Douglas.



(Centre, left) A. Bennett and T. C. de la Hay (3½ Sunbeams) as they rode—almost side by side for many laps. They finished first and second. (Centre, right) This huge cylinder of petrol awaited F. G. Edmond (Triumph), who was among the first three from the start, leading on the seventh lap, but ran out of petrol on the eleventh circuit. Edmond is seen at his depôt after his unfortunate retirement. (Bottom) Froment (2¼ Labor) negotiating the hairpin bend at Pontlieue at the Le Mans end of the course.

TOURING with a LIGHTWEIGHT SIDECAR

Through Nine Counties on a Small Two-stroke Outfit.

SO much have two-stroke lightweights improved of recent years that they are no longer regarded as purely solo mounts. Last Olympia Show revealed that many makers had sufficient faith in their little valveless engines to exhibit them fitted in small but sturdy frames to render them suitable for attaching a sidecar: what was more, they staged complete outfits at figures in the neighbourhood of £100.

All this was not due to any recent discovery on the manufacturers' part—private owners had tried the little machines with sidecars and had not found them wanting. The writer was one of these, and this spring a fortnight's tour through nine counties, including Devon and Dorset, was undertaken with success. This, I would remind the reader, with a motor cycle equipped with one of the much-maligned three-speed hub gears.

Unnecessary Luxuries Discarded.

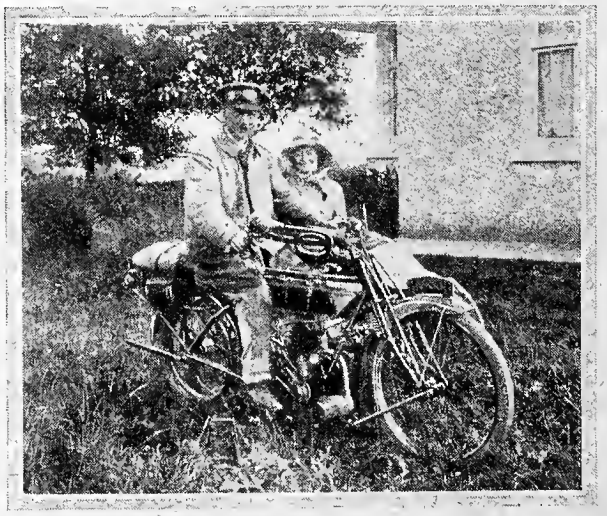
Naturally, with so small an engine, we refrained from carrying spare tins of fuel and such luxuries as spare wheels. Nevertheless, there was quite a large amount of luggage in addition to the camera and its *etceteras*.

The weather—wet up to half-an-hour of starting—turned out gloriously, and we enjoyed complete immunity from even the smallest shower.

Our route from the Midlands was *via* Bromsgrove, Worcester, Tewkesbury, Gloucester, Cain's Cross, missing Stroud by bearing right for Nailsworth, where we purchased petrol at the only garage we encountered open that day (a Sunday), and very thankful we were to obtain it.

A delightful place is Nailsworth, with its terraced houses quaintly situated amidst trees of many hues; but the climb out of the place necessitated dropping into second (8½ to 1). At Bath we took the Newton road, turned left at the Globe Inn for Marksbury, Hallatrow, and Chewton Mendip, where we turned right for Cheddar.

The entrance to the Gorge from above was enthralling, the great towering rocks providing an inspiring spectacle. One goes down and down without a break for about three miles. Great care has to be exercised in rounding some of the sharp "S" and "hairpin" bends, and we confess to a feeling of relief when at last we arrived at the delightful village nestling at the base, where we noted that the cyclometer registered 113 miles for our first day's run.



The writer and his passenger on the two-stroke Regal-Peco.

Off the Beaten Track.

The way out of Cheddar was nothing to be compared to the entrance *via* the Gorge, and nine miles soon brought us to Wells and its cathedral, at which we halted for some time before setting off again for Taunton and Exeter. About five miles beyond the latter town I took the wrong turning, and later, by means of Bartholomew, found that we were on a Roman by-road, which eventually led us up 700ft. over Great Haldon Hill, and, fearing that bottom gear (11 to 1) was not low enough for the diminutive engine I jumped off near the top and ran for about thirty yards. It was the first occasion the engine had required assistance, and I realised that a lower bottom gear would have been better for touring in Devon. The glorious five-mile run down into Newton Abbot, however, was ample compensation for the climb.

Our second day's run of ninety-two miles ended at Torquay, and as it was our first visit to this Devonshire resort we gave the engine a rest and thoroughly enjoyed a lazy day. The coast scenery, viewed from high up above Ansty's fairy cove, was magnificent. With coloured rocks varying from white to deep red, interspersed with thick foliage and, above all, the great expanse of English Channel—truly, the scene was one to be remembered.

From Torquay our direction was north-east, and we hugged the coast as much as we could, thence along the cliff road to Shaldon, across the long wooden bridge to Teignmouth, then on through Dawlish, following the broad estuary of the Exe.

Near Exminster we crossed the river, and after passing through many charming villages we reached

Touring with a Lightweight Sidecar.—

Exmouth. Beyond this coming resort we managed to lose ourselves, and, in the process, discovered what must be Devon's loveliest village—Littleham. There was a long halt in that Devon Arcady.

Failure without Disgrace.

After pursuing our journey for some eight miles, we encountered Peak Hill, near Sidmouth. The passenger walked this—at least the last fifty yards of the hill. It was rough as well as steep, and the descent to Sidmouth on the other side was even worse. It will be remembered that this road, in the reverse direction, caused considerable trouble to competitors in the last London-Exeter-London Trial.

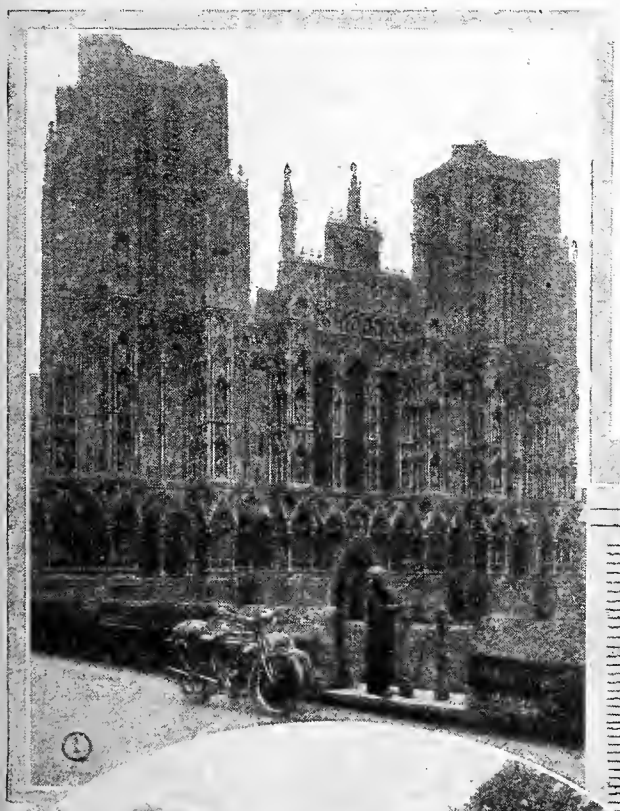
I may say that this portion of our tour was not according to the route provided by the A.C.U., but I have no regrets and would go the same way again, —but with a lower gear!

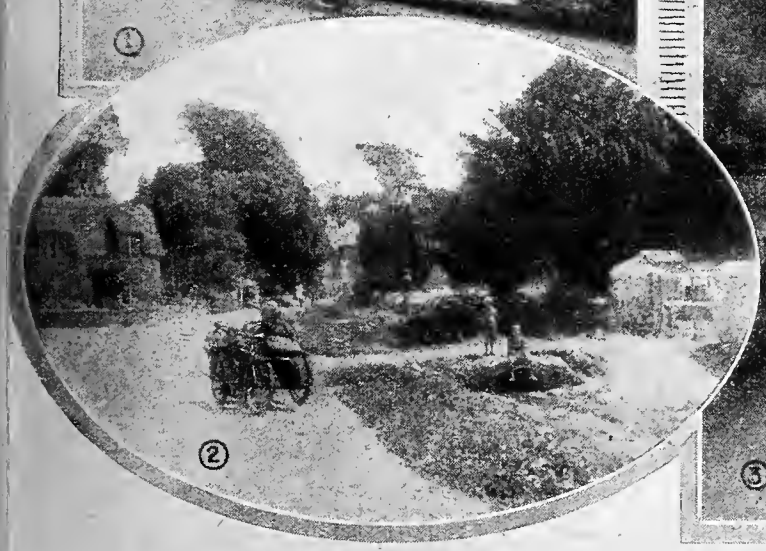
Trow Hill, the other side of Sidmouth, another of the "London-Exeter" test pieces, proved to be the steepest hill of all, and its hairpin bend halfway up made caution necessary—a hill I think I should omit from any future tour in that district, no matter what I am astride.

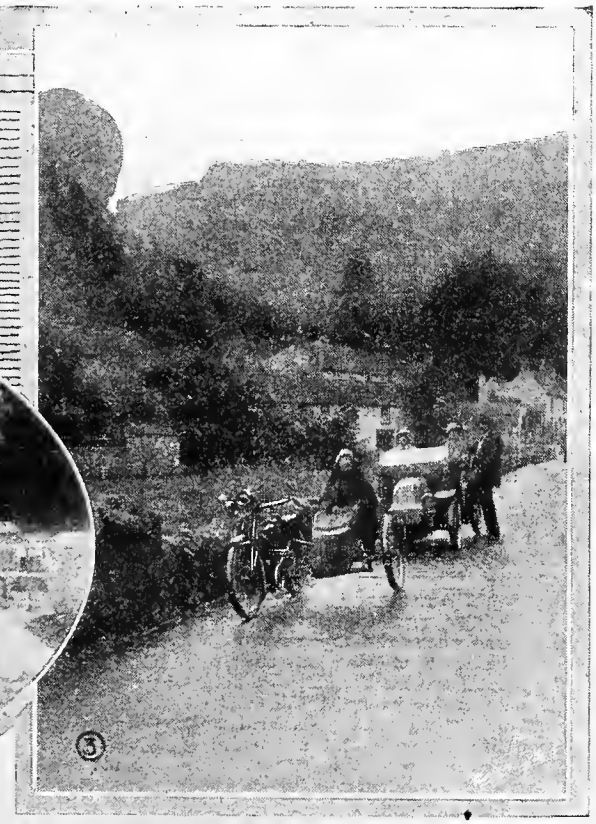
On reaching Lyme Regis we decided to cry a halt with only sixty miles to our credit for the day. It was here that a resident fell in love with my outfit and expressed a desire to purchase it, but there was no business done. My Regal-Peco-Watsonian is one of the family. He marvelled at the engine's capabilities, yet really wondered whether we should get through our tour! It was evident that his education on the power of modern two-stroke engines had been neglected.

Switchback Roads.

Rain fell in the night, but when we were ready to start at 9.30 next morning it had ceased, and, shortly after, the sun came out gloriously. The climb out of Lyme Regis was severe with a very greasy surface, but the Peco roared up tunefully. To Bridport the road was of a switchback character, after which there was a steady five-mile rise to 716ft., followed by the most enjoyable "coast" of our run, down to Winterbourne Abbas, a Dorset village gem, that forced us to halt.







(1) A short stay to admire the fine façade of Wells Cathedral. (2) In the lovely village of Winterbourne Abbas, Dorset. (3) 'Midst the crags at Cheddar.

Touring with a Lightweight Sidecar...

The usual crowd of village children gathered while a "snap" was being taken, and only one of them was not impressed with our junior passenger machine; this was a little boy whose father possessed "a Hindian," as he proudly informed us.

After an *al fresco* lunch, our route was through Dorchester and Bournemouth, to Lymington, and, after another toll, we crossed the silent Solent to Yarmouth, I.O.W. Although only 4¼ miles across, the fare was 3s. 6d. each for machine and sidecar and 2s. each for passenger and myself—11s. in all. Surely this will rank as the dearest four-mile journey in England! Within fifteen minutes of landing on the Island, we had reached the home of friends, with another ninety miles to the credit of our machine.

Three Up in the Isle of Wight.

Many of the Island's best "bits" were visited "three up," and having lowered the gear to 13½ bottom no shedding was necessary. To Yarmouth (still another toll), Totland Bay, Alum Bay, Brook, Brighstone, and on to Carisbrooke was a wonderfully varied run. Yet the best is, without doubt, along the Undercliffe to Ventnor, Bonchurch, and the coast to Shanklin, Sandown, inland to Brading, and Ryde, returning *via* Old Newport and older Shalfleet.

The Island was destitute of motorists, and it is easy to guess the cause with such heavy fares staring one in the face at the docks ticket offices. The Island roads were wonderfully improved since my previous visit, many bad corners having disappeared and the surfaces tarred.

We were sorry to leave the Isle, and sorrier still to part with another 11s.—for the crossing was rough!

Our return was through the New Forest, Salisbury, Amesbury, Park House, Collingbourne, Ducis, Savernake Forest (where we had to shelter from our first shower), Marlborough, Swindon, and Highworth—a total of ninety-two miles for the day.

Next day's route (and the last) was *via* Stow-on-the-Wold, Broadway, Evesham, Alcester, and home, the day's run being eighty-two miles.

Our total mileage was 600, and 7½ gallons of petrol were used, working out at 80 m.p.g.; three pints of Vacuum A served for lubricating.

There were no punctures to record, but I used no fewer than four rear brake blocks! The original one I lost on the Wight, and three others I purchased proved absolute "duds," by the time home was reached the last one being a mere shred.

The desire to see those lovely Devon scenes again is very keen. We had no difficulty in finding suitable accommodation, and the charges were most reasonable. The Peco engine behaved splendidly, and once more proved the joy and success of touring on a lightweight sidecar. A.A.S.

A 20 M.P.H. CATERPILLAR.

A Remarkable Machine Capable of Cross-country Service.

A USEFUL PROSPECTING MOUNT FOR TRIALS ORGANISERS!

A caterpillar "scooter," engine with a 2¾ h.p. Douglas unit and capable of running at 20 m.p.h. over meadowland or broken country. It has been evolved by the Dept. of Tank Design and Experiment for the purpose of testing out the possibilities of employing flexible tracks, steerable without braking and skidding

AT the conclusion of last year's A.C.U. Six Days Trials disgruntled competitors sarcastically opined that to emerge successfully from such a severe trial, a caterpillar track was a necessity. Little did these critics imagine that experiments were being made by the Department of Tank Design and Experiment, with a view to ascertaining whether it were possible to steer such a machine by deflecting the track. The principle adopted is that by laying down the track in a curve the machine follows the track.

A Flexible Track.

A pair of ordinary handle-bars are fitted, the centre line of which passes through the track near the point where it ceases to be in contact with the ground under normal conditions. The handle-bars control the movement of a front fork which carries the forward pulley wheel of the track, which is of flexible rubber, and it is obvious, therefore, that when the handle-bars are moved the track is deflected, the front portion of the track forming an obtuse angle with that portion of the track in contact with the ground. Actual demonstration has proved that the machine is easily steerable.

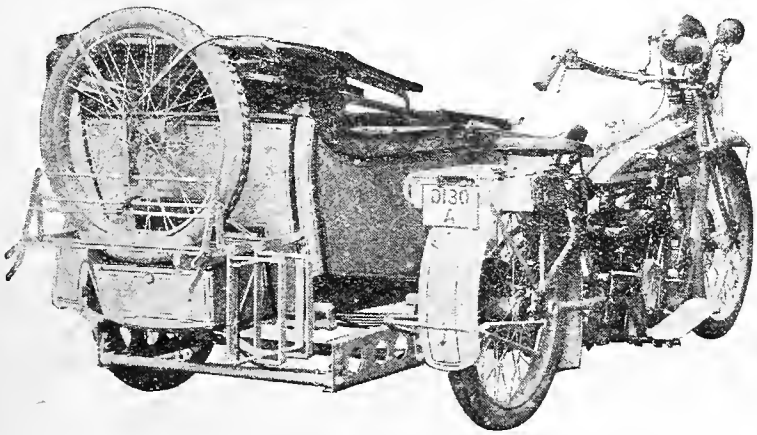
Balance, however, proved to be somewhat difficult at first, but once mastered the running of the machine was particularly smooth even over rough meadowland at 20 m.p.h., while small hard obstacles could be negotiated without transmitting any shock to the rider.

As a novelty the motor cycle caterpillar is distinctly interesting, and might offer certain possibilities for military purposes, although the machine is built as a preliminary experiment in connection with larger vehicles of the caterpillar type.

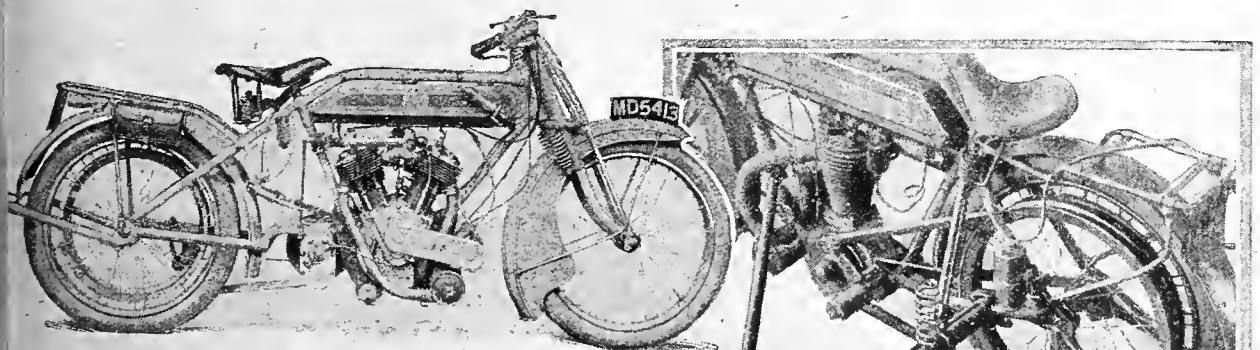
PASSENGER MACHINE TOPICS.

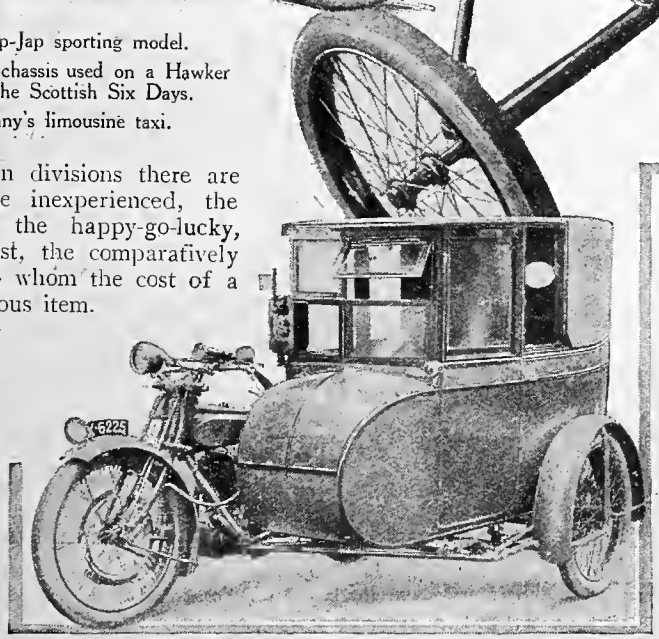
Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers. Collated by "Vedette."

IF sidecar owners are to be judged by the majority of sidecars on the road, one must classify them as four distinct types: (1) The "sporting" owner, who has an occasional passenger and a featherweight sidecar; (2) the more sedate driver with a wife and, perhaps, one child; (3) the family man with a large number of juveniles, for whom he has to provide accommodation; and (4) the man who buys a sidecar outfit purely for utilitarian purposes.



A five-seater outfit. The 8 h.p. Vindec-Jap with a sidecar built for three adults With a pillion seat, five adults can be accommodated on the outfit.





(Top) A new 8 h.p. Trump-Jap sporting model.
(Left) The Tritube sidecar chassis used on a Hawker lightweight in the Scottish Six Days.
(Bottom) The "X" Company's limousine taxi.

In all these four main divisions there are the experienced and the inexperienced, the fastidious faddist, and the happy-go-lucky, anything-will-do enthusiast, the comparatively wealthy, and the man to whom the cost of a new tyre or belt is a serious item.

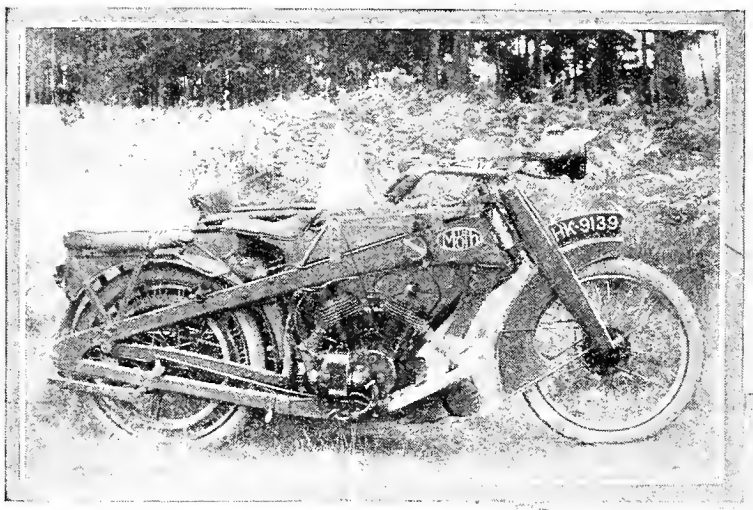
* * *

There are now sidecars on the market for every class of buyer, including the man who requires seating accommodation for his wife and four or five children. We recently illustrated an Acme outfit which comfortably accommodates a family of six without recourse to the pillion. Brown Bros., Ltd., of Great Eastern St., E.C.2, are also offering a "full size" Vindec outfit, which is illustrated. As will be seen, the outfit is very complete in its equipment, which includes hood, screen, side curtains, luggage grid, petrol tin carrier, rear locker for tools, Magdyno lighting and ignition set, and interchangeable wheels with spare. The chassis is of pressed steel, and the sidecar body accommodates three adults.

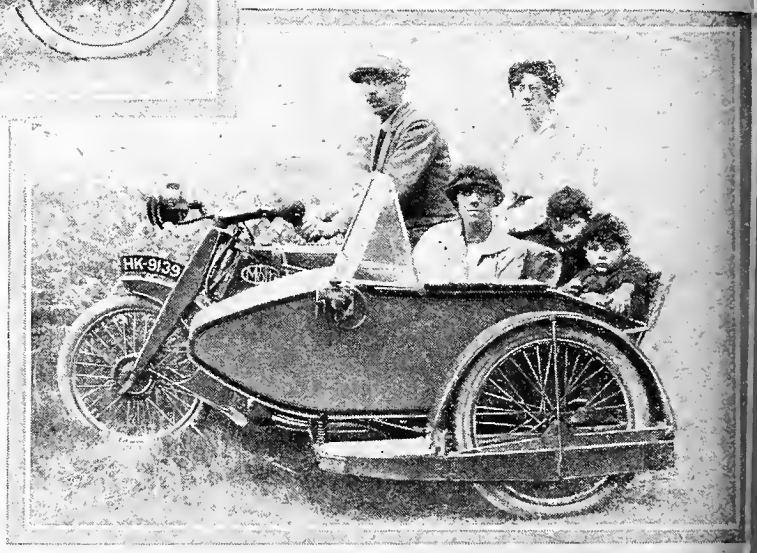
Before the war Trump motor cycles were as well-known as most makes then on the market, and the revival of the old name is not without interest to motor cyclists of to-day. The newly re-formed company is located at Weybridge, and, among other models, markets a fast, J.A.P.-engined twin, which no doubt will appeal to the sporting sidecarist.

* * *

A lightweight chassis, consisting of three straight



Wood is largely used both in the cycle frame and sidecar chassis of this remarkable home-built outfit. (Above) How the timber frame is arranged. (Right) Mr. Beaumont's sidecar, with its full complement of passengers.



tubular members, was used in the little Hawker two-stroke in the Scottish Six Days. It is known as the Tritube. The lugs are of mild steel, and there are no bends in the construction, while the axle is of 2in. × 14 gauge tubing, provided with a spring and ball joint taking the front end of the body. The rear part of the body is suspended on two helical springs. The weight of the chassis is only 25 lb. and of the body 20 lb. It is manufactured by Messrs. Henry and Leslie, Ltd., 133, Clifton Road, South Norwood, London, S.E.25.

* * *

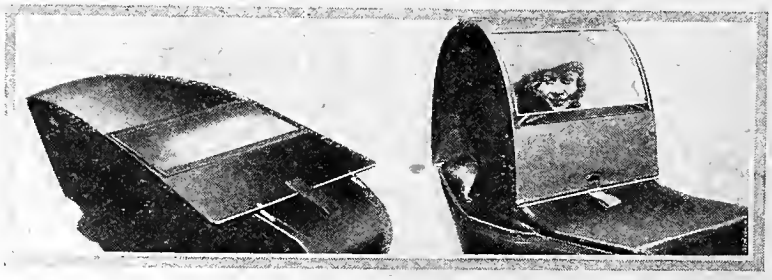
The general use of the motor cycle and sidecar taxi in London has not yet materialised, although vehicles of this kind are being employed with success in the provinces. The "X" Motor Cycle Co., of Parkfield Road, Torquay, S.7, has, since July, 1919, carried 2,500 passengers in each of its taxi-sidecars, and has found this form of vehicle extremely popular. A large percentage of this mileage, however, has been covered on trips into the beautiful country surrounding Torquay. This firm has now produced the comfortable vehicle illustrated on the previous page. The body is mounted on a special chassis, marketed by the United Aircraft Co. A special feature of this chassis is the link plate which, connected to the rear fork of the motor bicycle, terminates the rear end of five tubes which form the main structure. The interior of the body is luxuriously upholstered, whilst the V shaped windows at the front can be opened, as also can those at the sides. Either the complete outfit or the sidecar and body can be supplied.

* * *

From time to time there appear in the pages of *The Motor Cycle* particulars of motor cycles assembled by readers, but very few have had the pluck to tackle the complete outfit. Mr. H. W. Beaumont, of Ipswich, has not only done this, but he has ideas of his own on methods of construction. His very praiseworthy effort is illustrated on this page, wood being used extensively. The wood used is ash, with steel plates and bands to strengthen the joints, while the sidecar body is three-ply over a cedar frame. Sprung fore and aft, and with the sidecar wheel also sprung, the outfit, we are told, is roadworthy and comfortable. It has an 8 h.p. Rex engine, fitted with a Philipson pulley and a two-speed hub gear. Not the least interesting feature is its equipment of two carburetters—a small one for traffic driving with an ordinary B. and B. with W.S.R. jet for general running. So far the outfit has covered about 600 miles without trouble. Its weight is 460 lb.

* * *

A new type of windscreen known as the Coupé has recently been introduced by T. A. Simpson, 66 Gravelly Hill, Erdington, Birmingham. As will be seen from the illustrations, it may be used as an apron when the sidecar is empty, and forms a hood when in position. Side curtains are provided for stormy weather, and it appears to give most of the advantages of an enclosed vehicle without its weight. The hood is constructed on tempered spring



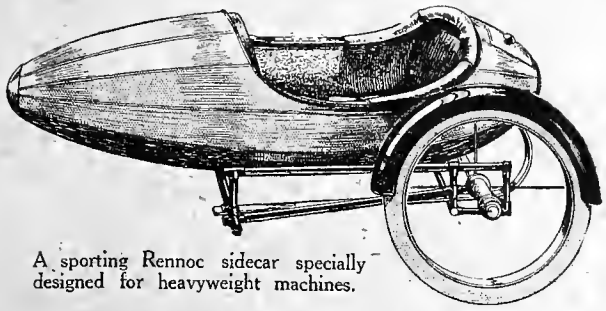
The last in sidecar protection—the Coupé combination hood and screen

Passenger Machine Topics.—

steel, capable of straightening out when released from the semi-circular formation, and of sufficient strength to keep the hood perfectly rigid. The price with two side curtains is four guineas.

* * *

There are two kinds of sidecar bodies equally well-known as "sporting." The first of these is the slipper-like affair, usually fitted to lightweights. The second is much more commodious, and generally follows the outline of a torpedo. I have before me illustrations of two of the latter type, the first made by the well-known Bowser firm, and the second a Rennoc model No. 448, which is specially designed for heavyweight machines. Incidentally, a third sidecar following these outlines comes to my mind in the Watsonian R34, of which many are now seen on the road.



A sporting Rennoc sidecar specially designed for heavyweight machines.

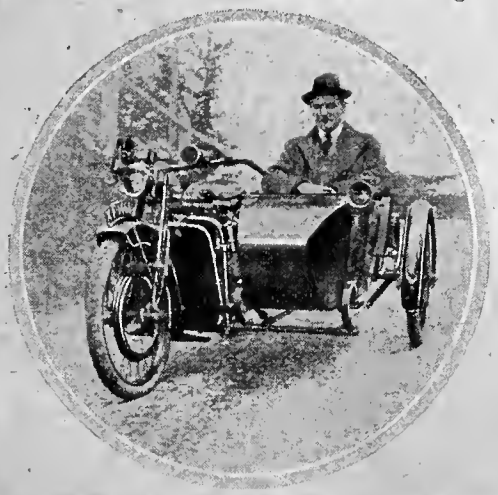
A roomy two-seater Bowser model, and an attractive-looking sporting model sidecar by the same makers.

* * *

As multi-seated sidecars are now so popular, it is not without interest to know that Messrs. Bowser and Co., of Leeds, claim to have been the first firm to place such types on the market. This firm, therefore, should have had experience in the requirements of owners of this type of vehicle. An illustration is given on this page of one of the latest Bowser two-seaters, from which it will be seen that quite an attractive body has been produced to accommodate two adults.

* * *

Very few standard motor cycles are fitted with a brake which is held on permanently when required. The P. and M. is one of the exceptions. Such a brake is particularly handy if it is found necessary to leave the machine at a standstill on a gradient. The outfit shown in the illustration was photographed on the 1 in 4 section of the Brooklands test hill, where it was held by its brake without assistance from engine compression.



A P. and M. outfit held stationary on a 1 in 4 gradient by the ratchet brake.

* * *

The present state of some of our roads brings the quality, or otherwise, of sidecar comfort into the minds of both driver and passenger. With a well-sprung sidecar, well upholstered, the passenger rarely has cause to suggest to the driver that it is advisable to slow down for the very good reason that the driver, with only a pair of saddle springs between him and the road shocks, is the first to recognise the need. Probably 90% of drivers will be unanimous that the passenger has the best of it where shock-absorbing devices are concerned. Personally, I have found it so until quite recently, when I took delivery of one of the new Terry spring saddles. Now it is my passenger who regulates the pace over pot-holed roads, for, to date, I have never enjoyed such real saddle comfort on a sidecar outfit.

* * *

It may be recalled that the Terry saddle consists of a number of light coil springs on a frame approximating in shape to that of a large leather saddle. These springs are covered by a felt pad with a leather cover. At present I am wondering how the pad will wear, but the prospect of having to renew this does not unduly worry me—the comfort provided makes it worth while.

* * *

When purchasing a proprietary sidecar, care should be taken to specify a wheel of the correct size; two cases of bad steering recently were traced to the use of 26 × 2½ (o.s.) sidecar wheels alongside machines with "26 × 2½ for 2¼" tyres; the latter are approximately 27¼in. in diameter, therefore good vertical alignment is rendered difficult.

The Future of the British Motor Cycle Overseas.

Extracts from a Paper Read at the First Oversea Motor Trade Conference.

By MAJOR H. R. WATLING, General Manager of the British Cycle and Motor Cycle Manufacturers' and Traders' Union.

I SHOULD like to say at the outset that there is now a strongly developed view that although there will still be a steady demand for British cycles and motor cycles in the United Kingdom, yet the real future (especially of the motor cycle industry) will lie in the ability of the British manufacturer to recapture the markets he had prior to the war, and the success with which he is able to establish himself in fresh markets.

What has been Done.

It must not be thought that the British manufacturers heretofore have been unmindful of the overseas markets, but one must be ready to admit at once that much ought to be done to improve trade practice so that the competition of foreign manufacturers may be adequately met. Lest we should depreciate our efforts too greatly, it is well to remind ourselves that in 1920, a year during which there was an abnormal demand for cycles and motor cycles for home consumption, the total value of the export trade of cycles, motor cycles, tyres, specialities and accessories thereof amounted to not far short of £10,000,000.

Another important point to remember is that, as far as can be ascertained, the approximate value of the overseas trade of the American cycle and motor cycle industry during 1920 amounted to £5,000,000. When it is remembered that American motor cycles and parts to the value of approximately £1,500,000 were imported from the U.S.A. in 1920 it can be seen that the British cycle and motor cycle industry as opposed to the American is yet in a fairly sound position. Nevertheless, we are not satisfied with the present position.

An Individual Industry.

One of the difficulties which has to be overcome is that, speaking generally of the British road vehicle industry, it is a young industry, and for that reason is yet a very individual industry, and manufacturers therefore find a larger number of points of individual interest than they do of collective or common interest, but I must approach the subject from the point of view of the Union, the only organisation in the cycle and motor cycle industry which represents a collective interest. Therefore, I am touching to-day upon the points which are being emphasised by the Union, and to which the earnest attention of British manufacturers is being called.

The following points are being urged:

(a) A definite allocation of production for the overseas markets.

(b) Proper agency representation.

(c) Personal investigation of the special condition of the markets.

(d) Proper appreciation of the trading points on which local agents lay stress, *e.g.*, discounts, publicity, support of competitions, etc.

(e) The carrying of stocks and adequate service to the user.

(f) Making the best use of the Department of Overseas trade and the local consular officers.

The development of the overseas trade by the British motor cycle industry affects every motor cyclist—the more machines that are sold, the cheaper they will be; the greater our overseas trade, the better will be the nation's credit, and cost of living will be reduced. Apart from these two main facts, every patriotic rider wishes to see British motor cycles pre-eminent overseas—he likes to think that sister machines to his own are being used all over the world. This being so, the paper by the general manager of the British Cycle and Motor Cycle Manufacturers' Union will be read with interest. Major Watling is himself a keen motor cyclist, and attends most of the big trials to obtain first hand knowledge of their conditions, and the capabilities of the modern motor cycle.

I am pleased to be able to say that the last twelve months has shown a great stimulation of interest amongst all classes of manufacturers, and there is a real intention to sell in overseas markets.

Colonial Models.

The export trade is realised to be of such importance to both the technical and commercial aspects of the industry that the attitude of the designer has sustained a distinct modification in what is known as the "Colonial" model, for use where road transport and road facilities are less than they are in Western Europe.

It is often assumed that a large engine with heavy frame and equipment are the absolute essentials for what are popularly described as "colonial" conditions.

I freely admit that competitive machines from other countries generally achieve their purpose, principally because very heavy materials are used in a frame in which a very weighty and large engine has been incorporated.

I venture to suggest that the result has been to produce an unnecessarily heavy, over-powerful, and thoroughly uneconomical machine. Strength and power are not necessarily adequately obtained solely from weight and size.

At any rate, although this is my own personal opinion, I venture to think that the lighter, better constructed, smaller-engined British machine will in most cases achieve all that is required.

Selling versus Running Costs.

Perhaps somewhat too much stress is laid upon the question of the original selling price. I think that this point has become too much of a fetish, and too little regard has been paid to the subsequent running costs.

The British designer produces what I think is a thoroughly satisfactory and economical machine, and has not in mind the objective of producing a machine from the standpoint of cheap manufacture and low initial cost alone. I believe in the long run his view will be accepted as right, and that the world's markets in due course will pay such attention to accuracy of design, finish, and low running costs as never before.

The day is rapidly passing (even in the countries where the spending power is still high) when the user will be content with paying the expenses entailed by the use of an unnecessarily powerful, weighty, and uneconomical type.

That the smaller British machine is capable of doing all that can be reasonably required of it under really bad conditions is amply shown by various competitions, including the recent International Tourist Trophy Races.

The Aims of the Manufacturers' Union.

May I, in conclusion, mention that although, as I say, we are an individualistic industry, and although we must at present leave individual manufacturers with power to deal with this matter as each thinks fit, yet the Union is not itself idle in the matter of overseas trade; and in connection therewith, may I say it is functioning in the following way:

(a) It is constantly in touch with the Department of Overseas Trade, the Foreign and Colonial Offices, etc.

(b) It represents the views of British manufacturers in connection with taxation, tariffs, and the general development of British interests.

(c) It works closely in touch with the Federation of British Industries, the press, and sister associations.

(d) It has sent representatives abroad to discuss with British representatives and foreign Governments the incidence of foreign tariffs.

(e) It is compiling a list of agents, clubs, garages, and similar societies and interests overseas who are likely to buy British products.

(f) It organises an annual show, to which foreign buyers are invited, and particulars of the show are circulated broadcast throughout the world in four languages.

(g) It disseminates in various ways information as to current problems of the industry for insertion in the technical and general press throughout the world.

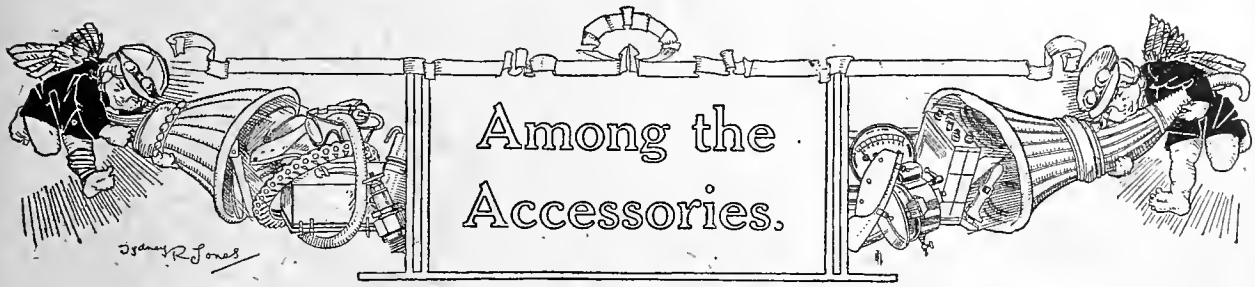
(h) It distributes trade catalogues of interested manufacturers to chambers of commerce, foreign trade buyers, and the like.

(i) It has under consideration a scheme of general publicity by means of newspaper advertisements, posters, and the like.

(j) It has under consideration co-operative publicity abroad, and co-operative selling schemes by a group of non-competitive manufacturers.

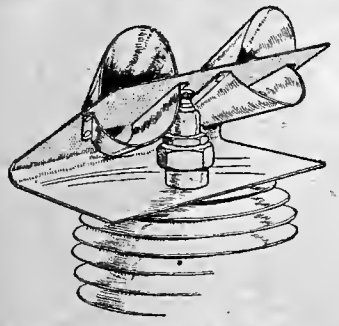
(k) It prepares reports upon general trading conditions in foreign countries, distributes particulars of tariffs, trade opinions, etc.

Amongst other schemes which are under consideration, but have not yet been definitely formulated, is the proposal to send a trade ambassador to various of the world's markets.



Cooling the Plug.

TO cool the plug of a two-stroke engine is the aim of the deflector designed by S. Oddy, 48, Sussex Street, Middlesbrough. Although somewhat

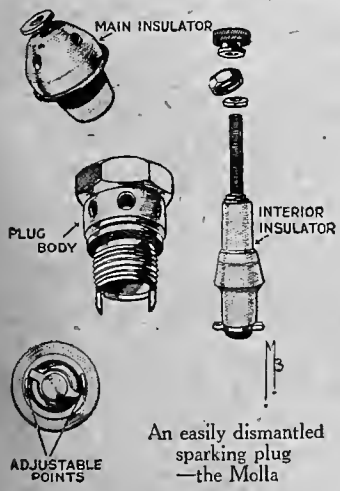


A device for cooling plugs of two-stroke engines.

clumsy in appearance, it has proved most efficient in action. It is made of sheet aluminium.

Detachable Sparking Plug.

WITH a brass body copiously drilled, the Molla plug, it is claimed, cannot overheat. It has two porcelain insulators (the main one being also drilled), which are taper fits in the plug body, and are held together by a small



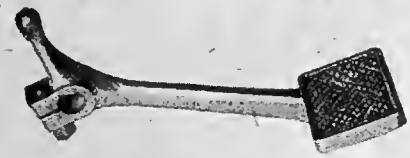
An easily dismantled sparking plug —the Molla

nut and spring washer on the central electrode. The plug points are adjustable, and the whole assembly is easily dismantled. (E. James and Co., 24, Regent Street, Piccadilly, London, W.1.)

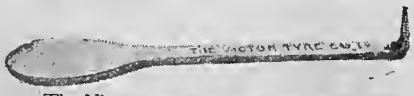
A beetle mascot for sidecars or cars sold by A. Gough, Broad Street, Birmingham.

A useful route-card holder sold by the Ashgate Garage and Engineering Company, Ashgate Lane, Glossop Road, Sheffield.

A spare bulb case sold by the English Electric and Siemens Supplies, Ltd., Brook House, 191, Tottenham Court Road, London, W.1. The case is suitable for any type of bulb provided with small bayonet caps.



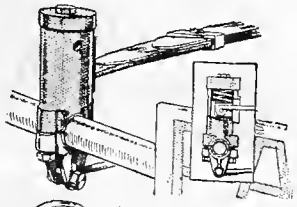
The neatly-made "Celerio" pedal for converting the clutch of Sturmey-Archer gear boxes to both foot and hand control. It is sold by Brown Bros., Ltd., Great Eastern Street, London, E.C.2.



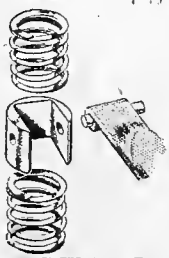
The Victor tyre pick, a handy little tool for digging flints out of outer covers. Sold by the Victor Tyre Co., Ltd., New Malden, Surrey.

Shock Absorber for Cycle Cars.

LIGHT cycle cars present difficult suspension problems, and auxiliary shock absorbers on simple lines are certain to command the interest of owners. The M.P. device—shown in de-



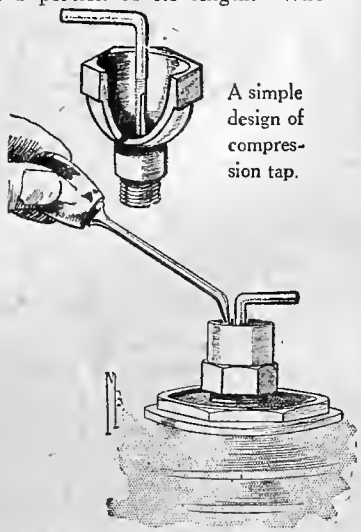
The M.P. shock absorber.



tail: (below) dismantled, (above) in position, and (inset) sectionally—has been designed specially for the front axle of the G.N. by Murden, Page, and Co., 2, Halkin Place, Belgrave Square, London, S.W.1. It is meeting with considerable success.

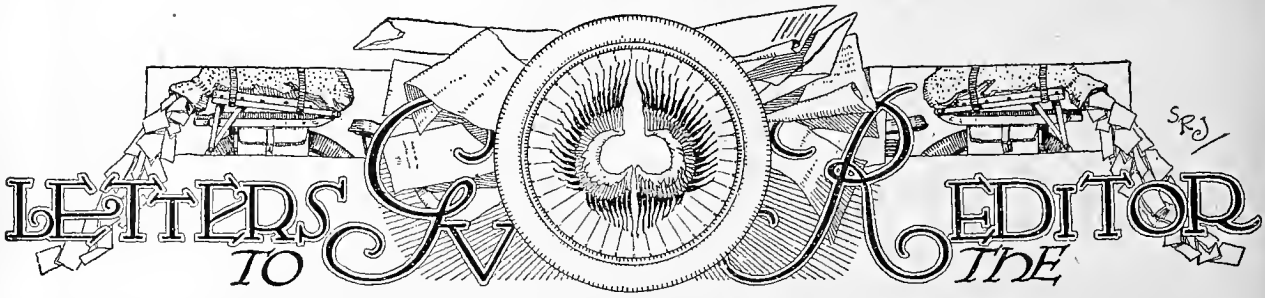
Compression Tap Design.

EXTREME simplicity is the chief point of the M.P. compression tap, which consists of the usual plug and cup, the valve being a vertical screw, grooved for a portion of its length. When this



A simple design of compression tap.

is screwed right down, the tap is sealed. Two models are shown. (Murden, Page, and Co., 2, Halkin Place, Belgrave Square, London, S.W.1.)



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

POUNDS, SHILLINGS, AND PENCE PREFERRED.

Sir,—Walking through Manchester last week I heard a curious conversation between two youths who were evidently bent on buying a motor cycle. In the window of a depot several motor cycles were displayed and marked in guineas. One of these youths turned to the other and said, "Let us see, how much is that?" meaning, I suppose, how many pounds, shillings, and pence. How idiotic this system of marking in guineas seems. £. S. D.

Blackpool.

VENUE FOR THE 1922 T.T. RACES.

Sir,—I notice, with much surprise, that "Ixion," in his "Comments," urges a new T.T. course, where 500 c.c. mounts can indulge in unfettered speed.

Why not Brooklands? The T.T. is not merely to find the maximum speed of a machine, but also to test it. What better course than the Manx for such a purpose? This year a 2¾ h.p. machine won because of the phenomenal acceleration: compact, low frame, excellent brakes and steering qualities. Next year much more attention will be paid to these features in Senior and Junior races alike.

Isle of Man. BALLA-HAIR-NECK.

MILESTONES IN THE "SCOTTISH."

Sir,—I should be extremely grateful if you would allow me, through the medium of your columns, to thank Messrs. Alexander and Co. for the valuable assistance which they rendered myself and other competitors in this year's Scottish Six Days Trial, by placing "milestones" all over the course.

I admit the arrowing of the course was splendid, but it was a very cheering sight to see every few miles an imitation milestone, informing us how far we had to travel to a check, and sometimes valuable hints on observed hills, etc.

Edinburgh. ONE OF THE COMPETITORS.

POLICEMAN AND SPORTSMAN.

Sir,—Whilst touring with a sidecar last week, in Devon, it was my fortune to come across a really good-hearted policeman. The valve rubber on my back wheel had split, when this gentleman of the Devon Constabulary came along on a bicycle and at once took the valve out of his own machine for me, offering to walk to the next village (one and a half miles) to replace his own. Luckily help came from another source, and I was able to give it back to him. In addition to this he was quite anxious to pump my tyre up, notwithstanding a temperature of something like 85° in the shade. I thought it was a really good turn, and worthy of note, hence this letter. CE 5254.

Saffron Walden.

AIR-COOLING AND OIL-COOLING.

Sir,—Anent your readers' comments on air-cooling, they all seem to forget that a petrol engine's best running temperature is not stone cold, but rather in the region of 100° C. It would follow that, if air-cooling is "too hot," water-cooling is "too cold." I am waiting impatiently for the wholly oil-cooled engine.

Regarding the present cylinder, if the fins were produced so that the outside shape became streamlined, the air at the rear of the cylinder would cease to be static, and would assist to cool that part.

In some rotary aero engines an Γ shaped aluminium obturator ring is fitted to the extreme top of the piston to assist in taking up distortion caused by uneven cooling. Such a ring would be quite simple to fit to any piston, and would at least do a little towards retaining compression in our too easily distorted cylinders. C.C.C.

London, E.16.

Sir,—In Mr. Bradshaw's interesting article on oil-cooling he says: "The cylinder head for the time being must be cooled in the usual manner." Would it not be possible to have the valves in the head driven by an overhead camshaft and circulate the oil over the head, thus cooling the head and lubricating the valve gear at the same time? W.H.A.

Holt.

ANOTHER DISABLED RIDER'S DIFFICULTY.

Sir,—I am a disabled rider ("crocked" left leg), and possess a 1921 standard 2¼ h.p. Levis. I can paddle this machine away quite easily (when warm) with my right leg, and in every way manage it quite satisfactorily; but I am sorry to say I have had a left-hand side-slip, in which my crocked leg came off rather badly.

As you may imagine, I can ill afford to injure this member further, and wondered if any of your readers could tell me of a stout leg shield which would enclose this leg up to the knee, and to a certain extent protect it in case of a similar accident. I presume I should also require strong adjustable footboards instead of the standard footrests now fitted; in fact, I should prefer them. DISLIP.

Liverpool.

Sir,—May I tender my thanks to the many correspondents who so kindly gave their encouragement and experiences, in answer to my enquiry *re* a suitable sidecar outfit for a disabled rider, in a recent issue?

I may say that it has helped me to a decision, and I hope to be on the road again before the end of the present month. 1914-1919.

Walthamstow, E.17.

H. R. Davies—the winner of the Senior T.T. race—mounted on a 16 h.p. Anzani-engined pacing machine, which, however, it is extremely doubtful would equal the speeds of the little 2¾ h.p. A.J.S.—at least on the Isle of Man course.

OPEN SPEED TRIALS AS A CURE FOR INSOMNIA!

Sir,—I took the opportunity of going over to the open speed trials at Clipstone on the 23rd ult.

The start was at 1.30 p.m., and at five o'clock twelve classes had been run off. Up to this time some half-a-dozen or so riders had been racing in almost every event. Then came the solo machines, events Nos. 9 to 24. Up to this point there had been no solo event in spite of the fact that the solo competitors were there from 1.30 until five o'clock and 135 riders had been on the course.

By running the events in this way the organisers did their best, in my opinion, to kill the interest in the trials.

It was one wearisome stream of sidecars, the same people going up and down. A much better idea, it seems to me, and one which would sustain the interest more, would be to run a few sidecar events, and then a few solo events, interspersing them, so as to make the events more varied, and, at the same time, it would give men who had travelled a long distance with their machines some opportunity of racing, instead of hanging about for hours before they were called upon to take any part whatever in the trials.

For an event such as this I would suggest that:

(a) The men should get away quicker at the start.

(b) To save time in coming back, they should get back to the start on a circuitous road.

(c) Some accommodation should be made for spectators on an advantageous spot, by the way of seats, or a small stand, and that opposite should be recorded the winners of the various classes as they take place.

(d) That refreshments should be provided, even if not of a high-class character.

(e) There should be a definite starting time for each event or class, so that people who have come long distances may know what time they should be there and get away.

At 5.30 p.m. on Saturday last some riders, who had travelled a considerable distance at considerable expense to themselves and their firms, had taken part in one event only, although they had entered for half-a-dozen events, and, owing to the time of waiting, had to take their departure in spite of the fact that they had incurred heavy expenses both in travelling and entry fees without taking part in other events.

As stated above, these trials started at 1.30, and at 5.30 approximately 136 competitors had covered the course, and there were still about 380 to go up, so heaven only knows what time they finished. [Some weary pressmen left at 9.40 p.m.!—ED.]

I think that these events, if well handled, are splendid sporting competitions, calculated to stimulate and encourage motor cyclists, but if handled in the apparently loose manner in which this event was handled on the 23rd ult. they become most wearisome. It surely should have been a matter for easy calculation for the organisers of these trials to know that 500 competitors would take a certain length of time to go up, and they should have limited the number of classes or entries.

I write this letter with the best of feelings, and with the best interest of the sport in mind, and the few suggestions I have made, if adopted and carried out in a thorough manner, would make such trials as these an exceedingly interesting, instructive, and pleasurable afternoon's sport.

NORMAN T. DOWNS, Managing Director,
NEW IMPERIAL CYCLES, LTD.

TWENTY-THREE YEARS AGO.

Sir,—The accompanying photograph was taken in the spring of 1898—twenty-three years ago. The machine was one of a first batch of three Werner motocyclettes imported into England, and consisted of an ordinary type of pedal cycle with stiffened frame and front forks. The motor was a single-cylinder air-cooled with tube ignition, and designated as ¾ h.p. It was attached by clips to the crown of the front forks and to the stem of the handle-bars, moving with the latter.

Carburetter and tank for petrol were in one, and consisted of the small circular tank attached to the top tube of the frame. The carburetter was known as the "surface type," the inside being a plain cylinder with a horizontal diaphragm to prevent the petrol splashing about, through which were fixed several pieces of coarse fabric, one end of each being in the petrol and the other ends protruding into the upper portion of the tank. By capillary attraction the petrol saturated the upper portions of the fabric, and the main air intake was so arranged that the air drawn into the engine passed through this, licking up a certain amount of petrol vapour in its passage, and thus provided a carburetted mixture. There was, in addition, an independent air supply controlled by a lever on the handle-bars.

At its best, and on the level, the machine was capable of about 16 m.p.h., but had to be assisted by the pedals up even the slightest gradient.

The tube ignition was a constant source of trouble, owing to the wind either blowing the burner out or directing the flame away from the tube, and one got quite used to covering the burner case with one's cap to keep the tube hot.

I rode the machine several hundreds of miles, including one run from London to Brighton and back (which took me three days), pedalling for more than half the distance.

One outstanding feature, I remember, was the good balance of the machine, which enabled it to be ridden with the greatest of ease without using the handles.

A relic of long ago, when motor cycles and the fraternity of motor cyclists were young. Mr. Percy Richardson on his 1898 Werner.

The ultimate fate of this motor bicycle was that it became a martyr to the cause of the present motor 'bus services in London, as on its last day of this life it skidded under a horse 'bus, taking me with it, and, as usual in those days, burst into flames. As it was found impossible to get it out from under the 'bus, the passengers and horses were taken off, and the bicycle and 'bus just burnt themselves merrily out.

PERCY RICHARDSON.

WHERE ARE THE SPRING FRAMES?

Sir,—Referring to the remark of "Old Timer" (in your issue of July 7th) about the considerable scarcity of spring frame motor cycles on the road, I think that the following are the main reasons why the average motor cyclists do not ride spring frame machines:

(1.) Greater cost of these machines.

(2.) Extra weight is not negligible, especially in the case of medium or lightweights.

(3.) The doubt that the rear spring fork may present failings during its use, *i.e.*, deficiency of lateral rigidity, rapid wear of parts, and inconstant tension of the drive.

Therefore super-saddles and larger size tyres are generally used. This is actually a solution of compromise, not theoretically and mechanically sound, whereas a really correct design must be produced, eliminating any inconvenience. This is not impossible.

As a rider having hard experience of the worst roads of this country, I wish that the motor cycle, well sprung fore and aft, may receive hereafter greater care by makers and lesser diffidence from the public.

ABROAD.

Bologna, Italy.

Sir,—Your correspondent "Old Timer" asks for riders' opinions and reasons as to why they do not ride spring frames. My opinion (that of an "Old Timer" also) is not formed so much from personal use of spring frames as from very close observation of men who have been riding with me on such machines, and I may say at once that I have not been inspired with confidence. The inherent whippiness or elasticity of the spring frame is least noticeable to the observer, and is felt least by the rider when used with a sidecar combination, and I must say that my experience of the 1920 spring frame Matchless was, on the whole, satisfactory. Beyond rolling a bit at speeds, it was very comfortable, and after some considerable mileage there was no apparent wear. But for solo use the spring frame is a different matter, for in most instances it seems to cause unsteady steering, in some instances it creates bouncing, and sometimes I have noticed the two faults occurring simultaneously. Where roads are furrowed with longitudinal ruts, as so many are in these days, the rigid frame scores every time. I have ridden the Bat type of spring frame solo, and was obliged to lock the spring and use it solid. The only spring frame which appears to me from its behaviour on the road to have its rear springing acting in entire unison with the front springing is the A.B.C., but opinions of riders vary very considerably as to the merits and demerits of this spring frame. As a veteran rider I look forward to the ideal springing, but so far it does not seem to have matured, and so long as I am able to do 200 miles comfortably in the day on my Triumph fitted with a Brooks B170 saddle with light springs to suit my weight, I am not worrying about spring frames.

London. ENTENTE.

LED HORSES ON THE ROAD.

Sir,—May I venture, as a very old cyclist, to seek the publicity of your columns in an endeavour to put an end to one of the gravest dangers on our roads, viz., the led horse on its off side. This danger is increased tenfold after dark, as the law still allows a horse to be ridden or led without showing a light at all. Serious accidents continue to happen week after week, and yet this absurd old law is allowed to hold good.

The remedy is simple. Every horse should be led by the off side of its head, so that it may take its proper place in the traffic, and every horse, whether led or ridden, ought to carry regulation lights. CONVALESCENT.

Cockermouth.

ROAD CONDITIONS IN SCOTLAND.

Sir,—May I ask some space in your columns for a gentle counter-attack on your Scottish Six Days representative?

As a Scot, his opening paragraph has stung me to the quick.

I spent all last winter in London, and frequently had occasion to traverse the Uxbridge and Barnet roads. The Falkirk-Stirling road, notoriously the worst in the Lowlands, is a very poor second to the former, and the latter had potholes which could nearly accommodate the whole of Stirling. Memories of Croydon, too, still keep me awake o' nights. 75% of my kinks in my long-suffering rims came from that favoured clime, and although a rider of several years' experience, I had more falls in that five months than I have had in the rest of my life.

Such surfaces may not be tolerated in remote parts of England, but appear to be accepted without comment round the Metropolis.

Please do not designate me a mad Scotsman trying to prove black white. I admit the blackness where alleged, but desire to point out that it may be found South as well as North of the Tweed. A.H.S.

Edinburgh.

Sir,—Your otherwise excellent report of the Scottish Six Days Trials was, in my opinion, marred by an unjustified attack upon the present condition of the roads in the northern kingdom. To designate the average road in Scotland as appalling and impliedly dangerous, is to propound an unwarrantable proposition which is calculated to create an erroneous impression in the minds of your English readers, and might deter many from experiencing the joys of touring in Scotland.

Evidently your trials reporter has been too prone to generalise from the condition of particular districts which lie, as, for instance, Jeantown and Glendarnel, far from the beaten track. In such districts, apart from trials, motor traffic is few and far between.

It must be borne in mind that the policy of the organising club has always been to lay the six days' route over mountainous, and consequently comparatively uninhabited, parts, and to provide a difficult route which will eliminate the unwary without having to rely on split second methods.

It would be idle, of course, to deny that there are *some* pretty bad roads in Scotland, but the prolonged drought, and the abnormal road traffic during the recent strike, should be considered before making such a sweeping condemnation.

As it is, the roads in Scotland are already better on the average than they were before the war.

Despite the odium attached to comparisons, I would mention, as a parting shot, Lord Montagu of Beaulieu's recent letter to *The Times*, in which he hails the main approaches to Edinburgh as the finest in the British Isles.

Edinburgh. WRATHFUL SCOT.

SUMMARY OF CORRESPONDENCE.

Several enlogistic letters upon the running of various machines have reached us this week. No fewer than three Matchless owners endorse the previous letter of "Satisfied," and in each case give instances of long journeys covered at a high average speed without discomfort. Two lightweight owners, of a 1915 2½ h.p. Ivy and a Velocette respectively, also claim exceptionally satisfactory performances for their mounts, the Velocette rider, incidentally, asking if the term "baby" as applied to small capacity two-strokes is not somewhat of a misnomer.

"FH 1926" recommends "Punkho" as a satisfactory puncture-preventing medium.

Signing himself "Badly Treated," a reader complains of lack of attention to a small spares order by the London depot of a well-known firm.

If the motor cyclist who received assistance from a G.N. at Ferrybridge on the 12th or 13th ult. will communicate with the D.R. Engineering Co., Ltd., Hospital Hill, Dunfermline, he will receive the inflator which was left in the car.

Letters on the subject of mounts suitable for disabled drivers continue to reach us. Mr. F. O. Edney, a disabled (left leg) rider of a 4¼ h.p. Humber sidecar, thinks that "many disabled men would take up the sport if they knew how easily modern machines are handled." "H.V.H.," a one-armed rider, expresses great satisfaction with his Levis.

Over the signature of "Public School Boy," a correspondent states the case for the formation of a Public Schools M.C.C. exclusively for boys still at school.

The Autocraft Board appeals to motor cyclists to give greater attention to correct compliance with registration and driving licence regulations. Police raids in main roads around London recently have revealed an extraordinary number of cases of carelessness in this respect.

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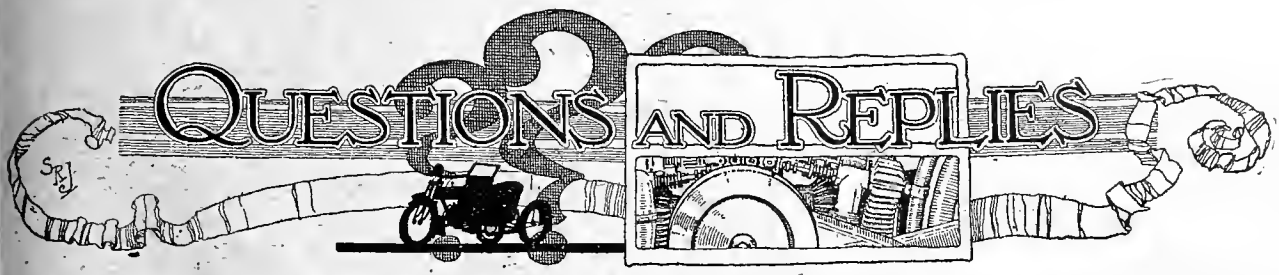


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

KICK STARTING.

When using the kick-start of my 2¾ h.p. J.A.P.-engined lightweight, I find great trouble in dropping the exhaust valve at the right moment, and the result is a nasty kick back. Could you tell me the cause and remedy for this?—A.E.R.

Probably the ignition is slightly too far advanced. You should also drop the exhaust valve just before the kick-starter pedal reaches the end of its travel.

LIGHT SIDECAR WORK.

Could you tell me if a sidecar weighing 90 lb. is too heavy for a 2¾ h.p. two-stroke used in the Midlands?—H.G.

Provided no severe hill-climbing is attempted, and that the load carried is not excessive, you should obtain reasonable satisfaction from your machine if the sidecar fitted does not exceed 90 lb. in weight. This is assuming, of course, that the machine is a two-speed model.

RIGHT IN STOLEN MACHINE.

Nearly twelve months ago we purchased a second-hand motor cycle, and sold it soon afterwards. It has recently come to our knowledge, through the police, that the machine was a stolen one, and it had to be given up to the owner, the result to us being that our customer claims the return of the full amount he paid for it. We have learnt that our customer, after having had the machine some months, sold it for less than he gave us for it. What we wish to know is to what extent we are legally responsible to our customer—whether for the amount he paid or for the amount he resold it. Having bought the machine when trade was good, after using it for some time, and reselling it when trade was quiet, should the loss of the difference be borne by our customer or not,—M.N.

If the machine were a stolen one, the right in it remains with the person from whom it was originally taken; therefore, the person who bought it from you might demand that the money he paid be returned to him, also you might make the same demand from the person who sold you the machine, and so on. The question of the fall in value of the machine need not concern you at all, since legally, if the machine were stolen, neither the person who bought it from you, nor you yourselves, have any right to it.

CONVERTING ACETYLENE LAMPS TO ELECTRIC.

(1.) What voltage and amperage or candle power of bulbs shall I require for a moderately powerful head lamp, a small sidecar lamp, and a tail lamp (preferably flash lamp type of bulbs for the two latter)? (2.) What voltage and amperage of accumulator shall I require, how long will it last on a charge, and will an unspillable one do? (3.) Can I obtain clips to fasten the bulbs to the existing gas burners? (4.) Do you consider accumulator electric lighting satisfactory?—E.K.

(1.) Four volt bulbs should be sufficient if you do not require an extremely powerful light. Use a four volt two amp. in the head lamp, and four volt half amp. in side and tail lamps. (2.) A four volt forty amp. (ignition) accumulator will run these about six hours. (3.) Most manufacturers of electric lighting accessories supply conversion sets for acetylene lamps. (4.) Accumulator lighting is perfectly satisfactory, providing you keep the batteries well charged; even if the lights are not used the batteries should be charged every six weeks.

ADAPTING A CINEMA DYNAMO.

(1.) I have a small dynamo or generator—I am not sufficiently versed in electricity to know the difference—off a small bioscope. It was geared off the pulley worked from the film wheel (by hand), and I want to know if I could run it off the flywheel of my 4 h.p. Douglas to supply electric light. The voltage is about six. (2.) Should I have to run accumulators? The pulley on the dynamo (?) is of the "slipping variety."—A.J.W.

(1.) The terms "dynamo" and "generator" are synonymous. You might be able to use the dynamo for motor cycle lighting, but it is doubtful whether it will stand up to the variations to which a motor cycle lighting generator is subjected. (2.) As you do not state whether the current generated is continuous or alternating, we do not know whether you can use it in conjunction with accumulators or not. Presumably the slipping pulley is to prevent the dynamo being driven above the speed required for its normal output; but on a motor cycle the device might not work satisfactorily for any length of time.

Taking left-hand bends at speed. S. King (4½ Humber sidecar) making a spectacular climb of Northend Hill, near Nightcote, in the recent Humber trial.

KNOCK IN A NEARLY NEW ENGINE.

A 1920 2¼ h.p. two-stroke engine which was delivered two months ago, lately developed an amazing knock when climbing hills, and I have to change gear on the slightest gradient. I think it unlikely any part of the engine is worn as the machine is almost new.—K.L.S.

From the details you supply it is impossible to state definitely the cause of the knock which has developed, but it may be due to excessive carbon deposit, or to one of the piston rings becoming burnt in its groove. It would be as well to remove the cylinder in order to look into these matters and also to find out if the big end has slackened. If this, or any other, mechanical defect has arisen, it would be well to return the machine to the makers for attention.

SPARKING AT CONTACT BREAKER.

A new motor cycle, fitted with Villiers flywheel magneto, which I bought in June has given trouble since I took delivery. I find that when the engine is running a spark (more or less continuous) occurs between the platinum points. Naturally, the points soon burn, and have to be refaced. When refitting new points, I made the gap of points $\frac{16}{1000}$in., and gap of plug electrodes $\frac{15}{1000}$in. This cured sparking at magneto points for the time being, but a spark again appeared at the platinum points.—D.P.E.

The trouble is apparently due to defective action of the condenser; it is probably short-circuited either internally or externally. Such symptoms are not usual with this magneto, which normally is particularly free from contact breaker sparking. A new condenser may be fitted quite easily, as it is a detachable component. The contact points of any magneto in good order should not require renewal until the machine has completed at least 10,000 miles.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," 19, Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"W.J.S." (Deptford, S.E.)—Auto-wheel fitted into an ordinary cycle frame.

"A.K.G." (Blundellsands). — Scott Sociable. Reliability, comfort, starting, consumption, and ease of handling.

"A.F.J." (Lee, S.E.).—Sports Sunbeam. Maximum speed, hill-climbing and general reliability.

"G.F." (Rotherham).—Degory carburetter on Scott. Consumption and flexibility.

"C.B." (Warrington).—Grado gear on early model Triumph; also most suitable belt for Rudge-Multi.

"G.P." (Charlwood).—A.V. monocar. Steering, ease of chain and gear adjustment, reliability.

"G.H.G." (Manilla).—Indian Scout. Particulars required of the electrically equipped model, and data as regards running and performance generally.

Important Dates.

Mon., Aug. 1st, to Sat., Aug. 6th—International Six Days Trial in Switzerland.

Sat., Aug. 6th—B.M.C.R.C. Open Brooklands Meeting.

Sat., Aug. 6th—North Wales M.C.C. Open Reliability Trial.

Fri., Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs., Aug. 25th — Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd—A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—North-Western Centre A.C.U. Open Speed Trials.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Mon., Nov. 28th, to Sat., Dec 3rd—The Olympia Motor Cycle Show.

RECOMMENDED ROUTES.

MELTON MOWBRAY TO ILFRACOMBE.—W.H.T.

Melton Mowbray, Syston, Leicester, Lutterworth, Rugby, Blue Boar Corner, Bubbenhall, Leamington, Warwick, Stratford-on-Avon, Bidford, Abbots Salford, Harvington, Evesham, Bengeworth Bridge, (edge of) Sedgeberrow, (edge of) Beckford, Ashchurch, Tewkesbury, Gloucester, Bristol, Sidcot, Axbridge, Cheddar, Highbridge, Pawlett, Bridgwater, Cannington, Nether Stowey, Williton, Watchet, Washford, Carhampton, Dunster, Minehead, Porlock, Lynmouth, Lynton, Parracombe, Blackmore Gate, Combe Martin, Ilfracombe. Approximately 242 miles.

WOOD GREEN TO WORCESTER.—W.K.

Wood Green, Barnet, St. Albans, St. Michael's Church, Leverstock Green, Boxmoor Church, Berkhampsted, Northchurch, Tring, Aston Clinton, Aylesbury, Hartwell, Stone, Thame, Wheatley, Oxford, Woodstock, (edge of) Enstone, Chipping Norton, (edge of) Little Compton, Moreton-in-Marsh, Bourton-on-the-Hill, Blockley, Broad Campden, Chipping Campden, Weston-sub-Edge, Willersey, Broadway, Evesham, Pershore, Defford, Baughton, Upton-on-Severn, Hanley Castle, Great Malvern, Powick, Worcester. Approximately 136½ miles.

PECKHAM TO BRISTOL.—J.G.

Peckham, Camberwell New Road, Kennington Oval, Harleyford Road, Upper Kennington Lane, Vauxhall Bridge Road, Victoria, Grosvenor Gardens, Grosvenor Place, Hyde Park Corner, Knightsbridge, Kensington High Street, Kensington Road, Hammersmith Road, Chiswick High Road, Kew Bridge Station, Brentford, Hounslow, Colnbrook, Slough, Maidenhead, Littlewich, Twyford, Reading, Theale, Newbury, Hungerford, Marlborough, Beckhampton, Calne, Chippenham, Pickwick, Box, Bath, Keynsham, Bristol. Approximately 123 miles.

SPARKLETS

Helping the Petrol.

There are still riders who believe in the possibility of increasing the power obtainable from petrol; for instance, we learn that L. Mitchell, the Norton rider, who was first in the 600 c.c. four miles race, second in the 600 c.c. twenty miles race, and third in the twenty miles 1,000 c.c. event at the recent Saltburn speed trials, used Spots in his petrol.

In the Air.

British magnetos were primarily developed for aircraft work, and have performed with unfailing success in the upper elements as well as on sea and land. The record of success is being continued, for the first three places in last month's Aerial Derby were gained by machines equipped with B.T.H. magnetos. In the same race, in both 1919 and 1920, these magnetos were used on the first and second machines.

In the Scottish Trials.

As a rider substituted at the last moment in the Scottish Six Days Trials A. Symes piloted one of the Martinsyde sidecar outfits with success, being awarded a gold medal. Unfortunately Symes's name was announced as E. Simms, and so appeared in our report.

A Belated Amendment.

The award of the Sangster Cup in the Birmingham M.C.C.'s reliability trial at Whitsuntide has been changed from F. Short (5-6 James sc.) to F. W. Giles (A.J.S. sc.), in consequence of a re-checking of the results.

Front Forks and Brakes.

The makers of the now well known Webb internal-expanding front brake have acquired the sole licence to manufacture the Maplestone spring forks. Such an amalgamation of interests will be beneficial to users of both components, as the forks will be specially made to suit the application of the Webb brake.

Price Reductions.

In consequence of the anticipated reduction in wages and lower costs of raw material, Chater-Lea, Ltd., have made reductions as follows: Lightweight model, with Chater-Lea engine and two-speed gear box, from £70 to £63; lightweight model, with Villiers Mark III engine and Chater-Lea two-speed gear box, from £65 to £58; while the prices of motor cycle and cycle car components parts have been reduced by 15%.

The price of the 8 h.p. Royal Ruby sidecar outfit, with patent adjustable spring frame, and equipped with Eastint windscreen, spare wheel, and complete tool kit, has likewise been reduced to £185; while that of the 3 h.p. spring frame solo machine, with three-speed gear, clutch, and kick-starter, has been reduced to 95 guineas.

Current Chat

Times to Light Lamps

Aug.	4th	... ...	9.12 p.m.
,,	6th	... ...	9.9 ,,
,,	8th	... ...	9.7 ,,
,,	10th	... ...	9.2 ,,

Special Features.

TOURING WITH A LIGHTWEIGHT SIDECAR.
INTERNATIONAL SIX DAYS TRIAL.
PASSENGER MACHINE TOPICS.

urjoh Engines!

Phonetic spelling would undoubtedly be seful on occasion. The peculiar name in his paragraph heading appears in the dvertisement columns of a daily paper, nd we assume it refers to Peugeot.

ally of Bradbury Riders.

It is proposed to hold a rally of Bradbury riders during August, at some popular rendezvous near London. Mr. Austin F. Godwin, The Homestead, Belmont Road, Twickenham, London, will be pleased to hear from riders who would like to take part in it.

Vell-supported North Wales Trial.

At the time of going to press nearly 120 entries had been received for next Saturday's open trial of the North Wales M.C.C., but it is expected that there will be about 130 starters. There are twenty teams, including one of three Powell machines. The start and finish will be at Denbigh, and the route, of approximately 150 miles, will include some of the most beautiful scenery in North Wales.

Faded Licences.

Licences that have become illegible owing to exposure to the sun, but through no fault of the licence holder, will in future be replaced free of charge. Should the fault be due to a defective holder, however, the usual fee of 5s. will be charged. Licensees are warned by the Ministry of Transport that faded cards should on no account be "touched up."

The A.A. and M.U. Annual General Meeting.

An improved road service and a great increase in the membership. These were two chief points of Sir W. Joynson-Hicks's speech at the general meeting of the Automobile Association and Motor Union held at the Savoy Hotel, London, on Wednesday, July 27th.

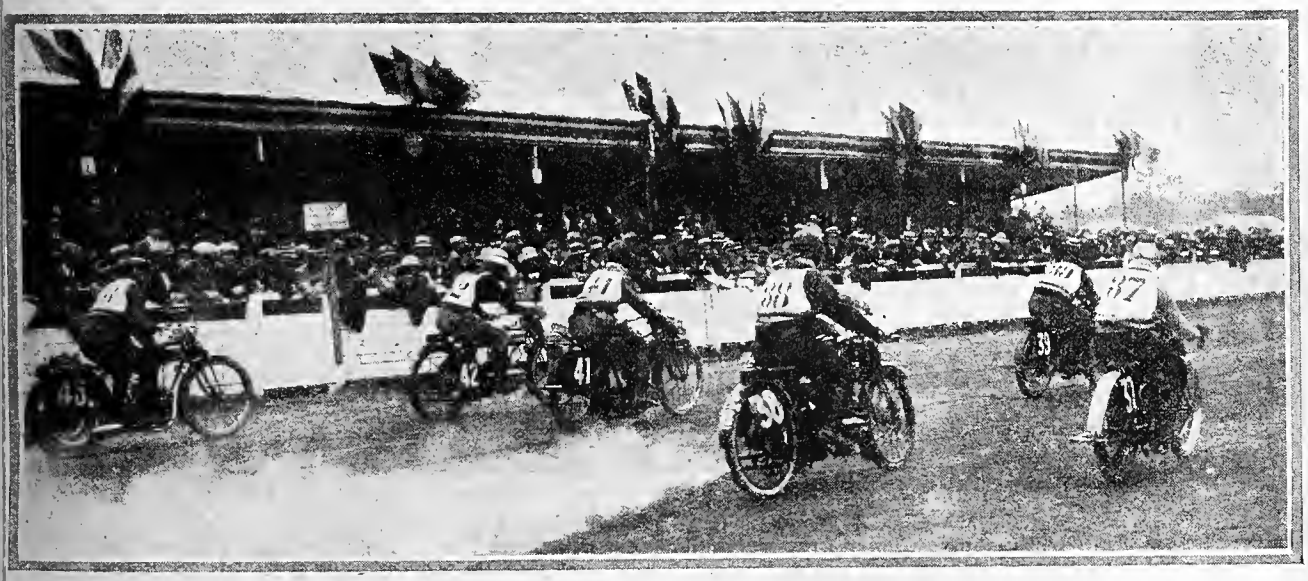
Signposting of roads had now been taken over by the Ministry of Transport. It was the duty of the Association, however, to see that the existing high standard of signs was maintained. The work of the route section had been greatly increased, and they were now supplying motorists with over 91,000 routes per annum. A balance sheet showing the sum of over £99,529 carried to the reserve funds was presented by Mr. Charles McWhirter, who pointed out the excellent financial position in which the Association now stood.

Important Trial in Cumberland.

Established last year as an event of importance, the second annual open reliability trial of the Cumberland County M.C.C. will be held on Saturday, the 13th inst. The award list includes the Alan trophy (value sixty-five guineas) and three other silver cups. Mr. J. J. A. Dias, 24, Bank Street, Carlisle, is trials secretary.

British Power Alcohol.

Finance Bill amendments include a new clause dealing with power alcohol, which increases the existing allowance of 3d. per proof gallon on British distilled power alcohol to 5d., and removes the net surcharge of 2d. per gallon on power alcohol imported from British Colonies. This means that Empire-produced power alcohol is now not only free from duty, but has a preference amounting to more than 2s. a gallon over foreign spirit.



The start of the 350 c.c. class in the Grand Prix race. Paul Meunier, riding a twin-cylinder Alcyon (No. 37), the winner of this class, covered the distance of 193.07 miles in 3h. 55m. (49.4 m.p.h.).

In the U.S.A.

In America, it is said, the unemployed are using their private cars to earn themselves a living. We understand that this class of motorist no longer employs a chauffeur!

Disregarded Limit in Lincolnshire.

Complaints have been received by the Lincolnshire police of riders passing through the ten-mile limit in the village of Colsterworth, on the Great North Road, midway between Grantham and Stamford, at an excessive speed. The Chief Constable, in corresponding with the A.C.U. on the matter, gives the assurance that he is very undesirous of establishing anything in the nature of a police trap, but that unless the limit at Colsterworth is observed he will be compelled to take action in the matter.

Police Activity in Essex.

On Sunday evenings a police trap is usually being "worked" in Ingatestone on the London-Colchester road, six miles west of Chelmsford.

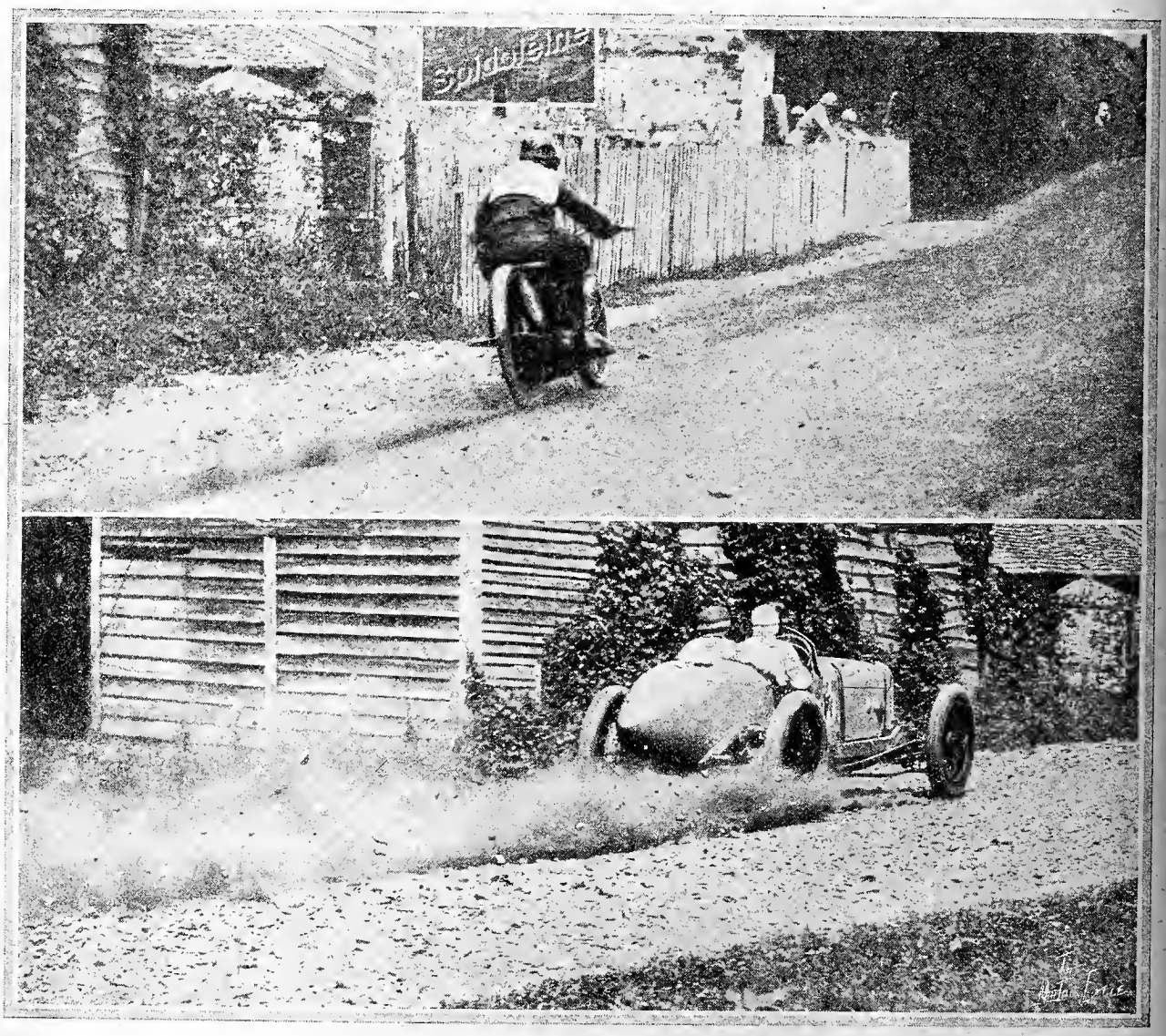
Yet another trap is reported in the same county. This is in the High Road, Woodford Wells, where motor cyclists are stopped to find out if their machines are properly equipped as regards brakes, etc.

Belgian Grand Prix Race.

The most important speed event in Belgium this year is the Grand Prix, organised by the Belgian Motor Cycliste' Federation. Twenty-one entries have been received, of whom the following are of British nationality: G. W. Walker (Norton), H. Le Vack Indian), and F. W. Dixon (Indian). British machines are represented by the Rudge, Triumph, James, B.S.A., and Sun makes. The race takes place on a course near Malmédy in the beautiful Ardennes district on August 12th.

Handbook of the F.I.C.M.

There has just been published the annual handbook (1921) of the *Fédération Internationale des Clubs Motocyclistes*. It contains much useful information as to the aims and scope of the Federation, and also its general and international competition rules, which have already been dealt with at some length in *The Motor Cycle*. Appended there is a complete table of world's records as approved at the Brussels conference of the Federation in January. The handbook, price 2s. 6d., may be obtained from the general secretary, F.I.C.M., 83, Pall Mall, London, S.W.1.



EFFECT OF RACING SPEEDS ON ROAD SURFACES.

The top illustration shows the state of the road during the motor cycle Grand Prix race. Although bad in certain places, it was not to be compared with the course during the car race which took place the next day. As competitors passed along the cut-up surface, showers of stones were flung in all directions. The lower illustration conveys a good idea of what the 100 m.p.h. car drivers had to contend with. (Copyright photograph from *The Autocar*.)

THE MOTOR CYCLE IN HIGH ALTITUDES.

International Six Days Trial in the Swiss Alps. Climbs of 8,000 feet.

ON Monday morning last there started one of the most interesting and instructive reliability trials which has ever been held, namely, the International Six Days event, organised by the Swiss Motor Cycle Union for the International Federation of Motor Cycle Clubs. Entries are composed of private individuals, and international teams competing for the trophy presented by the British Manufacturers' Union, and individual trade entries from Great Britain, France, and Switzerland.

Representative British Entry.

Unfortunately, the support for this competition has not been so good as was expected, but the number of entries may be accounted as a fair one, and the British entries, though few in number, are representative.

As far back as 1913, an international team trial was held—on that occasion in England, and in conjunction with the English Six Days Trials. We say *team* trial advisedly, for not until the following year were true international six days trials organised—*i.e.*, trials which attracted individual entries from various countries as well as teams for the 200 guinea International Trophy.

The 1914 event was to have been held in France, with Grenoble as a centre, but owing to the outbreak of war the event was cancelled. Many of the British competitors had a very exciting time, being stranded in France during the first stirring days of mobilisation. Several had to abandon their machines, which were for ever lost to them.

Therefore, the first trial on this year's lines was held last year, Grenoble again being selected as the starting point.

Summary of Past Results.

In 1913 two teams, English and French, competed for the Trophy in the A.C.U. Six Days in the Lake District. The English team, consisting of W. B. Gibb (2¾ Douglas), W. B. Little (3½ Premier), and C. R. Collier (8 Matchless sc.), won easily.

There were four team entries for the cancelled 1914 event: Great Britain, France, Switzerland, and Germany.

Last year's event, on the other hand, only attracted two international teams, France and Switzerland, and a total of but fifteen starters for the trial. The Swiss team, all on Motosacoches, made the only non-stop performance, and thus secured the Trophy, and, incidentally, the allocation of venue and routes for the following year's (1921) event, which is now taking place.

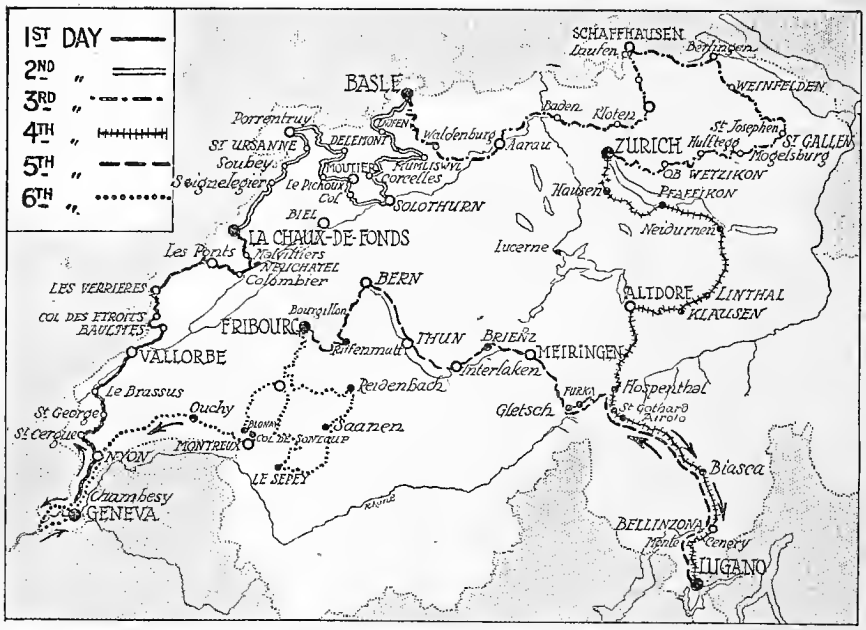
In the course of this year's competition the whole of that part of Switzerland which is open to motor traffic will be covered, and the principal mountain passes will be surmounted.

The First Stage.

The first day's run is from the starting point at Geneva to Chaux-de-Fonds. The first hill-climb is some fourteen miles from the start, and rises to a height of 3,500 feet, giving an excellent view of the Alps and looking right into France, where Mont Blanc can be clearly seen if the weather is fine. A little farther on another climb is encountered, where the gradient reaches 1 in 6½ and an altitude of 4,950 feet is reached. The road then descends to the luncheon stop,

A STUDY IN HAIRPIN BENDS.

A scene on the fifth day of the International Six Days Trial, which started on Monday, August 1st. On the right the route traverses the Furka Pass (7,500 ft.), descending by degrees in order to cross the Rhone at Gletzch (4,300 ft.); it immediately rises over the Grimsel Pass (6,900 ft.) by a series of hairpins. In the centre of the picture is seen the Rhone glacier.



The course of the International Six Days Trials, which encircles almost the whole of Switzerland. The total distance is 1,081½ miles.

Vallorbe, after which other passes of the Jura are traversed over heights from which excellent views can be obtained, extending from the French frontier to the Austrian Tyrol. The total journey is 76 miles, and terminates at the most famous watch-making city in the world.

The Second Day's Run.

The next day's run from Chaux-de-Fonds to Basle marks the entry into the German-speaking part of Switzerland, but again includes beautiful scenery, and, of course, necessitates the climbing of more of the Jura passes.

Basle to Zurich.

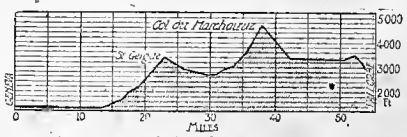
The third day's run from Basle to Zurich runs along the Rhine, traversing more of the Jura country with the usual ascents and descents, and finishes the first stage at Laufen, close to Schaffhausen, where are the famous falls of the Rhine, and though the road is undulating there are apparently no serious ascents until the end of the journey, at Zurich, is reached.

Over 8,000 Feet High.

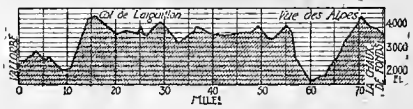
We now come to the fourth stage, Zurich to Lugano, quite the most interesting day's run, involving a climb to 6,440 feet over the Klausen Pass, the road rising about 5,000 feet in fourteen miles, followed shortly afterwards by an even higher climb to nearly 7,000 feet, with a descent to 700 feet above sea level in forty miles to Lugano.

On the fifth stage of the trial, 8,030 feet is reached (Col de la Furka) by the wonderful serpentine road illustrated on the preceding page. Continental engineers, however, differ from the road makers of this country, insomuch that the hairpins are made level—the easiest instead of the most difficult portions of the hills. Here the competitors will see the Glacier du Rhône and a view which alone is well worth the journey.

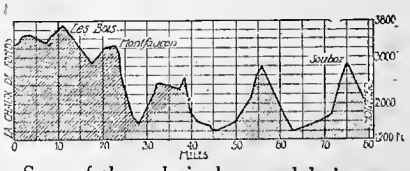
SOME OF THE GRADIENTS TO BE ENCOUNTERED.



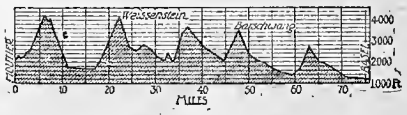
First part of the first day's journey.



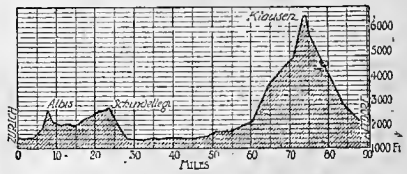
Second part of the first day's run.



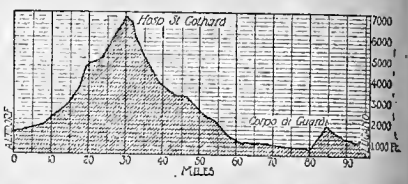
Some of the peaks in the second day's run.



A series of climbs in the afternoon of the second day.

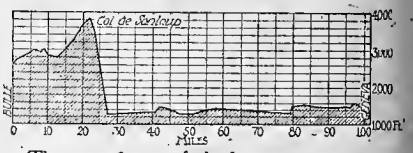


A remarkable contour of the fourth morning's route.



In the afternoon of the fourth day the famous St. Gothard Pass is climbed.

The contour of the last day's route suggests some difficult steeplechasing, and at two points the height of 5,000 feet is reached, while in one section the competitors will descend from 3,820 feet to 1,240 feet in five miles, to the shore of Lake Geneva, with a comparatively level run to the finish at Geneva.



The second part of the last day's journey.

Below we give a list of the machines entered in the different categories, from which it will be seen that many well-known British competitors are riding, while quite a number of British motor cycles are in the trial in the hands of Continental riders.

The British team competing for the Manufacturers' Trophy is composed of Leslie Guy (3¾ Scott), Hugh Gibson (5-6 Raleigh sc.), and J. A. Newman (3½ Sunbeam).

MOTOR BICYCLES (250 c.c.).
Morand (Condor).
Wuillemin (Condor).
Clerq (Condor).

MOTOR BICYCLES (350 c.c.).
Eric Williams (A.J.S.).
Bally (Hobart).
A. Demont (New Imperial).
Magnin (New Imperial).
Jean Woltenlagel (Condor).
Three Viratelles (drivers not specified).

MOTOR BICYCLES (500 c.c.).
Dawson (P. and M.).
Guiguet (Motosacoche).
Robert (Motosacoche).
J. G. Neher (Motosacoche).
Pictet (Norton).
Staub (Norton).
Tschudy (Norton).
F. P. Dickson (Brough).
E. H. Lees (Sunbeam).
J. A. Newman (3½ Sunbeam).

MOTOR BICYCLES (750 c.c.).
Egger (Triumph).
Cossetto (Douglas).
Huzli (Douglas).
Schlée (Douglas).
Gafner (Indian).
Wiedmer (Indian).
Nussle (Moto-Rêve).
Alfter (Scott).
—— (Scott).
—— (Scott).
Leslie Guy (Scott).
Haseler (Triumph).
Zysset (Triumph).
Bolthauser (Triumph).

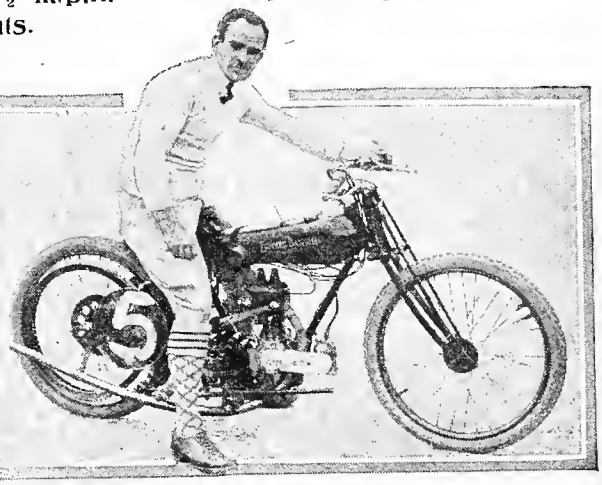
MOTOR BICYCLES (1,000 c.c.).
Bersetti (Motosacoche).
Rothenbach (Motosacoche).

SIDECARS UP TO 1,000 c.c.
H. Dinckel (Condor).
Henry (Indian).
Moebus (Indian).
Verlet (Janoir).
Chappaz (Janoir).
Penet (Janoir).
Hugh Gibson (Raleigh sc.).
Gex (Motosacoche).
Bonvin (Motosacoche).
Rolland (Motosacoche).
H. R. Davies (6 A.J.S. sc.)

RACING AT BROOKLANDS.

H. R. Davies on his 2¾ h.p. A.J.S. beats the Five Mile Record at the Fourth B.M.C.R.C. Members' Meeting, Averaging 74½ m.p.h. Good Speeds by 250 c.c. Lightweights.

S. M. Greening (Francis-Barnett), who won the lap scratch race for solo machines not exceeding 280 c.c. at a speed of 56.5 m.p.h.



R. N. Stewart, winner of the handicap for machines between 350 and 1,000 c.c. on a Trump-Jap, averaging 58.73 m.p.h.

ANOTHER laurel has been added to the wreath of victories now standing to the credit of the 349 c.c. A.J.S. H. R. Davies, in the three lap scratch race at the B.M.C.R.C. members' meeting at Brooklands on Wednesday last week, raised the speed of the five mile record in Class B to 74.50 m.p.h.—an additional 4.68 m.p.h. over Kaye Don's previous speed; the time for the five miles was 4m. 1.6s. Eight races were run off, the first of which was secured by C. F. Temple (7-9 Harley-Davidson), who again put up a fine speed. The distance was three laps, and limited the starters to 1,000 c.c. The winner's speed was 79.67 m.p.h. F. C. Townshend (8 Zenith) and G. Packman (8 Sunbeam-Jap) finished second and third respectively.

A victory for the Massey-Arran was obtained by Kaye Don in the second race for 350 c.c. solo machines. His speed was 69.96 m.p.h., while H. R. Davies (2¾ A.J.S.) did not give him much rope. Third place fell to Tudor Thompson (2¾ Douglas).

Fast Times in Scratch Event.

Victor Horsman on a Norton led the field in the three lap scratch race for 500 c.c. machines, and covered the distance at an average speed of 75.14 m.p.h. C. G. Pullin (3½ Douglas) and F. B. Halford (on a 3½ h.p. Ricardo Triumph) followed in that order.

A large field started in the three lap handicap for machines between 350 c.c. and 1,000 c.c., and, curiously enough, a long handicap man, R. N. Stewart (4 Trump-Jap) romped home at 58.73 m.p.h.

Reyersbach, a newcomer, had bad luck on his Norton, which caught fire *en route*.

THREE-LAP SCRATCH RACE (Solo, up to 1,000 c.c.).—1, C. F. Temple (7-9 Harley-Davidson); 2, F. C. Townshend (8 Zenith); 3, G. Packman (8 Sunbeam-Jap). Winner's speed, 79.67 m.p.h.

THREE-LAP HANDICAP (Solo, up to 350 c.c.).—1, Kaye Don (2¾ Massey-Arran), 12s. start; 2, H. R. Davies (2¾ A.J.S.), scr.; 3, Tudor Thompson (2¾ Douglas), 24s. Winner's speed, 69.96 m.p.h.

THREE-LAP SCRATCH RACE (Solo, up to 500 c.c.).—1, V. Horsman (3½ Norton); 2, C. G. Pullin (3½ Douglas); 3, F. B. Halford (3½ Triumph-Ricardo). Winner's speed, 75.14 m.p.h.

THREE-LAP HANDICAP (Solo, between 350 c.c. and 1,000 c.c.).—1, R. N. Stewart (4 Trump-Jap), 3m. 3s. start; 2, E. Remington (4 Blackburne), 27s.; 3, W. L. Gard (3½ Norton), 2m. Winner's speed, 58.73 m.p.h.

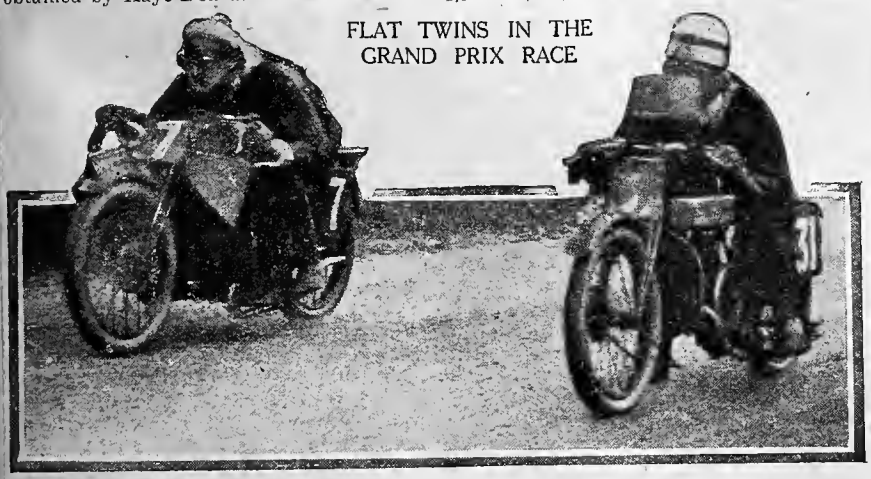
THREE-LAP SCRATCH RACE (Solo, up to 350 c.c.).—1, H. R. Davies (2¾ A.J.S.); 2, Kaye Don (2¾ Massey-Arran); 3, Tudor Thompson (2¾ Douglas). Winner's speed, 73.45 m.p.h.

THREE-LAP HANDICAP (Sidecars, up to 1,000 c.c.; cycle cars, up to 1,100 c.c.).—1, W. D. Marchant (8 Zenith sc.); 2, O. de Lissa (8 Motosacoche sc.); 3, R. Dequin (8 Zenith-M.A.G. sc.). Winner's speed, 70.30 m.p.h.

THREE-LAP SCRATCH RACE (Solo, up to 280 c.c.).—1, S. M. Greening (2¼ Francis-Barnett-Jap); 2, J. V. Prestwich (2¼ Jap); 3, C. Fairweather (2¼ Blackburne). Winner's speed, 56.5 m.p.h.

THREE-LAP SCRATCH RACE (Sidecars, up to 1,000 c.c.).—1, H. F. Marchant (8 Zenith sc.); 2, S. E. Longman (7-9 Harley-Davidson sc.); 3, O. de Lissa (8 Motosacoche-M.A.G.). Winner's speed, 69.78 m.p.h.

FLAT TWINS IN THE GRAND PRIX RACE



Naas, the French rider of an A.B.C. (on left), riding neck and neck with F. W. Dixon (Douglas). Naas assumes a fine riding attitude, but fell out between the fourth and sixth laps. Dixon finished fourth in the 500 c.c. class.

A SHORT CUT TO EXPERIENCE.

THE phrase above describes in a nutshell the latest edition of "Hints and Tips for Motor Cyclists" *(2s. net, Iliffe and Sons, Ltd., 20, Tudor Street, London, E.C.4)*, and it admirably expresses the qualities of this useful handbook of wrinkles, which has now reappeared in its eighth edition.

An extensive revision of the matter has taken place, and it has been thoroughly brought up-to-date, but, in view of the fact that thousands of motor cyclists follow the sport on more or less obsolete machines, references to older models have been by no means entirely deleted.

From the selection and purchase to the final selling of a machine is the field covered in the 400 odd paragraphs, and legal requirements, driving, maintenance, repair, lighting, tyres, accessories, and touring are all touched upon.

A.C.U. SIX DAYS TRIALS.

A Section of Manufacturers Dissatisfied with the Regulations. Fear of Sparse Entry.

SO far about thirty entries have been received for the annual Six Days Trials of the A.C.U., August 29th to September 3rd next. Information from various sources would suggest that manufacturers will not give the trial the support usually accorded this important annual event.

It appears that a large number of prominent manufacturers are dissatisfied with the regulations, and make no secret of the fact. Especially do they object to those points—extraneous to reliability—which depend entirely upon the personal opinion of A.C.U. officials.

Outstanding among these is the proposed marking for silence, which this year will be effected by ear alone. It will be remembered that in previous A.C.U. Trials competitors have objected to the use of the audiometer, and particularly the marks lost under the heading of silence compared to other features considered of far more importance. On the other hand, one regrets that any test of silence would not be popular among a certain section of the trade.

Points Criticised.

The fuel and oil consumption test is deemed unfair to lightweight machines; and, as much as we desire to see every encouragement extended to matters of economy, one is inclined to agree with the view expressed that the A.C.U. Competitions Committee has not fully taken into consideration the conditions under which the competing machines will be running. For example, the 250 c.c. lightweights are expected to average 100 m.p.g. of petrol and 1,800 m.p.g. of oil, and one mark will be deducted for every 2% below these figures.

Fifty marks are credited at the commencement of the trial for each of these tests, and a small two-stroke which may climb every hill, arrive on time at every check, gain full marks on all other counts, but which only gives 89 m.p.g. of petrol, would lose its gold medal. That is but one bone of contention.

Considering the nature of the course—although no freak hills are included, there are over twenty hills with 1 in 7 gradients included.

Oil consumption, too, is regarded as being too ambitious. Again, to quote the 250 c.c. lightweights, 1,800 m.p.g. is probably the oil consumption of the average rider who uses his machine for ordinary pottering about, but to average legal limit over 700 odd miles, including the worst hills in the West of England, in addition to twenty-five laps of Brooklands at speed on less than half a gallon of oil, is regarded as grossly unfair.

Another test which is much criticised by traders interested in this essentially trade trial is the final examination. Marks will be deducted *at the discretion of the judges* if any vital part of the engine, transmission, or frame be found broken, and if any undue wear or tear is discovered in the steering, valve tappets, cycle parts, controls, and engine bearings.

It is the remark "at the discretion of the judges" which forms the definite stumbling block, since it may conceivably mean so much when awards are under contemplation. For this the A.C.U. has only itself to blame, for in past events decisions in this connection have been far from fair, *and exhibited a desire to dictate design*, which, it is claimed, not without reason, is outside the scope of the A.C.U., which is a body to *test* rather than *design* machines.

Altogether there are eight separate and distinct tests in the trials.

(1.) General reliability (running to schedule) (100).
(2.) Hill-climbing (100).
(3.) Silence (20).
(4.) Brakes (25).
(5.) Fuel consumption (50).
(6.) Oil consumption (50).
(7.) Speed at Brooklands (100).
(8.) Final examination (100).

The number of marks credited at the commencement of the trial is shown in parentheses.

In order to obtain a gold medal a competitor may not lose more than 10% of marks on any one test. Thus, the loss of three marks in the silence test *alone* is sufficient to place a competitor in the silver medal class; this is considered a hopeless handicap by manufacturers of single-cylinder machines in particular.

A. Bennett and the 3½ h.p. Sunbeam, on which he won the Grand Prix in the record time of 3h. 13m. 24⅗s. (=59·9 m.p.h.). This retrieves somewhat his hard luck in the T.T., when he finished fourth.

It is to be regretted that these facts will be the cause of many manufacturers abstaining from entering, as the A.C.U. Six Days Trials of the past have been productive of much good, and have indeed claimed the representative trials entry for many years past.

Itinerary of the Route.

As announced in last week's issue, the A.C.U. Six Days Trial this year will start on Monday, the 29th inst., from Brooklands, and will include five routes in the South and West of England as follows:

FIRST DAY.—Brooklands, Staines, Maidenhead, Oxford, Chipping Norton, Cirencester, Malmesbury, Slaughterford, Colerne (Ditteridge Hill), Bath—138 miles.

SECOND DAY.—Bath, Weston (Weston Lane), Toghill, Dursley, Wickwar, Chipping Sodbury, Keynsham (Darley Hill), Whitchurch, Bishopsworth (Dundry Hill), Chewstoke, Cheddar Gorge, Bridgwater, Spaxton (Collier's Hill), Kingston (Cothelstone Hill), Crowcombe, Stogumber (Pitsford Hill), Wiveliscombe (Axford Hill), Taunton—155½ miles.

THIRD DAY.—Taunton, Wiveliscombe (Whitefield Rocks), Haleigh's Cross, Luccombe (Porlock), Lynmouth (Lynmouth), (Lynton Station Hill), (Parracombe), South Molton (Ash Mill), (Frankhill), Tiverton (Newtes Hill), Honiton (Station Hill), Sidford, Lyme Regis, Morcombelake (Baker's Cross), (Thistle Hill), Axminster (Sector Hill), (Stammery Hill), Marshwood, Broadwindsor, Chard (Coombe Head), Taunton—178 miles.

FOURTH DAY.—Taunton, Blagdon Hill, Wellington Hill (Monument Hill), Dunkeswell, Honiton, Crewkerne, Yeovil, Sturminster Newton, Shaftesbury, Warminster (East Knoyle), Frome, Radstock, Bath—135½ miles.

FIFTH DAY.—Bath, Trowbridge, Maddington, Castle Hill, Winchester, Petersfield (Wheatham Priors Dean), Alton, Binstead (Crooksbury Payle Hill), Guildford, Ripley, Brooklands—132¼ miles.

Twenty-five Laps at Speed.

SIXTH DAY.—Twenty-five laps on Brooklands at minimum speeds varying from 30 m.p.h. in Class A to 45 m.p.h. for the largest solo machines. These speeds are approximately 5 m.p.h. faster than those set for the corresponding test last year, but are generally slightly below the average speed that was reached by those who completed the test in 1920.

The names in parentheses indicate test hills. Entries close at ordinary fees on Saturday next. So far the following entries have been received:

ENTRANT AND MACHINE.

New Imperial Cycles, Ltd. (three New Imperials).
R. C. Winn (one 3½ Douglas).
Norton Motors, Ltd. (three Nortons).
— Compton (not specified).
Thompson Bros., Bilston (one 8 h.p. T.B.-Jap).
Warland Dual Rim Co., Ltd. (one 2½ h.p. Connaught).
A. G. Wall (one 2¼ h.p. Cedos).
H. J. Wilkes (one 3½ h.p. Rover).
New Hudson, Ltd. (three 2¼ h.p. New Hudsons).
Phelon and Moore, Ltd. (three 3½ h.p. P. and M.'s).
R. C. Davis (not specified).
Rudge-Whitworth, Ltd. (four Rudges).
Arden Motor Co. (not specified).
M. Chereau (one Blériot Whippet).

Essex M.C.

Three motor cycle races, each 8½ miles, are included in the programme of the Brooklands meeting of the club to be held on Saturday, the 13th inst.

Abergavenny and District M.C. and L.C.C.

Next Thursday a hill-climb, open to members of the South Wales Centre A.C.U., will be held on Plough Hill, near Abergavenny.

Sheffield and Hallamshire M.C. and L.C.C.

Open to clubs in the Yorkshire Centre A.C.U., the sporting trial postponed from May 7th will be held on August 7th. Useful prizes of Sheffield cutlery are a feature of the award list.

Eastbourne and District M.C.C.

Five teams of four riders each competed in the team trial held in the latter half of July, the winning team being:

A. Jempson (8 Blackburne sc.), J. Mason (4 Blackburne), who each lost no marks; A. Craddock (4 Triumph), 7 marks; and P. Hobden (4 Triumph).

Pontefract and District M.C.

This newly-formed club's hill-climb at Castle Hill, Stapleton, resulted as follows:

CLASS 1.—Machines up to 275 c.c. Flying start: 1, A. Ward (Silver Prince), 50s.; 2, A. Maud (Ixion), 57.25s.; 3, G. Wright (Hobart), 58.4s. Standing start: 1, R. Curtis (New Hudson), 61.6s.; 2, J. Dawson (New Hudson), 62s.; 3, J. Ellis (New Hudson), 63s.

CLASS 2.—Machines up to 350 c.c. Flying start: 1, H. England (New Imperial), 46.6s.; 2, A. Sanderson (Excelsior), 47.6s.; 3, —. Brook (Omega), 48.2s. Standing start: 1, —. Brook (Omega), 55.6s.; 2, A. Sanderson (Excelsior), 56.75s.; 3, H. England (New Imperial), 57s.

CLASS 3.—Machines up to 550 c.c. Flying start: 1, A. J. Campy (Sunbeam), 30.6s.; 2, C. Keyzer (Sunbeam), 31s.; 3, G. W. Shepherd (Sunbeam), 31.6s. Standing start: 1, C. Keyzer (Sunbeam), 35.4s.; 2, G. W. Shepherd (Sunbeam), 38s.; 3, —. Richardson (Norton), 41.8s.

CLASS 4.—Capacity unlimited. Flying start: 1, A. J. Campy (Sunbeam), 30s.; 2, G. W. Shepherd (Sunbeam), 30.8s.; 3, C. Keyzer (Sunbeam), 31.25s. Flying start by request of competitors: 1, G. W. Shepherd (Sunbeam), 31.8s.; 2, —. Richardson (Norton), 33.4s.; 3, H. Wordsworth (Norton), 38s.

Stocksbridge and District M.C. and L.C.C.

Results of the reliability trial held on the 23rd ult. have now been confirmed, and are as under:

PLADDEY CUP AND STACEY MEDAL.—Hugh Thompson (4 Triumph).

SILVER MEDAL.—C. W. Hayward (5-6 Clyno).

BRONZE MEDAL.—W. H. Clarke (3½ Coventry Eagle).

Week-end Club Events.

Aug. 6.—Cardiff M.C.C. Speed Trials at Porthcawl.
Aug. 6.—Yorkshire Centre, A.C.U. Speed Trials.
Aug. 6.—Glasgow Western M.C.C. Speed Event and Hill-climb.
Aug. 6.—Dewsbury and District M.C.C. Picnic.
Aug. 6.—Coventry and Warwickshire M.C. Picnic.
Aug. 7.—Portsmouth and District M.C. and L.C.C. Club Run to Petworth Park.
Aug. 7.—Middlesbrough and District M.C. Social Run.
Aug. 7.—North-Western Centre, A.C.U. Hill-climb.
Aug. 7.—Leeds M.U. Club Run to Wensleydale.
Aug. 7.—Burton and District M.C.C. Club Run to Warwick.
Aug. 7.—Exeter M.C. and J.C.C. Treasure Hunt.
Aug. 7.—Sheffield M.C.C. Club Run to Matlock.
Aug. 7.—Eastbourne and District M.C.C. Club Run to Bodiam.
Aug. 7.—Central London M.C.C. Social Run.
Aug. 7.—Berwick and District M.C. Club Run to Yetholm.
Aug. 7.—Wakefield and District M.C.C. Club Run to Kirkham Abbey.
Aug. 7.—Woolwich, Plumstead, and District M.C. Club Run to Gamshall.
Aug. 7.—Sheffield and Hallamshire M.C. and L.C.C. Sporting Trial, open to Yorkshire Centre, A.C.U.
Aug. 10.—Bishop Auckland and District M.C. Speed Trials.
Aug. 10.—Harrogate and District M.C.C. Social Run.
Aug. 11.—Canterbury and District M.C.C. Club Run to Dymchurch.
Aug. 11.—Worcester and District M.C.C. River Trip.
Aug. 11.—Taunton and District M.C. and L.C.C. Treasure Hunt.
Aug. 11.—Abergavenny and District M.C. and L.C.C. Hill-climb, open to South Wales Centre, A.C.U.

A Section devoted to Club Announcements will be found on Supp. xxxvi.

Bridgwater M.C.C.

Results of the recent Carver Cup trial are:

CARVER CUP.—H. W. Pollard (3½ Sunbeam).

NEXT BEST SOLO PERFORMANCE.—V. G. Tucker (3½ Norton).

BEST SIDECAR.—H. Milton (4 Triumph).

BEST LIGHTWEIGHT.—F. Hewin (2¾ Blackbird).

Okehampton M.C.C.

It has been decided to form a motor cyclists' club at Okehampton, and the following officers have been appointed: Captain, Mr. J. Everard Hosking; vice-captain, Mr. R. Hawken; and secretary, Mr. W. H. Newman. Fifteen riders joined in the first evening run.

Leeds and District M.C.

Results of the speed trials held on the 24th ult. are as follows:

600 c.c. SOLO.—1, C. Keyzer (3½ Sunbeam); 2, A. G. Ridgeon (3½ Sunbeam).

1,000 c.c. SOLO.—1, C. Keyzer (3½ Sunbeam); 2, A. C. Thornton (6 Ariel); 3, W. Backhouse (4 Triumph).

UNLIMITED CLASS.—1, C. Keyzer (3½ Sunbeam); 2, A. C. Thornton (6 Ariel).

1,000 c.c. SIDECARS.—1, A. C. Thornton (6 Ariel); 2, A. Smith (8 Stanhope).

Central Cornwall M.C.

Over fifty riders competed in the recent hill-climb on Tregolls Hill, and great keenness was displayed for the medal awarded for the fastest time of the day, which was eventually won by Reg. Dyer, of St. Austell, on a 3½ h.p. Norton. Results:

NOT EXCEEDING 250 c.c.—J. Jenkin (Baby Triumph), 1m. 26s.

NOT EXCEEDING 350 c.c.—Open section: A. Assheton-Salton (2¾ Douglas), 1m. Amateur section: H. J. C. Cornelius (2¾ Douglas), 1m. 6⅘s.

NOT EXCEEDING 500 c.c.—1, A. Assheton-Salton (3½ Brough), 47s.; 2, P. Phillips (3½ Norton), 48⅗.

NOT EXCEEDING 650 c.c.—Open: 1, R. Dyer (3½ Norton), 46⅗s.; 2, A. Assheton-Salton (3½ Brough), 48s. Amateur: 1, R. Dyer (3½ Norton), 46⅗s.; 2, J. J. Kelly (4 Norton), 57⅗s.

UNLIMITED.—1, A. Assheton-Salton (3½ Brough), 46⅘s.; 2, P. Phillips (3½ Norton), 51⅗s.

SIDECARS NOT EXCEEDING 650 c.c.—H. F. Benny (4 Triumph), 1m. 16s.

SIDECARS UNLIMITED.—1, H. F. Benny (4 Triumph), 1m. 14s.; 2, C. V. Hooper (8 Zenith), 1m. 22s.

Club News—

South Midland Centre A.C.U.

It is now possible to publish the award list of the recent championship trial, in which so many of the competitors lost their way.

CENTRE CHAMPION.—H. H. Saddington (7 James sc.).

GOLD MEDALS.—W. H. Hines (3½ Norton), W. N. G. Phillips (4 Indian), W. F. Jobnson (7 A.J.S. sc.), and N. C. Dear (3½ Sunbeam).

SILVER MEDAL.—H. B. Shutes (8 Matchless sc.).

BRONZE MEDALS.—C. Broom Smith (8 Zenith), G. E. Cuffe (2½ Metro-Tyler), S. R. Axford (3½ Norton), and C. Bourlet (3½ Ariel).

Leinster M.C.C.

The following awards are announced in connection with the trial held on the 23rd ult.

GOLD MEDALS (full marks at all controls).—T. E. Green (2¼ Enfield), T. F. Slevin (2¼ Velocette), C. Johnston (2¾ New Scale), G. Thompson (3½ N.U.T.), J. A. Carville (4 Triumph), and P. J. McGlade (4 Triumph). The committee was unable to determine an individual winner, and consequeotly the six riders will be asked to re-run the trial on Saturday next.

SILVER MEDALS (90% marks).—G. Daly (4 Triumph), R. Murphy (4 Triumph), W. J. Fagan (4 Indian), and F. S. Woods (7-9 Harley-Davidson).

BRONZE MEDAL (85% marks).—W. E. S. Gilmour (2¾ Douglas).

Exeter M.C.

An entry of forty was attracted by an inter-club reliability trial held on the 23rd ult.

Twenty-five per cent. of the competitors were eliminated before lunch, including many experienced riders, and only twenty-three were timed in at Exeter at the finish. This number included Miss Phillips, the only lady competitor. To add to the strenuousness of the trial, torrential rain was experienced on Dartmoor. Several members experienced troubles. A. M. Knill (4 Indian Scout) burst a front tyre in the morning on a non-stop section, and rode thirty miles on a flat tyre, which eventually came off and threw the rider, who finished on a bare rim. Results:

TEAM PRIZE.—Plymouth No. 1 team: J. Baker (3½ Sunbeam), lost no marks; M. Dawes (3½ Sunbeam), lost 24; S. Snell (8 Sunbeam), lost 0. No other complete team finished.

SOLO LIGHTWEIGHT (Silver cup and silver medals).—T. Browning, Exeter M.C.C. (2¾ Diamond), lost 5 marks. Special silver medal: Miss Phillips, Plymouth M.C.C. (2½ Connaught), lost 16. No other lightweights finished.

SOLO (Silver cup and gold medal).—G. Morrish, Yeovil M.C.C. (3½ Sunbeam), lost no marks, error 19s.

GOLD MEDALS.—G. Claridge, Exeter (4 Triumph), lost no marks, error 31s.; J. Baker, Plymouth (3½ Sunbeam), lost 0, error 60s.; E. Chudleigh, Exeter (4 Indian), lost 0, error 61s.; F. Wheeler, Plymouth, lost 0, error 161s.; P. Hare, Taunton M.C.C. (3½ Douglas), lost 0, error 169s.; O. Ford, Exeter (4¼ B.S.A.), lost 8, stop on non-stop; J. Durrant, Exeter (3½ Norton), lost 8, stop on non-stop.

SILVER MEDALS.—H. Clarke, Plymouth (4¼ B.S.A.), lost 8, failed on hill; T. Pullin, Exeter (3½ B.S.A.), lost 16; H. Flower, Plymouth (3 A.B.C.), lost 18; M. Dawes, Plymouth (3½ Sunbeam), lost 24.

SIDECARS.—Silver cup and gold medal, E. Williams, Exeter (4 Triumph sc.), lost no marks, error 16s.; gold medal, L. Peter, Exeter (4 Norton sc.), lost 0, error 23s.; S. Snell, Plymouth (8 Sunbeam sc.), lost 0, error 98s.; silver medal, J. Mercer, Exeter (4 Norton sc.), lost 5.

Redditch and District M.C.C.

Full results of the speed trials held on July 25th are now to hand, and are as follows:

TIME CLASSES.

250 C.C. CLASS (Solo).—1, B. Kershaw (2¼ New Imperial); 2, G. Povey (2¼ Velocette); 3, T. Weaver (2¼ Sirrah).

350 C.C. CLASS (Solo).—1, B. Kershaw (2¼ New Imperial); 2, G. Povey (2¼ Velocette); 3, A. Taylor (2¼ Levis).

600 C.C. CLASS (Solo).—1, W. E. Smith (3½ Norton); 2, A. Taylor (3½ B.S.A.); 3, A. Wood (3½ B.S.A.).

UNLIMITED CLASS (Solo).—1, W. E. Smith (3½ Norton); 2, A. Taylor (3½ B.S.A.); 3, T. Weaver (5-6 Verus).

600 C.C. CLASS (Passenger).—1, C. Jenkins (4¼ B.S.A.. sc.); 2, C. Brown (4 Triumph sc.); 3, H. Poole (3½ B.S.A. sc.).

UNLIMITED CLASS (Passenger).—1, C. Jenkins (4¼ B.S.A. sc.); 2, L. Perry (10 Morgan) and C. Brown (4 Triumph sc.); 3, H. Poole (3½ B.S.A. sc.).

FASTEST TIME OF DAY.—W. E. Smith (3½ Norton).

FORMULA CLASSES.

250 C.C. CLASS (Solo).—1, B. Kersbaw (2¼ New Imperial); 2, G. Povey (2¼ Velocette); 3, T. Ward (2¼ Verus).

350 C.C. CLASS (Solo).—1, B. Kershaw (2¼ New Imperial); 2, G. Povey (2¼ Velocette); 3, F. Wood (2¾ Verus).

600 C.C. CLASS (Solo).—1, B. Kershaw (2¼ New Imperial); 2, A. Taylor (3½ B.S.A.); 3, F. Bicknell (2¼ Enfield).

UNLIMITED CLASS (Passenger).—1, H. Poole (3½ B.S.A. sc.); 2, E. Raduall (2½ Radco sc.); 3, L. Perry (10 Morgan).

East Midland Centre A.C.U.

Owing to several mistakes and omissions in the division of certain competitors into expert and general classes, the following alterations and additions to the results of the open speeds are annonnced by the organising clubs:

CLASS 4 (Unlimited sidecar, standing start).—Expert class: P. Baron (7-9 Indian), 41⅘s., second in place of H. R. Davies (2¾ A.J.S.), 42⅘s.

CLASS 10 (Two-strokes, unlimited).—General: 1, G. Mills (3½ Scott), 41⅘s.; 2, J. R. Sylvester (2¼ Velocette), 46s. Expert: 1, R. E. Pugh (2¼ Levis), 43⅘s.; 2, Mary Jennison (2¼ Velocette), 44s.

CLASS 14 (Solo under 550 c.c.).—General: Oliver Hodgson (3½ Sunbeam), 37⅘s., second in place of F. Stevenson (3½ Broogh), 37⅘s.

CLASS 16 (Solo under 500 c.c.).—General: R. Flint (3 A.B.C.), 35s., second in place of R. Carter (7-9 Indian), 36⅘s.

CLASS 21 (Solo under 500 c.c.).—General: F. Hatton (3½ Douglas), 29⅘s., second *vice* H. Barron (3½ Norton), 30s.

CLASS 24 (Unlimited solo).—Expert: 1, G. Dance (2¾ Sunbeam), 26⅘s.; 2, R. Cawthorne (3½ Norton), 27s.

CLASS 22 (Machines under 550 c.c.; times taken from 500 c.c. class).—General: 1, R. Flint (3 A.B.C.), 28s.; 2, F. Hatton (3½ Douglas), 29⅘s. Expert: 1, G. Dance (3½ Sunbeam), 24⅘s.; 2, R. Cawthorne (3½ Norton), 27s.

CLASS 23 (Machines under 750 c.c.; times taken from unlimited classes).—General: 1, T. C. Greenwood (4 Sunbeam), 26⅘s.; 2, R. Flint (3 A.B.C.), 29s. Expert: 1, G. Dance (2¾ Sunbeam), 26⅘s.; 2, R. Cawthorne (3½ Norton), 27s.

Bradford M.C. and L.C.C.

Official results of the Bradford-London-Bradford trial have now been announced as follows:

CLASS B (EXPERTS).

BRIGGS CUP AND GOLD MEDAL.—H. Moore (3½ P. and M.).

GOLD MEDALS.—S. M. Haigh (6 Ariel sc.), A. R. Naylor (3½ Sunbeam), W. A. Dovener (3¾ Scott), W. Marriott (4 Norton sc.), G. Townsend (3½ P. and M. sc.), and C. B. Haigh (3¾ Scott sc.).

CLASS A (NOVICES).

ARTHUR HODGSON CUP AND GOLD MEDAL.—G. Allen (3½ P. and M. sc.).

GOLD MEDALS.—Miss I. Pickles (3¾ Scott sc.), W. E. Anderton (3½ P. and M. sc.), G. R. Grundy (3½ Sunbeam), R. Turner (2¾ Douglas), S. Jepson (6 A.J.S. sc.), R. A. Bonner (3½ N.U.T.), and J. H. Leyland (3½ P. and M.).

SILVER MEDALS.—H. Askham (4 Douglas sc.) and A. D. Thornton (3½ P. and M. sc.).

Rhondda Valley M.C.C.

The first reliability trial of this club will be held this month. Particulars may be obtained from the secretary of the event, The Landlord, The Farmers' Arms, Trebanog, Porth, Rhondda.

Westmorland M.C.C.

At a very successful social run and speed-judging competition held recently, Percy Hoggarth (4 Norton) made the best performance, thus gaining the silver vase presented by the Manufacturers' Union. B. Hill (2¾ Velocette) won Mr. Westwood's prize, while Miss Pickles (3¾ Scott) was third.

North-west London M.C.C.

During a recent "conducted tour" round the byroads of Herts., the secretary introduced tests comprising speed and distance judging, fast, slow, and flexibility hill-climbing, acceleration, brake tests, and some surprise queries which caught not a few. Prizes were awarded on the combined performance.

1, G. J. Thompson (3 A.B.C.); 2, H. James (3½ Norton); 3, D. F. C. Fitzgerald (4 Norton sc.); 4, W. P. Cooper (3½ Sunbeam); 5, E. T. Pierce (3 A.B.C.).

Kelso and District M.C.C.

Lanton Hill, Jedburgh, presented a scene of great activity on Saturday, the 23rd ult., when the open hill-climb arranged by Kelso and District Motor Cycle Club, and held under the open competition rules of the S.A.C.U., took place. The hill presents a climb of 1,250 yards, with a gradient varying from 1 in 12 to 1 in 6-7. The surface here and there is certainly rough, with large stones in evidence, but on the whole a good track is presented and the negotiation of the two turns does not call for outstanding skill.

CLASS 1 (Motor cycles not over 350 c.c.). Expert barred.—1 (gold medal), E. R. Jacobs (2¾ Coulson B); 2 (silver medal), D. Robb (2¾ N.U.T.); 3, W. B. Richardson (2¾ N.U.T.).

CLASS 2 (Motor cycles not over 600 c.c.).—1 (gold medal), E. R. Jacobs (2¾ Coulson B); 2 (silver medal), Alfred Downie (2¾ A.J.S.); 3, (bronze medal), J. H. Lindsay (3½ Norton). Gold medal for fastest time: Hugh Mason (3½ N.U.T.).

CLASS 3 (Motor cycles of unlimited capacity).—1 (gold medal), E. R. Jacobs (2¾ Coulson B); 2 (silver medal), Alfred Downie (2¾ A.J.S.); 3 (bronze medal), J. H. Lindsay (3½ Norton). Gold medal for fastest time: R. J. Braid (7-9 Indian).

CLASS 5 (Motor cycles and sidecars of unlimited capacity). Expert barred.—1 (gold medal), J. O. Turnbull (7-9 American X sc.); 2, Robert Matbieson (3½ Norton sc.); 3, T. Gillies (3¼ Sunbeam sc.).

Meet of members of the Stocksbridge and District M.C. and L.C. Club, preparatory to their first reliability trial, held over difficult country in Yorkshire.

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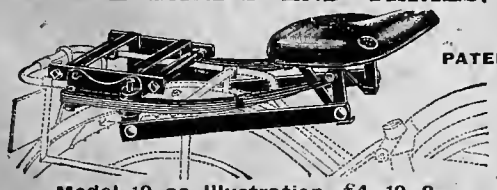

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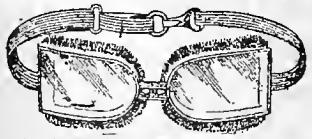

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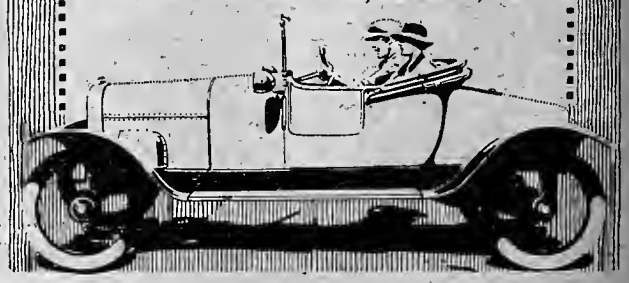

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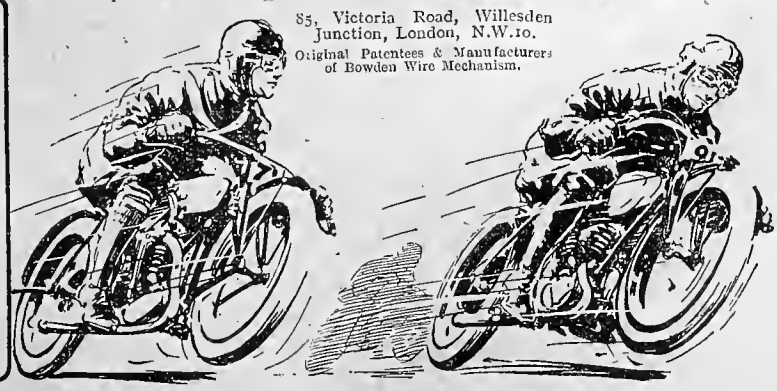

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DIAMOND, 2¾ h.p., J.A.P., Enfield 2-speed	84	0
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NEW IMPERIAL, 8 h.p., combination	168	0
O.K., 2½ h.p., 2-stroke	39	18
NEW IMPERIAL, 2¾ h.p., 3-speed	£70	0
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SCOTT, 3¾ h.p., 2-speed, clutch	130	0
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CALTHORPE, 2¾ h.p., single-speed	45	0
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ROYAL ENFIELD Combination, 8 h.p.	£160	0
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B.S.A., 4½ h.p., Model H2, chain drive	£110	0
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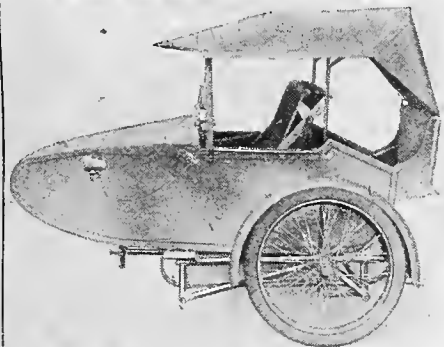

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MOTOR CYCLES FOR SALE

Douglas.

£50.—1918 2¾h.p. Douglas, 2-speed, makers' original enamel, lamps, accessories, licen condition, unscratched.—63, Solon Rd., Brixton

1915 2¾h.p. Douglas, 2-speed, good runnin lamps, horn; expert inspection invited; no able offer refused.—4, St. John's Wood Park Cottage.

DOUGLAS 4h.p. 3-speed Combination, guaranteed, fully equipped, fast, powerf trial; £76, tax paid.—H. Scott, opposite Southall.

1916 2¾h.p. Douglas Motor Cycle, in good order, tax paid; £37/10.—Scotia Motor 80, Upper Tooting Rd., London, S.W.17. Streatham 2707.

DOUGLAS Late 1919 4h.p. Combination, la clutch, Easting, lamps, tax; £90.—Ne Motor Co., 223, Hammersmith Rd., W.6. Hammersmith 80.

ELI CLARK can give you good service both machines and spares; try me. I may be to you.—The Pioneer Agent for Douglas Motor Cheltenham Rd., Bristol.

DOUGLAS Combination, 1920, licensed sured, mileage 3,000, hood, screen, speedometer, excellent condition; £110.—Rac The Bungalow, North Weald.

2¾h.p. Douglas, engine No. 30432, brand new 4 neto, gear box, tyre, mechanical horn, enamel unscratched, plating perfect, very last; 2h, Denmark Rd., Camberwell.

DOUGLAS 4h.p. Combination, 1918, thoroughl hauled, with new sidecar body; lowest pric no other offers considered; seen by appointment.— Box 5,522, c/o *The Motor Cycle.*

DOUGLAS 1920¾ 2¾h.p., 3-speed, K.S., 1 1,500, tyres unpunctured, all accessorie scratched; bargain, 70 gns.; buying higher p Wandle Court, Beddington, Croydon.

4 h.p. Douglas Combination, late 1918, mecho perfect and excellent condition, lamps, hor tyres and belt, tax paid; £87/10.—Brierley, 20, P Rd., Skemersdale, near Ormskirk, Lancashire.

DOUGLAS 4h.p. 1919 Combination, 3 speeds, starter, lamps, compressed acetylene lightin cently thoroughly overhauled, owner bought car tax paid.—Catteshall Grange, Farncombe, Sur

IMMEDIATE Delivery of any Douglas Model or deferred payments; book your order no avoid disappointment later.—Burlington Motors South Side, Clapham Common, S.W.4. 'Phone: ton 2417.

DOUGLAS 1919 4h.p. Combination, engine 7239, in first-class condition, hand and foot dissolved acetylene lighting, speedometer, all tools any time; price £100.—Lieutenant Thornton H.M.S. Hermione, Southampton.

DOUGLAS 2¾h.p., late 1916 T.T. model, just overhauled, very fast, lamps, Cowey horn, belt in leather case, long exhaust, etc.; can be se time by appointment after 6; £45.—W. Mood Upper Tulse Hill, Brixton Hill, London, S.W.

ALL 1921 Douglas Models, 2¾h.p., 4h.p., an improved W.D., at £85, all fully equipped; supplied. Extended payments taken at one-fifth remainder in 12 equal monthly payments; exc arranged.—Wauchope's, 9, Shoe Lane, Fleet St., don.

WANTED, purchasers for any model of new Douglas motor cycles and combinations immediate delivery. Your present machine ta part exchange; full market value allowed; distan object.—R. Bamber and Co., Ltd., 2, Eastbou Southport. Tel.: 607.

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LEICESTER and County.—Sole distributing for Duzmo sporting overhead valves motor very fast; 3½h.p. single speed, speed gear, and models. 3½h.p. models in stock, £84, and with Philipson pulley £91.—Naylor's Garage, A Leicester. 'Phone: 52.

Dot.

DOT-J.A.P. 8h.p. T.T., clutch model, believed newly stove enamelled, replated, absolutely new, Binks, new tyre and tube, adjustable pulley reliable, powerful.—Best offer to Truefitt, Hotel ville, Scarborough.

Edmund.

GOURLAY, the spring frame Edmund agent, F field, Manchester.

EDMUND, 2¾h.p. Blackburne or J.A.P. engin stock; deferred payments.—Parker's, Brad gate, Bolton; also 245, Deansgate, Manchester.

Enfield.

6 h.p. Enfield Combination, excellent running £65.—Hopkins, New St., Ledbury.

SHEFFIELD Agent for Royal Enfields, all in stock.—J. A. Stacey, 12, Ecclesall Rd.

ENFIELD 6h.p. Combination, dynamo, Easting (late).—Eldrick, Ayr Rd, Fouldhouse, Linlithgowshire.

MOTOR CYCLES FOR SALE.

James.

DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

-6h.p. James Combination, Lucas dynamo lighting, hood, screen, tax paid, etc.; £125.—Pickering, rewsbury. [X6115

1920 James Combination, hood, screen, many extras, tax paid, as new; £125.—Rolls, 4, Little Cadogan ace, Belgrave Sq., S.W.1. Victoria 2914. [2414

JAMES 4¼h.p. Combination, all chain, late 1919, Easting, all accessories, excellent condition; £95. Newnham Motor Co., 223, Hammersmith Rd., W.6. hone: Hammersmith 80. [2724

IMMEDIATE Delivery of any James Model; cash or deferred payments: book your order now, and oid disappointment later.—Burlington Motors, Ltd., outh Side, Clapham Common, S.W.4. 'Phone: Brixn 2417. [0503

JAMES 1920 4¼h.p. Combination, fitted James de luxe car, electric lighting, tax paid, wind screen, achine indistinguishable from new, mileage 300, ost £188; accept £115.—The Surgery, 216, Portobello d., W.11. [1982

J.A.P.

3h.p. o.h.v. J.A.P., special machine, short wheelbase, 4 winner 2 gold medals and cup last few weeks, uaranteed sound condition, many spares, will do over 0; for quick sale nearest to £65.—J. M. Heath, Motor ngineer, 276-8, Chatsworth Rd., Chesterfield. [X6409

J.E.S.

J.E.S. 2h.p. 2-stroke Model, C.B., as new, not run 50 miles, special 26in. wheels; lowest 38 gns.—Doctor empleton, Peel, Isle of Man. [2390

J.E.S., 1½h.p., brand new, mileage 30, carrier, horn, electric light, tax paid, ready to ride; £35. -Apply, 6, Trevor Rd., Wimbledon. [2356

J.H.

7-9h.p. M.A.G. Twin J.H. Combination, fitted with handsome coachbuilt sidecar; £65.—Wanchope's, , Shoe Lane, London. '9016

Kerry.

KERRY 3½h.p., mag., spring forks, low dropped frame, runs splendidly; must sell, bargain, 14/15.—53, Swaffield Rd., Wandsworth, S.W.18. [2598

Kingsbury.

1921 Kingsbury 2¾h.p., 2-speed, all-chain, tax paid, fully insured; £39. After 7.—38, Westbere Rd., West Hampstead. [2444

Lea-Francis.

LEA-FRANCIS 5-6h.p., M.A.G. model, not done 50 miles, cost £150; accept £133; licensed and fully guaranteed; letters only.—54, St. James St., Ashted, Birmingham. [X5299

Levis.

DAN GUY, Weymouth.—Levis 1921 models in stock; £60. [0554

LEVIS 2½h.p., 1915, single speed; £30, or offer.—Mayeot, Alexandra Rd., Epsom. [2652

1920 Levis, as new, all accessories, tax paid; 50 gns. —Maitland, 40, Fleming Rd., Kennington, S.E.17. [2561

CYRIL WILLIAMS for immediate delivery of all models Levis.—Chapel Ash Depot, Wolverhampton. [X3819

1919½ Levis, 2 speeds, new tyres, all on, perfect; £46; 4-stroke wanted.—Wood, Wainfleet, Lincs. [X6298

1921 Levis, all on, as new, guaranteed perfect; £45. —Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2517

1919 Levis, Enfield 2-speed, lamps, tax, guaranteed perfect; £48/10.—Goad, 122, Maida Vale. Phone: Hampstead 1353. [2518

LEVIS.—Sole Walsall agents; special exchange and deferred payment terms; immediate delivery.—Maudes', Walsall Garage, Walsall. [2423

LEVIS, late 1920, tax paid, ridden 70 miles for delivery purposes only, as new and unmarked; £50. —Torcross, Hillborough, Herne Bay. [2590

1921 Levis, practically unused, in perfect condition, tax paid, Lucas lamp, horn, tools, etc.; £60.—Perham, c/o Spence, High St., Helmsley, Yorks. [2659

LEVIS 1915 2¾h.p., 2-speed, just been thoroughly overhauled, lamps, horn, speedometer, reliable and fast bike; £58.—L. J. Hooley, 1, First Avenue, Tinsley, Sheffield. [2801

Limited.

1919 Limited, 8h.p., complete accessories, variable gear, clutch, discs, pillion, just overhauled, enamel new, guaranteed perfect; best offer under £88. —Dalziel, Prestwick, Ayrshire. (D) [2332

Martinsyde.

1921 6h.p. Martinsyde Combination; £145.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [2462

MARTINSYDE 1921 Twin Combination; £145 cash, or exchange.—Collier's Motories, Horton St., Halifax. [2524

MARTINSYDE Combinations for immediate delivery from stock; £145.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2723

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"	Beldam Ex. Heavy	37/6	53/-
"	Kempshall Anti-skid	37/6	52/6
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"	Wood-Milne Special	32/6	56/9
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26×2⅜	8/3	11/3	26×2½	8/9	12/9
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DELIVERY Free for 150 miles from London. Don't forget, every outfit personally tested by the (Matchless only) expert. I am now booking orders for the new sports model, ready shortly, the fastest and best combination on the road.—J. Tassell, 1a, Bloomfield Rd., Plumstead, S.E.18. [5374

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AGENT, T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744.

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LUXURIOUS Riding on a Matchless.

ECONOMICAL in Petrol.

SECOND to None in Price and Workmanship.

SATISFACTION Guaranteed. Price standard model, £185, with 2-seater sidecar £191/10, with sporting sidecar £180. Easy payments and exchanges arranged. [8976

MATCHLESS Coachbuilt Combination, 8h.p. M.A.G., 3-speed, tax paid; £83.—234, Belsize Rd., N.W. [2615

1921 Matchless, Magdyno, brand new; owner cannot take delivery; £189.—St. Bruce, Cisphanus, Buxted, Sussex. [2820

MATCHLESS Combination, 1921, dynamo lighting set, detachable wheels; £120.—Apply, Martin Winser, Ltd., Folkestone. [X6299

1921 Matchless Magdyno Combination, brand new, unused, unregistered, owner must sell; £180.—41, Madrid Rd., Barnes, S.W. [2843

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185. —A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS, Model H, dynamo lighting, in stock; deferred payments. — Parker's Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6537

MATCHLESS Electric Model, M.A.G. engine, equal new, speedometer, screen, spare wheel unused; £165.—Cope, Upper Hagley Rd., Birmingham. [2375

MATCHLESS.—Try R. B. Clark and Co. for your Matchless; best price allowed for your old machine.—7, Exhibition Rd., South Kensington. [2247

MATCHLESS Electric Model, M.A.G. engine, equal new, speedometer, screen, spare wheel unused; £165.—Cope, Upper Hagley Rd., Birmingham. [2375

F.O.C.H. have a 1920 Matchless Combination, dynamo, small mileage, tax paid; bargain.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2693

1921 Matchless, all models for immediate delivery, exchanges and deferred payments if required.—Edwards, 50, Harrington Rd., South Kensington. [2844

MATCHLESS Combination, 8h.p. M.A.G., 3-speed, K.S., electric lighting, perfect condition; £95.—Clarence Garage, Richmond, Surrey. 'Phone: Richmond 431. [2536

MATCHLESS H, Nov., 1920, mileage 200, guaranteed as new, used few times only, horn, screen, spare wheel, tools, tax paid; £145.—Bickmore, Chins College, Cambridge. [2621

MATCHLESS Combination; £185; best value on market; spring frame, detachable wheels included.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. Kensington 4096. Exchanges arranged. [9194

MATCHLESS.—Immediate and early deliveries of all models, with Magdyno lighting, £207/10; Standard, £185; sports model (standard), £180; double sidecar, £6/10 extra.—Wilkins, Simpson, opposite Olympia, London. [2768

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

MATCHLESS.—August Holidays. Sam E. Clapham, the agent that never disappoints; immediate delivery sports model, £180; single-seater, £185; 2-seater, £191/10; cash or deferred terms. To secure satisfaction and unlimited Matchless service, write, call, or 'phone Greenwich 751, agent for all high-class makes of motor cycles, light cars, etc.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [2249

MOTOR CYCLES FOR SALE.

Metro.

1919 Metro-Tyler, single speed, accessories; £35; exchange with cash for Douglas, 1916, later.—11, Kilmartin Av., Norbury. [2690

Minerva.

£5.—2¾h.p. Minerva, m.o.v., minus carburetter, saddle, belt.—King, Egrove Farm, Oxford. [X6448

3½h.p. Minerva, D.A.2 M.A.G., tax paid, Klaxon, running order; £18/10.—Wright, Hollyhouse, Langmere, Scole, Norfolk. (D) [2347

LIGHTWEIGHT Motor Cycle, Minerva, magneto, Brooks, Brown-Barlow; bargain, £7/19.—Thomas Butler, Engineer, Littleover, Derby. [X6379

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 2-8, Alexandra Rd., Hornsey. [3698

Moto-Reve.

£27.—Moto-Reve twin, overhauled makers, receipt shown, not unpacked, carriage paid.—Smith, Castle Rd., Grantown-on-Spey. [X6378

MOTO-REVE 2¾h.p. single, o.h.v., drip feed, cylinder reground, S.A. 3-speed, hand clutch, lamps, horn, licence, 45 m.p.h.; bargain; trial; £25.—37, St. Luke's Rd., Maidstone. [2399

MOTO-REVE Twin, chain-cum-belt, Juckes gear box, B. and B. carburetter, electric lighting, mechanical horn; best cash offer.—11L, Kramer Mews, West Brompton, London. [2710

Motosacoche.

FOR Sale or Part Exchange, for good push bike and cash, 2½h.p. lightweight Motosacoche, engine rebored and new piston, all in perfect order.—Apply, Walker, Bradenham, Thetford, Norfolk. [2648

New Comet.

NEW COMET 2½h.p. 2-stroke, 1921, Climax engine (inside flywheels, similar 350 c.c. record holder), Albion 2-speed, T.T. bars, Cox-Atmos, new chains, nearly new belt, tyres, enamel shabby, but everything guaranteed absolutely perfect and highly tuned for competition work, lamps, horn, pump, number, discs, licence, spare sprockets, chains, belt, tube, gold medal winner; best offer over £45, or arrangement.—Mannox, Henlow, Beds. [2640

New Hudson.

NEW HUDSON.—2¼h.p. de luxe models in stock; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6538

NEW HUDSON 1914 4¼h.p., 3-speed, clutch, kick start, splendid condition; £40.—43, Lower Teddington Rd., Hampton Wick, Middlesex. [2681

4h.p. New Hudson, 3-speed Armstrong gear, clutch, all on, spares, excellent condition throughout; £40, or near offer.—Box 5,506, c/o *The Motor Cycle.* [2502

NEW HUDSON 2¾h.p., 3-speed clutch, Bosch, B. and B., new lamps, tyres, speedometer, perfect condition; trial; £38/10.—5, Marjorie Grove, Battersea (near Town Hall). [2443

NEW HUDSON 6h.p. Twin Combination, delivered new Jan., 1920, fully equipped; £99.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2726

NEW HUDSON 2¼h.p., 2-speed, clutch, and kick starter, recently overhauled, chains new, belt and tyres good; £38; after 6 p.m.—87, Clarence St., Southall, Middlesex. [2585

NEW HUDSON Coachbuilt Combination, 1915, 6 h.p., 3-speed, clutch, kick start, lamps, speedometer, wind screen, luggage grid, very smart and ideal for touring; nearest 86 gns. secures.—Adkins, Builder, Roehampton, S.W.15. [2636

NEW HUDSON Lightweights, all models, on view: Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Catalogues and any information by return.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [4756

New Imperial.

NEW IMPERIAL-J.A.P., 2¾h.p., 2-speed, tax paid, all on; £35.—248, High Rd., Willesden Green. [2350

1920 New Imperial-Jap Combination, 8h.p., well equipped; £120.—24, Balliol Rd., North Kensington. [2679

NEW IMPERIAL, 2¾h.p., 2-speed, good condition, lamps, and spares; £40.—Davies, Gonerby, Grantham. [2458

NEW IMPERIAL-J.A.P., 1915, in good running order, lamps, horn, tax paid; £40.—Morcar, Holton-le-Moor, Lincoln. [2450

1916 New Imperial-Jap 2¾h.p., 2-speed, lamps, horn, tools, etc.; £40, or near offer.—Everard, H.M.S. Witherington, Portland. [2475

NEW IMPERIAL 1920 8h.p. Combination, excellent condition, lamps, Easting, Klaxon, tools; £135.—Wyatt, 2, Jasmine Grove, Anerley, S.E. [2581

1921 2¾h.p. New Imperial-Jap, kick starter, hand clutch, full equipment, licensed, fast, smart; 53 gns.—Fersfield, Westbury Rd., New Malden. [2635

EXCHANGES QUOTED

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De luxe, 2-seater, dickey seat	£410	0
De luxe, 4-seater	£435	0
Popular, 2-seater, dickey seat	£355	0
Popular, 4-seater	£375	0

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MARTINSYDE 6 h.p. twin Combination	£145	0
COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£165	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four 3-sp. Combination	£170	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single-speed	£98	0
***DOUGLAS**, 2¾ h.p., 2-speed	£85	0
***DOUGLAS**, 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£160	0
DOUGLAS, 3½ h.p., 3-sp., sports model	£150	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON 1920 Big Four, 3-speed	£110	0
P. & S., 1920, 2 speed, 2¾ h.p., clutch	£55	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
BROUGH, 1916, 3-speed countershaft	£59	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2-speed, lightweight	£49	10
ARIEL, 1920, 3½ h.p., 3-speed c/shaft	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10
TRIUMPH, 3½ h.p., clutch, good	£47	10
NORTON, 1920, 3½ h.p., sporting	£80	0

PASSENGER MACHINES.

COVENTRY - PREMIER, 1921, disc wheels, small mileage, tax paid	£235	0
SUNBEAM 8 h.p. M.A.G. Combination	£145	0
HAZLEWOOD-J.A.P. 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting, tax paid	£105	0
MORGAN, 1915, sporting	£120	0
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HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£185	0
HARLEY 1920 Combination, electric	£168	10
READING-STANDARD 3-speed Com.	£110	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£75	0
ALECTO 3½ h.p. 2-sp, 1920 coach Comb.	£79	10
REX 6 h.p. 2-speed Combination	£52	10
ZENITH-GRADUA, 6 h.p., and Sidecar	£57	10
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£75	0
NORTON Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£125	0

Deferred Payments taken.
Cash offers considered for Second-hand Models.
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1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1½	£2	2	0
Douglas Carburetter, used		19	6
New Saddles, usual price £3 3s.	£2	9	6
New Army Knapsacks, 13½ × 11in.		5	6
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£18	10	0
Second-hand Douglas Magneto	£1	17	6
Second-hand Amac Carburetter		15	0
Second-hand B. & B. Carburetter	£1	5	0
1920 Triumph Carb., nearly new	£2	15	0

MOTOR CYCLES FOR SALE.

New Imperial.

BRAND New 8h.p. New Imperial Combination seater sidecar, fully equipped; any trial, paid; £125.—Braemar, 17, St. Quintin's Av., N Kensington. [

NEW IMPERIAL 1920 Models (2), combinat fully equipped; £125 and £135; exchan Newnham Motor Co., 223, Hammersmith Rd., 'Phone: Hammersmith 80. [

NEW IMPERIAL Solo and Sidecar, immediate livery; liberal allowance on your present mach —Newnham Motor Co., 223, Hammersmith Rd., 'Phone: Hammersmith 80. [

IMMEDIATE Delivery of any New Imperial Mo cash or deferred payments; book your order and avoid disappointment later.—Burlington Mot Ltd., South Side, Clapham Common, S.W.4. 'Pho Brixton 2417. [0

NEW IMPERIAL 1920 8h.p. Combination, East lamps, spare cover, tools, recently comple overhauled by makers, in beautiful condition; £1 privately owned.—Colonial Motors, 104a, Finchley N.W. Hampstead 7822. [2

New Ryder.

NEW RYDER de Luxe 2¾h.p., kick starter, 2-s gear, list 76 gns., slightly shop-soiled; 60 deferred terms arranged.—Midland Garage, 7, Bi St., Birmingham. [7

Norton.

PREMIER Motor Co. for 1921 Nortons.

ANY Model Norton delivered to your address, riage paid within 24 hours; easy payments 4% extra.—The Premier Motor Co., Aston Rd., mingham. [0

CYRIL WILLIAMS for immediate delivery of models Norton.—Chapel Ash Depot, Wolverha ton. [X3

NORTON 1921 Models.—Sole district agents, Wes Motors, Ltd., 60, Catherine St., Salisbu 'Phone: 72. [5

NORTON.—Sole Walsall agents; exchanges or ferred payments.—Maudes' Motor Mart, Wals Garage, Walsall. [24

NORTONS 16H and Big Four, and B.R.S. speci from stock.—Frank Whitworth, Ltd., 139, N St., Birmingham. [X41

NORTON.—All models in stock; deferred payme —Parker's, Bradshawgate, Bolton; also 2 Deansgate, Manchester. [X65

NORTON, 1919, 3½h.p., 3-speed, Venus sidec accessories, licensed, any trial; offers over £1 —Henwood, Glencoe, Launceston. [23

NORTON 1920 Big 4 Sporting Combination, scratched, low mileage, very fast, perfect, electr acetylene, horn, 700×80; best offer over 120 gns Holloway, White House, Aldridge Rd., Walsall. [X62

LICENSED Brooklands Special 1920½ Nort 3½h.p., largest Lucas lamps, horn, Bonnicks A.K. grips, perfect, 70 m.p.h.; £90; cash urgen required.—Morris, 81, Huntingdon Rd., Coventry. [X65

VERY Fast 1921 16H Norton, spare sprocket a chain, tools, horn, Cowey speedometer, just ov hauled, grips and knee pads, guaranteed perfect, paid: best offer over £115.—H. Laddington, Wallin ton Hall, Downham Market. [24

WANTED, purchasers for any model of new 19 Norton motor cycles and combinations, immediate delivery. Your present machine taken part exchange; full market value allowed; distance object.—R. Bamber and Co., Ltd., 2, Eastbank S Southport. Tel.: 607. [06

L. MITCHELL, our representative, rode his priva 1920 3½h.p. Norton in the Senior T.T. to pro his confidence in the machine he sells. Result, fi Norton first private owner, and sixth place in t greatest race ever contested. If the effort deserves e couragement, you can do no less than place that Nort order with him and watch him in the next big even —Bulloughs Motors, Ltd., Waterloo St., Oldham. [2

N.S.U.

N.S.U. 1914 3h.p. Twin, o.h.i.v., Binks, 2-speed, F.E spring frame, tax 30/- (paid), fully equipped, fa reliable, good appearance; £35.—J. Walker, 51, T Avenue, Goodmayes, Essex. [23

N.U.T.

1921 N.U.T. 3½h.p., dynamo lighting, condition new, tax paid; £110.—L.S.T. Engineering Co Medway St., Chatham. [24

1921 3½h.p. N.U.T., special racing model, overhe valves, hand-operated gear, complete for the trac very small mileage; first cheque £90.—Maudes', 10 Paris St., Exeter. [25

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, i distinguishable from new; £120; deferred pa ments if desired.—Parker's, Bradshawgate, Bolton; al 245, Deansgate, Manchester. [X64

N.U.T. Combination, 1920, new, Lucas Magdyn lighting, electric horn, Easting, A.A., fully i sured, owner buying car; £150.—Chapman, 323, Tw Mile Hill, Kingswood, Bristol. [23

MOTOR CYCLES FOR SALE.

N.U.T.

N.U.T.—Sole agents for nine counties; special exchange or deferred payment terms; immediate delivery all models; trade supplied.—Maudes' Motor Part, London, Exeter, and Walsall. [2422

O.K.

O.K.-VILLIERS, 1920, 2-speed, little used; £48.—103, Clock House Rd., Beckenham. [2553

1921 2¾h.p. O.K. Junior; £50/8.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [2464

1920½ O.K.-Villiers, 2¾h.p., as new, lamps, horn, licence; £42. 9 to 6 p.m.—7, Brewery Rd., N.7. [2398

1920 O.K. 2-stroke, lamps, tax paid, heavy tyres as new, fine condition.—Rose's Garage, Uxbridge. [2629

O.K.-UNION 1920 2-stroke, scarcely used, perfect, tax, accessories; £36.—164, Broadfield Rd., Catford. [2792

LATE O.K. 4-stroke, 2-speed Albion, lamps, accessories, licence, new condition; £38.—63, Solon Rd., Brixton. [2785

O.K. Lightweight, countershaft, almost new; 32 gns.; money wanted.—57, Kenbury St., Camberwell, London. [2604

O.K.-J.A.P., 1917, 2¾h.p., 2-speed, kick start, clutch, acetylene lamps, licence paid, suit lady; £35, or nearest offer; apply after 6.—Barnes, 33, Meadway Court, Golders Green. [2716

O.K.-VILLIERS, 2-speed, 2-stroke, late 1920, new tyres, lamps, horn, very little used, guaranteed; bargain, £43, or exchange combination and cash.—217, Belsize Rd., Kilburn, N.W.6. [X6301

Omega.

1920 Omega, 2¾h.p. J.A.P., kick start, 2 speeds, hand clutch, just overhauled, lamps, tax paid; £45.—Good, 122, Maida Vale. 'Phone: Hampstead 3353. [2521

P. and M.

CYRIL WILLIAMS for immediate delivery of all models P. and M.—Chapel Ash Depot, Wolverhampton. [X3821

P. and M. Combination, late 1920, lamps, horn, and licence paid, in excellent condition.—Hull, 150, Tarvin Rd., Chester. [2331

P. and M.—Solo or sidecar in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6536

P. and M., late 1920, very little used indeed, magnificent condition, solo and sidecar gears; £90.—Alford, Rosedene, Camberley. [2559

1918 P. and M., 2-speed, clutch, K.S.; £55; new Dunlop back, excellent condition, tax paid.—A. King, Peaslake, Gomshall, Surrey. [2483

1918 P. and M. Combination, very fast, in excellent condition, licensed, all accessories, £60; as solo, £50.—Derrington, Grafton Rd., New Malden. [2815

P. and M., late 1917-18, newly stove enamelled and plated in makers' 1921 colours, new Dunlop tyres, perfect mechanical condition; £65.—57, Firs Hill Rd., Sheffield. [1701

MESSRS. Phelon and Moore, Ltd., of 4, Berners St., W.1, from time to time can offer sound second-hand machines which have been taken by them in part payment for new ones. The following are two examples:

P. and M., R.A.F. model, fully equipped, overhauled and enamelled by the makers, and fully guaranteed; price £75.

P. and M., 1920, fully equipped, overhauled by the makers, carrying a full guarantee, in excellent running order; price £90. [1444

Paragon.

PARAGON 2-stroke, 2-speed, brand new; £40; cash wanted.—Downs, Sudbury, Suffolk. [2601

Precision.

PRECISION Combination, 3-speed, all on, condition perfect, tax paid; no reasonable offer refused.—13, Flaxton Rd., Plumstead. [2367

Premier.

PREMIER Lightweight, 3-speed, nearly new; £28; take push cycle part.—57, Kenbury St., Camberwell, London. [2603

COVENTRY PREMIER 3½h.p. Motor Cycle, 3-speed S.A. and clutch, condition, appearance as new; exchange lower powered and cash; sell £40, offers.—Box 5,532, c/o *The Motor Cycle.* [2597

Quadrant.

CLIFFORD WILSON Mfg. Co.—Quadrant official wholesale distributers.

QUADRANT Combinations from stock, 4½h.p. £125, 5h.p. £135; cash, exchange, or deferred payments. All spares. Official repairers. Second-hand Quadrants from £60.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. 'Phone: Hop 210. [1813

Whatever tyre mileage you have obtained

These tyres are "good for more."

ENGLEBERT TYRES

Super-reinforced

THE cover that has been designed to withstand any strain that it is possible to put it to—that will stand the kick of any motor cycle engine yet made—that will last out any other make.

These covers are a combination of everything that is best in tyre manufacture. The finest possible rubber, the strongest possible walls, and the best brains to make the "best out of them."

ACTUALLY AT HALF PRICE

Size.	Pattern.	Our Price.	List Price.
26×2	Touring 3-ply Rubber Studded	23/-	46/3
"	Passenger 4-ply Rubber Studded	26/6	53/-
26×2½	Touring 3-ply Rubber Studded	24/6	49/-
"	Passenger 4-ply Rubber Studded	27/9	55/6
26×2½	Touring 3-ply Rubber Studded	26/6	53/-
"	Super-reinforced Extra Heavy	32/6	64/9
26×2½ ×2¼ 28×3	Touring 3-ply Rubber Studded	27/6	55/-
	Racing Rubber Bars and Studs	50/6	100/-

We guarantee these Covers to give a minimum mileage of 3,000 miles and will replace any proving faulty on this basis. These goods are sent on 7 days' approval against remittance. Carriage paid. For particulars of our "sporting offer," see other advertisements appearing in this issue.

OUR AGENT IS THE PILLAR-BOX:

IT PAYS TO DEAL WITH THIS LINE.

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The Name ELITE RUBBER Co. LTD. Tyre Specialists *The Firm*

—WAY—

LONDON'S LEADING TYRE HOUSE, 264-266, Vauxhall Bridge Rd., Victoria, S.W.1.

Telephones: Victoria 6553 and 6554.

MOTOR CYCLES FOR SALE.

Quadrant.

QUADRANT Combination, 1914, 3-speed, clutch, 4½ h.p., stored 4 years, nice appearance; £45; exchange solo.—Priest, Cleveland House, Clifton St., Stourbridge. [2769

QUADRANT Combination, 1920 (September), 3-speed, clutch, Easting, lamps, horn, tools, disc wheels, under 1,000, tax paid; offers.—Williamson, Oak Bank, Newton, New Mills, near Stockport. [2386

QUADRANT, 1916, 4½h.p., countershaft, 3-speed and kick starter, tyres as new, mileage 2,300, unused for last 4 years; 50 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [0679

QUADRANT C.B. Combination, 4¼h.p., Enfield gears, lamps, etc., splendid condition; £65 quick sale, or exchange Powerplus Indian combination with slight cash adjustment.—105, Stonefield Terrace, Hastings. [2478

Radco.

RADCO 2¼h.p., 1919, any trial, guaranteed perfect, tax paid; £34.—Joslin, 68, Smallwood Rd., Tooting. [2437

Raleigh.

PREMIER Motor Co. for 1921 Raleighs.

EASY Payments only 4% extra. We can deliver to your address within 24 hours the new Raleigh 5-6h.p. flat twin, spring frame, chain drive; solo, 140 gns.; sidecar, 176 gns.; spare wheel and tyre, 6 gns.—Sole Birmingham Agents, The Premier Motor Co., Aston Rd., Birmingham. [0626

RALEIGH 6h.p., 1921, condition new, any trial; accept £136.—Parry, Beddgelert, North Wales. [2714

1921 5-6h.p. Raleigh, used for demonstration and tests only, registered; £138; sidecar extra.—Roe's Motor Cycle Depot, West Bridgford, Nottingham. [X6406

RALEIGH Solo and Combinations for Immediate Delivery. Purchase your machine from the authorised agents; liberal allowance on your present machine.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2720

WE can give delivery of this famous make of machine from stock; there is no better quality or finish possible; a perfect machine in every point and detail: Raleigh 5-6h.p. flat twin solo, 140 gns.; combination, 176 gns.—G. and J. Dawson, 60 and 62, Regent St., Cambridge. [0600

Reading-Standard.

£70.—Reading-Standard, 3-speed clutch, speedometer, just been overhauled, excellent condition and appearance. 3½h.p. Precision, 3-speed, very fast, tax paid, £30.—39, Ruskin Rd., Kingsthorpe, Northampton. [2352

Rex.

8h.p. Rex-Jap Coachbuilt Combination, good condition; £80, or near offer.—Carver, Havant, Hants. [2385

8h.p. Rex Twin, 3-speed Sturmey countershaft, K.S., new condition; what offers?—257, Brockley Rd., S.E. [2594

Rover

3½h.p. 1919 Rover Combination, tax paid; £90.—Pickering, Mardol, Shrewsbury. [X6119

ROVER Combination, 3½h.p., 3-speed, countershaft, Swan sidecar, lamps, accessories.—72, Gordon Rd., Ealing, London. [2809

1918 Rover Combination, 5-6h.p. J.A.P., chain drive, 3 speeds, kick start, mechanically perfect; £65.—Cooke, 8, Mildmay Park, Islington. [2750

1919 Rover Combination, 5-6h.p. twin, Easting screen, lamps, tax paid, in first-class condition.—Rhind and Co., Stone Place, Rusholme, Manchester. [2417

ROVER 4h.p. Combination, 1920, 3-speed, good condition, recently overhauled; accept £100, or nearest.—Furlonger, Portsmouth Rd., Liphook, Hants. [2360

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

ADVERTISER through ill-health having to give up motor cycling, wishes to dispose of his 5-6h.p. 1920 Rover combination, guaranteed in perfect condition and as new, ready for any trip; first reasonable offer accepted.—Box 838, c/o *The Motor Cycle.* [X6377

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.—John Aldrich and Co., Diss. [0630

ROYAL RUBY-VILLIER, 2¾h.p., new belt, mudguards, overhauled, A1 condition, any trial; £36.—Warwick House, Somercotes, Derby. [2333

1920 Royal Ruby 8h.p. Combination, Lucas dynamo lighting, mileage under 500, beautifully equipped; £150.—17, St. Charles Sq., North Kensington. [2005

1919 8h.p. Royal Ruby Combination, fully equipped, mileage only 900; £92; or exchange late solo and cash.—Braemar, 17, St. Quintin's Av., North Kensington. [2612

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A35

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Royal Ruby.

ROYAL RUBY 1919 8h.p. Combination, electric lights, speedometer, horn, screen, very powerful; £115.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2731

1920 Royal Ruby, with Dunbill sidecar, lamp, horn, and speedometer; cost £240; will accept £110 for quick sale.—Can be seen by appointment at The Grange, Hendon Av., London, N.3. [2342

Rudge.

1921 3½h.p. Rudge Multi; £85.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [2465

RUDGE Multi, 3½h.p., 1913, tax paid; £36; seen after 7 o'clock, 2 o'clock Saturdays.—3, Charnock Rd., Clapton, E.5. [2363

7-9h.p. Rudge Multwin, never ridden; owner bought light car; list price £120; accept £110.—Box 850, c/o *The Motor Cycle*. [X6490

LATE Rudge Multi, clutch, kick starter, lamps, accessories, licence; £55.—63, Solon Rd., Brixton. Exchange 2¾h.p. Douglas. [2778

1919 Rudge Multi, 3½h.p., I.O.M., torpedo coachbuilt sidecar, very good condition; £75.—Simons, Hagley, Gerrard's Cross, Bucks. [2432

7-9h.p. Rudge Combination, brand new, only ridden 5 miles, tax paid; list price £202, accept £190.—19, Forest Rd., Forest Gate, E.7. [2489

RUDGE 1913-14 3½h.p., Philipson, discs, Klaxon, large lamp set, tax paid, excellent condition; £35, or offer.—Seymour, 251, Woodstock Rd., Oxford. [2564

1920 Rudge Multi Combination, tax paid; £85; only ridden 1,600 miles, all accessories; any time by appointment.—Hale, 12a, King's Av., Clapham. 'Phone: Brixton 2582. [2626

1921 Rudge Multi Combination, lamps, tools, tax paid, unscratched; bargain, £98/10.—Joseph Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [2419

LATE 1920 Rudge Multi, I.O.M., done under 2,500 miles, perfectly sound, nearly new condition, big Lucas acetylene head lamp, electric rear, Cowey horn, Stewart speedometer, tyres right, spare belt, and all tools, tax paid; owner going abroad; £75, or best offer.—Sym, 12, Alva St., Edinburgh. [2661

T.T. I.O.M. Rudge Multi, engine No. 14157, magneto overhauled by C.A.V, 1920 Sensspray, 1921 mudguards, carrier, toolbags, forks, fork spring, and wheels, new 1in. belt, long exhaust, touring and overlap cams, miller set, leather knee-grips, black and gold tank, licensed, private owner; £60.—Write, A W., 263, Bridgend Rd., Maesteg, Glamorgan. [2469

Scott.

3¾h.p. Scott and Coachbuilt Sidecar; £45; excellent opportunity.—Wauchope's, 9, Shoe Lane, London. [9013

SCOTT 3¾h.p., water-cooled; sacrifice, £48; take lightweight part.—57, Kenbury St., Camberwell, London. [2605

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2698

SCOTT, 3¾h.p., 2-speed, in fine condition, recently overhauled, tax paid; £50.—Goodman, Hillmorton Paddox, Rugby. [X6474

SCOTT.—In stock, solo or sidecar; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6540

1920 Scott, splendid condition, fast, £20 worth equipment; only £75.—107, Mortimer Rd., N.1. 'Phone: Dalston 48. [2701

1915 Scott Combination, 2-speed, kick start, sporting sidecar, in excellent condition.—Joseph Rhind and Co., Stone Place, Rusholme, Manchester. [2423

1920 Scott, Lucas head, electric tail, mechanical horn, Watford speedometer, new tyres and chains, just overhauled; £90.—Knox, The Chase, Nuneaton. [X6471

1914 Scott, new cyls., rear tyre, drip feed, lamps, and horn, Binks, K.S., good condition, trial by appointment; £55; offers.—69, Upper Fant Rd., Maidstone. [2688

1920 Scott, lamps, horn, Binks, compression taps fitted, mileage 3,000, licensed; £105. Wanted, T.T. dynamo A.B.C.—Brown, New Inn, Silverton, Devon. [2627

SCOTT 1920 3¾h.p., solo, Lucas lamps, horn, tax paid, really good condition; £87.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2732

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; at £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

SCOTT, 1919, and Mills-Fulford sidecar, just finished complete overhaul, replating (Godfrey's), equal new spare Palmer Cord tyre, tax paid; £120.—J. K. Dunlop, 33, Exeter Rd., Broadesbury, N.W.2. [2620

1921 Scott Squirrel, fitted with special gear for hill-climbing and racing, extra air control, very fast, also mauve Canoelet sidecar to match, with wind screen, easily detached, posh turnout, small mileage, all on; cost £170, will accept £150.—Catt, Jun., Thanet, Abington Park, Northampton. [2330

SATISFACTION

based on Reliability is ensured to every purchaser of The

BURLINGTON

Re-conditioned

DOUGLASES

Indistinguishable from new. Fitted with New Carburetter, New Tyres, New Belt, New Chain, etc., and fully equipped for immediate service on road.

2¾ h.p. 2-speed.... **£65**

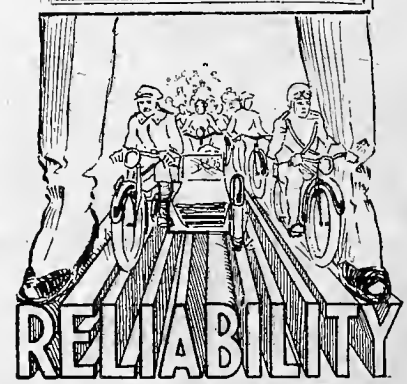
4 h.p., 3-speed, k.s., solo **£85**

4 h.p., 3-speed, k.s., comb., with Brand New Burlington Sidecar..... **£110**

NOTE !

2¾ h.p. Reconditioned Douglases are fitted with VICI Single Lever Carburetters. All the above machines are absolutely complete, including licence holder.

EASY PAYMENTS ARRANGED.



The BURLINGTON MOTOR CYCLE CO., LTD.,

7, South Side, Clapham Common, S.W.4

'Phone: *Brixton 2417.* *Wires:* *Burlington, Motors, Clapham.*

Just by Clapham Common, Underground Station.

MOTOR CYCLES FOR SALE.

Scott.

SCOTT 1913 3¾h.p. 2-stroke, twin, 2-speed, clutch kick start, all-chain drive, enclosed Bosch, Binks carburetter, splendid condition throughout, runs like a Rolls-Royce, nearly new tyres, enamel and plating perfect, has been most carefully used; £34 cash.—Watson, Victoria Rd., Aldeburgh, Suffolk. [272

Singer.

SINGER 4h.p. C.B. Combination, Bosch, B. and B. P.M. lighting set, 2-speed, perfect running order, all tyres new; £65.—Woodhay, Blackdown, near Farnborough, Hants. [263

Southey.

SOUTHEY'S 2½h.p. 2-stroke 2-speed Models, lamps, horn, licence holder, tools; £60.—Southey and Co., Berkhamsted. [X599

SOUTHEY 2½h.p. 2-stroke, 2-speed, Chater-Lea or Sturmey-Archer gears, clutch and kick starter, lamps, horn, licence holder, tools; £67.—Southey and Co., Berkhamsted. [X599

Sparkbrook.

1916 Sparkbrook-Villiers, 2¾h.p., 2-speed, engine as new; £30.—Kenneth Webb, Home Mill, Hertford. [237

Sun.

1921 Sun Vitesse 2-stroke, brand new, never been used, unregistered; £45.—53, Leslie Park Rd., Croydon. [1850

Sunbeam.

SUNBEAM Combination, 8h.p., as new; £175.—Hopkins, New St., Ledbury. [0678

E. KICKHAM for Sunbeam, sole agent for Bristol and district.—Stokes Croft, Bristol. [3359

4h.p. Sunbeam Combination, 1919 French Military Model, chain-cum-belt; price £110.—Southey, Berkhamsted. [X5991

3½h.p. Sunbeam Combination, lamps, Klaxon, £120 and cabinetmaker chest and tools, value £40, for higher power.—31, Hoghton St., Southport. [2800

SUNBEAM Combination, new appearance, 8h.p. J.A.P., completely overhauled by makers, spare wheel, etc.; £165.—Pickering, Mardol, Shrewsbury. [X6120

SUNBEAM 8h.p., Sept., 1920, Henderson Elite sidecar, electric lighting, horn, tools, tax paid, perfect condition, equal to new; £195 cash.—Terry, Beeley, Redditch. [0688

1914 8h.p. Sunbeam Combination, with 1919 J.A.P. engine, tax, spares, and well equipped, 3in. good tyres; genuine, £110.—Scantlebury, 163, Desborough Rd., High Wycombe. [2807

1919 (June) Sunbeam 3½h.p., low mileage, ready to ride away; owner bought car; solo £100, or with Canoelet sidecar complete £110.—Capt. Rusher, The Avenue, Amesbury, Wilts. [2401

1921 Sporting Sunbeam, Lucas lamps and horn, Bonnikseu speedometer, Brooks tube case containing new tube, etc., mileage under 300; £155.—Bowker, 21, Manchester Rd., Burnley. [X6330

1919 Sunbeam 8h.p. Combination, Lucas Magdyno, speedometer, Klaxon, wind screen, spare wheel, leg shields, licensed; £165.—Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [2845

SUNBEAM 1915 3½h.p. Model with sidecar, complete with all accessories, excellent condition; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6467

1920 3½h.p. Sunbeam Combination, mileage 500, condition perfect, appearance as new, interchangeable wheels, insured, tax paid; accept £140; any trial, owner buying car.—G.H.M., 86, Eltham Rd., S.E.12. [1511

SUNBEAM 1920 3½h.p. Combination, Lucas electric lighting, mudshields, low mileage, indistinguishable from new; £170; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6468

SUNBEAM 8h.p. 1920 Model Combination, delivered end 1919, small mileage; 28×3 tyres, fully and elaborately equipped, in perfect condition, ready for tour; bargain, £175, tax, insurance paid.—69, Bryn-y-Mor Rd., Swansea. [X6405

SUNBEAM Combination, 7-9h.p. M.A.G. engine, interchangeable wheels, fitted with best Gloria spring wheel sidecar, complete with hood, 3 lamps, speedometer, and Stewart horn, tax paid; £150.—53, Leslie Park Rd., Croydon. [1849

SUNBEAM Combination, 8h.p., late 1919, in first-class condition, electric light from accumulator, extra large Gloria sidecar with shock absorber, hood, wind screen, and apron, tax paid; £175; owner buying car.—Lewellen, Chattanooga, Clacton-on-Sea. [2378

1921 8h.p. Sunbeam Combination, new April, mileage 3,000, all Lucas accessories, cantilever Brooks saddle, Cowey speedometer, wind screen, luggage carrier, perfect condition, been well kept; £230; trial given.—Richardson, Rosslyn Hill Mews, Hampstead (near Tube Station). [2574

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

MOTOR CYCLES FOR SALE.

Triumph.

PREMIER Motor Co. for 1921 Triumphs

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; W.D.B. (renovated), £95; Type H 4h.p., 3-speed, £115; Type S.D., chain drive: £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph Specialists, the Premier Motor Co., Aston Rd., Birmingham. [0627

TRIUMPH 3½h.p., all on, perfect, licensed; £20.—17, Heatou Rd., Mitcham. [2804

1½h.p. Triumph, all on, tax paid; £24.—48, St. Barnabas St., Pimlico, S.W.1. [2442

1918 Countershaft Triumph, perfect; from £50.—24, Balliol Rd., North Kensington. [2675

LIGHTWEIGHT Triumph, 1920, complete; £60.—Pickering, Mardol, Shrewsbury. [X6116

TRIUMPH, C.S., equal new; £60; cash wanted.—Wilton, White Swan, Crystal Palace. [2299

1½h.p. Baby Triumph, 2-speed gear, 1915; £42/10.—Wauchope's, 9, Shoe Lane, London. [9010

27.—3½h.p. Triumph, new engine parts, tyres, licence.—Sidey, Pebmarsh, Bures, Essex. [2538

TRIUMPH, 3-speed, clutch and K.S.; owner going abroad; £65.—19, Wellington Rd., Charlton. [2812

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

1921 All-chain Drive Triumph, ridden 100 miles only, registered; £120, offers.—15, Wilfred St., Derby. [2339

TRIUMPH 1921; all models in stock for immediate delivery; exchange arranged.—Rose's Garage, Uxbridge. [2630

TRIUMPH 3½h.p., clutch, kick start, T.T. bars, new tyres, licence, all on; £36.—92, Tennyson St., Battersea. [2370

TRIUMPH 4h.p., renovated, 3-speed, lamps, horn, first-class condition; any trial; £56.—Hayes, Builder, Malvern. [2379

TRIUMPH 1920 4h.p. Countershaft with sporting sidecar; £90.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2519

1920 Triumph 4h.p., countershaft, perfect condition, well equipped; £80.—17, St. Charles Sq., North Kensington, W.10. [2004

TRIUMPH.—Wonderful value in overhauled W.D. models, from £57.—Clark, 7, Exhibition Rd., South Kensington. [2246

FOR Sale, 3½h.p. Triumph, enclosed Bosch; £40, or nearest; all spares; any trial.—Briggs, 3, Byam St., Fulham, London. [X6381

1919 Triumph 4h.p., 3 speeds, polished discs, appearance, running, guaranteed new; £75.—59, Greyhound Rd., Fulham. [2805

1912 3½h.p. Triumph, Henderson sidecar, fully equipped; any trial; £50, near offer.—Golby, South Mimms, Middlesex. [2395

1913 Triumph, 3-speed, lamps, accessories, good running order, tax paid; £35, lowest.—Harvey, 10, Hadley Gardens, Chiswick. [2531

1917 Triumph Countershaft, all accessories, tax paid, insured, just overhauled; 55 gns.; after 6.—66, Chelmsford Rd., Woodford. [2743

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parkers', Bradshawgate, Bolton; also 65, Deansgate, Manchester. [X6532

TRIUMPH, with Dunhill sidecar, latest model, fully equipped, only done 100 miles; what offers?—33, Jackford Rd., Brixton, S.W.9. [2826

1918 Triumph Combination, licensed, lamps, just been overhauled, £72; as solo, £62.—Derrington, Grafton Rd., New Malden. [2816

1921 (April) Triumph Combination, cost £220, take £185; 2-stroke in exchange.—Bacon and Wynn, 70, Stratford Rd., Birmingham. [X6367

1918 Triumph, unregistered, but in absolute perfect condition; accept £57/10.—G.H., 66, Pampit Vale, Lewisham, London. [2811

1918 Triumph, appearance and mechanically perfect; £60; any trial.—Haynes, 28, Church St., Greenwich, S.E.10. 'Phone: 1330. [2810

TRIUMPH 3½-4h.p., 1913, 3-speed hub gear, in good condition, lamp set, horn, mirror, etc.; £40, or near offer.—Triumph, Savoy Hotel, Buxton. [X6403

1½h.p. Triumph, new 2-speed N.S.U., new cyl., piston, belt, tyres nearly new, rebushed, overhauled, licensed; £39.—Apply, Cox's Garage, Holywell, Oxford. [2460

TRIUMPH, in excellent condition; bargain, £38.—Light Car and Motor Cycle Engineering Co., 26, Holse Hill, S.W.2 (½ minute from Brixton Skating Rink). [2795

TRIUMPH, 1918, 4h.p. countershaft, engine No. 52178, perfect condition; 60 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [0658

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1920 **COULSON B**, 4 h.p., 2-speed, very fast.....**£80**

1920 **SCOTT**, sports model, brand new.....**£115**

1921 **DOUGLAS**, 2 spd, all-on, **£85**

1920 **PRIORY**, 2¾ h.p., 5-stroke, Arden engine, lamp, horn, etc. .....**50 Gns.**

1920 **LEVIS**, fully equipped, tax paid **£45**

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1921 **DIAMOND-VILLIERS**, 2¾ h.p., Sturmey-Archer 2-speed and kick-starter **78 Gns.**

1921 **CALTHORPE** J.A.P., 2¾ h.p., Enfield 2-speed, and kick-start.....**£73**

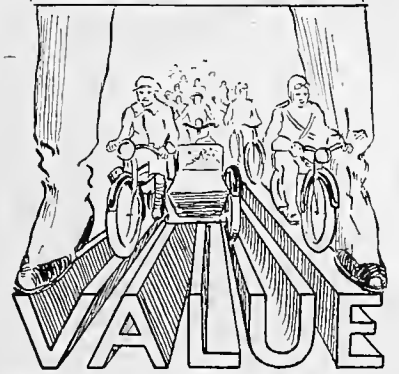
1921 **CALTHORPE**, 2-stroke, 2-speed, 2¾ h.p. .....**60 Gns.**

1921 **COULSON B**, 2¾ h.p. sports model, Sturmey-Archer, 2-speed & clutch **97 Gns.**

1920 4 h.p. **ZENITH**, Gradua gear, all-on, tax paid **£65**

1921 **WOLF-BLACKBURNE**, 4 h.p. Sturmey-Archer 3-speed, clutch and k-starter, Burlington No. 2 model, sidecar, complete with Easting Windscreen and all accessories, tax paid **£125**

(This machine has only been used for demonstration purposes.)



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TRIUMPH 1918 4h.p., countershaft, 3-speed, enamel, plating, and mechanism splendid order throughout, fully equipped; £70.—30, Crystal Palace Park Rd., Sydenham. [2645

TRIUMPH Countershaft Coachbuilt Combination, 3-speed, kick start, splendid throughout; seen Saturday afternoon or Sunday.—Hart, 153, Upland Rd., East Dulwich, S.E. [2685

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

1920 Triumph 4h.p., C.S., 3-speed, clutch, K.S., plated tank, speedometer, lamps, horn, licence; £77.—Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken 3709. [2322

TRIUMPH Combination, 1914, 3-speed clutch, large P.H. head lamp, Stewart speedometer, full accessories, carefully handled, excellent tune, 80 m.p.g.; £60.—Redroofs, Oxshott. [2357

TRIUMPH, renovated, 1920, 4h.p., 3-speed C.S., D.R. bars, Klaxon, lamps, spares, guaranteed perfect condition, very fast; owner buying car; best offer over £80.—Elmscott, Winchmore Hill, N. [2413

TRIUMPH 1919 4h.p., countershaft, as new, licence, fully equipped, Klaxon, new Dunlops, full tools, specially tuned engine, new S.A. gear box; £85, or offer.—Walker, 9, The Butts, Brentford. [2365

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt models.—Jones Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all models in stock, new chain drives, new chain-cum-belts, solos and combinations; immediate delivery; supplied on easiest of easy terms; trade supplied. [4537

1919 Triumph Combination, not W.D., engine No. 61747, lamps, horn, Easting, tools, etc., first-class condition guaranteed, any trial, licence paid; first reasonable offer.—Worboys, Saffron Rd., Biggleswade. [2673

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

1918 Triumph, renovated, fitted new 1921 Sturmey-Archer 3-speed countershaft, H.B. clutch, kick start, new sidecar, absolutely as new, fully guaranteed; £95.—Joseph Rhind and Co., Stone lace, Rusholme, Manchester. [2420

TRIUMPH 1921 4h.p., all chain drive, brand new but slightly soiled, an exceptional bargain at £105; usual price £125; secure now and save £20; cannot be repeated.—Wilkins Simpson, opposite Olympia, London. [2766

TRIUMPH, 1919, coachbuilt Canoelet sidecar, all lamps, horn, licence, tool kit, pump, etc., oversize rear Miller tyre, recently overhauled and in excellent condition; £105.—Taylor, 3, St. Cuthbert's Place, Durham. [2361

1919 C.S. 4h.p. Triumph, overhauled, replated, enamelled, new tyres, semi-T.T. bars, Bonniksen trip, Lucas horn, F.R.S. Major, all accessories 1921, tax paid; by appointment, after 6; £85.—J.B.I., Magazine Qtrs., Abey Wood, S.E.2. [2547

1918 Triumph, late model, countershaft, kick start, electric lighting, tyres good, tools, C.A.V. mag., engine 45411, in absolutely tip-top condition; £75, or offer.—The East Grinstead Motor Garage, Ltd., London Rd., East Grinstead, Sussex. [2425

1918 4h.p. Triumph, 3-speed, kick starter, complete with Canoelet sporty sidecar, Easting, lamps, horn, etc.; bargain, £74; tax paid; property of a naval officer.—Seen at Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [2250

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport Tel.: 607. [0646

TRIUMPH Combination (1919, July), smartest on the road, driven by owner only, disc aluminium wheels, aluminium mudshields, Tan-Sad saddle and carrier, electric light, hood and screen, several spares, top gear everywhere; £115/10. Victoria 6564.—Kearey, 41, Marsham St., Westminster, S.W. [2380

TRIUMPH Combination, 1918, 3-speed, clutch, K.S., engine, gear box just overhauled by makers, 3 lamps, generators, speedometer, unused spare tyre, 2 belts, £10 spares, new mudguards with aluminium side valances, detachable aluminium engine shield and leg guards, very fast machine, tax paid; 100 gns.; consider exchanges, higher power or A.B.C. combination.—Box 5,484, *c/o The Motor Cycle.* [2382

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

MOTOR CYCLES FOR SALE.

Triumph.

1921 Triumph-Gloria Combination, 4h.p., 3-speed countershaft, Model S.D.C., all-chain drive, Triumph new patent gear box and shock absorber, hand clutch, kick start, Gloria de Luxe sidecar, coachbuilt, painted purple, lined black and gold, upholstered light blue crocodile, large lockers back and front, floor rugs, aluminium covered luggage grid, patent spring wheel, black rubber covered apron and Easting Royal wind screen, petrol carrier and tin, Ace aluminium discs and Dunlop extra heavy tyres on all wheels, Triumph leg shields, all Lucas lamps, Cowey horn, handle-bar mirror, knee grips, Tan-Sad seat with patent back rest, full kit of tools, new spare valve, driving chain, tyre vulcaniser, and many other spares, maps, route guides, goggles, overalls, etc., etc., magnificent outfit, only 3 months old, mileage less than 500, absolutely as new, tax paid, cost new with accessories £220, owner bought houses and must realise; accept £157, remarkable bargain.—Write, Lt. St. John White, Olde Englishe Hotel, Matlock, Derbyshire. [1609

Velocette.

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

VELOCETTE, 1915, all on, speedometer, tax paid and insured, good order; bargain.—160, Boundary Rd., Walthamstow. [2372

VELOCETTE 2-stroke, 2-speed, chain drive, condition, almost new; rare opportunity, £39/10; tax, licence.—288, Sangley Rd., Catford. [2791

Verus.

VERUS-BLACKBURNE 4h.p., 1920, 3-speed, equal new, horn, tools; £70.—Cope, Upper Hagley Rd., Birmingham. [2377

£68.—1920 2¾h.p. Verus-Blackburne, 2-speed, K.S., horn, accessories, licensed, like new.—19, Saxon St., Wrexham. [2509

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, ridden 250 miles, tax paid; £80.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0502

1920 Verus 2¼h.p., single speed, practically new, Hunt's electric light outfit, mirror, good horn, extra Lycett toolbag, tax paid, privately owned; £50; would consider exchange higher powered single-cyl. 2-speed lightweight with cash adjustment, must be very low riding position; London district.—Write Box 5,417, c/o *The Motor Cycle.* [1586

Victoria.

VICTORIA, Precision engine and 2-speed gear, guaranteed good order and condition; £27/10; first cheque secures.—Samuel Reed and Sons, 136, Gt. Dover St., S.E.1; 168, Hither Green Lane, Lewisham, S.E.13. 'Phone: Hop 2537, Lee Green 794. [9456

Villiers.

1916 Villiers, lamps, tax paid, guaranteed sound; £20, bargain.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2520

Wilkin.

WILKIN.—All models in stock; deferred payments. Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6545

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate; Bolton; also 245, Deansgate, Manchester. [X6469

Wolf.

£32.—Wolf 2-stroke, in splendid condition, go anywhere, reliable.—Holdstock, Church Cottages, Eynsford. [2485

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

1921 8h.p. Zenith, clutch and K.S.; £144.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [2461

ZENITH 6h.p. Combination, 1913-14; £70; any trial.—Molton, 5, Hatchlands Rd., Redhill, Surrey. [2486

ZENITH 4-5h.p., clutch model; £88, offers; kick start.—Coniston, Alfriston Rd., Seaford, Sussex. [2667

1920 8h.p. Sports Zenith, low mileage, condition as new, tax paid; £110, or nearest.—Chattan House, Harrogate. [2508

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [2692

ZENITH 8h.p. Racer Cycle, 1920 T.T. model, little used; £85, or best offer.—Harper, Phillips and Co., Ltd., Eastgate, Grimsby. [1978

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ARIEL, 4½ h.p., 3-speed	£110	0
ARIEL 6-7 h.p. 3-speed all-chain Combination	£165	0
A.J.S. 7 h.p. Combination	£215	0
B.S.A., 4¼ h.p., Model H	£110	0
Ditto, with B.S.A. Sidecar	£152	0
B.S.A. 6-7 h.p. Model A twin Com.	£175	0
DOUGLAS, 2¾ h.p., all-on model	£85	0
ENFIELD 8 h.p. Combination, Magdyno lighting, and horn	£182	0
ENFIELD, 2¼ h.p., 2-speed	£65	0
METRO-TYLER, 2½ h.p., 2-speed, sports model	£63	0
MATCHLESS Model H Combination, spare wheel, etc.	£185	0
NEW IMPERIAL, 2¾ h.p., 3-speed, clutch, and K.S.	£80	17
MARTINSYDE 6 h.p. Combination	£145	0
NORTON Big Four, 3-speed	£135	0
O.K. Junior, all models, from	£39	18
P. & M., 3½ h.p., 2-speed, etc.	£115	0
RUDGE Multi, 3½ h.p., I.O.M.	£85	0
VELOCETTE, 2½ h.p., 2-speed	£75	0
ZENITH, 8 h.p., Model H	£144	0
CLYNO 8 h.p. Combination, spring frame, and spare wheel	£180	0
RALEIGH 5-6 h.p. 3-speed spring frame Combination	£184	16
BROUGH 5-6 h.p. flat twin 3-speed Combination	£170	0

Etc., etc.

We have a good stock of up-to-date second-hand machines, overhauled in our own workshops and guaranteed in good order.

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LEVIS Popular, re-enamelled and plated	£42	10
DOUGLAS, 2¾ h.p., 2-speed	£50	0
A.B.C., 1920, 4 speeds, dynamo lighting	£105	0
A.J.S. 1915 6 h.p. Combination	£115	0
ENFIELD 1916 6 h.p. Combination	£105	0
SCOTT, 1920, and Henderson Sidecar, electric light, screen, speedometer, only done 500 miles	£135	0
NEW IMPERIAL-J.A.P. 1920 6 h.p. Combination, access., tax paid	£130	0

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Last week the price of our Super Lamp was stated at **8/-**, this being a printer's error for **38/-** We apologise to readers for any trouble they may have been occasioned.

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ZENITH.—All models, solo or sidecar; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6543

ZENITH, all models.—Sporting 5h.p., £115. Consult the man who rides one.—R. B. Clark, 7, Exhibition Rd., South Kensington. [2248

ZENITH 6-8h.p. 1914 Combination, coachbuilt sidecar, spring wheel; £65; perfect running order.—Walker, 168, Upland Rd., E. Dulwich. [2448

ZENITH 4h.p. Coachbuilt Combination, enamelled red, perfect order, take 3 anywhere; genuine bargain, £40.—Dunkley, Brackley, Northamptonshire. [2532

ZENITH Combination, all lamps, re-enamelled, new bushes, gudgeons, rings, tyres, and new spare belt at a cost of £30; £90, or accept solo Douglas as part.—Barker, 10, Elaine Grove, N.W.5. [2510

ZENITH 1915 4h.p., speedometer, lamps, tools, aluminium disc wheels, recently painted, in excellent mechanical condition, also sidecar to go with machine; will sell both separately; offers wanted.—Box 5,408, c/o *The Motor Cycle.* [1453

5 h.p. Twin Zenith Combination, clutch, kick starter, Henderson £24 sidecar, as new, overhauled, new extra heavy back tyre, front nearly new, spare belt and tube, mechanically sound; best over £70, bargain.—57, Church St., Dunstable. [X6475

68 GNS.—8h.p. Zenith C.B. combination, 1916-17, wind screen, speedometer, brand new frame, wheels, etc., plating, enamel unscratched, new tyres all round, tax paid.—I. D. Hardy, 8, Breams Buildings, Chancery Lane. Holborn 4752. [2663

Ladies' Motor Cycles.

AS a Lady's Motor Cycle, the Ivy is It.—Send for details from the Midland agents, Frank Whitworth, Ltd., Birmingham. [X4180

NEW IMPERIAL, 2¾h.p. J.A.P., lady's model, 1917, clutch, kick starter, etc., good condition.—'Phone, after 7 p.m.: Dalston 1560. [2415

GREAT Bargain.—Genuine 1920 2-speed 2-stroke Calthorpe, lady's model, used very little, fast, powerful; owner bought car; will sacrifice for quick sale £39, no offers.—Miss Richards, Onslow St., Guildford. [2411

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax

BARGAINS.—1920 Indian Combination, dynamo lighting, screen, £145/10; G.W.K. light car, detachable wheels, £155/10.—Booths Motories, Halifax.

BARGAINS.—8h.p. Matchless combination, countershaft gear, £49/10; 4¼h.p. James, 3-speed, chain drive, £39/15.—Booths Motories, Halifax.

BARGAINS.—7-9h.p. Indian, 2-speed, £29/10; 6h.p. Chater-Lea and sidecar, £30/10. — Booths Motories, Halifax.

BARGAINS.—3h.p. Enfield lightweight, 2-speed, £35/10; 3½h.p. Triumph, £26/10; 3½h.p. Ariel, £35/10; J.E.S. motor set on cycle, £17/10.—Booths Motories, Halifax

BARGAINS. — 3½h.p. 1914 P. and M., £49/10; nearly new 1921 2-speed Omega, £51/10; 1920 O.K., £35/10; 1920 Scott, £87/10.—Booths Motories, Halifax

BARGAINS.—4h.p. Douglas, 3-speed, £59/10; 1915 2¾h.p. Douglas, £37/10; new 1921 Rudge Multi, £85.—Booths Motories, Halifax.

BARGAINS.—Shop-soiled 1920 models: 2¾h.p. O.K., £43/10; ditto 2-speed, £54/10; 2¾h.p. Omega-Jap, 2-speed, £67/10; Harley-Davidson and sidecar, £189/10; 6h.p. Ariel combination, £149/10; exchanges entertained. Pay us a visit.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [6195

MINIATURE Motor Cycle, Wall engine, 20in. wheels, pan saddle, excellent running order; £20, or near offer.—12, Hemingford Rd., Barnsbury. [2641

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [7906

A1 Opportunity.—Exceptional bargains in shop-soiled motor cycles and combinations for cash or the easiest of easy terms, no extra charge.—Write, 'phone, or call at Wauchope's, Shoe Lane, London. [4535

SAM E. CLAPHAM (Motors). 'Phone: Greenwich 751.—Immediate delivery lightweight models, Edmund (spring frame), Connaught, New Comet, Excelsior, F.N., Arden, Douglas, etc.—27, Stockwell St., Greenwich, S.E.10 [1108

VICTORY Garage. Victory Garage.—Douglas 2¾h.p., unscratched, £52; Indian Powerplus, brand new sidecar, all on, £120; J.A.P. monocar, 2-speed, lamps, etc., £95; Quadrant 3h.p., £25; machines overhauled and tuned; estimates free; write or call.—2b, Denmark Rd., Camberwell, S.E. [2839

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WANDSWORTH.—Easy terms. Easy terms. Immediate delivery given on first deposit.—Below.

WANDSWORTH.—Humber fine coachbuilt combination, 3½h.p., 3 speeds, kick, lamps; 58 gns.—elow.

WANDSWORTH.—F.N. splendid coachbuilt combination, 5-6h.p., 4 cyls., 2 speeds, clutch, lamps, censed; 59 gns.—Below.

WANDSWORTH.—Premier beautiful coachbuilt combination, 3½h.p., 3 speeds, kick, licensed; 52 ns.—Below.

WANDSWORTH.—Rudge coachbuilt combination, 3½h.p., 2 speeds, kick, runs splendidly; 48 gns. -Below.

WANDSWORTH.—Chater-Jap coachbuilt combination, 4h.p., 3 speeds, lamps, licensed; 49 gns.—elow.

WANDSWORTH.—Rex coachbuilt combination, 5 h.p. twin, 2 speeds; any trial; 49 gns.—Below.

WANDSWORTH.—Triumph coachbuilt combination, 3½h.p., 2 speeds, countershaft, lamps; only 8 gns.—Below.

WANDSWORTH.—1920 Triumph, almost new coachbuilt combination, 3 speeds, lamps; 125 ns.—Below.

WANDSWORTH.—1920 magnificent Red Indian coachbuilt combination, dynamo lighting; gift, 29 gns.—Below.

WANDSWORTH.—Zenith, 4h.p. J.A.P., Gradua gear, clutch, kick starter; bargain, 45 gns.—elow.

WANDSWORTH.—1918 P. and M. nearly new coachbuilt combination, lamps, licensed; sacrifice 79 ns.—Below.

WANDSWORTH.—F.N., 5-6h.p., 4 cyls., Bosch, 2 speeds, clutch, runs beautifully; 45 gns.—Below.

WANDSWORTH.—Royal Enfield lightweight, twin, 2 speeds, kick, licensed; cheap, 42 gns.—Below.

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WANDSWORTH.—Bradbury 4h.p., mag., 3 speeds, kick, lamps, licensed; only 38 gns.—Below.

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WANDSWORTH.—Minerva 4½h.p. twin, mag., F.E. clutch; great bargain, 25 gns.—Below.

WANDSWORTH.—F.N. 2¼h.p., Bosch, 2-speed, shaft drive, wants crank case; 16 gns.—Below.

WANDSWORTH.—Minerva 2½h.p., mag., dropped frame, drive away; gift, 13 gns.—Below.

WANDSWORTH.—Exchanges. — Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). Phone: Latchmere 4686. [2837

MORE Bargains to Clear.—A.C.M.E. twin 3½h.p., running order, £15; Quadrant 3½h.p., 2-speed Coc, £18; Matchless-Jap 3½h.p., 2-speed, £25; Bat-Jap 6h.p., £20; several lightweights.—Bunting's Exhange, Wealdstone. [2833

T.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged, ny new motor cycle combination or car supplied, ash or easy payments. — Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Sta on). 'Phone: Hampstead 3752. Hours 9-7, includ ng Saturdays. [2696

1919 7-9h.p. Indian, 1919 5-6h.p. Rover combination, 1920 Coulson-B 2¾h.p., 3¾h.p. Scott 915 combination, 1914 Indian combination; 7-9h.p. Dayton combination, lamps, screen, etc., £65; Bradbury ombination, C.B., lamps, wind screen, 2-speed gear, tc., £50; 1914 Humberette, screen, hood, lamps, all s new.—Below.

2-SEATERS, combinations, or solo machines bought, sold, or exchanged.—'Phone: 776 Rusholme.—oseph Rhind and Co., Stone Place, Rusholme, Manhester. [2424

WE have at bargain prices, needing slight repair, 1916 Levis, £29/10; 1913 Indian combination, 30; 1916 Douglas 2-speed, £35; 1915 Ivy-Jap 2-seater ombination, £75; 1914 Excelsior combination, £35; 915 Harley-Davidson Model J combination, £89/10.—amb's, 151, High St., Walthamstow; 50, High Rd., Wood Green; and 387, Euston Rd., N.W. [2742

MOTOR ATTACHMENTS.

1921 1½h.p. Economic Motor Attachment; 25½ gns —Morriss and Co., Ltd., 139, Finchley Rd., .W.3. [2466

WALL Auto-wheel, condition perfect, suit invalid chair or bicycle; £10.—Judd, 51, Wadsley Lane, heffield. [2775

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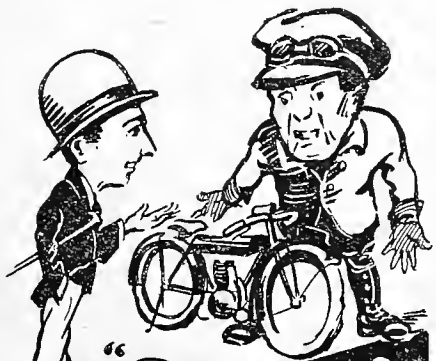

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MORGAN 1920 Sporting Model, 10h.p. M.A.G. engine, complete lamps, tax paid, wants a few adjustments made; £100.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

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1920 A.V. Monocar, 8h.p., as brand new, mileage small, beautiful engine, special springing, electric and acetylene lights, dickey seat, new spare tyres, spares, and tools; £85, offers.—1, Thorpe Mews, Ladbroke Grove, W.11. [2749

MORGAN 1921 Models, delivery from stock.—Grand Prix £218, De Luxe £228, family £235, Aero £223. Authorised agents. Trade supplied.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.V., paint, tyres excellent, dickey seat, unusually smart, powerful electric, 5 inspection lamps, special lubrication, just back from makers' overhaul; they value £130, price £78/10; tax paid.—A. V. Catteshall, Grange, Godalming. [2704

1921 Morgan Runabouts, de luxe, family, and aero models, ready drive away; complete stock of spares, chains, sprockets, tyres, etc.—Main distributer Monmouthshire: W. Luther J. Davies, 71, Commercial St., Newport, Mon. 'Phone: 2488. [0642

COVENTRY Premier Owners Note.—Get maximum economy by fitting the Dixon hand jet control to your Cox Atmos carburetter; 15-20 increased m.p.g. guaranteed; a genuinely good sound fitting. Price 35/-; fitted in ten minutes.—Dixon-Bate, Dee Banks, Chester. [X5510

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£50 down and 12 payments of £5 monthly secures reliable landaulet.—Palmer's Garage, Tooting.

£50 down and 12 monthly payments £7/10 secures reliable 2-seater.—Palmer's Garage, Tooting.

£225 Cash secures 1917 Napier chassis, 4 cyls., worm drive, detachable wheels.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £10 secures 12-14h.p. Fiat landaulet, cheap running car.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures 18h.p. Oakland open touring car, 7-seater, sell-starting.—Palmer's Garage, Tooting.

£75 down and 12 monthly payments £10 secures Sheffield-Simplex landaulet. — Palmer's Garage, Tooting.

£100 down and 12 monthly payments £10 secures 15.9h.p. Benz landaulet, 4 speeds, monobloc.—Palmer's Garage, Tooting.

£150 Cash secures 15h.p. Darracq torpedo 4-seater, detachable wheels, extra good.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures Piccard-Pictet ¾ landaulet.—Palmer's Garage, Tooting.

£50 down and 12 monthly payments £5 secures very fine 20h.p. N.E.C. ¾ landaulet.—Palmer's Garage, Tooting.

£75 Cash secures 10h.p. Swift 2-seater, gate, hood, screen.—Palmer's Garage, Tooting. [1992

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FORD Landaulet, in perfect order; £125.—77, Acre Lane, London, S.W. [2707

ADAMS 10h.p. 2-seater, good running order; £50.—Fry, The Firs, Chertsey Rd., Windlesham, Surrey. [2554

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CADILLAC 30h.p. 8-cyl. Touring Car, little used, perfect; £295.—Dr. Carr, 94, Branksome Rd., Brixton, London. [2705

MARSHALL-ARTER 10h.p. 2-3-seater, Baby Rolls, 1914-15, 4-cyl. monobloc Chapuis-Dornier engine, enclosed valves, waterproof Bosch, Zenith, disc wheels, Lucas dynamo lighting set with 5 lamps, Wallis side screen, mechanical horn, hood, screen, etc., special very luxurious body fitted, painted dark blue with black wings, nearly new tyres all round, runs most beautifully, any trial given, a real snip; £140.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [2740

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£100 Down and 12 monthly payments of £25 secure a magnificent 3-ton lorry.—Details, Palmer Garage, Tooting. [1986

A.C. Tradesmao's Box Carrier, 1916 late model, reverse and hand brake, excellent condition; any trial; bargaio, £55; would exchange for motor cycle or combination.—1, Norwood Rd., Herne Hill, S.E.24. [2210

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FOR Best Treatment and best terms for light cars, cycle cars, or motor cycles of any make, new or second-hand, write Service Co., 292, High Holborn, W.C.1. [0672

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4¼h.p. Levis Engine, 2-stroke, flat twin; £6.—Thorncliffe, Eastbourne Rd., Seaford. [2345

10h.p. 4-cyl. w.c. Engine, complete; £25.—Capt. Jackson, c/o 77, Acre Lane, S.W.2. [2706

LEVIS 4½h.p. Flat Twin Engine, mag., carburetter; £15.—2, Bassingham Rd., Earlsfield. [9787

2¾h.p. J.A.P. Engine, magneto and silencer, all brand new! what offers?—Kemp's Garage, Louth, Lincs. [X6457

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TRIUMPH Engine, B. and B., M.L., adjustable pulley, all in order; £10, or separate.—44, Brunswick St., Cardiff. [2546

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2¼h.p. 2-stroke Engine, new cylinder, with chain sprocket, overhauled and in perfect order, fitted with new C.A.V. magneto, complete; best offer over £10.—Box 834, c/o *The Motor Cycle*. [X6207

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MAGNETOS to Trade Only.

C.A.V. 2-cyl. Clockwise Aeroplane Starting Magnetos, platinum points, the workmanship is of the finest; all working parts interchangeable with C.A.V. type KU2.

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ONE Carriage Paid 25/-; special price for quantity.

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MAGNETOS, Dixie, clockwise, twin, unused, perfect, £3/3, must sell; Thomson-Bennett, single, as new, £3/15.—64, Bishopsgate, London. [0615

45/-, Thomson-Bennett 180° twins and singles, suitable Douglas, P. and M.; also Clyno twins, £3; all brand new.—Banister and Botten, 341, Upper St., Islington, N.1. 2480 North. [2748

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Goodrich Safety Tread Cover and Tube.

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26 × 3 × 2½	Skew Extra Heavy Non-skid	42/6

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28 × 2½	Clincher Dreadnought	45/6

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8'6" × 1" ..... £1 1s.

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C.A.V., suitable for any 2 or 1-cyl. engine of than 5h.p., height 4¼in., breadth 2⅝in., d from armature driving end to contact breaker c 4½in. They are efficient, and yet have the vantage of being the smallest magneto that can thoroughly relied upon for the purpose recommen Variable ignition and short circuiting terminal. T magnetos have platinum points, and the workman is of the finest. 2-cyl. fires at 180°; provisional p 47/6. All working parts are standard and interchan sble with C.A.V. Types K.U. 1 and 2.

THOMSON-BENNETT 4-cyl. or 8-cyl., vari ignition, clock or anti-clock, £5/5; carriage packing, 5/-.—Below.

BOSCH 1-cyl., clock or anti-clock, as new, £3 variable ignition, 10/- extra.—Below.

THOMSON-BENNETT and M-L's of Coventry, L A.D.S. or P.L.R. types, clock or anti-clock; 3 variable ignition 10/- extra; suitable for statio engines.—Below.

THOMSON-BENNETT, types A.M.1 and 2, vari ignition and short-circuiting terminal, clock anti-clock; 50/- each; type A.M.2. fires at 180 Below.

N.B.—State whether 1 or 2-cyl., clock or anti-cl when looking at the driving end. Special net p will be made for contract orders to deliver so m per week or month; carriage and packing 1/9 per m oeto on 1 and 2-cyl. magnetos.

GUARANTEE.—These magnetos were manufactu in anticipation of Government contracts, a have been some time in stock; it is therefore ne sary to throw out any damaged by rough handli and to remagnetise and thoroughly overhaul all othe All our single-cylinders are guaranteed one spark p revolution. We guarantee that the work has b thoroughly done by experienced mechanics, and t all magnetos are despatched in perfect working order Vale Engineering Syndicate, 8-11, Brown's Buildin St. Mary Axe, E.C.3. [05

COUNTY of London Engineering Works, Ltd.

MAGNETOS, Magnetos, Magnetos.

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H.B. Ignition Co. for unused W.D. Thomson-Bennet magnetos, 500 in stock.

H.B. can supply from stock single and twin T.B 42, 45, 50, 55, and 180 degrees, clock and anti with baseplate and bolts for fixing on Triumph, P.M. B.S.A., J.A.P., Douglas, etc.; £2/10, postage 1/6.

H.B. sends all goods on approval per return post on receipt of cash; every magneto sent out carries H.B. 12 months' guarantee.

H.B. will take your old magneto in payment.

H.B. can offer you large discount for quantities o A.C. Titan plugs in boxes, 1/6 each. Send you enquiries to an old-established firm.—H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. [2309

MAGNETOS. The real thing, not converted starter magnetos. Genuine Bosch 1914 type, waterproof anti-clock, ZE1, £3/15.—Marble Arch Motor Exchange 135, Edgware Rd., W. 'Phone: Padd 789. [1616

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PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6 slip rings 6/6, H.T. terminals 4/6. Our price fo overhauling a motor cycle magneto ranges between 20/ and 35/-, and never exceeds the latter figure. Guaran teed for 12 months, and redespatched to you in 2 days

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MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telephed on receipt; quick, efficient repair guaranteed from 2 to 6 days, usually within 24 hours.—Palmer's arage, Tooting. [1987

J.H. Magneto Repairs.—We specialise in these magnetos and can be relied upon to give you good rvice. A1, B1, AO, KB1, KB2V, KZ2V type spares ocked; prices moderate; 12 months written guarane.—Charles Parker and Co., Churchfield Rd., Acton, ondon. [7623

STANDARD Magneto Co.—For 8 years we have specialised on magneto repairs, during which time e have handled every make and type. Here are 3 rong reasons why you should send that magneto us and avoid future failures and the consequent pense:

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MAGNETOS.—Thomson-Bennett, clock or anti-clockwise, 42, 45, 50, 55, 180°; and single-cyl. engines, 4-stroke 50/-, 2-stroke 45/-. All above have variable ignition and are new, waterproof and guaranteed. Write for illustrated particulars.—Super Power Co., 81, orth Side, Clapham, S.W.4. [2712

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THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, nd officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly eturn them within 24 hours. We have several new nd second-hand single and 2-cyl. magnetos in stock, ll guaranteed.—The Magneto Repairing and Winding o., 78, Hampstead Rd., Euston, London, N.W.1. Phone: Museum 1158. T.A.: Kumagoelec, Euroad, London. [6015

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos, Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and pares. All repairs are tested on an approved A.I.D. est bench before despatch, and therefore carry our uarantee for 12 months. We hold the largest sock f guaranteed magnetos in London, twins all degrees; pare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, ables, ½-watt and vacuum bulbs, all voltages. We ive you real live service always.—Euston Ignition o., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Euroad, London. [0263

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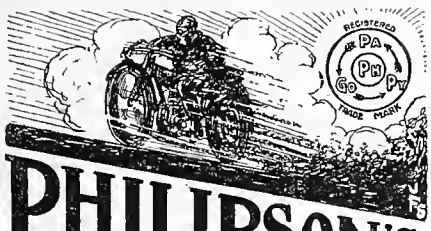
650×65 Clincher De Luxe, extra heavy, unused, 42/-, original cost 80/9; 650×65 Oylers, heavy, 38/6, original cost 65/-.—64, Bishopsgate, London. [0618



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HERBERT ROBINSON, Ltd., Green St., Cambridge.—Special manufacturers' clearance and W.D. stock, every cover guaranteed and sent on 7 days' approval, carriage paid.

26×2¼ Dunlop Heavy 37/-, Palmer cord 36/-, Clincher extra heavy 35/-, Matchless 20/-, John Bull heavy 39/-, Cuthbe 42/-, Pedley specials 35/-, inner tubes 6/11.—Robinsons.

26×2⅜ Dunlop Heavy 37/-, John Bull rib stud 48/6, Hutchinson T.T. 32/-, Moseley heavy 30/11, Clincher 35/-, Bates heavy 50/-, Beldam heavy 30/11, inner tubes 7/11.—Robinsons.

26×2½ John Bull Heavy 48/6, Bates special heavy 50/-, Matchless 20/-, inner tubes 7/11.—Robinsons.

26×2½ (to fit 2¼) John Bull 50/-, Cuthbe 48/-, inner tubes 7/11.—Robinsons.

28×2½ (to fit American rims) Dunlop steel studded 39/6, Dunlop extra heavy rubber studded 48/-.—Robinsons.

28×3 Moseley heavy 30/11, Cuthbe 63/-, Avon extra heavy 3-ribbed 50/-, inner tubes 7/11.—Robinsons.

28×3 for American Rims, Dunlop extra heavy, 52/-.—Robinsons.

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700×80 Cuthbe; 70/-.—Robinsons.

26×2, Special Bargain in Dunlop inner tubes, new, unused; 6/-, post free.—Herbert Robinson, Ltd., Green St., Cambridge. [2202

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ECONOMIC.—Wood-Milne 24×2 heavy, 23/9; 26×2 heavy, 25/-; extra heavy, 30/-.

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ECONOMIC.—Wood-Milne 26×3 extra heavy, 720×80, for 650×65, 46/6; 700×80 special, 43/6; 28×2½ American special, 32/4.

ECONOMIC.—The following are W.D. clearance, new, and in perfect condition.

ECONOMIC.—26×2¼ Bates special heavy, 33/-; Clincher de Luxe extra heavy, 33/9; Beldam combination, 35/-.

ECONOMIC.—26×2⅜ best make heavy rubber-stud, 37/6; Hutchinson T.T., 30/-; Hutchinson Passenger, 35/-.

ECONOMIC.—26×2⅜ Bates special heavy, 36/6; Beldam extra heavy, 32/6; Clincher de Luxe heavy, 30/-; extra heavy, 34/6.

ECONOMIC.—Fully guaranteed Dunlop rubber-stud, 24×2 26/3, 26×2 28/9, 26×2¼ 30/-.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [7892

BURST Motor Cycle Tyres, chafed beads, remoulded, made perfect, tube vulcanising, butt-ends fitted, retreading; send for list.—Melton Mowbray Rubber Works, Melton Mowbray. [0347

BALE and Co.—Special offer of Wood-Milne covers, new and condition perfect, at prices approximately 50% under list; all goods carriage paid against remittance; money refunded if not satisfied.

BALE and Co.—26×2¼ 26/6, extra heavy 32/6; 26×2⅜, extra heavy 33/-; 26×3 (to fit 650×65), 40/-, extra heavy 45/-, 650×65 32/6, 26×3 34/-, extra heavy 42/-, 26×2½ 34/-, extra heavy 36/-.

BALE and Co.—Hutchinson T.T. 26×2¾. 35/-; passenger, 36/-; Clincher de luxe, extra heavy, 34/-; Palmer 26×2¼ and 2⅜, 35/-; Avon rubber studded 26×2¼×2⅜, 32/6; Dunlop heavy rubber studded 26×2¼×2⅜, 37/6.—126, High St., Croydon. 'Phone: 1882. [8380

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [6068

TYRES, brand new, in perfect condition; 26×2¼ heavy 26/6, 28×3 heavy 30/-, 28×3 extra heavy 33/-, 26×2⅜ Dunlop heavy, 37/6.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, S.W.2 (½ minute from Brixton Skating Rink). [2796

EMANUEL'S have a special line of real live 26×2¼ and 2⅜ rubber-studded second-hand covers, guaranteed sound and never been repaired; inner tubes to match, 20/- the pair; a few other sizes on application.—H. Emanuel, Tyre Factor, 37a, Balls Pond Rd., Dalston, N.1. [0235

TYRES.

FURTHER Bargains.—New Dunlops, Avons, or Wood-Milne steel-studded covers, W.D., 650×65 or 700×65, 35/- each; new Beldam clearance covers, all sizes 30/- each, except 28×3 and 650×65 40/- each, 700×80 50/- each; new motor cycle tubes, all sizes, 5/- each.—Homerton Rubber Works, Brooksby's Walk, Homerton, E.19. [0331

26×2½ New Beaded Covers, 24/-; new best quality tubes, 24×2¼, 5/-; 26×2, 6/-; 26×2¼, 6/6; 26×2½, 7/6; 26×2½×2¼, 8/-; 26×3, 9/-; 700×80, 9/6; 750×75, 10/-; 28×3, 10/6; new rubber belts, 6ft. 2in.×1in., 10/6; 15in. inflators, 2/3; sent approval; carriage paid receipt remittance.—Palmer's Garage, Tooting, S.W. [1983

EXCEPTIONAL Opportunity.—Nearly 50% off list price; 7 days' approval; Wood-Milne Keygrip covers, new, 26×2¼, 29/6, list £2/13/8; 26×2½, 35/-; list 57/6; 26×2¾, 33/6, list 62/-; 650×65 motor cycle bead, 35/6, list 65/6; Englebert heavy rubber-studded passenger, 33/6, list 46/3; tubes 6/- each.—Armstrong, 17, Goldhawk Rd., Shepherd's Bush, London. [2771

CENTRAL Garage, Thornton Heath, Croydon.—Owing to the phenomenal success of our free vulcaniser gift last week, we have decided to distribute a further 500 machines. A complete outfit with any of our covers, which is entirely for the purpose of bringing to your notice the value we offer, invariably met by repeat orders. Despatched immediate and on approval. Brand new Wood-Milne covers, 26×2¼, 26/6, extra heavy 32/6; 26×2⅜ 27/6, E.H. 33/-; 26×2½×2¼ 30/-, E.H. 35/-; 26×2½ 34/-, E.H. 36/-; 26×3×2½ 32/-, E.H. 40/-; 26×3 34/-; E.H. 42/-; 650×65 32/6, E.H. 37/6; 700×80 or 26×3 (to fit 650×65) 40/-, E.H. 45/-; heavy tubes, 5/6; carriage 1/6.—Below.

CENTRAL Garage.—Special line of 28×3 extra heavy Wood-Milne, 30/- each, listed at 87/-; tubes, 7/6.—Below.

CENTRAL Garage.—Dunlop covers, all sizes, heavy, extra heavy, and combination steel stud. Send cutting of lowest advertised, and we will supply, together with free vulcaniser, on approval.—Below.

CENTRAL Garage.—Bates 3-ribbed covers, 34/6; Palmer, 35/-; Hutchinson, Avon, or Macintosh, 34/-; 26×2¼ or 2⅜; all approval against cash; carriage 1/6. Anyone going elsewhere does not know how to buy.—London Rd., Thornton Heath. [2222a

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14 FEET Whittle Belting, ¾in., as new; sell cheap, whole or in parts.—Box 5,538, c/o *The Motor Cycle.* [2760

BALATA and Chrome Combination Belts, splendid for variable pulleys; special trial offer, ⅞in. 1/3, 1in. 1/6 per foot; postage 1/-; fasteners 9d.—W. Pollie and Son, Hollington, St. Leonard's-on-Sea. [1417

CENTRAL Garage.—Most of this belting is all the same stuff, although there is little doubt we had the first pick. Brand new Pedley, Dunlop, or Clipper: 6ft. 6in. ¾in. 12/6, 8ft 6in. 1in. 18/6, ⅞in., any length, 1/9 per ft.; carriage 9d.; approval.—London Rd., Thornton Heath, Croydon. [2222b

LARGE Quantity of New Belts, not clearance: Clipper, 9ft.×1in., 22/- each; 8ft. 6in. ditto, 21/- each; surplus by leading makers, ⅞in., any lengths, 2/1 a foot; special offer at 6ft. 6in. of ⅞in. at 10/- each, ¾in. ditto, 12/6.—H. Emanuel, Tyre Factor, 27, Belgrade Rd., N.16. Stores: 37a, Balls Pond Rd., Dalston, N.1. 'Phone: Dalston 3161. [0348

BELTS.—Clincher, unused, not W.D., ¾in., 6ft. 6in., 9/6; 7ft. 6in., 10/11; 8ft., 11/9; ⅞in., 7ft. 6in., 12/9; 8ft. 6in., 14/9; 1in., 7ft. 6in., 16/6; 8ft., 18/6; 1⅛in., 7ft., 18/6; 8ft. 21/-; 8ft. 6in., 23/-; Bates, short lengths, ¾in., 5ft., 5/-; 5ft. 6in., 5/6; ⅞in., 4ft. 6in., 5/6; 5ft., 6/3; 5ft. 6in., 7/6; 1in., 4ft. 6in., 6/9; 5ft., 7/3; 5ft. 6in., 8/3; leather belts, ¾in., at 2/6 per ft.; belt fasteners, 9d. and 1/- each.—Bancroftian Co., 64, Bishopsgate, London. [0617

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J. E. S. LOCKWOOD, Motor Specialist.—Guide free. 3, New St., Birmingham. [7103

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 25 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [1049

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SITUATIONS VACANT.

TRAVELLERS Wanted, call on garages, factors, ironmongers, engineers, factories, all districts, carry excellent selling lines on good commission.—Box 5,391, c/o *The Motor Cycle.* [137

MOTOR Cycle Chauffeur wanted for touring provinces. State age, experience, salary required, good references essential.—Handicrafts, Ltd., 264, Holloway Rd., London, N. [150

WANTED, by well-known cycle and motor cycle manufacturers, 2 or 3 first-class representatives or travellers, thoroughly acquainted with trade. Only those having good connection, and who can introduce solid business, need apply. All applications will be treated in strict confidence.—Write, stating area worked and full particulars, to Box 847, c/o *The Motor Cycle.* [X643

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YOUNG Man seeks Situation in motor or cycle trade, some experience; work board and lodging.—Long, Stone Green, Mersham, Ashford, Kent. [184

WANTED, a chance!—Advertiser has all-round experience I.C. engines, thermo dynamics, carburation, etc., keen on power per capacity experimental design, forced induction, etc., work done to micrometer, no rusty foot rules employed, qualified to use his head as well as hands, capable rider and tuner, will undertake anything, Public School education, a real live wire.—Box 5,533, c/o *The Motor Cycle.* [275

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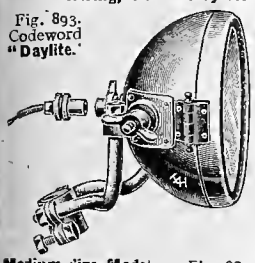
Fig. 893. Codeword "Daylite."



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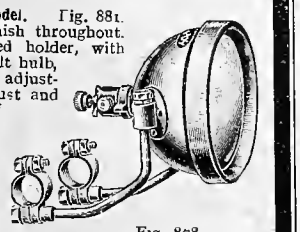

Fig. 878. Similar to Fig. 895, but smaller, and with special "pull on" front. Rubber ring casting for glass. New Price, Black-plated, **40/-** each. Old Price, 55/-

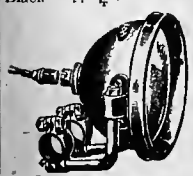

Fig 560. Sidecar Lamp screw holder, bulb, switch wire complete. price **7/6** each; old price 8/6
Fig. 561 Ditto, bayonet holder, less switch, wire, etc Price **6/6.**

Fig. 573. Shows red danger signal, lights No. plate. Complete with switch, bulb, wire, clip, etc. Price **7/6**; old price 9/6.

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A.J.S. Spare Wheel, with or without tyre, 650×65.—Box 835, c/o *The Motor Cycle.* [X6208

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TRIUMPH Countershaft Model, solo, not W.D.—86, Church Rd., Upper Norwood, S.E.19. [2665

ZENITH Wanted, solo, not earlier than 1915, cheap for cash.—139, Ladbroke Grove, W.10. [2628

2¾h.p. Douglas, 1915-21, also water-cooled Morgan, cheap.—H., 63, Solon Rd., Brixton. [2779

WANTED, Roc wheel, suit 1911 3½h.p. Humber, good condition.—Atkins, Morton-on-Tees. [2387

GLORIA Spring Wheel Sidecar, for C.S. Triumph.—Schlinger, 64, Harleyford Rd., Vauxhall. [2589

TRIUMPH, clutch or T.T. model, 1914 or later.—Write 14, Park Av., Palmers Green, N.13. [2664

SPEEDOMETERS and Parts, Stewart or Watford preferred.—Robins, 97, Latchmere Rd., Battersea. [2403

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N.S.U. and other gears, magnetos, tyres, belts, anything cheap.—Box 5,536, c/o *The Motor Cycle.* [2758

£4 for J.E.S., or similar lightweight, with spring forks, minus engine.—Blackburn, Sunnyside, Lee, Devon. [2470

WANTED, good motor cycle or combination, for cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [2825

WANTED, high powered combination.—Full particulars and price, 28, Bushey Rd., Harlington, Middlesex. [2584

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WANTED, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons. Wandsworth Motor Exchange, Ebner St., Wandsworth. [3151

MOTOR Cycle for disabled soldier; £25; clutch, kick start, 3½h.p.—No. 1, Chapel Rd, West Thurrock, Grays, Essex. [2335

WANTED, second-hand Morgans, in good condition. Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [9376

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3152

WANTED, Morgan, not earlier than 1920, or Baby Peugeot. State lowest cash price.—79, Ayresome St., Middlesbrough. [X6402

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F.N., 1914, 4-cyl., wanted; £25 for best machine offered.—Write, or call after 6.30 p.m., 95, Grosvenor Rd., Highbury. [2622

URGENTLY Wanted, good lightweight, also combination; cash waiting.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2241

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

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650×65.

Dunlop Steel-studded Voiturette	47/6
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26×2¼ for 26×2¼ Rims.

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Palmer Cord Heavy	33/-
Clincher Extra Heavy	28/-
Avon Rubber-studded	28/6
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Hutchinson Passenger	30/-
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Moseley Extra Heavy	32/6

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Dunlop Heavy	35/-
Palmer Cord Heavy	36/-
Clincher Extra Heavy	28/6
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Wood-Milne Extra Strong	34/-
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Wood-Milne Special	23/9

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WANTED, countershaft Triumph; exchange new 3h.p. twin Enfield, perfect, and A.C. Sociable 3-wheeler.—King, Egrove Farm, Oxford. [X6446

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WANTED, good class modern combination or solo capable sidecar work, cycle car considered; must be reasonable, immediate for cash.—R., 49, Queen's Rd., Finsbury Park, N. [X6177

ENGINES, singles and twins, J.A.P., Triumphs, M.A.G., Clyno, etc.; also gears and magnetos, hub or C.S.; cheap. State price. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [1646

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CASH on Sight for new and second-hand motor cycles and combinations, any make or condition. —Call, write, or 'phone, Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

F.O.O.H. pays highest prices for sound machines. Bring the 'bus along and take the cash away; exchanges arranged.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [2697

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EXCHANGE.

O.K. (see ad.) and cash for late 2¾h.p. Douglas.—H., 63, Solon Rd., Brixton. [2780

C.B. Sidecar, value £25, and cash for Douglas.—46, Wellington St., Camden Town. [2596

WOULD Exchange 14-cwt. Ford for motor cycle; £40.—Mulley, Builder, Welling. [2689

1920 8h.p. A.V. Car, electric lights, for Indian or Scott.—Price, Ashley, Scunthorpe. [2572

1919 Sporting Morgan and cash for w.c. Morgan.—28, Admiral Seymour Rd., Well Hall. [2496

A.C. Sociable, 3-wheeler, suit traveller, for solo or combination.—King, Egrove, Oxford. [X6451

EXCHANGE or sell 3-speed countershaft gear box.—Particulars, 25, Northam Rd., Southampton. [2506

FAST Twin 4½h.p. Minerva, m.o.v., waterproof mag., for lightweight.—King, Egrove Farm, Oxford. [X6445

AS New, 3h.p. Royal Enfield twin, 2 speeds, perfect, for countershaft Triumph.—King, Egrove Farm, Oxford. [X6452

GRADO Gear, kick start; £6/10; anything useful part exchange.—Box 5,534, c/o *The Motor Cycle*. [2756

4h.p. Douglas Combination, 1917-18, fully equipped, and cash for higher power; sell £80.—Coulson, Welwyn, Herts. [2374

1919 8h.p. Enfield Combination for 3½h.p. Sunbeam combination, or would sell.—25, Oak Rd., Horfield, Bristol. [2573

NEW IMPERIAL 8h.p. J.A.P. Combination (1920), for first-class lightweight, or sell £130.—Roberts, Plummers Plain, Horsham. [2537

EXCHANGE, P.M. combination, in good condition, for fast solo, Indian preferred, any condition.—551, Holloway Rd., N.19. [2819

3½h.p. B.S.A., 2-speed, good reliable bike; exchange for higher power, or sell £40.—Schneider, Filbert House, Castlemorton, Malvern. [2639

3¾h.p. Precision Model de Luxe Motor Cycle, 1914, 2-speed, good order, Binks carburetter, for 2¾h.p. Douglas, or 2-speed 2-stroke.—Below.

8h.p. 1919 Carden-Tamplin 2-seater, 3 speeds, kick started from seat, discs, very fast, any trial, for good combination.—Mead, Osborn House, Station Rd., Amersham, Bucks. [2479

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650 × 65	Goodrich Safety Tread	44/-
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TUBES.

26 × 2¼	Hutchinson	5/9
,,	Michelin	6/6
26 × 2½	Michelin	6/6
28 × 3	Hutchinson	7/6
,,	Goodyear (butted)	9/6

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THE MOTOR CYCLE

ESTABLISHED IN 1903

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EDITORIAL OFFICES: Hertford St., Coventry.
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A Scottish Show.

FOR the first time motor cycles are to be exhibited in Scotland in a manner commensurate with their importance. The promoters of the Scottish exhibition next January have agreed to devote a certain amount of space to members of the British Motor Cycle Manufacturers' Union, and the decision, no doubt, will be welcomed by many who desire to interest the Scottish public in their goods. While a goodly number of Scottish motor cycle agents always visit the Olympia Show, only a comparatively small number of northern riders have been able to visit London in order to examine all the latest models under one roof. The Scottish Show, if well supported, should be of immense value to all interested in the motor cycle movement in the North.

The Manufacturers and the Law.

NOW that the police have abandoned their old practice of trapping on safe and open roads, it would appear that they have redoubled their efforts to secure prosecutions of motor cyclists for other alleged offences. Chief among these is the strict observance of the regulations concerning silencing arrangements. Needless to say, as with most other demands of the Motor Car Act, different districts interpret the law in their own way, and, while some authorities are satisfied by a compliance with the letter of the law, no matter how noisy a machine may be, others insist upon that degree of silence which the law was framed to produce. In other words, the police in certain districts are satisfied if an expansion chamber is fitted; others examine motor cycles—with the aid of a stick—to ascertain whether a baffle is fitted. Again, the opinion as to what constitutes an "expansion chamber" is far from unanimous; therefore, to secure immunity, a motor cyclist who intends riding over a large area must not only have a reasonably quiet running machine, but must be in a position to prove that it conforms to the law. To do this, it is usually necessary to have a silencer which is considerably larger than the cylinder capacity of the engine.

This should not be so, for the law as it stands does not specify a definite size for the expansion chamber, nor does it make a baffle compulsory. Theoretically, a long exhaust pipe is an expansion chamber within the meaning of the Act, and *if it rendered the machine reasonably silent* no prosecution on this count could be successful.

As everybody knows, however, no long exhaust pipe secures "reasonable silence"; and, as there are many motor cycles on the market to-day, thus fitted as standard, every week sees a fresh crop of silencing prosecutions.

The manufacturers are to blame in many of the cases, and it is quite a moot point whether they are not laying themselves open to legal actions on the part of those who have bought their machine in good faith and afterwards been prosecuted. In any case, it is incumbent upon them to protect their customers by equipping their machines in a manner which fully conforms to the requirements of the law.

Guineas and Pounds.

SINCE guineas no longer exist as coin or paper money units, it is passing strange that so many manufacturers of motor cycles continue to quote guineas in pricing their productions. At first sight an article priced at, say, forty guineas, appears cheaper than at forty-two pounds, and it is for this reason that guineas retain their popularity with those who have goods to sell and are equally unpopular with those who buy.

The practice, however, deceives no one, and certainly serves no useful purpose, since the public has to convert the figures into pounds, shillings, and pence. In fact, instead of being at an advantage, goods marked in guineas are at a disadvantage, for the reason that the real price is more than that originally suggested.

An index to the advertisements in this issue will be found on the page facing the back cover.

Curiosities of the Road.

ONE generally encounters some strange equipages on a Bank Holiday. This August the two turn-outs which most tickled me consisted of a push tandem fitted with an Auto-wheel, which was being propelled down the Portsmouth Road at a great pace with the aid of a high pedalling gear by the man and the girl who occupied its two saddles; and a pedalling sidecar combination, complete with a third passenger on the carrier, which I met travelling up hill at a snail's creep. The saddle of the latter was filled by a very devoted papa, who will surely have a jewelled crown hereafter for his self-sacrifice, but whose complexion suggested that his earthly reward might be apoplexy.

Scottish Roads.

WHEN I read our report of the Scottish Six Days, I quite expected that some Hielan' laddies would take umbrage—they are a patriotic race. To some extent I sympathise with the critics, for it is perfectly true that here and there one still encounters magnificent surfaces north of the Tweed, while candour compels us to admit that some of the English roads are appalling. But our reporter did not go beyond his brief. He stated that most of the going included in the trials was bad—I have chatted with many of the riders, and their terminology is much more lurid—and he advised intending tourists in Scotland to obtain road reports from the A.A. Surely a wise precaution!

T.T. Venues.

I AM sorry to differ fundamentally from "Balla-Hair-Neck" on all his points. Brooklands is all very well in its own sphere, but it is no substitute for a road race, for the obvious reasons that it does not test brakes or engine flexibility at all, whilst it furnishes very inferior data about acceleration, steering, and the behaviour of a lubrication system under roadster conditions. On the other hand, the Manx course is quite unsuitable for the 1,000 c.c. twin, which we need to develop in this country, and also camouflages the superiority which a 500 c.c. engine possesses over a 350 c.c. For these reasons many good judges hope to see a future T.T. contested over a course roughly resembling the Le Mans circuit.

Would You Believe It?

INCREDIBLE as the news may seem, a motor cycle race was organised in broad daylight on the Portsmouth Road last month. Fifteen entries were received, and, escorted by a fleet of attendant motor cars, the event was run off over twenty-one miles on full throttle, most of the machines finishing non-stop. Most marvellous of all, the police did not interfere, though the race started at Putney Hill and the finish was at Wisley Hut.

No, there is no catch. Everything occurred exactly as I have described it, dear reader.

The competing machines? Certainly. They were all converted push-cycles, equipped with an auxiliary motor known as the Cyclotracteur. It is of French manufacture, is attached by clips to the handle-bar and front spindle, and drives by means of a rubber-covered pulley pressing on the front tyre. As it cannot exceed 20 m.p.h., the "race" was perfectly safe and legal.

The Rudge Returns.

FEW people noted that an interesting feature of the Scottish Six Days was the return of the Rudge to competition work. The staff of trials experts, which S. A. Rowlandson collected and captained in the old days, dispersed to the four winds during the war, and the two men who rode the big Rudge outfits up north were both absolute novices at the game. Sibley, I hear, is one of the factory testers, and Nelson looks after Rudge interests north of the Tweed. Both men did well, Sibley being delayed by

Casional Comments.—

nctures, several of which befell him on observed lls, whilst Nelson found the Corkscrew too much r him, or he would have got the coveted Scotch gold his first effort. I wonder if these two are to e nucleus of a new Rudge medal-winning team, and ether next year's T.T.—but that is a long way off . Anyway, we all used to marvel at the uncanny way which Rudges used to produce a small regiment of known youngsters on big occasions, and help themves to most of the fat.

The A.C.U. Six Days.

I HAVE studied the preliminary regulations for this year's Six Days Trials, and, though I am aware that the "trade" have discovered objections, I rsonally see little wrong with them. Last year the tals tried to find out what the motor cycle cannot . This year they will show what it can do; and the same time the standard is set quite as high as e public requirements demand. There are two vious blots of a minor character, however:

1. *The brake test is on the first day* instead of the last. Durability is surely the prime need in a good brake.
2. Petrol consumption is to be measured, but *there is no rule against changing jets.*

In *The Motor Cycle* for July 28th I described how e single substitution of a 28 jet for a 36 jet raised e consumption of my own 'bus from approximately m.p.g. to 164 m.p.g. The general public want a asonable consumption without the fag of changing s, and they will be hoodwinked if the Six Days lers are allowed to use tiny jets for 95% of the stance and to insert a racing jet for the hills and e speed trial.

Dust Mulching the Roads.

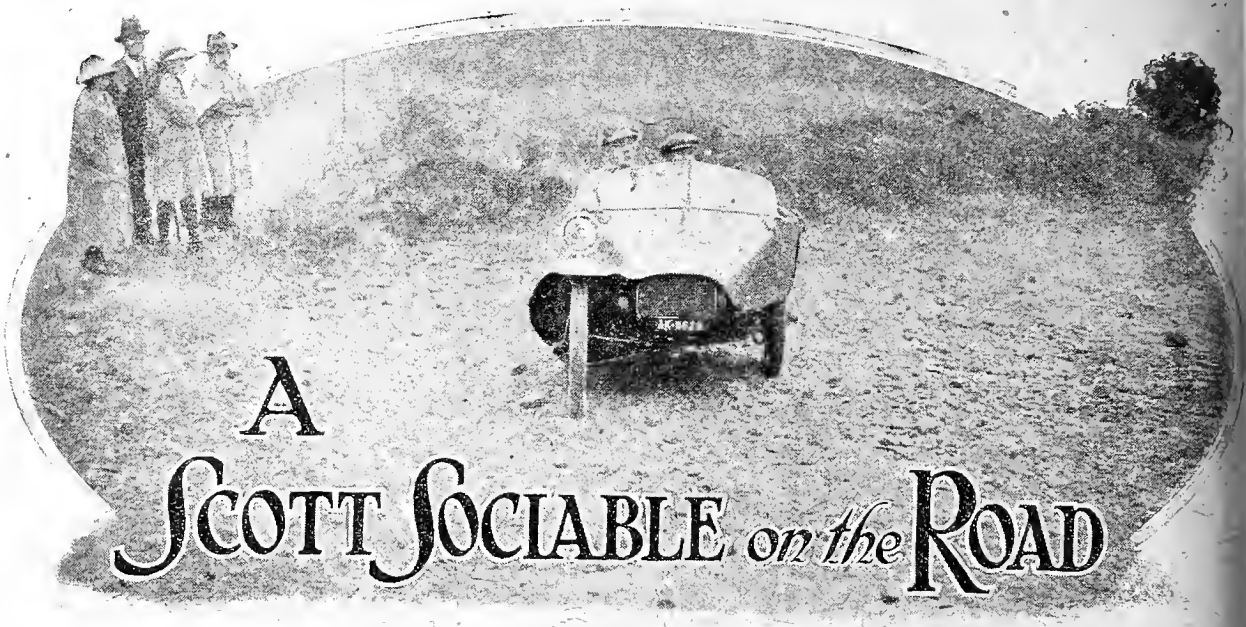
DURING drought, the expert kind of gardener "dust mulches" his roses, sweet peas, onions, and other flora. Having no water for external application, he keeps the natural moisture in the ground by perpetually scarifying the ground surface into dust, thus decapitating all the evaporation passages. After the Scottish, the Midland competitors complained bitterly to us that some Scottish road surveyors treat their roads in similar fashion by spreading from two to six inches of fine grit across the full width, and thereby tempting the unwary scrapper to dryskid to his own destruction and the great enrichment of repairers. The A.C.U. ought to keep a wary eye on this matter. It is not only in Scotland that such measures are rife. To name only two examples further south, much of the Winchester-Petersfield and Newbury-Basingstoke roads have been treated after the same fashion.

Sauce for the Gander.

I DO not know why this dust-mulch business has been adopted—probably because it is cheap, and with an occasional raking postpones the day when pot-holes must be retarmacced. Probably it is quite unexceptionable from the standpoint of a horsed driver or a car owner, except that it is rather dusty. But it is quite distinctly unpleasant for all two-wheelers, and especially fast two-wheelers. I am informed that in Scotland several men took nasty tosses when cornering on it, and I personally took some nasty wobbles last week on the two southern roads named in the last paragraph. If the malpractice spreads, motor cyclists will have a lot to say about it; and I imagine that for once in their lives push cyclists will be ready to make common cause with us.

KNIGHTS OF THE ROUND TABLE ON MOTOR CYCLES.

Something like a hundred motor cycles are used in the new Fox film, "A Yankee at the Court of King Arthur," where Sir Lancelot leads a motor cycle army over several hundred feet of film, to the interest of all motor cyclists who see it, and, incidentally, shows the non-motorist how controllable are modern machines, even in the hands of knights in armour.



A Scott Sociable on the Road

A Yorkshire Test of a Sidecar Substitute.

On account of its startling originality, the Scott Sociable has succeeded in creating an immense amount of interest. Some motor cyclists are inclined to fight shy of unconventional design, but there are many who welcome originality in any form, provided, as in the case under review, it leads to an advance.

Some years ago, Mr. Alfred Scott set himself to the task of evolving a mechanical form of passenger machine which should combine the light weight and ease of handling of the sidecar outfit with the comfort and stability of the car, and to achieve this end along sound engineering lines. As might be expected, the result is unorthodox in appearance, though eminently satisfactory in practice.

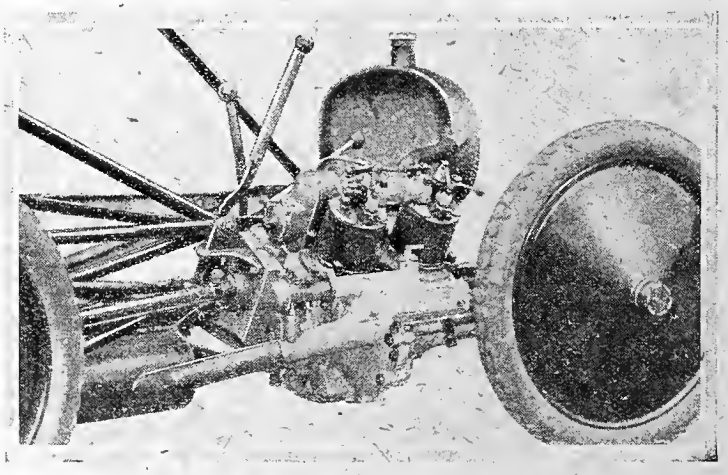
It was, therefore, with pleasurable anticipations that we accepted Mr. Scott's invitation to view the points of interest in the recent Ilkley Trial as a passenger in his machine.

At an early hour we were picked up in Bradford by one of the little vehicles, and immediately set out for Harden Bank with the intention of reaching the spot before the competitors.

Mr. Scott contends that the public will soon accustom themselves to the unusual appearance of the Sociable, and his theory is borne out by the fact that scarcely a curious glance was directed at the quiet little three-wheeler as it slipped along over the cobbled streets of its native town. When clear of the town, speed was increased as far as the morning mists would allow, and we had time to appreciate the roominess and excellent springing before arriving at the atrocious surface of Harden Bank. The hill was taken with consummate ease on the low gear of 13.5 to 1, and, in spite of the surface, no discomfort was experienced, the shocks from the rocky surface being converted into easy oscillations by the ingenious tension-spring suspension.

After watching the performance of the competing machines, we short-circuited the trial route by making straight for Park Rash. A run of an hour and a quarter over twisty and undulating roads formed as good a test as could be devised for a vehicle of this description, and in no point did it fall short of the ideal.

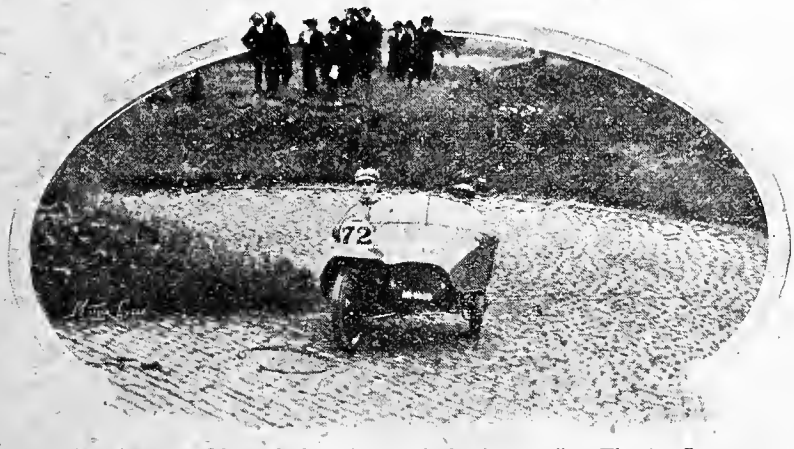
Except when racing the engine on low gear, the presence of the power unit was only noticeable by its smooth propulsive effort; corners can be taken without unpleasant rolling, and without any tendency for the wheels to lift; springing is better than on most light cars, and there is plenty of room for two large passengers. The 578 c.c. twin two-stroke engine is practically inaudible from the passenger's seat, and will hold on to a top gear of 4.5 to 1 on all ordinary hills. Middle gear provides a ratio of 7.03 to 1, and is suffi-



The complete unit with gears and clutch is easily detached, being held to the chassis with four bolts only.

he Scott Sociable—
ent for any but e steepest gradi- ıts. Both brakes e powerful and nooth in action, ıd our sole riticism was rected towards e bevel drive, hich was rather oisy.

With regard to peed, it may be entioned that it possible to ex- eed the legal limit ı low gear up ıite considerable opes.



The Scott Sociable on the last of the difficult "hairpins" on Thwaites Brow, near Keighley.

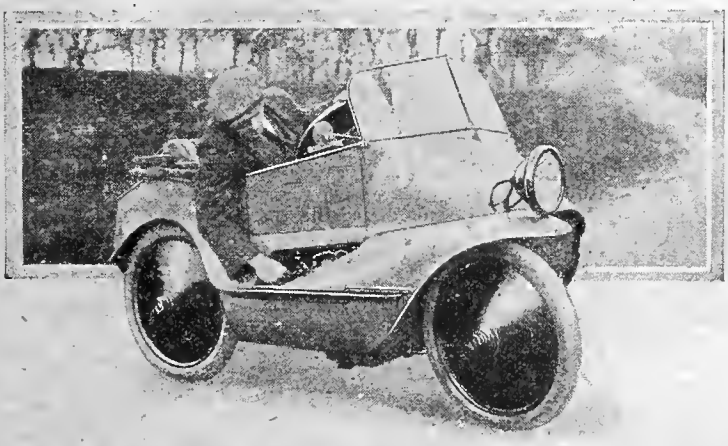
On reaching Park Rash, the first of the competitors ad already arrived, so an attempt on the hill had be postponed till after the trial. Never have we en the dreaded hill in more difficult condition; ose stones and thick dust covered the whole surface, nd not even the usual narrow track of fairly firm rface was to be found. Some of the solo motor yclists scrambled to the top without actual assistance, ut scarcely a man made a really clean ascent.

A "Mix up" on Park Rash.

Of the passenger machines, three sidecar outfits made onderful climbs, but no light car or three-wheeled mabout got further than the first bit of gradient. ven Mr. Scott, who informed us that he had never et failed in his many attempts on the hill, had qualms bout the existing conditions. These fears proved be well grounded, or, though the Sociable got at least as ar up as any of the ompeting light cars nd runabouts, it ame to a standstill ith the driving wheel evolving merrily. ince most of the assistance" had by ow left the hill, we ad somewhat of a cramble to get the nachine off the hill, nd, in the general mix up," the hiddle gear was unortunately damaged. lthough this mishap did not put the machine out of action, it was decided that *The Motor Cycle* representative should be transferred to another machine. This provided an opportunity for even more strenuous testing, for Mr. Frank Philipp, whose dickey seat we occupied, already had his wife and "Peggy," a very sporting little Scottish terrier, on board.

The Stake, which was next visited, is too easy an ascent to worry the Sociable, and we were content to climb to a convenient observation post well above the first steep section and watch the performances of the competitors. On the homeward journey, a terrific thunderstorm caused us to forsake the dickey for the comfortable interior, wherein three and a dog managed to find room without any considerable discomfort. Now indeed were we able to appreciate the V fronted windscreen and the very easily manipulated hood, which can be raised and fastened in position without slowing the machine. A slot in the windscreen enabled our pilot to carry on in spite of the drenching rain, which caused many cars to halt by the roadside on account of poor visibility.

The Scott Sociable is now in production, and we are not surprised to learn that it is in considerable demand. It is particularly well suited for a lady driver, for the carburetter may be flooded, and the engine primed, if necessary, from the driver's seat; the hand starter within the body is also an excellent device. It should be added that every detail of the machine, from the engine to the door catch, shows evidence of an engineering brain behind it, and we at any rate were charmed with its excellent running.

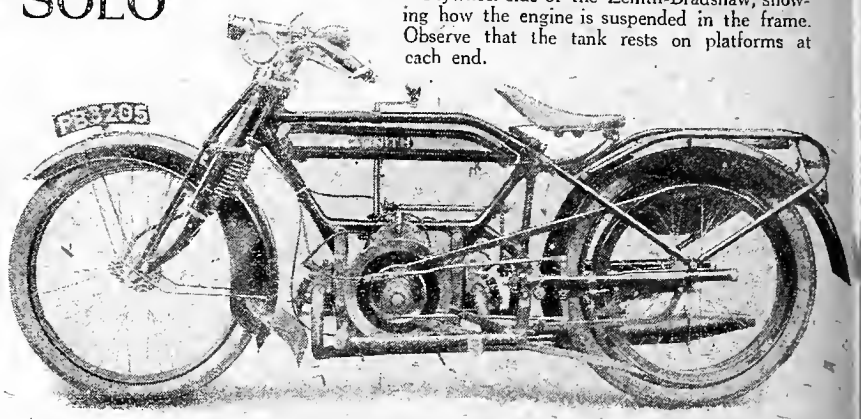

The engine of the Scott Sociable is instantly accessible by the moving of a "roll top" cover.

CYCLE CARS OF OLDEN DAYS.

AN impecunious and disabled friend of mine, whose damaged limbs render solo work impracticable, invested in a very cheap cycle car. In his early rips the steering of the 'bus scared him stiff, and, aving been a manufacturer in a small way during a revious era of health and wealth, he began to study he layout to see what could be done. Illumination came when the cycle car was poised outside a house on a steeply cambered road. There was so little give in the front springs that, whilst the off side front tyre reposed securely on the road, the near wheel was suspended 1½in. above the roadway. It followed that occasions arose in cornering over pot-holes when *neither front tyre touched the road at all!* IXION.

A FASCINATING SOLO MACHINE.

The 500 c.c. Oil-cooled Zenith-Bradshaw now in Production.



Flywheel side of the Zenith-Bradshaw, showing how the engine is suspended in the frame. Observe that the tank rests on platforms at each end.

UNDOUBTEDLY one of the attractions at the last Olympia Show was the flat twin engine exhibited by Messrs. Zenith Motors, Ltd., and designed by Mr. Granville E. Bradshaw, of A.B.C. fame. For many years Mr. Bradshaw has been regarded as a revolutionist where design is concerned. His last year's effort somewhat startled the older school of designers and riders by the fact that all but his cylinder heads were enclosed in the crank case, and that the cylinder walls were cooled by oil.

The design was the outcome of extended experiments made with aero engines during the war, when it was found that with the average so-called air-cooled engine a great deal of the heat was being dissipated internally through the oil. The success of the engine's running under such conditions prompted Mr. Bradshaw to make proper provisions for oil-cooling by mechanical means rather than by accident, and the oil-cooled Zenith-Bradshaw at the last Show was the outcome.

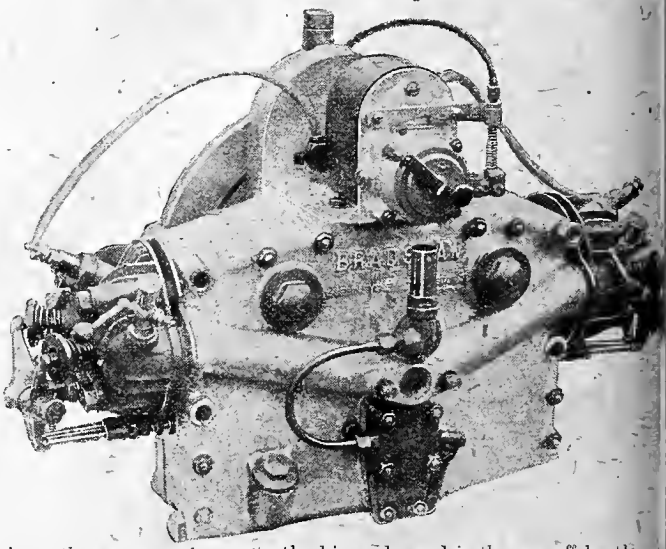
Clean Design.

Since the exhibition of this new model, there has been a great deal of refinement introduced, for, as with all new things, it was hardly to be expected that the first design would be unaltered before production. There was also the question of frame design to be considered, and the chief point of criticism—the external oil tank—to be removed.

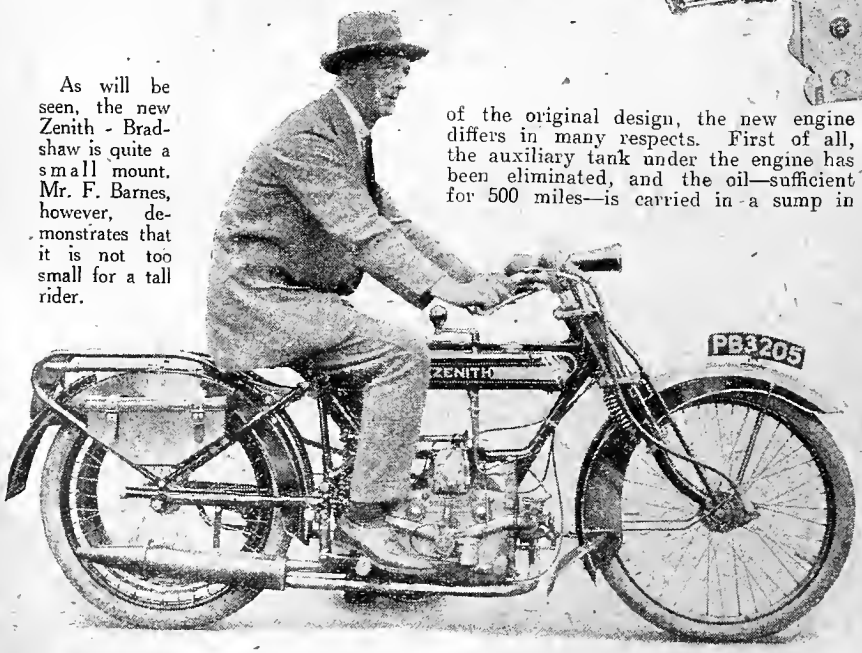
The result of these months of work is one of the nicest sporting solo machines it has been our pleasure to ride, and now that deliveries are commencing, it will soon be in the hands of the public in numbers; of that we are convinced, provided the qualities of reliability and durability are in keeping with its many good points, and we see no reason why they should not be so.

While retaining the essential features of the original design, the new engine differs in many respects. First of all, the auxiliary tank under the engine has been eliminated, and the oil—sufficient for 500 miles—is carried in a sump in the lower half of the crank case. A single rotary pump is now used for circulating the oil, instead of the two pumps governing the supply in the original machine.

The oil is pumped up to the drilled crankshaft, and passes *via* the crank webs to the big ends, and is thrown off by these and from an orifice in the second outside crank web, whence it is distributed over the whole of the interior of the engine. From the upper side of the cylinder barrels, the oil passes, by a series of holes, to the piston, finally draining back to the sump.



In the "production" model of the 3½ h.p. Zenith-Bradshaw engine, the oil tank has been eliminated. The oil, which is used for both lubricating and cooling, is carried in a sump sufficiently large for 500 miles running.



As will be seen, the new Zenith - Bradshaw is quite a small mount. Mr. F. Barnes, however, demonstrates that it is not too small for a tall rider.

Hemispherical Cylinder Head.

Another alteration is the fitting of hemispherical cylinder heads with inclined valves, operated by more or less conventional rockers *via* push rods placed close together under the cylinders. This position, however, is not so inaccessible as one might imagine, as, by leaning the machine on its footrests, it is quite an easy matter to effect adjustments.

A double row ball bearing supports the crankshaft on the driving side, and a single row at the other end. Aluminium flat-topped pistons are used.

The cylinders are 68×68 mm. bore and stroke (494 c.c.).

The accommodation of a flat twin in a motor cycle has not been the easiest task of designers, and the Zenith-Brad-

A Fascinating Solo Machine—

shaw proved to be no exception. These difficulties have, however, been overcome very successfully by a frame following conventional Zenith outlines, but which differs in many respects at minor points. For example, the horizontal tube immediately below the tank is eliminated, the tank being supported on platforms at each end. Some distance below the tank a tube binds the frame together, and from this the engine is hung.

The provisions made for operating the well-known Gradua gear also are new, and consist of a vertical shaft carrying a bevel at its lower end, meshing with a similar bevel on a longitudinal shaft extending rearwards. At the end of this shaft is fitted the sprocket for the chain operating the mechanism of the sliding fork members.

Fitted with 26×2½in. tyres, the machine is delightfully easy to handle, due to the fact that the engine is carried below the wheel centres; and this, combined with the low saddle position, the position of the footrests, and the design of the handle-bars, gives that feeling of security specially appreciated by those who are short in the leg. On the other hand, the tallest rider is not cramped, for Mr. Fred Barnes—whose name is always associated with Zeniths—is a tall rider, and the machine could not be more comfortable for him had it been "made to measure."

Mud and Skid Protection.

Guards are to be fitted to protect the carburetter and the pulley, while, as a safety guard to protect the engine in the case of a spill, two longitudinal tubes are fitted, which carry auxiliary footrests at the fore end. We term them footrests for want of a better name, for they will rarely be used for the feet, even by the tallest rider.

It was our pleasure to try the machine on the road. Incidentally, the present writer has never been fully converted to all-chain drive, even for sidecar work, and has fully appreciated the recent correspondence in *The Motor Cycle* on the fascination of belt drive. The use of all-belt drive, however, has been confined to lightweights, so it was necessary, first of all, to attempt to analyse our impressions in order to apportion correctly the good points of the Zenith-Bradshaw—to decide, in other words, whether it was "Zenith" or "Bradshaw," which produced such refined motion.

The engine is practically vibrationless—silent save for the burble of the exhaust. In fact, first impressions are of motion alone. One can neither hear nor feel machinery in motion. One just opens the throttle and leaps forward.

The gear range is that usually provided by the Gradua gear, and, unlike the majority of flat twins, the new Zenith pulls well at low speeds. It is possible to slow down to a crawl and to accelerate without reducing gear. With the Gradua gear it is possible to find just the right ratio for the moment.

To summarise, the new Zenith-Bradshaw is a most fascinating machine, and, when it becomes known, it will be very popular as a sporting mount. The price is £118.

HILL-CLIMB ON A DURHAM FELL-SIDE.

Strong Wind Prevents High Speeds in Newcastle Club's Open Event.

An old fell-side milestone made an excellent starting post in the recent Newcastle and District M.C. open hill-climb. G. S. Boston (2¾ A.J.S. sidecar), who made several excellent climbs, both solo and sidecar.

OVER a kilometre course on Muggleswick Common, a wild stretch of moorland road between Stanhope and Edmundbyers, Co. Durham, the A.C.U. open hill-climb, organised by the Newcastle and District Motor Club, took place on Saturday, the 30th ult. The event attracted 168 entries, the principal award being the Alan Robson Challenge Shield for the fastest time of the day.

The hill has a gradient of about 1 in 13, practically straight, and, as the surface was good, some remarkable times would have been put up had it not been for the very stiff head wind which almost amounted to a gale. The effect of the wind was plainly noticeable as the competitors breasted the first rise and got the full blast from the moors.

Throughout the whole of the day G. S. Boston's 2¾ h.p. A.J.S. ran remarkably well, annexing many firsts both in the solo and sidecar classes. Hugh Mason was astride an all-chain drive N.U.T., and, but for clutch trouble, in Class 3, would no doubt have carried off the premier award, the liveliness and acceleration of his engine up to the time of this trouble being most remarkable.

The results, subject to A.C.U. confirmation, are:

CLASS 1.—Solo machines up to 250 c.c. *Section A.* On time: 1, F. J. Price (2¼ Diamond), 46⅘s.; 2, D. Prentice (2¼ New Imperial); 3, S. A. Marks (2¼ Diamond). On formula: 1, D. Prentice; 2, F. J. Price; 3, F. Turvey (2¼ Velocette). *Section B.* On time: 1, H. F. Brockbank (2¾ Brock-Blackburne), 43⅕s.; 2, J. Joynson (2¾ N.U.T.) and Davison Hull (2¾ Dot-Jap) tied. On formula: 1, H. F. Brockbank; 2, D. Hull; 3, J. Joynson.

CLASS 2.—Solo up to 350 c.c. *Section A.* On time: 1, G. S. Boston (2¾ A.J.S.), 38⅘s.; 2, C. Fairweather (2¾ Blackburne), 3, D. Prentice (2¾ New Imperial). On formula: 1, G. S. Boston; 2, D. Prentice; 3, F. J. Price (2¼ Diamond).

CLASS 3.—Solo up to 500 c.c. *Section A.* On time: 1, G. S. Boston (2¾ A.J.S.), 38⅘s.; 2, H. Mason (3½ N.U.T.); 3, C. N. Sadler (3½ Norton), on formula: 1, G. S. Boston; 2, D. Prentice; 3, C. N. Sadler. *Section B.* On time: 1, W. Holliwell (3½ Norton), 41⅘s.; 2, C. N. Sadler (3½ Norton); 3, R. W. Loughton (3½ Douglas). On formula: 1, H. F. Brockbank (Brock-Blackburne); 2, C. N. Sadler; 3, R. W. Loughton.

CLASS 4.—Solo up to 750 c.c. *Section A.* On time: 1, G. S. Boston (2¾ A.J.S.), 37⅘s.; 2, W. Holliwell (3½ Norton); 3, C. N. Sadler (3½ Norton) and R. W. Loughton (3½ Douglas) tied. On formula: 1, G. S. Boston; 2, D. Prentice (2¾ New Imperial); 3, C. N. Sadler. *Section B:* 1, W. Holliwell (3½ Norton); 2, C. N. Sadler (3½ Norton); 3, J. Lee (3½ Sunbeam).

CLASS 5.—Solo, unlimited. *Section A.* On time: 1, G. Grinton (7-9 Harley-Davidson), 36⅘s.; 2, G. S. Boston (2¾ A.J.S.); 3, W. Holliwell (3½ Norton) and Hugh Mason tied. on formula: 1, G. S. Boston; 2, D. Prentice; 3, F. J. Price. *Section B.* On time: 1, G. Grinton (7-9 Harley-Davidson), 37s.; 2, P. Baron (7-9 Indian); 3, W. Holliwell (3½ Norton). On formula: 1, H. F. Brockbank (2¾ Brock-Blackburne); 2, S. Bell (3½ Norton); 3, R. W. Loughton (3½ Douglas).

CLASS 7.—Passenger machines up to 600 c.c. *Section A.* On time: 1, G. S. Boston (2¾ A.J.S.), 48⅘s.; 2, J. Whalley (3½ Sunbeam); 3, G. Clapham (3¾ Scott). On formula: 1, G. S. Boston; 2, J. Whalley; 3, G. Clapham. *Section B.* On time: 1, G. Clapham (3¾ Scott), 55⅕s.; 2, J. Whalley (3½ Sunbeam). On formula: 1, J. Whalley; 2, G. Clapham.

CLASS 8.—Passenger machines up to 750 c.c. *Section A.* On time: 1, G. S. Boston, 48⅘s.; 2, J. Whalley. On formula: 1, G. S. Boston; 2, J. Whalley. *Section B:* J. Whalley, walk over.

CLASS 9.—Passenger machines, unlimited. *Section A.* On time: 1, P. Baron (7-9 Indian), 47⅘s.; 2, G. Grinton (7-9 Harley-Davidson); 3, G. S. Boston (2¾ A.J.S.). On formula: 1, G. S. Boston; 2, P. Baron. *Section B.* On time: 1, P. Baron (7-9 Indian), 46⅕s.; 2, G. S. Boston (2¾ A.J.S.); 3, R. F. Pritchard (8 Morgan). On formula: 1, J. Whalley (3½ Sunbeam); 2, G. Grinton (7-9 (Harley-Davidson); 3, R. F. Pritchard.

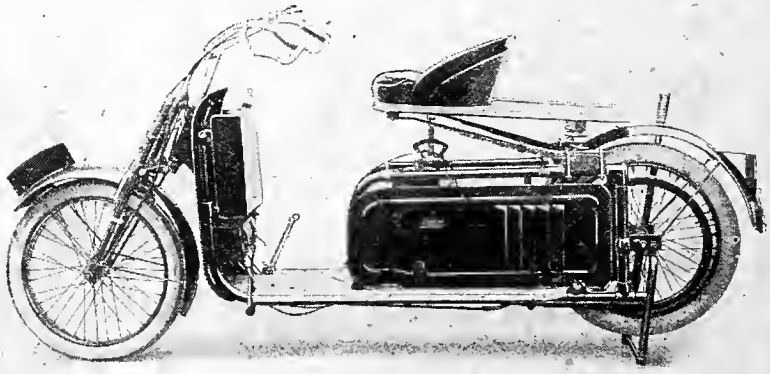
The Alan Robson Challenge Shield was won by G. Grinton (7-9 Harley-Davidson), whose fastest time was 36⅘s. Owing to insufficient entries, Class 6 for passenger machines up to 350 c.c., had to be abandoned.

PASSENGER MACHINE TOPICS.

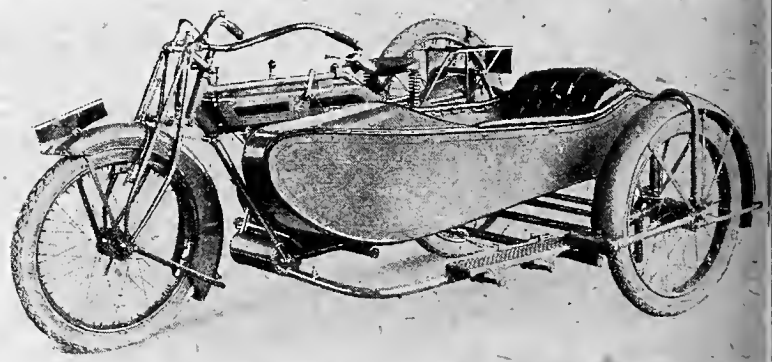
Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers. Collated by "Vedette."

WHAT is a passenger machine these days? There are readers who will say that every motor-bicycle on which the carrier is utilised as a pillion seat is a passenger machine, and the designer of the Reynolds Runabout evidently appreciates this. It is one of the few machines intended for tandem riding, although its utility is not confined to economical motoring for two, and it certainly has many points to commend it to those who desire a single track runabout providing protection for the attire. For tandem riding, it is supplied with two seats, the second passenger being accommodated on the rear part of the sprung platform, which, with the seat removed, may be used for luggage. A commercial traveller might carry quite a useful amount of samples. At first sight this little machine strikes one as being a glorified scooter, but as it is fitted with 550 × 65 mm. tyres (the size used on the Baby Peugeot car), has a Liberty two-stroke engine, a clutch, kick-starter, and two-speed gear, the specification is that of a motor cycle. The general layout suggests that the designer knows that there is a vast public that requires a vehicle on scooter lines which is not a toy. People jibe at motor cycles for some reason or another. Having recently had one of these machines in my possession, I was much impressed by the interest displayed by people who certainly were not motor cyclists or even potential motor cyclists. Ladies and elderly people particularly seemed to think that it was the type of vehicle they wanted. I will give an example of the attitude of these good people by citing that of a lady of my acquaintance. She has never felt confident to ride or drive a motor cycle, yet when the Reynolds drew up at the door, she at once exclaimed that it was "what she wanted." After a few minutes explaining the functions of the levers (forgotten one minute later) she retained the knowledge that the operation of the single lever of the Cox carburetter made the machine go faster or slower, and that by lifting one of the levers (the compression release) the engine stopped. With this scanty knowledge she glided away with her friends watching, and expecting that she would stop at the first corner for some one to turn the machine round for the return journey. This lady did a circuitous ride lasting over half an hour, on low gear, for the reason that it had not been deemed necessary to explain the functions of the gear lever. Sighting a friend walking on the pavement, she ranged alongside and slowed down to walking pace, discussed the merits of motor cycles, and afterwards proceeded on her way. At no time did she feel nervous, and one more lesson

On the road the Reynolds Runabout is simple to handle at the lowest speeds, but is capable of a maximum equal to the average lightweight.



The Reynolds Runabout, a machine distinctive in design and comfortable to ride. The long lever operating the rear stand is clearly shown.



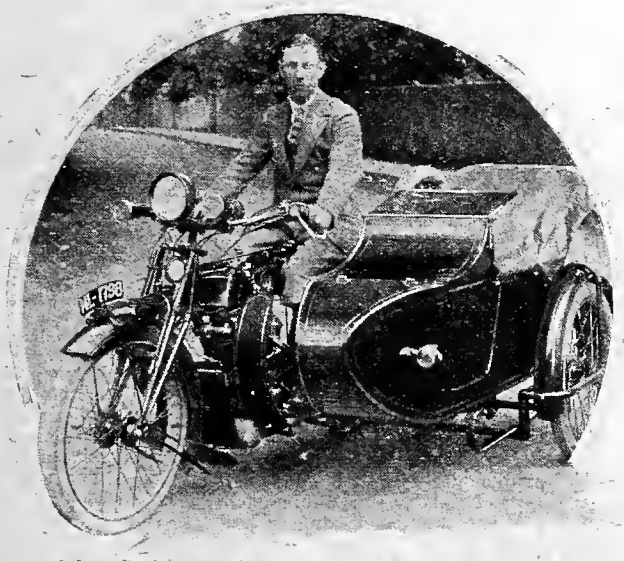
The spring frame Matchless as a sporting sidecar outfit. Observe the position of the spare wheel.

Passenger Machine Topics—

would have fitted her to undertake the longest journeys and through town traffic. As regards the speed of the machine, I can mention that on one thirty-mile journey it led two big twin sidecar outfits at a speed which the latter do not as a rule exceed —and this, also, in the hands of a lady. Comfort? The long wheelbase, large tyres, and Flexiforks give the impression that the frame is sprung. Of course, the seat is on long leaf springs. Tractability? It is as easy to handle as a lightweight motor cycle, is even easier to move about, and placing the machine on the stand is facilitated by a long hand lever. Ware and de Freville, Ltd., of 288, Regent Street, Oxford Circus, W.1, market this fascinating machine.

* * *

The popular Matchless-M.A.G. machine appears most attractive in its new guise as a sporting big-powered twin. Although the machine itself is, with the exception of the new footrests and the wider handle-bars, identical with the model H, the low racing sidecar completely changes the general appearance of the outfit. The sidecar body is carried low down on the standard chassis, and is suspended on coil and laminated springs at the rear and front respectively, yet the sociability of the outfit has not been lost, and, owing to the quiet running of the engine, conversation can be carried on without undue raising of the voices, for a long plated pipe carries the exhaust gases well to the rear of the machine, where they are almost inaudible. The spare wheel has been robbed of its usual housing, and is now mounted on a plate on the off side of the carrier—a convenient position—whilst its weight is of use to the back wheel when freak hills and the like have to be negotiated. The passenger literally lies in the sidecar, whilst the provision of a pad to support the knees makes the comfort of the seating position complete. A short trial spin on the new model was enjoyed, and the healthy turn of speed developed was found to be far ahead of that obtained on the big standard outfits.



8 h.p. Sunbeam outfit owned by a northern reader. Observe the curved dash in lieu of an apron, mentioned by the writer of this article.

* * *

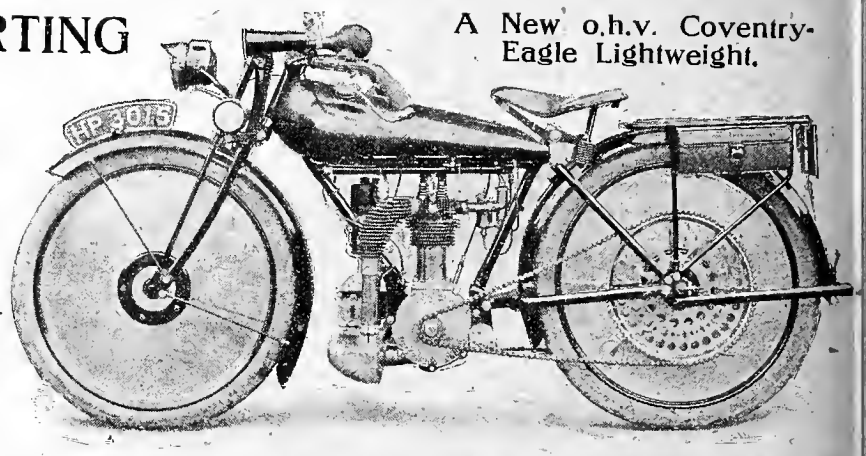
There are few things made that are not capable of improvement. Take the Ford for example. It is said that the industry that provides for improvements for this well-known American proposition employs more men than the Ford works themselves. Then we have leg-guards and footboards for Triumphs, hand-controls for the clutches of B.S.A.'s, and foot-control attachments for Sturmey-Archer gears. Now Mr. A. E. Tansley, of 162, Lenton Boulevard, Nottingham, has introduced a set of adjusters for Cameo windscreens. Known as the Sunorain, this fitment appears to overcome a small disadvantage of the excellent Cameo screen; it provides fore and aft adjustment, so that the screen may be used to advantage when a juvenile is carried. The price of the Sunorain is 27s. 6d.

I think the majority of sidecar passengers will agree with me that an apron no longer serves the requirements of our sidecar passengers. On my own machine my passenger has frequently complained, after a long run in the rain, that a pool of water collects in the apron, and finally percolates through and allows water to drip on to the knees. Several sidecar manufacturers have recognised the need for something more permanent than an apron of hood material, among them the A.J.S., Excelsior, and the Sunbeam. An illustration of the 8 h.p. outfit of the latter make accompanies these notes, from which it will be seen that a well-shaped dash is fitted. There is, however, one little point which most makers of this type of sidecar overlook, and that is that the hinge is not water-tight. A member of *The Motor Cycle* staff has overcome this by fitting a strip of rubber over the hinge from one side of the body to the other. The Sunbeam outfit mentioned is owned by Mr. G. G. Thompson, of Wooler, Northumberland.

A Cameo screen fitted with the "Sunorain" adapter, enabling the screen to be used when an extra passenger is carried.

A REFINED SPORTING MOUNT.

A New o.h.v. Coventry-Eagle Lightweight.



Broadside view of the single-geared model which will be sold fully equipped, as shown, with the addition of a chain guard but without discs.

NOW that 250 c.c. lightweights so often attain the once-magic figure of 60 m.p.h. in speed events, it is not surprising that it should strike somebody that there is a market for what may be called a *de luxe, vitesse* baby machine, to be guaranteed capable of reaching the mile-a-minute gait.

Such a machine is now being introduced by the Coventry Eagle Motor Cycle Co., Ltd., Coventry, and the designer, Mr. P. C. Mayo, has been guided by the same general principles as he used when evolving a growingly successful British sporting big twin, to which the latest production bears some detail resemblance.

Price will not be Excessive.

While no attempt has been made to build the new lightweight down to a price—it possesses an almost "regardless of cost" finish—it is not expected that the price will be prohibitive; indeed, £85 is mentioned as a tentative figure for the two-speed model.

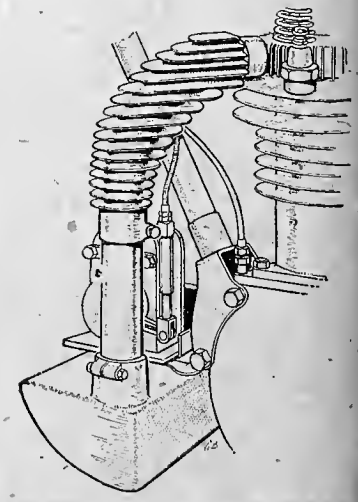
Turning to details, it is quite impossible to describe the exact shape of the distinctive dull black saddle tank, beyond saying that no photographs can fully convey just how attractive it is. It holds over two gallons, and feeds the Amac two-lever carburetter by a separate pipe from each compartment. One tap only, therefore, need be turned on, the other half of the tank acting as a spare petrol container.

The frame is neat and strong, and distinctive because of the way in which the cradle engine plates form integral lugs with the down tubes. Modified Brampton forks, with solid links substituted for the horizontal coils, are fitted, and here, again, lugs are cast for the Webb front brake mounting and a special bracket for the baby Lucas head lamp (which will be supplied with each machine).

Braking Arrangements.

At present the rear brake is of the simple heel-operated dummy belt rim type, but later it is proposed to embody a Webb internal expanding brake in the rear wheel.

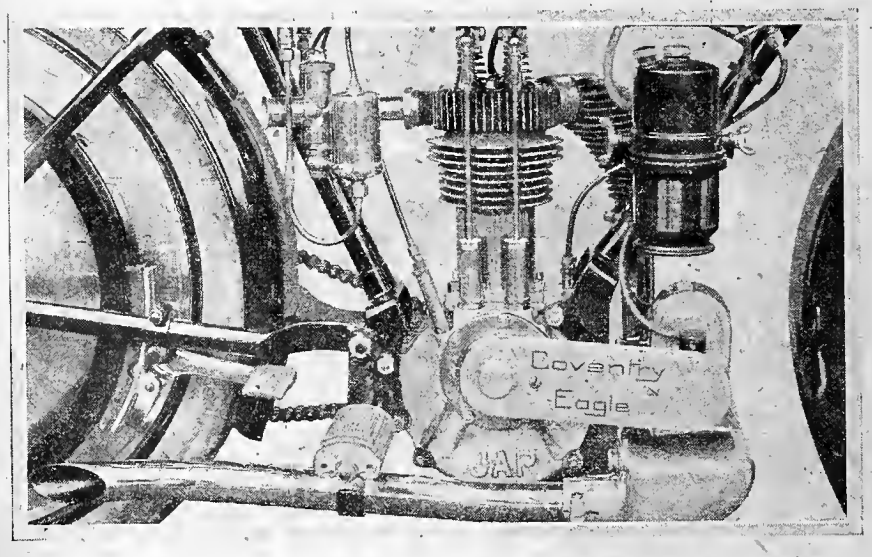
Although the engine is a proprietary unit—a 70×64.5 mm. (249 c.c.) o.h.v. J.A.P.—it has so many points of interest, some of them modifications by the present designer, that we have reserved its description to the last. Externally, the most striking point must be the exhaust arrangements. To design a clean and neat passage for the gases on an o.h.v. engine is not an easy task: in this case the difficulties have been overcome in an admirable way. A finned aluminium casting, projecting well out into the oncoming air draught, and of at least 1½in. internal diameter, acts virtually as a primary expansion chamber. Then a short length of plated pipe extends down to the large streamlined aluminium silencer, another large bore tail pipe reaching well beyond the bottom bracket and ejecting the gases outwardly instead of directly to the rear. The engine is an exceptionally nice-looking design, and besides the special "buffed" finish of the crank case, it embodies several departures from standard J.A.P. practice. Double taper valve springs are employed, internally coned washers and taper split bushes gripping the valve stems in such a manner that the cotter pins become merely a safeguard. Hardened steel rockers are fitted, and the valve-operating mechanism has been refined in one or two other details.



This sketch illustrates the finned primary exhaust pipe, and also the cradle frame lugs.

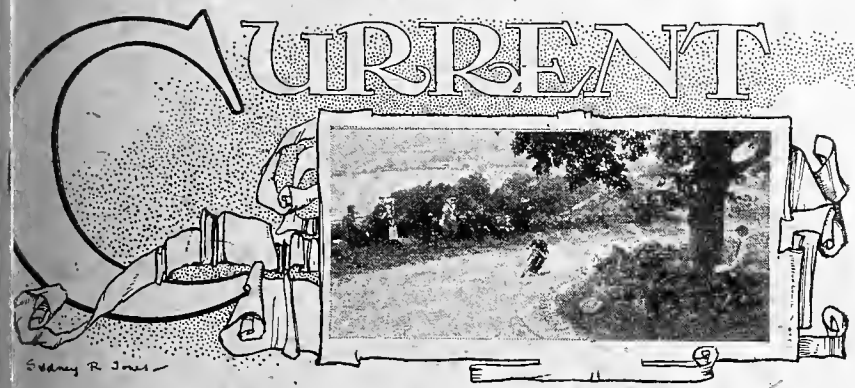
Transmission.

Single all-chain drive, by means of a double roller Coventry chain, is employed in the present model, but it is intended to introduce a two-speed countershaft machine at once, and possibly a model with the new lightweight Sturmey three speed box in the future.



Showing the clean engine design, the "streamlined" silencer, and the standard position for the Lucas generator.

CURRENT CHAT



SPECIAL FEATURES

A SCOTT SOCIABLE ON THE ROAD.
INTERNATIONAL SIX DAYS TRIAL.
NEW SOLO MODELS.

Times to Light Lamps

Aug. 11th	... ...	9.0 p.m
„ 13th	... ...	8.57 „
„ 15th	... ...	8.52 „
„ 17th	... ...	8.49 „

C Cooling.

ow a marketable proposition—a chine fitted with an oil-cooled flat twin ine (see page 164).

tor Cycles Replace A.A. Pedal Cycles.

t the sixteenth annual meeting of the A. and M.U. it was stated by the irman that the road patrols were now rly all provided with motor cycles, ead of pedal cycles, as in pre-war s.

International Six Days.

he Six Days Trial organised for the C.M. is little more an international l than any other Six Days Trial. y two teams competed for the Inter- onal Trophy—Switzerland and Great ain.

Public's Point of View.

etters received from readers regard- the stringent conditions of the Six s Trial indicate that modern motor es are expected to emerge from such ial with honours, and that to refuse support the trial is an admittance the conditions are too severe. As e than one reader points out, the con- ons are the same for all entrants.

Immediate Reduction in Taxation.

n the recent Parliamentary discussion the Finance Bill, Lt.-Com. Kenworthy ved a new clause to reduce the duties motor cycles and the like by 50%. Ir. Neal, Parliamentary Secretary to Ministry of Transport, in resisting proposed new clause, said that the ies had not been in operation for a ll year, and it was too soon to begin ising them. The whole of the motor ation, including the duties on motor les, was the result of most careful mination by a committee representa- e of all classes of motorists, including tor cyclists, who had investigated the blem in every aspect, and who had de unanimous recommendations, having ard to the cardinal principle that it the use of the roads that was to taken into account. The new clause rejected by 177 votes to 58.

The A.C.U. Six Days.

There is still time for manufacturers to amend their decision regarding the A.C.U. Six Days. Entries do not finally close until Saturday. Over sixty entries have already been received. Last year 133 competitors took part.

To Ex-D.R.'s of the 15th Division.

Ex-D.R.'s of the 15th Division Signals have formed a "15th Division D.R.'s Reunion Circle." Potential members may obtain further particulars of the scheme from Mr. W. W. Manley, 6, Franklin Street, Belfast.

Seventy-six Entrants in a Local New Imperial Rally.

Social or competitive events confined to riders of any particular make of motor cycle are becoming quite popular, and such an event organised recently in Blackburn for New Imperial owners attracted no fewer than seventy-six entrants.

Bournemouth Undercliff Drive.

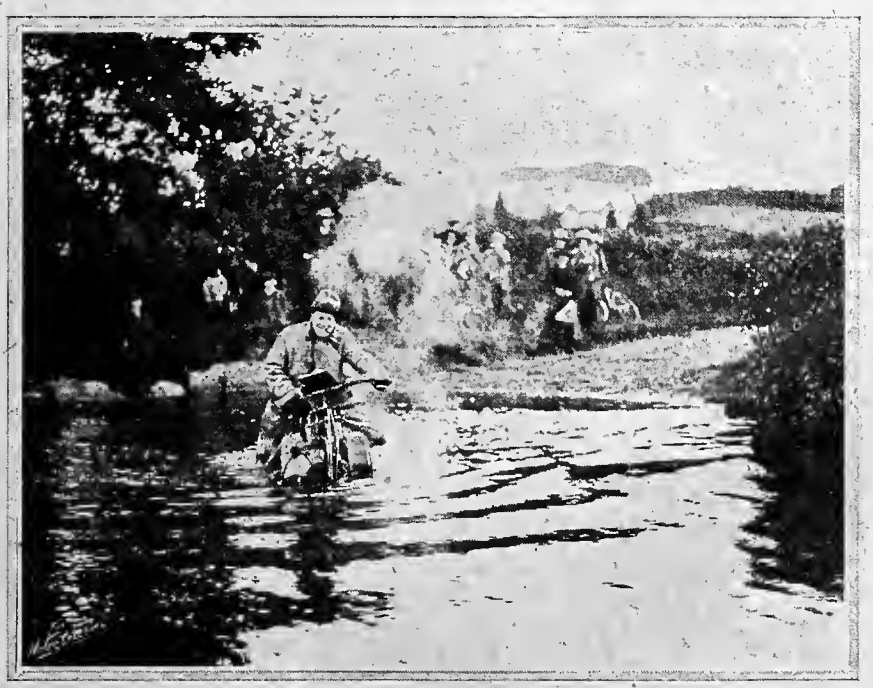
Bournemouth Corporation Beach Committee has decided that if motor cyclists do not more satisfactorily observe the speed limit on the Undercliff Drive it will consider the advisability of prohibiting motor cycles altogether on the Drive.

The Roads Department.

The Roads Department of the Transport Ministry employs 108 persons at salaries totalling £57,887 as against twenty-one persons employed by the old Road Board at a cost of £10,447; yet, says the *Sunday Pictorial*, the main road grants to various county councils have been simultaneously reduced.

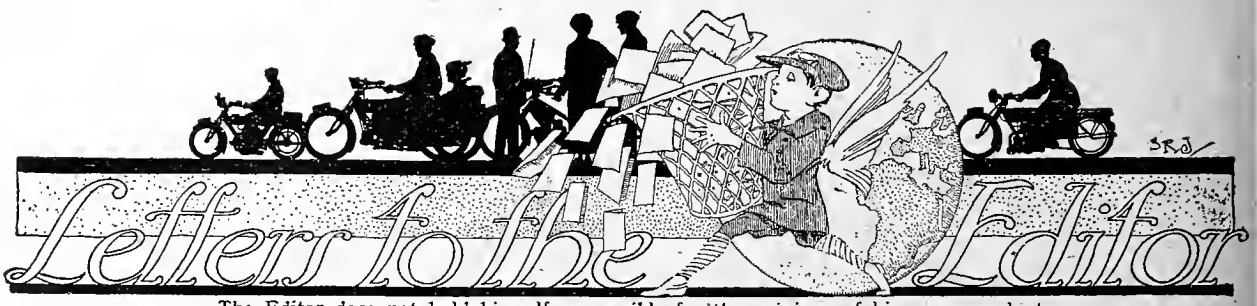
Open Hill-climb near Bath.

There are nineteen motor cycle classes on the programme of the Western Centre A.C.U. open hill-climb, to be held at Kingsdown Hill, near Bath, on Saturday, the 20th inst. Fastest time of the day will gain the "John Bull" Challenge Cup. Entries must reach the secretary for the event, Mr. H. W. Jacobs, 4, Ravenswood Road, Redland, Bristol, by next Saturday, at ordinary fees, or the following Tuesday at double fees.



RATHER MORE THAN A "SPLASH."

An incident in the recent Neath and District M.C. trial to Llandovery and back. Ivor Thomas (3½ Sun beam) in difficulties in the swollen watersplash at Sennybridge.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

BRAKES ON SIDECAR TAXIS.

Sir,—As a motor cycle taxi owner and driver I was interested in the County Cycle Co.'s letter in a recent issue. My machine was built by the Campion Cycle Co., and is, I believe, the largest on the road; it will take two passengers and 2 cwt. of luggage. Only one brake is fitted to the back wheel—of the internal expansion type—and is actuated by pedal and rather a long rod. The action of the brake is smooth and there is no apparent side pull with or without load. The machine is beautifully balanced, and I consider this balancing in heavy sidecar outfits most important; the lack of it probably has a great deal to do with any pull to the right when braking. L. A. SAKER.

PETROL TINS ON SIDECARS.

Sir,—I am obliged to Mr. E. Bridgeland and Mr. Taylor for their replies to my letter on the above subject. In reply to the former, his suggestion is not of much use, as I use the carriers on both sidecar and cycle to carry my luggage; hence it does not answer my question as to vibration.

In reply to Mr. Fred Taylor, he has missed the point altogether. Why it is necessary to carry two gallons is that so many dealers refuse to split a can. Moreover, I have tried the smaller tin, and found that it is an extremely difficult proposition to make such a can leak-tight, even with a leather washer.

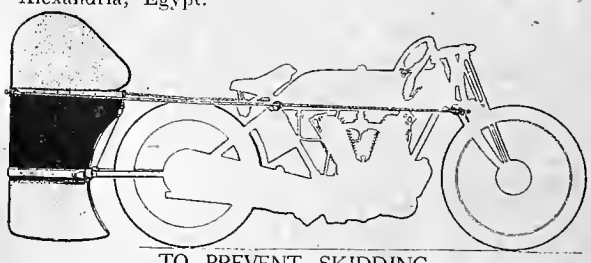
I am, however, having a special can made now, which I think will solve the difficulty. R. C. MEASURES.

[That "many dealers refuse to split a can" is a statement that does not by any means bear out our recent experience. —ED.]

Sir,—May I reply through your correspondence columns to a letter from Mr. R. C. Measures, published in your issue of June 30th, on the unsuitability of the petrol tin carrier on the Triumph sidecar?

I should like to state that, having a 1920 Triumph and Gloria, I have found the petrol tin carrier everything that could be desired, as I have driven the outfit from Alexandria to Cairo and back over mud roads which have never seen a steam roller, during the week's run covering close on five hundred miles without the slightest trouble, and have always found the petrol tin in perfect condition. Possibly the tins supplied abroad are of thicker metal than those at home. H. HARVEY GEORGE.

Alexandria, Egypt.



TO PREVENT SKIDDING.

For dirt track racing in America—its original purpose—this rudder, which is said to banish rear-wheel skid when cornering at speed, may possess advantages, but we do not think it very likely to become popular with British speed-men. It is operated by light cables attached to the front fork, the rudder turning in the opposite direction to the wheel.

LOOK-OUTS FOR HEAVY MOTOR VEHICLES.

Sir,—With reference to your article headed "Motor Coaches" in your issue of July 14th, it may be of interest to know that in Uganda it has been the law for several years that "all heavy motor vehicles shall carry a 'look-out' behind, whose duty will be to signal to the driver warning him of the approach of faster overtaking traffic." Compared with home roads, the roads in Uganda are certainly much narrower, but the "look-out" business works exceedingly well, and I should certainly like to see something of the sort introduced in Great Britain.

My own experience in England has been that the great majority of drivers of heavy vehicles do "pull over" promptly, but, unfortunately, one does meet those who refuse to budge and keep one crawling behind for long distances. W.M.Y.

Birmingham.

Sir,—Referring to your leading article on "Motor Coaches," I should like to add another suggestion, and that is that all motor vehicles capable of travelling at over 5 m.p.h. should be compelled by law to fit pneumatic tyres. In my opinion, it would save the owners a considerable amount in repairs, and also the roads could be kept in decent order at about half the present cost of upkeep. No char-à-banc or 'bus should be allowed to carry more than twenty persons.

I am living in a district where the heavy motor traffic is enormous. Consequently, the roads are in a terribly bad and dangerous condition. I have got to go at least twenty miles before I can get on what may be called a decent road. Broken frames and chassis are a common occurrence.

What do we pay a big tax for? To keep our motor cycles and light cars in the garage? What pleasure is there in getting bumped about and waiting every minute for something to break? Many of my motoring friends have declared that they are going to give it up altogether. I think it is a crying shame that these transport 'buses and chars-à-bancs, carrying anything up to forty persons, should be allowed to tear up the roads and travel at such a speed as they do, to the danger of their passengers and also other users of the road.

I quite understand that people living in areas where heavy motor traffic is seldom seen are unaware of the state of things.

Glamorgan. D.T.W.

NOISE—MECHANICAL AND EXHAUST.

Sir,—My motor cycle is a 3½ h.p. single-cylinder of a well-known make, holding numerous records on Brooklands track. Recently I was summoned and fined for riding an excessively noisy machine.

The silencing arrangements consist of a pipe about 5ft. by 2in. diameter, and having a device called a "muffler" on the end. The "muffler" and pipe have not been enlarged or altered in any way, and are in exactly the same position as when I first bought the machine.

Naturally, on buying the machine I understood it was available for ordinary road use, but evidently this is not so. The manufacturers are turning out machines having exactly similar silencing arrangements as mine at the present date; so here we have a standard machine which the manufacturers state to be suitable for touring, whereas the rider of such a machine renders himself liable to prosecution if venturing on the road. This seems a breach of faith with their clients on the part of the manufacturers. Personally, I am disposing of my machine for one that is rideable.

Kenilworth. FED UP.

Sir,—Have any of your numerous readers noticed a Rolls moving along a good road at 50 m.p.h.? Have they also noticed any high grade motor cycle performing the same feat? What is the chief difference? Silence on the part of the former; noise on the part of the latter.

The Rolls approaches with no audible sign of its power and speed, and passes in a swift silent rush, so that one is hardly aware that it is doing more than 20 m.p.h. The motor cycle proclaims to all and sundry by the high screech of its valve gear, the grinding of its gear box, and its reverberating exhaust, that it is doing 50, and probably imagines it is doing 60 m.p.h.

Is this necessary? Personally, I would willingly pay an extra twenty-five to thirty guineas and sacrifice 10-15 m.p.h. from the maximum speed of any motor cycle for the silence of any medium-priced car, much more for the dignified and deceptive silence (to the police as well as others) of a Rolls, a Daimler, or a Lanchester.

When so much care and designing skill go to the production of such machines as the Sunbeam, A.J.S., Brough Superior, and Norton, all of which can give a performance equal to that of a Rolls in speed and hill-climbing power, why is it that they cannot compare in the matter of silence?

I am sure that there are many of like mind with myself, and that an enormous market awaits any manufacturer who can supply this want, even at a slightly greater cost and lesser performance, provided he does not impair the reliability one expects from the modern motor cycle.

I should like to hear other readers' views on this subject, and also their opinions as to which is the most silent machine at the present time.

As you are once more reopening your campaign for physical comfort, will you not endeavour to obtain for us mental comfort as well—in the form of silence?

Fermoy. THE OWL.

POLICE PREJUDICE AND THE SWISS SIX DAYS.

Sir,—As there seems to exist some misapprehension on the above-named subject in England, I feel prompted to say that conditions for touring in Switzerland are not half as bad as your correspondents and many others seem to imagine. I have always found the police very tolerant, and, besides, policemen are few and far between out in the country, and police traps do not exist at all. Of course, the general population want that the authorities here insist on reasonable and considerate driving, which I find only right. Also speed limits of 4-5 kilometres do not exist at all. The smallest I have come across yet was 10 kilometres (about 6½ m.p.h.), and these only through towns and villages. There is at present a lot being done by motoring and other interested circles to bring about the abolishing of Sunday afternoon prohibition, but what will come of it nobody knows just yet.

So, considered generally, and with a bit of care in driving, Switzerland, with its grand and ever-changing scenery and beauty spots, is still a very attractive touring ground for foreign visitors on motor cycles and cars, and I can assure my British colleagues that on the occasion of the International Six Days, as well as on all other opportunities, they will always find a most sportsmanlike and hearty welcome here.

Sursee, near Lucerne. WINDY.

JOURNAL BEARINGS FOR HUBS.

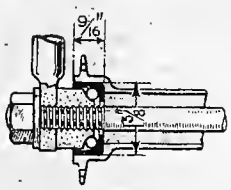
Sir,—May I have the pleasure of quoting a statement made by the Pelican Engineering Co. in a recent issue:

"It is simply a matter of finding a ball race of the same outside diameter as the hub shell, and having fitted the races, hub troubles end."

This is a very serious statement, as in most cases this is when the trouble starts, for an application of journal bearings under road conditions requires far more consideration than as stated above.

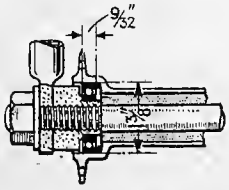
Generally, in a conversion of this type an under-sized ball journal bearing would be used; thus the bearing is put under conditions which it was never designed to carry out.

The following sketch (fig. 1) was made up from a friend's front wheel (3½ h.p. mount). Now the standard ball journal bearing that would correspond to the outside diameter of 1⅜in. would be of 1⅜in. outside diameter × $\frac{9}{32}$in. wide × ⅝in. bore, and could be efficiently mounted as in fig. 2, but this type of bearing is only suitable for "light steady loads as on small electric fans and spinning spindles, and is not designed to carry any journal load to speak of." This is a statement made by the manufacturers, therefore if the designer only recommends this type of bearing for light steady loads, such conditions as are found on the road would surely ruin it in a short time.



STANDARD SMALL TYPE					
DIAM OF BORE	⅛"	⅝"	¾"	7/16"	1"
OUTSIDE DIAM	1⅛"	1⅜"	1⅝"	1⅞"	2"
THICKNESS	¼"	9/32"	5/16"	⅜"	⅜"

Fig. 1.



STANDARD MEDIUM TYPE					
DIAM OF BORE	¼"	⅜"	½"	⅝"	¾"
OUTSIDE DIAM	1 5/16"	1½"	1⅝"	1 13/16"	2"
THICKNESS	9/16"	9/16"	⅝"	⅝"	11/16"

Fig. 2.

May I mention that my statement is based on a conversion such as stated by the Pelican Engineering Co., and not on a new hub design for journal bearings, as a detachable spindle can be very easily incorporated, leaving the bearings and wheel all one unit. I have at present a design of this construction, but using roller journal bearings, which I must say is very satisfactory and most efficient.

Reddish. ACME.

WHERE ARE THE SPRING FRAMES?

Sir,—The question asked by the correspondent in your issue of July 7th, under this heading, seems rather to suggest that he is not among the keenest of observers. Spring-frame machines, whether in the lighter types or heavy sidecars, are on the roads in sufficient numbers to be seen without any trouble at all. Of course, seeing that the spring frame is a comparatively recent development, it is only to be expected that machines of this category should, at present, be considerably outnumbered by rigid mounts.

Another factor is that spring frames have hitherto involved additional cost, and probably a good proportion of riders have been compelled to deprive themselves of their undoubted advantages on grounds of economy in first cost. As against this, it may be remarked that the use of a spring frame has been shown materially to lessen running and upkeep expenses, so that the extra initial outlay is sooner or later recouped.

Given a reduction in prices, however, bringing the cost of a spring frame machine down to the level of the most ordinary rigid type—a movement that has already been initiated—the only remaining reason for using an unsprung motor cycle will disappear. Bitter experience—and commonsense—overwhelmingly suggest that the motor cycle should not continue to share with the pedal cycle the distinction of giving to its rider less protection against road shocks than anything that goes on wheels. FRED A. COULSON.

F. ASLETT-COULSON ENGINEERING CO.

Sir,—"Old Timer," in your issue of July 7th, inquires where the spring frames are. Most riders, I imagine, are not convinced of a necessity for isolating engines from road shocks, and realise that spring seat pillars and such saddles as the Tan-sad No-hurts give the driver the comfort of a spring frame without the complications and liability to trouble inherent in the additional mechanism of a spring frame.

I personally am much more interested in front fork design. I should like to know the justification for the Triumph type of fork. I allude to all forks hinged at the foot of the steering column in such a way as to allow the wheel a circular back and forward motion round the hinge, a movement calculated in my uninstructed mind to accentuate rather than to absorb road shocks. Yet its incorporation in recent machines, *e.g.*, the XL, Hawker, Beardmore Precision, suggests that there may be something to be said in defence of this type. At the same time it is significant that the T.T. Triumph machines were fitted with the parallel link type of fork. WARUM.

Barlinnie.

Sir,—In reply to "Old Timer's" query in your issue of July 7th concerning the absence of spring framed machines, if my case is the example of the average spring framed machine, I am not in the least surprised that we see so few about nowadays.

As I live in the Manchester district, where good roads are only dreamt of and paid for, I decided to buy a spring frame machine. I was still feeling very shaken after riding a 2¾ h.p. 'bus fitted with 2½in. tyres. So, last September, I chose one of the best spring framed machines going, for which I paid a ridiculously high price. The machine ran perfectly for a few weeks, but then troubles arrived thick and fast! Naturally a spring frame needs oiling very frequently. The only means of injecting oil was through microscopic holes, without dust caps! After these had been discovered, it became obvious that no oil could possibly soak through the solid plug of mud which had found its way there. After much trouble and expense grease cups were fitted. Soon after this lateral play became evident, making the machine rather dangerous at speeds over 30 m.p.h.

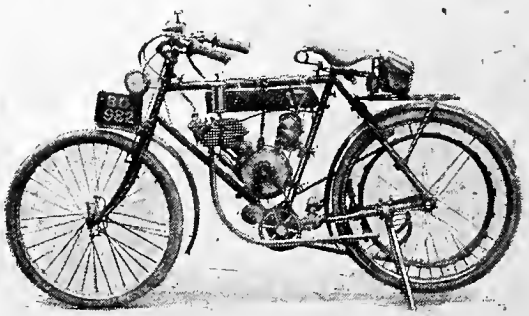
Now I would like to say a word in fairness to English manufacturers against Mr. Mursell's letter in the Overseas Section, June 30th, p. 822. He states that the only English agency in Geneva is that of the Hobart. I fear he would have a rude surprise if he took a walk to the Rue Muzy, Geneva. Here two very enthusiastic and enterprising brothers hold agencies for Nortons, New Imperials, and Omegas. They also "race" these machines, with great success, and have sold many of the first two mentioned. Also, I know there are agencies here for Triumph, Zenith, Scott, B.S.A., and Douglas motor cycles. Also, I consider the 3½ h.p. machine by far the most suitable for average touring purposes here, as the roads are too bad and the hills too long for a 2¾ h.p. 'bus. English quality is realised here!

Hoping you will find space for this protest against an unjust statement, S. N. TURNER.

Geneva, Switzerland.

PAINSTAKING MODERNISATION.

Sir,—I enclose a photograph and a few details of an old 1¾ h.p. Motosacoche that I have modernised. Being a moulder by trade, and model engineering being one of my hobbies, I have effected the alterations myself. I became a motor cyclist early in 1919, and, securing a good conditioned 1914 3½ h.p. Premier, have since then been a regular reader of *The Motor Cycle*, and look forward to it each week.



Much painstaking work has been carried out on this modernised Motosacoche by "A.R.," who describes his efforts in the accompanying letter.

Coming across an old 1¾ h.p. Motosacoche some time ago, which I bought cheaply, I decided to improve it if possible. I discarded the side shields and cut away the triangle frame, clipping the tank to the top tube. The oil reservoir I fixed to the side of the tank. I scrapped the accumulator ignition and substituted a T.B. magneto, the platform for it being of aluminium, and acting as an extra clip between the engine and the frame. The 2 to 1 gears are made in phosphor-bronze, the small pinion on a steel pin being driven into the end of the crankshaft. The larger pinion is riveted to the chain sprocket on a sleeve that revolves on a pin screwed into the original gun metal plate that carried the contact breaker mechanism, which, being eccentric, allows of chain adjustment. I replaced the old carburetter by an Amac having an adjustable jet. The pedals were dispensed with, the bottom bracket carrying a countershaft for a chain-cum-belt drive. The axle was extended to take the chain wheels on one side and the belt pulley on the other. The belt pulley itself was made from sheet steel plates, dished with an aluminium boss cast on for lightness. Of course the back wheel had to be reversed.

A foot brake was fitted to act on the belt rim, an aluminium bracket clipped by a U bolt holding the footrests to the back forks. The chain sprockets were made from steel blanks, turned, and holes drilled round the blanks to form the teeth, the surplus metal being filed away; then the wheels were hardened.

The gear is about 6½ to 1, and I found it necessary to employ a tension pulley to take up chain slackness; also chain guards are being fitted. The results are very satisfactory, and the machine runs well and will climb a fairly good hill.

Wellinghorough. A.R.

PETROL CONSUMPTION.

Sir,—May we beg a little space to reply to Mr. C. G. Vokes's letter in a recent issue, as this gentleman appears to be under some misapprehension. The two machines which we submitted to an A.C.U. observed consumption trial were fitted with Senspray carburetters, and the results were 164 and 226 m.p.g. respectively. The former was an absolutely standard machine selected by the A.C.U.'s engineer from our stock at random, and was not tuned in any way. The one that did the greater mileage was an equally standard machine, but we ourselves did a little tuning to the carburetter. A rather smaller jet was fitted, as we were aware of the steepest gradient on the course which was used, and were able to de-tune the machine slightly accordingly.

The 300 m.p.g. to which your correspondent refers was not obtained by us at all but by Messrs. Amac, Ltd., using the 226 m.p.g. machine referred to above, and fitted with one of their carburetters specially tuned for the occasion. We believe that their actual figures were 320 m.p.g. in the observed test, but we know that Messrs. Amac, Ltd., did obtain 361 m.p.g. privately on a day when the conditions were rather more favourable than on the day the actual test was held.

Mr. Vokes may not be aware that we are giving a petrol consumption guarantee of 120-150 m.p.g. with our standard single-geared models. To our knowledge, quite a number of our riders are getting considerably more, which is quite comprehensible in the case of machines in a flat district, ridden by light enthusiasts, who drive their machines intelligently.

We may say that when considering entering the aforementioned tests we purposely refrained from entering a special machine with freak tuning, as we are well aware that the exceptional figures which can be so obtained under favourable conditions are not believed by the majority of riders.

W. S. BANNER,
For Butterfields Limited.

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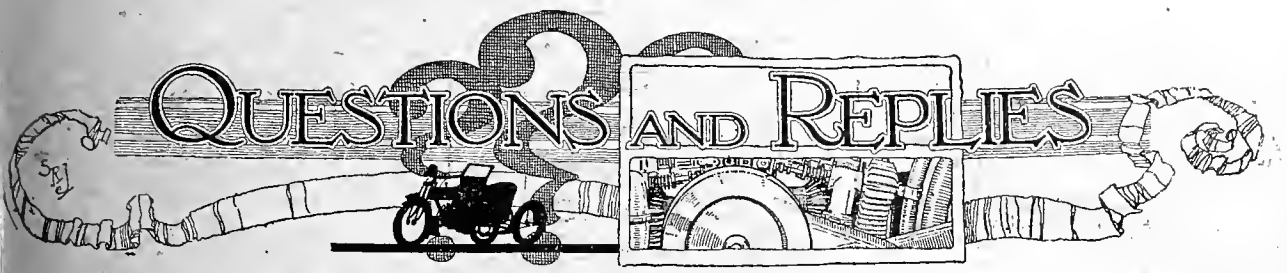

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. **ROUTES.**—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

A QUESTION OF BALANCE.

? (1.) On dismantling my W.D. Triumph engine I find that some of the lead weights in the fly-wheels are missing, namely, the four nearest the connecting rod—two in each wheel. Should this be so? (2.) Should I replace them?—G.L.S.

and 2.) The weights are omitted for balancing purposes, and they should not be replaced.

LICENCE FOR SALE OF PETROL.

? Is any licence required before commencing to deal in motor spirit?—G.H.

You require a licence to deal in motor spirit, and you can obtain one from the nearest collector of Customs and Excise. It will also be necessary that you have a properly constructed and licensed motor spirit store. You will be able to obtain information regarding this from the chief constable's office of your county.

MISFIRING ABOVE 25 M.P.H.

? Some months ago I purchased a 2¾ h.p. 1920 Douglas, and for about the first ten days was able to run on full air. Later, however, the engine commenced backfiring and missing, and I found the only remedy was to shut off my air until it was about a quarter open only. I am still experiencing the same trouble, and have tried every remedy I can think of. I have bound the joints of the induction pipe with adhesive tape, but with no result. I am using a 25 jet, and if I try larger the cycle takes less air than ever. Up to about 25 m.p.h. it takes full air, and only when I open the throttle beyond this have I to shut off the air almost completely. As a result of this trouble I am only getting about seventy miles to the gallon, which is far too little. I can discover nothing wrong with the carburetter.—G.R.F.

If the machine now refuses to take extra air beyond a certain throttle, it would appear that there is some restriction in the fuel supply; this may be between the tank and the carburetter, between the float chamber and the jet platform, or in the jet itself. You should dismantle the parts and thoroughly clean them, specially noting the state of the filters in the petrol tap and float chamber union. We assume that the sparking plugs are in good order; a broken inlet valve spring often causes erratic running even when it does not stop the engine. The consumption of your machine is not excessively high.

AGE QUALIFICATION FOR DRIVING LICENCES.

? What is the minimum age of persons to whom licences for driving motor cycles may be issued?—A.J.N.

A motor cycle driving licence is issued to anyone over the age of fourteen years.

FRAME MODIFICATIONS.

? My 3½ h.p. Triumph, of rather old type, has a straight top tube. I wish to lower the saddle position, but I am unable to get anyone to undertake the job. Is it possible for me to bend the tube without breaking it, and which is the best way to loosen the tube joints?—H.W.B.

Unless you have access to a brazing hearth, and have had considerable experience in frame building, we do not advise you to attempt the frame alteration yourself. The existing frame lugs are pinned and brazed, and the necessary heat to loosen them may easily damage the tubes if carelessly applied.

PROTECTING A MAGNETO.

? Is it possible to make my old type Bosch magneto weather-proof by fitting end plates of aluminium and having a small bolt made of the same material going through the magnets, thus pulling them close to the latter? (1.) What insulation should I require between end plate and magnets, also bolt? (2.) Would insulating tape be good enough? (3.) Would there be any harm whatever done to the magneto by the aluminium bolt going through the magnets? (4.) What would be the best material to make nuts of for ends of bolt?—A.A.D.

The arrangement you suggest would do very little to protect the magneto, and one of the rubber covers sold by the accessory dealers would be far more effective. (1 and 2.) It would not be necessary to place any insulation between the end plates and the magnets. (3 and 4.) There is no necessity to use an aluminium bolt; steel would do.

In spite of the bother entailed in a sea passage, a large number of motor cyclists choose the Isle of Wight for their holidays, although their runs must necessarily be circumscribed. The illustration depicts a scene on one of the cross-Channel steamers during the Cowes regatta week.

A SINGLE-TRACK CAR WANTED.

As a reader of your paper, I should be pleased if you could tell me why the single-track monocar or cycle car on motor cycle lines has not made its appearance, as it obviously has so many advantages over the motor cycle and the monocar, yet one never hears of one having been built or experimented with. Of course, for traffic and slow running, I suggest that two wheels should be let down each side of the body by a lever controlled from the seat, and the steering should be by cables running over pulleys from very short handle-bars about 2ft. wide to a control of the Maurice Farman aeroplane type, or another pair of handle-bars on the dashboard.—D.S.

Vehicles designed upon the lines you suggest have been tried in many cases, and experiments have never been brought to a successful end. Obviously such a machine would have great disadvantages, except upon good wide roads. In congested traffic, or where the road surface was very bad, such a machine would be positively dangerous, as the driver is in a helpless position. Moreover, in many cases, it would be impossible to bring the subsidiary wheels into operation sufficiently quickly to avert disaster.

TIMING AN A.I.V. ENGINE.

Having recently taken over an old machine with automatic inlet valve, will you kindly put me right as to the timing of the valves and ignition? I have timed it as follows: Piston top dead centre, contacts just about to open. (I am using an old twin magneto with one brush and one cam removed. Is this right?) I get a good shock from the magneto, but no spark at the plug, which is a new one. There is a screw missing that holds the contact breaker to the armature. What difference will this make?—E.A.G.

(1.) In the case of an automatic valve engine, the exhaust valve only has to be timed. Set it so that it is just closing as the piston reaches the top of the stroke. The spark should occur on the top dead centre of the compression stroke when the ignition control is two-thirds retarded. (2.) There is no reason why the magneto should be unsatisfactory when used on a single-cylinder engine if you have removed one brush and one cam, but the remaining cam should be lengthened so that the points are kept open for at least 180° of revolution. It is absolutely essential that you do not remove the contact breaker centre screw, as this provides the lead for the primary current to the insulated portion of the contact breaker.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"J.H.E." (Bristol).—Bowden extra air inlet on 4 h.p. Douglas.

"N.N." (Masham).—Binks carburetter on 8 h.p. Matchless-Jap. Consumption, starting, jet sizes.

"K.C.B." (Knutsford).—3½ h.p. Rudge Multi especially hill-climbing.

Important Dates.

Fri., Aug. 12th—Motor Cycle Grand Prix in Belgium.

Sat., Aug. 13th—Cumberland M.C.C. Open Reliability Trial.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept. 3rd—A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—North-Western Centre A.C.U. Open Speed Trials.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

READER'S REPLY.

HIGH PETROL CONSUMPTION.

Referring to "F.C.W.'s" query in the issue of the 28th ult., I notice that you consider a 25 jet quite small enough for a 2½ h.p. two-stroke; perhaps you will be interested to learn that I am successfully using a 23 jet in the Amac carburetter, on my 1920 2½ h.p. Ivy, with most satisfactory results. I get 120 to 130 m.p.g., averaging about 20 m.p.h.—A. E. GORDON.

RECOMMENDED ROUTES.

LOUGHBOROUGH TO BURLINGTON LANE.—H.S.G.

Loughborough, Leicester, Oadby, Kibworth, Market Harborough, Brixworth, Kingsthorpe, Northampton, Hackleton, Stoke Goldington, Gayhurst, Newport Pagnell, Woburn, Hockliffe, Dunstable, Markyate, Redbourn, St. Albans, Radlett, Elstree, Bushey Heath, Harrow and Wealdstone Station, Sudbury, Ealing Common, Gunnersbury Avenue, Turnham Green Church, Chiswick Station, Burlington Lane. Approximately 111 miles.

HALIFAX TO HIGHGATE.—W.E.H.

Halifax, Doncaster, Wadworth, Tickhill, Oldcoates, Carlton, Worksop, Welbeck Abbey, Cuckney, Market Warsop, Mansfield, Nottingham, West Bridgford, Plumtree, Normanton-on-the-Wolds, Widmerpool Inn, Six Hills Inn, Thurmaston, Leicester, Oadby, Great Glen, Kibworth, Market Harborough, Brixworth, Kingsthorpe, Northampton, Hackleton, Stoke Goldington, Gayhurst, Newport Pagnell, Woburn, Hockliffe, Dunstable, Markyate, Redbourn, St. Albans, Highgate. Approximately 200½ miles.

KIDDERMINSTER TO WINDERMERE.—W.A.L.

Kidderminster, Quatt, Quatford Bridgnorth, Stockton, Norton, Brockton, Shifnal, Crackley Bank, Newport, Hinstock, Ternhill, Bletchley, Sandford, Whitchurch, Beeston Castle Station, Tarporley, Cote Brook, Cuddington Station, Weaverham, Acton Bridge, Stretton, Warrington, Sankey Chapel, Bold, Clockface, St. Helens, Rainford, Ormskirk, Burscough Bridge, Rufford, Longton, Penwortham Bridge, Preston, Garstang, Lancaster, Slyne, Bolton-le-Sands, Carnforth, Beetham, Milnthorpe, Levens Bridge, Kendal, Windermere. Approximately 174½ miles.

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The Avon India Rubber Co. has move into large and splendidly equipped pr mises at 343, Euston Road, N.W.1.

Really Helpful Hints.

Again "Rudge Wrinkles" runs in another edition, this time embodying d tails relating to the new three-spee chain-driven gear box models. This pa ticular handbook has long been regard as just what a maker's instruction book should be, and every Rudge rider nee one by him. Some useful hints on ge changing with the three-speed gear b will be useful to users of any make three-speed machine.

A Tempting Offer.

Riders who have hesitated to inst any of the new lighting and ignition se on account of the scrapping of the exis ing magneto will be attracted by t offer in connection with the M-L Magli outfit for singles and flat twins, wherel a generous allowance is to be made f the discarded magnetos off the first 2,0 machines converted.

Two-stroke Tips.

A very thorough handbook, combin with spare parts list, dealing with t running of the 2¼ h.p. Royal Enfield tw stroke, has just been issued. It is keeping with all the excellent instru tional matter previously prepared by t Enfield Cycle Co., Ltd.; and users the machine mentioned who are witho a copy in their garage should send a quest to Redditch forthwith.

Catalogues Received.

Wright and Son, Edgware, Middlese Aluminium number plates pressed fr the sheet are a speciality described in folder issued by this firm, which a produces a low-priced pressed aluminiu licence holder. The idea of embossi number plates is also extended to an en mous variety of name, door, and directi plates.

Successes in the Grand Prix.

Speedwell oil promises to become popular in France as in England, sin Jean Vernisse used Speedwell lubrica on his 250 c.c. Yvels-Jap when he w the lightweight class in the Grand Pr as also Clech (Moto Solo), who finish second.

Found.

Found, near Liverpool, a sidecar ho cover. Editor has address of finder.

Found on Bucklebrow, near Sett Yorks, a haversack belonging to a So rider, by Mr. E. Lucas, 23, Stanleyfi Road, Preston. Also a tool roll at Mo Heath, Cheshire, by Mr. T. E. Holber 33, Whalley Street, Gorton, Manchest

Chelmsford M.C.C.

cal motor cyclists interested in a osed club, as above, should communi- with Mr. J. Day, Friars Place, msford.

Prestwich M.C.C.

ly formed a month ago, the member- of this club already tops the hundred The headquarters are at Messrs. I. Taylor and Co., Ltd., motor engi- Sedgely Park.

Berwick and District M.C.

e speed trials held in Belford ct were a great success. The awards as follows :

) MACHINE (up to 350 c.c.).—1, J. W. n, Tweedmouth (2¾ Jap-Imperial).
) MACHINE (Unlimited c.c.).—W. Murray ports Sunbeam).
CARS AND CARS (Unlimited c.c.).—G. G. son, Kirknewton (8 Sunbeam sc.).

Harper Adams College M.C.C.

re were several unusual events at rst "motor cycle sports" meeting s club. These included a long jump winner "jumping" 19ft. off a rise ., with fifty yards start) and a plank The results were :

T PRIZE AND CHALLENGE CUP.—C. er-Carr (4 Harley-Davidson).
OND PRIZE.—R. G. Posnett (3 A.B.C.).
RD PRIZE.—A. F. Gatehouse (2¾ Douglas).
s E. Cholmondeley (the only lady titor) rode her machine with great

Wallington and District M.C. and L.C.C.

y twelve out of twenty-one entrants d the course in the recent half-day ng trial over a stiff course of ap- ately 70 miles. Allan O. Gruzelier enith-Bradshaw) made an outstand- erformance on all the hills, but unately his watch stopped, and as consequently late at the first Results :

ER CUP AND MEDAL.—G. Gilbertson (5 98 marks.
ER MEDALS:—R. A. Green (3½ Norton), rks, and A. B. Lavy (3½ Sunbeam), 93

Week-end Club Events.

Aug. 11.—Doncaster and District M.C.C. Speed Trials.
Aug. 11.—Canterbury and District M.C.C. Club Run to Dymchurch.
Aug. 11.—Taunton and District M.C. and L.C.C. Treasure Hunt.
Aug. 11.—Worcester and District M.C.C. River trip.
Aug. 13.—Ulster M.C.C. Hill-climb.
Aug. 13.—Leeds and District M.C. Gymkhana.
Aug. 13.—Helensburgh M.C.C. Hill-climb.
Aug. 13.—Saltcoats and District M.C. Club Run to Kilwinning.
Aug. 13.—West Kent M.C. Flexibility Test on Brasted Hill.
Aug. 13.—Luton and South Beds A.C. Hill-climb.
Aug. 13.—North Wales M.C.C. Silencer Trial.
Aug. 13.—Wallington and District M.C.C. Hill-climb.
Aug. 13.—Liverpool M.C. Hill-climb at Pen-y-Bull.
Aug. 13.—Public Schools M.C.C. Reliability, Brake, and Acceleration Trial.
Aug. 13.—Stourbridge M.C.C. Gymkhana.
Aug. 14.—Ilkley M.C. and L.C.C. Wilkinson and Armitage Trophy Trial.
Aug. 14.—Stafford and District M.C.C. Captain's Run.
Aug. 14.—Barrow and District M.C.C. Reliability Trial.
Aug. 14.—Manchester M.C. Gymkhana and Social.
Aug. 14.—Leeds and District M.C. Club Run.
Aug. 14.—Leeds M.U. Reliability Trial.
Aug. 14.—Harrogate and District M.C.C. Social Run to Hawnby.
Aug. 14.—Wolverhampton Auto Nomads. Club Run to Haughmond Avenue.
Aug. 14.—Sheffield M.C.C. Club Run to Lincoln.
Aug. 14.—Northern M.C.C. Gymkhana.
Aug. 14.—N.E.A.A. Team Trial.
Aug. 14.—Halifax and District M.C.C. Club Run to Buxton.
Aug. 14.—Wolverhampton M.C.C. Social Run to Ross.
Aug. 14.—Portsmouth and District M.C. and L.C.C. Club Run to Bramdean.
Aug. 14.—Wakefield and District M.C.C. Club Run to Aysgarth.
Aug. 14.—Brighton and Hove M.C.C. Secretary's Surprise Run.
Aug. 14.—Basingstoke and District M.C. and L.C.C. Club Run.
Aug. 14.—Woolwich, Plumstead, and District M.C. Gymkhana.
Aug. 14.—Cambridge and County M.C. Speed Trials.
Aug. 14.—Rochester, Chatham, and District M.C. and L.C.C. Club Run to Hever Castle.
Aug. 17.—Exeter M.C. and J.C.C. Supper Run to Torquay.
Aug. 17.—Central London M.C.C. Club Run to Epping Forest.
Aug. 18.—Berwick and District M.C. Hill-climb.

A Section devoted to Club Announcements will be found on Supp. xxxviii.

Liverpool M.C.

There were forty-two starters, including four ladies, in the distance and speed-judging competition on July 27th, starting from Arrowe Hall. The prize winners proved to be :

1, F. H. Roberts (2½ Chater-Lea) and A. E. Taylor (18 Overland) tied, divide first and second prizes; 3, J. R. Worrall (2¾ Douglas). Best performance by a lady, Miss P. Dorie (3½ Rudge Multi).

Cannock Chase M.C.C.

A successful reliability trial, over a varied course, was held on Monday, the 1st inst., for the president's cup. Twenty competitors started, and fourteen completed the course. The cup winner was T. E. Stone (3½ Sunbeam sc.), 3m. late, the second man being E. A. Mason (2½ Ixion). Any riders wishing to join the club should communicate with the honorary secretary, Mr. T. E. Lindop, The Green, Cannock.

Rochester, Chatham, and District M.C.C.

Five Kentish clubs in all contributed towards a very successful hill-climb held at Nosley Hill on July 31st. Electrical timing was used, and the proceedings went forward without a hitch. Some very good times were put up, the fastest time of the day (22⅖s.) being gained by F. Short on an overhead valve J.A.P. The length of the course was two-fifths of a mile, and the average gradient 1 in 7.

CLASS 1.—Sidecars, unlimited : 1, G. Packman (8 Brough Superior), 30⅖s.; 2, H. Chalklen (7-9 Harley-Davidson), 32⅖s.; 3, J. Redstall (7-9 Indian), 40s.

CLASS 2.—350 c.c. (general) : 1, W. Rumens (3 Ivy), 30⅖s.; 2, G. Williams (2¾ Douglas), 32⅖s.; 3, S. Stockwell (2¾ Hobart), 36⅖s.

CLASS 3.—350 c.c. (experts barred) : 1, S. Stockwell (2¾ Hobart), 31⅖s.; 2, Watson (2¾ A.J.S.), 51s.

CLASS 4.—600 c.c. (general) : 1, Newman (3½ Sunbeam), 24⅖s.; 2, Smart (3 A.B.C.), 28⅖s.; 3, W. Rumens (3 Ivy), 28⅖s.

CLASS 5.—600 c.c. (experts barred) : 1, L. Williams (3¾ Scott), 29s.; 2, Frear (3¾ Scott), 30⅖s.; 3, Eckersley (3½ Duzmo), 31⅖s.

CLASS 6.—Unlimited (general) : 1, J. Short (8 J.A.P.), 22⅖s.; 2, Newman (3½ Sunbeam), 24⅖s.; 3, G. Packman (8 Brough Superior), 26⅖s.

CLASS 7.—Unlimited (experts barred) : 1, J. Short (8 J.A.P.), 22⅖s.; 2, Iggulden (7-9 Indian), 25s.; 3, Redstall (7-9 Indian), 26⅖s.

CLASS 8.—600 c.c. touring machines : 1, Smart (3 A.B.C.), 28⅖s.; 2, Wallis (3 A.B.C.), 31⅖s.; 3, Cousins (4 Triumph), 34s.

The INTERNATIONAL Six Days Trials in Switzerland.

In the neighbourhood of Giornico in the canton of Tessin, near the St. Gothard Pass. Competitors passed this spot on the fourth and fifth days.

British Machines make Creditable Performances on Severe Gradients in High Altitudes

ONLY two teams competed for the International Trophy in last week's Six Days Trial (promoted by the Swiss Motor Cycle Union for the F.I.C.M.), viz., Great Britain and Switzerland. There were fifty-one entrants, and all faced the starter at Geneva on Monday.

Gorgeous scenery and long, tiring gradients were the chief characteristics of the trial. Imagine Applecross piled on Porlock, and Sutton Bank placed on the top. Cover the whole with glorious shady woods, add a blue sky and a blazing sun, and some idea may be gathered of the lesser climbs of the trial. Of the really strenuous ascents more anon.

Fifty-one Starters.

The entry consisted of riders from England, France, and Switzerland, and machines made in England, France, Switzerland, and America. Most of the best makes figured in the trial, and the entry may be said to have been fairly representative. Two teams only entered by countries competed—the Swiss team, consisting of Morand (Condor), Rothenbach (Motosacoche), and Crex (Motosacoche), and the English team consisting of Eric Williams (A.J.S.), J. A. Newman (Douglas), and Hugh Gibson (Raleigh). Besides these the following Englishmen took part: H. Dawson (P. and M.), E. H. Lees (Sunbeam), H. Langman (Scott), C. P. Wood (Scott), and F. P. Dickson (Brough Superior), making eight British entries in all. Of the fifty-one entrants, of whom all weighed in, twenty-four rode British mounts, leaving twenty-seven divided between three other countries.

The organisation at the weighing in was excellent and most thorough, and took place in the Bâtiment Electoral, one of the finest buildings in the beautiful town of Geneva. Every conceivable part of the machines and each bundle of spare parts carried was either sealed or stamped, while particular attention was paid to silencers, every cut-out being sealed in its closed position.

Altogether the exhibition of machines ranged in order in the centre of the hall was a fine one, and to it the public were admitted, and arrived in a steady stream from 8 a.m. Several of the machines attracted much attention, perhaps the most prominent being one of the French mounts, the unconventional Viratelle, with water-cooled, enclosed valve, side-by-side twin-cylinder engine, forming a unit with the gear box, laminated spring forks, and a radiator circular in form, carried in front and provided with a belt-driven fan. The Blériot, too, raised much comment; it is perhaps a shade better known in England, but this is the first important trial in which the former has competed.

Swiss Entries.

Among the Swiss makers, the neatly equipped M.A.G.-engined Condor made a very favourable impression. The Motosacoche had all spring frames, while the sidecar machine of this make had an Enfield type gear, but giving three speeds. The Condor sidecar outfit had a M.A.G. engine, but a three-speed gear box. One machine better known in England a few years ago than now—the Moto-Rêve—had an overhead valve V twin engine and the Enfield type of gear also.

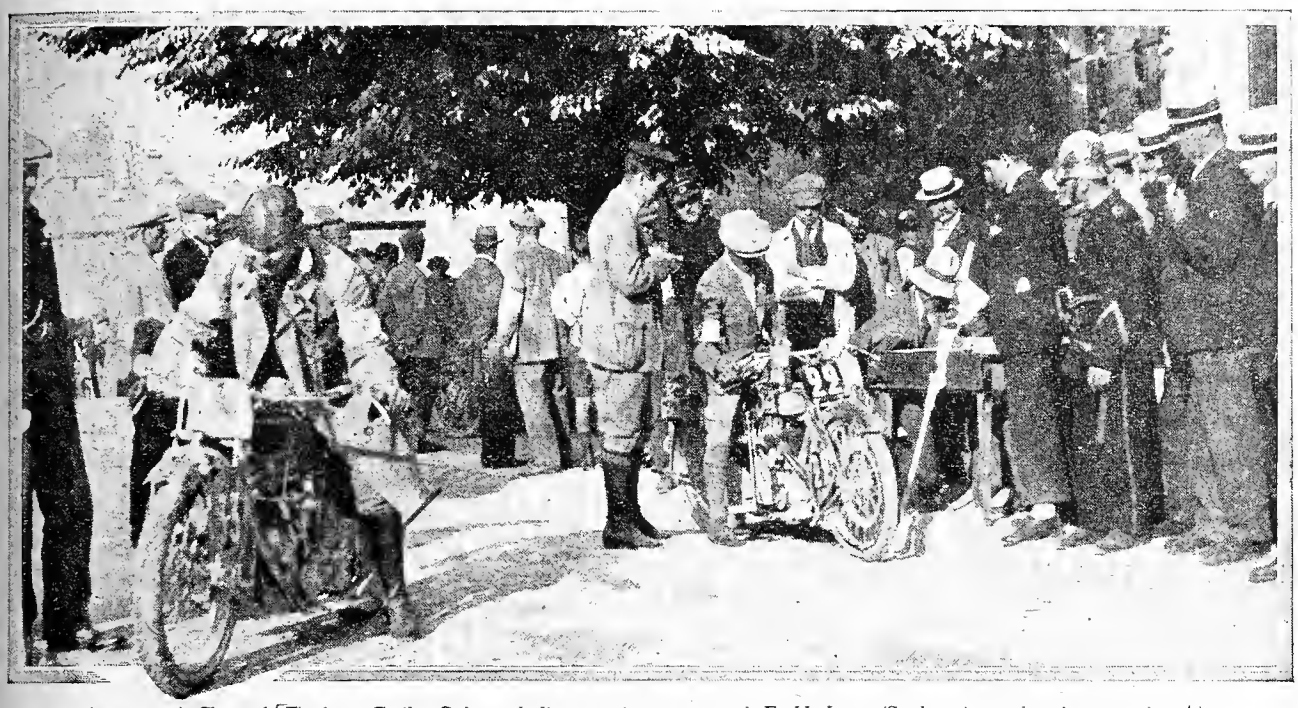
Every official spoke fluent English, all seemed bent on doing their utmo help the foreign visitors.

Of the British officials, Mr. T. Loughborough, secretary of the F.I.C. Mr. W. H. Wells, representing the and A.T.A., and Mr. E. M. P. Boil British delegate of the F.I.C.M., at conference held last Monday at Gen journeyed by road, while Mr. A. V. Eb white, the other British delegate of F.I.C.M., and, like Mr. Loughborou one of the stewards of the trial, arri before the start and followed the c petition. Though it was fully expe they would take part, the French Italian teams failed to materialise.

FIRST DAY.—GENEVA TO CHAUX-FONDS, 193 MILES.

The first day's run was not too l and was comparatively easy. competitors were despatched from Batiment Electoral at Geneva si and at one-minute intervals. It wa perfect morning, heralding a hot day the competitors sallied along the ex lent and mostly dustless road which sk Lake Geneva. After Nyon the lake left, and then ensued a long climb St. Cergues up a zigzag road, wh though long, gave little trouble ex to one of the French machines.

On our way to Marchairnz, the observed hill, we had some little exc ment. *En route* we passed a sentry in which sat a soldier in a brilliant form. We slowed down, and were nalled to proceed, and all went well after climbing about five miles, we fo the road barred, where we were infor



A scene at Chaux-de-Fonds. Emile Gafner (Indian) getting away, and E. H. Lees (Sunbeam) at the timekeeper's table. Observe the fireman with his hatchet and metal helmet.

that we had passed through an artillery range, and had narrowly escaped being shelled. Soon after a series of rapid shots added emphasis to our informant's remarks.

The First Test Hill.

Ascending from the lake, the view should have been glorious, but the heat haze spoilt it, and Mont Blanc could only just be discovered, barely visible, a white ghost mountain. We took up our post on the observed hill at an altitude of well over 4,000ft., much higher than the top of Snowdon, where the gradient was about 1 in 8, but the summit was close on 4,800ft. This is not among the Alps proper, but only in the Jura district. Nevertheless, twice on the first day the competitors climbed to heights exceeding that of Applecross.

The first arrival was Lombard, on the *monobloc* four-cylinder Salmson water-cooled cycle car, who travelled well. Georges Neher, on the 500 c.c. Motosacoche, came up in fine style, but later suffered from carburetter trouble. While watching the competitors, a workman arrived on a $2\frac{1}{2}$ h.p. F.N., in which he had fitted an enclosed fan running on ball bearings, and driven by a belt off the flywheel for inducing an air draught on to the cylinder head. M. Jules Neher, who was following the trial on a Morgan, came up in fine style. Despite the length of the hill, and the fact that it was very steep near the summit, it caused little trouble to the competitors. Wood and Langman (on Scotts) simply played with the gradient, while Gibson (on the Raleigh sidecar) made an extremely good climb. Laeser (on a $2\frac{3}{4}$ Condor) came up well, but made a poor change at one of the corners, while Morand (on one of the miniatures of this make) did well, though his mount was somewhat noisy. Wuillemin (another Condor rider) wore a sort of waterproof Balaklava helmet, which might have been ideal in rain, but must have been extremely hot. Pognanski (7 A.J.S. sc.), who was one of the last to arrive in Geneva before the start, was sailing under British colours, and brought the total number of British entries to nine. His machine and Eric Williams's $2\frac{3}{4}$ h.p. of the same make made fine ascents. Gafner (on an Indian Scout) made easy work of the climb, but his trouble was to come later. Gex (Motosacoche sc.) ascended with his passenger leaning far out of the sidecar.

Well-known riders at Schaffhausen on the third day's run. Reading from left: H. Langman (Scott), Hugh Gibson (Raleigh), Eric Williams (A.J.S.), and J. A. Newman (Douglas).

English Machines Climbed Well.

Boltshauser and the other Triumph riders did well, and so did the Nortons, except that ridden by Tschndi, who arrived late and was making up time. All the Englishmen were doing excellently, and Lees (Sunbeam), though he

The International Six Days Trial.—

has been doing much car work lately, had, by the way he took the corners clearly, lost none of his old skill. Dawson's P. and M. made quite a good climb, and so did Schlee's 2¾ h.p. Douglas and Newman's 3½ h.p. of the same make.

Swiss Team's Loss of Marks.

After the summit, the road descended rapidly, and eventually skirted the pretty little Lac de Joux, its blue waters sadly diminished by the drought. At the end of the lake came a short section of mountain road, and then a steady fall to Vallorbes—the luncheon stop. Here it was reported that the Swiss team had already lost marks, and Gex, the crack Motosacoche rider, was reported to have stopped more than once on Marchairnz; the Englishmen were still intact, but the climb had but just begun. Bailly (Hobart) and Gafner (Indian Scout) were in trouble with their tyres, the latter having suffered a ripped tube.

After lunch the worst climb was the Col de l'Aiguillon, some time after which the road descended to the shores of the Lake of Neuchatel, and then ascended to the Vue des Alpes, but there was no view on account of haze. It was a long trying climb, but not severe, though it rose to an altitude of 4,300ft.—higher than the summit of Ben Nevis.

Gafner (Indian Scout) ascended with his pump sticking out of his haversack. We had another exciting incident before reaching this point. Men were working on a sewer by the roadside, and pulled us up because they had laid a mine. When it did go off, it made little more fuss than a Chinese cracker.

Chaux-de-Fonds, the finish of the day's run, was but a few kilometres distant.

British Competitors' Impressions.

A chat with the British competitors at the end of the first day's run evinced several items of interest. Newman considered the event far more entertaining than either the Scottish or English Six Days Trials, and Gibson felt that he had already learned a great deal. In his own words, he had actually melted two plugs, had three punctures in a ten-kilometre section, and had lost no marks. Dickson (Brough Superior) had been unable to descend a single long hill without sooting his plugs. Lees (Sports Sunbeam) had seized his engine, owing to bad oil, but had freed it again. Eric Williams (2¾ A.J.S.) was merry and bright; while Dawson (P. and M.) had had three punctures in the last ten kilometres, and had "blinded" to make up time, broke an exhaust valve as a result, and lost seven marks.

One Retirement First Day.

Of the fifty-one starters there was only one retirement—Balmer, the French rider of the Blériot. Bailly (Hobart) lost marks owing to tyre troubles, and Gex (Motosacoche) through broken high-tension wire. Balmer (Blériot), however, could not get his engine to start for an hour after the word to go was given on the second day, and so had to withdraw.

(Left) C. P. Wood taking one of the hairpins on the Weisenstein on the first day. (Right) Typical continental architecture—the Tower at Solothurn. The car belongs to Mr. W. H. Wells, of Indian fame, who was accompanied by Mr. and Mrs. Loughborough.

SECOND DAY.—CHAUX-DE-FONDS TO BASLE, 156 MILES.

Monday's run presented few difficulties, but Tuesday's was a very different story. It was a really hard run. One of the incidents of the morning was a five-kilometre descent over a stony track, at times studded with rocks as large as paving stones—a piece of cross-country work as bad as could be found in an English or Scottish Six Days Trial, but with the agony piled on owing to its length. Several of the Swiss drivers were seen to be walking their machines down the hill, and on the way to St. Ursanne the Condor sidecar outfit was found to be hanging over the edge of a precipice, with driver and passenger hanging on for dear life, almost exhausted and ready to let go, when Gibson and his companion came along, and swiftly hauled the outfit back to safety.

To hark back for a moment to the evening before. Chaux-de-Fonds celebrated the Swiss National Fête with fireworks and illuminations, hugely enjoyed by all and sundry, save by one British official, Mr. A. V. Ebblewhite, whose forehead was cut open by a rocket stick. Fortunately, the injury, though unsightly, was not severe.

On the Weisenstein.

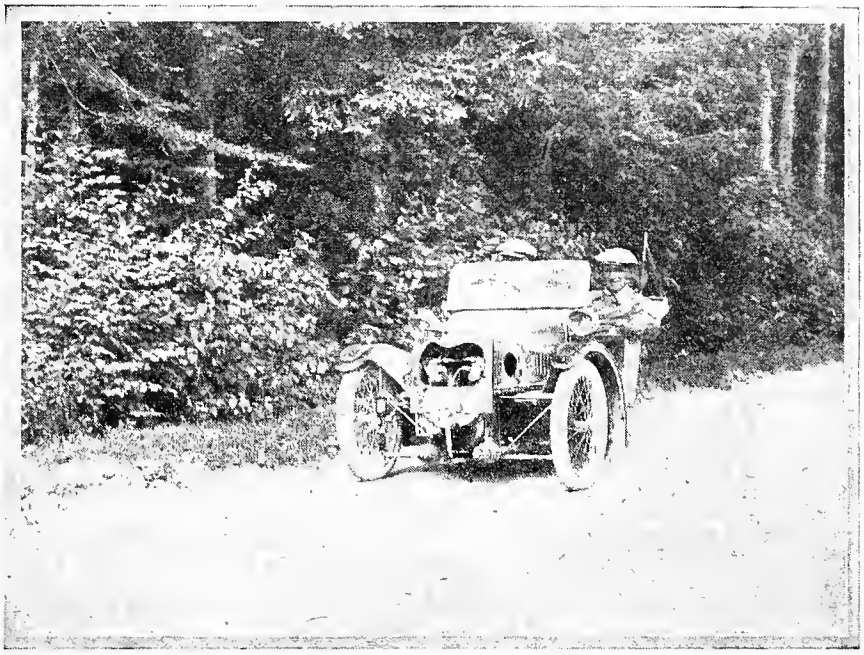
Reverting to the trial, the *pièce de résistance* of Tuesday's run was the ascent of the Weisenstein from Solothurm. It will be noticed that this is a German name, and practically marks the entry of the trial into German Switzerland. The peasants do not speak French, and their German is an unintelligible *patois*. Most of the organisers of the trial spoke English and French, so that the sudden change from one or other of these languages was not a little trying.

The Weisenstein is a good hill, and one British rider, who was fairly beaten by it, declared it to be the finest hill he had ever met. Applecross plus Porlock

The International Six Days Trial.—

plus Sutton Bank describes it. Its length is at least five miles; its surface like Sutton Bank in fair condition, and so not too bad; its average gradient about 1 in 8; and its steepest, inside the three worst corners, about 1 in 4. Like the other hills in the second day's run, it was not observed, as the course was thought to be insufficiently steep, but it had its record of failures. It is not a freak hill, for cars and motor cycles climb it every Sunday, as the view from the summit, 4,350ft., is marvellous in clear weather; but few cars will climb it without boiling furiously.

We watched the performances from the topmost bad corner, where the climb began to be serious, about 1,000ft. from the highest point. Poznanski (A.J.S. sc.) made a beautifully clean climb. The machine sailed easily round the bend, and his passenger remained normally seated. Eric Williams (2¾ A.J.S.) did splendidly, and, though he had an anxious moment through taking the inside of the bend instead of taking it wide (the easier way); he made a clean recovery and a non-stop climb. By the time they reached this point, the engines were pretty hot, but Langman's, Wood's, and Alfter's Scotts came up without a falter, and the Swiss-ridden Triumphs did remarkably well. The hill proved too much for three of the little Condors, the riders of which had to dismount and run; but Laeser, riding one of these machines, made a fine climb, and foot-slogged quite unnecessarily.



M. Jules Neher, president of the Motor Cycle Union of Switzerland, who followed the trial on his Morgan.

Passenger Machines.

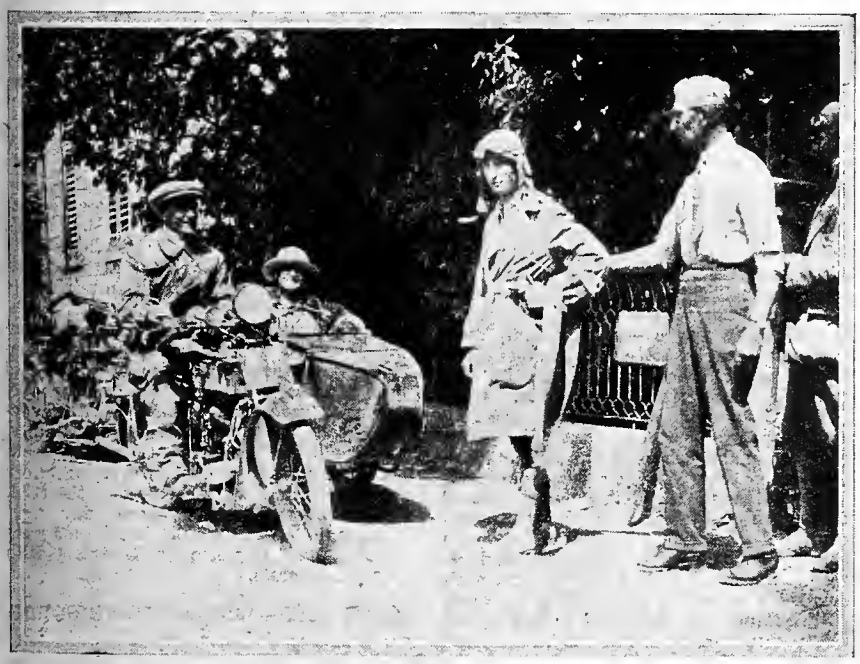
Of the cycle cars, the Salmson made a very fine performance, but the French-built G.N. had to shed its passenger, who pushed behind. Many of the sidecar machines came up with the sidecar seat either empty or with the passenger most abnormally seated. Schorp (Motosacoche sc.) and Rolland (New Imperial sc.) were offenders in this respect, and failed, while other unsuccessful riders were the two 500 c.c. Motosacoche riders, Guignet and Robert. Bonvin, riding a similar machine, kicked hard on the ground, and nearly fell.

Of the solo Viratelle machines, those ridden by Lambert and Aumaitre failed, the rider of the former arriving at the corner very much the worse for wear.

After a long rest, he had the misfortune to break his chain just as he was restarting.

Dickson (Brough-Superior) came up beautifully and smiling, as did Newman (Douglas), who took the corner a shade too wide. Lees (Sunbeam) gave a fine exhibition of driving.. Of the other English riders, Gibson (Raleigh sc.) stopped simply through wheel slip, and shed his passenger. Gafner, the Indian Scout rider, came up well, but took his corner rather clumsily; but Marcel (7 Indian sc.) failed just beyond the last corner.

After this there was a good deal more of the hill, another corner not quite so bad, and a further steep stretch. The descent was rough, narrow, and severe, comprising numerous gulleys, and more stiff country was traversed before Basle was reached.



An A.J.S. rider, M. Poznanski, about to leave Rheinfall. Shirt sleeves were the order of the day. On the right is Mr. W. H. Wells, who accompanied the riders on the course.

A Place of Evil Omen.

There were several incidents during the day. Fouquier (Viratelle sc.) upset his outfit on the Col des Enfers (the Pass of Hell), rightly named so far as he was concerned, as his brakes failed, and he fell, breaking several ribs. Young Neher (Motosacoche) lost marks through punctures, brake, and plug troubles, while two of the British team must have lost many marks. The unfortunate Newman had a fall after the Weisenstein, and then a series of punctures which exhausted his supply of spare tubes. Exhausted by his fall, the heat, and his efforts, he lost an hour.

It will be appreciated that the trial was no picnic, and most of the English riders said they have to drive on full throttle most of the time. Gibson, though his failure on the worst hill of the day lost him no marks, feared he had been penalised owing to five punctures he suffered.

THIRD DAY.—BASLE TO ZURICH, 213 MILES.

All those who arrived the previous night started on the third day's route, except Bischof (8 Motosacoche sc.) and Dawson (3½ P. and M.), whose fork crown broke owing to the bad roads. This day's run was not severe, except that it was long and tiring. The road was rough on leaving Basle, but improved later, and in glorious weather the competitors traversed the final hills and valleys of the Juras. There were few difficulties, except on one part of the course, where the road was traversed by numerous gulleys.

Lunch was served at Laufen, near Schaffhausen, where the men had ample time to view the falls of the Rhine, which are really worth seeing. The enclosure at the luncheon stop was approached through an arch under a sixteenth century tower. Lunch was served in a shady garden, and afterwards petrol was brought in drums and doled out first in enamelled water jugs, and finally out of glass water decanters. Oil was a great difficulty in this trial, as the local lubricant was unsuitable for British engines.

The afternoon was somewhat tiring, though fine country with a few steep hills up and down was traversed. It was a rich district, with neat, well-kept buildings, and at several of the controls liquid and solid refreshments were offered to the competitors. At the Hulftegg control a group of enthusiasts met Eric Williams and greeted him as a hero to be revered, his prowess in the T.T. having reached even these distant parts. The climb up to this point was stiff, but only troubled some of the smaller Condors.

Descent of the Hulftegg.

Coming down from the summit the road was steep, and here Williams suffered two punctures, and was stung by a wasp. Young Neher (Motosacoche) had a run of bad luck. After a puncture, he tried to make up time descending from the Hulftegg, and had a nasty fall, his lighting dynamo broke completely adrift, and he lost his way riding into Zurich. The final control was three kilometres away from this beautiful town.

The arrivals were grouped into parties of ten and piloted by cars to the enclosure—a fine electrically lighted building in the heart of the city. The floor was covered with sawdust, each competitor had his appointed post arranged in the next day's order of starting, his luggage was arranged on one side of the hall, and petrol and oil were set out all ready for the next day's run. The trial was certainly well organised, but the N.M.S. has still a little to learn as regards running a competition of this kind.

Dust, Wind, and More Punctures.

The only surviving Viratelle arrived with its water boiling. The Salmson cycle car lost marks owing to punctures after the start.

The men arrived covered with flour-white dust, which is not so disfiguring as the English variety, but there was plenty of it. Poznanski (A.J.S. sc.), though he had a puncture on Tuesday, finished the third day quite happy, and his machine had certainly put up a fine performance. The weather clouded over near the finish, and a wind storm sprang up, about which Lees (Sunbeam) complained strongly. He was using Challenger inner tubes, which, up to this point, kept him free of punctures.

The Swiss-ridden Triumphs were still giving an excellent account of themselves, but, like many others, have suffered tyre troubles. Eric Williams was distinctly impressed with the trial, and informed us that the engine had to keep "turning over" all the time. He found the event most instructive, but would like to have seen more observed hills. Hugh Gibson's comments were sound as usual. He was still finding the trial of absorbing interest, and said he would not have missed it "for worlds." At the end of the third day, he pointed out that we know little about hills in England, and the difficulty experienced in these parts was to realise the gradients, and that the power fell off at high altitudes. He wished he had had a voiturette cover on the rear wheel.

The following retirements were reported on Wednesday: Aumaitre (Viratelle); Tschudi (Norton), broken push rod; Franel (Moto-Rêve); and Rolland (8 New Imperial sc.), who had nine punctures on the third afternoon. These, with Dinkel (Condor sc.), who broke his bandle-bars through colliding with a non-competitor on the Weisenstein, Balmer (Blériot), Dawson (P. and M.), Bischof (Motosacoche), and Fouquier (Viratelle sc.), make nine retirements in all of the fifty-one starters halfway through the trial.

So far, the competitors had been three days in Switzerland, and had not seen the Alps.

On the frontier. A typical Continental scene—the bridge at Kaiserstuhl looking into Germany.

FOURTH DAY.—ZURICH TO LUGANO, 187 MILES.

Heavy rain fell during the morning of the fourth day, making a bad prospect for the journey over the highest Swiss passes. The first important ascent over the Klausen (6,400ft.) was made through heavy rain and thick clouds; it was very cold at the summit. The road was in good condition. Competitors met the Cyclist Alpine Regiment during the ascent, and had a hearty welcome at the Hospice, but were so cold that they could hardly feel their controls at the beginning of the descent.

After lunch at Altdorf, the St. Gothard climb began with thirty-two miles of long, easy gradients at first, then by adrupt zigzags to Andermatt, and again to the summit (6,900ft.). All were travelling well, including the English team. Lees (3½ Sunbeam) had a no-trouble run, and was enjoying the weather, which was now gloriously fine but cold at this high altitude.

Descent from St. Gothard.

The descent, by numerous hairpins, was amidst unsurpassed scenery. Hugh Gibson (5-6 Raleigh sc.) was stopped just below the top with tyre troubles, and, as usual, the Salmson cycle car was late, and came down at breakneck speed. It was skilfully driven, but it was a dangerous performance.

Great enthusiasm was not at all evident in the down hill run to Lugano as Monte Cenery had to be climbed after Bellinzona. The control at the finish was beautifully organised, competitors, after parking their machines, being met by cars and driven to their hotels.

It was here decided that J. A. Newman (3½ Douglas) should be allowed to continue, but with loss of marks. He had been an hour late on the second day through punctures. The committee decided that, owing to a doubt in the rules, he should be permitted to proceed, but not so any other competitor getting into a similar plight during the rest of the trial.

Retirements on the fourth day were Wuillemin (2¼ Condor) with magneto trouble, and Cossetto (4 Douglas) with two tyre bursts.

FIFTH DAY.—LUGANO TO FRIBOURG, 202 MILES.

Another hard day's run proved too long for such difficult country. Fortunately, the Airolo side of St. Gothard was not

The International Six Days Trial.—

observed, or half the Swiss Army would have been needed; the corners on this side were very loose.

The English team arrived happy at the Bellinzona control, but had suffered nineteen punctures in all. Neher (3½ Motosacoche) remained long, struggling with a tube. He speaks English well, but his language was bad on this occasion! It was cold again at the summit, but before this point Gibson picked up a stone, which jammed his wheel, and Eric Williams had four punctures, and had to drive all out, passing competitors on the descent to Hospenthal, then over the Furka Pass past the Rhône glacier—a glorious sight—up the Grimsel, and on to Meiringen, which was a fearful and wonderful journey. Bouvin (8 Motosacoche sc.) retired before Fribourg was reached owing to a collision and gear trouble.

Andre Robert (Motosacoche) followed by J. A. Newman (Douglas) on the St. Gothard Pass
Observe the granite posts placed to denote the edge of the road.

SIXTH DAY.—FRIBOURG TO GENEVA, 205 MILES.

The last day's run was almost equally stiff, but the competitors were welcomed everywhere. There was a speed hill-climb in the morning at Du Brueck, a long hill with dangerous corners, on which were several falls. Eric Williams (2¾ A.J.S.) made fastest time in his class, despite a broken throttle wire; C. P. Wood (3¾ Scott) won the 750 c.c. class; and F. P. Dickson (8 Brough-Superior) was first amongst the 1,000 c.c. solos.

In the afternoon a well-organised speed trial took place, and amongst the class winners Eric Williams (2¾ A.J.S.), J. A. Newman (3½ Douglas), C. P. Wood (3¾ Scott), and F. P. Dickson (8 Brough-Superior), were again prominent.

At the end of the trial there were thirty-nine finishers out of the fifty-one starters, and amongst those who lost no marks were Eric Williams (2¾ A.J.S.), Robert (3½ Motosacoche), Staub (3½ Norton), Rothenbach (8 Motosacoche), and Honel (G.N).

To summarise, the International Trials this year have been exceedingly severe, and the passes have tested engines to the utmost, since they had to be taken dead slow.

A study in sinuosity. This road, too, is on the famous St. Gothard Pass, and was traversed by the competitors on the fourth day of the trial.

The International Trophy Winners.

For the second time the Swiss team secure the International Trophy, being 151 marks to the good. The trade team prize was secured by the Motosacoche, followed by the Douglas trio. The prize of a gold watch for the best performance by a foreign visitor was secured by Eric Williams (2¾ A.J.S.), and the prize offered by the Swiss president was awarded to the G.N.

TWO HUNDRED ENTRIES IN CARDIFF M.C. MEETING.

AFTER the heavy downpour and the terrific gales which lasted throughout the day on Friday, the hearts of the Cardiff M.C. officials must have rejoiced on beholding a satisfactory change in the weather on Saturday morning, when very successful speed trials were held at Porthcawl Sands.

The event, which had attracted over two hundred entries, was run in heats on the "knock-out" principle (from standing starts).

In the smaller classes Harris (New Imperial) put up a very fine performance, although he did not appear to make the best use of his gear box.

Of the sidecar classes, which came next, the premier honours deservedly go to Jack Thomas (3½ Norton sc.), with his wife (who evidently proved to be a good mascot) as passenger, as they carried off the sidecar championship in the 500 c.c. class. The unlimited sidecar class was won by Handel Davies (8 Brough Superior sc.), after a tight race with Boshier Jones (3 A.B.C. sc.).

This event was followed by the ladies' handicap, which was won by Miss I. Fontaine (2¼ Levis).

In the general classes, 500 c.c., 750 c.c., and unlimited, there was a keen contest between Nortons and Sunbeams, all the big machines getting knocked out by the 3½ h.p. singles.

Undoubtedly the best race of the day was Heat 4 in the 500 c.c. class, in which the four riders were Neath members, riding two Sunbeams and two Nortons, and there was not twenty-five yards between all the riders at the finish. The star rider was a comparatively new entrant in competitions, W. Rice Evans (Neath), on a Sports Sunbeam, who carried off the 500 c.c., 750 c.c., and unlimited classes, making the fastest time of the day.

This event was certainly the finest yet run at Porthcawl.

CURRENT CHAT (Continued from p. 169).

A Sporting Northern Event.

The Scott trial this year will be held on Saturday, October 8th.

Motor Cycle Show in Scotland.

As the result of negotiations concluded between the British Cycle and Motor Cycle Manufacturers' and Traders' Union, Coventry, and the Scottish Motor Trade Association, space will be reserved in the Twentieth Annual Scottish Motor Show for the exhibition of motor cycles and tricars. The exhibition is to be held from January 27th to February 4th (inclusive), 1922.

The A.C.U. Trials.

The criticised oil and petrol allowances for the various classes in the A.C.U. Six Days Trial are as under, and *do not* include the test on Brooklands :

		Fuel. m.p.g.	Oil. m.p.g.
250	c.c. solo	100	1,800
350	c.c. solo	90	1,500
500	c.c. solo	75	1,000
750	c.c. solo	60	800
1,000	c.c. solo	50	600
600	c.c. sidecar	50	550
1,000	c.c. sidecar	45	500

Price Reductions.

The A.J.S. prices have now been reduced. The 7 h.p. sidecar outfit is now £195 instead of £215, and the lightweight is reduced from £105 to £95.

Sporting One Day Trial in Cumberland.

Next Saturday the Cumberland County M.C.C. is holding a one-day open sporting trial. Late entries may still be received by Mr. J. J. Dias, 24, Bank Street, Carlisle.

A Sweepstake Hill-climb.

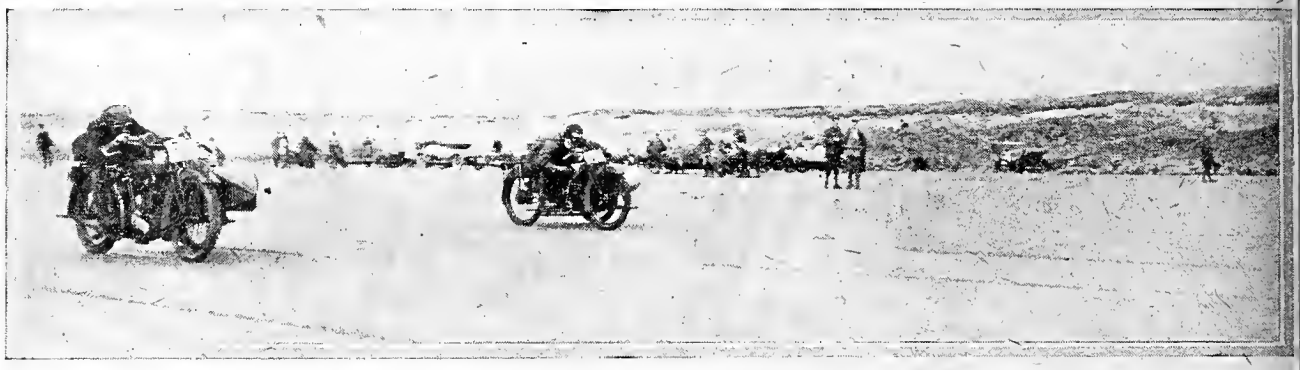
With a view to stimulating club activities, the Edinburgh and District M.C. purposes holding an inter-club sweepstake hill-climb on September 10th, the following being the outlined conditions :

1.—Each club will be represented by five separate riders on five separate machines, one up to 350 c.c., two up to 500 c.c., one unlimited capacity (all solo), and one sidecar unlimited capacity.
2.—One club one team only.
3.—Time only to count—the smallest aggregate time to win.
4.—Time permitting, each rider will have two ascents of the hill, the better time to count.
5.—No restrictions regarding equipment.
6.—The timing will be electrical.
7.—The entry fee is ten guineas per team, the winning club to take the whole entry money, no deduction being made for organising costs.
8.—While the actual team need not be nominated till one hour before the start, entries from clubs must be sent in not later than the 27th inst.
9.—The organising club will require each club entering to nominate one official to represent them.
10.—The selected hill is in the South of Scotland, and is not only very suitable, but also of the "safe" variety.

Already the promoting club has promises of teams, and a representative entry from England as well as Scotland is anticipated. All communications should be addressed to the Secretary, 6, Castle Terrace, Edinburgh.

Mechanical First Aid for Motorists.

The A.A. Road service outfits were fully occupied during the recent Bank Holiday period in assisting motorists with stranded vehicles. In addition to giving roadside and other information to over five hundred motorists, these A.A. road patrols rendered assistance in connection with 380 minor breakdowns and mechanical troubles, and were able to help seventy-four owners of cars and motor cycles stopped by serious causes.



THE CARDIFF M.C. SPEED TRIALS AT PORTHCAWL LAST SATURDAY.
A tussle between a big and a small twin in the sidecar championship heat. The Brough Superior (on the right) and the A.B.C. ran level for a great distance, the former eventually drawing ahead.

CLUB NEWS. (Continued from page 175.)

Reigate, Redhill, and District M.C.C.

Eighteen members took part in the recent trial for the president's cup, the winner being F. Bewers (3 A.B.C.).

Gravesend and District M.C.C.

As the result of a very successful reliability trial, held on the 28th ult., a club has now been formed as above. A membership of thirty practical riders has already been secured, Mr. E. Mitchell, of the *Reporter* Office, Gravesend, being appointed secretary, and the Rev. R. C. Measures, a well-known local competition rider, organising secretary.

Eastern Centre A.C.U.

A rally of the clubs in this centre will take place on August 21st, the venue being Culford Park, Bury St. Edmunds (by the kind permission of Lord Cadogan). It is hoped that as many clubs as possible will be in attendance. Any unattached riders in the counties of Essex, Suffolk, Cambridge, and Norfolk, are also cordially invited.

Blaenavon M.C.C.

All entries and enquiries regarding the inter-team trial for the Daniel challenge shield, to be held on the 27th inst., should be addressed to Mr. D. J. Daniel, Lime Kiln House, Blaenavon.

Clitheroe and District M.C.C.

This club is holding a circuit reliability run on August 21st confined to members only for the Motor Traders silver bowl, etc. The hon. sec., Mr. H. Sainsbury, 27, Castle View, would be pleased to get in touch with any new members desirous of joining the club who would then be eligible to compete. Entries close on the 17th inst.

Hartlepools M.C.

On the 27th ult. a commendable pre-war custom of this club was revived, when about 120 crippled children were taken for a ride in cars and sidecars. The outing included games and tea for the little guests; and, in addition, a sum of £17 11s. was subscribed by those members who were not able to take an active part in the proceedings.

Folkestone and District M.C.C.

There are still vacancies for a few more members in this newly-formed club. Mr. P. J. Halt, "Ellerslie," 23, Bournemouth Road, Folkestone, is the hon. secretary.

North Monmouthshire M.C.C.

Results of a joint reliability trial held on August 1st have now been announced as follows :

BEST SOLO PERFORMANCE.—M. Evans (4 Triumph), Blaenavon.
BEST SIDECAR PERFORMANCE.—M. Hudson (8 Sunbeam sc.), Abergavenny.
BEST LIGHTWEIGHT PERFORMANCE.—W. Davies (2¾ Hawker), Abergavenny.
GOLD MEDAL AWARDS.—A. J. Watkins (3¾ Scott), M. Hudson (8 Sunbeam sc.), M. R. Lewis (3¾ Scott), A. Nicklin (4½ B.S.A.), A. Williams (10 G.N.), T. Jones (2¾ Douglas), Geo. Williams (4¼ B.S.A.), H. Westwood (8 Enfield sc.), H. Dickinson (3¾ Scott), R. Corcorran (4 Triumph), M. Evans (4 Triumph), A. Williams (4 Norton), A. Parfitt (6 Sun-Jap), and T. Wakefield (4 Triumph).
SILVER MEDAL AWARDS.—W. T. Cook (2¾ Douglas), A. Stevens (3½ Sunbeam), Geo. Jayne (3½ Sunbeam), B. R. Evans (8 Matchless sc.), and W. Davies (2½ Hawker).

A.C.U. SIX DAYS TRIALS.

Entry List closes at Ordinary Fees with a Good Total of Competitors.

DESPITE the somewhat stringent regulations framed for the A.C.U. Six Days Trials on August 29th to September 3rd, there has been a much better support from the manufacturers than was expected in trade circles generally. This is probably due to the sporting spirit of many competition managers who realise that, however difficult the conditions render the trial, every competitor has an equal chance.

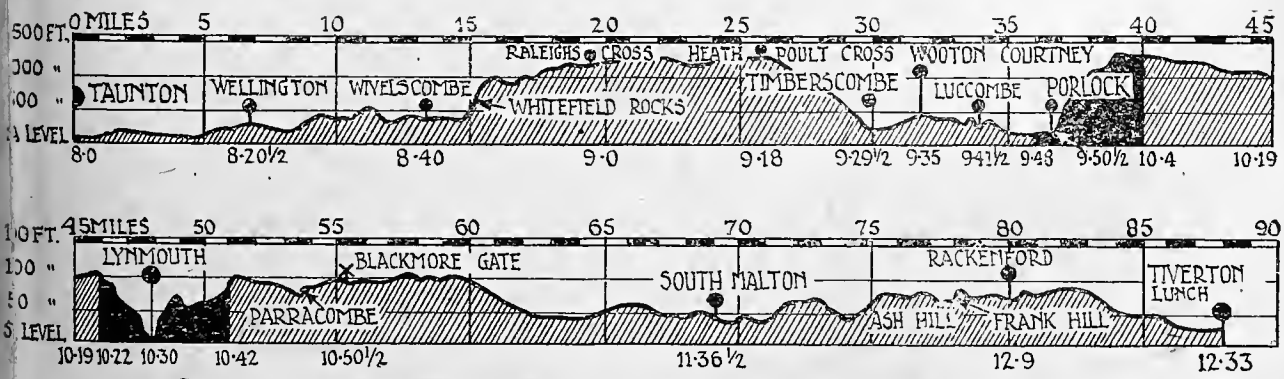
Although there are no freak hills included this year, the trial will be somewhat strenuous, as will be seen from the accompanying contour of Wednesday's route.

So far the following entries have been received; the lists are, however, open at double fees until Saturday next:

The Porlock, Countisbury, and Lynton hills are now, of course, familiar ground to the majority of competition riders, and, except for Wednesday's severe route, the greatest difficulty of the trial undoubtedly will lie in fulfilling the various technical requirements, such as maintaining the necessary speed for the given number of laps on Brooklands and the attainment of the given mileages per gallon of oil and petrol from Monday until Friday.

NINETY-NINE ENTRIES ALREADY RECEIVED FOR THE A.C.U. ANNUAL EVENT.

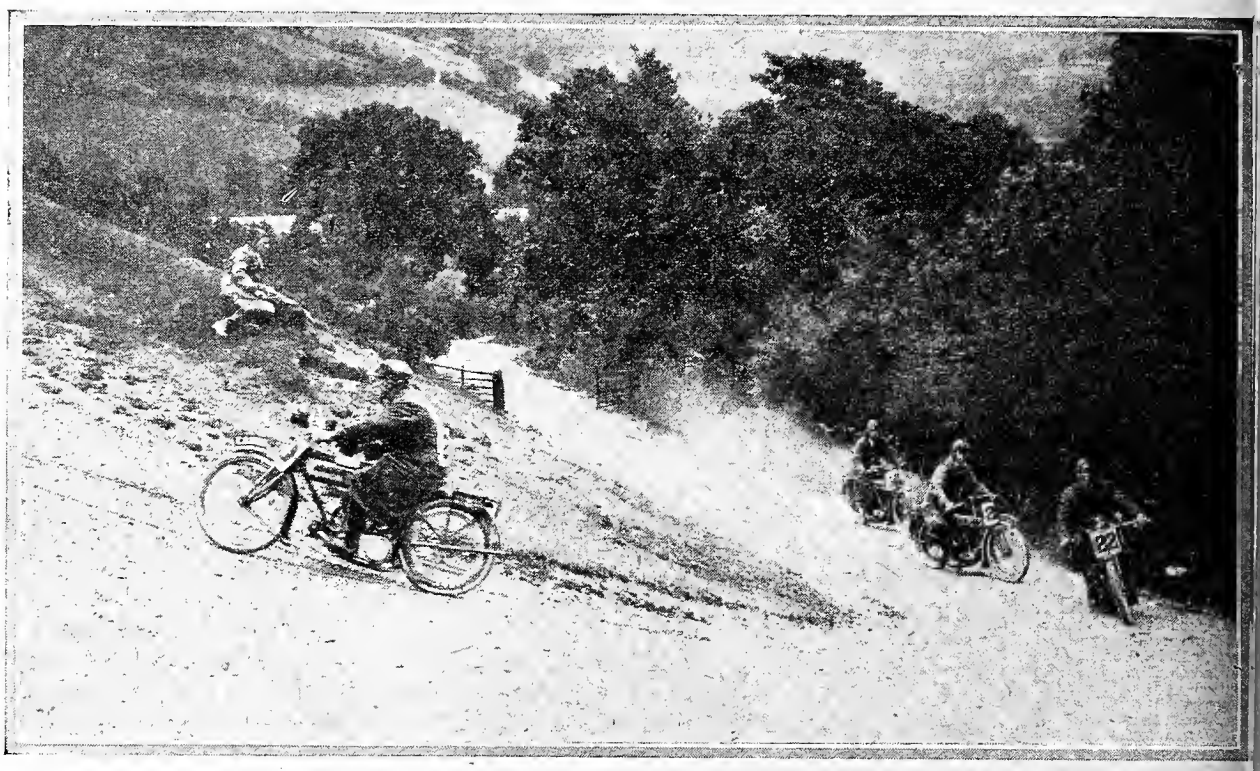
Entrant.	Driver.	Machine.
New Hudson, Ltd.	E. Mundey	2¼ New Hudson.
A. G. Ward	Entrant	2¾ Cedos.
C. H. Hanwell	Entrant	2½ Cedos.
James Cycle Co., Ltd.	J. Lidstone	2¼ James.
Humphries & Dawes, Ltd.	W. L. Handley	2½ O.K.-Junior.
Humphries & Dawes, Ltd.	——	2½ O.K.-Junior.
Bordesley Eng. Co., Ltd.	I. F. Anderson	2¾ Connaught.
Bordesley Eng. Co., Ltd.	G. F. Mason	2½ Connaught.
" " " "	C. L. Sprosen	2¾ Connaught.
Arden Motor Co., Ltd.	J. C. Humphries	2½ British Standard Arden.
C. Edmund & Co. (1920), Ltd.	J. C. Walker	2¾ Edmund.
C. Edmund & Co. (1920), Ltd.	——	2¾ Edmund.
Henderson Motors, Ltd.	E. Searle	*4 Sheffield Henderson.
Henderson Motors, Ltd.	L. Padley	*4 Sheffield Henderson.
T. G. Richards	A. A. Symes	3½ Martinsyde.
H. P. Martin	H. H. Nicholson	3½ Martinsyde.
R. C. Winn	Entrant	*3½ Douglas.
James Cycle Co., Ltd.	G. Strange	3½ James.
New Hudson, Ltd.	W. E. Baylis	4 New Hudson.
New Hudson, Ltd.	B. Bourke	4 New Hudson.
Humphries & Dawes, Ltd.	N. Hall	2¼ O.K.-Junior.
Humphries & Dawes, Ltd.	——	2½ O.K.-Junior.
J. H. Watson, M.C.	Entrant	4 Triumph.
R. N. Clayton-Russell	Entrant	4 Norton.
Martinsyde, Ltd.	J. T. Bashall	6 Martinsyde.
Martinsyde, Ltd.	E. H. Gifford	6 Martinsyde.
Martinsyde, Ltd.	W. H. Bashall	6 Martinsyde.
R. C. Davis	Entrant	8 Chater-Lea
James Cycle Co., Ltd.	G. E. Stobart	7 James.
James Cycle Co., Ltd.	G. S. Arter	7 James.
H. Collier & Sons, Ltd.	T. J. Ross	7 Matchless.
H. Collier & Sons, Ltd.	F. O'Brien	7 Matchless.
T. J. Ellis	Entrant	8 Matchless.
Air Nav. & Eng. Co., Ltd.	N. Chereau	8-9 Bleriot Whippet.
Thompson Bros. (Bilston), Ltd.	F. S. Spouse	8 T.B.
A. Fraser Nash	Entrant	8.7 G.N.
A. Fraser Nash	——	8.7 G.N.
A. D. Hardee	Entrant	Matchless.
H. J. Wilkes	Entrant	Rover.
A. J. Cranch	Entrant	5-6 Rover.
Morgan Motor Co., Ltd.	H. F. S. Morgan	Morgan.
Morgan Motor Co., Ltd.	F. G. Boddington	Morgan.
Morgan Motor Co., Ltd.	S. Hall	Morgan.
Dunford & Elliott, Ltd.	——	1¼ Dunelt.
Dunford & Elliott, Ltd.	——	1½ Dunelt.
Dunford & Elliott, Ltd.	——	4½ Dunelt.
Ariel Works, Ltd.	F. S. Longman	3½ Ariel.
Ariel Works, Ltd.	W. T. Woodcock	3½ Ariel.
Ariel Works, Ltd.	L. Newey	3½ Ariel.
Ariel Works, Ltd.	Tom Peck	1¼ Ariel.
Ariel Works, Ltd.	A. E. Rollason	1¼ Ariel.
Ariel Works, Ltd.	T. W. Blumfield	6-7 Ariel.
Phelon & Moore, Ltd.	——	P. & M.
Phelon & Moore, Ltd.	——	P. & M.
Phelon & Moore, Ltd.	——	P. & M.
H. G. Hawker Eng. Co., Ltd.	Capt. L. Pearly	2¾ Hawker.
H. G. Hawker Eng. Co., Ltd.	L. H. Wells	2¾ Hawker.
H. G. Hawker Eng. Co., Ltd.	T. R. Dowson	2¾ Hawker.
Norton Motors, Ltd.	——	3½ Norton.
Norton Motors, Ltd.	——	3½ Norton.
Norton Motors, Ltd.	——	3½ Norton.
New Imperial Cycles, Ltd.	——	New Imperial.
New Imperial Cycles, Ltd.	——	New Imperial.
New Imperial Cycles, Ltd.	——	New Imperial.
Rudge Whitworth, Ltd.	——	Rudge-Multi.
Rudge Whitworth, Ltd.	——	Rudge-Multi.
Rudge Whitworth, Ltd.	——	Rudge Multi.
Rudge Whitworth Ltd.	——	Rudge Multi
Beaumont Motors, Ltd.	—	——
J. Ford	Entrant	7 F.N.
W. A. Fell-Smith	Entrant	8 Brough Superior.
F.N. (England), Ltd.	H. G. Bell	7 F.N.
F.N. (England), Ltd.	T. W. Buckle	7 F.N.
A. J. Stevens, Ltd.	H. R. Davies	2¾ A.J.S.
A. J. Stevens, Ltd.	E. Williams	2¾ A.J.S.
A. J. Stevens, Ltd.	Cyril Williams	2¾ A.J.S.
A. J. Stevens, Ltd.	F. W. Giles	7 A.J.S.
A. J. Stevens, Ltd.	L. Wade	7 A.J.S.
A. J. Stevens, Ltd.	Rex Mundy	7 A.J.S.
New Rover Cycle Co.	T. W. Ravenhall	3½ Rover.
New Rover Cycle Co.	R. Elliott	2½ Rover.
New Rover Cycle Co.	G. Featherstonhaugh	3½ Rover.
Capt. M. C. Breese	Entrant	6 B.S.A.
W. L. Guy	Entrant	3¾ Scott.
T. W. White	Entrant	8 Sunbeam.
Lt. H. A. Fellowes	Entrant	4 Coulson-B.
E. Foster	Entrant	7 Raleigh.
B. G. Merson	Entrant	2¼ Ready.
G. Read & Co.	D. Read	2¾ Ready.
W. S. Scott	Entrant	3¾ Scott.
W. Moore	Entrant	3¾ Scott.
James Cycle Co.	H. Boynton	7 James.
H. R. Harveyson	Entrant	4 Harley-Davidson.
Wooler Motor Cycle Co.	A. C. Robbins	2¾ Wooler.
Griffiths Radial Co.	J. S. Holroyd	7-9 British Radial.
H. F. Edwards	Entrant	——
D. Atkin, jun.	Entrant	Rover.
G. L. White	Entrant	Rover.
E. S. Astley	Entrant	Rover.



Contours of the Wednesday morning's route, which promises to be the most trying ninety miles of the trials.

MOUNTAINEERING IN NORTH WALES.

Inclusion of Alt-y-Bady in the North Wales M.C.C. Open Trial causes Many Failures and Several Retirements. 110 Starters; 62 Finishers.



A Triumph quartette at the foot of Bwlch-y-Groes. Observe how the riders are taking the outside edge immediately before the acute bend. The riders are: R. Edwards, J. Edwards, W. L. Fincher, and C. Lightening.

THAT Alt-y-Bady retains an undisputed right to the title of "the most difficult trials hill" was generally acknowledged by the 110 competitors in Saturday's (North Wales M.C.C.) open trial. Whether, on the other hand, Alt-y-Bady was a fair test for inclusion in such an event is a question upon which opinions differ. The great majority of the competitors, however, seemed perfectly contented to lose their "golds" on this uneven stretch of 1 in 3 behind Llangollen, and, this being so, the justification or otherwise of the hill may well be left for discussion at some other time.

Alt-y-Powls not Difficult.

Starting from Denbigh, the route went through Abergele to Llanfair T.H., where started the first non-stop section and the first observed hill, Alt-y-Powls. (It should be noted that "T.H." does not stand for "test hill"; it is merely a considerate abbreviation on the route card of the full seventeen-letter name of the hamlet). Before getting thus far, however, one rider, P. J. Thomas (3½ Rover) was in trouble, colliding on a bend with a non-competing motor cyclist coming in the opposite direction. Despite a bruised arm, he pluckily carried on.

Alt-y-Powls had dried surprisingly quickly after the preceding day's downpour, and the observers were noted to be jotting down "O.K.'s" with monotonous regularity.

About a mile further on, and still in the non-stop section, there came a muddy descent of 1 in 5 or thereabouts, and, had an official observer been posted here, he would have done useful work towards limiting the gold medal issue.

110 Miles After Lunch.

Through Llanrwst, Bettws-y-Coed, Blaenau-Festiniog, and Tyn-y-Groes to the lunch stop at Dolgelly was a straightforward run, the last section being non-stop simply to make an arrival to schedule more difficult. At the lunch table there were one or two complaints—not wholly without reason—regarding the paucity of the arrowing, but most of the conversation turned on the apparent fearfulness of the afternoon's run. One hundred and ten miles to go, five test hills, and a watersplash, for which all the local riders carried auxiliary exhaust pipes—obviously the worst of the trial was yet to come.

Bwlch-y-Groes was in excellent condition, and, until a heavy shower stopped two of the solo machines through belt slip, no failures were reported. It was touch and go for some, however, although Reg. Brown's 3½ h.p. Sunbeam and Sam Wright's 4½ h.p. Humber sidecars both got up without apparent difficulty.

Fortunately, the rain had ceased before the leading men reached Llangollen, and Alt-y-Bady, beyond the bend, had begun to dry, and looked fairly climbable. A large crowd occupied positions of considerable danger at either side of t road, but not until No. 18, S. V. Jones (3½ Norton), came up were th treated to anything approaching a cle climb.

B. Kershaw and D. Prentice (2¼ a 2¾ New Imperials respectively) bo earned the applause with which th ascents were greeted, but G. I. Fran (2¾ Francis Barnett) stopped at the ha way mark (*i.e.*, about twenty yards rou the corner); he got away under pow

Then came the only lady competit Miss Marjorie Cottle (4 Triumph), w had been piloting her big machine w quite as much skill as eighty per cent. the men. Just as it seemed that she h conquered the grade, the Triumph m inexplicably lost all forward motion, a she also had to make a restart. G. Mason's 2½ h.p. Connaught went up wi out outside assistance and only very sli assistance from the rider—a most creo able performance.

Pre-war Twin on Alt-y-Bady.

R. Russell Bromley and M. W. Ha wick, private owners on Sunbeams, b failed, but eventually reached the summ Then T. R. Druitt, on a seven-year- 6 h.p. Enfield toured up with his feet fi on the footrests, his very nonchala so surprising the onlookers that they f got to applaud. Everything consider Druitt's climb must rank amongst best three.

Mountaineering in North Wales.—

Handley and his O.K.-Union somehow got broadside on, and then commenced a series of alarming somersaults down the hill. When both were picked up, Handley seemed least dismayed of all, and soon carried on. Norman Norris (2¾ Armis) climbed without outside help, while Oswald Hayes (3½ Sunbeam) was prematurely cheered for a very fast dash into the bank near the top! L. Crisp (4½ Humber) followed Hayes with a very good attempt, but ending with the same fate; but his brother, also on a

On the most difficult trials hill in Wales—Alt-y-Bady. (Left) F. W. Giles (7 A.J.S. sidecar) who shared the honour with S. Wright (4½ Humber sidecar) of making the only clean sidecar climb. (Right) H. Boynton (7 James sidecar), who took the hill at a good speed, but failed through wheelspin.

umber, made a very fine ascent—clean d fast. W. Brandish, on the third umber, was, if possible, even better. Crisp, unfortunately, retired with ar box trouble a little further on, thus minating one of the most "dangerous" ıms.

Experience Tells.

George Dance (3½ Sunbeam) more than held his reputation, making an effort-s, fast, and clean ascent; while W. illiams (5-6 Raleigh) was almost as od, albeit his engine was smoking ex-ısively. To lend variety to the pro-edings, L. A. Welsh (4¼ B.S.A.) lay wn several times, while H. V. Collins Marloe) made a wonderful attack on bank. W. Isbill (4 Triumph) just ceeded, unaided; while E. Foster (6 Raleigh) chased a spectator on to road, and very nearly killed a dog. Another shower was now making itself ft on the road surface, the last dozen so solo men being consequently un-lky.

Among the tail end soloists, G. F. Burns (3½ Sunbeam) made a magnificent ascent, proving that even then the hill was not unclimbable by a first-class rider and machine.

Only Two Clean Sidecar Climbs.

It was freely opined that no passenger machine would get up. When such well-known drivers as H. Boynton (7 James sc.), B. Bladder (8 New Imperial sc.), J. H. Walker (4¼ B.S.A. sc.), G. E. Stobart (7 James sc.), and J. E. Greenwood (3½ Sunbeam) all charged up and

bounced to a standstill—usually with spinning wheels—this seemed a true prediction. But a few minutes later, F. W. Giles (7 A.J.S. sc.) tore round the bend, bouncing (or being bounced) so energetically that it appeared as if he were literally dragging his outfit up by sheer effort. His passenger remained seated, and he disappeared over the brow at a cool 15 m.p.h. H. F. S. Morgan (8 Morgan), helped by Mrs. Morgan, repeated Giles's success, if slightly less spectacularly, and it would be difficult to say which of the two was the better.

Slower, but no less sure, Sam Wright (4½ Humber sc.) was the only other competitor in the three-wheeler class to make a clean climb with "passenger normally seated," thus earning ten bonus marks and salvos of well-deserved cheers. (The Humber's engine is only 600 c.c.) The crew of the 2¾ h.p. Hawker sc. walked alongside, but the little engine propelled the light outfit up quite nicely; and, finally one of the Matchless outfits made a non-stop passage with the passenger on the carrier.

After the Alt-y-Bady *débâcle*, Dol-y-wern was almost child's play, as was the non-stop section from Pentre Dwr to Dafarn Dwyrch (for a considerable number of those who were finding the course too difficult for them had retired at, or near, "Alt-y").

Fording a Stream.

But Llanfihangel "watersplash" was a different matter. As an interesting free show for the villagers, who no doubt greatly enjoyed seeing Miss Cottle take a ducking, the fording of this stream was an admirable idea, but as an eliminating agency in an open *reliability* trial it was quite superfluous, especially in an event organised by a club with the Llangollen terror "on its doorstep." We are glad therefore that the committee has decided to reprieve those who failed to pick a clean path over large, round boulders 18in. below the surface of a stream. Even then it was not very enjoyable to get wet feet between eight and nine at night and after 160 miles of the worst going that mountainous North Wales could provide. It says much for the weatherproofness of the modern motor cycle, however, that, to the best of our knowledge, not one retirement was caused by this freak "splash."

It was well after lighting up time before the sidecarists reached the finish; and although a commendable attempt was

Mountaineering in North Wales.—

made to get the results out on Sunday, some of the observers were also non-finishers, and it is not expected that an award list will now be available until late this week, but the list of finishers is appended.

SOLOS.

John Knowles (4 Triumph).
Allen S. Jones (——).
J. O. Jones (4 Triumph).
R. E. Grice (2¼ New Imperial).
R. Norman Roberts (4 Triumph).
E. A. Hughes (4 Powell).
W. Edwards (4 Powell).
J. R. Williams (4 Powell).
Marjorie Cottle (4 Triumph).
Frank T. Jones (3½ Sunbeam).
J. Howard Davies (3½ Sunbeam).
W. J. Kellett (4 Triumph).
T. Blackburne Williams (3 Triumph).
S. V. R. Jones (3½ Norton).
R. Edwards (4 Trinmph).
C. Lightening (4 Triumpb).
J. Edwards (4 Triumph).
W. L. Fincher (4 Triumph).
Bert Kershaw (2¼ New Imperial).
Griff Roberts (4 Trinmph).
G. T. Francis (2¾ Francis-Barnett).
G. F. Mason (2½ Connaught).
R. Russell Bromly (3½ Sunbeam).
H. W. Hardwick (3½ Sunbeam).
M. W. Hardwick (3½ Sunbeam).
Norman Norris (2¾ Armis).
W. L. Handley (2¾ O.K.-Union).
W. E. Hope (3½ Norton).
Oswald Hayes (3½ Sunbeam).
L. Crisp (4½ Humber).
W. Brandisb (4½ Humber).
H. V. Collins (2¾ Marloe-Blackburne).
George Dance (3½ Sunbeam).
W. Williams (5-6 Raleigh).
Lewis A. Welsh (4¼ B.S.A.).
W. W. Jones (3½ Sunbeam).
W. Wells (3½ Sunbeam).
William Isbill (4 Triumph).
John Edward Arthur (4 Triumph).
G. F. Burns (3½ Sunbeam).
G. Savage (2¾ Hobart).
D. Harris Jones (3½ Sunbeam).
Ernest Foster (5 Raleigh).
G. Jones (4 Triumph).

PASSENGER MACHINES.

B. Bladder (8 New Imperial sc.).
F. S. Spouse (8 T.B. sc.).
Geo. W. Shepherd (8 Excelsior sc.).
L. L. Sealey (4¼ B.S.A. sc.).
J. H. Walker (4¼ B.S.A. sc.).
B. L. Bird (4¾ B.S.A. sc.).
E. Wheeler (5½ Sunbeam sc.).
W. Peaty (2¾ Hawker sc.).
Frank W. Giles (7 A.J.S. sc.).
Reg. Brown (3½ Sunbeam sc.).
J. E. Greenwood (3½ Sunbeam sc.).
G. E. Stobart (7 James sc.).
Stanley Parker (8 Matchless sc.).
F. J. Ellis (8 Matchless sc.).
G. Nott (8 Matchless sc.).
Rex Mundy (7 A.J.S. sc.).
Sam Wright (4½ Humber sc.).
H. E. Ashley (6 L.M.C. sc.).

Commencing the climb of Bwlch-y-Groes in the rain. W. Williams (5-6 Raleigh) on the hairpin bend.

THE BELGIAN GRAND PRIX.

Chances of a British Success in the 200 Mile Continental Road Race.

TO-MORROW the Belgian Grand Prix race will be decided over a triangular course of nearly ten miles, with Malmedy, Francorchamps, and Stavelot as apices.

As in the T.T. and the French Grand Prix, there are classes for 500 c.c., 350 c.c., and 250 c.c. machines; but, owing to lack of entries, the 350 c.c. class has had to be abandoned. The "Senior" race will consist of twenty circuits, while the lightweights must make fifteen.

British Chances Favoured.

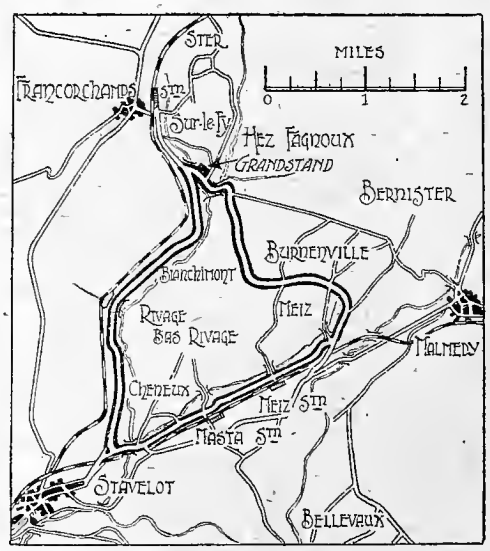
It will be seen from the appended list of entries that several well-known British riders are represented. Graham Walker and H. W. Hassall will ride Nortons; while a strong trio, in Edmond, Sgonino, and Shemans, will endeavour to annex honours for the Triumph camp.

H. Le Vack and F. W. Dixon, on their T.T. Indians, will no doubt prove dangerous competitors to the British machines, while the Saroleas are reputed to be fast, and gain some advantage by the fact that their riders are racing on familiar ground.

Three Belgian riders were originally entered to ride the Triumph machines, and the substitution of such riders Edmond, Sgonina, and Shemans wo indicate that this entry is a serious o

However, a British victory in the c.c. class is confidently expected, wh the only British lightweight may g a walk-over if, as at the moment writing seems probable, the two Ri machines will not run.

Great local interest is taken in entry of Le Vack and Dixon account of their success in the T.T.



THE BELGIAN GRAND PRIX COURSE.

The circuit is nearly ten miles and will be covered twenty times by the 500 c.c. machines.

500 c.c. CLASS.

1. Breslau (Norton).
2. Graham Walker (Norton).
3. Hassall (Norton).
4. Debaybe (Sarolea).
5. Renier (Sarolea).
6. Vidal (Sarolea).
7. —— (Sarolea).
8. Desterbecq (Rudge).
9. Edmond (Trinmph).
10. Sgonina (Triumph).
11. Shemans (Triumph).
12. —— (Triumph).
13. Nivelles (——).
14. Strange (James).
15. —— (B.S.A.).
16. —— (B.S.A.).
17. Le Vack (Indian).
18. Dixon (Indian).
19. Naas (A.B.C.).
20. Perrin (A.B.C.).

250 c.c. CLASS.

1. —— (Sun).
2. Gheude (Rush).
3. Joha (Rush).

4 Standard Renold

EVER since the inception of the Chain-driven Motor Cycle, Renold *Standard* chains have been adding success to success. The Standard chain, used by Mr. H. Le Vack on his winning Indian in the Brooklands 500 mile race, was purchased in January, 1921, and represents the logical and consistent progress founded on research, hard work, and engineering intelligence since the basic idea was formed over 40 years ago.

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cannot be surpassed for general all-round excellence in manufacture, and reliability in everyday use.

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„ 2a.	Villiers 2½ h.p. Two-stroke, S.A. Two-speed Gear Box, Clutch, and Kick-starter	„ £65 0 0
„ 3a.	J.A.P. 2¾ h.p., S.A. Two-speed Gear Box, Clutch and Kick-starter	„ £73 0 0

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4 h.p. Douglas s/c	£98	£25	£6 9s.
8 h.p. R. Enfield s/c	£125	£32	£8 5s.
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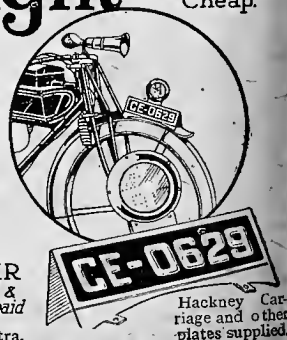

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The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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A.B.C., new Sept., 1920, cost £180, little used, original tyres, licensed; £75, bargain.—Moss, Wem. [X6903

3½h.p. A.B.C., in perfect condition every way, will do 73 m.p.h., for sale.—Apply, E. S. Abram, 226, Manchester Rd., Stockport. [3412

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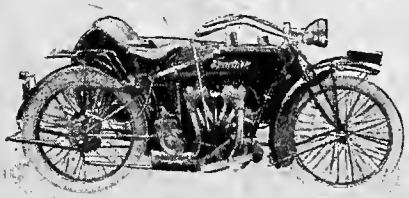

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A.B.C. 1920½ Combination, 2,700 miles, aluminium sidecar, Bonniksen, Cowey, Lucas lamps, perfect condition.—Leigh, Greyroofs, Malvern. [2797

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1921 A.B.C., 3 weeks old, specially tuned engine, very fast, Stewart mechanical horn, fully licensed; £100, or nearest offer.—Box 5,642, c/o *The Motor Cycle.* [3871

A.B.C. Combination, 1920, dynamo lighting, speedometer, Cowey horn, many spares, nominal mileage, good condition; £135, or offer.—Harrison, 21, Wicker, Sheffield. [X6921

A.B.C. Combination, 1920½, lamps, licence, speedometer, wind screen, spares; £100; run in, taken down, decarbonised, and found perfect by owner; why buy a new machine?—Armytage, 2, Holywell Lane, Gt. Eastern St., London. [3074

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A.J.S.

A.J.S., brand new 2¾h.p. 1921 model, actually in stock.—Moss, Wem. [X6904

A.J.S., best after test, all models.—Merrick's Stores, 174, Listerhills Rd., Bradford. [2219

2¾h.p. A.J.S., 1921, new, ridden 100 miles, licensed; £100.—Box 5,641, c/o *The Motor Cycle.* [3870

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

1921 A.J.S. 2¾h.p. Solo, £105; 7h.p. combination, £215.—A.J.S. Agent, 114, Brixton Hill, S.W.2. [3577

A.J.S. Combination, new condition, electric lighting; nearest £100.—26, Ballina, Honor Oak Park, S.E. [3884

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £215; 2¾h.p. 2-speed A.J.S., £108; from stock. [0687

A.J.S. 2¾h.p., countershaft, £80; sidecar, £5; stamp, particulars.—128, Church Rd., Teddington. [3992

1921 A.J.S., 2¾h.p., 3-speed, C.K.S., brand new and unused; sacrifice, £96.—41, Regent St., Wellington, Salop. [X6867

A.J.S. 1916 Combination, 4h.p., spare wheel, lamps, Binks, wind screen, beautiful condition; £39.—59, Setton St., Southport. [X6882

£80.—2¾h.p. A.J.S., 2-speed, C.K.S., lamps, horn, licensed, faultless; genuine bargain.—Shaw, Jeweller, Wellington, Salop. [X6868

2¾h.p. A.J.S., 1915-16, enclosed chains, electric lighting, clutch, kick starter, tax paid; £60.—30, Claremont Sq., London, N.1. [2870

A.J.S.—London and Walsall agents; immediate delivery; exchanges or deferred payments.—Maudes' Motor Mart, London and Walsall. [2420

1920 A.J.S. Combination, fully equipped, perfect order, private owner; best offer.—Haworth, Beechwood, Ash Rd., Headingley, Leeds. [2971

A.J.S. 1920 6h.p. Combination (Dec.), lavishly equipped, original tyres, unscratched; £145.—Braemar, 17, St. Quentin's Av., North Kensington. [3485

A.J.S. 6h.p., 1917, used 2 seasons, Montgomery sidecar, screen, luggage grid, splendid running order; £100, or near offer, great bargain.—Newman, Haverhill. [2872

A.J.S. 1919 6h.p. Combination, spare wheel, lamps, horn, screen, etc.; £137.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2728

A.J.S. 1920 6h.p. Combination, electric lighting and full accessories, makers' demonstration model, small mileage; £185.—Beney, 13, Spenser St., Victoria St., S.W.1. [0674

1921 2¾h.p. A.J.S., brand new, electric light set, horn, registered, tax paid, and ready for the road; accept £5 under list price.—A.B., 128, St. Leonard's Rd., Poplar. [3598

A.J.S.—Brand new 1921 combination, 7h.p., interchangeable wheels and spare; immediate delivery from stock; £215; no waiting.—Wilkins, Simpsoo, opposite Olympia, London. [3292

1920 A.J.S. Combination, hood, screen, mat, lamps, horn, speedometer, spare wheel, all new tyres, Wex carburetter; quick sale, £155, bargain.—18, Hestercombe Av., Fulham. [3104

A.J.S., 1918, delivered 1919, 6h.p. combination, spare wheel, lamps, tools, chain, etc., Tan-Sad, tax paid, exceptionally fine engine and new condition; £115.—Brown, 1, St. Leonards Rd., Surbiton. [3982

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. 1918 Combination, complete, recently rebushed, excellent condition, all on, light car tyres, licence paid; £135; seen here or reasonable distance by appointment.—Nurney, Hadlow Down, Sussex. [3751

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

1916 4h.p. A.J.S., excellent condition, all accessories, Tan-Sad, speedometer, Palmer cord, Dunlop, and two new spare covers; owner abroad; £70, or near offer.—Apply, Whiting's Garage, Barton St., Bath. [3652

A.J.S. 1920 Combination, Lucas dynamo lighting, fully equipped, cost £260, all as new, mileage 2,000; any trial and inspection; £180.—Central Works, Melbourne Rd., Wallington, Surrey. 'Phone: Sutton 1385. [3004

1920 A.J.S. 6h.p. Combination, dynamo lighting, 11 months insurance, all spares, fully equipped; any trial; £170; consider good single combination and cash; no crocks.—Snow, 91, Mapledene Rd., Dalston, E.8. [3996

A.J.S. 2¾h.p., 2-speed, hand clutch, kick start, chain drive, Lucas head lamp and horn, Palmer cord tyres, in excellent condition and mechanical order, been little and carefully used; £60.—G. H. Murchison, Fulford, York. [2952

1920 A.J.S. Combination, fully equipped, D.A. cylinder lighting, hood, wind screen, apron, luggage grid and box, speedometer, horn, spare wheel; price £150; any trial.—43, Brailsford Rd., Water Lane, Brixton, London. [3945

A.J.S. 1921 7h.p. Combination, new, immediate delivery, £215; also 2¾h.p. sports model, £105; exchanges, extended terms.—Authorised agents, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

A.J.S. 7h.p. 1921 (June) Combination, complete with interchangeable wheels and spare, licence paid to end of year, new unused lamps, etc., etc., only used on a few fine days; any trial or expert examination invited; £210, net cash; no offers, no exchanges.—Box 5,615, *c/o The Motor Cycle.* [3250

Alldays.

E. KICKHAM for Allon, sole agent for Bristol and district.—Stokes Croft, Bristol. [3356

1916 Allon 2¾h.p., fully equipped, perfect condition; £34.—8, Shieldhall, London, S.E.2. [X6681

ALLON 1920, 2-speed, clutch, accessories; £60.—Connor, 1, Stanhope Av., Finchley, N.3. [4007

ALLON 2¾h.p., Aug., 1919, 2-speed, legshields, pillion seat with footrests, equipped; £48.—61, Albany Rd., Coventry. [X6879

£80, or nearest.—Alldays 4½h.p. combination, Bosch, Senspray, 3-speed; chain drive; owner going abroad.—Ong, Lanmeston [2396

1919 Allon, 2-speed, clutch, all accessories, perfect condition; nearest £50.—Stacy, 6, Grosvenor St., Camberwell Rd., S.E.5. [3114

ALLDAYS Allon, 1920, 2-speed, clutch, kick start, legshields, tools, new lamps, tyres as new; £55.—60, Half Acre Rd., Hanwell, W.7. [3476

BRAND New Alldays Allon De Luxe, clutch and kick starter, beautifully equipped, cost £91; accept £60.—24, Balliol Rd., North Kensington. [3480

ALLDAYS Allon, 2¾h.p., 2 speeds, clutch, kick starter; in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6729

1918 Alldays Matchless, brand new 2-stroke engine, new mag., new carburetter, new semi T.T. handle-bars; £29; no offers.—Orchardleigh, Leatherhead. [3777

ALLDAYS Combination, 4h.p., 3-speed countershaft, hood, screen, accessories, spares; trial; sacrifice 50 gns.—12, Station Rd., Church End, Finchley, N.3. [3519

ALLDAYS Matchless 3½h.p. C.B. Combination, 3-speed, clutch, adjustable jet, lamps, speedometer, mechanical horn, tax paid, insured; any trial after 7; £55, or nearest.—67, Anerley Rd., near Crystal Palace, S.E.19. [3448

American X.

AMERICAN X Combination, 1916, 7-9h.p., acetylene lighting, in good condition; trial; no reasonable offer refused.—Hatton, Coombe Hill Rd., Kingston Hill, Surrey. [3091

AMERICAN X., 1920, 7-9h.p., Swan sporting sidecar, dynamo lighting, indistinguishable from new; £125; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6735

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4½ h.p. **HUMBER** Com., shop-soiled	£155 0
4½ h.p. **HUMBER**, shop-soiled	£125 0
4 h.p. **INDIAN** Scout, shop-soiled	£132 0
4 h.p. **TRIUMPH**, 3-sp., chain-cum-belt	£115 0
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3½ h.p. **JAMES**, twin, solo	£120 0
3 h.p. **CALTHORPE** Combination, M-L Maglita	110 gns.
3½ h.p. **ROVER**, 3-speed, chain drive	£116 0
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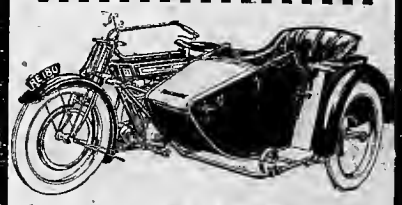

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ARIEL 3½h.p., 1920, countershaft 3-speed, lamps, horn, spares, licence, like new; must sell; £80.—8, Little Goodge St., W.1. [3582

6-7h.p. Ariel, 1920, C.B. sidecar, perfect condition, not ridden this year, lamps, spares; £100.—J., 10, Oat Market, Nantwich. [3734

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ARIEL 1920 Combination, fitted Ariel car, Lucas, accessories; £90, or exchange lightweight.—Dawe, 216, Portobello Rd., W.11. [3839

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28 GNS.—3½h.p. Ariel, 1911, modernised 1916, perfect machine, new tank, piston, bushes, etc., heavy Clinchers, fully equipped.—11, Tredegar Rd., Ebbw Vale, Mon. [3115

1921 Ariel Combination (in crate), 3½h.p.; £135; driving taught free; your old machine in exchange. 'Phone: Wanstead 48.—374, Grove Green Rd., Leytonstone, E.11. [3252

1920 5-6h.p. Ariel Combination, nice condition, £110; also 1914 T.T. model, bargain, £40; also 1920 3½h.p. Ariel, all accessories, tax paid.—Ross, 86, High Rd., Lee. [3327

ARIEL 1921 7h.p. All-chain Combination, brand new, tax paid, electric set, horn; only wants seeing, one of finest on the road; £180, or offer.—Norman, 855, High Rd., Leytonstone, E.11. [3033

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£29.—4h.p. Arno, overhauled and rebushed throughout, lamps, tax paid.—151, Kingston Rd., Teddington. [2902

Bat.

3½h.p. Bat, fine running order, good pulley back tyre unused; price £25.—Kennett, 11, Waldegrave Rd., S.E.19. [2676

BAT.—Solo or Combination in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6728

8h.p. Bat Combination, splendid condition; bargain, £90; owner purchased car.—Gates, Post Office, Ivinghoe, Leighton Buzzard, Beds. [3700

BAT-J.A.P. 6h.p. Combination, 2-speed countershaft, Cameo, tyres good, electric light, Bosch, Amac; £75, offer, exchange.—44, Eleanor Rd., E.15. [3764

BAT-J.A.P. 6h.p., coach 2-seater sidecar, screen, countershaft, all-chain drive, fully equipped; trial; genuine; £72.—179, Hatfield Rd., St. Albans. [3372

BAT-J.A.P. 6h.p. Combination, 3-speed countershaft, engine just overhauled by J.A.P.; bargain, £85.—Champion, 31, Portland Rd., Notting Hill, W.11. [3015

1920 Bat 6h.p., practically new Ride Easy de Luxe S.C., recently overhauled, screen, horn, lamps, tools, luggage carrier, fast, sound machine, owner abroad; £110, or near offer.—Apply, J. Clowes, St. John's Street House, Colchester. [3390

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LYNO 5-6h.p. Combination, 3-speed, clutch, kick start, spare wheel, just overhauled, perfect condion; £90; tax paid; trial by appointment after p.m.—15, Audley Rd., Hendon, N.W.4. [3102

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3 GNS.—2¾h.p. Connaught 2-stroke, good tyres, ride away anywhere.—181, Newton Rd., Burton-Trent. [3398

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3h.p. Coulson, spring frame, export model, 2-speed, 4 clutch, kick starter; 80 gns.—Edwards, 50, Hargton Rd., South Kensington. 'Phone: Ken. 3709. [2319

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DOUGLAS No. 2¾h.p., 3-speed, all on; cheap.—19, Askew Crescent, W. [3691

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DOUGLAS 2¼h.p., single speed, in splendid order; £25.—Southey, Berkhamsted. [0683

E. KICKHAM for Douglas and spares; trade supplied.—Stokes Croft, Bristol. [3351

2¾h.p. Douglas, 2-speed, all on, very fast; £45.—43, Trevelyan Rd., Tooting, S.W. [3852

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DOUGLAS, 2¾h.p., equal new, electric; £55, no offers.—165, Church Rd., Mitcham. [3733

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1918 2¾h.p. Douglas, first reasonable offer secures.—Bailey, 55, Dove Row, Hackney, London. [3444

DOUGLAS 2¾h.p., 1916, 2-speed, accessories, tax paid; £50, or nearest.—Barclay's Bank, Southall. [1357

DOUGLAS, 1917 and 1915, engines as new, tax paid; best offer.—Turner, 78, Church Rd., Willesden. [2939

2¾h.p. Douglas, 1915, good condition, accessories; £42/10.—Andrews, 13, Acacia Rd., Enfield. [3216

DOUGLAS, 2¾h.p., 2-speed, good condition, any trial; nearest £45.—Laurence, Ollerton, Notts. [3473

ADVERTISER, leaving England, will sacrifice 4h.p. Douglas, April, 1921.—3, Gilston Rd., S.W.10. [3607

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CYRIL WILLIAMS for immediate delivery of all models Douglas.—Chapel Ash Depot, Wolverhampton. [X3818

£37.—2¾h.p. 2-speed Douglas, just overhauled, equipped, licence.—14, Parkhurst Rd., Bexhill-on-Sea. [3984

DOUGLAS 1916 2¾h.p., accessories, good condition, tax paid; £40.—8, Foxgrove Rd., Beckenham, Kent. [3779

DOUGLAS Combination, 4h.p., absolutely as new, all new tyres; £95.—Buckland, Plough Lane, Waddon, Croydon. [3396

1915 2¾h.p. Douglas, 2-speed, condition as new; must sell; £38.—17, Sussex Rd., New Malden, Surrey. [3858

DOUGLAS 2¾h.p., 1915, excellent order, overhauled; nearest offer £37/10.—114, Salcott Rd., Clapham Junction. [3419

DOUGLAS, 2¾h.p., 1916, splendid condition; any trial; lamp, tools, etc.; £42/10.—19, Valnay St., Tooting. [2220

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2¾h.p. Douglas, open frame, 2-speed, kick start, in first-class order; £32/10.—88, Brampton Rd., St. Albans. [3497

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DOUGLAS 1915 2¾h.p., tax paid, fully equipped; £44; any trial.—18, Marlborough Rd., Old Kent Rd., S.E.1. [3767

DOUGLAS 2¾h.p., specially tuned T.T. engine, 55 m.p.h., perfect, lamps, spares; £50.—Tilly, High St., Edgware. [3026

1919 4h.p. Douglas, fully equipped, unscratched; £60.—Braemar, 17 St. Quentin's Av., North Kensington. [3487

DOUGLAS, 2¾h.p., 2-speed, overhauled, splendid condition; £50, or near offer.—108, Landor Rd., Stockwell, S.W. [3017

59 GNS.—1919 4h.p. Douglas, condition and appearance as new; cash essential.—4, Elm Gardens, Hammersmith. [2965

1918 4h.p. Douglas, every detail new, tax paid; £75, with brand new sidecar; £87/10.—28, Elm Rd., Gray's, Essex. [2847

DOUGLAS 2¾h.p., sound condition, just overhauled; any trial; must sell; £48.—5, South Row, Blackheath, London. [2855

DOUGLAS 4h.p. Combination, wind screen, spares, splendid condition; £65, nearest; must sell.—Sutton, Bagshot. [3375

DOUGLAS, 1917, 2-speed, as new; sacrifice 40 gns. for quick sale.—462, Lea Bridge Rd., Bakers Arms, Leyton, E. [3993

DOUGLAS 2¾h.p., fully equipped and licensed; £16.—Clapham Motors, High St., Clapham. 'Phone: Latchmere 4290. [3898

1920 2¾h.p. 3-speed Douglas and accessories, tax paid, in good condition; £75.—Bounds, 223, High Rd., Kilburn, N.W. [3022

DOUGLAS 2¾h.p., W.D., 1915, less gear box, tank, and other parts; after 6.—Simpson, 51, Belvedere Rd., Waterloo. [2974

DOUGLAS 2¾h.p. W.D. Model, just uncrated, 2-speed; £47/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [3307

2¾h.p. Douglas, 1916, just overhauled, good condition, fast; £45.—40a, Lambrook Terrace, Fulham, S.W.6. [3668

DOUGLAS 2¾h.p., 2-speed, 1915, long copper pipe, fully equipped, tax paid; £45 cash.—114, Brixton Hill, S.W.2. [3579

DOUGLAS, 1915, fast, reliable, all on, Binks carburetter, licence; £40.—Chapman, R.N. College, Keyham, Devonport. [3298

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4h.p. Douglas Combination, 1915, 3-speed and clutch, and kick starter model; £65.—Wauchope's, 9, Shoe Lane, London. [9014

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GENUINE Bargain.—1917 2¾h.p. Douglas, nearly new engine, tyres, tax paid; £45.—30, Harold Rd., Upper Norwood, S.E.19. [3517

DOUGLAS, 2¾h.p., 2-speed, in splendid running order and condition, with accessories; £38.—4, Whitford Gardens, Mitcham. [2898

42 GNS.—1917 2¾h.p. Douglas, specially tuned, elaborately equipped, owner in financial difficulty.—4, Elm Gardens, Hammersmith. [2966

ALL-ON Douglas Models from Stock; 2¾h.p. 2-speed, £85; 3-speed clutch, £105; combination, £170.—Moffat, Yeovil. 'Phone: 50. [5043

1919 4h.p. Douglas and Sidecar, excellent condition, just repainted; any good offer entertained.—Bury, Arden Hall, Accrington. [2504

1916 2¾h.p. Douglas 3-speed, tax paid, nice order; £60, or near offer.—Kennett, Southside, St. George's Rd., Orpington, Kent. [3392

DOUGLAS 1917 2¾h.p., enamel, plating, and mechanism splendid condition, equipped; £46.—30, Crystal Palace Park Rd., Sydenham. [3724

1920 4h.p. Douglas Combination, speedometer, lamps, etc., perfect condition; 90 gns.—24, Observatory Rd., East Sheen, S.W. [3806

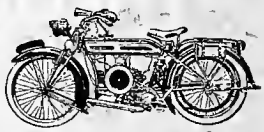
4h.p. Douglas Combination, 1919, lamps, horn, screen, hood, luggage grid, pillion, tax; nearest £95.—27a, Anerley Park, Anerley. [3758

DOUGLAS 2¾h.p., engine No. 37773, excellent condition, fully equipped, footboards; £42; evenings.—143, Norbury Crescent, Norbury, S.W. [3615

DOUGLAS, any model, as makers' specification and prices, carriage paid. Write for special terms.—Somers Bros., 23, Harpenden Rd., S.E.27. [3365

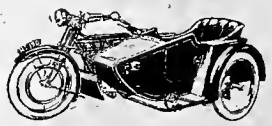
ALEXANDER'S
FOR THE LEADERS.

DOUGLAS

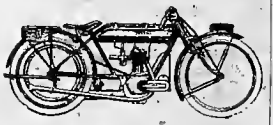


MATCHLESS

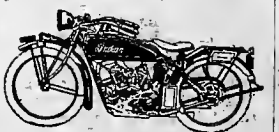
ENFIELD



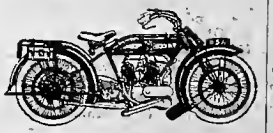
NORTON



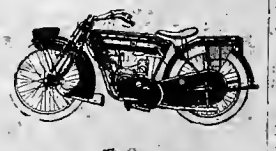
INDIAN



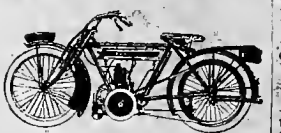
B.S.A.



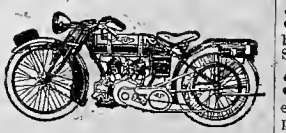
P. & M.



LEVIS



N.U.T.



VELOCETTE, ZENITH, NEW IMPERIAL, CALTHORPE, DIAMOND, COULSON B, Etc., Etc.

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

Douglas

DOUGLAS 4h.p., 1917, good condition, excell order, all accessories, Tan-Sad, licensed, insure £60.—40, Whitworth Rd., South Norwood. [37

F.O.C.H. have several new and second-hand Doug combinations and solos; bargains.—5, Heath Hampstead (nr. Hampstead Tube Station). [26

£40.—2¾h.p. Douglas, overhauled and re-enamell electric light, everything perfect, only wants ing; must sell.—21, Church Walk, Hampstead. [30

DOUGLAS 1920 2¾h.p., 3 speeds, mileage 300, distinguishable from new, all accessories, tax pa £75.—Holmleigh, Baring Rd., Grove Park, S.E.12. [33

£50.—1918 2¾h.p. Douglas, 2-speed, makers' colou original enamel, lamps, accessories, licence, n condition, unscratched.—63, Solon Rd., Brixton. [37

DOUGLAS 2¾h.p., Nov., 1915, 2-speed, lam horn, tools, several spares, splendid conditi tax paid; £40.—61, Silver St., Edmonton, N.18. [35

£69.—1921 2¾h.p. Douglas, only 4 months old speeds, lamps, horn, footboards, and mudshie etc., perfect.—L. Bull, 44, Hills Rd., Cambridge. [34

DOUGLAS, 2¾h.p., 1916, not W.D., all on, go condition, fast; £50, or exchange with cash Tamplin or A.V. Bi-car.—Roe, Swallowbeck, Lincol [29

1921 Douglas 4h.p. Combination, delivered May t year, used slightly for demonstration, tax pa bargain, £150.—Swift and Co., Ledbury, Herefordsh [32

DOUGLAS.—All models in stock at new redu prices; deferred payments.—Parker's, Bradsha gate, Bolton; also 245 Deansgate, Manchester. [X67

DOUGLAS 2¾h.p., 1914, 2-speed, clutch, Bosch, u used during war, guaranteed mechanically sou thoroughly overhauled; £45.—38, Conway St., Nottin ham. [34

DOUGLAS 4h.p., 1918, and brand new sidecar, t paid, 3 lamps, 2 generators, tools, pump, ho Binks; £90.—Hammersmith 685.—75, Lonsdale R Barnes. [31

1919 2¾h.p. 2-speed Douglas, Canoelet sidecar, p fect condition, lamps, tax paid, aluminium le shields, footrests, would separate.—Crawley's, St. Mary Bedford. [28

2¾h.p. Douglas, 2-speed, clutch, sports model, ove hauled, fully equipped, taxed, excellent cond tion; £32, near; stamp particulars.—32, Henry S Gloucester. [31

DOUGLAS, 1917, 2¾h.p., 2-speed, speedomete lamps, etc., copper exhaust, footboards, conditio perfect; £42.—Forge Cottage, Green St. Green, Dar ford, Kent. [34

2¾ Douglas, 1915, 3-speed, perfect condition, co pletely equipped, spares; £50, or exchange go countershaft Triumph with cash adjustment.—5, Misk Rd., Dartford. [33

NEW 4h.p. Douglas Combination, tax and acce sories, done about 100 miles; £140; would acce 2¾h.p. solo as part exchange.—Grimes, 18, Brut Place, W.1. [37

4h.p. Douglas Combination, 1919, slightly soil sidecar, perfect running order, good condition, n on; £90; seen by appointment.—Tapscott, 11, Sutt Lane, Chiswick. [384

1918 Douglas Combination, new sidecar and scree tyres and lamps, all on, licence and insuran paid, like new; any trial; £80.—G., 21, Market Pla Kingston, Surrey. [337

HARD Up!—1915 4h.p. Douglas combination, speeds, clutch, kick starter, splendid tune, o of work only reason for selling; £53.—9, Chose Villas, Colindale, Hendon. [286

ELI CLARK can give you good service both in ne machines and spares; try me. I may be usef to you.—The Pioneer Agent for Douglas Motors, 19 Cheltenham Rd., Bristol. [001

35 GNS.—Douglas. 1915 2¾h.p., 2-speed, make colours, lamps, horn, tax paid, overhauled bargain.—Stanley, 8, Warwick Sq. Mews, Clarendo St., Westminster, London. [391

3½h.p. Douglas C.B. Combination, 1914 model, speeds, clutch, K.S., wind screen, lamps, etc excellent condition; bargain, £65.—Taylor, 62, Live pool Rd., Eccles, Manchester. [294

1919 (Oct.) 2¾h.p. 2-speed Douglas, excellent co dition, copper exhaust, adjustable jet, Pedle grips, Lucas horn, spare tube and chain; £62.—1 Atherton Rd., Forest Gate, E.7. [335

1920 2¾h.p. 3-speed Douglas, P. and H. lamps Lucas horn, knee grips, copper exhaust pipe leg shields, registration paid, excellent order; £75.— Box 5,645, c/o *The Motor Cycle.* [397

HARLESDEN.—Sporting 4h.p. Solo Douglas, hig compression engine, footrests, T.T. bars, enam and plate nearly new, fast; £65, no offers.—M., 29 Greenhill Park, Harlesden, N.W.10. [300

1920 2¾h.p. 3-speed Douglas, excellent condition Binks, speedometer, copper exhaust, aluminium disc wheels, Tan-Sad, insurance; best offer.—Mitchell 69, Culverley Rd., Catford, S.E.6. [384

P22 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Harley-Davidson.

18 Harley-Davidson 7-9h.p. Electric Model, overhauled and repainted, new tyres, screen, Apollo etc., magnificent combination, tax paid; £145.—an, Farningham House, Farningham, Kent. [3817

20 Harley Electric, C. and M. 87 guinea sidecar, fitted screen, disappearing hood, speedometer, licensed, perfect throughout; £158.—Edwards, Harrington Rd., South Kensington. 'Phone: Ken. [2846

ARLEY Combination, 4h.p., new October, 1920, complete, absolutely new condition, lamps untyres unpunctured, mileage only 600, tax paid; over £210, bargain, £150.—19, Cambridge Ter-W.2. [3513

ARLEY-DAVIDSON, 1920, 4h.p. model, Swan sporting sidecar, electric lighting, excellent con-n, as new; £175; deferred payments if desired.—ter's, Bradshawgate, Bolton; also 245, Deansgate, hester. [X6736

ARLEY-DAVIDSON 1919-20 Combination, Tan-Sad, complete Lucas dynamo lighting, all tyres ct, smart appearance, and in perfect mechanical ition; £150.—Colonial Motors, 104a, Finchley Rd., on. Hampstead 7822. [3937

ARLEY-DAVIDSON 1918 Combination, Sandum bulbous back sidecar, tyres nearly new, fully pped, including hood, apron, spare chains and kets, excellent condition; £100.—17, Cranmore Muswell Hill, London. [3690

ARLEY-DAVIDSON Combination, Nov., 1919, folding wind screen, electric and mechanical every accessory, beautiful condition, tyres unared; £130; any trial, preferably appointment.—Sherrard Rd., Forest Gate, E.7. [3539

ARLEY, 7-9h.p., genuine 1915 mag. model, with Swan torpedo sidecar, outfit like new, just reed, all worn parts replaced, fast, economical, plete, lamps, tax, etc.; £95; making room for car. gineer, Huntington, Chertsey, Surrey. [3844

ARLEY-DAVIDSON Combination, 7-9h.p., late 1919, with Rennoc de Luxe special sporting side-Aero wind screen, passenger mirror, specially de-l chassis with luggage grid, speedometer, disc s, tyres unpunctured, D.A. lighting with spare cylinder, absolutely reliable machine, condition rghout perfect, and practically as new, 60 m.p.g., spares, licence paid; cost over £200; first £110 ers.—Hart, 16, Stapleton Rd., Upper Tooting, S.W. [2937

Henderson.

KICKHAM for Henderson, sole agent for Bristol and Bath districts.—Stokes Croft, Bristol. [3354

NDERSON 4-cyl. C.B. Combination, all acces-ories; £65; exchange.—C.S., 14, Swaton Rd., ow E.3. Tel.: E. 3155. [3987

NDERSON 10h.p., 1920, with 2-seater sidecar; £125.—Newnham Motor Co., 223, Hammersmith W.6. 'Phone: Hammersmith 80. [4020

NDERSON 10h.p. 4-cyl. Combination, new 1916, erfect condition, with Cameo screen, spares; £95. ns, Lime Av., Huthwaite, Mansfield. [3335

DERSON, late 1916, 10h.p., 4-cyl., 2-speed, S., 35 gns. sidecar, electric, fine condition; tax paid.—Ellis, 20, Minet Av., Harlesden, [3044

10h.p. Henderson Combination, disc wheels, sporty, perfect condition; £180; exchanges or l payments.—Bacon and Wynn, 870, Stratford irmingham. [X6950

DERSON Combination, 1920, dynamo, hood, reen, speedometer; cost £250 last August, not r months; owner got car; £150, no offers.—s, 34, High St., Clapham. [2850

½ Henderson Combination, electric model, sporting bulbous sidecar, electric horn, Triplex etc., guarantee faultless, must dispose; any ble offer. — 153, Knolly's Rd., Streatham, [3856

Henderson Electric Model Combination, plus ne sidecar, wind screen, guaranteed mileage below 0 les, in perfect order; will sell motor cycle alone 0, or combination for £200; first cheque; pri-owned.—Clydesdale Supply Co., Ltd., Bridge St., [3409

Hilton.

Hilton Combination, J.A.P. engine, S.A. 3-ed hub, hand clutch, kick start, guaranteed h. solo, complete, very reliable, good trial £60.—85, Beaconsfield St., Bolton. [3825

Hobart.

Hobart, Villiers 2-speed, fully equipped, tax aid; £55.—114, Brixton Hill, S.W.2. [3578

2¾h.p. Hobart-Villiers, 2-speed, fully quipped; 28 gns.—Ewers, Newton Rd., Burton-T.T. [3602

Hobart-Jap, rebushed, new semi-T.T. bars, new mno, Bosch, Dunlop tyres, good condition; bar-29.—W. Bayley, 2, Mount Pleasant, Congleton. [3735

Humber.

UMBER Lightweight, good order, lamps, suit gunner; £21.—94, Perry Rise, Forest Hill. [2884

"GOOD SERVICE" OILSKINS.

are made from an entirely new material, that is GUARANTEED not to stick, crack, or let in wet.

"SERVICE" No. 2 SUIT

(as illustrated) in best quality light weight "GOOD SERVICE" Oilskin, Jacket 36 in., long, D.B. belted, storm collar and cuffs, seatless trousers, and overalls, with patent clip fasteners.

	Black	Tan
Jacket	24/-	26/6
Seatless Trousers ..	16/6	18/6
Legging Overalls	11/9	13/6
Sou Westers to match ..	2/11	3/9

State chest and leg measurement

"SERVICE" HOT WEATHER SUIT.
Made in light crash material.
Jacket 15/- Legging Overalls 8/6.

"SERVICE" LEGGING OVERALLS.
Made in best quality Fawn Double Texture Material, interlined rubber. Price 12/6 post paid.

"SERVICE SPECIAL"

144 pair **Best quality Leather Gauntlet Gloves.** Lined wool. Colour chocolate. **Today's value 25/-** "SERVICE" Price **12/6** Post Paid.

UNDER ONE ROOF

NEW ACCESSORIES.
A complete range of Motor Cycle Accessories always on show. Everything that is desirable stocked. Lucas largest size Lamp Set, **£4 17s. 6d.**; F.R.S. Small Horn, **12/6**; P. & H. 120-Lightweight Lamp Set, **£1 15s.**; Ingersoll Handle-bar Watches, luminous hands and figures, **£1 2s. 6d.**; Smith Trip Speedometers, **£5 5s.**

ENGINE SPARES.
Heavy stocks of Spares for the following machines are carried: Precision, Norton, Connaught, M.A.G., Matchless, Enfield, B.S.A., New Comet, 2¾ h.p. and 4 h.p. Douglas, J.A.P., Clyno, Triumph, Rudge, Brough, Blackburne, P. & M., Sturmey-Archer 3-speed and 2-speed gear boxes, and Villiers 2-stroke. Sturmey Ferodo Rings, **4/-**; Douglas Valve Guides, **3/-**; Triumph Piston Rings, **1/9**; B.S.A. Valves, complete, **10/-**; J.A.P. Gudgeon Pin, **5/6.** Only genuine spares are supplied.

GENERAL SPARES.
In addition to our very complete stock of Spares for engines and gear boxes, we carry an extensive selection of Spares for Frames, Wheels, Saddles, Carburetters, Magnetos, Speedometers, etc. Specially trained men deal with this department. We claim to have the largest and best selected stock of running spares. Immediate attention to post orders. Amac Float Chamber Tops, **5/-**; C.A.V. Fibre Rollers, **4d.**; Brooks Inner Saddle Springs, **1/6**; Brooks Outer Saddle Springs, **2/9**; Tan-Sad Springs, **1/8**; Carbon Brushes, **1/-**; Spare Inners for G.I K.L.G. Plugs, **3/-.**

BARGAIN DEPT.
Due to large and advantageous purchases, we have at all times a number of special lines that are offered in most cases at prices considerably below the original cost. We issue a special list of these Bargains, which is sent post free on application. 28×3 Inner Tubes, new, faultless, English valves, **7/6**; Box Spanners, with tommy bar, **8d.**; 28×3 Wood-Milne Clearance Covers, **30/-**; Hot Air Intakes, for B. & B. Carburetters, **2/-**

"GOOD SERVICE"

THE SERVICE CO., LTD.,
289-293, High Holborn, LONDON, W.1.

MOTOR CYCLES FOR SALE.

Humber.

BARGAIN; Humber 3-speed combination, £55; spring wheel sidecar.—Searles Stores, Southborough. [3745

3½h.p. Humber Coachbuilt Combination, 2-speed clutch, lamps, horn, licensed; £39.—17, Redfern Rd., Harlesden, N.W.10. [3028

1920 Humber Flat Twin Combination, fast and reliable; £90; no offers.—Vardin, 330, Wandsworth Bridge Rd., Fulham. [3675

HUMBER 2¾h.p. Twin, 1914, 3-speed gear, nice condition; £30; exchange for higher power, cash adjustment.—24, Albion Rd., Lewisham. [3278

1921 4½h.p. Flat Twin Humber Motor Cycle, complete with lamps, horn, and full accessories, unused, shop-soiled only; £125.—Box 5,634, c/o *The Motor Cycle.* [3862

3½h.p. Humber, 2-speed, coachbuilt sidecar, overhauled Humbers, cost £20, receipts shown, exceptional condition; £37/10.—61, New Kent Rd., London, S.E.1. [2859

HUMBER 3½h.p., 2 speeds, engine overhauled makers, gear slightly out of order but rideable; bargain, £20; tax paid, all on.—H., Old Station House, East Grinstead. [3778

HUMBER (June, 1921) Flat Twin Combination, accumulator lighting, speedometer, insurance, etc., mileage 1,600, condition excellent; only £140; London. —Box 5,568, c/o *The Motor Cycle.* [3082

3½h.p. Humber, 3-speed S.A., engine perfect, enamel very good, tyres good, belt new, no tax paid, stored 4 years, £35, bargain; wicker sidecar, £3.—Ford, Sotwell, near Wallingford, Berks. [X6936

HUMBER Late 1919 Flat Twin Combination, speedometer, electric lights and all accessories, laid up last ten months, done under 2,000 miles; £95, or nearest offer.—Barder, Vellacot, Staines. [2916

Indian.

E. KICKHAM for Indian, sole agent for Bristol and district.—Stokes Croft, Bristol. [3353

INDIAN Scout, 1920, lamps, licensed, perfect; £105. —Welford, James St., Brighton. [3717

INDIAN 5-6h.p., clutch, all on, licensed, perfect; £35.—17, Heaton Rd., Mitcham. [3687

INDIAN 7-9h.p., late 1918, good running order; £60. —On view at Kingston Hill Garage. [X6908

7-9h.p Indian Combination, 1912; £55 cash.—Wauchope's, 9, Shoe Lane, London. [9015

3½h.p. Indian, splendid running order; write particulars; bargain, £36. — Bartlett, Milford-on-Sea, Hants. [3373

7-9h.p. 1916 Indian, clutch model, disc, licensed, lamps, reliable; £37/10.—Shaw, Regent St., Wellington, Salop. [X6872

1920 Powerplus Indian Combination, fully equipped, perfect; bargain, £135; owner going abroad.—12, Lynmouth Rd., Reading. [3402

INDIAN 1916 Combination, Powerplus; exchange for 2-seater car.—Particulars to and from 172, Whippendell Rd., Watford. [2890

1914 Indian Combination, 7h.p., 2 speeds, lamps, hood, wind screen, and spares, perfect; £69.—2a, Delafield Rd., Charlton, S.E.7. [3875

1915 5-6h.p. Indian Combination, C.B., 3-speed, clutch, kick start, good running order; £70.—74, Hunsdon Rd., New Cross, S.E.14. [3001

1915 Indian, 7-9h.p., spring frame, 2-speed, clutch, K.S., Mills-Fulford sidecar, new tyres, good condition; £60.—Wadlow, Orpington, Kent. [3560

1919 Powerplus Indian, in new condition, 3-speed clutch, kick start, also Indian sidecar; £98/10.—Rhind and Co., Stone Place, Rusholme. [3955

7-9h.p. Indian 1919 Combination, new Millford bulbous sidecar, electric lighting, tax paid, as new throughout; £120.—Utton, Bourne End, Bucks. [3414

INDIAN, 1919, 7-9h.p., 3-speed, C.S., kick start, clutch, tax paid, as new, perfect condition; cheap. —A. L. Firstbrook, 21, Albemarle Rd., Beckenham. [3903

1919 Indian Powerplus Combination, 3 speeds, kick start, lamps, horn, screen, spares, accessories, perfect order, tax paid; £75.—Rule, Boxford, Suffolk. [3752

1920 Powerplus Indian Combination, dynamo lighting, speedometer, mileage 6,500; cost £235, accept £120; perfect condition.—1, Othello St., Liverpool. [3318

1914 7-9h.p. Indian Combination, Gloria spring wheel sidecar, fully equipped, splendid condition; what offers?—Collins, Little House, Adeyfield, Hemel Hempstead. [3596

INDIAN 5-6h.p. Combination, 3-speed, sidecar nearly new, splendid condition; £72/10.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2730

INDIAN 7-9h.p. Combination, new 1920, and only used 3 months, perfect condition, dynamo lighting, electric horn, brand new 1921 bulbous back sidecar; £140, or near offer.—Hitchings and Son, Evesham. [X6626

MOTOR CYCLES FOR SALE.

Indian.

INDIAN, 7-9h.p., clutch model, engine absolutely perfect, appearance good, very fast, new tyres, chains, tools, long exhausts, tax paid; £60.—8, Moorland Rd., Leeds. [3341

1916 7-9h.p. Indian Combination, 2-speed clutch, K.S., hood, screen, aluminium discs, lamps, horn, good condition, licensed; best offer.—Farr, 27, Seward Rd., Hanwell, W.7. [3355

INDIAN Combination, 7-9h.p., 2-speed, kick-start, also dynamo lighting and starting, 1915, all on and in best of order; bargain, £85, or exchange small car. —4, Reynold St., Liverpool. [X6926

INDIAN Combination, 1920, 7-9h.p., fully equipped, dynamo lighting, electric horn, speedometer, condition and appearance as new, small mileage; £160.—46, Vale Rd., Tonbridge, Kent. [2969

INDIAN Combination, 7-9h.p., 1919, in splendid condition, hood, screen, spare tube, tools and all accessories; £115, or near offer.—A. Clarke, 251, Tooley St., near Tower Bridge. Hop 3872. [3005

£130.—Indian combination, 1920, hood, screen, speedometer, copper legshields, dynamo lighting, ampmeter, electric horn; any trial. 'Phone: Wanstead 48. —374, Grove Green Rd., Leytonstone, E.11. [3253

INDIAN Combination, 7-9h.p., foot clutch, kick start, Easting wind screen, and hood, good tyres; any trial given; condition perfect; bargain, £65.—Apply, Weston, Elmhurst, 7, Beverley Rd., New Malden, Surrey. [3403

INDIAN Combination, 7-9h.p. Powerplus, 3-speed, dynamo lighting, speedometer, electric horn, extra accessories, tax paid, in excellent order; £155.—The Chester Engineering Co. (1918), Ltd., City Rd., Chester. [3797

INDIAN 1920 4h.p. Scout Model, with sporting sidecar to match, fully equipped, speedometer, horn, tax paid; £155; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6739

7-9h.p. Indian Powerplus Combination, 1920, Amac carburetter, Thomson-Bennett mag., Cameo wind screen, Millford sidecar, Klaxon, tax paid; £100, or exchange 3½h.p. Sunbeam solo.—Flint, Chemist, Newport, Mon. [2908

INDIAN 7-9h.p. Coachbuilt Combination, spring frame, 2-speed, free engine clutch, kick start, lamp, luggage grid, tax paid, in splendid order and condition; any trial; £75.—Smylie, 82, Godstone Rd., Whyteleafe, Surrey. [2851

£70, or near offer.—1915 Indian 7-9h.p. 3-speed combination, speedometer, lamps, 2 screens, spares, nearly new tyres, general condition excellent, owner buying car.—Apply, Avenue Garage, St. Margaret's Rd., Twickenham. [3127

NEARLY New 7-9h.p. Indian and Sidecar, used only since July, mileage about 800, electric or acetylene lighting, speedometer, horn, back carrier, Easting wind screen; only £150; tax paid.—Short, 2, Nobel Villas, Sewardstone Rd., Waltham Abbey. [3222

INDIAN 4h.p., Scout model, complete as per makers' specification, fitted with dynamo lighting set, electric horn, speedometer, etc.; retail price; £172, brand new but shop-soiled, clearance price £135.—Braid Bros., Midland Garage, Colwyn Bay. Tel.: 105. [3909

3½h.p. Sporting Indian Twin, 1915, 3-speed, K.S., done very little mileage, perfect condition, fully equipped, licensed, handsome machine, speedy and economical, a no-trouble 'bus; sacrifice £65, delivered; cost double.—H. C. Parry, Oakhurst, Abbey Park Rd., Grimsby. [3736

WANTED, purchasers for any model of new 1921 Indian motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0650

INDIAN 7-9h.p., 3 speeds, spring frame, electric lamps and horn, Montgomery sidecar, underslung chassis, 5-point attachment, luggage grid, tools, wind screen, etc., tyres unpunctured, perfect in every respect, solely ridden and carefully handled by owner; £100, or nearest; solo machine considered as part.—Vere, 25, Claxton St., Portsmouth. [3295

SPECIAL 1919 Powerplus 7-9h.p. Indian, 3 speeds, hand and foot clutch, T.T. bars, long exhaust, disc wheels, fully equipped, many spares, tools, in excellent condition and running order, always run solo, licence and insurance paid, owner bought car; photo sent by request; £95 the lot.—Wood, Stone House, Cliffe Rd., Rochester. [3542

Invicta.

1920 3½h.p. Invicta and Millford Sidecar, Sturmey-Archer 3-speed countershaft, hand and foot clutch, kick start, Cox Atmos carburetter, Easting wind screen, lamps, all accessories, spare valves, excellent appearance, mechanically perfect; £90; tax paid. —Cranwell, 106, Leighhall Rd., Leigh, Essex. [2865

Ivy.

1914 Ivy 2-stroke, good condition, tax paid; £20, or exchange good tricycle and cash.—2, Back Rd., Sidcup. [3595

IVY 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

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1921 4 h.p. **INDIAN** Scout, electrically equipped, speedometer; cost £180 a few weeks ago £135

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1918 8 h.p. **SUNBEAM** Combination, hood and screen, Lucas lamps and horn, spare wheel, licensed, excellent condition £125

1915 4 h.p. **DOUGLAS** Combination, Lucas lamps, horn, licensed, excellent condition £67

1913 3½ h.p. **TRIUMPH** Combination, 3-sp., hand clutch, K.S., electric lamps, horn, speedometer, excellent condition £55

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IVY-PRECISION 3½h.p. T.T. model, twin, o discs, tax paid, all on; a bargain, £50.—Light and Motor Cycle Engineering Co., 26, Tulse Hill, S (Half minute from Brixton Skating Rink.). [

James.

DAN GUY, Weymouth.—1921 4¼h.p. James hination from stock; price £155. [

1918 James Lightweight, countershaft gears, a sories, licensed; 35 gns.—Fersfield, Westbury New Malden. [

4¼h.p. James Combination, 3-speed, K.S., all-c electric light, splendid condition; £75, or and cash.—32, Walsingham Rd., Clapton, E.5. [

1920 James 4¼h.p. De Luxe Combination at bar price, practically new, complete with Powel Hanmer lighting, horn, and tax paid; £120.—Bel

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1920 5-6h.p. James, 3-speed, clutch, kick st Cowey horn, long exhaust pipes, tax paid, fast, in good condition; £95.—Hoare, Beechurst, borough, Hants. [

4¼h.p. 1914 James, Binks, Philipson pulley, tyres, £55; 1920 Montgomery, £25; toge £75; drive 50 miles to purchaser.—Smith, W maker, Thrapston. [

JAMES 4¼h.p. Combination, all chain, late Easting, all accessories, excellent condition; —Newnham Motor Co., 223, Hammersmith Rd., 'Phone: Hammersmith 80. [

LATE 1920 5-6h.p. James Combination, baby se sidecar, fully equipped, licensed, magnificent ont, not done 200 miles; accept £145, cost £225. C. Parry, Oakhurst, Abbey Park Rd., Grimsby. [

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IMMEDIATE Delivery of any James Model; cas deferred payments; book your order now, avoid disappointment later.—Burlington Motors, South Side, Clapham Common, S.W.4. 'Phone: ton 2417. [

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COMPETITION James 5-6h.p. Combination, winner of many hill-climbs, speed trials, an liability trials, complete with all accessories, numerous spares for competition work, definite given of awards gained, also the most exacting ride given; further particulars may be had from Reyre, Sun St., Hitchin; price £160. [

J.H.

1916 J.H. 6h.p. Combination, C.S. gear, com lamps, etc., sound, but wants tuning up; £ Cross, Effingham Sq., Rotherham. [X

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LEA-FRANCIS 1920 3½h.p., all on; nearest £ 132, Widmore Rd., Bromley, Kent. [

LEA-FRANCIS Combination, 1916, 3½h.p., 3-s clutch, K.S.; 80 gns.—21, Fordel Rd., Catf [

LEA-FRANCIS 3½h.p., 1920, 2-speed, clutch original tyres, accessories; £85.—32, Cour Av., Ilford. [

BRAND New Shop-soiled 3½h.p. Lea-Francis; price £115, to clear £90.—Apply, 198, Gt. land St., W.1. [

LEA-FRANCIS Combination, 3½h.p. twin J K.S., 2-speed, clutch, lamps, tools, etc.; £50. Valnay St., Tooting. [

LEA-FRANCIS 3½h.p. Twin, countershaft c K.S., speedometer, Tan-Sad pillion, accessorie new; £55 cash, bargain.—C/o Broadway Garage, ing. [

1920 Lea-Francis, 3½h.p. M.A.G., fitted sp meter, lamps, Cowey horn, tyres new, lice absolutely perfect; £80.—Edwards, 50, Harri Rd., South Kensington. [

LEA-FRANCIS, 1921, 3½h.p., 3 speeds, clutch, starter, twin M.A.G. engine, brand new; £ exchanges or extended terms.—Elce and Co., 1 Bishopsgate Av., Camomile St., E.C.3. 'Phone: Av 5548. [

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ATE 1920 Lea-Francis 4h.p. Combination, Henderson sidecar, Lucas lamps, Klaxon, speedometer, only 1,050, unscratched; bargain, £95.—James, Bradmore's, 482, Harrow Rd., Paddington. Tel.: Hesden 1744. [3133

Levis.

AN GUY, Weymouth.—Levis 1921 models in stock: £60. [0554

EVIS, 2¼h.p., 2-speed, good running order; £40.—589, London Rd., Sheffield. [2993

EVIS, 1920, perfect condition, all on; £45, or nearest offer.—58, Thornhill Rd., N.1. [3441

EVIS, new last August, excellent condition: £40.—N., 49, Westbere Rd., West Hampstead. [3359

EVIS, 1916, 2¼h.p., perfect running order, lamps, etc.; £32.—Major Green, Christ's Hospital, Sussex. [3197

YRIL WILLIAMS for immediate delivery of all models Levis.—Chapel Ash Depot, Wolverhampton. [X3819

20 Levis, as new, all accessories, tax paid; 50 gns.—Maitland, 40, Fleming Rd., Kennington, S.E.17. [2561

EVIS, 2¼h.p., mechanically sound, good condition; after 7 p.m.; £30.—50, Chestnut Av., Waltham-w. [2892

EVIS 2¼h.p., 1916, excellent condition, recently overhauled, lamps, etc.; £30.—34, Springfield Rd., Teddington. [2849

3 GNS.—1917 Levis, engine, overhauled by makers, new tyres, tax paid; bargain.—65, Southview Rd., Sidcup, Kent. [3776

EVIS Popular, 1920, all accessories, mileage under 1,000, good condition; £45, or offer.—20, Higham Station Av., Chingford. [3420

17 2¼h.p. Levis, perfect, engine rebushed, new piston, etc., all on; £29, bargain.—Ewers, New-t Rd., Burton-on-Trent. [2932

h.p. Levis, good model, thoroughly overhauled recently, new tyres, lamps, licensed; £36.—Hoe, Highbury Park, N.5. [3137

EVIS.—Sole Walsall agents; special exchange and deferred payment terms; immediate delivery.—Mides', Walsall Garage, Walsall. [2423

EVIS, 1921, complete with lamps, horn, licensed, condition perfect; £45.—Chas. H. Littlewood Co., Sherman Rd., Bromley. [4013

EVIS, 1920 (November), all red, 2-speed, all complete, many spares, condition faultless; any trial; reasonable offer.—Dr. Beesley, Exmouth. [3236

EA-FRANCIS 5-6h.p., M.A.G. model, not done 50 miles, cost £150; accept £133; licensed and fully guaranteed; letters only.—54, St. James St., Ashted, Birmingham. [X5299

21 Levis, lamps, tax paid, excellent condition, guaranteed, £43/10; 1919 Levis, lamps, 2-speed, perfect condition, £47/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [3304

21 Levis 2¼h.p. Popular Model., tax paid, set P. and H. lamp, machine is in every respect new, low mileage; owner bought higher power; sacrifice £54.—G. L. Easter, Blandford, Dorset. [3182

21 Levis, supplied on deferred payments at only 4% extra; all models in stock for immediate delivery. 2¼h.p. Touring or Sports model, £60; M 1 S, 2¼h.p., 2-speed, handle-bar controlled clutch, £8—Buy your machine direct from the Levis specialists, The Premier Motor Co., Aston Rd., Birmingham. [X6885

Lincoln-Elk.

INCOLN ELK Combination, 2-speed, countershaft, Bosch, Druids, lamps, etc.; £35.—27, Princess Rd., West Kilburn. [3071

0.—Lincoln-Elk combination, 4h.p., 2-speed, clutch, kick start, good Dunlops, in excellent order.—M r, 151, Kingston Rd., Teddington. [3433

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LOYDS Motor Cycle, 1914, 2¾h.p., 4-stroke, lighting set, horn, pump, etc., tax paid, in splendid condition throughout; £32, or offer.—Dentistry, 769, Romford Rd., Manor Park, London, E. [3061

L.M.C.

4h.p. L.M.C., single gear, good condition, disc wheels; £18/10.—Axon, 3, Vant Rd., Tooting, S.W. [3111

M.A.G.

7h.p. M.A.G. Twin J.H. Combination, fitted with handsome coachbuilt sidecar; £65.—Wauchope's, Rice Lane, London. 9016

Martinsyde.

MARTINSYDE 1921 Twin Combination; £145, cash or exchange.—Collier's Motories, Horton St., Halifax. [3407

MARTINSYDE Combinations for immediate delivery from stock; £145.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2723

21 6h.p. Martinsyde Combination, new, immediate delivery, specification sent on request; £145.—Duncan and Shepherd, 33, The Parade, Gold's Green. [3070

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A.J.S. 7 h.p. Combination	£215	0
ARIEL 4½ h.p. Combination	£150	0
ARIEL 6-7 h.p. Combination, all-chain	£165	0
B.S.A. 6-7 h.p. Combination, with dynamo lighting	£195	15
B.S.A., 4¾ h.p., Model H, and No. 3 Sidecar	£152	0
LEVIS, 2¼ h.p., Popular Model	£60	0
LEVIS, 2¼ h.p., 2-speed	£88	0
MARTINSYDE 6 h.p. Combination	£145	0
MATCHLESS 8 h.p. Combination	£185	0
MATCHLESS 8 h.p. family Combination	£191	10
METRO-TYLER, 2½ h.p., 2-speed, sports model	£70	0
N.U.T., 3½ h.p., Model P, dynamo lighting	£138	0
NEW IMPERIAL, 2¼ h.p., Model T	£73	10
NEW IMPERIAL, 2¼ h.p., Model 2	£80	17
NEW IMPERIAL 8 h.p. Combination	£168	0
RALEIGH, 5-6 h.p., flat twin, 3-speed, spring frame	£147	0
ROYAL ENFIELD, 2¼ h.p., 2-speed	£65	0
ROYAL ENFIELD, 2¼ h.p., 2-speed, with kick-starter	£70	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL ENFIELD 8 h.p. Combination, with dynamo lighting	£182	0
TRIUMPH, 4 h.p., Model H, chain-cum-belt	£115	0
TRIUMPH, 4 h.p., Model S.D., all-chain	£125	0
TRIUMPH, 2¼ h.p., Junior Model	£70	0
ZENITH-GRADUA, 5 h.p., sports model	£115	0
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ENFIELD, 1917, 8 h.p. Combination, 2-speed, clutch, and starter, as new	£120
ENFIELD, 1916, 3 h.p., 2-speed, clutch, and kick-starter. Tax paid	£40
ENFIELD, 1917, 3 h.p., 2-speed, clutch, and kick-starter, lamps, horn. Tax paid	£55
METRO-TYLER, 1920, 2¾ h.p., 2-speed, lamps, and horn	£55
NORTON, 1915, 3½ h.p., Model B.S., Philipson pulley. Tax paid	£60
ROVER, 1920, 5 h.p., 3-speed, clutch, and kick-starter, Empress Monitor Sidecar, electric lighting, speedometer, horn. Tax paid	£148
ROVER, 1917, 3½ h.p., T.T. model, hand-controlled Philipson pulley, lamps, horn, speedometer. Tax paid	£55
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MATCHLESS Combinations.

AGENT, T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744.

TRAVEL in Comfort on a Matchless.

CERTAIN to Please.

HIGHEST Marks Awarded in any passenger class to T. J. Ross in A.C.U. 6 days trial 1920.

LUXURIOUS Riding on a Matchless.

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DELIVERY Free for 150 miles from London. Don't forget, every outfit personally tested by the (Matchless only) expert. I am now booking orders for the new sports model, ready shortly; gradual payments arranged 5% on balance only.—J. Tassell, 1a, Bloomfield Rd., Plumstead, S.E.18. [5374

MATCHLESS 1921 New Sports Model, delivery from stock; £180; the finest outfit on the road.—Below.

MATCHLESS 1921 New Model H Combination, £185; 2-seater sidecar model, £191/10; delivery from stock; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

8h.p. Matchless Combination, 2 speeds, V.S., enclosed, running order; £50.—43, Russell Av., Wood Green. [2857

1921 Matchless, sports model, M.A.G. engine, electric lighting, fully equipped; offers.—Packman, Grove House, Rochester [3541

1921 Matchless Magdyno Combination, brand new, unused, unregistered, owner must sell; £180.—41, Madrid Rd., Barnes, S.W. [2843

1921 Matchless Family Combination, dynamo, just delivered, tax paid; cost £230, sell £200.—253, Munster Rd., Fulham, London. [3511

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS, Model H, dynamo lighting, in stock; deferred payments. — Parker's Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6724

MATCHLESS, 8h.p. J.A.P., Fullford new coach, taxed; £55; separated or exchanges.—Timber Yard, 663, Seven Sisters Rd., Tottenham. [3842

MATCHLESS Combination, 1920, £30 extras, £7 insurance paid last month, perfect; £145.—Bennett, 2, West View Terrace, Morecambe. [3533

MATCHLESS 1921 Model Combination, 8h.p. M.A.G., fully equipped, faultless, dynamo; £162/10.—Rossie, Gloucester Rd., Kingston Hill. [2893

MATCHLESS (June, 1921) Combination, fitted with hood, screen, and side curtains, spare wheel, only run 500 miles, perfect; £165.—89, Balham Hill, S.W. [3640

MATCHLESS, 1917, M.A.G., electric, Tan-Sad, hood, screen, re-enamelled, splendid condition; £115.—39, Kyrle Rd., West Side, Clapham Common. [3991

F.O.C.H. have a 1920 Matchless Combination, dynamo, small mileage, tax paid; bargain.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2693

1921 Matchless, all models for immediate delivery, exchanges and deferred payments if required.—Edwards, 50, Harrington Rd., South Kensington. [2844

1920 Matchless Combination, Magdyno, excellent condition, good tyres, speedometer, fully insured; Saturdays after 6; £155.—115, Grove Rd., Walthamstow. [3354

MATCHLESS Combination, 8h.p. M.A.G., 3-speed, K.S., electric lighting, perfect condition; £95.—Clarence Garage, Richmond, Surrey. 'Phone: Richmond 431. [2536

MATCHLESS Combination, 8h.p. M.A.G., 3-speed, K.S., overhauled and re-enamelled, accessories, perfect condition, trial; £105.—L.P., 28, Elmwood Rd., West Croydon. [3666

MATCHLESS Model H., J.A.P., Magdyno lighting, speedometer, hood, legshields, etc., in new condition, just overhauled; £160.—Tassell, 1a, Bloomfield Rd., Plumstead. [3461

MATCHLESS H, Nov., 1920, guaranteed as new, used few times only, horn, screen, spare wheel, tools, tax paid; real bargain, £140.—Bickmore, Caius College, Cambridge. [3559

MATCHLESS 1920 8h.p. Combination, dynamo lighting, speedometer, horn, hood, screen, tools, etc., tax paid, a bargain; £160.—Seen at Wilkins, Simpson (opposite Olympia), London. [3873

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MATCHLESS Combination, 7-9h.p. M.A.G. engine, 3-speed, screen, Tan-Sad, lamps, tax paid, splendid condition; £105; near offer.—Richards, 4, Meadowcroft, Perry Hill, Catford, S.E. [3619

MATCHLESS Model H2 Combination, M.A.G., late 1920, small mileage, all accessories, speedometer, tyres unpunctured, perfect, tax paid; £160.—Linnell, 57, St. Peter's Rd., Croydon. [3434

MATCHLESS Combination; £185; best value on market; spring frame, detachable wheels included.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. Kensington 4096. Exchange arranged. [9194

VICTORY Matchless, overhauled and re-enamelled latest colours, new chains, new 700×80 tyres, spare wheel, lamps, horn, tax paid, spares, etc.; £115, or exchange; open expert exam. and trial.—21, Norfolk Rd., Littlehampton. [3894

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MATCHLESS Combination, 8h.p., 1920, M.A.G., Lucas dynamo, inspection lamp, Watford speedometer, spare wheel complete, unused, wind screen, luggage grid, cover, side valances, licensed, beautiful condition, £20 extras; £175, worth more.—Headmaster, Madley, Herefordshire. [2994

MATCHLESS Late 1919 Victory Model 8h.p. J.A.P. Combination, overhauled and renewed Feb., 1921, hood, side curtains, Orto screen, speedometer, spare wheel, luggage grid, Tan-Sad, College leg shields, insured £185 to April, 1922, lamps, accessories, etc., tax paid; price £130.—Graham, 13, Champion Grove, Denmark Hill, S.E.5. [3599

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METRO-TYLER 1920 2¾h.p., tax paid, lamps, etc.; £42.—Billingshurst, Wordsworth Rd., Worthing. [3037

1919 Metro-Tyler, 2-speed, new Clinchers, very fast; £35.—20, Treen Av., Hoggers Corner, Barnes, S.W.13. [3510

1920 Metro-Tyler, 2½h.p., 2-speed, beautiful condition, all accessories; £42.—163, Davenport Rd., Catford, S.E.6. [2868

SINGLE Speed Metro-Tyler, 1919-20, guaranteed in thorough running order; any trial; £35, cost £50.—179, Earlsfield Rd., Wandsworth, S.W. [3241

METRO-TYLER, 1920, all red, 2-speed, lamps, and accessories, tax paid, in good running order; £54.—V. Barker, Aston Clinton, Bucks. [3210

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MINERVA Motor, splendid order; £18; take push cycle part.—57, Keobury St., Camberwell, London. [3506

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MINERVA Combination, U.H. mag., Druids, low frame; £23, offers; exchanges; after 5.—27, Princess Rd., West Kilburn. [3072

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MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 2-8, Alexandra Rd., Hornsey. [3698

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NEW HUDSON, J.A.P. 2¾h.p., 3-speed, overhauled; bargain, £36.—Lane End, Avenue, Claygate. [3382

AUG., 1920.—New Hudson 2¼h.p., 2-speed, mileage 1,600; £47/10.—Write, R., 17, Conrey Rd., N.8. [3766

NEW HUDSON 2¼h.p. Lightweight, shop-soiled, £65; also demonstration machine, £50.—Rogers, 42, Church Rd., Hendon. [3613

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26×2¾	Dunlop W.D. Heavy	39/6	51/3
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26×2½	Wood-Milne Comb.	50/-	102/-
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New Hudson.

NEW HUDSON 2-stroke, 1917, good running order £19/10.—23, Tower Bridge Rd., Bermondsey. [342

NEW HUDSON, 1914, 3-speed, clutch, Bosch, B and B., lamps, horn; £37/10.—Langford, 102 Branstone Rd., Burton-on-Trent. [390

NEW HUDSON Coachbuilt Combination, 3-speed clutch, K.S., new tyres and condition; £50, offer —120, Sutherland Rd., Croydon. [359

NEW HUDSON 2¼h.p., 2-speed, splendid condition lamps, horn, tax, spares, ride away; £42.—22 Canterbury St., Gillingham, Kent. [361

NEW HUDSON Lightweight Demonstration Model only done 200 miles; £50.—New Hudson Depot 45, Gray's Inn Rd., Holborn, W.C. [314

NEW HUDSON 2-stroke, 2 speeds, new tyres an chains, horn, T.T. bars, tax paid; £29, bargain.— Mulcaster, 235, Barking Rd., Plaistow. [358

NEW HUDSON 4h.p. Combination, July, 1919, a accessories, luggage carrier, D.A. set; £100.— Nurton, 31, Montpelier Vale, Blackheath. [290

NEW HUDSON.—2¼h.p. de luxe models in stock deferred payments.—Parker's, Bradshawgate Bolton; also 245, Deansgate, Manchester. [X672

NEW HUDSON-J.A.P. 2¾h.p., 3 speeds, clutch splendid condition; trial, 2 up; £34; exchang 3½-4¼h.p.—349, Bristol Rd., Birmingham. [X688

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NEW HUDSON Lightweight de Luxe Models wi kick starter, and clutch; delivery from stock. New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C [314

NEW HUDSON, 1913; 3½h.p., in perfect runnin order, Bosch mag., Binks, £38, or near offer with sidecar, £46.—Major Green, Christ's Hospital Sussex. [315

NEW HUDSON 1916 C.B. Combination, counter shaft, 3-speed, kick starter, tyres as new, lamp etc., perfect condition; 65 gns.—1, Priory Rd., Ke Green. [391

NEW HUDSON 6h.p. Twin Combination, delivere new Jan., 1920, fully equipped; £99.—Newnha Motor Co., 223, Hammersmith Rd., W.6. 'Phone Hammersmith 80. [272

NEW HUDSON Coachbuilt Combination, 3-spee clutch, belt and tyres excellent, tax paid; £3 privately owned.—Seen, Gray Levin, 5, Boulevar Balham High Rd., S.W. [390

6h.p. New Hudson Combination, 1915, hood, scree electric lighting, new tyres, spares, overhauled £70, offers.—Spalding, Redholm, College Rd., Dulwic S.E. 'Phone: Sydenham 639. [340

NEW HUDSON 1915 6h.p. Combination, 3-spee kick, just completely overhauled, new tyres, p fect order; any trial; £100, tax paid.—Castle, 10 Cricklewood Broadway, N.W. [33

1920 New Hudson, but not delivered before 192 2¼h.p., 2-speed, lamps, full set tools, insure tax paid, in new condition; 45 gns.—Worsley, Haz dene, St. John's Rd., Sevenoaks. [37

NEW HUDSON 2-stroke, 2-speed, excellent con tion, new tyres, fully equipped, £35; also Le 2¼h.p. Popular, Bosch, Best and Lloyd, first-cl order, fully equipped, £30, or offer.—103, St. Alba Av., Chiswick. [29

NEW HUDSON Lightweights, all models, on view Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gn Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocke Deferred payments arranged. Catalogues:—New Hu son Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [39

New Imperial.

8h.p. New Imperial Combination, nearly new, t paid; £95.—9, Church Rd., Willesden. [35

2¾h.p. New Imperial, 2-speed, reduced to £69; dit with clutch and kick starter, reduced to £77

8h.p. Combination; £168; in stock for immediate livery; easy payments.—Harrods, Ltd., 1 Brompton Rd., London. [39

NEW IMPERIAL, Oct., 1920, 2¾h.p., 2-speed, lit used, licensed; £55.—Edwin Knight, Church S Reigate. [32

NEW IMPERIAL 1918 2¾h.p., 2-speed, lamp, hor £50, offers.—Fairmount, Brockley View, Forc Hill, S.E.23. [36

LATE 1920 New Imperial-Jap 8h.p. Combinatio equipped regardless; £115.—24, Ballicl R North Kensington [34

1921 8h.p. New Imperial Combination, only run few miles, as new; £145.—Tilleys, T Esplanade, Weymouth. [30

1920 New Imperial, kick start, clutch, 2 speeds, accessories, lamps, tax paid; £55.—Adams, Tonsley Rd., Wandsworth. [31

NEW IMPERIAL, 1916-17, 2¾h.p. J.A.P., 2 spee excellent Dunlops, licence, lamps, splendid ord £33.—G., 63, Solon Rd., Brixton. [37

1919 New Imperial, 2 speeds, clutch, kick start mileage 2,000, as new; £55.—G. W. Holla White Barn Cottage, Alderley Edge. [X66

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NEW IMPERIAL 1920 Combination, fully equipped, speedometer, luggage grid, perfect; £100.—The Bicycery, 216, Portobello Rd., W.11. [3838

BRAND New 8h.p. New Imperial Combination, 2-seater sidecar, fully equipped, tax paid; £110.—Bamar, 17, St. Quentin's Av., North Kensington. [3486

NEW IMPERIAL, new engine, not run 600 miles, 1917 frame, 2-speed, good condition; any trial; £ or offer.—K.O.I., 99, Holmesdale Rd., Reigate. [2975

1920 New Imperial 8h.p. Combination, Klaxon, lamps, splendid outfit; £105.—C/o Bradmore's, Harrow Rd., Paddington. Tel.: Willesden [3131

1921 2¾h.p. New Imperial Motor Cycle, 2-speed, kick start, complete with lamps, horn, etc., unshop-soiled only; £79.—Box 5,635, c/o *The Motor Cycle*. [3863

1920 8h.p. New Imperial Combination, electric lighting, Easting, Tan-Sad, perfect order, any trial bargain; £120.—37, Manchester St., New Cleethorpes, Lincolnshire. [3845

NEW IMPERIAL 1920 Models (2), combinations, fully equipped; £125 and £135; exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2725

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1920 New Imperial-Jap 8h.p. Combination, Grindlay 2-seater sidecar, Binks, Easting, speedometer, splendid condition, trial; £140; exchange considered.—Robson, Hykeham Rd., Lincoln. [3471

IMMEDIATE Delivery of any New Imperial Model; cash or deferred payments; book your order now to avoid disappointment later.—Burlington Motors, 5, South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0506

NEW IMPERIAL 1920 8h.p. Combination, Easting, lamps, spare cover, tools, recently overhauled by makers, in beautiful condition; £125, privately owned.—Colonial Motors, 104a, Finchley Rd., London, Hampstead 7822. [3938

NEW IMPERIAL-J.A.P., 2¾h.p., 2-speed, 1916, little used during war, just overhauled and rechelled, in perfect condition, complete with electric lighting, tools, spares, and accessories; 38 gns.—Beckedin, Ashford, Middlesex. [3107

NEW IMPERIAL Combination, 8h.p. J.A.P., 3-speed, clutch, kick start, bought June, guarantee, tax paid, fully insured, wind screen, Klaxon, lamps, spare cover, tube, valve, chain links; a bargain, £120. Bromar Rd., top Camberwell Grove, S.E.5. [4002

New Ryder.

NEW RYDER de Luxe 2¾h.p., kick starter, 2-speed gear, list 76 gns., slightly shop-soiled; 60 gns; deferred terms arranged.—Midland Garage, 7, Broad St., Birmingham. [7353

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NORTON Motor Cycles.—Can deliver anywhere; early dates.—Kelly, Bachelor's Walk, Dublin [3973

CECIL WILLIAMS for immediate delivery of all models Norton.—Chapel Ash Depot, Wolverhampton. [X3820

NORTON 16H, new, fully equipped, speedometer, picked engine; £118.—Green, Wine Merchant, Rye. [2889

NEW (1920) 3½h.p. Norton, accessories, tax paid, new condition; £105.—Morris, 21, Saunders St., Southport. [3271

NORTON 1921 3½h.p. 3-speed Sports, licensed, lovely condition, mileage negligible; £110.—Crow Bros., Gillford. [3940

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5005

NORTON.—Sole Walsall agents; exchanges or deferred payments.—Maudes' Motor Mart, Walsall Garage, Walsall. [2421

1921 Norton, T.T., single speed, run 5 miles only; £80.—Apply, Lucas, 10, St. Germains Place, Blackheath, S.E.3. [3185

NORTONS 16H and Big Four, and B.R.S. specials from stock.—Frank Whitworth, Ltd., 139, New St., Birmingham. [X4160

NORTON.—All models in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6726

16H 3½h.p. T.T. Norton, 1921, ridden only 400 miles, better than new; for quick sale £119 cost.—4, Bath Rd., Exeter. [3012

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NORTON Big 4, 1920, Swan sporting sidecar, aluminium colour, electric lighting, large Apollo car horn, disc wheels, about 6,000 miles; what offers?—Box 5,594, c/o *The Motor Cycle*. [3187

£95.—3½h.p. Norton combination, Dinky Petite sidecar, discs, large F.R.S. lamp, tools, etc., tax paid, engine, gear box, etc., in perfect condition; great bargain.—Tucker, Redcliff Hill, Bristol. [3969

BIG 4 Norton de Luxe Combination, Nov., 1920, fully equipped, and absolutely like new; sacrifice quickly, £125, offer.—Clapham Motors, High St., Clapham. 'Phone: Latchmere 4290. [2873

NORTON 1921 T.T. Model, as new, and perfect, ridden under 200 miles, licensed, unused; £115, or consider exchange 2¾h.p. Douglas and cash.—Fox, c/o Mr. Burrell, 28, Park Lane, Romford, Essex. [3709

NORTON.—Immediate delivery Big 4 and 16H Models; spare parts always in stock.—Call, wire, write, or 'phone 4042. G. H. Tucker, the Norton Rider, Agent, and Specialist, Redcliffe Hill, Bristol. [3970

1920 Norton Sporting Combination, 3½h.p., B.R.S., 3-speed, Lucas electric lighting, condition as new, racing sprockets, spares, etc., cost over £300; will accept best reasonable offer.—Hulms, Wesley St., Stockport. [3205

T.T. Norton, 1920, in excellent condition, very fast, mileage 2,000, carefully ridden and tuned, tyres unpunctured, speedometer, lamp, Klaxon, 2 belts, tax paid; £95.—Ince, Silver Hawk Motor Co., Cobham, Surrey. [2968

NORTON 1921 3½h.p. B.R.S. engine, 3-speed, all chain, ideal competition machine, complete with lamps, horn, and several spares, licensed; £130.—Chas. H. Littlewood and Co., Sherman Rd., Bromley, Kent. 'Phone: Bromley 464. [4011

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L. MITCHELL, our representative, rode his private 1920 3½h.p. Norton in the Senior T.T. to prove his confidence in the machine he sells. Result, first Norton, first private owner, and sixth place in the greatest race ever contested. If the effort deserves encouragement, you can do no less than place that Norton order with him, and watch him in the next big event.—Bulloughs Motors, Ltd., Waterloo St., Oldham. [2050

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N.S.U. 2¾h.p. Twin, Bosch, 2-speed, new Dunlops, £19.—17, Heaton Rd., Mitcham. [3688

N.S.U. 2¾h.p. Twin, Bosch, licensed, in running order, for Levis or similar 2-stroke; sell £25.—Cawley, Copthorne, Sussex. [3018

N.S.U. C.B. Combination, 7h.p. twin, 2-speed F.E., Bosch, lamps, Klaxon, tools, tyres, belt new, tax paid, guaranteed good order, any trial given; after 5 p.m.; £48.—68, Hyde Vale, Greenwich. [3886

N.U.T.

1920 3½h.p. N.U.T., in excellent condition, dynamo lighting, horn, speedometer; £95.—Lt. Hope, Fort Grange, Gosport, Hants. [3212

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, indistinguishable from new; £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6740

SPECIAL o.h.v. 3½h.p. N.U.T., guaranteed 70 m.p.h., indistinguishable from new, run under 1,000 miles; £68, or exchange solo, cash.—9, Red Hill, Bassett, Southampton. [2976

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O.K. Junior, 2¾h.p., brand new; agent's surplus stock; our price £37/15.—Sun Garage, Henshaw St., Oldham. [3475

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O.K.-J.A.P., 2¾h.p., late 1917, excellent order, Lucas lighting, speedometer, legshields, spares, all on; £45, near offer; appointment.—40, Crystal Palace Park Rd., S.E. [2867

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36 GNS., bargain.—1919 Omega, J.A.P. 2¾h.p., 2 speeds, fast machine.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [3498

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P. and M. Combination, tax paid, excellent condition. —12, Ashmead Rd., St. John's, S.E.8. [3784

1918 P. and M., W.D.; any offer considered.—Woodcock, 27, Gore Park Rd., Eastbourne. [3124

1918 P. and M., 2-speed, clutch, K.S., perfect order; £50.—56, Park Lane, Kidderminster. [3637

P. and M. Combination; £65, or solo £53; perfect. —38, Sherriff Rd., W. Hampstead, N.W.6. [3570

P. and M. Combination, perfect condition, accessories, tax paid; £65.—8, Sion Rd., Twickenham. [3848

BRAND New Shop-soiled P. and M. and sidecar; to clear. £90.—Apply, 198, Gt. Portland St., W.1. [3521

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P.M. 1918 Combination, stoved, plated, new tyres, 3 lamps, tax paid, perfect; £60.—106, North End Rd., W.14. [3994

1918 P. and M., blue-gold, unscratched; £57/10; consider cheaper machine part.—61, New Kent Rd., London, S.E.1. [2860

P. and M. Late 1918 Combination, excellent condition, lamps, horn, tax paid; £70, or offer.—Ward, 16, Old Broad St., E.C.2. [3551

P. and M.—Solo or sidecar in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6723

1911-12 P. and M. Combination, 2-speed, clutch, excellent going condition; £30, or offer.—302, London Rd., Thornton Heath. [3553

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P. and M. Combination, June, 1920, speedometer, screen, hood, lamps, etc., insurance, tax; £125.—Hughes, 49, Brockley Rise, Forest Hill. [4008

P. and M. R.A.F. Model, overhauled, good appearance, with Canoelet Minor sidecar, complete; £70.—Lewis, 57, Gloster Rd. Site, Trowbridge. [2854

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P. and M., 1918, 2-speed, kick start, coachbuilt combination, lamps, horn, screen, etc., in perfect running order, any trial given; £65.—Richards, 14, Arragon Gardens, Streatham Common, S.W. [3885

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1919 P. and M. Combination, in good condition, new gear chains, Mills-Fulford sidecar, complete new chassis, Camac wind screen, electric and acetylene lights; £70, or sell separate.—Rowland, 86, Algernon Rd., Lewisham. [2956

1921 P. and M. Combination, latest model, electrically equipped, all accessories, most reliable, perfect condition; any trial or inspection; private owner; price £125.—Bell, 59, Richmond Park Rd., East Sheen, S.E. [3192

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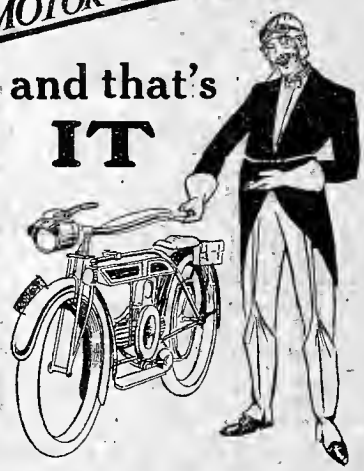

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COVENTRY Premier, 1921, latest model, dyn lighting, spare wheel, dickey seat, tax paid, surance, watch, etc., as new; £235.—Allen, Ledbu [X

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PREMIER 3½h.p. 1916 Coachbuilt Combinatio speeds, countershaft, K.S., excellent condit any trial; best offer; exchange good 2¾h.p. late m —Pearce, Island Cottage, Ufton, Reading, Berks.

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QUADRANT Combinations from stock, 4½h.p. £ 5h.p. £135; cash, exchange, or deferred ments. All spares. Official repairers. Second-h Quadrants from £60.—Clifford Wilson Mfg. Co., 1 Westminster Bridge Rd., S.E.1. 'Phone: Hop 21

QUADRANT 1917 Combination, countershaft, tect condition, little used.—Ferndall, St. Geor Rd., Kingston-on-Thames.

QUADRANT 4½h.p. Combination, 1920, elec lighting set, speedometer, horn, tax paid; £8 Elce and Co., 15-16, Bishopsgate Av., Camomile E.C.3. 'Phone: Avenue 5548.

QUADRANT, 1916, 4½h.p., B.S.A. 3-speed, coun shaft, clutch and kick starter, mileage 2, unused 4 years, as new; 50 gns.—Smith's, 86, Ch Farm Rd. (opposite Chalk Farm Tube Station), N.W

1920 Quadrant Combination, Rudge sidecar, bea fully sprung; genuine bargain; horn, lamps, di Easting wind screen, speedometer, etc., tax paid, fect running order; £100.—Write Macaskie, Lyndhu Park Drive, Harrogate.

1914 Quadrant, coachbuilt, Sturmey, 3-speed, clut free, Cameo, Stewart, electric lighting, fast, handsome condition, tax paid; £70; trial ev ings, after 7 o'clock except Tuesdays.—C. S. How 14, Elton St., Islington, N.16.

MOTOR CYCLES FOR SALE.

Radco.

ADCO, 2½h.p., 2-speed, 1920, perfect, lamps, horn, tools; bargain, £38.—Osman, 231, Leigh Rd., h-on-Sea. [3968

Raleigh.

ALEIGH Combination, not done 200 miles; £170. —Welford, James St., Brighton. [3718

REMIER Motor Co. for 1921 Raleighs.

ASY Payments only 4% extra. We can deliver to your address within 24 hours the new Raleigh .p. flat twin, spring frame, chain drive; solo, 140 s; sidecar, 176 gns.; spare wheel and tyre, 6 gns.— Birmingham Agents, The Premier Motor Co., Aston Rd., Birmingham. [0626

Stock, new Raleigh, 5-6h.p.—Wale, 7, Queen's Rd., Nuneaton. [X6620

h.p. Raleigh Combination, ridden 500 miles, nicely run in, registered; £175.—Rogers, 42, Church Rd., Hdon. [3611

21 5-6h.p. Raleigh, used for demonstration and tests only, registered; £138; sidecar extra.—Roe's or Cycle Depot, West Bridgford, Nottingham. [X6406

ALEIGH Solo and Combinations for Immediate Delivery. Purchase your machine from the author- agents; liberal allowance on your present machine. —Newham Motor Co., 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [2720

Reading-Standard.

16 Reading Standard Combination, splendid value; £90.—Ross, 86, High Rd., Lee. [3334

EADING-STANDARD Combination, 10h.p., 1920, dynamo lighting, small mileage; £125.—Viner, Malling, Maidstone. [3321

EADING-STANDARD Combination, 1921 model, 10h.p., perfect condition, splendid turnout; £180, nearest offer.—Wilkins, 1, Foster's Buildings, Sheffield. [2880

EADING-STANDARD, 1920, dynamo lighting, powerful, flexible, with touring Henderson side- with luggage capacity, ready for riding; £155; £240.—70, Camden Mews, N.W.1. [X6934

Rex.

X 5-6h.p., B. and B., Bosch, clutch, tax paid; £28.—137, York St., Heywood, Lancs. [3743

X 3½h.p., 2-speed, looks and runs really well; must sell; £26.—Apply, 523, Croydon Rd., Beckenham. [3380

.p. Rex, overhauled, low, clutch, sporting, fast, tax paid; £30.—Huggins, 15, Willes Rd., Kentish Town, London. [3109

GNS. secures 5-6h.p. Twin Coachbuilt Rex Combination.—Particulars, Carslake, Deansgate, Stony Stratford. [3532

X 1913 5-6h.p., with chassis, thorough going order, new tyre and belt; £40; will exchange for good machine.—Hasnip, Ondle. [3358

.p. Rex, B. and B., Dixie, T.T. bars, dropped frame, running order, smart; £18.—Middleton, illais St., Albany Rd., Camberwell, S.E.5. [3942

4¼h.p. C.B. Combination, 2-speed, clutch, speedometer, Klaxon, excellent order and appearance; 65, Leucha Rd., Walthamstow, London. [3429

, red, low, sporty, and fast, lighting set, horn, tc., tyres like new; sacrifice, £25, or near.— 769, Romford Rd., Manor Park, London, E. [3060

CIAL Offer of brand new 8h.p. Rex-Blackburne ombination, detachable wheels, spare wheel; list price £218, reduced to £175 cash; easy ts only 4% extra.—The Premier Motor Co., Aston Birmingham. [X6886

Roc.

p. Roc, 2-speed, clutch, handle starter, running rder; £25.—Box 5,630, c/o *The Motor Cycle.* [3638

Rover

ER 1920 3½h.p., T.T., tax paid; £65.—Holmes, rondeg, Llanelly. [3411

5-6h.p. Rover Combination, perfect; £100.— 24, Balliol Rd., North Kensington. [3483

Rover 5-6h.p. Combination, new, best fittings; £190.—H., 9, Frances Rd., Windsor. [3010

–3½h.p. Rover, 3-speed, clutch, splendid running order.—King, Egrove Farm, Oxford. [X6859

3½h.p. Rover 3-speed Coach Combination, faultless; bargain, £42.—13, New St., Wellingalop. [X6870

ER 3½h.p. Combination, 3-speed, perfect condition; any trial; what offers?—Batey, Stretton-Fosse, Rugby. [3343

Rover Solo 3½h.p., 3-speed, tax paid, like new, done under 600 miles; £93.—Grimes, 18, Place, W.1. [3800

p. Rover Combination, 3-speed hub gear, and clutch, pedal starting, perfect condition; £60, r offer.—Gibbs, Ondle. [X6582

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Pillion riding is allright, but—respect for your passenger must make you realise the comfort and absence of danger ensured by a well-designed and strongly built sidecar.

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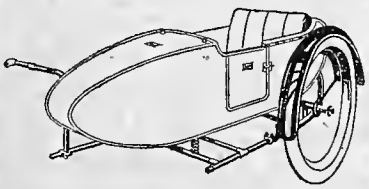

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MOTOR CYCLES FOR SALE.

Rover.

ROVER Combination, 1921, 5-6h.p., perfect condition; any examination; cheap for quick sale.—Briggs, 16, York Place, Carlisle. [3172

ROVER 3½h.p., 3-speed and clutch, engine just over hauled and tank renovated, tax paid; view any time; £45.—4, Thames St., Staines. [3816

ROVER, 1920, 3½h.p., T.T., Philipson, indistinguishable from new, guaranteed perfect; nearest £70.— 156, Dalmally Rd., Addiscombe, Croydon. [3048

ROVER, 1914, new sidecar chassis, 3 speeds and clutch, in perfect condition, new tyres, 3 lamps; £40.—Noel, 40, Ryeston Rd., Fulham, S.W.6. [3674

1919 3½h.p. Rover Combination, 3-speed K.S. countershaft, Canoelet sports sidecar, fast outfit; £84; solo £72.—Ewers, Newton Rd., Burton-on-Trent. [2930

1919 3½h.p. T.T. Rover, Philipson, guaranteed perfect, Lucas electric accumulator lighting, tax paid; offers.—Elliott Smith, 7, St. Michael's Rd., Bedford. [3822

3½h.p. T.T. Rover, 1914, lamps, horn, etc., fast, absolutely reliable, tax (£1/10) paid, very economical; £42.—Guyler, 53, Vauxhall Bridge Rd., S.W.1. [3698

1913-1914 3½h.p. Rover Combination, 3-speed clutch, Sturmey-Archer hub, stored during war, tax paid, perfect condition; bargain, £55.—1, Norwood Rd., Herne Hill, S.E.24. [3795

3½h.p. Rover (November, 1919), 3-speed, Millford sidecar, T.T. bars, small mileage, excellent condition, fully equipped; accept £95, or near offer.—Abbey, 43, St. John St., York. [3275

ROVER 5-6h.p. Combination, as new, only done about 200 miles, tax paid, accessories; 102 gns.— Handslip Fire Station, South Parade, Church St., Chelsea, S.W. [3780

FRANK WHITWORTH, Ltd., of Birmingham, recommends the chain drive 3-speed 3½h.p. Rover at £115 as one of the best value machines in the trade. Delivery from stock. [X4176

1919 5-6h.p. Rover Combination, engine just rebushed, electric lighting, Easting, speedometer, mechanical horn, accessories; getting car; £110.—Watts, 3, Portland Rd., Oxford. [3249

1920 (July) Rover 3½h.p., countershaft, all-chain, original tyres, unpunctured, with Swan sporting sidecar to match, fully equipped; good reason for sale; £105.—56, High St., Tooting. [3643

NEARLY New Sporting 5-6h.p. Rover, Bonniksen, electric lamps, Tan-Sad, spares, many special refinements, absolutely unscratched and perfect throughout; £140.—172, Cross Rd., Coventry. [X6755

ROVER Late 1919 3½h.p. T.T., Philipson pulley, small mileage, original tyres unpunctured, accessories, spares; £65; exchange recent Douglas or other geared lightweight; after 6 p.m.—71, Manor Park, Lee, S.E. [3300

ROVER 1921 3½h.p. T.T. Speed Model with special racing engine, Bonniksen speedometer, racing Amac, knee grips, long plated 2in. exhaust, guaranteed as new, many spares, can do 70; cost £135, accept £100.—Stanworth, Higham, near Burnley. [3144

ADVERTISER through ill-health having to give up motor cycling, wishes to dispose of his 5-6h.p. 1920 Rover combination, guaranteed in perfect condition and as new, ready for any trip; first reasonable offer accepted.—Box 838, c/o *The Motor Cycle.* [X6377

1917 Rover Combination, W.D., 5-6h.p. J.A.P. twin, new spring driving chain, pistons, connecting rods, valves, etc., spare tyre, Dunlop heavy, new Henderson sidecar body, new M-L magneto, Easting wind screen, 3 Lucas lamps and generators, in perfect running order; £105, or offers.—A. V. Simons, Priory Rd., Alcester. [3746

Royal Ruby.

ROYAL RUBY Sports Model; 80 gns.; in stock.— John Aldrich and Co., Diss. [0630

ROYAL RUBY, Villiers 2-speed, good order; £35.— Seen, Wilkinson's, 129, High Rd., Croydon. [3173

ROYAL RUBY, 2½h.p., perfect throughout; bargain, £28.—Fisher, 24, Tremadoc Rd., Clapham, S.W.4. [2895

ROYAL RUBY 1919 Combination, 8h.p. J.A.P. engine, fully equipped; £95.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [2925

£35.—1920 2½h.p. Royal Ruby, mileage under 1,000, all on, perfect; absolute bargain, no offers.— Lewis, 157, Hartfield, Wimbledon. [3046

ROYAL RUBY 1919 8h.p. Combination, electric lights, speedometer, horn, screen, very powerful; £115.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2731

Rudge.

RUDGE Multi, new 1921, sloping tank model in stock; £85.—Moss, Wem. [X6906

1920 L.O.M. Rudge Multi, 212 m.p.g. recent trial; £50.—2, West View, Farnboro' Rd., Hants. [3544

£33.—Rudge 1914 clutch model, good appearance, sound condition, sporty.—221, High Rd., Kilburn. [3427

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MOTOR CYCLES FOR SALE.

Rudge.

1921 I.O.M. Rudge Multi, with pedal starter, new, unregistered; nearest to £77.—104, Elgin Rd., Seven Kings. [3350

1920 3½h.p. Rudge Multi, guaranteed mechanically perfect. Palmer tyres; bargain, £50.—Drake, 1, Bruton Av., Bath. [3014

1914 5-6h.p. Rudge Multi, good condition, good tyres, lamps, leather belt; £46; exchange.—Kemp, New York, Lincoln. [X6927

1920 5-6h.p. and 7-9h.p. Rudge Combinations, unused; also 1921 I.O.M.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

1920½ Rudge Multi, I.O.M., guaranteed as new, lamps, Klaxon, clutch, licensing; £68; exchange.—3, Morpeth Rd., South Hackney. [3774

1921 Rudge Multi, as new, with Watsonian sidecar, lamps, tools, tax paid; bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [3953

RUDGE 3½h.p., free engine, clutch, speedometer, lamps, new tyre and belt, fast, perfect condition; £40.—28, London Lane, Hackney. [3460

RUDGE Multi 1919 3½h.p. T.T., discs, lamps, horn, speedometer, perfect condition; photo; £60.—Phillips, Albion, Llandrindod Wells. [3245

RUDGE Multi, 3½h.p., T.T., with pedal starting; immediate delivery; £85.—Peacock, 219, High Rd., Balham. 'Phone: Streatham 170. [3155

RUDGE Multi and C.B. sidecar, excellent condition and running order, very fully equipped; write for details; £52.—3, Park Crescent, Tonbridge. [2967

RUDGE Multi 5 6h.p. Coachbuilt Combination, good running order; seen any time; £70, nearest offer.—Talmore Heel Co., Bury St. Edmund's. [3121

RUDGE Multi 3½h.p. Coachbuilt Combination, late model, lamps, Klaxon, spares, tax and insurance paid; evenings; £65.—73, Thorneyhedge Rd., W.4. [3983

BRAND New I.O.M. Rudge Multi and Mills-Fulford sidecar, a magnificent turnout; or separate; £105.—H. L. Edwards, The Dairy, Pleasant St., Kidderminster. [X6912

1921 7-9h.p. Rudge Multi Combination, tax paid, speedometer, Easting, spares, only run few hundred miles; £135.—Seen 69a, Ferris Rd., East Dulwich, S.E. [2980

1915 Rudge Multi, coachbuilt sidecar, apron, wind screen, electric lighting, pillion seat, luggage grid, etc.; £68/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [3956

GENUINE T.T. Rudge, 1913, good condition throughout, exceptionally fast, climb anything two up, completely equipped; £40, or nearest.—Purser, Manor Farm, Old Windsor, Berks. [3393

RUDGE Multi, 5-6h.p., with handsome sidecar, hood, screen, Cowey speedometer, Lucas lamps, etc., practically new, smart outfit; 100 gns.; yours in part.—Bunting's Exchange, Wealdstone. [3708

RUDGE Multi, 5-6h.p., 1914, with C.B. sidecar, new back tyre, just overhauled, in first-class condition; £65, or exchange lightweight solo and cash.—Cooper, 28, Upper Bridge St., Stirling. [3119

RUDGE Combination, 3½h.p., 1913-14 model, B. and B. carburetter, 2 speeds, clutch, fully equipped, sound condition throughout; bargain, £40; trial.—29, Allsop St., Upper Baker St., London, N.W. [3130

1920 (October) Rudge 3½h.p., special I.O.M. cams, pedal, large P. and H., new tyres, tubes, belt, large tool kit, spare valve, Klaxon, handle-bar watch; ride 100 miles; nearest £70—5, Victoria Park, Cambridge. [3248

Scott.

SCOTT Sports, 1919 model, lamps, licensed; £77/10.—Welford, James St., Brighton. [3715

SCOTT Squirrel, 1921, brand new and unused; £110.—Welford, James St., Brighton. [3714

1920 (Aug.) Scott Combination, good order; 80 gns.—Grant, Saintfield, Co. Devon. (D) [2848

SCOTT Sports, 1920, lamps, speedometer, licensed, perfect; £87/10.—Welford, James St., Brighton. [3713

SCOTT Combination, wicker, makers' overhaul July, fast, licensed; £60.—11, Guildford Rd., Stockwell, S.W.8. [3453

1920 Scott Combination, fully equipped, fine condition; £85.—4, Thornton St., Kempston, Bedford. [3960

£45.—3½h.p. Scott, thoroughly overhauled, new parts. — Stallybrass, 52, Beechwood Av., Plymouth. [3470

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2698

SCOTT.—In stock, solo or sidecar; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6727

SCOTT and Sidecar, engine No. 2970, electric lighting, perfect condition, accessories; £85.—33, Mansell Rd., Acton, W. [2869

1920 Scott, perfect, just overhauled, original tyres small mileage; bargain, £85.—Elliott Smith, 7, St. Michael's Rd., Bedford [3821

EMANUEL'S

FOR TYRE BARGAINS

There are more pleasant holidays spoilt by faulty tyres than anything else. So look below before you go.

TYRES AND TUBES

IN PERFECT CONDITION.

I will refund your money immediately if you are not satisfied.

24×2	
Wood-Milne Special	28/-
Hutchinson Rubber-studded	22/6
26×2	
Wood-Milne Extra Strong	32/9
Wood-Milne Combination	44/-
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Dunlop Heavy	36/6
Macintosh Chain	32/6
Avon Sunstone	37/6
Clincher de Luxe Extra Heavy	35/-
Rom Combination	42/-
Avon Combination	38/9
Beldam Combination	35/-
Palmer Heavy Cord	36/9
Palmer Cord	32/6
Skew Rubber Non-skids	29/6
26×2⅜	
Palmer Heavy Cord	37/-
Palmer Cord	33/-
Dunlop Heavy	37/-
Clincher de Luxe Extra Heavy	34/6
Bates Special Heavy	37/6
Wood-Milne Extra Strong	35/-
26×2½ to fit 2½ Rims.	
Hutchinson Rubber-studded	33/-
Wood-Milne Special	33/-
Wood-Milne Extra Strong	45/-
26×2½	
Rom Combination	45/-
Dunlop Heavy	45/-
Macintosh Chain	36/-
Rom Combination	47/6
Hutchinson Rubber-studded	36/-
Skew Heavy Ribbed	37/6
650×65	
Heavy Rubber Non-skid	26/6
Wood-Milne Special	43/6
Michelin Steel-studded	52/6
Burnett Grooved	41/9
Dunlop Steel-studded	55/-
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700×80 to fit 650×65	
Wood-Milne Special	50/-
Wood-Milne Extra Heavy	55/-
Dunlop Steel Studded	70/-
700×80 (for 650×65) Voiturette Rims	
28×3	
Goodyear Extra Heavy Diamond Tread and Tube	75/-
Wood-Milne Extra Strong 4-ply	29/3
Dunlop Extra Strong 4-ply	50/-
Dunlop Heavy	45/-
Clincher de Luxe Extra heavy	45/-
28×3 to fit 2½ Rims.	
Dunlop Extra Heavy	50/-
28×2½	
Wood-Milne 4-ply	40/-
Hutchinson Heavy Rubber-studded	26/9
Hutchinson Heavy Ribbed	29/6

NEW TUBES, in all Sizes, 7/- each.

Also Clearance TUBES, with one small vulcanised patch by Manufacturers, otherwise quite new, 5/6.

The above lines are sent Seven Days on Approval, and Forward Passenger Train. Carr. Paid.

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Telephone: Dalston 3161. **LONDON, N.16**
Stores:
37a, Balls Pond Rd., Dalston, London, N.

MOTOR CYCLES FOR SALE.

Scott.

SCOTT 1920½ Combination, fully equipped, spa licence, excellent condition; £120, or near of —6, Campbell Rd., Croydon. [30

SCOTT Combination, 1920, perfect condition, elec lamps; any trial; Yeovil district; £100.—Wr Box 5,572, c/o *The Motor Cycle.* [30

ROTARY Valve Scott, actual T.T. winner, Bos racing Amac, Bonnikson trip; £75; Bristol Further particulars, Box 5,571, c/o *The Motor Cy* [30

1912 Scott, with No. 5 Gloria sidecar, excell condition, accessories, tax paid; £75, or off seen by appointment.—Hicks, 8, Belmont Rd., Walli ton, Surrey. [29

1915 Scott 2-sped 2-stroke, kick start, excell condition, fitted very smart new sporting sidec £65, bargain.—Joseph Rhind and Co., Stone Pla Rusholme, Manchester. [39

SCOTT Sports Model, 1920, 2-speed gear, sligh shop-soiled, and unused; at £130.—Burling Motors, Ltd., South Side, Clapham Common, S.W 'Phone: Brixton 2417. [0

1921 Scott Squirrel, with sporting Canoelet sidec electric lights, horn, speedometer, insurance licence paid, mileage 200; £170, or offer.—Carpent High St., Baldock, Herts. [3

SCOTT (November, 1920), done under 4,000, sto 12 months, perfect condition, and runs magn cently, full Lucas equipment, licence paid; any tri £85.—Hunt, Llanwenarth, Abergavenny. [29

1920 Scott Combination, 3¾h.p., twin-cyl., 2-stro water-cooled, electric lamps and batteries, spee meter, Easting screen, Tan-Sad pillion seat, tax p for 1921; £125; easy payments.—Harrods, Ltd., 1 Brompton Rd., London. [39

SCOTT Combination, 1920, run under 1,000 mi complete with horn, lamps, Low generator, speedometer, mirror, spare petrol tank, tools, spares, for year, fully insured; what offers?—Apply, Watters 36a, Elgin Crescent, W.11. Tel.: Mayfair 937. [29

SCOTT Combination, 1921 model, fitted with c wheels, Scott sidecar, oversize tyres, spee meter, Lucas dynamo, lighting set, Lucas electr horn, mirror, luggage grid, Tan-Sad pillion s licence paid until December, only done 150 mi indistinguishable from brand new; cost £245, our pri for quick sale £175.—Braid Bros., Midland Gara Colwyn Bay. Tel.: 105. [39

Service.

SERVICE, 1916, 2¾h.p. Peco engine, 2-speed, stroke, condition as new; genuine bargain; £3 Williams, c/o Anderson's, Nurserymen, Maidenhea [30

Singer.

1914 Singer, 2¾h.p., 2-speed, clutch, good con tion; any trial; £28.—Wadlow, Orpington, Ke [39

1914 3½h.p. Singer, cane torpedo sidecar, Grudo re accessories; expert examination; 50 miles to p chaser; £45, nearest.—Harkness, Hazeldene, Hitchin [29

4½h.p. Singer Combination, countershaft 2-spe clutch, K.S., Mills-Fulford sidecar, take 5 n where; £48, near; solo £36; exchanges.—Argyle Lod Newton Rd., Burton-on-Trent. [29

Southey.

SOUTHEY'S 2½h.p. 2-stroke 2-speed Models, lam horn, licence holder, tools; £60.—Southey and Berkhamsted. [0

SOUTHEY 2½h.p. 2-stroke, 2-speed, Chater-Lea Sturmey-Archer gears, clutch and kick start lamps, horn, licence holder, tools; £67.—Southey Co., Berkhamsted. [0

Sparkbrook.

SPARKBROOK 2¾h.p., 2-speed, 1916, lamps, ho tax paid; £35.—78, Wimborne Rd., Bournemou [30

Stan.

SPECIAL Offer of new Stan 2½h.p. 2-stro machines, 6 single speed, 2 2-speed, all fitted w Wall engines, Arden spring forks, Dunlop stud tyres and belts; price £36 and £44 respective F.O.R.—This offer cannot be repeated, so send at o to L. Lawrence, Westwood Heath, near Coventry. [X69

Sun.

1921 Sun-Vitesse, 2-speed, clutch, taxed, done miles, electric lighting; must sell, near £60.—King, London House, Hereford. [29

1920 Sun-Vitesse, 2-speed, h.b. clutch, tax pa tools, no accessories, under 1,000 miles, sto 10 months; £47, no offers.—Gauntlett, Montpell Cheltenham. [3

Sunbeam.

E. KICKHAM for Sunbeam, sole agent for Bri and district.—Stokes Croft, Bristol. [3

WAUCHOPE'S, 9, Shoe Lane, London, E.C. 3½h.p. Sunbeam and sidecar, 1915; £90. [4

SUNBEAM 6h.p., Gloria sidecar, well equipped, cellent order; £85.—Bunting's Exchange, Wea stone. [3

4h.p. Sunbeam Combination, 1919 French Milit Model, chain-cum-belt; price £110.—South Berkhamsted. [0

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MOTOR CYCLES FOR SALE.

Sunbeam.

RAND New 8h.p. Sunbeam Combination, spare wheel, unridden, unregistered; £175.—Fitt, 102a; rch St., Chelsea. [3464

21 Sports Sunbeam, perfect, unscratched; £130.—Jackson, Heatherlea, Grappenhall Rd., Stockheath, Warrington. [3641

NBEAM Combination, 1920, mileage 500, fully equipped, perfect; £125. — The Surgery, 216, tobello Rd., W.11. [3840

21 Sunbeam (new April), Lucas lamps, horn, perfect condition; £125.—Graham, East Lodge, Warre Manor, Wargrave. [3741

NBEAM Combination, 8h.p., electric lighting, hood, screen; £150; seen by appointment.—Hampton, Muswell Hill Rd., N.10. [3431

NBEAM 3½h.p., T.T., 1919, indistinguishable from new, tax paid; bargain, £105.—322, Green es, Finsbury Park, N.4. [3692

NBEAM 1920 3½h.p. Combination, fully equipped and perfect; £105.—Clapham Motors, High St., pham. 'Phone: Latchmere 4290. [2874

TE 1919 3½h.p. Sunbeam, Gloria sidecar, Lucas lamps, horn and tax, perfect order; £120.—Tays, The Esplanade, Weymouth. [3063

16 3½h.p. Sunbeam, like new, Lucas lamps, horn, with Gloria sidecar; £130, or separate; offers.—Pchas, Hockliffe St., Leighton Buzzard, Beds. [2957

NBEAM 3½h.p. Semi-sports Model, late 1920, without fault or scratch; cost £164, with lamps horn; sacrifice £120.—Tupling, Ltd., Whitchurch, Sp. [3031

.p. Sunbeam Combination, 1919 French military model, wind screen, lamps, tools; £115; lack ure cause disposal.—Rattray, 7, Blakehall Rd., Carsion. [3362

21 3½h.p. Sunbeam Combination, Lucas Magdyno, electric horn, legshields, wind screen, like new; £5.—J. H. M. Yeomans, Newton Rd., Burton-on-Trit. [3178

TE 1920 8h.p. Sunbeam Combination, Lucas lamps, horn, and tax, only run a few miles and anteed as new; £200.—Tilleys, The Esplanade, Wmouth. [3066

20 3½h.p. Sporting Sunbeam with Dinky sidecar to match, condition as new, fitted up regardless; £7, or near offer.—Beaurain, 51, Wilberforce Rd., Finsbury Park. [3712

h.p. Sunbeam, Montgomery sidecar, fully equipped, mechanism, appearance as new, black-gold discs; trial or guarantee; £105 lowest.—Nurseries, Bransd Rd., Worcester. [3545

TE 1919 Sunbeam Combination, 3½h.p., tax paid, electric Lucas lamps, perfect condition; bargain, £0, near offer. After 6 o'clock.—133, Liverpool Rd., ington, London, N.1. [2947

21 3½h.p. Sunbeam Combination, delivered last month, lamps, wind screen, etc., licensed, cost £5, receipt shown; genuine bargain, accept £170.—11 Claremont Rd., Rugby. [X6922

20 (August) 3½h.p. Sunbeam Combination, leg shields, Lucas fittings, interchangeable wheels, Binks, as new, unscratched, not done 800 miles; £0.—14, Estcourt St., Devizes. [2899

NBEAM Combination, 3½h.p., 1918, 3-speed countershaft gear, K.S., coachbuilt sidecar, lamps accessories, tax paid; best offer over £100 secures; dealers.—45, West St., Leytonstone. [3424

NBEAM 1915 3½h.p. Model with sidecar, complete with all accessories, excellent condition; £1; deferred payments if desired.—Parker's, Bradgate, Bolton; also 245, Deansgate, Manchester. [X6741

NBEAM 1920 3½h.p. Combination, Lucas electric lighting, mudshields, low mileage, indistinguishable from new; £170; deferred payments if de—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6742

p. Sunbeam Combination, July, 1920, spare wheel, Lucas lamps and horn, Easting, mechanical oil p, Binks, carefully used, excellent condition, tax buying car; £225.—Sommerville, St. Phillans Pl., Newport, Fife. [2871

NBEAM 1921 Sports, mileage 100, Lucas accessories, speedometer, electric tail light, spares; sell or exchange new Triumph or Brough Superior, either way.—Heath, 168, Wellington Rd. South, Hounslow, Middlesex. [3671

NBEAM 1921 8h.p. Combination, Lucas Magdyno lighting, electric horn, ammeter, Cowey trip speedometer, tax paid, mileage 2,000; only wants seeing; £2, or near offer.—F. H. Carpenter, Manager, White Hse Restaurant, Boor Lane, Leeds. [3243

21 Sunbeam 8h.p. Combination, completely equipped with Lucas Magdyno electric lighting, spare wheel unused, screen, hood, speedometer, etc., condition like new, small mileage; cost over £300 recently, accept £248.—Apply, Lark House, Longcartway, Farnworth, nr. Bolton. [3353

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

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Sunbeam.

19 21 3½h.p. Magdyno Sunbeam, actual show model, nicely run in, otherwise as new, enamel unscratched, tyres unpunctured, aluminium number plates, incorporating licence holder, Cowey horn, valve spring protectors, lean-over stand, spares; cost £190, accept £170.—Alan Fraser, 23, Elm Park Gardens, S.W.10. Kensington 7209. [3721

Torpedo.

TORPEDO, Precision 1914 3½h.p., perfect; £30.—Mitchell, 44, Wellington St., Camden Town. [3457

Trump.

4 h.p. Trump-Jap and Coachbuilt Sidecar, 3-speed gear (bub), all lamps, tax paid, nice condition; 48 gns.—3, Parker Lane, Burnley. [X6611

Triumph.

PREMIER Motor Co: for 1921 Triumphs

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WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; W.D.B. (renovated), £95; Type H 4h.p., 3-speed, £115; Type S.D., chain drive; £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

TRIUMPHS, 1918; from £50. — 24, Balliol Rd., North Kensington. [3482

TRIUMPH, new 4h.p. Type H. solo and combinations in stock.—Moss, Wem. [X6905

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X6622

19 18 C.S. Triumph, perfect; any trial; £58.—8, Leybourne Rd., Leytonstone. [3445

TRIUMPH 3½h.p., Gradua gear; £20, quick sale.—Merriman, Solicitor, Pembroke Dock. [2989

£27.—3½h.p. Triumph, new engine parts, tyres, licence.—Sidey, Pebmarsh, Bures, Essex. [2538

TRIUMPH, single gear, less cylinder; first £20.—Platts, 602, King's Rd., Fulham, London. [3509

19 19 Triumph Combination; £85. — James, c/o Bradmore's, 482, Harrow Rd., Paddington. [3134

BABY Triumph, 1915, tax paid, perfect condition; first offer £40.—16, Belmont Rd., Maidenhead. [X6625

£22.—1914 3½h.p. Triumph, good condition, Bosch mag., slight adjustments.—27, Cantrell Rd., Bow, E. [3218

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH 1919 Combination, all on; £87, or exchange good solo.—386, High Rd., Leytonstone. (P) [3730

£26.—3½h.p. Triumph, clutch, D.R. bars, dropped frame, fast, equipped.—King, Egrove Farm, Oxford. [X6860

COUNTERSHAFT Triumph, like new throughout, accessories; £68.—30, Harold Rd., Beulah Hill, S.E.19. [3516

TRIUMPH, 3½h.p., 2-speed, accessories, lamps, tax paid, perfect condition; £35.—57, Rectory Grove, Clapham. [2996

19 20 Triumph 4h.p., makers' leg shields, Bonniksen speedometer; £80.—Jacobs, Princes Risborough. [3536

TRIUMPH (renovated £95), registered May, condition as new; what offers?—Box 5,570, c/o *The Motor Cycle*. [3084

£85 for Early 1920 Triumph, all accessories and tax, done under 2,000 miles.—Grimes, 18, Bruton Place, W.1. [3799

TRIUMPH, 3½h.p., 3-speed, and Lambert sidecar, perfect throughout; nearest £65.—Ward, Broad St., March. [X6608

19 20 Triumph Combination, Easting, spares; £110, bargain; only wants seeing.—112, Canbury Park Rd., Kingston. [3775

£23.—1911 Triumph, clutch, perfect order, tyres as new, take 2 anywhere.—Ewers, Newton Rd., Burton-on-Trent. [3399

TRIUMPH, 1918, countershaft, fully equipped, perfect order; £55.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [2924

19 20 Triumph 4h.p., countershaft, perfect condition, well equipped; £80.—17, St. Charles Sq., North Kensington, W.10. [2004

19 20 Triumph 4h.p., countershaft, exceptional condition, tools, licence; £75.—106, Church St., Chelsea, S.W.3. [3670

19 18 Triumph, 3-speed, clutch and K.S., absolutely O.K., going abroad; must sell, £60.—19, Wellington Rd., Charlton. [3980

TRIUMPH, 1914, 3-speed and clutch, overhauled, new tyre, belt, lamp; £48.—Stanton, 11, Gascoyne Rd., South Hackney. [3221

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Combination, in good running order, kick start; £47/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [3954

1914 Triumph, 3-speed, lamps, horn, tyres new, tax paid, £52; sidecar for same, £5.—Guys Retreat, Buckhurst Hill, Essex. [3101

TRIUMPH, countershaft, good condition, fast and sporty, all on, tax paid; £60.—153, Leathwaite Rd., Clapham Common. [3514

3½h.p. Triumph, clutch, K.S., B. and B., accessories, sound and reliable; 38 gns.—Jesmond Dene, Woodstock Rd., Walthamstow. [3239

TRIUMPH, late 1919, bulbous back, licensed, equipped, as new, fast and powerful; £95.—28a, Danehurst St., Fulham. [3723

1919-20 Triumph, not ridden 1,000 miles, as new, all accessories; £90.—Webber, 68, Durants Rd., Ponders End, Middlesex. [3006

1920 Triumph Combination, excellent condition, guaranteed; £100.—Gead, 122, Maida Vale. 'Phone: Hampstead 1353. [3310

TRIUMPH 3-speed Countershaft Combination, engine No. 55702, tax paid; what offers?—Murrell, Godstone Rd., Caterham Valley. [2885

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parkers', Bradshawgate, Bolton: also 245, Deansgate, Manchester. [X6719

TRIUMPH, 1920, November, 3-speed, countershaft, perfect condition, unscratched, £15 accessories, tax.—288, Sangley Rd., Catford. [3682a

TRIUMPH 1911-12, complete with 2-speed N.S.U., magneto, and carburetter, only wants engine; £10.—Condon, Capel St., Dublin. [3610

1914 Triumph, clutch, gears renovated, accessories, coachbuilt sidecar; trial; excellent condition; £65.—Glynne, Solicitor, Bangor. [2954

TRIUMPH, 2 only left, overhauled, W.D., late models; £57, £59.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [3792

TRIUMPH, fixed gear, 1914, discs, Klaxon lamps, not much used, perfect; £36; tax paid.—7, Newbury Rd., Newbury Park, Ilford. [3877

TRIUMPH-GLORIA Combination, 1920, all accessories, insurance and tax paid; £125, or nearest.—125, Sumner Rd., Peckham, S.E.15. [3059

1914 Triumph, 3-speed hub gear, lamps, speedometer, good condition, tax paid; what offers?—66, Hermon Hill, Snaresbrook, E.11. [3829

SEVEN Triumphs, 1918, countershaft machines, engine Nos. 55-58,000; what offers?—G. Bell, 24, Chevening Rd., E. Greenwich, S.E.10. [3979

1915 Triumph Solo, T.T., fully equipped and perfect throughout; £27.—Clapham Motors, High St., Clapham. 'Phone: Latchmere 4290. [3897

TRIUMPH, 1919, excellent condition, with smart comfy sidecar, lamps, etc., excellent condition; £80.—Bunting's Exchange, Wealdstone. [3706

TRIUMPH Junior, latest, Cowey trip speedometer, etc., all new, guarantee given; take 60 gns.—Rev. Coote, 1, Ambrosden Av., Westminster. [2900

TRIUMPH 3½h.p., clutch model, renovated, excellent condition, spares worth £4; £40.—Rev. F. Wilson, Pound Rd., Beccles, Suffolk. [3531

TRIUMPH Combination, overhauled by makers and re-enamelled; bargain, £42; lady's cycle taken in part.—74, Faircross Av., Barking, Essex. [3356

TRIUMPH Junior, late 1919, in perfect running order, complete with lamps, etc.; 50 gns.—Mattock Motor Co., Mattock Lane, Ealing, W.5. [3656

3½h.p Triumph, C. and K.S., thoroughly overhauled, lamps, horn, tools, pillion seat, tax paid; £35.—4, Orchard Terrace, Bedonwell Hill, Belvedere. [3297

TRIUMPHS.—1916 C.S., £70; 1919 C.S., £64, 3 months' guarantee given; also 1914 3-speed S.A. hub gear models, £45.—Ross, 86, High Rd., Lee. [3325

1919 Triumph de Luxe Combination, new condition, tax, screen, grid, lamps; best offer over £115 accepted.—39, Warren Rd., Wanstead, Essex. [2901

1920 Triumph Combination, Watsonian sidecar, run 2,000 miles, lamps, horn, tools, etc.; £120, or close offer.—S. Nunn, Garboldisham, Attleborough. [2960

1920 Triumph, speed model, single gear, fully equipped, perfect condition; £80.—Farrington, 1, Highfield Rd., Chorlton-cum-Hardy, Manchester. [3603

TRIUMPH 3½h.p., in really good order; £35.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, S.W.2. (Half minute from Brixton Skating Rink). [3926

TRIUMPH, late model, 4h.p., countershaft 3-speed, enamel, plating, and mechanism splendid order, equipped; 60 gns.—30, Crystal Palace Park Rd., Sydenham. [3725

TRIUMPH-GLORIA Combination, Oct., 1919, Lucas lamps, Cowey speedometer, engine No. 65749, excellent condition; £100.—20, Hart Grove, Ealing Common. [4009

TRIUMPH, 1919 (July), 4h.p., fast, excellent condition, lamps, tools, speedometer, Klaxon horn; £85, or offer.—Gee, 10, Alexandra Court, Queen's Gate, S.W.7. [3753

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1919 Triumph Countershaft Combination, la Cowey horn, sidecar new, splendid condition; trial; tax paid; £92.—Guys Retreat, Buckhurst Essex. [

£36, or nearest.—3½h.p. Triumph, original en new N.S.U. gears, new Dunlops, licensed, trial, under 200 lb.—Dyer, Filleigh, South Mo Devon. [

TRIUMPH, 1918, 4h.p., countershaft, engine 52057, perfect condition; £65.—Smith's, Chalk Farm Rd. (opposite Chalk Farm Tube Stat N.W.3. [

1920 4h.p. 3-speed Triumph, lamps, horn, tools, shields, comprehensive policy up to May, splendid condition; nearest £100.—Coles, 1, Sheep Bicester. [

COUNTERSHAFT Triumph, new, unridden and registered; 90 gns., a snip.—Miles, 11, Chich Rd., West Kilburn, N.W.6 (1 min. Kilburn Tube). [

1920 Triumph-Gloria Combination, Cameo, la mileage 3,500, engine 66611, tax paid, ance till January; £120.—Adams, 317, Squires Finchley. [

£48.—Triumph 3½h.p., 3-speed hub, clutch, starter, all on, smart appearance; photo; idle time; rail paid, or ridden away.—Morgan, Schoolm Ystradgynlais. [

3½h.p. Triumph, 3-speed, pedal start, Hende lightweight sidecar, fully equipped, exceptio good condition, private owner; offers wanted.—8, A Park, Bristol. [

TRIUMPH 3½-4h.p., 1914, 3-speed hub gear, sidecar (Millford), tax, lamps, etc., pe £55, offers.—155, Ladbroke Grove, W.10. 'Ph Park 5541. [

TRIUMPH, 4h.p., countershaft, C.B. combina 3-speed, clutch, K.S., lamps, horn, tools, paid, good condition; any trial; £90.—249, Jun Rd., Holloway. [

TRIUMPH, renovated and overhauled, co shaft, 3-speed, tools, spares, lamps, Kl etc., tax paid; £80.—Hawkeswood, Field H Quarry Bank, Staffs. [

1920 4h.p. T.T. Triumph, special machine, h horn, spare valves, belts, mileage 2,000, tinguishable from new; £75.—30, Tudor Southend-on-Sea. [

1920 Triumph, Philipson pulley, Lucas lamps, 1,000 miles, 5 to 59.2 m.p.h. (timed), p off, 120 m.p.g.; £65.—Vos, 49, St. Andrews Rd St. Anne's-on-Sea. [

TRIUMPH Combination, 1919, countershaft, 3-speed, Lucas, Cameo, Klaxon, spares, p condition, nice appearance; £98.—151, Wilberforce Finsbury Park, N. [

TRIUMPH, W.D., renovated by makers, Lucas unused, and horn, tax paid, ridden 150 mile distinguishable from new; nearest £90.—Bather, M heath, Chelford, Cheshire. [

TRIUMPH (Jan., 1921), 4h.p., countershaft special coachbuilt sidecar, fully equipped less, unscratched, under 600 miles; £130.—Ba Petersfinger, Salisbury. [

4h.p. Triumph Combination, 3-speed, recently hauled, tyres nearly new, lamps, horn, spares, sidecar, Easting, perfect condition; trial; £75 Warwick Rd., Bowes Park. [

CROYDON Agent for Triumph motor cycles. models in stock ready for immediate deliv Moore's Presto Motor Works, Ltd., 145, North Croydon. 'Phone: 2624. [

£67.—1916 3-speed countershaft Triumph com tion, 1920 Montgomery sidecar, hood, lamp surance, etc.; seen and tried.—62, Cottage Grove ham Rd. Station, S.W.9. [

4h.p. Triumph, 3-speed, tax paid, all on, goe money; 42 gns.; lovely condition, 1914 gu teed, or exchange.—Heppelthwaite's, 19, Wilcox South Lambeth, London, S.W.8. [

3½h.p. Triumph, C.B. sidecar, Bosch, D heavies, lamps, horn, speedometer, S.A. 3- mechanically perfect; any trial after 7; 80 gns.—D 13, Colville Rd., Lower Edmonton. [

TRIUMPH 1920 4h.p., 3-speed, mileage original tyres good, lamps, Cowey horn, ometer, mirror, spares, etc., excellent condition; Janes, 23, Walton St., Aylesbury. [

TRIUMPH Combination, 1914, 4h.p., 2-speed, and kick start, Easting screen, speedo lamps, etc., insured, tax paid, excellent cond £70.—85, Dalberg Rd., Brixton, S.W.2. [

TRIUMPHS.—We are the North London agents can give immediate delivery; chain drive, cum-belt models.—Jones Garage, Muswell Hill, end at Woodside Parade, North Finchley. [

TRIUMPH Combination, 55,857, engine throughout, nearly new bulbous back si £75; similar machine solo, unregistered, £ Hayns, 28, Church St., Greenwich. 'Phone: [

MOTOR CYCLES FOR SALE.

Triumph.

9 20 Triumph-Gloria Combination, guaranteed perfect, Lucas lamps, Cowey speedometer, Cowey horn, Tan-Sad, cost £192; bargain, £128.—31, Claremont Rd., Alexandra Park, Manchester. [X6930

h.p. Triumph Combination, late 1918, recently overhauled and guaranteed perfect throughout, sidecar as new, tax paid; £85; exchange considered.—Langford's, 37, Cricklewood Broadway, N.W.2. [3556

VERY Smart 4h.p. Countershaft Triumph C.B. Combination, specially renovated, pre-war colours, leg shields to match, fully equipped, whole turnout as new; bargain, £90.—1a, Richardson Rd., Eccles, Manchester. [2944

VAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all models in stock, new chain drives, new chain-cum-belts, solos and combinations; immediate delivery; supplied on easiest of easy terms; trade supplied. [4537

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

TRIUMPH 1917, 3-speed countershaft; Triumph 1914, Philipson pulley; both completely overhauled and stove enamelled as new; bargain, £97 the two, or would sell separately.—Cooper, 8, Commerce Rd., Wood Green, N. [2942

TRIUMPH 1916 4h.p. C.B. Combination, 1921 clutch, new tyres, speedometer, lamps, Klaxon, licence, tools, many spares, excellent condition; £80 for quick sale; seen any time.—Radcliffe, 197, London Rd., West Croydon. [3763

TRIUMPH, 1917, W.D., renovated April, 1921, since only 500 miles, canoelet, P. and H. head lamp and two covers new April, splendid condition, cost £45; offer; seen any time.—Thomson, 3, Keslake Rd., Putney. [3024

TRIUMPH 4h.p. 3-speed Countershaft Combination, unscratched, electrically equipped, full insurance, accessories, tax paid, cost over £175 last year; trial or examination; £115.—Davy, 82, Larden Rd., Acton, W. [3952

9 21 (April) Triumph Combination, discs, lamps, knee-grips, tools, luggage carrier, Magdyno; cost £80, scarcely used; a bargain, £185; deferred terms or exchange.—Bacon and Wynn, Ltd., 870, Stratford Rd., Birmingham. [X6949

TRIUMPH, 1921, chain model, purchased brand new May, scarcely run in, fitted with bulbous side-screen, Easting screen, beautiful condition owing to very low mileage; cost £165, will accept £135.—3, Sutherland Av., Sunbury-on-Thames. [3090

1913-14 F.E. K.S. Triumph, specially tuned engine, fast, decompressor, rebushed, Dunlops, P. and H., Xl-all, speedometer, practically as new, guaranteed perfect, ride 100 miles; £37/10, near offer.—57, Stopford Rd., E.13. [3803

OCTOBER (1920) Super-posh Triumph Combination, mileage 3,000, Smith's speedometer, Lucas light, Lucas horn, hood and screen, smartest outfit in the district; cost £190, will accept 130 gns.—Cobbold, Clan Mount, Summerhill Rd., Dartford. [3052

TRIUMPH W.D.B. Type, delivered by makers Aug., 1920, engine 55714, condition as new, small mileage, long nickel exhaust, or standard silencer, F.R.S. lamp, Klaxon, tyres unpunctured, rear 3in., licensed; £67.—Lt. Giddy, Royal Marines Barracks, Deal. [3768

TRIUMPH Model H Combination, 1919, excellent condition, engine and gear box overhauled, lamps, screen, spare covers, tools, etc., not done 8,000 miles; a real bargain; £115 for quick sale; seen by appointment.—Wilkins, Simpson (opposite Olympia), London. [3872

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

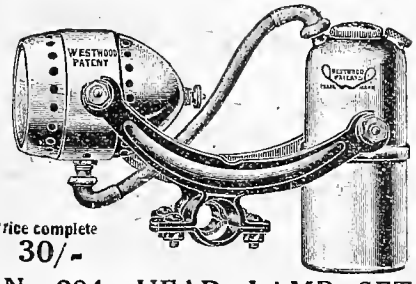
STARTING Triumph, 3½h.p., hand clutch, Philipson, countershaft model, tank, Cowey trip speedometer, Klaxon, large P. and H. lamps, heavy Dunlops, guaranteed perfect, thoroughly overhauled, re-enamelled, all road tax paid and A.A.; bargain, £50.—27, Flaxton Rd., Plumstead, London. [3782

1920 4h.p. Triumph Combination, equal to new, luxurious coachbuilt sidecar, cost over £50, with room for 2 gallons petrol, oil, spares, top for luggage, lockers, also seat locker, storm apron, all lamps, spares; best cash offer over £110.—Trnefitt, Hotel Splendide, Esplanade, Scarborough. [3812

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall hood, 4-point attachments, £135 cash; easy payments, only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

Union.

1920 (July) 2¾h.p. Union 2-stroke, 2-speed, clutch, K.S., B. and B., E.I.C. mag., mechanically sound, not used this year; £42.—J. Raper, Lanchester, Durham. [3944



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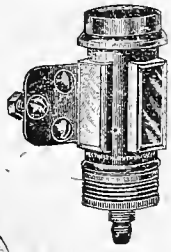

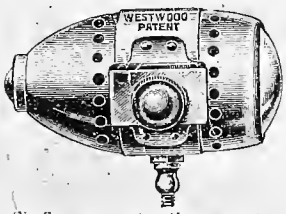

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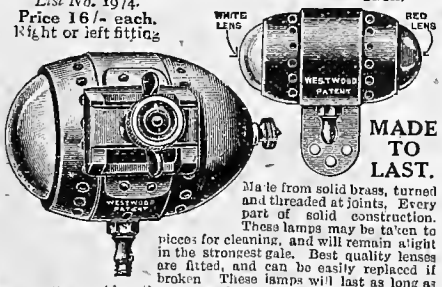
Similar in construction to 19/4 Lamp, but having 1⅞in. diameter lens, and also Ruby Lens in rear. List No. 205. Price **8/6** each. Plated finish.

SIDE LAMP.

List No. 19/4.
Price 16/- each.
Right or left fitting

SIDECAR LAMP.

List No. 19/2
Price 6 - each.



MADE TO LAST.

Made from solid brass, turned and threaded at joints. Every part of solid construction. These lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on, and are absolutely rustless.

"DAYBEAM"
ELECTRIC LIGHTING OUTFITS

Solo £5 5 0. Combination £7 7 0

ILLUSTRATED LISTS FREE.

Licence Holders

(For Motor Cycles)

Number plate fitting, as illustrated, complete with nuts and screws.
List No 214. 3/6 each.
Handlebar fitting, complete with 2 pairs of clips and screws.
Price 4/- each
MOTOR CAR PATTERN, with complete attachment for fitting to either woodwork or metal work. List No. 216. 3/6 each.

Westwood Special Lines are stocked by all reputable agents.

TRADE MARK
WESTWOOD
RIM & PATENTS LTD
LAWDEN RD BORDESLEY BIRMINGHAM.

MOTOR CYCLES FOR SALE.

Velocette.

VELOCETTE, not done 200 miles; price £67/10.—Welford, James St., Brighton. [3719

NEW Velocette, July, 1921, 2-speed, not ridden 5 miles, unsoiled; £60.—21, Claremont Rd., Southport. [X6882a

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

VELOCETTE, done 2,000, delivered 1920, like new; £50; ride 50 miles to purchaser.—Saunders, 34, Carlton Place, Southampton. [3230

1920 Velocette, 2¼h.p., 2-speed, chain drive, all on, and accessories, tax paid, perfect order; £50.—42, Nelson St., Hyde Park, Doncaster. [2917

WONDERFUL Value.—Special offer of a new 1921 Model D2 2¼h.p. 2-speed Velocette, with new type internal expanding front brake; £65 cash, or £22/12 down, and 12 monthly instalments of £3/15.—The Premier Motor Co., Aston Rd., Birmingham. [X6883

1921 Velocette supplied on deferred payments at only 4% extra, delivery within 3 days from receipt of deposit; 2¼h.p. 2-speed £75, 3-speed £85, ladies' open frame £78; no enquiries made, no guarantor required.—Buy your machine direct from the Velocette specialists: The Premier Motor Co., Aston Rd., Birmingham. [X6887

LATE 1919 Velocette, black and gold, Sturmey-Archer 2-speed, neat undamaged appearance, faultless mechanically, 120 per gallon, comfortable pneumatic grip handle-bars, automatic lubrication, all-chain drive, an economical, light, and easy starting machine. Levis size and weight, tax paid; £47/10; approval willingly.—Laver, Unthank Rd., Norwich. [3053

Verus

VERUS-BLACKBURNE, 2-speed, clutch, kick starter, almost new, tax paid; real bargain, £68.—95, Richmond Rd., Twickenham. 'Phone: 217 Richmond. [3769

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0502

Victor

80 m.p.h.—Victor 1921 sports model, 8h.p. Precision engine, mileage under 500; £75.—Write Lowell, 6, Mount Pleasant Rd., Ealing. [3495

Villiers.

1916 Villiers 2¾h.p., excellent condition; bargain to clear, £18/10.—Gead, 122, Maida Vale. 'Phone: Hampstead 1353. [3309

2½h.p. Villiers, Albion 2-speed, M-L mag., Bicks carburetter, Dunlop tyres, in good running order; £30.—J. Hall, Broadleys, Buscot, Lechlade, Glos. [3240

Vindec.

OLD Type 5-6h.p. Vindec Twin, Bosch, B. and B., strongly built, powerful, new wheels, good tyres and belt, overhauled, in good order; £25.—Spion Kop Motor Works, Peasedown, Bath. [X6630

Wilkin.

WILKIN.—All models in stock; deferred payments. Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6732

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6743

Wolf.

4h.p. Wolf-Jap, 3-speed, good condition; £45, complete.—54, Somers Rd., Walthamstow. [3985

1915 2¾h.p. Wolf-Jap, 2-speed, electric light, new tyres, insured, tax paid; £36.—266, Streatham High Rd., S.W.16. [2911

WOLF-J.A.P. 2¾h.p., new tyres, belt, etc., all on, splendid condition, mechanically perfect; £28, offers.—47, Nicholas St., Hoxton, London, N.1. [3512

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler.

55 GNS.—1920 Wooler, just overhauled by makers, perfect, licensed, equipped; must sell.—20, Treen Av., Hoggers Corner, Barnes. [2928

NEW 2¾h.p. Wooler, flat twin, Brooklands sports model, fully equipped with accessories; price greatly reduced to clear £90; easy payments.—Harrods, Ltd., 118, Brompton Rd., London. [3932

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

1920 Zenith 5h.p., sporting, fully equipped.—Hands, Buller Barracks, Aldershot. [3265

ZENITH, hand new, 5h.p., sporting model, in stock; £115, Tippen, Marden, Kent. [3468

MOTOR CYCLES FOR SALE.

Zenith.

ALLAN GRUZELIER for Zeniths.

ZENITH-BRADSHAW, 3½h.p.; deliveries very shortly.

PLACE your order at once with the A.G. Zenith Service Depot.

ZENITH, 1921, all models, for immediate delivery.

ZENITH, 1920 (new), 8h.p. standard, £108; countershaft, £116.

90 BORE o.h.v. 1921 A.G.'s Competition Machine; £135.

ZENITH My Speciality.

THE Zenith is my mount, and has been for 10 years. Let it be yours.

PAY Me a Call, or write for particulars, and take advantage of the practical A.G. Zenith service.

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W. (Elevator, 7 Beak St.) [3142

ZENITH 5-6h.p. Combination, 1915, K.S., speedometer, lamps, horn; £75.—Rogers, 42, Church Rd., Heudon. [3612

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [2692

60 GNS.—8h.p. Zenith Sports, new tyres, tubes, Binks, Tan-Sad, speedometer, Klaxon.—84, Ilex Rd., Willesden, N.W. [3394

ZENITH.—All models, solo or sidecar; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X6730

ZENITH 6h.p. Twin Combination, countershaft, K.S., speedometer, wind screen, etc., splendid condition; £78.—Bell, Fire Station, Croydon. [3400

5-6h.p. Zenith, 1919½, engine No. 8/80397/A, lamps, Klaxon, discs, guaranteed perfect, original tyres. —153, Knollys Rd., Streatham. [3395

ZENITH Late 1920 5-6h.p. Twin, not done 500 miles, absolutely as new, tax and lamps; bargain, £85.—76, Cornwall Rd., Bayswater, W. [3757

29 GNS.—4h.p. Zenith-Gradua, 1914, clutch, perfect, unused 4 years, good tyres; must sell.—20, Treen Av., Hoggers Corner, Barnes. [2926

ZENITH Combination, 1920, countershaft, wheel discs, Tan-Sad, Klaxon, lamps, tax paid, perfect condition, spares; £139.—36, Alexandra Rd., Croydon. [3437

1920 Zenith 6h.p. Combination, Model H, all accessories, exceptional machine; £150; trial bona-fide purchaser by appointment.—Richardson, Bredon, Bromley. [3002

1919 6h.p. Countershaft Zenith Combination, Swan sporting sidecar, discs, lamps, all accessories, very sporty; excellent condition; £115.—65, High St., Hounslow. [2896

1920 Zenith, 8h.p., countershaft, Henderson Elite sidecar, outfit as new, guaranteed perfect; cost £220, sacrifice £130.—Scott, c/o Lindfield, High St., Crawley, Sussex. [3180

ZENITH, 1920, 6h.p., Montgomery sidecar, nearly new, complete with hood, screen, grid, horn, lamps, and tools, licensed; bargain, 100 gns.—Barker, Sacombe, Ware. [3256

ZENITH 8h.p., countershaft, Oct., 1920, run under 200 miles, equipped, taxed, insured May, unscratched; £105.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [3790

1919-20 8h.p. Zenith, clutch, Swan sidecar, electric lamps, horn, hood, screen, as new; any trial; £125, or exchange.—58, Whitney Rd., Leyton, E.10. 'Phone: Walthamstow 426. [2979

1920 Model H 8h.p. Zenith Coachbuilt Combination, speedometer, luggage grid, lamps, accessories; £135 cash, no offers entertained, would exchange 2-seater car.—Eacock, Sutton, Ely. [3073

1916 5h.p. Clutch Model Zenith, £58; also 5-6h.p. clutch model with large aluminium sidecar, electric lamps, tax paid, £70; also 5h.p. sports model in stock, new, £115.—Ross, 86, High Rd., Lee. [3323

SEPT. (1919), 5h.p. countershaft Zenith, Swan de Luxe sidecar, Easting, lamps, Klaxon, etc., beautiful combination; trial willingly; £120, offers; exchanges. —1, Boundary Rd., Notting Hill. 'Phone: Park 654. [2948

ZENITH 1921 8h.p. 90×77½ Clutch Model with K4 sports sidecar, complete with lamps and horn, in first-class condition; £145.—Chas. H. Littlewood and Co., Sherman Rd., Bromley, Kent. 'Phone: Bromley 464. [4010

ZENITH 1921 8h.p. Clutch Combination, electric lighting and horn, twin filament head lamp, special rear seat and grid, all on, unpunctured, mileage 350; £165; no offers; trial.—252, St. Ann's Rd., Tottenham. [3755

ZENITH Sports, 1919, delivered 1920, 6h.p., speedometer, horn, lamps, tyres and belt practically new, thoroughly sound throughout, knee grips, valve attachments; £75; private owner.—Apply, Woodcote, Garage, Epsom. [2862

EXCHANGES QUOTED

1922 CALTHORPE LIGHT CARS.

NEW MODELS AND PRICES.

De luxe, 2-seater, dickey seat	£410	0
De luxe, 4-seater	£435	0
Popular, 2-seater, dickey seat	£355	0
Popular, 4-seater	£375	0

1921 NEW MOTOR CYCLES.

MARTINSYDE 6 h.p. twin Combination	£145	0
COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£165	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four 3-sp. Combination	£170	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single-speed	£98	0
***DOUGLAS**, 2¾ h.p., 2-speed	£85	0
***DOUGLAS**, 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£160	0
DOUGLAS, 3½ h.p., 3-sp., sports model	£150	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON 1920 Big Four, 3-speed	£110	0
P. & S., 1920, 2 speed, 2¼ h.p., clutch	£55	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
BROUGH, 1916, 3-speed countershaft	£59	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2-speed, lightweight	£49	10
ARIEL, 1920, 3½ h.p., 3-speed c/shaft.	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10
TRIUMPH, 3½ h.p., clutch, good	£47	10
NORTON, 1920, 3½ h.p., sporting	£80	0

PASSENGER MACHINES.

ROVER, 1921 8 h.p. 2-seater,	£245	0
COVENTRY - PREMIER, 1921, disc wheels, small mileage, tax paid	£235	0
SUNBEAM 8 h.p. M.A.G. Combination	£145	0
HAZLEWOOD-J.A.P. 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting, tax paid	£105	0
MORGAN, 1915, sporting	£120	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£99	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£185	0
HARLEY 1920 Combination, electric	£168	10
READING-STANDARD 3-speed Com.	£110	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£75	0
ALECTO 3½ h.p. 2-sp, 1920 coach Comb.	£79	10
REX 6 h.p. 2-speed Combination	£52	10
ZENITH-GRADUA, 6 h.p., and Sidecar	£67	10
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£75	0
NORTON Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£125	0

Deferred Payments taken.
Cash offers considered for Second-hand Models.
TRADE SUPPLIED.

SUNDRIES.

1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1½	£2	2	0
New Army Knapsacks, 13½ × 11in.		5	6
Douglas Carburetter, used 15/-,	£1,	£1	10
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£18	10	0
Second-hand Douglas Magneto	£1	17	6
Late Amac Carburetter	£1 10 0 & £1 17 6		
Late B. & B. Carburetter	£1 12 6 & £1 19 6		
1920 Triumph Carb., nearly new	£2	15	0

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH 8h.p. Countershaft Combination, 1917, t oughly sound condition, lamps, horn, child's s hood, wind screen, licence, insurance, spare belt, ch tyre, 70 m.p.g.; £97/10, or offer.—21, The C Palmers Green. [3

ZENITH 1915 4h.p., speedometer, lamps, tools, minium disc wheels, recently painted, in excel mechanical condition, also sidecar to go with mach will sell both separately; offers wanted.—Box 6,408, The Motor Cycle. [1

ZENITH 1920 Twin, countershaft, clutch, k starter, 6h.p., and Swan £24 sidecar, all Dunlops, machine new condition and appearance, g anteed faultless, Easting wind screen, lamps, t splendid smart turnout, trial any time, tax paid: gain, £95.—Owner, 45, Charles St., Jubilee St., S ney, London. [3

Ladies' Motor Cycles.

AS a Lady's Motor Cycle, the Ivy is It.—Send details from the Midland agents, Frank W worth, Ltd., Birmingham. [X4

LADY'S Motor Cycle, Humber 3-speed, free eng run a few hundred miles only, condition gua teed as new; price £38.—Reid, 41, Commerce Fraserburgh. [3

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Ome Quadrants; exchanges entertained. — Bo Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and side £125; new 7h.p. Ariel combination.—Bo Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½ Ariel, £110; 1921 7h.p. Ariel, £125.—Bo Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 m £75/10; J.E.S. motor set, for cycle, £10/5; 3 twin Humber, 3-speed, £18/15.—Booths Motories, fax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S £12/10; 3h.p. Enfield, 2 speeds, £29/15; Chater-Lea, Grado gear, £21/15.—Booths Moto Halifax.

BARGAINS.—8h.p. Premier and sidecar, £85 3½h.p. free engine Triumph, £26/10; 3½h.p and M., 1914, £39/15.—Booths Motories, Halifa

BARGAINS.—4h.p. 1917 3-speed Douglas, £59 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾ Douglas, £37/15; 1917 Douglas, £55.—Booths Moto Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 192 speed Omega, £51/10; 1921 new O.K., £38 1921 2-speed O.K., like new, £52/10; several soiled machines at reduced prices; exchanges e tained, including push cycles. Visit us.—Bo Motories, Portland Place, Halifax. Tel.: 1062.

TRIUMPH Combination, £55; Ariel ditto, £40; paid.—H. Lander, Grelliers Wharf, Belvedere Lambeth, S.E.

MOTOR Cycle, 3½h.p., mechanical valves, hee low, 2 speeds, running order; £20 secures.—P Canon St., Taunton.

RICHMOND Park Garage, 110, Upper Richm Rd., East Sheen, S.W.14, 'phone Putney 2 offer the following machines for sale or exchange

R.P.G.—Douglas 2¾h.p., 1916, £36; also 1915, cellent condition, £32.

R.P.G.—Levis 2¼h.p., 2-speed, £28.

R.P.G.—Excelsior 1920 2-stroke, 2-speed, ha soiled, £35.

R.P.G.—4h.p. Triumph countershaft, fully equip tax paid, £52/10.

R.P.G.—8h.p. Matchless-Jap, 2-speed counters gear box, coachbuilt sidecar, good order, £5

R.P.G.—2¾h.p. twin cyl. Humber, 3-speed, excel order; £22.—Richmond Park Garage, 110, U Richmond Rd., East Sheen, S.W.14. 'Phone: Pu 2622. [3

ALLBER Garage, Thornsett Rd., Earlsfield, Lo (opp Earlsfield Station, L.S.W.R.). 'Ph Latchmere 4388. Exchanges and easy terms arran

ALLBER.—Indian 1916 5h.p., countershaft, 3-s clutch, kick starter, all on, splendid machine;

ALLBER.—F.N. 2¼h.p., 2-speed, clutch, shaft d good running order, all lamps, tax paid; £

ALLBER.—New Hudson 2¾h.p. 2-stroke, with la tax paid, very smart machine; £27/10.

ALLBER.—Metro-Tyler 1920 3h.p. 2-stroke, Al 2-speed gear, disc wheels, all red, sports m complete with accessories, tax paid; £45.

ALLBER.—Edmund, 1917, famous spring frame, field 2-speed gear, lamps, horn, speedometer good order; £45.

ALLBER.—Triumph combination, 4h.p., S.A. 3-s clutch, kick starter, all lamps, horn, tools, wind screen, tax paid, absolutely as new; £110.

ALLBER.—Indian combination, 1919, Power Phœnix sidecar, wind screen, all on, in bea condition; £95.

MOTOR CYCLES FOR SALE.

Miscellaneous.

IGHTWEIGHT, 2¾h.p., Bosch, spring forks, adjustable pulley, torpedo tank, less carburetter; £8.—Prince Regent Lane, Plaistow. [3050

h.p., Palmer spring frame, twin Peugeot engine, Bosch, Binks, almost new condition, very fast; bargain, £30.—Spion Kop Motor Works, Pease, Bath. [X6631

20 6h.p. Royal Enfield Combination, Binks, 75 m.p.g., spring pillar, spring fork links, Mag lighting, hood, screen, spare tyre and tube, splendid condition, £149.—Below.

16 3½h.p. Rudge and Sidecar, C.B., overhauled, acetylene lamps, all on; cheap, £55; £200 the H. J. Ludbrook, 238, High Rd., Leyton, E.10. [3202

VE are well pleased with machine sent." Thus four buyers last week. Still a few left. £15 25. "Come and see.—Bunting's Exchange, Wealdstone. [3704

21 Rudge Multi and Sidecar, £97/10; 1920 Dot-Jap, 2-speed, £43/10; Royal Ruby, like new, Triumph and sidecar, perfect condition, £75.—Liverpool Rd., Eccles, near Manchester. [3469

Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [7906

21 Rudge Multi Combination, beautifully equipped, bargain; 1919 Indian Powerplus combination, bargain; 1915 Scott combination, £65; 1917 Norton 2-stroke, £32/10; motor cycles bought, sold, exchanged.—Joseph Rhind and Co., Stone Place, Holme. [3959

p. Douglas Combination, wind screen, lamp, tax paid, snip, £75; Sun 2-stroke, enamelled as new, 3½h.p. Matchless-Jap, all on, tax paid, £26; car with screen, as new, 26in. wheel, complete, Clyno body, £4/10; Scott, £3/10; others in .—Mrs. A. and H. DeCort, 387, Caledonian Rd., on, N.1. [3882

C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged, new motor cycle combination or car supplied, or easy payments. — Fair Offer Car House, 5, St., Hampstead (near Hampstead Tube Sta 'Phone: Hampstead 3752. Hours 9-7, includ Saturdays. [2696

TOR Cycles at bargain prices.—Mebes and Mebes, the original light car specialists, have a number of 1920 motor cycles, popular makes, and new, for which they are prepared to accept reasonable offer. Call and inspect, and make your They are relinquishing this department owing ited space being required for light cars.—154-6, ortland St., W.1. 'Phone: Langham 2230. [3247

AY and Raynes' Great Clearance Sale.—2½h.p. vy-Precision, £27; 2¼h.p. Calcot, 3 speeds, £30; 3-speed Premier, £30; 3½-4h.p. twin Precision, 3½h.p. Norton, B.R.S. Model, very fast, £85; Levis, £35; 1921 British Excelsiors from £48; 1 Armis from £48; 1921 Hobart from £47/10; Omegas from £50; 1921 4h.p. New Scale, £100; Triumph, with 3-speed, grand condition, £58; £5 extra; 3½h.p. Triumph, 2-speed and clutch, sidecar, £4/10 extra; your old machine taken t payment for others. Give us a call, satisfaction guaranteed. Douglas Amac carburetter, as new, ; 4-cyl. magnetos, new, £9 each.—8, Low Rd., Doncaster. [3156

MOTOR CYCLES FOR HIRE.

) and Combination for hire after August; London istrict.—Box 5,629, c/o *The Motor Cycle*. [3463

GLAS Motor Cycle and Sidecar for hire, absolutely reliable, 15/- per day, 50/- per week-end, per week.—Write Rodwell, 38, Brook Green; or Haynes Garage, Western 2253. [3287

MOTOR ATTACHMENTS.

.. complete with bicycle, ready to ride away; 22/10.—Tacey, Ockley, Surrey. [3622

O-WHEEL de Luxe, perfect; £8, or easy payents.—Bell, Draper, Workington. [3889

O-WHEEL, running order, good condition; cept an offer.—80, Gellatly Rd., Nunhead. [2919

NG Motor Attachment, little used, licence paid; 12.—Bridge-of-Urr Post Office, Dalbeattie. [3095

A. Auto-Wheel and Cycle, good condition, new re and chain; £12.—Haggett, Builder, Arundel. [3174

IND New Economic Motor Set, complete; cost 26, accept £16.—106a, Gt. Moor St., Bolton. [3673

L B.S.A. Auto-Wheel, perfect condition, exceptionally fast; £9.—34, Chatterton Rd., Bromley, Kent. [3634

NG Bicycle Attachment and bicycle, complete, new; £19, near; exchanges.—184, Newton Rd., Burton-on-Trent. [2934

UDWHEEL, excellent condition, together with leigh cycle, accessories, tax; offers.—288, Sangey R., Catford. [3682

1¼h.p. J.E.S. on B.S.A., running order, Brooks, and, carrier, tyres, tubes A1, tax paid.—Froude, m, Reading. [3667

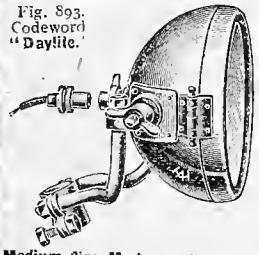
H.A.H. Complete Electric Lighting Sets.

ACCESSORIES. SPECIALITIES

NOTE REDUCED PRICES.

H.A.H. COMPLETE SETS.—Head, Side, and Tail Lamps, Accumulators, Carrying Cases, Switch, Wiring, etc. Ready for Installing.

Fig. 893. Codeword "Daylite."



NEW PRICES

Stem or Handlebar fixing. Best quality finish, adjustable, strong, weatherproof.

Nickel-plated, 60/-
Old price, 72/6
Black Plated, 65/-
Old price, 76/6

Medium Size Mode. Fig. 881. Best quality finish throughout. Totally insulated holder, with switch and 4-volt bulb, adjustable focus, adjustable brackets, dust and weather-proof front. As illustrated. Fig. 881.

NEW PRICES
Nickel .. 36/-
Black .. 39/-
Old prices:
Nickel .. 43/-
Black .. 47/-

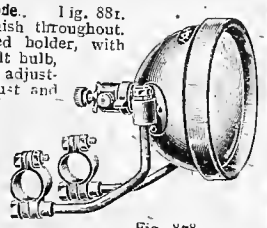


Fig. 878. Similar to Fig. 895, but smaller, and with special "pull on" front. Rubber ring casting for glass. New Price, Black-plated, 40/- each. Old Price, 55/-

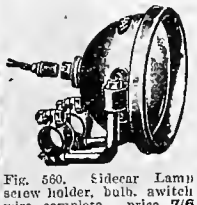


Fig. 560. Sidecar Lamp screw holder, bulb, switch wire complete. price 7/6 each; old price 8/6
Fig. 561. Ditto, bayonet holder, less switch, wire, etc. Price 6/6.

Fig. 573. Shows red daoger signal, lights No. plate. Complete with switch, bulb, wire, clip, etc. Price 7/6; old price 9/6.

"Force" Helleseo Battery, 9/11

986. Special metal case for "Force" 8/6. Complete rear set, 25/6.

'Speedolite' H.A.H. Patent Speedometer Lamp.

Fig. 847. Spring clip, switch wire, coloured bulb, etc., complete 7/6 each.
Fig. 449. 2-way 3/-. Fig. 410. Horn Tapper 2/-.

H.A.H. Switches

Fig. 428. 1-way Motor Cycle type. Price 2/- each. Screw Action, both contacts insulated. Fig. 429. Ditto Dash type 3/6.

A. H. HUNT, LTD.,
H.A.H. WORKS,
Tunstall Road, CROYDON, Eng.

Telephones: Croydon 2225, 2226.
Telegrams: "Keyage, Croydon."

MOTOR ATTACHMENTS.

SIMPLEX Attachment, with Raleigh cycle, perfect condition, complete 3-speed; £26, or separate, offers.—Cundell, Documents, Maresfield, Sussex. [3754

YOUNG and Cycle, late 1920, Amac, M-L, mechanical horn, lamps, tax and insurance paid, excellent condition; £20.—33, Davenant Rd., Upper Holloway. [3484

TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catalogue free.—Rayner, 10-12, George St., Blackpool. [X7038

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

TRICARS FOR SALE.

3½h.p. Minerva Tricar, 2-speed, Bosch, splendid condition; what offers, or sell separately.—Roberts, Walsall Rd., Lichfield. [3534

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—3, Kendall Mews, George St., W.1. [1442

2½h.p. Kingsway Scooter, as new, with sent.—Hayne, Auctioneer, Exmouth. [3330

KINGSBURY Scooter, as new, with seat; £25.—Rogers, 42, Church Rd., Hendon. [3614

A.B.C. Skootamota, 1921, new; £33.—Frank Whitworth, 139, New St., Birmingham. [X4178

NEW Kingsbury Scooter, unregistered; £20, or near offer.—Apply, 523, Croydon Rd., Beckenham. [3379

KINGSBURY 2¼h.p. Scooter, 2-stroke, splendid condition; £19.—D.J.E., 22, Cedar Rd., Croydon. [3138

KINGSBURY Scooter, with seat, new condition, only ridden twice; £20.—Gray's Garage, Watford. [3874

A.B.C. Skootamotas, new, latest model, carriage paid to any part of the U.K.; £30.—Fowler and Co., Cowes. [X6901

1921 Skootamota, just received from works, in crate; £31/10. — 54, St. James St., Ashted, Birmingham. [X4179

KINGSBURY Scooter, 2¼h.p., used for demonstration; £18, or offer.—Purchas, Hockliffe St., Leighton Buzzard, Beds. [2956

AUTOPED, 1920, flywheel magneto, lighting, taxed, and cash for lightweight, or sell cheap. — 78, College St., Salisbury. [3385

A.B.C. Skootamota, good condition, licence paid, owner purchased car; reasonable offer.—Mrs. Goldstone, Malmesbury, Wilts. [1380

WHIPPET Scooter, in first-class condition, licensed and ready to drive away; £18.—Ward and Avery, Ltd., Somerset Rd., Teddington. [3963

KENILWORTH Cyclette, seat model, late 1920, licensed, tyres, everything perfect; selling reason owner broke; accept £30.—Ibisons, Salem Rd., Bayswater. [3820

WALL Scooter, excellent order, lamps, horn, copper exhaust, foot brake, good tyres, good hill-climber; any trial by appointment.—Mitchell, Upperwood Hall, near Barnsley. [3264

AUTOGLIDERS.—Immediate delivery. What offers for three, new, one type B., two type D, each 2¾h.p., by Autogliders, Ltd., Birmingham.—Philpot, Engineer, Buckie. [2340

HOODS, WIND SCREENS, ETC.

SANDHAM'S make thousands of hoods every year; 50/- each. First quality twill waterproof.

SANDUMS.—The Sandum Patent Wind Screen of 100 positions, as shown at Olympia. Finest screen on the market; 90/-.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0635

CAMBER.—Hoods, 50/-; wind screens, 27/6.—Bright and Hayles, 78, Church St., Camberwell. [3567

HERCULES Hoods and Aprons. Write for list.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [1109

WIND Screen, new, complete with apron, side screen, etc., as fitted to 1921 Douglas sidecar; offers.—Pinkerton, Tisbury, Wilts. [3272

CELLULOID.—Clear transparent, cut to any size, 2/- per sq. ft.; carriage paid for cash.—The Essex Accumulator Co., Ltd., 499, Grove Green Rd., Leytonstone, E.11. [0680

WIND Screens Actually in Stock: Eastings, Baby, Standard, Royal, Bluemels latest; Cameo hoods, finest quality, waterproof, with curtains round; £3/5. —64 Bishopsgate, London. [0620

HOOD Materials.—3 hoops 10/-, brass fittings 3/3, extensions 2/6 pair, turnbuttons and eyelets 4/9 dozen, best twill 13/- yard 72in.—Henry Jones, 778, High Rd., Tottenham, London. [2316

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A37

Motor Cycles advertised by private owners are, when desired, marked (P).

BODIES.

S
FOR

SANDUM. the largest and most renowned sidecar body builders in country.

SANDUMS have put on the market over 10,000 sidecar bodies.

SANDUMS have the only adult 2-seater body on the market which is not unsightly. Write for our Dual-purpose Body catalogue.

SANDUMS Repair Bodies and Chassis of any make with the use of up-to-date machinery in four factories.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., London, W.C.1. 'Phone: Museum 3427. [0634

VENUS Step Bodies are the best for old chassis.

VENUS Bulbous Bodies are roomy and very smart.

VENUS Tandems hold 2 persons. Strong and light, but not unsightly. Get one.

VENUS Bodies are made in a factory and supplied direct. Catalogue free.

VENUS Sidecar Co., 6-14, Gourley St., S. Tottenham. [0519

SIDECAR Bodies, coachbuilt, best quality, £7/7; original £12/12.—64, Bishopsgate, London. [0614

CAMBER.—Coach Bodies; £4/17/6 to £12/17/6; to suit any make; lists free.—Bright and Hayles, 78, Church St., Camberwell.

CAMBER.—Sidecar repairs, repainting, and upholstering; estimates free.—Bright and Hayles, 78, Church St., Camberwell. [3564

ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

BASTONE'S for coachbuilt bodies (no better or cheaper house), sporting models, bulbous back and step pattern. All at low prices. Call or send your requirements.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6851

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

S
FOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Best value in Olympia Show.

SANDUM Chassis.—Insist on having our enclosed wheel type of chassis for safety.

SANDUM Models.—The Exquisite 23 gns., and sports 26 gns., are of distinctive appearance.

SANDUM Elite Sidecar, 27 gns.; the smartest sidecar on the road; highly recommended in "The Motor Cycle."

SANDUM Dual Purpose Sidecar (patented). A single or 2-seater sidecar as required in 5 seconds. Size of body as our single-seater Elite. Luxuriously comfortable seating for 2 adults, with the weight in correct position over rear axle. Finished in colours to suit any make of machine, 42 gns.; bodies only, 21 gns. The latest development of the 2-seater as designed by us, and approved by the recognised experts.

SANDUM Featherweight Streamline Body, smart and racy, weight 18 lbs.; price £4/17/6.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. Factories: 162 to 165, Pentonville Rd., N.; and Britannia Works, Britannia St., W.C. [0019

MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeams, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

MIDDLETON'S specialise in frame repairs of all kinds. Twisted motor cycle frames and forks promptly corrected.

SECOND-HANDS of various makes for sale. Your old sidecar taken in part exchange.

MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give to the bumps, not bash into them.

MIDDLETON'S, London's oldest established sidecar makers, wholesale, retail, and export, 27, Stroud Green Rd., Finsbury Park (near Tube). 'Phone: Hornsey 1584. [0522

Vivian Hardie & Lane Limited

GENUINE SALE
of
SHOP-SOILED
and
SECOND-HAND MOTOR CYCLES

6 h.p. A.J.S. Combination, 1920, hardly used, lamps, horn, spare wheel, Easting screen, etc., tax paid.

6-7 h.p. B.S.A. Combination, 1921, slightly shop-soiled, lamps, horn, spare wheel and tyre, hood, screen, tax paid.

LEVIS "Popular" late model, complete with accessories.

No reasonable offer refused.

First cash secures.

Large stock of Douglas spares.

TRADE SUPPLIED.

Immediate delivery of models, DOUGLAS, LEVIS, B.S.A., etc.

We have actually in stock a brand new 1921 Model 3½ h.p. Overhead Valve Douglas.

Price £150.

Call or 'phone for full particulars.

Showrooms wholesale and retail,

23, 24, Woodstock St.

(off Oxford Street),

New Bond Street, London, W.1.

'Phone: Mayfair 6559.
'Grams: "Ivhardilan, Wesdo, London."

SIDECAR ATTACHMENTS.

NEW Dinky Sporting Model, with apron, finis black, gold lined; £25.—Below.

NEW Mills-Fulford de Luxe, Harley-Davidson mo £30.—Elce and Co., 15-16, Bishopsgate Camomile St., E.C.3. 'Phone: Avenue 5548. [0

NEW Chassis, complete; £7; cost £15.—71, N Rd., Croydon. [3

COACHBUILT Sidecar, with new body; £10.— Delafield Rd., Charlton, S.E.7. [3

WICKER Sidecar complete, tyre nearly new; £3.—16, Mason St., Walworth. [3

CANOELET Minor Sidecar, new 1921; £11.—Mo Walker St., Eastwood, Notts [2

A.B.C. Sidecar, genuine chassis, good body; £1 West, 50, Maldon Rd., Acton, W.3. [3

CLYNO Coachbuilt Sidecar and Chassis, all compl 5 gns.—112, Gorton Rd., Coventry. [X6

MILLS-FULFORD Sidecar Chassis, complete wheel guard, third arm; £4.—Below.

DOUGLAS Chassis, complete; £4.—179, Brixton S.W.9. [X6

WATSONIAN Wicker Sidecar, only once u £7.—60, Bedford Rd., Harrow, Middlesex. [3

FOLDING Sidecar (Hopley), bulbous, practically off B.S.A.—6, Steele Rd., Leytonstone. [3

CAMBER.—Streamline sidecars, complete; £16 Bright and Hayles, 78, Church St., Camber

CAMBER.—Lightweight sidecars, complete; £17 Bright and Hayles, 78, Church St., Camber

CAMBER.—Semi-touring model; £18/10.—Br and Hayles, 78, Church St., Camberwell.

CAMBER.—Utility model, spacious locker; £2 Bright and Hayles, 78, Church St., Camber

CAMBER.—Tandem model, for adult and ch £26.—Bright and Hayles, 78, Church St., C berwell.

CAMBER.—We are the largest sidecar manu turers in South London. Repairs and repa ing a speciality.—Bright and Hayles, 78, Church Camberwell, London. 'Phone: Brixton 2951. [3

MONTGOMERY, Indian, coachbuilt, with fitting 7-9h.p. spring frame Indian; £18.—Moss, W [X6

BARGAIN; £40 spring wheel Millford coach side sacrifice £20.—Searles Stores, Southborough

COACHBUILT Sporting Sidecar, wind screen, Palmer tyre; £8.—Bell, Draper, Workington

SIDECARS, several cheap; room wanted; free.—57, Kenbury St., Camberwell, London

SIDECAR, off Harley, in good condition; £10 pointment.—Davis, 1, Norgrove St., Balham,

£7/10.—C.B. sidecar, serviceable, off 3½h.p. paid; photo.—Morgan, Schoolmaster, Ystradgy

CANOELET Model D4, new, lamp, generator, a £25/10.—Hartley, 20, Milford St., Colne, L shire.

BRAND New Swan Sporting Sidecar, blue fi £20.—Wood, 153, Leymoor Rd., Golcar, Hud field.

BARGAINS.—Shop-soiled £27/10 sidecar, Triumph or B.S.A.; £18/15.—Booths Mot Halifax.

BARGAINS.—Nearly new Henderson sidecar, Rudge, £16/15; Millford 27 gn. sidecar, n new, £16/10.—Booths Motories, Halifax.

BARGAINS.—New full-size coach body, locker u seat, £6/19/6; cane body, 25/-. — B Motories, Halifax.

SIDECAR, new bulbous back coachbuilt, with Do chassis, new tyre; £15.—Willings, 35, Effra Brixton, S.W.

HENDEE Special Sidecar, off 7-9h.p. Indian, Ea 4-point, new condition; £17, lowest.—McIr Barton-on-Humber.

BASTONE'S for sidecars and bodies; no bett cheaper house. Kindly inspect our models b purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other m in stock. Bodies from £4/13/6; complete sid from £14/18/6.

BASTONE'S.—We have a few soiled sidecars bodies to clear at low prices.

BASTONE'S.—Distributing agents for the fa Montgomery sidecars. Latest 1921 sporting other models in stock; trade supplied.

BASTONE'S (Sidecar Dept.), 228, Pentonville King's Cross, London, N.1. Tel.: 2481 N

A.B.C. Sidecar, new, uncrated, complete with si sprocket; £27/10, carriage paid.—54, St. J St., Ashted, Birmingham. [X

WATSONIAN Chassis, less tyre, £3; coachbuilt 50/-.—Smith's, 86, Chalk Farm Rd., op Chalk Farm Tube Station.

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
Telegrams: "Motorcycle," Coventry.
Telephone: 10, Coventry (5 lines).

ADVERTISING AND PUBLISHING OFFICES: 20, Tudor St., London, E.C.4
Telegrams: "Cyclist, Fleet, London."
Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings, Navigation Street, Birmingham.
Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

A British Success in Belgium.

THE victory of a British single-cylinder machine in last week's Belgian Grand Prix adds one more link in the long chain of successes in important events this year. It also emphasises the degree of perfection to which the British single-cylinder engine has been developed. In three big international races—the Tourist Trophy, the French Grand Prix, and now the Belgian race—three different British singles have beaten the field, which is more to the credit of our motor cycle industry than had one particular machine achieved a triple victory. The 500 mile race at Brooklands was the only other big event, and this we lost to a country which has developed the big twin machine as we have done the smaller and more economical single-cylinder engine; but even in this race, as meritorious as was the American victory, the speeds attained by the 1,000 c.c. twins were not so much higher, as might have been expected, than those of the singles of half the capacity. The British Empire has also produced the winning riders in all these races.

Sunday Competitions.

IT is with regret that once again we have to refer to Sunday competitions. Our attitude towards them is too well known to need explantation, as, for years, we have been averse to the organisation of sporting events on the Sabbath; in fact, our efforts have been the means of checking over-enthusiasm of trials organisers, who, at times, are apt to forget the feelings of the general public.

The Auto-Cycle Union shares our views, and has always been against anything which tended to undermine the popularity of the pastime; but since some of the local A.C.U. centres—especially those in the North—make a speciality of Sunday competitions, it would appear that the governing body has not full control over its subsidiary organisations.

Social club runs in comparatively small bodies are popular and do nothing but good if reasonably conducted. On the other hand, the passage of large numbers of motor cyclists, especially through quiet villages, is apt to disturb the peace of the inhabitants, and thus cause ill-feeling.

Numbered machines and riders merely aggravate the case, since they advertise the fact that a certain number of persons propose to enjoy their day's sport regardless of the feelings of the majority.

We would once more remind motor cyclists—whether competitors or otherwise—of the necessity for riding quietly through villages during church hours, or at such times as the community are on their way to places of worship, for it is largely due to inconsiderate driving at such times that a certain amount of prejudice still exists.

Accessibility.

QUITE recently we encountered a machine, designed since the war, in which it was a matter of extreme difficulty to adjust the tension of the magneto driving chain. Not only were the two holding-down nuts difficult of access, but they differed in size.

This example serves to illustrate a fault which is still only too common. What should be the simplest adjustments are often the most difficult to carry out for want of a little attention on the part of the designers. When, for some good reason, it is not possible to place nuts in a convenient position, it should at least be possible to supply a special spanner to facilitate removal.

On another occasion, a machine which passed through our hands had a number of nuts of odd sizes. No spanner in the kit would fit these nuts, and no fixed spanner could be bought to suit them, with the result that an adjustable spanner was the only tool available for removal.

We have often urged that standard nuts and fewer sizes be employed, and we would specially urge those who have their 1922 models in hand to study this point.

An index to the advertisements in this issue will be found on the page facing the back cover.

Honest and Smart.

I KNOW some cynics deny that in this planet of 1,500,000,000 inhabitants, there is even one individual who is both honest and smart. What would you say, dear readers, if I proved to you that such an individual exists? And in Manchester, of all places? I know he is smart, because he is organising mass production of one of my old brain-waves And I know he is also honest, because he has offered me a royalty on it. (Not less honest than I am, because I refused the said royalty, both as a journalist who likes to keep his independence, and also as one who remembers other makers' clumsier efforts in that line.)

What is it?

WHAT is it? Oh, just a prop stand. Are you annoyed with me? Well, wait till you've tried it. Do you really like lugging a 3 cwt. 7 h.p. twin on to its legs? Do you like searching a moorland road with flush edges for some sort of a kerb on which you can lodge a footrest whilst you light a pipe? Do you like being fetched out of your favourite hotel by a constable because you 'bus has tippled off the kerb, and a motor coach has juggernauted it? Do you like stopping halfway up Porlock because a large stone has joggled your rear stand out of its spring clip? When this new prop stand comes along—weight, about a feather and a half, cost next to nothing, and instantly fittable to anything from a two-stroke to a ninety bore twin (this is the inventor's account, *bien entendu*)—you will be permanently insured against any of these mishaps. The rear stand will then be restricted to its proper duties, *i.e.*, supporting the tail of the 'bus during tyre repairs; and it will, therefore, be secured by a clip which is vibration-proof.

Some Stand Reminiscences.

AS befits a veteran I have owned all sorts of stands. I remember days when stand and carrier were one and the same, tied to a hole in the back of the saddle by a bit of copper wire; on tour you had to unstrap all your luggage before you could mend the tyre. I remember stands composed of two separate legs, insecurely clipped to each chain stay; they used to drip bolts and nuts along the road, jang with a devil's tattoo to the forrard end of the chai stays, and then chock the wheel spokes. I rememb stands with such narrow bases that the machine topple over, if, whilst dismounted, you incautiously exhale your cigarette smoke transversely instead of longitudi ally. But I have loving memories of one two-le stand, date about 1907. Each leg had two positions half down, they acted as props; right down, th formed an ordinary stand. They were very heav rather expensive, and spike-ended, and the spik generally engaged the slack of my trousies when sprang for the saddle. But I tolerated their misdee for years because either leg could be used as a prop and a prop stand is the greatest petty comfort whic a motor cyclist can possess. After I have said this, I shall rejoice in my pseudonymity, supposing t latest prop stand never comes to anything, ar infuriated readers haunt our offices with guns; b I think it is going to be all right. More when t times are ripe.

Our Hill-climb.

THE club was only a few months old, and t hill-climb was our first real stunt. We real organised it very prettily. The natives attende in their billions. The electric timing would hav charmed Lindsay Lloyd. There were no crashe The entry fees more than covered the cost of t medals and administration expenses. The day w fine, and the police most complacent. Yet the eve was a dead failure. Why? Well, the eager, ignorant, amateurs, who comprise the bulk of o membership, had denied themselves all sleep for da previously, and had lived continuously in their shed rubbing up the points of their sparking plugs wi Globe polish, breathing heavily on dismantled ba bearings, and otherwise endeavouring to secure t final veneer of speed. On the Friday evening pri to the great day, the three local garages receive per passenger train special factory-tuned editions the machines for which the aforesaid garages ho local agencies. That these machines mopped up t open classes goes without saying. The very sam machines—cannily bestridden by the pet customers the aforesaid garages—also mopped up the membe

Occasional Comments.—

and amateur classes. The specials skipped up the hill at just under 60 m.p.h. We poor locals coaxed up our reconditioned W.D. 'buses and other genuine private properties very cleverly—only three of us had to jump off and run alongside for a few yards. We got nothing. We are now saving up money to purchase more medals for another stunt. The factory machines all went home again by passenger train on Monday. Doubtless they will return—when we make it worth their while.

The Remedy?

TO find a cure for the swamping of local club events by factory 'buses, you should study the rules for the Scottish Six Days as framed by the Edinburgh and District M.C.C. They define a private owner as a man who rides a machine which has been his *bona-fide* property for at least a month. "At least a month" sounds rather timid; but anyhow it cuts out the week-end visit of a special factory bus, while it accepts the entry of young Algy, who ordered a Brough Superior by telegram as soon as he heard that the club was going to run a speed trial. I have not a word to say against the factory bus in the trade classes—it generally provides the thrill of the afternoon, and in this class it does not fail under false colours. But it is wholly out of place in the members' or amateur events, and only a milk-and-watery committee will stand such trifling.

A Touring Oil Tin.

FOR years past touring motorists, from the multi-millionaire on his Rolls down to the insurance canvasser on his baby two-stroke, have put up with tins of oil which leaked at the least provocation when their contents had once been tapped, and much profit has thereby resulted to the tailoring fraternity. Not long ago I got a lift from a member of *The Motocar* staff, and when we got out tools to change a wheel, I found in his boot an *olla podrida*, in which raspberries, sandwiches, and Prices' *Huile de Luxe* appeared to be the main ingredients. The Vacuum people were the first firm to tackle this ancient hoodoo, and they sought to make the standard tin less filthy by fitting a tin shield to the spout. Prices' Co. have assaulted it along different lines. They have evolved a special touring tin which they supply empty at 4s. 6d. It holds rather over half a gallon, and its business end is provided with three special fitments. Item, a substantial screw stopper shaped to give a good spanner hold. Item, a nice long "teapotty" sort of spout. Item, a screwdown air release valve to ensure good pouring.

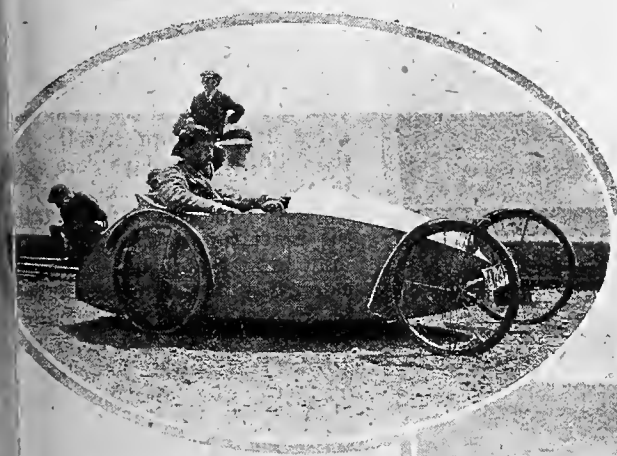
Too bulky for solo work, it is just the goods for sidecars and cycle cars. At the same time it would appear to make a very useful spare petrol tin for the soloist.

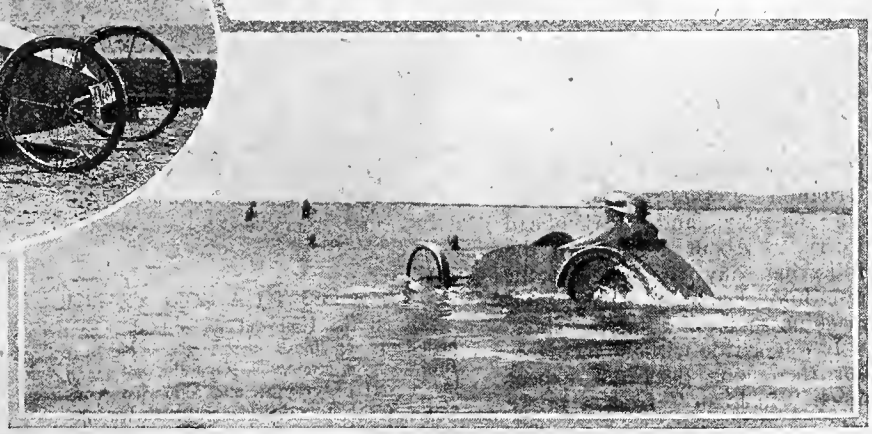
Why X—— Lost the T.T.

JUDGE of the mortification at a certain factory when it was discovered that its riders had elected to use non-standard valves in the race, together with springs 30 lb. lighter than the factory product. The result was that the valves bounced against the valve caps and gave quite a lot of trouble.

The Trade and the Six Days.

CONTRARY to popular expectation, entries for the A.C.U. Six Days have topped the hundred mark, and, provided the majority of these toe the line on the 29th, the anti-A.C.U. section of the trade may regard itself as the minority. Now I am taking no sides over this year's pre-trial dissatisfaction, but I can put my finger on the trouble: it is the clause in the regulations to the effect that marks can be deducted at the discretion of the judges. There is nothing tangible about "discretion," neither is there any consistency. At the conclusion of the 1919 trial almost everybody with clean sheets up to the final examination lost marks on "condition," and naturally opinions differed as to the fairness of some of the judges' findings. Only the A.C.U. itself knows the full amount of trouble that was caused, so in 1920 the judges apparently "got the wind up," and even machines with broken "innards," but which were able to finish, were passed without penalisation. The result is would-be entrants do not know where they are. The "discretion of the judges" is such an elastic sort of factor. It is necessary this year for the A.C.U. to frame its final regulations with a reasonable chance of their being adhered to.





AN AMPHIBIOUS CYCLE CAR.

Call it what you will, there is originality in the conception of this double-purpose cycle car made to run both on land and in the sea. Capt. Berry, of Sidmouth, is responsible for the design of the little four-wheeler, which is driven by a 2¾ h.p. Villiers two-stroke engine.

How a Motor Cycle ensured the Success of a Holiday in the Highlands.

EIGHTEEN days' sunshine, a golf course by the sea, and a motor cycle—in any order you please—are the constituents of the finest holiday possible. That, of course, is the opinion of the writer, who has just returned from such a vacation!

Nearly fifteen hundred miles were covered by road within the above time, but it was in no sense a tour; and my present endeavour will be to show how a motor cycle simply "made" a very ordinary golfing and "lazing" holiday in Scotland.

My chosen resort was Fortrose—an exceptionally beautiful little seaside town, not nearly so well-known as it deserves to be, ten miles from Inverness, and approximately 500 from my starting point (Coventry). It is, I believe, possible to reach Fortrose in just under twenty-four hours by the best expresses, and, at this time of the year, it is also generally possible for a fairly hefty male passenger to reserve at least one suit case in the corridor as his couch for the all-night journey. The third-class single fare is £3 9s. 0½d.

One Hundred Miles before Breakfast.

However, the Brooks "B 170" on my chain-driven Triumph appealed much more strongly than the corridor suit case; and early one glorious midsummer morning—5.30 to be exact—saw a well-laden Triumph *en route* for the North, *via* Chester and Birkenhead Ferry. About 6 p.m. on the following day the same outfit ran into Fortrose, rider and machine as fresh as at the start.

It was a ride without incident, but then, one does not expect much "incident" from a fairly new and high-class motor cycle nowadays. It was, however, an interesting and memorable ride, enjoyable every mile of it.

Chiefly remarkable were (1) the road over Shap (for its vileness, considering its importance) and (2) the road over the Grampians (for its fairness, considering that it has not been seriously remade for the last century). Since, I have heard several complaints about the latter route; my 28 × 3in. Palmer cord must have spared me much.

I bought just six gallons of petrol, and opened two quart tins of B.B., but at the journey's end had a little to spare in each case. This comes to but 25s., my total running expenses for over 500 miles; and even including the intervening night's hotel bill and meals *en route*, there will have to be a very decided fall indeed in railway fares before I go north again by train!

500 MILES TO A GOLF COURSE.

Not all the Highland roads lead over rugged mountains or bleak moorlands. North-east of Inverness the scenery is, generally, not at all wild, but is very picturesque, and somewhat reminiscent of the less striking districts of North Devon.

Other Interests.

My golf clubs, despatched the night before by passenger train, reached their destination just three hours before myself; and the following ten days were spent in effecting a 50% reduction in my golf handicap. Incidentally the exact figure is not mentionable even now; and again, incidentally, I lost nineteen balls in the process! What matter? For the combination of a very sporting little course, with plenty of "rough," and a player better qualified to be a George Dance than a George Duncan, simply results in the inevitable.

The Triumph proved invaluable as a transporting medium both to the links—threequarters of a mile—and to the mos

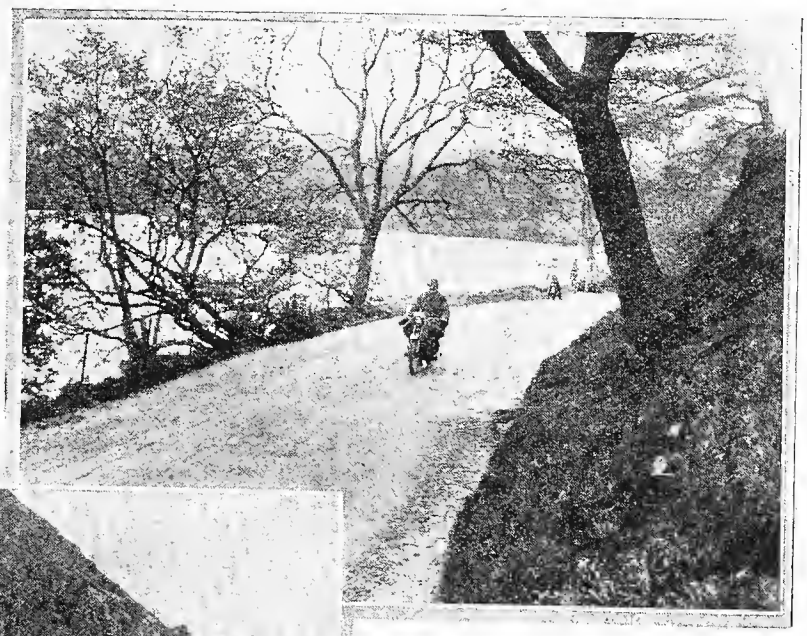
)0 Miles to a Golf Course.—

ecluded corner of the beach for bathing—about mile.

Otherwise, I relearned the art of walking, and, i this respect, despite what "Ixion" says, golf is ie best antidote to the motor cycle extant. After strenuous eighteen holes, however, it is very much ore enjoyable to be whisked home to nch by motor than to tramp it. here are no 'buses in Fortrose.

Sunday in the Highlands is not the inday of the Englishman; only be-ause I feel sure that none of the lers of the local kirk are also readers *The Motor Cycle* do I dare to ention surreptitious "de-coking" erations that were carried out one ening very near Monday. Beyond unusual gear box trouble, and two inctures while up there, that was the ly occasion on which I opened a lbag.

As a variation towards the end of stay, I spent two more days on saddle with the "Scottish" com-



(Top) Northward bound. Nearing the two-hundredth milestone from the start—a typical glimpse of Ullswater.

(Bottom) Towering high above Loch Ness, Abriachan Hill is not so difficult that the tourist who appreciates a magnificent panorama of mountain and lake should shun the climb.

tors—Applecross on the Tuesday (rough going, worth it for the scenery) and round Loch Ness Glendoe and Inverfarigaig on Wednesday (again too easy, but again worth it for the same reason). ink every variety of Highland scene is embraced hese two runs, and I can thoroughly recommend routes to the motor tourist. Personally, I found ier Applecross nor Inverfarigaig nearly as fear-as they are painted; and, indeed, after my return the jaunt across Scotland to the former climb, uld not resist an invitation to another nine holes ursuit of the little white ball! It does not get of course, till about 11.30 p.m. in the High-s in July—and it gets light again shortly after night.

Ross-shire is even now a very keen motor cycling county, but, from the interest of the school children, who in the outlying districts often get a half-holiday to view the passage of the "Scottish" competitors, one may safely predict that fifteen or twenty years hence there will be an even greater enthusiasm and demand for the two-wheeler. At present fully 90% of the machines in the North are big singles, B.S.A.'s or Triumphs; and, for the benefit of some of our English readers, the Highlander does not motor cycle in kilts!

All too soon a return to work became inevitable, and on the following Friday afternoon I trekked southward once more, feeling keenly the delight of a good machine beneath me and the long open road in front.

Dunblane that night, and Nantwich the following, were my stopping places. This time, however, I visited Wigan and Warrington—a more direct route and on the whole quite good—but Shap I avoided, going round *via* Kirkby Stephen, Sedbergh, and Kirkby Lonsdale. For the first time, too, I donned my Hutchinson boots, for it rained heavily in Cumberland and Lancashire.

A late start on Sunday nevertheless allowed me to reach Coventry in time for lunch—another mechanically uneventful, but most exhilarating 500 mile ride.

Without a motor cycle the same holiday would have cost more; but even the most disinterested reader must agree that it would not have been worth half as much.

A.McL.

The Nature of the Country and the Difficulties of the Competitors Discussed.

Impressions of the International 6 Days Trials

A Condor rider leaving the control at Vallorbe, on the first day's run.

(Circle) Cornering on an Alpine pass. H. Bischof (Motosacoche) on the Col de Mar chairnz.

NOW that the International Trials are over, it is interesting to review the impressions gained from the scenery, the nature of the roads, and the performances of the various machines—British and Continental.

Curiously enough, the most severe difficulties were found in the Jura country, and not in the high Alpine districts traversed towards the end of the trial.

Motoring Conditions.

Switzerland has not heretofore welcomed motorists with open arms, but it is improving, and a new Federal law has been passed bringing the control of all traffic under the Confederation, so that in two years' time motoring conditions will be far better than before, and the closed Canton of Grisons will be open to motor vehicles. At present each canton has its own motoring laws, and each village its own speed limit and fine. In one village the limit may be marked 15 km., 10 frs. fine: in another 12 km. and 2 frs. 20 cents fine, and so on.

Naturally, the Swiss were good enough sportsmen not to interfere with the competitors, and in most places gave them a good, if not enthusiastic, reception, welcoming them with wine, tea, or flowers. The Englishmen were hugely amused at the super-politeness of the marshals, who raised their hats and shook hands at every opportunity. The roads were good on the whole, though at times apt to be wavy; but the great trouble at the present time is dust, and few attempts to lay it were in evidence. Bitumenised and tarred roads exist near Geneva and other large towns, but not elsewhere, and it seems clear that, if the Swiss will render their highways dustless, and motorists will drive carefully in villages and on dangerous roads, the antipathy of a section of the population will be entirely removed. As roads *per se*, the high passes are disappointing, and do not compare favourably with the great highways from France into Italy, which are wide and well maintained. The Swiss passes which we traversed are well engineered, but narrow and with loose surfaces, and there is little doubt that the railway has spoilt the St. Gothard, as there is little road traffic over it. This is a pity, for the journey by rail condemns the traveller to twenty minutes in the dark during nine and a half miles through the tunnel, 1,000ft. below the summit, from which the views baffle description.

The Country Traversed.

The hard going in the Jura district and in that surrounding the Zurich mountains somewhat approached the conditions met with in English and Scottish Six Days Trials, but it is rather difficult to give the untravelled Englishman any idea of the hills the men had to surmount. Take, for instance, the Weisenstein on the second day. The climb is started at, say, 1,500ft. above sea level, and might be a hill in Surrey. Pine woods cover its flanks, and through them the road zigzags, keeping to a consistent gradient of 1 in 9, and with a slope inside the corners of 1 in 4 to 5. It keeps on like this, however, till an altitude of over 5,000ft. is reached, where the summit is all but bare of trees: and, when the air is clear, practically the whole range of the snowy Alps may be seen. Then the road drops steeply down a straight stretch crossed by deep gulleys of a frame-breaking nature down into a smiling valley, where the grass is as green as that of Ireland, and where drought is apparently non-existent, save that a few of the stream beds lack water.

Then consider the Alpine passes: they can be compared with nothing we have in England. The St. Gothard starts from Altdorf, and twenty miles are traversed before 3,000 feet are reached—a mere nothing in these parts. The wonderful gorge where lies the Devil's Bridge is passed, and then the climb really begins; sharp corners are encountered, and finally the plateau where lies Andermatt is reached, and then Hospenthal, the road junction—right to the Furka and left to the Gothard. The road goes up in *lacets* (literally "boot laces") up the side of the hill, then more gradually upwards, and finally round more hair pins to the summit. Here one is right away from civilisation except for the one hotel. The wind blows cold and chilly from the north, lashing the waters of the two small lakes into wavelets. It is a treeless wild, surrounded by grand and lofty mountains, on which still lie large snowfields.

Worse than Mont Cenis.

On the descent it was possible to stop and gaze at the road lying in a tangle beneath. The mountain falls sheer below, and down this descends the road in a veritable maze. The corners seem innumerable, and each is built up with stones against the mountain flank. Such a road exists on Mont Cenis, and is known as the staircase *(le Scale)*, but this one on the Gothard is far more severe. The competitors descending looked like flies upon the highway, even when only seven or eight "storeys" below.

From the time the hospice on St. Gothard is left one might be in Italy, the language and the type of scenery and

Impressions of the International Six Days Trials.—

architecture are truly Italian. The village streets are narrow, and paved with cobbles, but two single rail-like tracks of smooth stone run down the centre for wheeled traffic. Clear of the *lacets*, the descent becomes easier, and several straight stretches are encountered.

A Babel of Tongues.

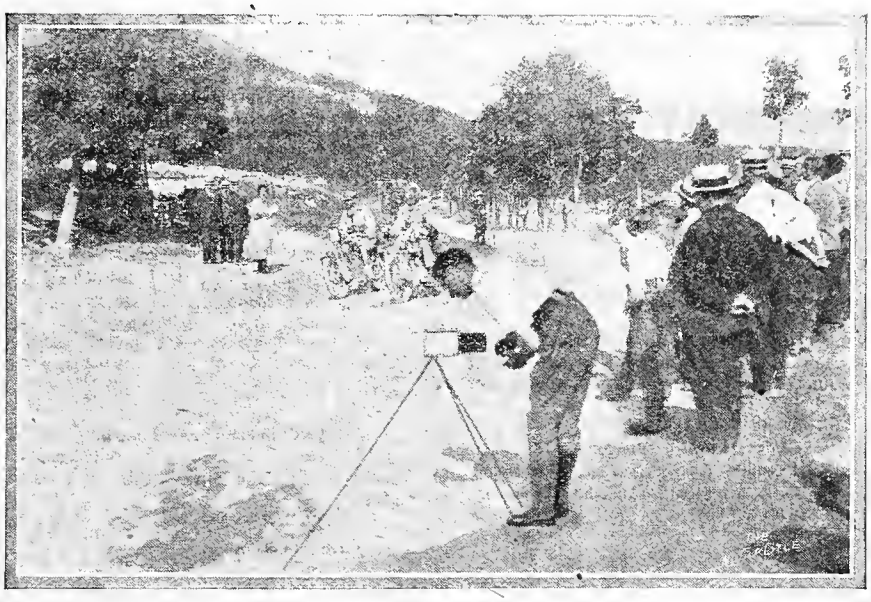
Switzerland is a confusion of tongues. English is spoken practically everywhere, but a knowledge of the country's three languages is useful. It is not easy to have to speak French in the morning and German in the afternoon, and be answered in a *patois* which resembles neither, or German in the morning and Italian in the afternoon, and again be answered in an even worse dialect.

Normally, motorists have to obtain permits to ascend these passes, and must not exceed twelve miles an hour for the average journey. This is no great hardship, as no one wants to exceed this speed, as it would hardly be safe to do so, especially when one *faux pas* would mean a tumble down many hundred feet.

The Lessons of the Trial.

The four riders actually in the trade in the event—H. Gibson, E. Williams, C. P. Wood, and H. Langman—inform us that they have learnt valuable lessons. Even on the second day, Gibson told us that he had learned more by this trial than he ever had in his life, and he is one of our oldest competition riders. Many of the men were forced to descend the passes on second and even bottom gears, not because their brakes would not hold, but because they were afraid of wearing them out. One member of the English team finished with his brakes entirely inoperative, and ascribed this state of affairs not only to the severity of the descents, but to the amount of dust which got on the brake drums. It was found exceedingly difficult to keep the engines cool, and Gibson told us he got the best results by using as small gears as possible. The Scotts seemed particularly happy all the time. Wherever we observed them, the machines of Langman, Wood, and Alfter appeared to keep as cool as their riders, and they only complained of boiling on the Weisenstein. The other water-cooled machine was Lambert's Viratelle. Circulation and other troubles lost him numerous marks, but such was the gallant Frenchman's pluck and endurance that he finished every day.

Never in any trial have there been such punctures. Even Lees, who used the challenge unpuncturable inner tubes, suffered once in this way, and there was a general rumour that each competitor experienced at least ten. Though doubtless several of the men were unsuitably shod under tyred, there was a definite reason for the number of nail punctures. First, the Swiss Army had mobilised for manœuvres, and many nails were shed from their boots. Secondly, nails were found on the road near Bulle placed at regular intervals on the road, and Huiget, one of the Motosacoche riders, had numerous punctures in one tube equally spaced round part of its periphery. It is feared, therefore, that some ill-disposed person had placed them there on purpose. There is no doubt that the daily runs were too long, in view of the difficult nature of the country. The Swiss organisers are well aware of this fact, but in their kindness of heart wished to show the competitors as much of their beautiful country as possible.



Ascending from the Lake of Neuchatel to the Vue des Alpes—a long trying climb, eventually reaching to an altitude of 4,300 feet. The photographer is busy snapping C. P. Wood (Scott) and Eric Williams (A.J.S.) as they round the bend.

Organisation.

There is no doubt that this was the best organised trial yet held on the Continent. Much detail work had been put in beforehand, and everything was most carefully worked out.

In the competition for the International Trophy, the Swiss team lost marks as follows: Morand (2¾ Condor), 21; Rothenbach (8 Motosacoche), 0; and Gex (8 Motosacoche sc.), 9=30 in all. The British team made a game struggle, but Newman (3½ Douglas) lost 93 marks; Eric Williams (2¾ A.J.S.), 0; and Gibson (5-6 Raleigh sc.), 88=181. The day following the trial the competitors were entertained by the N.M.S., and taken for a steamer trip on the lake, and the next evening the prizes were distributed in the Jardin Anglais. The welcome given by the Swiss Motor Cycle Union and its treatment in general of the English visitors were so excellent that adequate justice cannot be done to it in print.

Complete Classified Results.

A.J.S.

Eric Williams (2¾), marks lost, 0. *Special Gold.*
G. Poznanski (7 sc.), marks lost, 39. *Gold.*

BLERIOT.

F. Palmer (3½), retired first day.

BROUGH SUPERIOR.

F. P. Dickson (8), marks lost, 30. *Gold.*

CONDOR.

J. Morand (2¾), marks lost, 21. *Gold.*
P. Wuillemin (2¼), retired magneto trouble.
A. Clerc (2¼), marks lost, 41. *Gold.*
W. Jean (2¾), marks lost, 18. *Gold.*
C. Lcaser (2¾), marks lost, 46. *Gold.*
H. Dinckel (8 sc.), retired, collision.

DOUGLAS.

L. Hutzli (2¾), marks lost, 11. *Gold.*
J. A. Newman (3½), marks lost, 93. *Gold.*
C. Cossetto (4), marks lost, 51. *Gold.*
J. Schlée (4), marks lost, 18. *Gold.*

G.N. (CYCLE CAR).

P. Henel (8.7), marks lost, 0. *Special Gold.*

HOBART.

E. Bally (2¾), marks lost, 87. *Gold.*

INDIAN.

E. Gafner (4), marks lost, 74. *Gold.*
P. Widmer (4), marks lost, 26. *Gold.*
E. Moebus (7-9 sc.), marks lost, 21. *Gold.*
M. Henry (7-9 sc.), retired.

MOTOSACOCHE.

R. Gniguet (3½), retired, punctures.
L. Bonvin (3½), retired, collision.
J. C. Neher (3½), marks lost, 185. *Silver.*
F. Scherb (3½), marks lost, 153. *Gold.*
E. Borsetti (8), marks lost, 9. *Gold.*
A. Robert (3½), marks lost, 0. *Special Gold.*
A. Rothenbach (8), marks lost, 0. *Special Gold*
E. Gex (8 sc.), marks lost, 9. *Gold.*
R. Schorp (8 sc.), marks lost, 31. *Gold.*
H. Bischof (8 sc.), retired, tyre trouble.

MOTO-REVE.

J. Franel (4), retired, fall, etc.

NEW IMPERIAL.

A. Desfeux (2¾), marks lost, 74. *Gold.*
E. Magnin (2¾), marks lost, 110. *Gold.*
H. Rolland (8 sc.), retired, punctures.

NORTON.

C. Demont (3½), marks lost, 57. *Gold.*
P. Staub (3½), marks lost, 0. *Special Gold.*
K. Tschudi (3½), retired, broken tappet.

P. AND M.

H. Dawson (3½), retired, broken fork.

RALEIGH.

H. Gibson (5-6 sc.), marks lost, 88. *Gold.*

SALMSON (CYCLE CAR).

A. Lombard (10), marks lost, 204. *Gold.*

SCOTT.

M. Alfter (3¾), marks lost, 34. *Gold.*
H. Langman (3¾), marks lost, 31. *Gold.*
C. P. Wood (3¾), marks lost, 1. *Gold.*

SUNBEAM.

E. H. Lees (3½), marks lost, 30. *Gold.*

TRIUMPH.

F. Egger (4), marks lost, 41. *Gold.*
H. Hœrler (4), marks lost, 25. *Gold.*
E. Tysset (4), marks lost, 24. *Gold.*
H. Bolzhauser (4), marks lost, 166. *Silver.*

VIRATELLE.

G. Aumaitre (4), retired, radiator trouble.
R. Lambert (4), marks lost, 202. *Silver.*
H. Fouquier (4), retired, accident.

INTERNATIONAL TROPHY.—Swiss team.

MANUFACTURERS' TEAM PRIZE.—1, Motosacoche; 2, Scott; 3, Douglas.

CLUB TEAM PRIZE.—1, Moto Club Pâquis; 2, Worcester M.C.C.; 3, Motor Club Pâquis.

GOLD WATCH FOR BEST PERFORMANCE OF A VISITOR.—Eric Williams (2¾ A.J.S.).

SPEED TESTS IN THE SWISS TRIALS.

British Machines in Good Tune after Six Days Alpine Climbing.

ON the last day of the International Trials in Switzerland, the condition of the engines was amply tested after their gruelling over the mountain passes by a timed hill-climb in the morning and a speed trial held during the afternoon.

The British machines were prominent in both events, and in the speed test had no difficulty in exceeding the set speeds required in the various classes. In the hill-climb one mark was deducted for every ten seconds below the fastest time in each class; while in the speed test one mark was lost for each kilometre per hour below the set speed.

The speed trial results are:

250 c.c. CLASS. (Set speed, 50 km.p.h.=31¼ m.p.h.).

A. Clerc (2¼ Condor)	67.66 km.p.h.

350 c.c. CLASS. (Set speed, 60 km.p.h.=37½ m.p.h.).

E. Williams (2¾ A.J.S.)	80.35 km.p.h.
L. Hutzli (2¾ Douglas)	74.38 ,,
E. Bally (2¾ Hobart)	72.87 ,,

500 c.c. CLASS. (Set speed, 80 km.p.h.=50 m.p.h.).

J. A. Newman (3½ Douglas)	102.27 km.p.h.
R. Guiguet (3½ Motosacoche)	100.56 ,,
C. Bouvier (3½ Norton)	95.23 ,,

750 c.c. CLASS. (Set speed, 85 km.p.h.=53 m.p.h.).

C. P. Wood (3¾ Scott)	88.23 km.p.h.
M. Alfter (3¾ Scott)	87.38 ,,
F. Egger (4 Triumph)	86.53 ,,

1,000 c.c. CLASS. (Set speed, 90 km.p.h.=56¼ m.p.h.).

F. P. Dickson (8 Brough Superior)	105.88 km.p.h.
A. Rotherbach (8 Motosacoche)	105.88 km.p.h.
E. Borsetti (8 Motosacoche)	101.12 ,,

1,000 c.c. CLASS, SIDECARS.
(Set speed, 75 km.p.h.=46¾ m.p.h.).

R. Schorp (8 Motosacoche sc.)	90.45 km.p.h.
E. Moebus (7-9 Indian sc.)	87.80 ,,
E. Gex (8 Motosacoche sc.)	82.95 ,,

1,100 c.c. CLASS, CYCLE CARS.
(Set speed, 75 km.p.h.=46¾ m.p.h.)

P. Honel (8.7 G.N.)	86.12 km.p.h.

Placings in the hill-climb are as follows:

250 c.c. CLASS

	Marks Lost.
A. Clerc (2¼ Condor)	0

350 c.c. CLASS.

	Marks Lost.
E. Williams (2¾ A.J.S.)	0
L. Hutzli (2¾ Douglas)	6
E. Bally (2¾ Hobart)	9

500 c.c. CLASS.

P. Staub (3½ Norton)	0
C. Bouvier (3½ Norton)	0
A. Robert (3½ Motosacoche)	0

750 c.c. CLASS.

C. P. Wood (3¾ Scott)	0
H. Langman (3¾ Scott)	0
M. Alfter (3¾ Scott)	0

1,000 c.c. CLASS.

A. Rothenbach (8 Motosacoche)	0
E. Borsetti (8 Motosacoche)	2

1,000 c.c. SIDECAR CLASS.

R. Schorp (8 Motosacoche sc.)	0
E. Gex (8 Motosacoche sc.)	2
E. Moebus (7-9 Indian sc.)	3

1,100 c.c. CYCLE CARS.

P. Honel (8.7 G.N.)	0

The Salmson cycle car lost marks heavily in both tests.

THE F.I.C.M. CONGRESS AT GENEVA.

Spain now Represented. Lightweight Sidecars Discouraged in Next International Trials.

AFTER the conclusion of the International Six Days Trials the summer meeting of the International Federation of Motor Cycle Clubs was held at Geneva on the afternoon of the 8th inst. The delegates were first entertained to lunch by the Swiss Automobile Club, and then adjourned to the Mairie next to the club headquarters, where the congress was held under the able chairmanship of M. Jules Neher, a vice-president of the Federation. Eight countries were represented by the following: Count Bonacossa, Motor Club d'Italia; E. M. P. Boileau, Auto Cycle Union; A. V. Ebblewhite, Auto Cycle Union; W. H. Wells, M. and A.T.A. (U.S.A.); J. Quincelet, Touring Club Suisse; H. Chaponnière, timekeeper, A.C.S.; J. Revelliod, secretary, U.M.S.; G. Paisant, Touring Club Suisse; C. Merle, vice-president, U.M.S.; H. Fels, Konk. Ned. Motoclub (Holland); M. Poncet, treasurer, U.M.S.; E. Gafner, U.M.S.; E. J. E. Maas, Kon. Ned. Motorwielryders, Vereeniging (Holland); Nils Kindberg, Svenska Motorcykel Klubben (Sweden); E. M. Lanuza, Real Moto Club d'España; F. de A. Delgado, Real Moto Club d'España; G. Longuemare, Union Motocycliste de France; Jules Neher, president, Union Motocycliste Suisse; and T. W. Loughborough, general secretary, F.I.C.M.

Norwegian Delegates Absent.

The Chairman opened the meeting by welcoming the various delegates, and the Secretary then read letters of regret from the Hon. Sir Arthur Stanley, K.B.E., M.V.O., and the delegates from Norway who could not attend.

Out of the matters arising from the minutes, M. Maas (Holland) suggested that triptychs and carnets for international touring should be issued by motor cycle and not automobile clubs, as had been the case up to the present. The matter was, however, deferred. Count Bonacossa (Italy) suggested that an extract of the minutes of previous F.I.C.M. meetings should be inserted in the F.I.C.M. Handbook, and this was agreed to.

The Spanish delegates, who attended for the first time, then explained the position in Spain, and stated that certain clubs refused to acknowledge the authority of the R.M.E. The Chairman pointed out that only the Real Moto Club d'España could be recognised.

Success of International Trials.

M. Revelliod then reported on the International Six Days Trial. There had been fifty-one entries, thirteen retirements, and many marks lost for reliability in the timed hill-climb, in the speed trial, and in the final examination of machines. There had been five special and twenty-nine ordinary gold medals awarded.

Mr. T. W. Loughborough, speaking as a delegate of the A.C.U., offered his heartiest congratulations to the U.M.S. on the organisation of the International Six Days Trial.

M. Neher suggested that the British riders should have come a week earlier, and tried the course.

Next followed a discussion concerning the rules governing the International Trophy. M. Revelliod suggested that members of the winning team should be provided by the F.I.C.M. with a miniature of the Trophy, and this was agreed to. It was finally decided to refer the question of rules governing the Trophy to a sub-committee consisting of Messrs. A. V. Ebblewhite and G. Longuemare and M. Delessert.

Switzerland Again Next Year.

Then there followed a discussion regarding the venue of the next International Six Days Trial, and Mr. Wells rose and announced that the M. and A.T.A. would extend a hearty invitation to the F.I.C.M. if the trial could be held in the U.S.A. He felt, however, that the expense entailed would be too great; but to show how he appreciated the recent trial, the excellent Swiss roads, and the magnificent opportunity they gave for testing motor cycles, he would feel safe in guaranteeing a team of American riders if the U.M.S. would consent to hold the trial in Switzerland again.

The general feeling of the meeting was that as the Swiss team had won the Trophy, the contest should again be held in that country, and this was finally decided. The dates selected were Thursday, August 3rd, 1922, to Thursday, August 10th, with a day's rest on the Sunday, and that no other International competition should be fixed between July 29th and August 19th, 1922.

The proposal in the name of Mr. A. V. Ebblewhite, to the effect that a class for 350 c.c. sidecar machines should be re-introduced, met with violent opposition, and was not adopted.

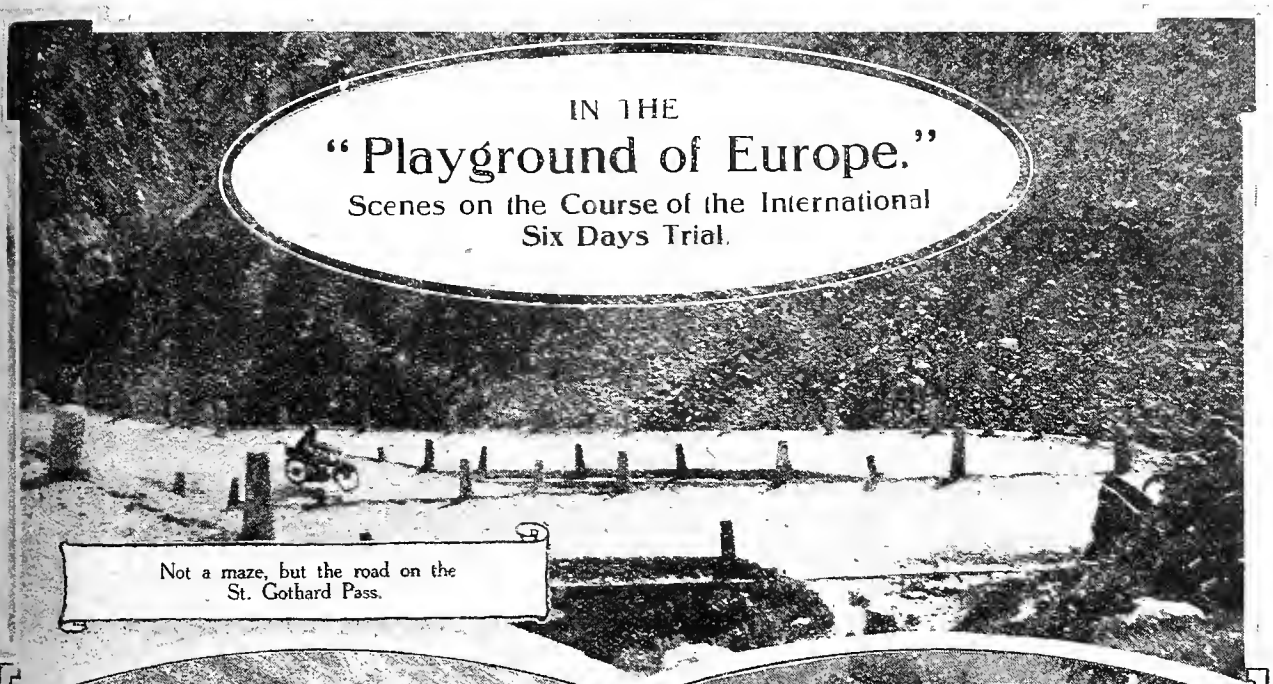
A letter read from the A.C.U., suggesting that records made during long-distance races should be recognised, created a lengthy discussion, and it was at first felt that the smaller machines would have an unfair advantage, as they might be paced by those of greater cylinder capacity, but the suggestion was finally adopted.

It was decided to hold the winter congress in Milan on December 14th.

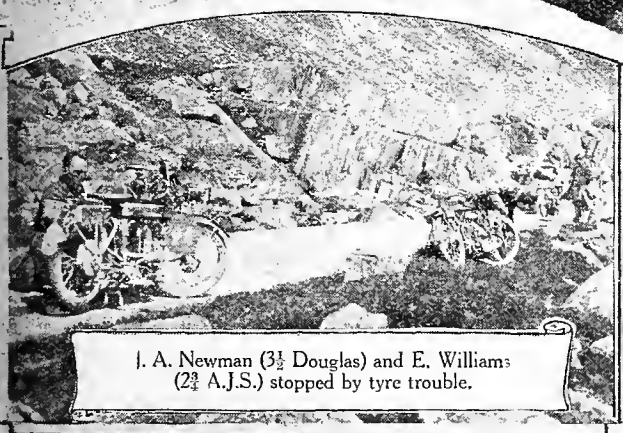
Count Bonacossa then expressed his opinion that European records might be recognised, but it was agreed to postpone this matter to the next meeting. He invited entries for the Circuit of Brescia, 17 km. long, to be covered eighteen times, for motor cycles up to 500 c.c., on September 10th. Entries close August 20th, and should be addressed to the Secretary, the M.C.I., 16, Via S. Nicalao, Milan.

IN THE "Playground of Europe."

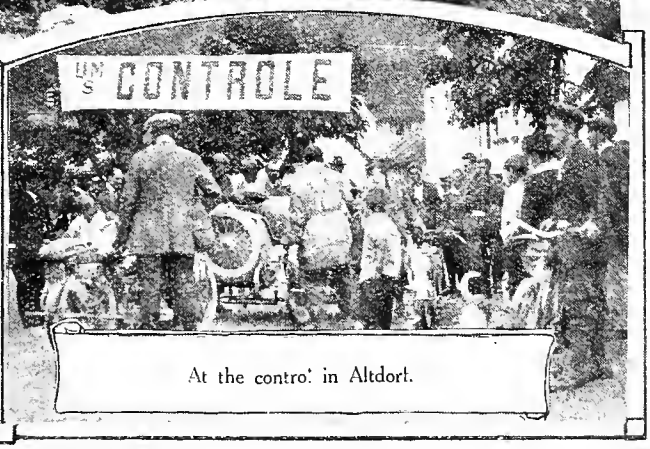
Scenes on the Course of the International Six Days Trial.



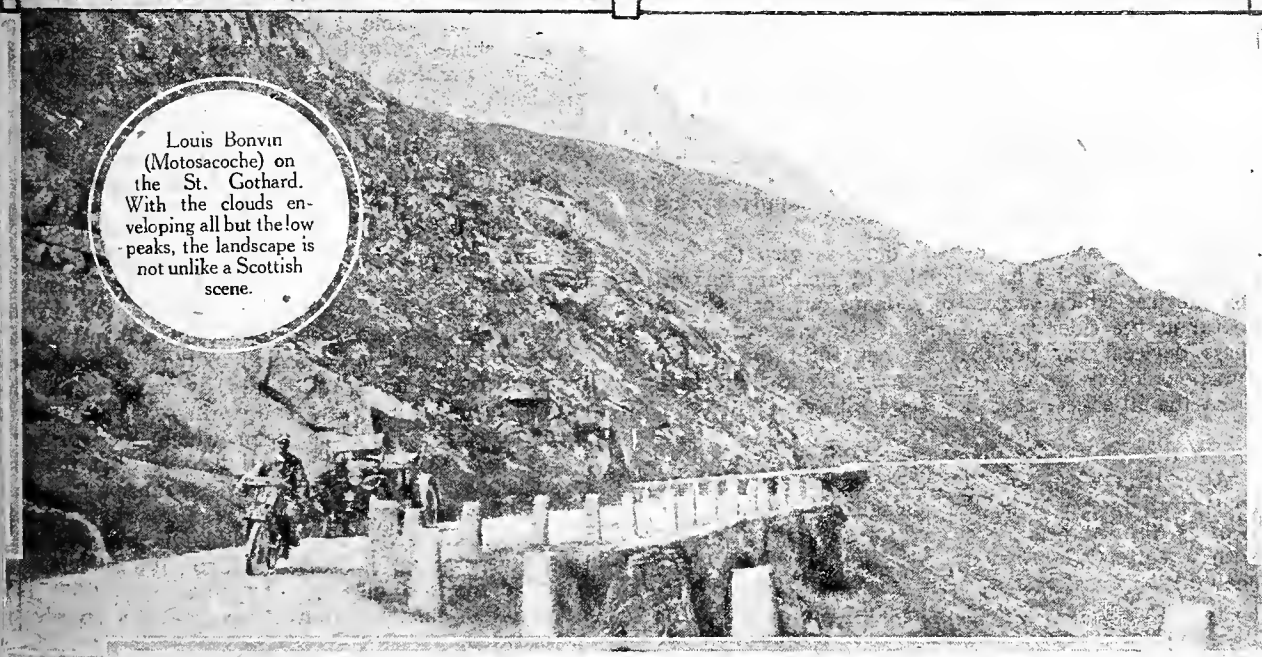
Not a maze, but the road on the St. Gothard Pass.



J. A. Newman (3½ Douglas) and E. Williams (2¾ A.J.S.) stopped by tyre trouble.



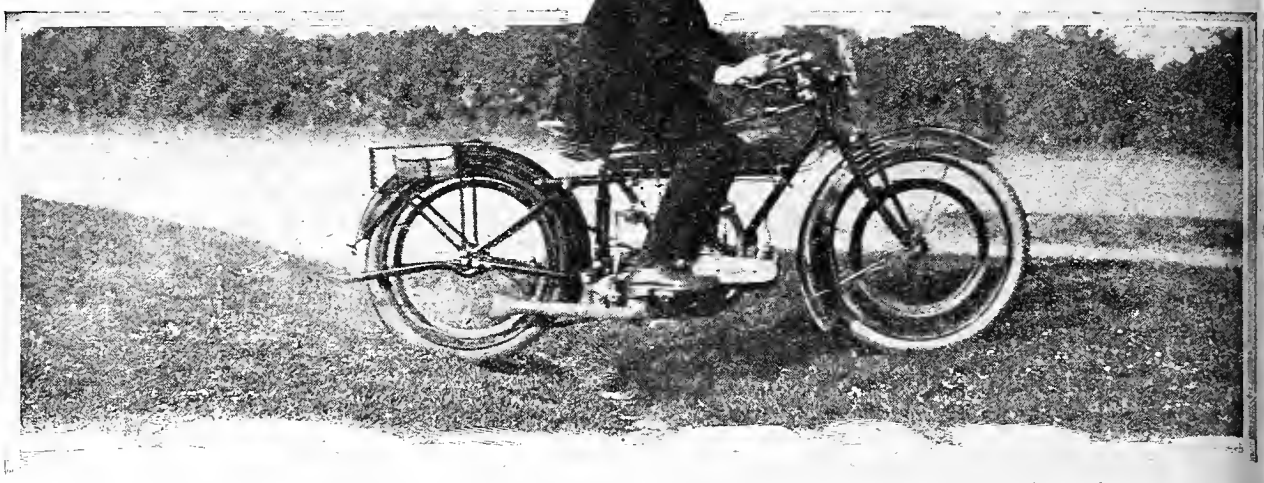
At the control in Altdorf.



Louis Bonvin (Motosacoche) on the St. Gothard. With the clouds enveloping all but the low peaks, the landscape is not unlike a Scottish scene.

ROAD TESTS of NEW MODELS

THE 2¾ H.P. SPRING FRAME HOBART.



In addition to trials on "pot-holed" roads, the spring frame was severely tested by riding over deep cross-gulleys at a fair speed. This feat would have been impossible with a similar rigid-framed mount.

SPECIFICATION:

ENGINE: Jap 2¾ h.p., 70 × 76 mm. (292 c.c.)
CARBURETTER: Amac.
TYRES: Dunlop 26 × 2¼ in.
FORKS: Brampton Biflex.
GEAR BOX: Sturmey-Archer, two-speed, clutch, and kick-starter.
TRANSMISSION: Chain and belt.
BRAKES: V-rim type on both wheels.
PRICE: £96.

CONSIDERING the undoubted advantages of the spring frame, it occasions some surprise on the part of many of our readers that the rigid type frame still continues to predominate. The reasons for this are many, and among them may be mentioned (1) the extra cost, which the majority of manufacturers do not feel justified in asking the public to pay at the present time; (2) the possibility of lateral play developing; (3) the extra weight; (4) the lower output due to the increased amount of labour for the additional units; (5) the difficulties of design; and (6) the majority of makers are not forced to consider the matter, because competitors who supply spring frames are in the minority.

Added to the above factors there is also the fact that there are now a large number of auxiliary suspension devices which successfully damp out road shocks so far as the rider is concerned. However successful these devices may be, they do not fulfil the proper functions of a spring frame in saving the machine from the ill-effects accruing from vibration.

The Question of Weight.

At a time when weight reduction is receiving the consideration due to it, the spring frame proposition is often dismissed on account of its extra weight; but, with a correctly designed spring frame, the weight should not exceed that of a rigid frame for the reason that, since the machine is not subjected to the same road shocks, the amount of metal need not be so great. For years manufacturers have been piling on weight in strengthening up their frames by adding more metal. In many cases the strength is obtained by sheer mass of metal rather than scientific design.

Another factor which has retarded the development of the spring frame is the popularity of the sidecar. If a machine has to be used with an attachment, the springing problem becomes more difficult than is the case with a purely solo mount.

Simplicity of Design.

In this latter type the 2¾ h.p. Hobart spring frame model is an excellent example of what can be obtained without undue complication and added weight. Here we have a machine which may be described as having three frames—(1) the front forks, (2) the main central portion, and (3) a rear frame carrying the driving wheel. This last-mentioned unit is pivoted just behind the gear box, and is connected to the top portion of the main frame, below the saddle, by means of parallel sliding members carrying coil springs. The illustration shows the principle upon which the springing works, and from which it will be seen that the distance between the driving and driven centres (the gear box pulley and the rear wheel) varies slightly with the movement of the frame. Although this movement is not very great, it would probably be sufficient to prohibit the use of chain transmission. With belt transmission this variation of centres may largely be disregarded.

Road Tests of New Models.—

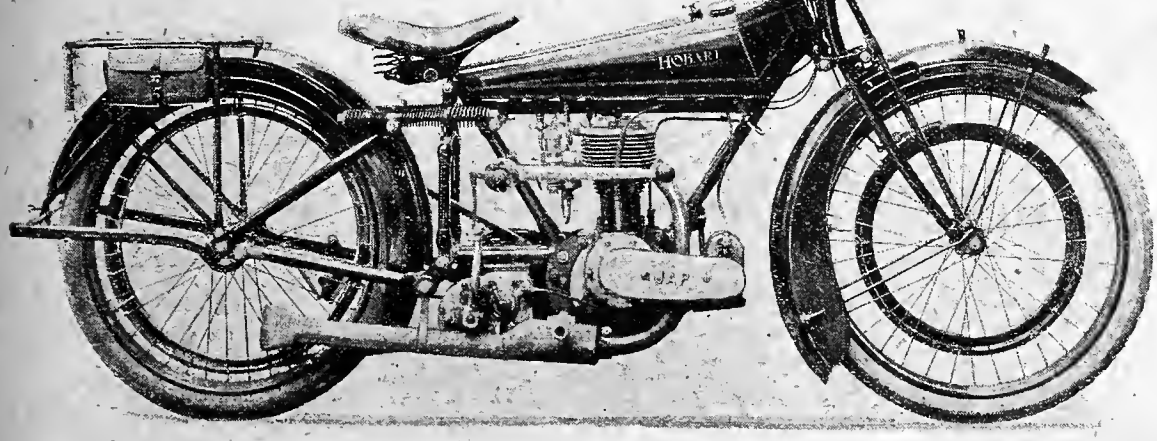
We recently tried one of these machines for several days, and immediately the added comfort of the spring frame was apparent. Ordinary road shocks are damped out, and one feels no jar when passing over "corrugated" surfaces caused by industrial vehicles.

It was on returning to a rigid frame mount that the full advantages of the Hobart spring frame were most apparent, and an inspection was made to ascertain whether the tyres were not too hard.

The particular machine we tried was the one which successfully climbed Screw Road (the hill discovered by *The Motor Cycle* and described in our issue for May 19th), and was fitted with one of the new 346 c.c. J.A.P. engines and a special three-speed gear box.

Both $2\frac{3}{4}$ h.p. J.A.P. and $2\frac{3}{4}$ h.p. Villiers two-stroke engines are fitted as standard to these models, and almost every reader of *The Motor Cycle* knows the excellent reputation enjoyed by each of these power units. As regards the machine itself, the spring frame has wonderful shock-absorbing qualities, but a fact not always realised by the designers of frame springing systems is that an excellently sprung and padded saddle is just as necessary as on a rigid frame. No car designer equips his well-sprung car with un-upholstered seats, for the main springing, if set to deal with major shocks between road surface and the dead mass of the machine, cannot be sufficiently sensitive to cushion the more delicate anatomy of the live load.

We even took the machine across country, traversing ridges and pavements, and, apart from the above criticism, it behaved in a manner that would surprise those who occasionally remark that spring frames are unnecessary.



Although affording a riding position several inches lower than the average, the sporting model spring frame Hobart has a well-balanced and pleasing appearance

THE LURE OF THE MOTOR CYCLE.

SOONER or later the lure of the motor cycle steals upon almost every boy in his teens.

To his conservative parents it may still be a smelly abomination; but to him, whose eyes have been opened, it represents the summit of desire.

In a little while, after spending much time in the company of the "fellow who knows about these kinds of things," he learns to distinguish the different makes of motor cycles on the road.

After this, usually follows the catalogue fever, when the boy bombards the motor manufacturers with peremptory postcards demanding "your latest catalogue by return," and sundry information as to the running costs of the machine, which the makers, with their usual diplomacy, pass on to "our agents in your district, Messrs. Blank and Co."

By the time the average boy has read the catalogues carefully, noting even the name of the printer, he has usually decided irrevocably upon the machine he really intends to buy. He has only to talk the matter over with his best friend (who is usually as enthusiastic as himself) to find the inevitable fly in the ointment.

His best friend has it from a fellow who knows another fellow who knows a motor engineer that the so-and-so machine has "no pep" on hills. Worse still, the such-and-such machine—his second favourite—has a nasty little habit of losing its flywheel; while its appetite for spirits (of the kind supplied by the Shell Co.) is not all that an ardent temperance reformer might desire.

Feeling thoroughly disillusioned, he has still to face the discouragement of his family circle, who are one and all bent on dissuading him from his mad enterprise.

The First Ride.

Then, on a great red-letter day in his life, his longed-for opportunity occurs at last. A perfectly ordinary young fellow, who must surely be an arch-angel in disguise, offers him a ride on his 'bus.

Almost too excited to mutter more than a curt "thanks," he sits astride of the machine, makes sure of the position of the various controls, and then, after a few ineffective kicks at the starter, he is really off.

After that the possession of a machine of his own comes as a matter of course. Life would not be worth living without one.

And the fellow who owns a motor cycle is a motorist for life.

V.H.

CLUB NEWS

South Wales M.C.C.

In the time results of the open hill-climb at Catsash on July 21st, Norton riders obtained first place in each class they entered. Formula results have now been announced, and show successes by A.B.C. (three), Sunbeam, and New Imperial machines in the 500 c.c. and 1,000 c.c. events.

Leinster M.C.C.

The re-run reliability trial for the Patland Cup took place on the 6th inst., when five of the six competitors who tied with full marks at the open controls in the first competition rode over the original course. As on the first occasion, all of them were on time at the open controls, and the result was consequently decided by the secret check, which gave a win to T. E. Greene (2¼ Enfield).

York and District M.C.

Awards in the recent York-Edinburgh-York reliability trial were as follows:

SOLO CLASS.

SPECIAL CUP.—W. Turnpenny (3½ Rudge Multi).

GOLD MEDALS.—G. W. Dawson (3½ Rudge Multi), W. Atkinson (4 Triumph), G. H. Eastwood (4 Triumph), G. A. Reed (3¾ Scott), G. E. Jackson (3½ Beardmore-Precision), and R. A. Wilson (2¾ Blackburne).

SILVER MEDALS.—E. T. R. Goodacre (Coventry Eagle) and J. Ford (F.N.).

SIDECAR CLASS.

SPECIAL MEDALLION.—W. Marriott (4 Norton sc.).

GOLD MEDALS.—A. O. Brett (6 Coventry Eagle sc.), H. Pattinson (8 New Imperial sc.), E. Bray (7 A.J.S. sc.), W. Westwood (4 Triumph sc.), and N. Jordan (3½ Beardmore-Precision sc.).

Dublin and District M.C.C.

Results of the one day trial, held on the August Bank Holiday, are announced as follows:

WALKER AND FREEMAN CUPS AND GOLD MEDAL.—Dene Allen (4 Norton sc.).

S. L. HUTCHINSON PRIZE, SPECIAL LIGHT-WEIGHT PRIZE, AND GOLD MEDAL.—T. Green (2¼ Enfield).

GOLD MEDALS.—P. H. Hurse (4¼ B.S.A.), T. Slevin (2¼ Velocette), G. A. Daly (4 Triumph), J. A. Carville (4 Triumph), F. Holmes (8 Enfield sc.), Stan. Woods (7-9 Harley sc.), J. McEntaggart (7-9 Reading-Standard), P. Smith (7-9 Indian sc.), R. Murphy (4 Triumph), H. McAllister (4 Triumph sc.), Fergus O'Connor (3½ Norton), G. W. Johnstone (2¾ New Scale), and A. Carton (3½ Norton).

SILVER MEDAL.—S. J. Redmond (4 Indian Scout).

BRONZE MEDALS.—John Adair (4¼ B.S.A. sc.), T. Woods (6 Martinsyde sc.), C. Maguire (4½ Humber sc.), E. McGrath (6 A.J.S. sc.), and T. Hassett (4 Norton).

Week-end Club Events.

Aug. 18.—North Wales M.C.C. "Follow the Leader" Competition.
Aug. 20.—Surbiton and District M.C.C. Speed Trials.
Aug. 20.—Harrogate and District M.C.C. Speed Trials.
Aug. 20.—Sutton Coldfield and North Birmingham A.C. Inter-team Trial.
Aug. 20.—East Midland Centre A.C.U. Rally at Stamford Park.
Aug. 20.—Taunton and District M.C. and L.C.C. "Follow the Leader" Competition.
Aug. 20.—Dewsbury and District M.C.C. Picnic.
Aug. 20.—Coventry and Warwickshire M.C. Sporting Event.
Aug. 20.—Glasgow Western M.C.C. Open Reliability Trial.
Aug. 20.—Surrey M.C.C. Speed Trials.
Aug. 20-21.—Northern M.C. All-night Reliability Run.
Aug. 21.—Barrow and District M.C. Club Run and Picnic.
Aug. 21.—Coventry Triangle M.C. Club Run to Bradgate Park.
Aug. 21.—Leeds M.U. and Doncaster and District M.C.C. Inter-team Trial.
Aug. 21.—Middlesbrough and District M.C. Club Run to Reeth and Buttertubs.
Aug. 21.—Leeds and District M.C. Club Run.
Aug. 21.—Burton and District M.C.C. Club Run.
Aug. 21.—Eastern Centre A.C.U. Club Meet.
Aug. 21.—Stamford and District M.C.C. Paper-chase.
Aug. 21.—Canterbury and District M.C.C. Captain's Surprise Run.
Aug. 21.—Eastbourne and District M.C.C. Hill-climb.
Aug. 21.—Halifax and District M.C.C. Club Run to Kettlewell.
Aug. 21.—Rochester, Chatham and District M.C. and L.C.C. C. Packman's Cup Trial.
Aug. 21.—Brighton and Hove M.C.C. Social Run.
Aug. 21.—Portsmouth and District M.C. and L.C.C. Club Run to Forest Side.
Aug. 21.—Berwick and District M.C. Chairman's Competition.
Aug. 21.—Central London M.C.C. Club Run to Shenfield.
Aug. 21.—Woolwich, Plumstead and District M.C. Duncan Best Cup Trial.
Aug. 21.—Clitheroe and District M.C.C. Motor Traders' Trophy Trial.
Aug. 24.—Bishop Auckland and District M.C. Speed Judging Competition.
Aug. 24.—Helensburgh M.C.C. Speed Judging Competition.

Heaton Moor M.C.C.

During August Holiday week the club held a reliability trial over an exceedingly sporting course of about fifty miles. The winner of the 500 c.c. class was A. Bains (P. and S.), with 255 marks out of a possible 300. The winner of the unlimited class was H. Cheetham (4 Triumph) with 249 marks. Incidentally, the winners were the only two competitors credited with clean ascents of Saltersford Hill, the tit-bit of the trial.

Castleford M.C.

Results of the recent speed trials held at Byrom Park are as follows:

250 c.c. SOLO.—1, B. Ward (2½ Silver Prince).
350 c.c. SOLO.—1, A. G. Ridgeon (2¾ Douglas).
500 c.c. UNLIMITED.—1, A. Campey (3½ Sunbeam).
500 c.c. SOLO.—1, C. Keyzer (3½ Sunbeam).
SIDECAR (UNLIMITED).—1, C. Shaw (6 Enfield sc.).

Campey and Keyzer tied for fastest time at 69.[illegible] m.p.h.

Neath and District M.C.

Owing to a dispute over the results of one class, the placings in the speed trials held at Margam Park on the 28th ult. are only now available for publication:

250 c.c. NOVICE CLASS.—1, Alf. Williams (2¼ Diamond), 33⅕s.
250 c.c. GENERAL CLASS.—1, Alf. Williams (2¼ Diamond), 35⅖s.
350 c.c. NOVICE CLASS.—1, Alf. Williams (2¼ Diamond), 33s.
350 c.c. GENERAL CLASS.—1, Ware (Coulson B), 33⅗s.
500 c.c. NOVICE CLASS.—1, H. W. Rice Evans (3½ Sports Sunbeam), 29s.
500 c.c. GENERAL CLASS.—1, H. W. Rice Evans (3½ Sports Sunbeam), 28⅕s.
750 c.c. NOVICE CLASS.—1, H. W. Rice Evans (3½ Sports Sunbeam), 28s.
750 c.c. GENERAL CLASS.—1, Ivor Thomas (3½ Sports Sunbeam), 27⅗s.*

* Fastest time of the day.

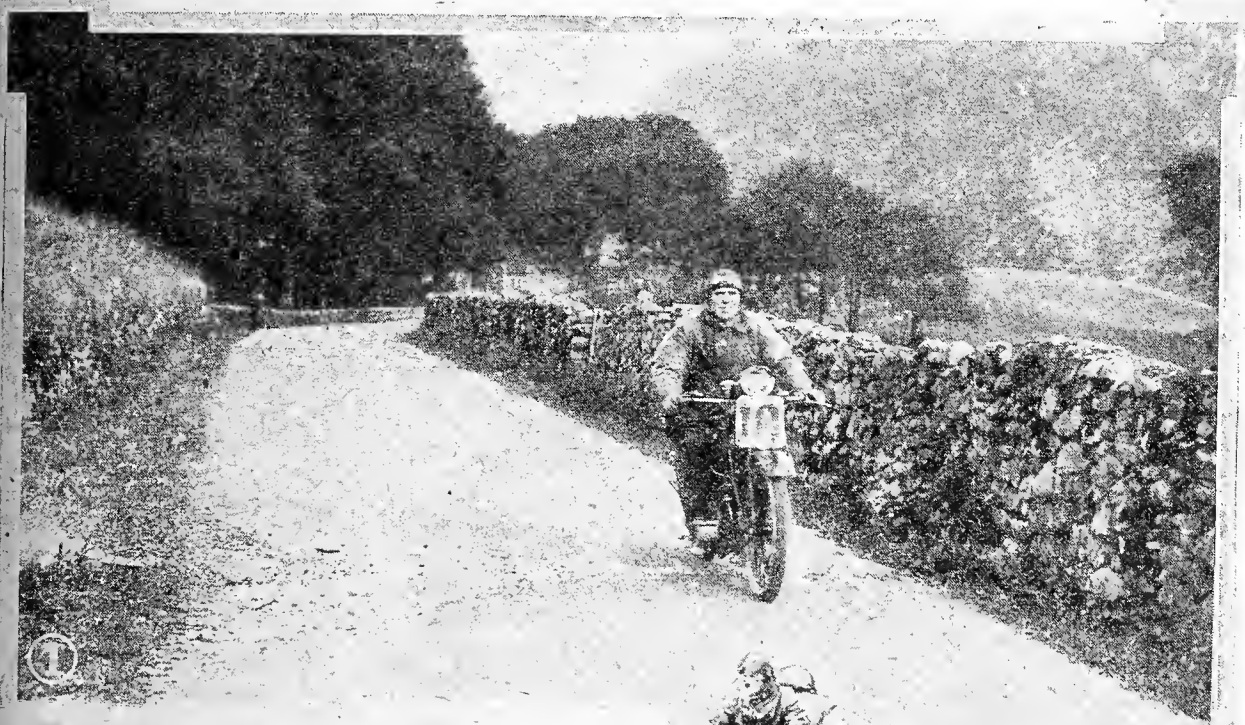
Cardiff M.C.

Winners of the various classes in the recent speed trials, described in *The Motor Cycle* last week, are as follows:

275 c.c. SOLO (NOVICES).—H. Harris (2¼ New Imperial-Jap).
350 c.c. SOLO (NOVICES).—N. Mitchell (2¾ Verus).
275 c.c. SOLO (GENERAL).—H. Harris (2¼ New Imperial-Jap).
350 c.c. SOLO (GENERAL).—L. Davies (2¾ Coulson B).
UNLIMITED SIDECARS (NOVICES).—G. Gronow (10 Henderson sc.).
SIDECAR CHAMPIONSHIP.—Jack Thomas (3½ Norton sc.).
500 c.c. SIDECARS (GENERAL).—Jack Thomas (3½ Norton sc.).
750 c.c. SIDECARS (GENERAL).—R. W. Hill (4 Precision sc.).
UNLIMITED SIDECARS (GENERAL).—H. Davies (8 Brough Superior sc.).
LADIES' HANDICAP.—Miss I. Fontain (2¼ Levis).
500 c.c. SOLO (NOVICES).—J. Jenkins (3½ Norton).
750 c.c. SOLO (NOVICES).—W. Buckler (3¾ Scott Squirrel).
UNLIMITED SOLO (NOVICES).—J. Jenkins (3½ Norton).
500 c.c. SOLO (GENERAL).—W. Rice Evans (Sports Sunbeam).
750 c.c. SOLO (GENERAL).—W. Rice Evans (Sports Sunbeam).
UNLIMITED SOLO (GENERAL).—W. Rice Evans (Sports Sunbeam).

A STRENUOUS TRIALS ROUTE.

On the Course of the Recent North Wales M.C.C. Open Reliability Trial, which included Bwlch-y-Groes and Alt-y-Bady.

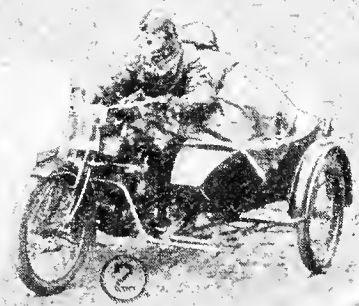


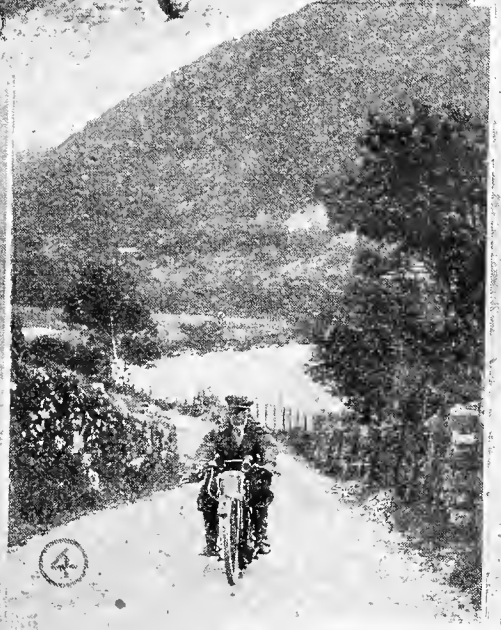
(1) W. Edwards (4 Powell) on easy going near Dolgelley.

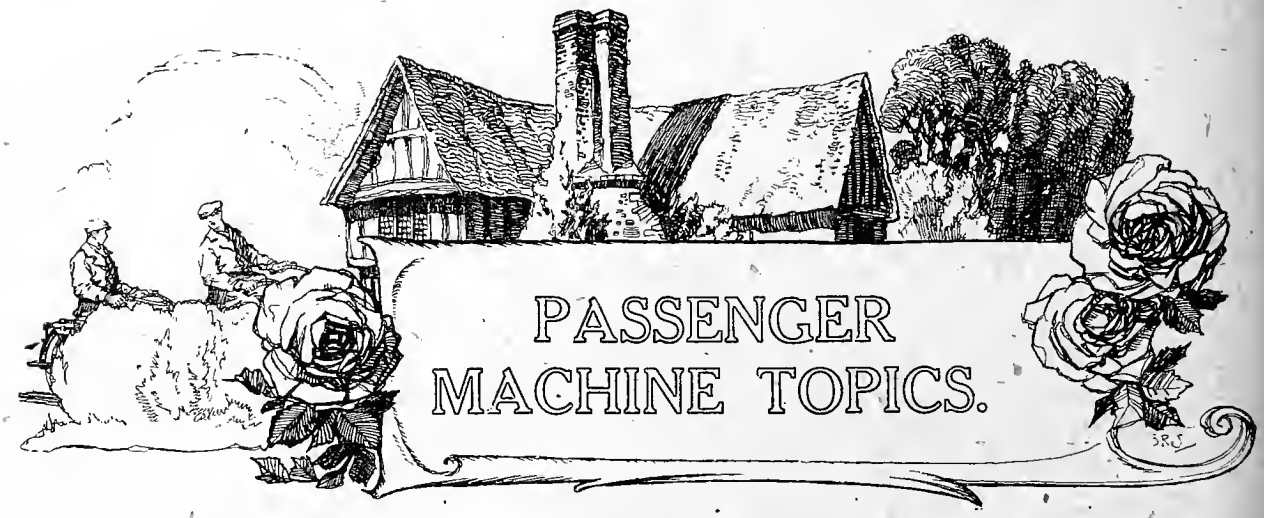
(2) B. Bladder (8 New Imperial sidecar) experiencing wheel spin on Alt-y-Bady.

(3) On the top of Bwlch-y-Groes. A. Welsh (4¼ B.S.A.) passing another competitor in difficulties.

(4) R. Russell Bromley (3½ Sunbeam), near Tyn-y-Groes, on the last non-stop section in the morning's route.

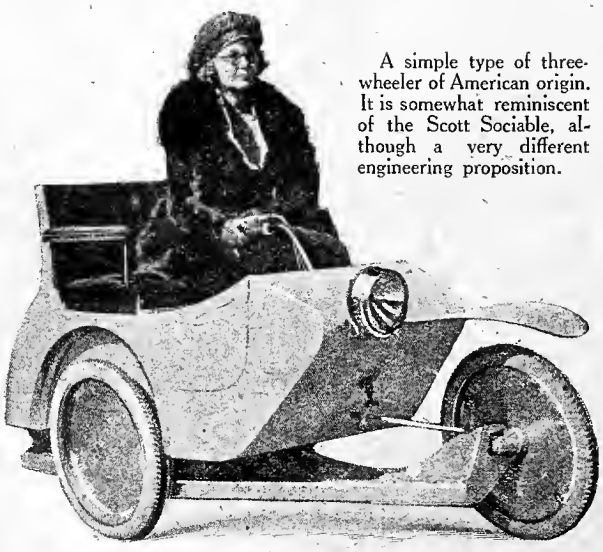




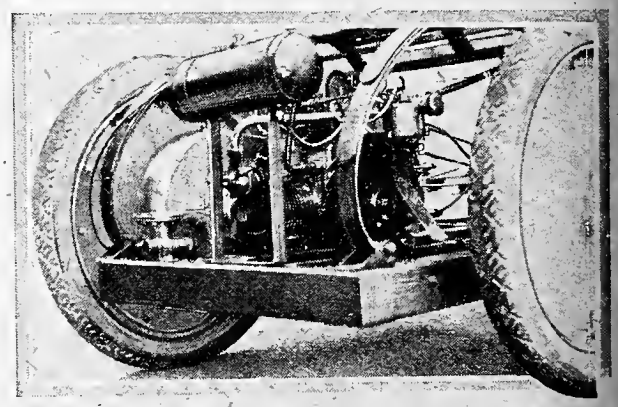


Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers. Collated by "Vedette."

A SMALL runabout, somewhat on the lines of the Scott Sociable, has recently been announced in the United States by the Martin Rocking Fifth Wheel Co., Springfield, Mass. It is a diminutive three-wheeler with a "bath tub" body accommodating two passengers. It is simple and economical, and it is said that the price will be exceptionally low. It has a flat-twin four-stroke air-cooled engine of 60×51 mm. bore and stroke (334 c.c.), which drives the left rear wheel. The clutch is mounted in the camshaft gear thus providing an initial reduction of 2 to 1. The transmission is located close to the wheel and provides two speeds forward. The engine is started by a kick-starter as is common in motor cycle practice. All controls are effected by the Bowden wire system, this system being used for the shifting of gears, operation of the clutch, brakes, magneto, carburetter, and, in fact, all parts under the control of the operator. The steering is by lever. The wheels are arranged on the sidecar plan. It resembles the sidecar in that the triangular frame connecting the wheels is unsprung, and the machinery carried on this frame is also unsprung—in fact, the body alone is carried on springs. It must be agreed, however, that in appearance it leaves something to be desired.

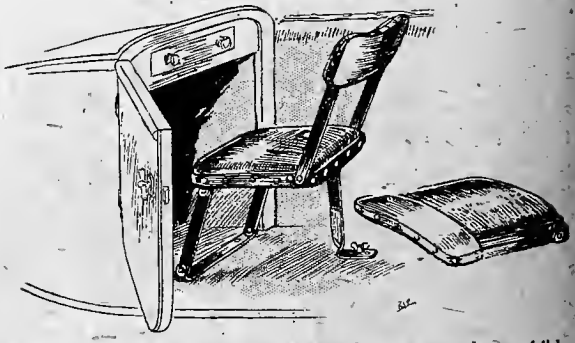


A simple type of three-wheeler of American origin. It is somewhat reminiscent of the Scott Sociable, although a very different engineering proposition.



The miniature flat twin four-stroke on the curious three-wheeler here described.

I observe that the Tynesider Seat Works, Union Street, North Shields, has now introduced an auxiliary seat for sidecars, the price of which is £1 9s. 6d. The illustration given is self-explanatory.



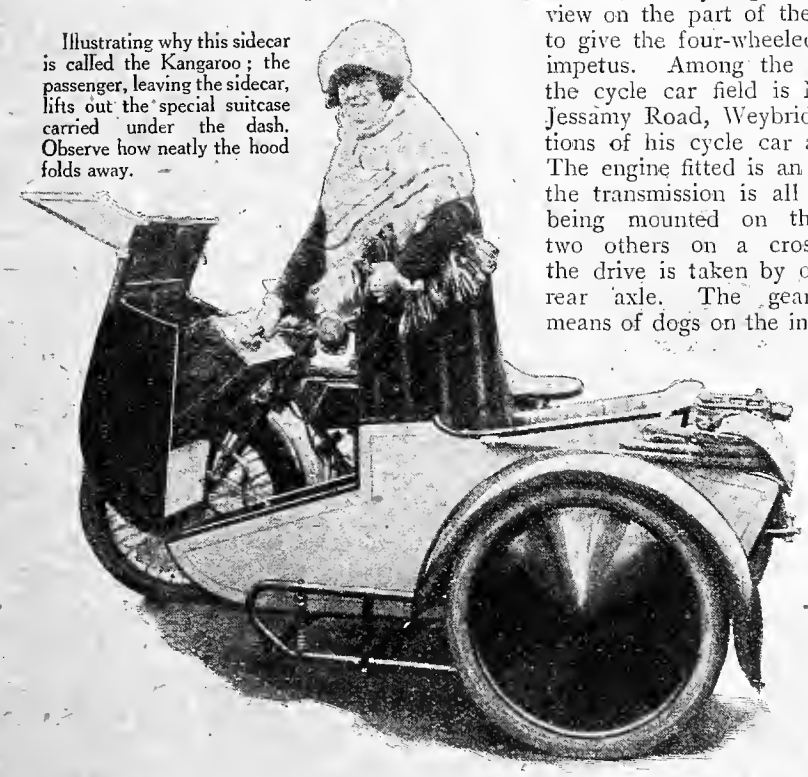
A Tynesider folding sidecar seat designed to accommodate a child.

Passenger Machine Topics.—

Recently, during a welcomed downpour of rain, I passed on the road the manager of a prominent motor cycle concern who was driving his touring outfit officewards. He had a passenger in the sidecar, who was holding the apron in front of his face as a protection against the grit thrown off by the front wheel—yet the makers continue to fit mudguards which inflict this punishment on passengers, and do not fit a screen as standard.

* * *

Some sidecar manufacturers are seriously considering the luggage problem. It is very satisfactory to note that slowly but surely the unsprung luggage grid is disappearing, and, in addition to the large number of sidecars now carrying the grid on the body, there are quite a number whereon the grid is discarded altogether in favour of a luggage locker. Usually these compartments are at the rear of the body, but at least one firm, the Woodside Motor Co., 415, Station Buildings, London, S.E.25, has arranged a luggage compartment in front. This sidecar is called the Kangaroo. In the front portion is carried a specially-designed suitcase, which fits accurately, and is held in position by straps. It is sufficiently spacious to carry luggage for two people for at least a week-end. Every available inch of interior space has been made use of, as in the back locker there is room for carrying two petrol tins in special carriers. Careful study of the seating position has enabled the designers to utilise this space under the dash for luggage-carrying without appreciably cramping the passenger's legs.

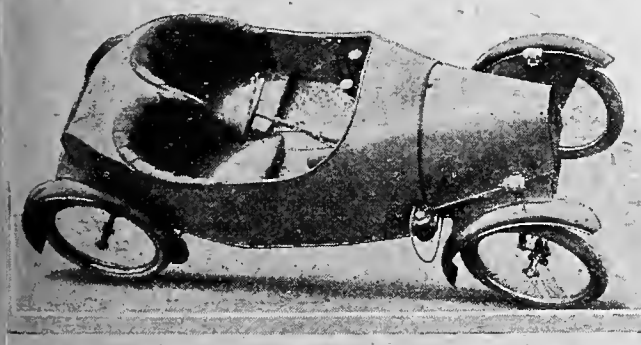


Illustrating why this sidecar is called the Kangaroo; the passenger, leaving the sidecar, lifts out the special suitcase carried under the dash. Observe how neatly the hood folds away.

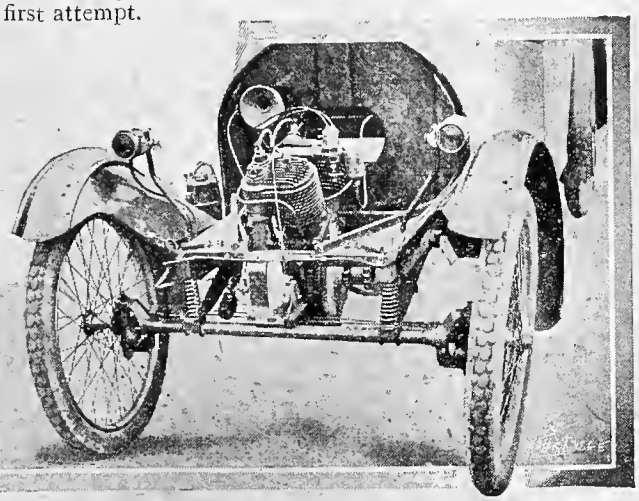
The undoubted popularity of the big sidecar outfit has been the means of inducing several firms to consider closely the cycle car proposition. It is prophesied that next year quite a number of small four-wheelers will be in direct competition with the sidecar *de luxe*—in fact, it only requires a little more lenient view on the part of the licensing authorities to give the four-wheeled cycle car a decided impetus. Among the latest firms to enter the cycle car field is Mr. G. W. Wadden, Jessamy Road, Weybridge, Surrey. Illustrations of his cycle car appear on this page. The engine fitted is an 8 h.p. J.A.P., while the transmission is all chain, two sprockets being mounted on the engine-shaft, and two others on a cross-shaft, from which the drive is taken by other chains to a live rear axle. The gears are changed by means of dogs on the inner sides of the cross-shaft sprockets. In the centre there is a single plate clutch. Steering is by means of cable and bobbin, while the springing is by coil and leaf springs.

* * *

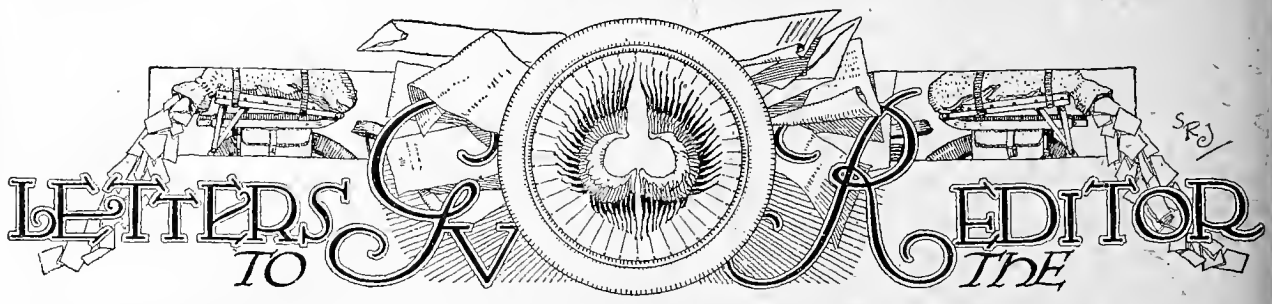
Why, and how, do one or two of the front-rank sidecar drivers succeed on the most freakish of hills when others driving identical outfits are hopelessly beaten by gradient, plus wheel-spin? Assuming that the machines *are* exactly similar, and that the man who fails is quite an experienced trials rider, the question becomes even more puzzling. Recent observations, however, convince me that the secret lies in systematic "bouncing" on the part of the driver and passenger. Full throttle, low gear, and a few minutes' synchronised gymnastic display—and a novice might well hope to surmount Alt-y-Bady at his first attempt.



Showing the staggered seats and quite graceful outline of the Simplic cycle car. The name is an index to its characteristics.



Front springing and power unit. A very "dummy" radiator forms part of the bonnet.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

PROTECTING A DISABLED LEG.

Sir,—I read "Dislip's" letter with considerable interest, as I am in a similar position myself. I have, however, constructed a strong and very satisfactory shield, similar to the one "Dislip" refers to, on a lightweight Clyno.

Should "Dislip" care to have further particulars no doubt the Editor would forward him my address.

Bridlington. DISLIP TOO.

THE CYCLE CAR OF MODERATE PRICE.

Sir,—It is with much interest that I read the article by "Ubique" on the above, and the letter of "Dumpling," in a recent issue, is also instructive.

At the same time, it must be borne in mind that the big twin engines, especially of the V type, are neither the most pleasant nor the most economical engines for the ideal cycle car. Thousands of sidecar enthusiasts—who, after all, are the people most likely to be interested in cycle car developments—regularly take two adult passengers and a child, and often luggage as well, anywhere, with a 4 h.p. engine; a 6 h.p. machine seems to be well on top of its work, and even with such a load is practically a "top gear 'bus" anywhere.

Therefore, why get a larger engine? Surely it is only necessary in order to counteract the inefficiencies of the transmission layout, etc. No, sir, I think we shall find that the real cycle car, when it does come, as it must before very long, will not require more than 5 h.p. or 6 h.p. at the outside, and most probably even less. Given a transmission free from losses, as is that of the modern chain-driven motor cycle, a cycle car will be more efficient even than the sidecar outfit, because it will eliminate the drag of the sidecar, which is quite an item, as experiments have shown. My specification would be a flat twin or four-cylinder engine up to 5 h.p. or 6 h.p., three-speed gear box, and all-chain drive, with a weight to power ratio about the same as in the high-class heavyweight sidecar of to-day.

Once our designers realise that the rider of a sidecar outfit requires just as adequate weather protection as his passenger now gets, we shall soon see the arrival of the new machine, the *real* cycle car, but it must be capable of taking the same loads and running as cheaply as does the popular sidecar. WILLIAM A. WEAVER,

Managing Director, The Coventry Victor Motor Co., Ltd.

UNITY OF CONTROL.

Sir,—Whilst fully appreciating the points made in your article on "Unity of Control," I should like to look at the matter from another point of view.

Motor cyclists and motor car owners cannot be absolutely in sympathy from the nature of things.

Let me put a case. Say the A.C.U., A.A., and R.A.C. are one. In matters of legal advice, assistance, etc., I should think the present A.A. organisation would predominate. A financially weak motor cyclist is smashed by a financially strong road hog in a big car. There are no independent witnesses. Both are members of the amalgamated body of control. Who is the body going to help? I am a member of both the A.C.U. and the A.A. I am in a somewhat similar position to the case indicated above. One organisation is very lukewarm in its action; the other is doing all it can.

I certainly maintain that it is in the interests of motor cyclists to have an organisation of their own. There are a large number of people whom the war has put in a position to be big car owners, who are not wanted in an organisation that looks after the sporting side of motoring.

Festiniog. UNDER 8 CWT.

Sir,—Two years ago I was a member of the A.C.U., but when it raised its fees I did not rejoin.

Since that date I have received over ten letters (including those from the A.A., of which I have never been a member) requesting me to rejoin. I have replied to none of these letters, and have made up my mind not to join again until these two bodies unite and form a really powerful and useful body. Every one of your readers realises, I am sure, the great work which could be done by an efficient, united body. Till then the circulars and letters which continue to come will remain unanswered. But why, oh why, do they not join forces? P. S. CHAMBERLAIN.

Sir,—Your recent leader on the subject of the A.C.U. shows your usual dignified handling of matters affecting the higher politics of the sport. But may I be permitted to suggest that, in accounting for the reduced membership, you miss, if not *the* point, at any rate a material point.

During last year the club, of which I had been a member of the executive for ten years, submitted a strongly-worded resolution to the governing body, calling on them to protest against the ridiculous and inequitable system of taxation then threatened. The same course was, I believe, adopted by other clubs. The outcome was that the R.A.C. gave the whole motorists' cause away, allowing Major Stenson Cooke, of the A.A., alone to raise his voice in protest. The obviously consistent course in the case of myself, and, I believe, in that of many others, was, though reluctantly, to sever all connection with any body directly or indirectly associated with the R.A.C.

It is to be observed that while the A.C.U. loses 40% of the membership, the A.A. forges ahead without looking back. *Verb. sap.*

Let us amalgamate these conflicting bodies by all means; but, bear in mind that the interests of the poor motor cyclist cannot, and will never, be safe in the hands of the plutocrats of Pall Mall.

BERNARD SIFFKEN, B.A., F.R.G.S.

MANUFACTURERS AND THE A.C.U. SIX DAYS TRIALS.

Sir,—The rules of the A.C.U. Six Days Trials have been so carefully drawn up that one besitates to criticise; I offer suggestions. That a certain standard should be reached in each test is admirable. A serious defect in one point spoils all-round excellence, and may reasonably spoil the chance of a gold. But is not the standard required too high? Would not a standard of 75% be sufficient, *provided that a 90% standard were required in the aggregate?*

To take an example, three marks lost in "silence" disqualify, whereas forty marks lost in "reliability," "speed," "oil and petrol," and "final condition" do not. As regards the silence test, it is obvious that the judges cannot discriminate between twenty varieties of noise. Would it not be fairer to have three grades only, "silent," "fairly quiet," and "noisy," and to disqualify the last only, giving bonus marks for the first? The machines might be (should be, I think) tested *before* the run. The riders could then retire and save trouble and expense. Also, it is possible for the most silent machine to develop a temporary noise,

which might happen by ill-luck at the moment of testing, but might not persist.

As regards the final test of "condition," I think you mistook the exact meaning of the rule.—I read it that a penalty will be imposed only in cases of actual breakage and bad wear and tear; and only then at the discretion of the judges—not that the judges have unlimited discretion as they had in a former trial. Personally, I think that the severe test at Brooklands would be sufficient, but it might seem unfair that a machine which survived the speed test only as a wreck should not be penalised. It depends on whether the Brooklands test is regarded as part of the trial, or whether it is regarded as a test of condition at the end of it. If it is the latter, obviously no further test is needed; if the former, the machine must be tested in some way after the trial. H. GEORGE MORGAN.

Sir,—There are several points in connection with your interesting article on the Six Days Trials which I feel might be amplified in such a manner as to put a different interpretation upon them. I hope that in writing I am not taking the words out of other people's mouths, who are possibly more vested in the necessary authority than myself.

In the first place, I was under the impression that the Six Days regulations were got out largely in conjunction with the manufacturers themselves. On the question of silence the manufacturers asked that the ear might be used to judge and mark the machines. In your notes you state that the makers do not like to be marked on points which depend upon personal opinions. Surely if the relative silence of one hundred machines is going to be judged, the personal element has been introduced by the manufacturers asking for the ear only to be the deciding factor, and it must be obvious to everyone that the result of this ruling will be that *no machine can be penalised* unless it is noisy beyond all reason.

On the question of marks being deducted in the final examination at the discretion of the judges, I should have thought the number of gold medals awarded last year would have removed any apprehension on this score. If actual marks were laid down as deductable for each broken spoke, the net result would be unfair to the competitors. We might have the case of a machine with one broken spoke having marks deducted, whereas a machine with every spoke thoroughly loose would go scot free. I merely quote this as an exaggerated example, to show that, as in the past, there is anything but a desire on the part of the A.C.U. to be antagonistic to anyone. This at least is my humble opinion, and if you realised the extraordinary amount of care and thought which is put into trials regulations, and the manner in which expert riders and designers are consulted to ensure general fairness, you would appreciate that many of the points raised by critics have not only been considered at great length, but are actually there to protect the very people who complain.

Surely every trial that has been held has been not only to support the private user, but also to help the manufacturer to demonstrate the best points of his machine. A trial does not exist merely as an advertising proposition for *every* machine, but only for the good motor cycles, and it is interesting in this connection to notice that almost every admittedly excellent motor cycle has done well in every A.C.U. trial.

There is one final point, which I suggest has been misquoted. I have never personally seen any Six Days Trials in which any official wished to criticise design, and I am quite certain that, should such an occasion arise, the stewards of the meeting would very soon stop such ridiculous behaviour on the part of those primarily responsible for the deduction of marks. What I think you have forgotten is that design has a nasty habit of affecting results. If twenty machines finish a trial with stirrup front brakes hopelessly inoperative, marks are deducted because the brakes are not in perfect working order. No marks are deducted because the design of the brake is such that this bad result might have been foreseen, and the fact that design might have been responsible for the bad result has nothing to do with the case whatsoever.

Surely it is evident that if a "bad" design finishes a hard trial in perfectly good order the design ceases to be bad. A. M. LOW, A.C.G.I., M.I.A.E., etc.

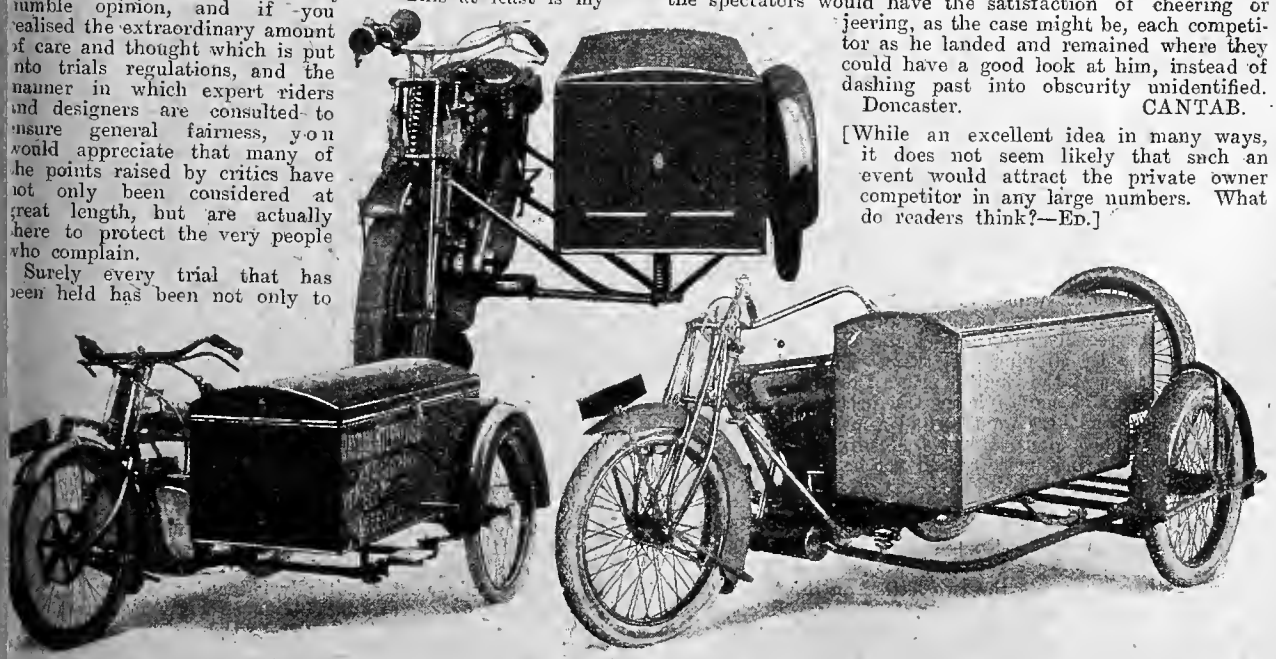
——*AND TYRES AT £6 PER PAIR?*

Sir,—As a motorist for nineteen years, and a motor cyclist for the last eight or so, I write to suggest what I believe to be a new type of race. The Doncaster and District M.C.C. (of whose committee I am a member) held its own speed trials recently over the measured half-mile, which distance was covered by several members at over sixty miles per hour.

The start was a flying one, and so was the finish, and no doubt this kind of competition has its uses and its thrills. But of how much more use would such a race be were it decreed that the finish were to be a standing one, right on a mark not more than 6in. wide? Such a competition would serve to bring honour to the man who had a machine that was not only fast, but fitted with good brakes, and who showed the maximum of skill and judgment in using them. It would encourage, as no other race that I have heard of, the "safety first" idea, of which all decent people are supporters; and those who are in the habit of riding as if there were no such things as brakes, or no occasions for their use, might learn therefrom a very valuable lesson. Finally, the spectators would have the satisfaction of cheering or jeering, as the case might be, each competitor as he landed and remained where they could have a good look at him, instead of dashing past into obscurity unidentified.

Doncaster. CANTAB.

[While an excellent idea in many ways, it does not seem likely that such an event would attract the private owner competitor in any large numbers. What do readers think?—ED.]



FOR LIGHT DELIVERY.

Several well-known motor cycles now available, with special sidecars for utilitarian purposes. (Top) A single-cylinder B.S.A. (Left) The Beardmore-Precision. (Right) A Matchless-M.A.G.

BRITISH BIG TWINS—FROM VARIOUS VIEWPOINTS.

Sir,—I have not been a reader of your interesting journal for ninety-nine years, but I have seen you cry out on more than one occasion for a fast British big twin, and it is my opinion we never will have one until the big twin is given a sporting chance in open speed trials. For instance, take any open speed trial and look at the programme, and we find a "hot stuff 3½ h.p." running no fewer than seven or eight times. Its entrant has a run in which to get to know the particular track, and seven more runs to make other adjustments in. Then comes the fixed geared big twin, with one solitary run in which to find out everything—when it is too late. Where is there a rider who cannot knock seconds off his first run on any machine?

Take the standing start classes, which prove nothing much, only making an event much too lengthy, in my opinion; what chance has a rider pushing his 3 cwt. of metal by himself for about twenty yards against a geared "3½ h.p." that could be half way down the track by the time the big twin gets his first shot? Instead of giving one man seven or eight runs and another man one, I would like to ask, why not give every man two runs, and his best time to count in all the classes he likes to enter for. Then, and only then, will one see how the big twins have been running against great odds? D.M.C.

Mansfield.

Sir,—Looking through all that has been said of late in the editorial and correspondence columns of *The Motor Cycle* on the subject of the introduction of a British super-twin, which should equal, and, if possible, supersede, its American brethren in speed and power, it strikes me that none of the writers has touched upon the commercial and financial side of this problem. Yet I am sure it will prove to be more difficult for the British manufacturers to capture the business done in big twins, especially in overseas markets, than to solve the technical problems connected with the construction of a mount which can lap the Americans on the Brooklands track. And, after all, the big sales and the subsequent profits are the things that count in the motor cycle trade, and record breaking is only one of the means used in the race for financial success!

As far as Holland is concerned, the bulk of the motor cycle business is done here by the American manufacturers. Notwithstanding the fact that they have the rate of exchange against them to an extent of 30%, the Hendee Manufacturing Co. are selling here the Indian Powerplus, fully equipped with spring frame, electric head and tail lamps, electric horn, separate magneto and dynamo, at the price of f. 1,525, whilst an electrically-equipped British motor cycle of only 6-7 h.p., and with a sprung saddle pillar as a substitute for a complete spring frame, costs here not less than f. 2,150.

Now, I am the first man to grant that the enamel and plating of British machines are generally superior to the finish of the Indians, but is this worth a sum of more than £50 to a rider who wants speed and power and who goes by the actual results obtained in the big trials?

It is not only necessary to offer to the public the right goods, but especially, nowadays, the right price is also wanted, and in this respect America is constantly making a big score. If the British manufacturers could see the number of American twins which make their appearance on the roads even in a small country such as Holland, they would be disagreeably surprised at the volume of business which is constantly slipping past them. The only cure is a thorough revision of the English prices along the whole line.

It would interest me to learn the price of the Brough Superior. If its makers want to find a market here in competition with the Indians, Harleys, Reading-Standards, and other Americans, their price should not be above £140, full electric equipment included. F. H. LAMPEN.

Amsterdam.

[Equipped with acetylene lamps, horn, etc., the Brough Superior sells at £175.—Ed.]

Sir,—With reference to the two letters on this subject, on page 111 of your issue dated July 28th, may I offer the following observations?

May I suggest to Mr. G. Wake that he is not in possession of all the facts in connection with the production of the Brough Superior, otherwise he would hardly have penned the letter he has?

The Brough Superior was designed and the first machine produced in less than eight months. That it achieved instant success is now a matter of history, and to say that it is easily the most coveted machine of the day will not be disputed by anyone who is not prejudiced.

I know that all successes in competition are on absolutely standard models, because no other models are made.

Bearing in mind that it is an expensive matter to produce an entirely new type of machine, and that the works are unable to cope with the demand, it is small wonder that the machine is not represented in such expensive events in time and money as the Brooklands five hundred mile race.

After all, who is the man who should be satisfied first? Is it the man who rides a machine, or the armchair critic who theorises and possibly knows very little of the facts of the case?

Personally, as a private owner and a more than satisfied user of the Brough Superior every day in my business, I can safely say it is the most reliable and satisfying of a series of motor cycles extending over the twenty years I have been using them. I have ridden my machine over 11,000 miles since March 2nd with the solitary replacement of a valve spring. In addition to using the machine for business, I have also ridden successfully in three long-distance trials, and I think any unprejudiced person will agree that the machine still looks practically as when new.

HAROLD KARSLAKE.

SPEED TRIALS AS A CURE FOR INSOMNIA!

Sir,—I note in your issue for the 4th inst. a letter from the Managing Director of New Imperial cycles regarding the Clipstone Drive speed trials, in which he very kindly volunteers several suggestions for the improvement of these events. All his suggstions are grand, but impracticable, except under the most favourable conditions.

To read such criticisms as your correspondent's is very disheartening to those who have worked assiduously for a month to try and please, though I am convinced that the production of this effect was very far from your correspondent's intention, and that he has no egoistic grievance. In the first place, it is rather wild to state that up to five o'clock only half a dozen competitors had been along the course, as in the first class alone there were twice that number of competitors. Again, several well-known riders told me previous to the event that they did not intend entering the sidecar classes. Yet I confess that solo classes for machines of the same capacity as, say, the speedy New Imperial, could very well have been sandwiched as the ham between the sidecar bread had it occurred to the promoters. This is a matter which is certainly worthy of attention. A great many machines of 500 c.c. and upward enter solo and sidecar, and the alternation of their sidecar entries with the 350 c.c. solo would certainly ensure that a few more got an early show, though the arrangement would leave the Senior T.T. winner perspiring as he detaches, fixes, redetaches and refixes on to his A.J.S.

Your correspondent continues: "There should be a definite starting time for each event or class." Excellent indeed, provided all goes well. There was a good deal of delay through the very heavy breeze making the start and finish banners unsafe, and the stewards very wisely held up the proceedings until they were in order. These are unlooked for occurrences, and "the best laid schemes of mice and men . . . ."

I am prepared to admit that on the general question your correspondent is quite right—that things can be improved. But the key to the whole trouble is nothing more than the multiplicity of classes. Mammon is once more at the root of the whole evil. But no such fabulous sums are made out of these events as some would have us believe. For Clipstone, the total value of the prizes alone approximates to £160, and this takes some collecting in entry fees. Hence the number of classes to cover other expenses also. Personally, I should welcome the breakdown of the gold medal tradition, and hail the advent of the day when there was a uniform entry fee of 5s. at most for all classes of rider, with some more modest recognition of a win. This would do much to remedy what admittedly is making the running of a trial a strain on, instead of a pleasure to, the organisers. At the same time, with a diminution in the number of classes, I should not like to see things pushed through. This, to my mind, savours too much of business, a trade, an advertisement. Let things be taken a little more gently, with an interval or two for a convivial quaff and a chat. There is no reason

whatever why the sporting side of motor cycling should be so hopelessly divorced from the social. This cleavage, which certainly exists to-day, is doing much to weaken the united front that motor cyclists can present, and I am convinced that it is enfeebling club life. I feel confident that, if things could be taken a little more leisurely on the lines I have broadly hinted, it would once more set the blood coursing freely through many a club body, and be the means of increasing its vitality twenty and thirtyfold.

K. S. TOPPING,
Hon. Sec., East Midland Centre.

FROM A MECHANICAL ENGINEERING POINT OF VIEW.

Sir,—Allow me to reply to the various criticisms of my letter with the above heading.

In regard to your editorial comment on the crank and connecting rod type of transmission, it will perhaps make matters clearer if I explain the particular design I had in mind, which design may have been experimented with years ago, but, in view of recent developments, might possibly be worth reviving.

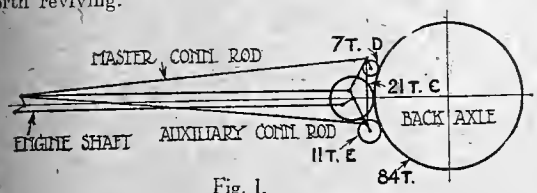


Fig. 1.

It consists of a combined transmission and gear box as shown diagrammatically in fig. 1. The rotation of the engine-shaft is transmitted by two connecting rods and cranks, or eccentrics, to the pinion-shaft C. The master connecting rod also rotates two crankshafts on which are the pinions D and E. It is seen that all three pinions are rotating at engine speed, and by engaging any one pinion with the gear wheel fixed on the back hub three speeds may be obtained. The clutch and spring cush drive would be in the outside flywheel. If the gear ratios are $\frac{84}{21}$, $\frac{84}{11}$, $\frac{84}{7}$ = 4, 7.7, and 12 to 1, pinion D would have seven teeth, which would be quite satisfactory provided the "Maag" form of gear tooth were used, as this form of gear tooth has the advantage that as the number of teeth decreases, the strength of the tooth increases.

The two connecting rods could be perfectly balanced, and, as such, would tend to smooth out the engine impulses. The whole transmission would require the minimum attention.

With regard to the Pelican Engineering Co.'s remarks *re* hub bearing design, may I point out that it is usual to choose all bearings by their load-carrying capacity, not by their outside diameter; also, existing hubs designed for cone bearings are not suitable housings for a high-class self-aligning ball bearing. On the whole, they are not rigid enough nor dirt or moisture proof.

I should like to know how they fix the races to take the end thrust, and also whether the manufacturer of that particular ball bearing guarantees them when so fitted.

The following are a few extracts from makers' catalogues:

"It may be remarked here that ball and roller races should be regarded by designers as hardened steel tracks. They are, particularly in the light types, readily distorted, and require to be supported in substantial housings, accurately machined."

"The importance of excluding dirt and water cannot be over-rated."

"We recommend as a lubricant a grease (chemically neutral) of about the consistency of thick vaseline. It is, however, of the utmost importance that all hardened and ground steel surfaces should be in contact with grease, as they quickly rust if this is not done. For these reasons we recommend that all housings containing ball bearings should be fitted with a Stauffer or similar lubricator, so that a little additional grease can be forced in as occasion demands (or a grease gun used)."

"Under proper conditions the bearings will run for years without showing wear."

Thus, to be efficient, a ball-bearing hub must satisfy the above conditions. The principles on which I should design a front hub for a lightweight are shown in fig. 2.

It will be seen that an internal expanding brake is incorporated. It is no use having an efficient and weatherproof hub without having the front brake to match, and this is the only type of brake which can be made efficient, weatherproof, and neat in appearance.

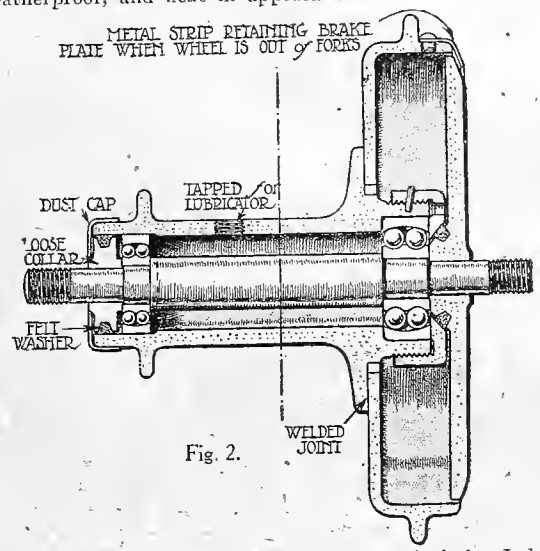


Fig. 2.

In regard to the use of Timken bearings in hubs, I do not think it is the best design to include the adjusting nut for the inner race as part of the "circuit" between the axle nuts. The fork ends should tighten against a solid shoulder on the axle on each side.

DRAUGHTSMAN.
Salford.

SUMMARY OF CORRESPONDENCE.

Two readers wish to thank good Samaritans—a driver of a G.P. Morgan, "O.H. 4589," on the Bristol-Bridgwater Road, and a Douglas rider on the Maidstone Road near Ightham—who respectively helped them in road troubles.

"One who has tried a few" praises the capabilities of his 1914 Clyno two-stroke lightweight.

Riding from Kilcreggan to Coulport, a Glasgow reader, "Indian," records that he was stopped in a ten mile limit by a plain clothes policeman whom he knew was "off duty."

Replying to "C.C.C.'s" letter on "Air-cooling and Oil-cooling," Messrs. W. H. Frost, Burnley, point out that their system of lubrication provides "a constant return to the crank case of cool and clean oil."

Referring to the letters on the subject of carrying petrol tins on sidecars, "J.H.R." recommends the Greenwich petrol can carrier made by Messrs. Duffet Bros., 78, Gt. Jackson Street, Manchester.

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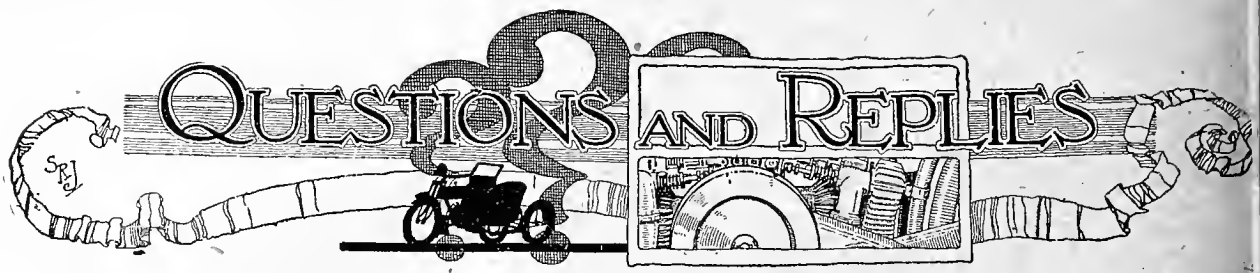


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects. ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

OILING A TWO-STROKE.

? My 2¼ h.p. New Hudson two-stroke (1916 model) has a plain sight drip feed, but does not get enough oil. Should there be a non-return valve, and, if so, where should it be fitted? Would it improve matters if I substituted a plain oil pipe without drip feed?—E.P.

There should be a non-return valve between the crank case and the drip feed, unless the oil pipe is led into the induction pipe, in which case the diaphragm valve in the base of the drip sight chamber will be sufficient. In order to ensure efficient working, make quite sure that there are no air leaks either at the unions or at the joint between the sight glass and the drip feed body. You should not fit a direct pipe with this particular drip feed. If the oiling is insufficient, add a small quantity of oil to the petrol.

VIBRATION AND TESTING BEARING WEAR.

? When running at any speed, the footboards of my machine vibrate to such an extent that it is almost impossible to keep my feet on them. In one of your articles some time ago the writer says, "Get the piston at the end of its stroke, and then test for bearing play by rocking the flywheel." Could you tell me which end, and in the case of a twin which piston? Surely even then an attempt to vibrate the sprocket, if successful, would only show slack in the main crankshaft bearings.—J.C.

It does not really matter whether the piston is at the inward or outward end of the stroke, although it is probably easier to test the state of the bearings when it is at the outward end. You appear to have misunderstood the process. By rotating the sprocket alternately backwards and forwards, the piston is correspondingly drawn rapidly up and down over the top of the stroke, changing its direction each time the rotation of the sprocket is reversed. The play in the connecting rod bearings is, therefore, very noticeable, as the piston lags behind the connecting rod when the reversal of direction takes place. This test should be carried out with the engine warm, so that the oil is thinned, and thus offers no resistance. Play in the main bearings is detected by lifting the sprocket vertically. Probably the engine is not rigidly held in the frame. Secure the engine fixing bolts or replace them with new ones if they are worn.

CLUTCH SLIP AND TOP GEAR HILL CLIMBING.

? (1.) Large chips are missing from two of the radiating fins of my W.D. Triumph. Can this be remedied in any way? (2.) The clutch slips slightly on hills. I have taken it down, and find that an extra fabric ring has already been added. The rings are free from grease, and I have tightened the screws as far as possible, without improvement. What do you recommend to effect a cure? (3.) With the throttle fully open on hills, the air has to be only threequarters open. Is this correct? The jet is 28. (4.) Is it good for the machine to attempt to climb such hills as Kop Hill, Princes Risborough, on top gear?—C.P.

(1.) The radiating fins cannot be repaired very readily. (2.) The only thing you can do is to add still another Ferodo ring, and then release the tension of the springs as required, or renew the springs entirely. (3.) With this size of jet it would be necessary to close the air slightly w hill-climbing. With a larger jet, No. 32, the carburetter is fully automa but the consumption will be a li higher. (4.) Climbing steep hills on gear will do no harm to the machine vided you do not allow it to "thum It is much better, however, to cha down into second gear rather than to h on to top when the speed falls below ab 15 m.p.h.

DOES CONSUMPTION IMPROVE WI USE?

? Does one get more miles gallon from a brand n machine, or will the m.p.g. more after the machine has say, 500 miles, and been tak down and decarbonised?—B.W

In all probability the petrol consumpt would be appreciably better after machine has run 500 miles, as it then be "run in," and all the pa working smoothly and with a minim of friction.

SEVERE WEATHER CONDITIONS IN NORTH WALES M.C.C. OPEN TRIAL. G. F. Burns (3½ Sunbeam) in the rain on the summit of Bwlch-y-Groes. He also made a fine ascent of Alt-y-Bady.

SIDECAR WORK FOR AN ESSENTIALLY SOLO MOUNT.

My mount is a 3½ h.p. V twin N.U.T. geared 4 to 1 on top. I want to reduce this to 5 to 1 to pull a sporting sidecar. (1.) Is the latter ratio correct for sidecar work? (2.) Which sprocket should I change, engine-shaft with fifteen teeth or countershaft with thirty?—J.J.L.

(1.) A 5 to 1 or 5¼ to 1 top gear would be the best for sidecar work. Your machine, however, was designed essentially as a solo mount, and you may be disappointed with the results when a sidecar is fitted. (2.) You will require a smaller sprocket on the engine-shaft, but you must remember that even a fifteen-tooth sprocket, as at present fitted, is smaller than the minimum size recommended by the chain makers.

ELECTRIC LIGHTING.

(1.) I have recently purchased a small dynamo giving an output of 12 volts 7 ampères. How many 4 volt 4 c.p. metal filament lamps will it supply? (2.) How long does a 4 volt metal filament lamp generally last? (3.) Should I run No. 14 wire to as central a position as possible, and tap off to various positions by means of No. 18 wire? (4.) What kind of fuse wire would be necessary?—B.W.

(1.) The dynamo would illuminate twenty-one lamps of 4 volt 4 c.p., but they would have to be in series of three, *i.e.*, seven sets in threes. (2.) It is impossible to estimate the life of metal filament lamps; it might be anything between 100 to 500 hours, according to the conditions of service. (3.) Each set of three lamps should be on 1/18; the mains should be of 3/18 or 7/20 wire. (4.) The main fuses should be 10 ampères, and one or two ampères on each circuit.

WHICH WHEEL LIFTS?

On reading in an old issue a question and your reply on which wheel lifts on a corner, I see that it is possible to lift the cycle on sharp right turns. I was once going up a hill with a sidecar at a fair speed, expecting when at the top a downward gradient of some length, but was surprised to find just about fifteen yards over the top a solid stone wall facing me and a sharp right-hand turn so narrow as to be almost invisible. There was no time for slowing down or thinking, and I turned sharp, but there was certainly no lifting of the cycle. The sidecar wheel, however, bent into a complete right angle. But does not this disprove the assertion that the cycle lifts?—E.T.

The curious accident which you experienced in no way disproves the fact that, on a sharp right-hand turn, if the speed is high enough, the motor cycle will lift and go over the sidecar. Why it did not do so in your case was probably because the speed was not sufficiently high, and also that the centrifugal force, exerted by the machine, which ultimately causes it to lift, brought about the collapse of the sidecar wheel as you indicate. We ourselves, at any rate, are quite satisfied, after personal experience and observing it on trials, that if the speed is high enough the machine will lift over the sidecar on right-hand bends.

READERS' REPLIES.

TWIN FIRING ON ONE CYLINDER.

May I offer my experience to "W.H.D."? I am also owner of a 2¾ h.p. Douglas, which lately developed precisely the same symptoms he complains of. All the engine parts, as in his case, appeared in perfect order, until, on removing the crank case cover, it was found that the cam wheel bush was worn, and this was associated with considerable wear in the bearing parts of the valve rockers, interfering, of course, with the perfect working of the valves. After rebushing the cam wheel and replacing the rockers the trouble disappeared.—P.J.B.

Re "W.H.D.'s" query in the issue of the 28th ult. about a Douglas, the trouble is probably caused by the exhaust lifter cable being a shade too tight. If this is released until the faintest slackness is felt on touching the exhaust lever, I think he will find his troubles are cured.—J. G. BEAL, M.P.S.

Important Dates.

Sat., Aug. 20th—Western Centre A.C.U. Open Speed Trials.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd—A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—North-Western Centre A.C.U. Open Speed Trials.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"J.U.M." (Belfast).—A.V. monocar: General experiences.

"D.C.M." (London, W.1.)—Scott Sociable: Particularly consumption and reliability.

L. H. Scott (Rock Ferry.)—A.V. monocar: General running and stability on corners.

"T.K." (Deal).—A.V. mono or bicar: Reliability and general wear.

"A.B." (Clapham, S.W.11).—Indian Scout, solo or sidecar: Consumption, suitable oil, carburetter adjustments, etc.

"F.A.R.C." (Westminster).—2¾ h.p. three-speed Douglas with light sidecar: Maximum gradients climbable, etc.

J. W. Howard (Bristol).—Indian Scout, electrically equipped model, and 3½ h.p. sports Sunbeam: Speed, climbing, general performance, and reliability.

"P.B.S." (Newmarket).—4½ h.p. 1921 Ariel with sidecar: Economy, reliability, comfort, and braking power.

RECOMMENDED ROUTES.

BIRKENHEAD TO ABERYSTWYTH.—T.A.McB.

Birkenhead, New Ferry, Port Sunlight, Bromborough, East Ham, Little Sutton, Great Sutton, Chester, Rossett, Wrexham, Johnstown, Ruabon, Acrefair, Trevor, Llangollen Station, Llangollen, Berwyn Station, Glyn, Dyfrdwy, Corwen, Llangar, Llandrillo, Llanderfel Station, Bala, Llannwchllyn, Dolgelley, Cross Foxes Inn, Upper Corris, Corris, Machynlleth, Talybont, Bow Street, Aberystwyth. Approximately 112 miles.

COVENTRY TO CONWAY.—R.E.W.

Coventry, Meriden, Stonebridge, Bacon's End, Castle Bromwich, Erdington, New Oscott, Brownhills, Bridgetown, Four Crosses, Gailey, Ivetsey Bank, Weston, St. Georges, Shifnal, (edge of) Wellington, Atcham, Shrewsbury, Whittington, Gobowen, Chirk, Llangollen, Corwen, (edge of) Cerrig-y-Druidion, Pentre Voelas, Bettws-y-Coed, Llanrwst, Tal-y-cafn, Glan Conway, Llandudno Junction, Conway. Approximately 142½ miles.

LEEDS TO COLCHESTER.—C.J.H.

Leeds, Killingbeck, Garforth, Ferrybridge, Doncaster, Bawtry, Barnby Moor, Retford, Tuxford, Newark, Great Gonerby, Grantham, Colsterworth, Great Casterton, Stamford, Wansford, Peterborough, Norman Cross, Stilton, Alconbury Hill, Huntingdon, Godmanchester, Fenstanton, Cambridge, Abington, Linton, Horseheath, Withersfield, Haverhill, Sturmer, Baythorn End, Ridgewell, Great Yeldham, Halstead, Earls Colne, Wakes Colne, Lexden, Colchester. Approximately 202 miles.

DEAL TO THE GREAT NORTH ROAD.—J.V.G.P.

Deal, Sandwich, Wingham, Canterbury, Boughton, Ospringe, Sittingbourne, Key Street, Newington, Rainham, Chatham, Rochester, Gads Hill, Gravesend, (ferry to) Tilbury, Gun Hill, Chadwell St. Mary, Grav's Cemetery, Stifford, South Ockenden, North Ockenden, Corbet's Tye, Upminster, Hornchurch, Romford, Collier Row, Chigwell Row, Woodford Bridge, Woodford Green, Chingford Green, Chingford Marsh, South Street (Ponders End), Churchbury Road, Enfield Town Station, Chase Farm Industrial School, Potters Bar, Hatfield, Great North Road. Approximately 93 miles.

BIRMINGHAM TO RAMSGATE.—W.T.W.

Birmingham, Acock's Green, Solihull, Knowle, Warwick, Gaydon, Warmington, Banbury, (near edge of) Adderbury, Aynho, Souldern, Bicester, Waddesdon, Aylesbury, Wendover, Great Missenden, Amersham, Beaconsfield, Farnham Common, Farnham Royal, Salthill, Eton, Windsor, Staines, Sunbury Common, Hampton, Hampton Court, Kingston-on-Thames, Tolworth, Ewell, Burgh Heath, Reigate, Redhill, Nutfield, Bletchingley, Godstone, Oxted, Westerham, Brasted, Riverhead, Seal, Ightham, Borough Green, Wrotham Green, (edge of) Leybourne, Maidstone, Detling, Key Street, Sittingbourne, Ospringe, Boughton, Canterbury, Sturry, Upstreet, Sarre, Birchington, Margate, Broadstairs, Ramsgate. Approximately 218 miles.

CURRENT CHAT

Times to Light Lamps

Aug. 18th	... ...	8.47 p.m.
,, 20th	... ...	8.43 ,,
,, 22nd	... ...	8.39 ,,
,, 24th	... ...	8.34 ,,

Motor Cycle Police in the Provinces.

Four Rudge Multi sidecars are being used by the Liverpool police for various road duties, and are giving every satisfaction.

The Price of Petrol.

The price of petrol is still too high, but motor cyclists will be content with "threepenny" reductions—provided they are frequent enough. We suggest that a further reduction is due.

The International Trials.

Last week we gave a fully illustrated report of the International Six Days Trials in Switzerland, written by a member of *The Motor Cycle* staff who accompanied the competitors. On pages 192 and 193 of this issue will be found his impressions of the Trial.

The "Six Days."

Among the trade entrants in the annual A.C.U. Six Days event this year are two teams on machines which have not been represented since the pre-war trials, *i.e.*, the F.N. and the Rudge. One of the F.N.'s will be ridden by H. G. Bell, a well-known F.N. exponent in days gone by, while the Rudges will be in the hands of F. T. Sibley, who drove a twin Rudge in the Scottish Trials; W. L. Danskin, the old Rover expert, who has now joined the competitions staff of the Rudge-Whitworth Co.; and R. B. Ewens, who has figured in more than one classic trial.

Imports and Exports.

While the total value of motor cycle imports during July has increased by £5,418 compared with June, the increase in our exports during the same period has only been £4,572. Actually, too, fewer machines were exported, but the deficit was largely made up by an increase in "value of parts." Comparative figures, culled from the Board of Trade returns for June and July, follow:

IMPORTS.

	June, 1921.	July, 1921.
Number of motor cycles ..	71	78
Value of machines and parts	£15,289	£20,707

BRITISH EXPORTS.

	June, 1921.	July, 1921.
Number of motor cycles ..	722	646
Value of motor cycles only	£54,792	£54,834
Value of parts	£19,374	£23,904
Total value	£74,166	£78,738

Caution.

Many villages on the London-Colchester road are complaining of inconsiderate and fast driving, and, according to a warning issued by the A.A., unless an improvement is observed, the police will be compelled to take action.

Waterloo Bridge Repairs.

The repaving of the carriageway on Waterloo Bridge is shortly to be commenced, and the Commissioner of Police of the Metropolis wishes to warn drivers of vehicles of probable congestion on the bridge, and to suggest that as much use as possible should be made of the other bridges.

The Old Wyche Road.

A Malvern magistrate has suggested that the Bench should make an application to the County Council to apply to the Minister of Transport under Section 7 of the Roads Act, with a view to an enquiry being held and steps taken to prohibit or restrict the use of the Old Wyche Road by motor cyclists. He submitted that the use of the road was being abused, and that this traffic was not only a nuisance but also a serious danger.

Special Features.

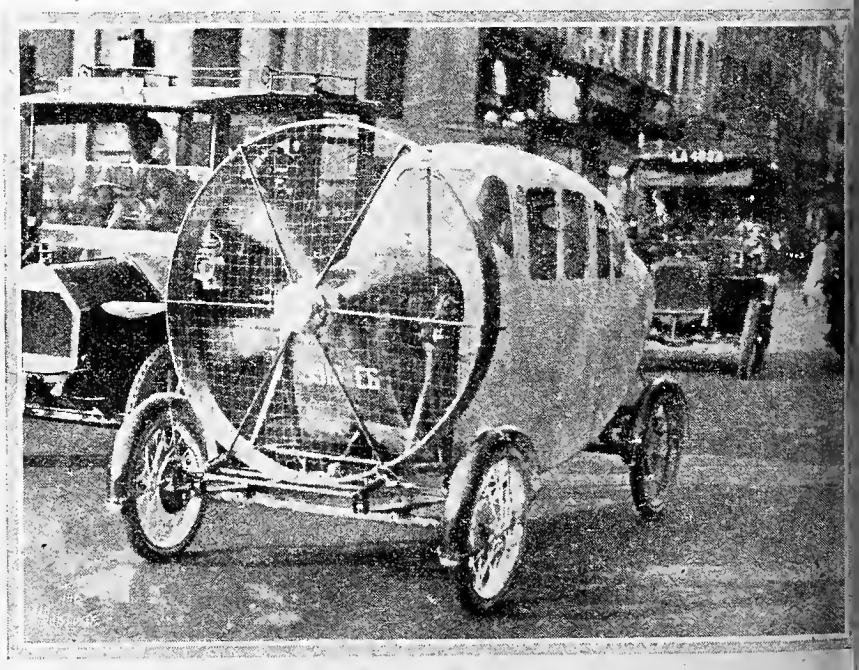
PASSENGER MACHINE TOPICS.
500 MILES TO A GOLF COURSE.
IMPRESSIONS OF AN ALPINE TRIAL.

Evidently a Standing Order.

The P. and M. sidecars used by the R.A.F. in London are equipped with a wheel lock, consisting of what appears to be a few links of the *Aquitania's* anchor chains, enclosed in leather, and a padlock.

A Warning.

A short while ago we published a letter from a gentleman who had been victimised by an impostor who called himself Mr. Reg. Brown, and borrowed money from him. We have to record that several other instances have since occurred, and the names of Mr. J. E. Greenwood and Mr. T. Cyril Greenwood have been used in a similar manner. Messrs. John Marston, Ltd., the makers of the Sunbeam, appeal to our readers to assist in the capture of the impostor by giving the earliest possible notice to the police and to themselves, if they are asked for money by any person professing to be a member of their staff.



FRENCH WIND WAGGON IN LONDON.

An imposing example of a limousine wind waggon of French origin, and fitted with an air-cooled engine. This is the lightest and simplest form of car construction, there being no gear box or transmission difficulties to overcome. The car is seen passing through Trafalgar Square.

CURRENT CHAT (Continued from p. 208).

Congratulations.

Congratulations to the manufacturers of the Norton motor cycle, and to H. W. Hassall, who rode it to victory in the Grand Prix in Belgium.

Another Price Reduction.

The following price reductions are announced for Morgan models: Sporting, £206 to £180; Grand Prix, £218 to £192; *de luxe* (a.c.), £215 to £188; *de luxe* (w.c.), £228 to £198; family, £235 to £200.

Motor Cyclist Helps Fire Fighters.

Mr. Chas. F. Coales, chief officer of the Newport Pagnell Fire Brigade, wishes to thank the driver of the Matchless sidecar, who, on Sunday, the 7th inst., carried one of his men to the scene of a fire after he had missed the departure of the fire-engine.

Practice for the Belgian Grand Prix.

When the competitors were about to qualify for the practice laps, they were asked to complete ten. The English riders said this was too much and started to bargain with the timekeeper, who then suggested five, but our countrymen beat him down to three. The men were all started on these three laps without number plates, and though one could not be distinguished from the other, they all qualified.

A Practical Handbook.

Based on the "Hints and Tips" pages of *The Autocar*, wherein they have been a feature since 1902, the handbook "Complete Hints and Tips for Automobilists" (5s., Iliffe and Sons Ltd., 20, Tudor Street, London, E.C.4) now reaches its eighth edition. Although of chief interest to the car owner, it is full of such sound practical "horse sense" in matters relating to the care and repair of mechanical and electrical things that it should be of almost equal value to the motor cyclist, for there is scarcely a page without some useful workshop "kink" of general application.

Lubrication.

One of the first lessons for the novice to learn is that the majority of engine troubles arise from inefficient lubrication. Sometimes the application of the lubricating system is the cause, but more often unsuitable oil is the source of trouble.

Nationalities.

At most speed events where certain well-known riders are competing, one hears remarks which go to show that Sgonina is regarded as an Italian, Le Vack and de la Hay as Frenchmen, and Bennett as an American. They are all British, including the last-mentioned, who is Canadian.

South African T.T.

The South African Tourist Trophy race, held at Maritzburg under the auspices of the Natal Club, was won by J. Young on a Triumph, who covered the 142 miles at an average speed of 40 m.p.h.; while M. Cohen, also on a Triumph, was second.

A Warning.

For passing a car from behind while a motor cyclist was approaching in the opposite direction, a car driver has been fined £5 and costs. The motor cyclist was struck by the overtaking car, and suffered a broken finger and a damaged shoulder. The practice of overtaking a car when the road ahead is not clear is most dangerous.

Sunday Competitions.

A strong protest has been made to the North Eastern Automobile Association against Sunday competitions, and members of the North Eastern Centre A.C.U. have protested against the proposed embargo. On the understanding that the N.E.A.A. name does not appear in connection with any Sunday programme, a projected resolution by the N.E.A.A. against such competitions was not proceeded with. Our views on Sunday competitions appear on the leader page. We do not favour them for reasons which often have appeared in these pages.

Trial for Fixed Gear Machines.

Previously confined to Levis machines, this year's trial of the Levis Athletic Club (Motor Section) for the Yardley Cup will be open to any rider of a direct belt drive machine (including Zeniths and Rudges, if the gear lever be sealed in one position). The event will take place on Saturday afternoon, the 24th prox., and further particulars may be obtained from Mr. W. S. Banner, c/o Messrs. Butterfields, Ltd., Stechford, Birmingham.

Sweeping the Board.

In the recent North Wales open trial, G. F. Burns, riding a 3½ h.p. Sunbeam, secured the two premier awards (open challenge cups) in addition to a silver bowl and a special prize and a gold medal. Not bad for a private owner!

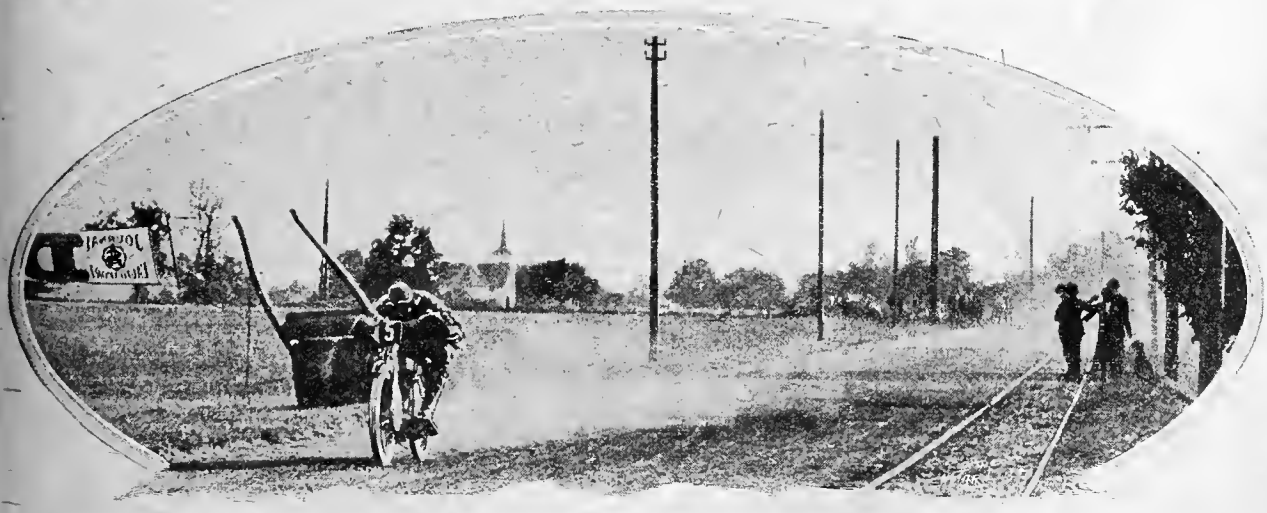
Motor Cyclist Police.

Replying in the House of Commons to Captain Viscount Curzon, who asked the Home Secretary whether he could yet make any statement on the work carried out in the control of traffic by the motor cyclist branch of the Metropolitan Constabulary, Mr. Shortt said that the Commissioner of Police has called for reports by the end of August, and hopes by that time there will have been sufficient experience to enable the subjects referred to to be properly reviewed.

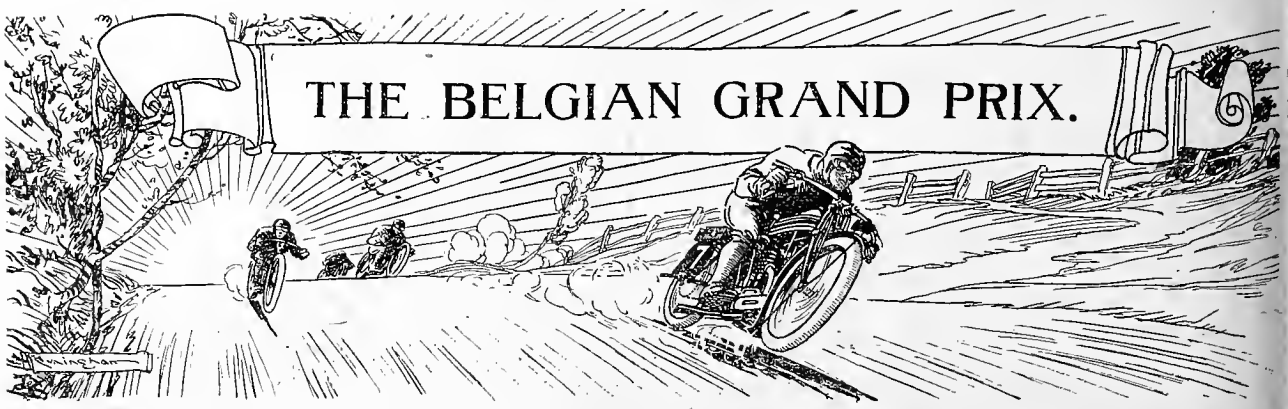
102 Entries in the Six Days Trials.

In addition to the ninety-nine entries for the Six Days Trials (which take place between August 29th and September 3rd), already tabulated on page 183 of our last issue, there are the following additional riders to be included: C. Crosthwaite (3½ Duzmo), R. Croucher (8 Matchless), and F. Watson (8.7 G.N.). The Beaumont entry also is now given as a 2¾ h.p. machine to be ridden by G. W. Shepherd.

In the above-mentioned list first published, it should be noted that A. G. Wall is the rider of a 2¼ h.p. Cedos (not A. G. Ward), and that the 7-9 h.p. British Radial, to be ridden by J. S. Holroyd, is entered by the British Radial Engine Co.



On the last day of the Six Days Trials in Switzerland, a speed test was held at Eaux-Mortes. Here is C. Laeser (2¾ Condor), a competitor in the 350 c.c. class. The 350 c.c., 500 c.c., 750 c.c., and 1,000 c.c. classes were won by British machines.



THE BELGIAN GRAND PRIX.

Another British Success in International Race. A Norton wins the Belgian Grand Prix with Indians second and third, and James fourth. Triumph accomplishes Fastest Lap.

A NORTON won the Belgian Grand Prix last Friday, thus completing a triple success for British machines in international road races. It is interesting that, while the T.T. was won on an A.J.S., and the French Grand Prix on a Sunbeam, the Belgian event was carried off by a Norton, which goes to show that British superiority does not lie in one super-tuned machine, but is fairly representative of the whole industry.

Never has a motor cycle race been run over a prettier or more charming course than the 1921 Grand Prix of the Fédération Motocycliste Belge.

The circuit is situated in the most delightful part of the Ardennes, about eight miles south of Spa, and is approached through the woods by one of the longest and straightest hills we have ever seen.

Leaving the grandstand, the course makes a large S bend, crossing a bridge, and thereafter comes a long ascent, followed by a fall with easy curves, next the dangerous Malmédy corner, then a straight stretch to near Stavelot, where a special by-pass loop has been made, a steady climb to the Francorchamps corner, where another loop was specially constructed for the race, and a descent back to the grandstand.

In Picturesque Surroundings.

The grandstand (or *tribunes*) was unlike any other, as it was built on the side of a hill by a landscape gardener, and words fail to describe its beauty. The hill flank was studded with terraces covered with cinders and with rough stone steps leading to them. Rustic fences, benches, and chairs were duly arranged, and pots of fresh growing flowers and plants were placed here and there; the whole effect was delightful. The British competitors were well pleased with the course. Sgonina said he liked it better than the Grand Prix, and that it was more like that in the Isle of Man; but, whereas the machines were not fast enough on the Le Mans circuit, they had speed enough and to spare for this one. Le Vack also liked the course, but thought the road rather loose for high speeds. This was certainly the case, but it was perfectly smooth, beautifully prepared, and dustless; and it may be mentioned here that the roads in the district are as fine as may be found anywhere.

The scoring board was opposite the unique grandstand, and was of plain unwhitened deal, so that the figures did not show up at all well. Moreover, as there were always at least four ladders placed against it, the reading of the times was no easy matter. The replenishment arrangements consisted of one long bench placed on the hill just below the scoring board, partitioned off for each make. The fact that the depots were on a down grade was not very convenient, as the men had considerable difficulty in pulling up at their stations, and often overshot the mark.

Few Novelties.

At 8 a.m. the machines were examined, and their frames were sealed with a piece of string and a lead seal. They presented no novel features, except that Mouret's Sun had an extra air port in the side of the cylinder, and a rotary inlet valve as in the T.T. Renier's Sarolea had large "fir cone" coolers over the exhaust valve cap and in the compression tap hole.

H. W. Hassall, winner of the Belgian Grand Prix on a 3½ h.p. Norton. He averaged 56.91 m.p.h.

The Rush machines were fitted with 2¾ h.p. J.A.P. engines and English components throughout. Quite the most ingenious idea was that fitted to the Nortons, and at first sight its *raison d'être* was impossible to fathom. It consisted of a piece of tin placed behind the top fork link and cut with deep serrations. Enquiry elucidated the fact that these serrations were twenty in number, and that the riders intended to bend one down at the end of each lap, and thus easily keep account of their lap progress in the race. Shemans and Sgonina, who, like the other Triumph riders, wore a white cross on their T.T. helmets, used Ricardo engines, while Edmond used the side-by-side valve pattern.

The Belgian Motor Cyclists' Federation has not had much experience in the organisation of racing events; but although their arrangements were a little crude, they did their best. It seemed strange that the principal parts of the course were not connected by telephone; but we were told that this could not be arranged, as part of the course ran through liberated territory still under a military governor; but this did not prevent the whole circuit being guarded by 300 Belgian soldiers in the khaki uniforms and tasselled forage caps so familiar in England during the war.

It had been intended to start the competitors in a group as at Le Mans, opposite the grand stand, but owing to the proximity of the two bends and a somewhat narrow bridge, it was wisely decided later to make the actual start after the curve at the base of the first hill. So just before 9 a.m. the men were given what was called *un faux départ*, or false start, which meant that they proceeded to the timekeeper at an easy pace, and started in earnest at the given signal. From the grandstand to the true starting point was but a few minutes' walk, and so it was easy to return before the leaders were due, even though it was expected they would cover the 15.082 km. course (nearly ten miles) in under ten minutes.

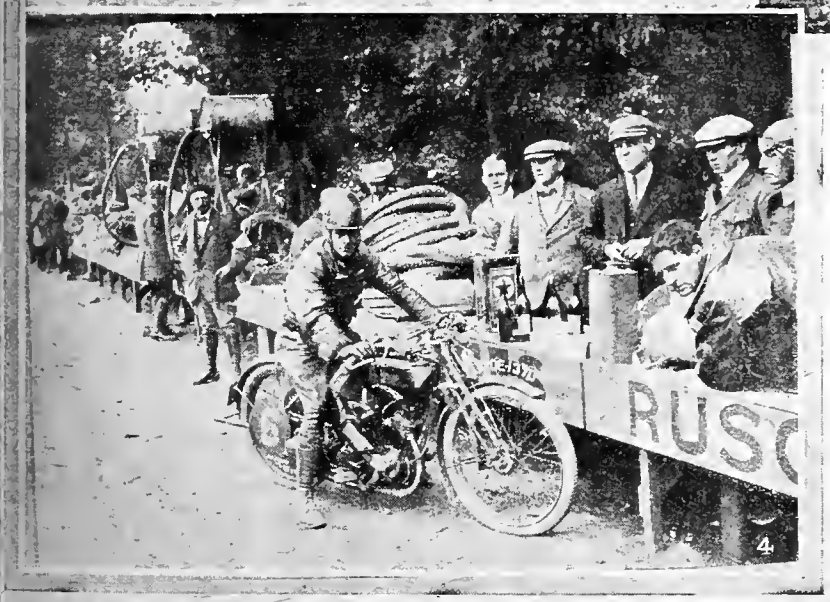
A Second Start.

Just on 9 a.m. the batch of riders were heard to start, and were seen coming round the bend. They were stopped on a gradient of 1 in 16-20, and on coming to rest half of them left their engines running, so every other sound was drowned, and M. Marcellis had to give the signal to start by waving his arm. As is always the case when a large group of riders is despatched simultaneously, the sight was an impressive one.

Breslau, the Norton rider, was first away, but Hassall (Norton) showed wonderful acceleration and shot ahead, while Edmond (Triumph) and Strange (James), who started on the first line, were momentarily lost in the crowd of twenty starters. The junior machines left immediately afterwards.

Scenes during the Belgian Grand Prix Race.

BRITISH SUCCESS IN THE THIRD OF THE INTERNATIONAL ROAD RACES OF 1921.



(1.) H. Hassall (3½ Norton), the centre of an admiring crowd after his success in the 188.5 mile race.

(2.) H. Le Vack and F. W. Dixon, who were respectively second and third on 3½ h.p. Indians, at speed past the scoring board.

(3.) An idea of the picturesque nature of the course is obtainable from this illustration.

(4.) G. Strange (3½ James), who finished fourth, alongside his replenishment depôt.

The Belgian Grand Prix—

From the grandstand an excellent view of the course could be obtained. On the left the competitors could be seen ascending the hill for nearly a mile, in front of the scoring board and past the replenishment depots, and again a glimpse of them could be seen passing on the flank on the opposite hill on the way to Francorchamps corner. There was not long to wait before the sound of the leaders' engines could be heard: they could be seen but not distinguished as they flashed behind the scoring board, and in two minutes they arrived. Edmond (Triumph) was leading easily, while the other British crack riders, Hassall (Norton), Dixon (Indian), and Le Vack (Indian), were travelling in close order. Shemans (Triumph) was going well, and so were Strange (James) and Sgonina (Triumph). Only one Belgian rider, Breslau (Norton), who was running sixth, was among the leading eight men. Kicken's Gillet in the junior class was giving an excellent account of itself, while Mouret (Sun) arrived somewhat late. It is impossible to give the first lap times, as, owing to several riders passing in a bunch, a number of times were missed.

A Ding-dong Race.

The second lap saw Edmond still the leader, and going better than ever, with Hassall second and Dixon third. The leading man was marked by the scorers by means of a red disc, which hid his number; and when this was done, there were shouts from the press stand of "Take it down! Are you a Socialist?"

Edmond lost his lead on the third lap, and dropped to second place, while Hassall ran first, with Dixon third, and Le Vack fourth. Shemans occupied fifth place, Strange came next in order, and Claessens (A.B.C.) seemed to be gaining ground. Joha (Rush) stopped for some time, and afterwards re-started. The fourth lap showed no great change of position, except that Sgonina gained a place, while Edmond stopped for petrol. In the fifth lap Dixon, who was travelling in splendid form, took the second position from Edmond, who now ran third, with Le Vack fourth, and Sgonina and Shemans fifth and sixth respectively. It now transpired that Le Vack had been delayed by a broken valve spring in the first lap. The next lap saw Dixon gaining on Hassall; but, as they mounted the hill, Dixon lost ground again. Edmond still kept third place, with Le Vack fourth, and Shemans fifth. The seventh lap was marked by one or two incidents. Edmond fell back to fourth place. Shemans slowed up at the replenishment depot, but shot off again, while Ghende (Rush) had a fall, and retired. In the eighth lap Hassall was still running as magnificently as ever, Dixon was missing, Le Vack was second, with Shemans third, and Sgonina fourth. Dixon arrived at last, and started to repair a fork member, which had broken, bracing it with a piece of iron and a strap.

H. Le Vack who rode second on a 3½ h.p. Indian.

When he pluckily started again, he was two clear laps behind. Edmond, who started well, was now among the unfortunates, and rolled in later with a loose tank and broken petrol pipe. In the ninth lap Hassall stopped to replenish, but his position was so good that he did not lose his lead. In the tenth lap several riders stopped for petrol and oil. At this stage the morning mist cleared, but the day remained dull and cool.

Halfway through the race the order and times were as follows:

	H.	M.	S.
H. W. Hassall (3½ Norton) ...	1	35	19
H. Le Vack (3½ Indian)	1	35	35
G. Shemans (3½ Triumph) ...	1	39	16
C. Sgonina (3½ Triumph) ...	1	47	29
G. W. Walker (3½ Norton) ...	1	48	23
Claessens (3 A.B.C.)	1	50	39
G. Strange (3½ James)	1	54	5
F. W. Dixon (3½ Indian) ...	1	58	7
Perrin (3 A.B.C.)	2	1	38
Kicken (2¾ Gillet)	2	1	55
Desterbecq (2¾ Gillet)	2	4	47
F. G. Edmond (3½ Triumph) ...	2	6	24
Gamara (3½ Saroléa)	2	9	34
Mouret (2½ Sun)	2	36	27

In the subsequent laps Hassall steadily increased his lead, and the order of the first five did not alter until the thirteenth, when Walker, who had improved his position, lost his place, and retired, owing to a broken piston. Hassall was now 3m. 10s. ahead of Le Vack, while Dixon, urged on by his delay, was pushing on to the extent of recklessness, but with no small degree of success. It takes some considerable amount of pluck to drive like fury with a broken and roughly repaired fork, but Dixon's blood was up, and he was now running eighth, and, though a lap or so behind, was racing neck and neck with Hassall.

The fourteenth lap saw the retirement of Shemans, who suffered engine trouble, and the fifteenth that of Sgonina, who had had both tyre and engine defects. The Saroléa team was sadly depleted, and they had indeed hard luck. Their chief tester was *hors de combat*, owing to an accident previous to the race, and one rider after another had to withdraw owing to distorted valves.

British v. American Machines.

The race was now left to British and American machines. Hassall was still unassailable; Le Vack was still going strongly; Dixon, through pluck or recklessness (call it what you like: it served its purpose, and all honour to him!), now rode in the third place with Strange (James), who had run most consistently, fourth; and the two French-built A.B.C.'s, which had travelled well from the start, in fifth and sixth places.

The fifteenth lap signalled the arrival of the first junior, Kicken (Gillet), who had ridden a splendid race; but when the second junior, Desterbecq (the other Gillet rider), arrived, he covered two laps before the marshals could stop him. In the sixteenth and seventeenth laps the survivors were running in the following order: Hassall, Le Vack, Dixon, Strange, Claessens, and Perrin, and maintained this until the finish. In the eighteenth lap Hassall and Dixon stopped for petrol. The final results were:

SENIOR CLASS (500 c.c.).

	H.	M.	S.
H. W. Hassall (3½ Norton) ...	3	18	53
H. Le Vack (3½ Indian)	3	28	20
F. W. Dixon (3½ Indian) ...	3	42	6
G. Strange (3½ James)	3	43	21
Claessens (3 A.B.C.)	3	55	50
Perrin (3 A.B.C.)	3	58	53

BRITISH RIDERS CARICATURED.
Hassall, Le Vack, Dixon, and Strange as seen by "Forg," of our Belgian contemporary *La Motocyclette*.

F. W. Dixon, placed third, was mounted on a 3½ h.p. Indian.

The distance covered in this class was 01.6 km., approximately 188½ miles. he fastest lap was declared to be dmond's first, in which he covered the .082 km. in 9m. 20s. As regards the nior class, the times of the three nishers were as follows :

	H.	M.	S.
Kicken (2¾ Gillet)	3	9	41
Desterbecq (2¾ Gillet)	3	11	25
Mourct (2½ Sun)	3	54	5

the junior machines accomplished een laps—226.2 km., 141 miles.

t was certainly an excellent race over nost delightful course, and, considering t fact that the organisers were unused to running such events, well carried out on the whole. They have learned a great deal, and will certainly do better next year. Such items as the system of time-keeping, which was inadequate; the scoring board, which was not too clear and too frequently obscured by ladders; and the slow posting of the times, are all matters which will be remedied next time the event is held.

The picturesque, effective, and unique grandstand was the idea of the Chevalier de Thiers, and it certainly worked well.

As regards the officials, Baron Nothomb, president of the F.M.B., MM. Paul Kelecom, E. Collignon, and Daems, together with their colleagues, did excellent work.

A Noteworthy Performance.

Hassall's win was certainly a fine one, as he never lost the lead he once gained, winning as he did by 9m. 27s. Le Vack ran well, despite having, in addition to valve spring trouble in the first lap, a broken chain in the last, while Dixon's performance is deserving of the greatest credit. Strange's consistent ride was specially praiseworthy, and has added another to the already long list of British racing successes on the Continent. As regards the lightweights, Kicken's ride is certainly worth special mention, and it is interesting to note that in the Belgian, as in the Grand Prix de l'A.C.F., a Continental lightweight won.

Comparisons.

The average speed over the total distance (188½ miles) of Hassall was 56.91 m.p.h., as compared with the following times at which other 1921 classic events have been won :

Tourist Trophy Race (Senior).—54.49 m.p.h., by H. R. Davies (2¾ A.J.S.), the distance being 225½ miles, or six circuits of 37¾ miles.

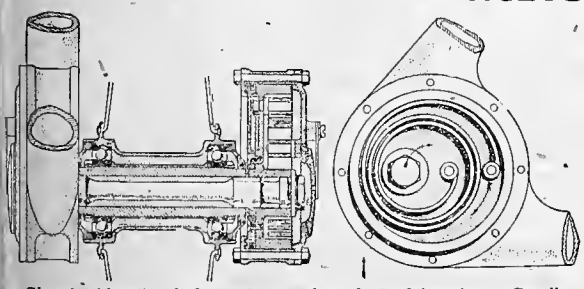
500 Miles Race (500 c.c. Class).—62.31 m.p.h., by V. Horsman (3½ Norton). His average speed for the first 200 miles was 62.75 m.p.h.

G. Strange on a 3½ h.p. James twin rode into fourth position.

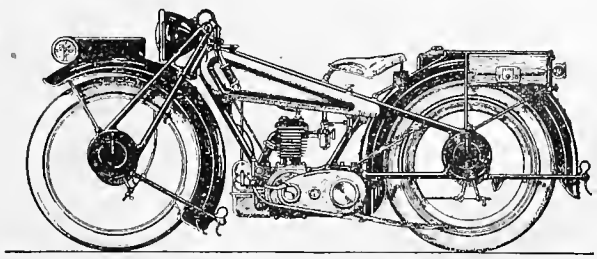
French Grand Prix.—59.9 m.p.h., by A. Bennett (3½ Sunbeam), over a distance of 193 miles. This event was similar to the Belgian Grand Prix, in that a triangular course of just over ten miles was traversed eighteen times by the competitors.

As was the case with the French Grand Prix and the International Six Days Trials, this third important Continental event was witnessed by a member of *The Motor Cycle* staff. Thus, this journal has been able to give an accurate and first-hand record of every important competition held this year.

COMPLETELY ENCLOSED SPRINGING SYSTEMS.



Showing details of the springs and method of housing. Small cover-plates provide access to the knock-out spindle nuts.



Neat and attractive layout of a lightweight fitted with Yano front and rear springing. The forks are merely rigid girders.

SIMPLICITY and neatness are the chief claims of the Yano springing system, and while it is not claimed th the design is ideal for a heavy pa enger machine, we are inclined to ag with the patentees (Messrs. S. Yano an W. Hall) that it is very suitable for be driven lightweights. It is applicable to oth front and rear wheels.

Briefly, the wheel spindle is mounted ec trically on discs, supported and free to rotate on each side of the hub. Rotation of each disc is controlled by a clock spring, one end being attached to the disc and the other to the cover plate of the housing. Movement of this cover plate modifies the spring tension as desired.

Protection and Lubrication.

Obvious advantages, of course, are facilities for ample lubrication arrangements, and for the provision of detachable wheels, and also the protection of all moving parts.

Just how neat this system would appear in actual practice is well illustrated by the drawing of a 2¾ h.p. machine embodying the springing. Incidentally, the general layout, large mudguards, and frame design combine to give a striking but attractive appearance.

The address of the inventors is 18, Cromwell Cres., Earl's Court, S.W.5.

Results of the North Wales Open Trial.

Sweeping Success by a Private Owner. Only 14 "Golds" Awarded.

As anticipated in our report of the North Wales M.C.C. open trial, held on the 6th inst., only a very small percentage of the competitors gained gold medals—actually fourteen out of approximately one hundred starters.

Four riders tied for the two premier awards, the North Wales Open Challenge Cup and the North Wales M.C.C. Open Challenge Cup, and the results therefore were decided on a secret check at Cerrig as follows:

G. F. Burns (3½ Sports Sunbeam), 1m. 6s. error.
Sam Wright (4½ Humber sc.), 3m. 55s. error.
Frank W. Giles (7 A.J.S. sc.), 7m. 19s. error.
J. Howard Davies (3½ Sports Sunbeam), 8m. 49s. error.

The only other tie occurred for the club team prize, and here again the secret check gave first place to the North Wales M.C.C. team, with the Coventry and Warwickshire M.C. second. Full results follow:

THE NORTH WALES OPEN CHALLENGE CUP (for the best performance of the day, presented by Mr. O. Bonner Thomas).—G. F. Burns (3½ Sunbeam).

NORTH WALES M.C.C. OPEN CHALLENGE CUP (for the best performance by a private owner, prize given by Mr. W. E. Rowlands).—G. F. Burns (3½ Sunbeam).

NORTH WALES CENTRE CHAMPIONSHIP PRIZE.—J. H. Davies (3½ Sunbeam).

SILVER CUP (for the best performance by a member of the N.W.M.C.C., presented by the President).—J. H. Davies (3½ Sunbeam).

SILVER BOWL (for the best performance by any solo machine, presented by the Manufacturers' Union).—G. F. Burns (3½ Sunbeam).

SILVER VASE (for the best performance by a sidecar machine or three-wheeler).—Sam Wright (4½ Humber sc.).

SPECIAL PRIZE (for the best performance by a private owner's sidecar machine).—Only one competitor, who was disqualified.

SPECIAL PRIZE (for the best performance by a lightweight, private owner, presented by Mr. H. Gibson).—G. A. Lovegrove (2¼ Radco).

SPECIAL PRIZE (for the best performance by a 500 c.c. machine, presented by Mr. A. J. Brewin).—G. F. Burns (3½ Sunbeam).

SPECIAL PRIZE (for the best performance by a lightweight, presented by Mr. A. J. Brewin).—G. F. Mason (2½ Connaught).

THREE SILVER CUPS (for the best performance by a club team).—N. Wales M.C.C. team: R. Edwards (4 Triumph), C. Lightening (4 Triumph), and J. Edwards (4 Triumph).

THREE SILVER CUPS (for the best performance by a trade team.—The W. Edwards team: R. Edwards (4 Triumph), C. Lightening (4 Triumph), and J. Edwards (4 Triumph).

SILVER CUP (novices prize, presented by the Manufacturers' Union).—R. Edwards (4 Triumph).

SPECIAL PRIZE (awarded by the Committe for a plucky performance of the lady competitor —Miss Marjorie Cottle (4 Triumph).

GOLD MEDALS.—J. Howard Davies (3½ Sn beam), *G. F. Burns (3½ Sports Sunbeam), Sa Wright (4½ Humber sc.), Frank W. Giles (A.J.S. sc.), *T. Blackburne Williams (4 Triumph *S. V. R. Jones (3½ Norton), R. Edwards (Triumph), Reg. Brown (3½ Sunbeam sc.), G. No (8 Matchless sc.), *John Knowles (4 Triumph *W. J. Kellett (4 Triumph), *Griff. Roberts (Triumph), *W. Wells (3½ Sunbeam), and G. Dan (3½ Sunbeam).

SILVER MEDALS.—J. O. Jones (4 Triumph R. E. Grice (2¼ New Imperial), E. A. Hugh (4 Powell), W. Edwards (4 Powell), J. R. Willian (4 Powell), C. Lightening (4 Triumph), J. Edwar (4 Triumph), Bert Kersbaw (2¼ New Imperial G. I. Francis (2¾ Francis-Barnett), G. F. Mas (2½ Connaught), *H. W. Hardwick (3½ Sunbeam W. Brandish (4½ Humber), W. Williams (5 Raleigh), F. S. Spouse (8 T.B.), F. J. Ellis (Matchless sc.), and Rex Mundy (7 A.J.S. sc.).

BRONZE MEDALS.—Allen S. Jones (2 Francis-Barnett), *R. N. Roberts (4 Triumph Norman Norris (2¾ Armis), L. Crisp (4 Humber), Lewis A. Welsh (4¼ B.S.A.), *W. V Jones (3½ Sports Sunbeam), John E. Arthur Triumph), G. Savage (2¾ Hobart), D. Harris Jon (3½ Sunbeam), *C. A. Lovegrove (2¼ Radco), (Jones (4 Triumph), L. L. Sealey (4¼ B.S.A.), Wheeler (3½ Sunbeam sc.), Capt. Peatty (2 Hawker sc.), G. E. Stobart (7 James sc.), Stanl Parker (7 Matchless sc.), *Marjorie Cottle Triumph), W. Isbill (4 Triumph), Walter Ow Jones (4 Triumph), and E. Foster (5-6 Raleigh)

* Private owner.

FORTHCOMING EVENTS.

Open Speed Trials and Dinner.

Entry forms are now available (from Mr. R. O. Clark, 2a, Upper King Street, Norwich) for the open speed trials of the Norfolk M C. and L.C.C., to be held at West Harling Heath on the 8th prox. There are nine trophies on the award list, and the affair will be wound up by a dinner at the Maid's Head Hotel, Norwich, at the close of the meeting (7.30 p.m.). Tickets for the dinner (7s. 6d.) may be obtained from Mr. R. A. Lower, "Mount Pleasant," Lower Hellesdon, Norwich.

Novices' Race at Next Brooklands Meeting.

There will be six three-lap handicaps and one half-lap scratch race at the fifth members' meeting of the B.M.C.R.C., to be held at Brooklands on the 27th inst. One of the handicap events is for members who have never won a first prize at a B.M.C.R.C. meeting.

Glasgow Open Trial.

Next Saturday the Western M.C.C. (Glasgow) is holding an open reliability trial for the Fifty Guinea James Challenge Shield and other prizes. Entries closed at ordinary fees yesterday, but late entries will be accepted at double fees to-day and to-morrow.

Open Speed Trials at Pendine Sands.

Representing the motor cycle clubs of Carmarthen, Ystalyfera, Neath, Cardigan, Ammanford, Pyle, Brecon, Maesteg, Haverfordwest, and Aberystwyth, the West Wales Centre A.C.U. is holding open speed trials at Pendine Sands on Thursday next (the 25th inst.). There are five open championship classes and seven members' events for a big award list.

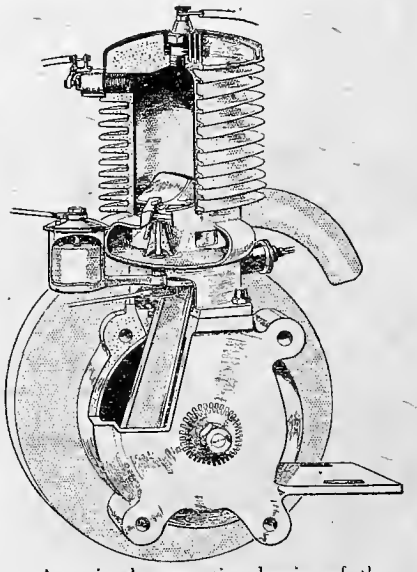
Open Hill-climb near Bath.

Next Saturday's big event is an open hill-climb of the Western Centre A.C.U., which will be held on Kingsdown Hill, near Bath, commencing at 2 p.m. A good entry has been received.

SUGGESTED TWO-STROKE MODIFICATION.

A TWO-STROKE engine, which embodies several novel features, has been recently designed by Mr. G. Dubois, of 20, Eastcheap, E.C. So far as the general principle of working is concerned, the engine follows ordinary two-stroke practice, with the exception that air only is drawn in through a port connected with the crank chamber. This air is then compressed by the descending piston, and is forced up round the carburetter choke tube, which is situated in the transfer passage.

Instead of the usual transfer port, however, there are four ports cut in the piston skirt, and these correspond with four passages in the cylinder wall whe the piston is at the bottom of its strok thus leaving a clear connection betwe the crank case and the cylinder.



A sectional perspective drawing of the Dubois two-stroke engine, showing the arrangement of the cylinder and piston wall ports.

Novel Control.

The control of the engine is by mea of a throttle controlling the supply air to the crank case, and consequent the quantity of mixture delivered to t engine. The carburetter is provided wi an adjustable taper needle control to t jet, which may be altered while t engine is running.

The chief advantage claimed for t engine is that the mixture is not co pressed in the crank case, so minimisi the possibility of minute particles petrol becoming condensed before reac ing the cylinder; this, it is claimed, i proves consumption, and goes a long w to prevent misfiring and four-stroki at low speeds.

A SCOTTISH SIX DAYS IN MINIATURE.

NEW trials ground will be broken the Scottish Two Days Open Re ability Trial to be held on the 17 and 19th of September, the intervent Sunday being spent in Stranraer. It aptly described by the organisers as Scottish Six Days in miniature," t regulations being almost identical wi those for the larger event.

There will be seven non-stop hills follows:

SATURDAY.—Talla Linns, Auld Bi Road, Chairley's Brae, and Tynron Hi

MONDAY.—Laird's Hill, Pinmore Ma Hill, and Final Hill.

Apart from the first, second, and thi class awards, there are two team pri for club and trade teams.

Entries will be accepted by the sec tary, Mr. Campbell MacGregor, 6, Cas Terrace, Edinburgh, up till Mond September 5th, at single fees.

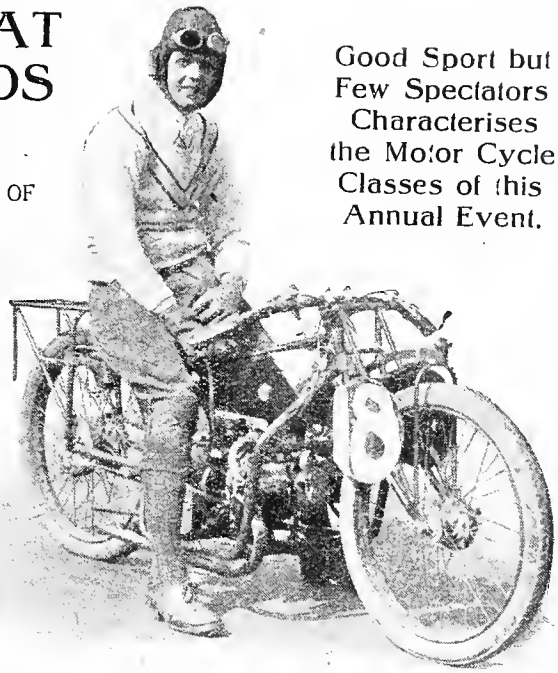
The start of the trial, of course, v take place at Edinburgh.

ESSEX M.C. AT BROOKLANDS

Good Sport but Few Spectators Characterises the Motor Cycle Classes of this Annual Event.

TWO SUCCESSFUL RIDERS OF FLAT TWINS.

C. Pearson (3½ Douglas), winner of the long handicap of eight and a half miles for machines between 400 and 1,000 c.c. His speed was 63·33 m.p.h.



S. J. Bassett (3 A.B.C.), who won the long-distance handicap for machines under 500 c.c. His speed was 62 m.p.h. over the eight and a half miles.

It was unfortunate that the Clerk of the Weather should have chosen Saturday last as the day which should mark the end of the drought in London, for a wet morning interfered sadly with the number of spectators who assembled to watch the Essex Motor Club's annual Whole meeting at Brooklands. The club was at least fortunate, however, in that the track was quite dry by lunch time, while the rain obligingly held off during the afternoon.

Although the number of entries received for the three motor cycle events on the programme was not really large, the quality of the riders was of a high order, and good sport was witnessed. The smaller machines in particular distinguished themselves.

Speed of Small Machines.

For the first of the three motor cycle races on the programme, the Essex long handicap for solo machines not exceeding 500 c.c., twenty-two entries had been received, and eighteen runners left the paddock. V. E. Horsman (Norton) was originally placed at scratch, but later was given 48s. start, as the machine he was riding was not the one on which his handicap had been judged. J. L. Emerson's Douglas, which had a Flexi carburetter fitted, was a favourite at the start. In the actual race, the main feature was the speed of the smaller machines, for N. A. Lowe (2¼ Diamond-Jap) and E. J. Anderson (2¼ New Imperial) at 2m. start, with A. G. Miller and H. J. Line, both on Martin-Japs and at 1m. 54s., were well down the railway straight ere Emerson's Douglas and F. A. Applebee's Indian had left the mark.

J. N. Stewart on H. Powell's Trump-Jap travelled well, but was unable to catch S. J. Bassett (A.B.C.) and S. V. Prestwich (Diamond-Jap), these two finally finishing first and second, with Powell third and I. P. Riddoch (Blackburne) and V. E. Horsman (Norton) chasing them home. The winner's speed was 62 m.p.h. Result:

		Start.
1.	S. J. Bassett (A.B.C.)	1m. 45s
2.	J. V. Prestwich (Diamond-Jap)	1m. 15s
3.	H. Powell (Trump-Jap)	1m. 18s

There were only five non-starters in an entry of twenty for the second Essex long handicap (for machines of from 400-1,000 c.c.) over a distance of eight and a half miles, but these included H.R.H. the Duke of York's Harley-Davidson. Practically all the interest centred on C. F. Temple's Harley-Davidson, which, being at scratch, did not start until C. Pearson's Douglas led the field round for the first lap. As it happened, the lead thus established made the American machine's chances hopeless, and the Douglas won at 63.33 m.p.h., with B. H. Wood's Norton a good second, and J. L. Emerson third on another Douglas. Temple, travelling at great speed, came up with a rush on the last lap, and was close to the end of the far banking as the winner crossed the line. Results:

		Start.
1.	C. Pearson (Douglas)	2m. 24s.
2.	B. H. Wood (Norton)	2m. 24s.
3.	J. L. Emerson (Douglas)	1m. 30s.

Sidecars v. Cycle Cars.

The third and last motor cycle event was the Essex long handicap for sidecars and three or four-wheeled cycle cars, sidecar engines being limited to 1,000 c.c. and cycle car engines to 1,100 c.c. Ten machines left the paddock, including W. R. Steele's G.N. R. R. Coes (Indian) was limit man with 1m. 57s. start, followed by H. H. Beach (Norton) at 1m. 45s. This handicap proved sufficient for Beach to win easily at 59 m.p.h., with O. de Lissa (Motosacoche-M.A.G.) second, and the field well behind. D. R. O'Donovan (Norton) with a new engine was apparently nursing it, for after a fast first lap he seemed to slow perceptibly. The G.N. came in, apparently with tappet rod trouble, before the last lap. Result:

		Start.
1.	H. H. Beach (3½ Norton sc.)	1m. 45s.
2.	O. de Lissa (7 Motosacoche-M.A.G. sc.)	38s.
3.	I. P. Riddoch (S Zenith-Jap sc.)	54s.

SEVERE ONE-DAY TRIAL IN IRELAND.

BEING compelled to abandon its two-day trial to Glengarriff, owing to many of the roads in the south being "trenched," the Dublin and District M.C.C. made its holiday event a one-day affair over a severe course in Co. Wicklow.

In Spite of Weather.

The weather conditions were very disagreeable, rain and wind combining to make things unpleasant; but, notwithstanding, only three of twenty-five starters failed to complete the course. The finishers were: Heuse (B.S.A.), Sleven (Velocette), Daly (Triumph), Carville (Triumph), Adsir (B.S.A.), Holmes (Enfield sc.), Smith (Indian sc.), Murphy (Triumph), McAllister (Triumph sc.), Greene (Enfield), Holdinn (Cotton), O'Connor (Norton), Allan (Norton sc.), Johnstone (New Comet), McGrath (A.J.S. sc.), Woods (Harley-Davidson sc.), Cartons (Norton), Redmond (Indian), Woods (Martinsyde sc.), McCuttagart (Reading Standard), Maguire (Humber), and Hassett (Norton). Markings at the open controls were very close, and the winners of the Freeman and Walker Cups will probably depend on the secret check errors. Official results appear on page 198.

CLUB NEWS.

(Continued from page 198.)

Macclesfield and District M.C.

Entry forms for the Axe Edge hill-climb, to be held on the 28th inst., may now be obtained from Mr. T. Simister, Jordangate, Macclesfield. This event is open to all clubs in the North-western Centre A.C.U.

Central London M.C.C.

On and after the 20th inst. all communications for the hon. secretary of the above club should be addressed to him at 91, Broadhurst Gardens, Hampstead, N.W.6.

Public Schools M.C.C.

Only two competitors made non-stop runs in the reliability, brake, and acceleration test held on Saturday. Results:

WINNER OF CUP, R. C. Charlesworth (5 Zenith); 2, H. B. Browning (3¾ Scott); 3, G. G. Gardner (3½ Sunbeam).

CLASS WINNERS.—350 c.c., no finisher; 500 c.c., G. G. Gardner (3½ Sunbeam); 600 c.c., H. B. Browning (3¾ Scott); 750 c.c., R. C. Charlesworth (5 Zenith); 1,000 c.c., no finisher.

At the invitation of the B.M.C.R.C., the club will hold a handicap race at Brooklands on the 27th inst. for a club silver cup. In addition, cups will be awarded for the fastest scratch times in the various capacity classes.

Evesham M.C.C.

On Friday evening last the club held its first hill-climb on Hopton Hill, Evesham, the hill generally used by the Worcester M.C.C. The lower reaches of the hill were greasy, and one or two skids occurred; the upper crest was rough. Some good times were accomplished, F. Morrall doing the fastest time of the day on a 4¼ h.p. B.S.A. He averaged nearly 45 m.p.h.

The results were as follows:

SOLO MACHINES (UP TO AND INCLUDING 350 c.c.).—1, J. N. Bacon (2¾ Douglas), 42⅘s.; 2, F. P. Andrews (2¾ Omega), 46⅖s.; 3, F. Jinks (2¾ New Imperial), 51⅘s.

SOLO MACHINES (UP TO 600 c.c.).—1, P. F. Andrews (4¼ B.S.A.), 29⅗s.; 2, F. Morrall (4¼ B.S.A.), 30s.; 3, H. Tuckwood (4¼ B.S.A.), 34⅕s.; 4, F. G. Byrd (3½ Norton), 35s.

UNLIMITED SOLO MACHINES.—1, F. Morrall (4¼ B.S.A.), 28s.; 2, F. P. Andrews (4¼ B.S.A.), 28⅗s.; 3, F. B. Bent (6 Bat), 29⅕s.; 4, H. Tuckwood (4¼ B.S.A.), 30⅘.

SIDECAR MACHINES (UP TO 600 c.c.).—1, F. Morrall (4¼ B.S.A. sc.), 47⅕s.; 2, A. Sharp (4 Triumph sc.), 61⅕s.; 3, G. S. Hiles (4¼ B.S.A. sc.), 67s.

UNLIMITED SIDECAR, LIGHT CAR, AND CYCLE CAR.—1, R. Gibbins (8 Enfield sc.), 34⅗s.; 2, J. N. Bacon (6 Enfield sc.), 44⅗s.; 3, A. O. Brown (6 Enfield sc.), 60s.

West Fife M.C.

Some very close finishes were witnessed in the knock-out hill-climb held at the Wicks-o'-Baiglie on the 6th inst., no fewer than four events being won by inches. Results:

350 c.c. CLASS.

MEMBERS.—1, S. C. Hubbard (2¾ Coulson); 2, G. W. Calvert (2½ Diamond).

PRIVATE OWNERS.—1, D. Dougall (2¾ H.B.).

OPEN.—1, G. W. Calvert (2½ Diamond); 2, S. C. Hubbard (2¾ Coulson).

600 c.c. CLASS.

MEMBERS.—1, J. Morgan Philipps (3½ Sunbeam); 2, W. R. Beveridge (3½ Sunbeam).

PRIVATE OWNERS.—1, R. Ewing (3½ Norton); 2, D. Bennett (3½ Sunbeam).

OPEN.—1, R. Stewart (4 Norton); 2, O. G. Braid (3 Motosacoche).

UNLIMITED.

MEMBERS.—J. Morgan Philipps (3½ Sunbeam); 2, W. R. Beveridge (3½ Sunbeam).

OPEN.—1, W. R. Beveridge (3½ Sunbeam), 2. R. J. Braid (7-9 Indian).

SCRATCH EVENT.

1, R. J. Braid (7-9 Indian); 2, J. Morgan Philipps (3½ Sunbeam).

North London M.C.C.

Despite the uncertain weather conditions last Saturday, a good attendance was made at the gymkhana held in a large football ground near the county headquarters, Radlett. The winners and events were as follows:

BLONDIN RACE.—1, R. L. Richardson. (2 Alecto).

BLINDFOLD RACE.—1, F. Thompson (Triumph sc.); 2, S. F. Colman (3½ James).

EGG AND SPOON RACE.—1, G. J. Read (Enfield); 2, H. Bartlett (2¾ Coulson).

THREADING THE NEEDLE.—1, R. L. Richardson (2¾ Alecto) and Mrs. Henderson; 2, C. Bartlett (2¾ Coulson) and Mrs. R. Baxter.

Bath and West of England M.C.

On the 6th inst. the club held a twelve hours reliability trial for the Victory Cup and other awards. The route was 2[illegible] miles, *via* Bridgwater, Porlock, Lynmouth, Lynton Hill, Crediton, Exeter, Taunton, and home to Bath. Results:

1 (Victory Cup and replica), V. C. Anstice (A.B.C.); 2 (gold medal), E. Colmer (3½ Norton); 3 (silver medal), E. W. Spencer (4 Omega); [illegible] (bronze medal), J. Carver (5-6 Rover).

East Midland Centre A.C.U.

On Saturday next the clubs in the East Midland Centre are holding a unit[illegible] gymkhana and motor cycle sports meeting in the grounds of Stamford Hall, [illegible] 4 p.m. A military band has been engaged, and will play for dancing on the lawn in the evening. An admission of one shilling will be charged, which includes fees to all gymkhana events.

A Section devoted to Club Announcements will be found on Supp. xi.

GLASGOW OPEN SPEED TRIALS.

FASTEST time of the day at the open speeds trials of the Western M.C.C. (Glasgow), held on the 6th inst., was made by D. S. Alexander (7-9 Indian). Full results, with speeds, follow:

GENERAL.—275 c.c. SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	D. S. Alexander (2¼ Levis)	932	45.5
2.	D. B. Calder (2¼ Imperial)	827	47.1
3.	J. Lidstone (2¼ James)	580	40.2

GENERAL.—275 c.c. SOLO (TIME).

		Time in Sec.	M.P.H.
1.	D. B. Calder (2¼ Imperial)	36⅙	48.9
2.	D. S. Alexander (2¼ Levis)	42⅓	42.6
3.	J. Lidstone (2¼ James)	46⅘	38.5

EXPERTS BARRED.—350 c.c. SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	887	53.6
2.	H. G. Deas (2¾ Royal Ruby)	552	43.9
3.	J. A. Brown (2¾ Douglas)	448	39.6

GENERAL.—350 c.c. SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	942	55.6
2.	D. S. Alexander (2¼ Levis)	914	45
3.	J. Walker (2¾ A.J.S.)	762	50.6

EXPERTS BARRED.—350 c.c. SOLO (TIME).

		Time in Sec.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	33⅔	53.9
2.	H. G. Deas (2¾ Royal Ruby)	41⅔	43.5
3.	J. A. Brown (2¾ Douglas)	44⅓	40.7

GENERAL.—350 c.c. SOLO (TIME).

		Time in Sec.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	32⅔	55.5
2.	J. Walker (2¾ A.J.S.)	34	53
3.	D. S. Alexander (2¾ Douglas)	35⅔	50.6

EXPERTS BARRED.—600 c.c. SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	909	54.5
2.	J. Lloyd (3½ Norton)	710	53
3.	L. B. C. Cunningham (3½ Sunbeam)	651	50.6

GENERAL.—600 c.c. SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	897	54.2
2.	J. Walker (2¾ A.J.S.)	895	54.9
3.	D. B. Calder (2¼ Imperial)	872	48.7

EXPERTS BARRED.—600 c.c. SOLO (TIME).

		Time in Sec.	M.P.H.
1.	L. B. C. Cunningham (3½ Sunbeam)	34	53
2.	G. Kelly (2¾ A.J.S.)	34⅓	52
3.	J. Lloyd (3½ Norton)	34⅔	52

GENERAL.—600 c.c. SOLO (TIME).

		Time in Sec.	M.P.H.
1.	J. Walker (2¾ A.J.S.)	30⅓	59.6
2.	D. S. Alexander (3½ Norton)	31⅔	57.3
3.	G. Kelly (2¾ A.J.S.)	32⅔	54.9

EXPERTS BARRED.—UNLIMITED, SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	920	54.9
2.	R. Wishart (3½ Sunbeam)	702	53.3
3.	G. C. Walker (3½ Norton)	658	50.6

GENERAL.—UNLIMITED, SOLO (FORMULA).

		Fig. of Merit.	M.P.H.
1.	J. Walker (2¾ A.J.S.)	1042	59.2
2.	G. Kelly (2¾ A.J.S.)	931	55.2
3.	D. B. Calder (2¼ Imperial)	826	47.1

EXPERTS BARRED.—UNLIMITED, SOLO (TIME).

		Time in Sec.	M.P.H.
1.	G. Kelly (2¾ A.J.S.)	33⅔	53.6
2.	D. M. Hamilton (7-9 Harley)	34⅘	51.7
3.	W. McLellan (4 Norton)	35⅔	50.6

GENERAL.—UNLIMITED, SOLO (TIME).

		Time in Sec.	M.P.H.
1.	D. S. Alexander (7-9 Indian)	29⅙	[illegible]
2.	J. Walker (2¾ A.J.S.)	30	[illegible]
3.	G. Kelly (2¾ A.J.S.)	32⅘	[illegible]

GENERAL.—600 c.c. SIDECARS (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S. sc.)	896	[illegible]
2.	E. Napier White (3½ Edmund sc.)	531	[illegible]
3.	R. Watson (4½ Humber sc.)	502	[illegible]

GENERAL.—600 c.c. SIDECARS (TIME).

		Time in Sec.	M.P.H.
1.	G. Kelly (2¾ A.J.S. sc.)	38⅓	[illegible]
2.	E. Napier White (3½ Edmund sc.)	46⅔	[illegible]
3.	R. Watson (4½ Humber sc.)	46⅔	[illegible]

EXPERTS BARRED.—UNLIMITED, SIDECARS (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S. sc.)	1042	[illegible]
2.	W. McLellan (4 Norton sc.)	564	[illegible]
3.	A. Neilson (7 A.J.S. sc.)	498	[illegible]

GENERAL.—UNLIMITED, SIDECARS (FORMULA).

		Fig. of Merit.	M.P.H.
1.	G. Kelly (2¾ A.J.S. sc.)	1010	[illegible]
2.	G. Grinton (7-9 Harley sc.)	601	[illegible]
3.	D. S. Alexander (7-9 Indian sc.)	586	[illegible]

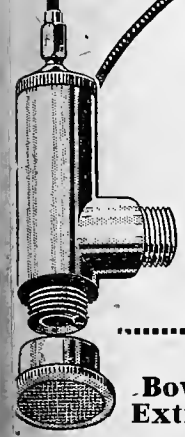
EXPERTS BARRED.—UNLIMITED, SIDECARS (TIME).

		Time in Sec.	M.P.H.
1.	G. Kelly (2¾ A.J.S. sc.)	39⅔	[illegible]
2.	W. McLellan (4 Norton sc.)	41⅔	[illegible]
3.	A. Neilson (7 A.J.S. sc.)	45⅔	[illegible]

GENERAL.—UNLIMITED, SIDECARS (TIME).

		Time in Sec.	M.P.H.
1.	D. S. Alexander (7-9 Indian sc.)	33⅔	[illegible]
2.	G. Grinton (7-9 Harley sc.)	36⅔	[illegible]
3.	G. Kelly (2¾ A.J.S. sc.)	41⅓	[illegible]

Experience tells



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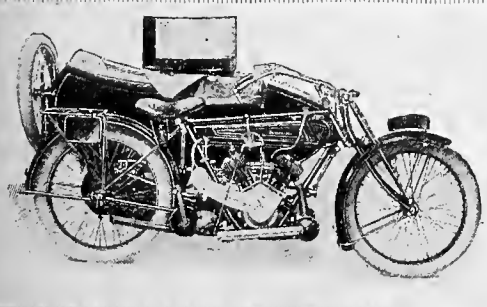

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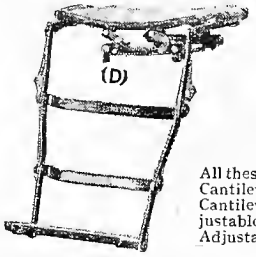
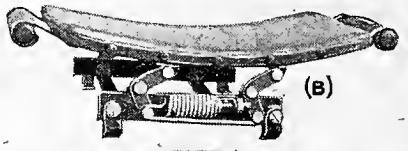


Latest Models.

All these seats are fitted with Cantilever spring set, four Cantilevers being used. Adjustable springs at each side. Adjustable for child or adult.



Model 64-B, very low seating position, about 7in. from carrier. A safe seat, no swaying, handsomely finished, **45/-** Handles 2/6 each extra.

Model 64-C. is the same as B. with stirrups attached. Stirrups 7/6 per pair extra. Fitted with rubber rest and are adjustable.

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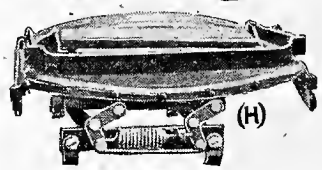
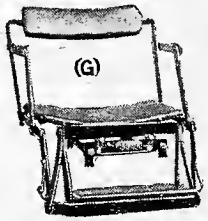
Any component part may be attached or detached in a few minutes. Making 8 different seats with Model 64-B. Adjustable clips to fit *any* carrier.



H. Shows how the seat E. F. & G. fold up and tucks away on the carrier when not in use. Luggage may be packed on seat, thus making a spring carrier.

Ask for Henderson's Tynesider Pillion Seat. Have no other or you will be disappointed. Henderson is the original inventor of pillion seats.



G, shows dress-guard of E. F. & D. half folded, leaving the footboard for child's use, or may be fully opened for adult's use.

Tynesid r Black Plating Lacquer.
Gives a splendid BLACK PLATING FINISH to Lamps, Handle-bars, Windscreens, Brasswork, Steel and Plated Fittings of all kinds. Easily and quickly applied. May be used for high-class Stoves, Fireplaces, etc. **2/6 per tin, post free.**

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Model 64-F. is the same as E. showing arm rests down if required. Seat same as B. Folds up like G. and H. Complete **£3 10 0.**

Any good up-to-date trader will supply you. Ask Halford, Rudge-Whitworth, etc.

We have a few shop-soiled **1920** seats at **21/-.** These are supplied direct only.

Model 64-E. is the same seat as B. with folding back-rest and double dress-guard attached. Folds up like H. or G. Complete **£3 10 0.**

All seats finished in Black and Gold. Plated fittings.

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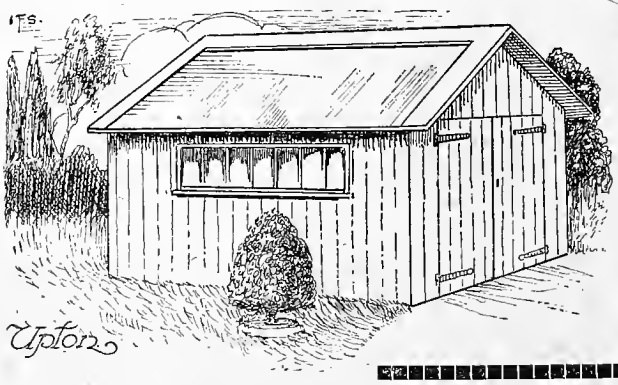

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ROYAL ENFIELD Combination, 8 h.p., dynamo £182 0
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RUDGE, 3½ h.p., I.O.M. model £85 0
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DOUGLAS 4 h.p. Combination, all on £160 0
B.S.A. Combination, 6-7 h.p., dynamo £195 15

NEW 1920 MACHINES.

AUTOPED Scooter, 1920, dynamo £25 0
8-10 h.p. 1920 **J.A.P.** Engine, w.c., magneto, new (engine only) ... £40 0

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NORTON and Sidecar, 4 h.p., 1919 ..... £105 0
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Big Four **NORTON** and Sidecar, as new £85 0
DOUGLAS, 3½ h.p., and wicker Sidecar, 1913 ..... £65 0
DOUGLAS, 4 h.p., 1915, and Rideezi Sidecar £55 0
CARDEN Monocar, 5-6 h.p., 1914 ..... £70 0
A.V. Monocar, 6 h.p. (special engine) £160 0
INDIAN and Sidecar, 5-6 h.p., 1913 ..... £80 0
AUTOPED Scooter, 1920, dynamo, licence paid £20 0

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Blackburne.

LACKBURNE 4h.p., Henderson sidecar, Cox-Atmos carburetter, Cameo, just overhauled; first £105 ures.—Woodhead, Wood Lane, Bolton, Bradford, rkshire. [4265

920 Blackburne 4h.p. Combination, 3 speeds, C. and K.S., coachbuilt sidecar, lamps, spring seat, tax d, unpunctured; rear offer £150.—Kinge, High St., lton Heath, Tadworth, Surrey. [4153

LACKBURNE 4h.p., June, 1920, mileage only 800, with Montgomery sidecar, especially painted match, complete with horn, lamps, and apron, in utiful condition throughout, Palmer tyres, unitched; £120.—21, Southville Rd., Thames Ditton. [4815

Bradbury.

RADBURY 4h.p. Combination, just overhauled and renovated; £50.—E.H., 46, Blackheath Hill, S.10. [4573

GENUINE Snip; 2¾h.p. Bradbury, Bosch, B.B., complete, running order; £7.—46, Cromwell Rd., Walthamstow. [5111

RADBURY Combination, 4h.p., 3-speed, Binks, lamps, splendid condition; what offers?—Hearse, Wt Leigh, Peasedown, Bath. [4175

RADBURY Combination, chain drive, Bosch, 2-seater sidecar, good condition; £75.—57, Tiescant Rd., London, S.W.8. [4802

12 Bradbury 4h.p., clutch, B. and B., Bosch, Dunlops, sidecar chassis; £20, or separate.—27, Eton Rd., Plumstead, London. [4475

RADBURY 1921 6h.p. Combination, hand and foot clutch, chain drive, detachable back wheel, lamps, accessories, tax paid; £130.—Chivers, 379, Cambridge R. Bethnal Green. [4191

RADBURY 6h.p. Combination twin A.J.S. engine, A.J.S. gear box, 3-speed, kick start, all chain, new tyres, all in good condition £100, or near offer.—Darvill, Builder, Lower Rd., Harrow. [4332

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Bradburys, all new models in stock, ready for immediate delivery; 4h.p. solos, 6h.p. combinations, and 2½p. lightweights, from £85. Apply for our easiest of easy terms. [4541

Brough.

5h.p. Brough, very fast and sporty 'bus, knee-grips, speedometer, etc.; £55, or exchange Norton.—G. Cobbing, Harmer Green, Welwyn, Herts. [4718

BROUGH 5-6h.p. (June) Combination, Henderson Elite sidecar, Lucas dynamo lighting, horn, speedometer, every accessory, tax, insurance, mileage 1,500, indistinguishable from new; owner buying car; £235, accept £198; machine only, £158; Lincoln dist.—Box 5,694, c/o *The Motor Cycle.* [4083

Brough Superior.

BROUGH Superior, latest 1921 8h.p. Model; £175; immediate deliveries from stock.—Marston, 31, Bridge St., Chester. [4701

1921 Brough Superior in stock, winner of the 2½ mile sprint at Pendine from 31 entries Whitsuntide.—South Wales Distributer: W. Luther J. 71, Commercial St., Newport, Mon. 'Phone: 248 [0640

B.S.A.

B.S.A.—All models always in stock; delivered anywhere.

B.S.A. Replacements, every part and pattern, by return.

B.S.A. Specialists: County Cycle and Motor Co., Broad St., Birmingham. [3248

NEW 1921 6-7h.p. B.S.A. Combinations in Stock; £175.—Lambert's, Thetford. [4390

B.S.A., Model H, all-chain drive; £110; latest 1921 model.—Marston, 31, Bridge St., Chester. [4689

NEW 1921 B.S.A. Combinations in stock; list price. Bounds, Garage, High Rd., Kilburn, N.W. [4448

BAGAIN.—B.S.A. Model K., shop-soiled, never ridden; £80.—Parkinson, Builder, Chatteris. [4304

B.S.A. 1919 4¼h.p. Combination, electric lights, licensed, and in good condition; £80.—Below.

B.S.A. 1919 4¼h.p. Combination, very little used, Longry carburetter, specially tuned, and in perfect condition, fully equipped, and licensed; £112.—Brown Motor Co., 34, Hereford Rd., Westbourne Grove, W. Tel.: Park 5420. [5018

3½h.p. B.S.A., 2-speed, K.S., fast and reliable, good condition, licensed; £45.—Mercer, Welshpool. [4290

1919 B.S.A., 4¼h.p., Model H2; £110.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [5005

DAGUY, Weymouth.—1920 4¼h.p. all-chain B.S.A. combination, all accessories, licence paid Guaranteed; £100. [0689

1920 B.S.A. Model H, lamps, licensed, excellent condition; £75.—Edwards, 50, Harrington Rd., South Kensington. [5046

B.S.A. Combination, 1915, 4¼h.p., 3-speed, lamps, etc., perfect condition; £73.—13, Crook Log, Bexleyheath, S.E. [4875

B.S.A. late model K, new Canoelet, Cameo, equipped, licensed; £85.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [3791

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DOUGLAS 4 h.p. Com., fully equipped	£160	0
DOUGLAS 4 h.p. Com., less equipment	£152	0
DOUGLAS 4 h.p. solo, fully equipped	£125	0
DOUGLAS 4 h.p. solo, less equipment	£122	0
DOUGLAS, 2¾ h.p., 2 speeds, all on	£85	0
DOUGLAS, 2¾ h.p., 3-sp., clutch, all on.	£105	0
HARLEY-DAVIDSON, 7-9h.p., electrically equipped	£180	0
HARLEY-DAVIDSON, 7-9 h.p., standard model, horn, speedometer acetylene lighting	£175	0
HARLEY-DAVIDSON, 4-5 h.p. flat twin, speedometer, acetylene lighting	£150	0
ALLDAYS ALLON, 2¾ h.p., 2-sp., clutch	£75	0
LEA-FRANCIS, 5 h.p. twin, 3-sp., clutch	£135	0
LEA-FRANCIS, 3½ h.p., ditto	£125	0
ZENITH, 5 h.p., sporting model	£115	0
ZENITH, 6 or 8 h.p., ditto	£128	0
ZENITH, 5 h.p., clutch model	£131	0
ZENITH, 6 or 8 h.p., ditto	£144	0
MATCHLESS H or H2 Combination, screen, spare wheel and tyre	£185	0
MATCHLESS ditto, sports type	£180	0
SCOTT, 3½ h.p., 2-speed	£130	0
SCOTT, 3½ h.p., 2-speed, sports model	£130	0
NORTON, 3½ h.p., 3 speeds, kick start	£132	0
NORTON, 3½ h.p., fixed gear	£98	0
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3-speed, £2 extra.		
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B.S.A.

1920 B.S.A. 4¼h.p. H2 Combination, lamps, Lucas horn, excellent running order, tax paid; £100.—Malby, Woodford, E.18. [0660

B.S.A. 3½h.p., all accessories, Bosch, gears, tax paid, perfect condition; £35.—5, Belmont Grove, Belmont Hill, Lewisham, S.E.13. [5076

1921 4¼h.p. B.S.A. Combination, Model H, Montgomery sidecar, equal to new; £112.—Bowen, Motor Agent, Llawhaden, Narberth. [4411

B.S.A. 1921 4¼h.p. Solo, all-chain, 3-speed, hand clutch, K.S., lamp, Cowey, mileage 1,000; £95.—Roberts, 39, Neptune St., Tipton. [4797

B.S.A. 4¼h.p., 1920, all-chain, uncrated last April, Montgomery No. 1 sidecar, fully equipped as new; £115.—2, Avoca Rd., Tooting Bec Rd., S.W. [4513

B.S.A.—All models for immediate delivery; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4654

B.S.A. 3½h.p., 2-speed, kick starter, all chain, overhauled, enamelled makers' colours, fast, reliable; £50, near.—Allen, Hill House, Elstead, Surrey. [4236

B.S.A. Late 1920 Twin Combination, excellent condition, Magdyno, Watford trip speedometer, spare wheel, bulbs, valves, etc.; £170.—6, Market St., Oxford. [4053

£120.—Brand new 1921 4¼h.p. B.S.A., with new Canoelet sidecar, free insurance.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. Hop. 210. [4662

SPORTING B.S.A., Philipson, clutch, perfect, many new parts, accessories; £37; exchange lightweight and cash.—MacDonald, 39, Brougham St., Greenock. [4254

1920 4¼h.p. B.S.A. Combination, Montgomery sidecar, fully equipped, licence paid, good condition; £90, no offers.—Bowen, Motor Agent, Llawhaden, Narberth. [4410

B.S.A. 4¼h.p. Combination, Model H, 3-speed, clutch, kick start, tyres almost new, fully equipped, licensed; £67.—75, Warwick Rd., Bowes Park, N.11. [4640

1920 B.S.A., all chain, 4¼h.p., Swan torpedo sidecar, mileage negligible, discs, horn, Lucas lamp, spare chain, valve, etc., any trials; £119.—36, Alexandra Rd., Croydon. [4495

B.S.A. Singles and Twins, early deliveries, fitted with any model Sandum sidecars; B.S.A. twin and dual sidecar in stock.—Sandum Sidecars, 336, Gray's Inn Rd., W.C.1. [0541

3½h.p. B.S.A. Motor Cycle, 2-speed, all accessories, good running order, tax paid; £37/10.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [4929

B.S.A. Combination, 1921, 6-7h.p., nearly new, condition perfect, electric lighting, Cowey trip, Cowey horn, Royal Easting, luggage grid, etc.; £170.—Chase, 53, Widmore Rd., Bromley, Kent. [4126

B.S.A. 1919 4¼h.p. Coachbuilt Combination, all chain drive, 3-speed, clutch, and K.S., wind screen, Tan-Sad, condition excellent, tax paid; £95.—J. Powell, Shawbury, Shrewsbury. [X7269

1916 4¼h.p. B.S.A. Combination, Millford sidecar, 3-speed, K.S., re-enamelled, in first-class order, lamps, horn, speedometer; bargain, £75.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0695

B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. [0657

IMMEDIATE Delivery of any B.S.A. Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0501

B.S.A. (May) 1921 Combination, Model H2, Mills-Fulford chassis, electrically equipped, electric horn, Stewart speedometer, F.E.W. valve attachments; any trial; £130.—Strathdee, 24, Leytonstone Rd., E.15. 'Phone: 2246 Broadway. [4166

4¼h.p. 1921 All-chain B.S.A., with Henderson sidecar, M.L., Maglita electric lighting set, Apollo electric horn, Best mechanical oil pump, spring seat-pillar, knee-grips, and many spares; £140.—D. Smith, 34, Westminster Rd., Coventry. [X6881

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—B.S.A. K2, new 1921 models, just delivered, £107; Model H2, all-chain, £110; 6-7h.p. twin combination, standard, £175; immediate delivery from stock; cash, easy terms, or exchange. [4540

B.S.A. 4¼h.p. Chain Drive Combination, Oct., 1919, 3-speed, Lucas lamps, Cameo wind screen, hood, tax paid, insurance, full set tools, C.B. sidecar, perfect condition; £115, or part exchange for B.S.A. twin.—Mould, Woodside, Leatherhead. [5033

1916 B.S.A. 4¼h.p., chain-cum-belt, 3-speed, Canoelet sidecar, speedometer, lamps and generators, spring pillar seat, Easting wind screen, apron, accessories, spares, tools, tax and insurance (Nov.) paid; price £92/10.—Fraser, 52, Chertsey Rd., Woking. (P) [4853

B.S.A.—A motor cycle worthy of its name is the B.S.A. We have always in stock at least three models, Model K, Model H, and 6-7h.p. twin; immediate delivery; all spares in stock; trade supplied.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0379

MOTOR CYCLES FOR SALE.

Calthorpe

CALTHORPE 2-stroke, 2 speeds, licensed, just overhauled; £30.—Dosser, Slingsby, Yorks. [4650

CALTHORPE Single-speed 2-stroke; £28.—Rhind and Co., Stone Place, Rusholme, Manchester. [4485

2-SPEED 2-stroke Calthorpe, practically new, guarantee; £35.—Box 5,786, c/o *The Motor Cycle.* [4941

CALTHORPE-J.A.P., 3-speed, splendid condition; 30 gns.—2, Kelton Villas, Hawkes Rd., Kingston-on-Thames. [4546

CALTHORPE-J.A.P. 1917 2¾h.p., 2-speed, lamps, horn, etc., as new; £45, near offer.—33, Hackford Rd., Brixton. [5069

1917 Calthorpe-Jap 2¾h.p., Enfield 2-speed, lamps, horn, tools; trial invited; bargain, £45.—Slack, 78, Victoria St., Hucknall, Notts. (D) [4182

3½h.p. Calthorpe-Precision, 2-stroke (1920), Enfield gear, Lucas accessories, perfect order, spares; £45, offers.—Gilbert, c/o McGugan, 25, Brisbane St., Greenock. [4772

CALTHORPE-J.A.P. 2¾h.p., brand new, but slightly shop-soiled, 2-speed, Enfield gear; £55.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

CALTHORPE 1921 Combination, actually in stock for immedite delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd., Clapham Common, S.W.4. 'Phone: Brixton 2417. [0509

Campion.

6h.p. 1920½ Campion-Jap, coachbuilt sidecar, Lucas Magdyno lighting, horn, screen, Sturmey-Archer countershaft 3-speed, mileage 1,000, tax paid; £135, nearest.—G., West Hill, Barrowby Rd., Grantham. [4800

Cedos.

E. KICKHAM for Cedos, sole agent for Bristol and district.—Stokes Croft, Bristol. [3357

CEDOS 2¼h.p., 2-speed, new, licence paid; £50.—7, Roseholme Rd., Northampton. [4246

BRAND New Cedos Lightweight; list price, £65; to clear, £52/10.—Apply, 198, Gt. Portland St., W.1. [4634

CEDOS, 2¼h.p., 2 speeds, lady's or gent.'s; in stock deferred payments. — Parker's, Bradshawgate Bolton; also 245, Deansgate, Manchester. [X7264

Chater-Lea.

CHATER-LEA 8h.p. Combination, perfect condition; £60, or nearest offer.—106, Lillie Rd., Fulham, S.W.6. [4820

£30.—5h.p. Chater-Lea, water-cooled, 2-speed, C.B. passenger, Bosch, perfect.—58a, Gosberton Rd. Balham. [3442

CHATER-LEA 8h.p. Coach Combination, 3-speed countershaft, K.S., chains; £70 cash.—1, Grove Av., Tunbridge Wells. [4884

CHATER-LEA 1920, 2½h.p. Villiers 2-stroke, P. and H. lamps, Lucas horn, tax paid, as new; £43/10.—14, Devonshire Rd., Forest Hill. [4846

CHATER-LEA 8h.p. Combination, 3-speed, all chain drive, in good, perfect condition; £80, or near.—J.H., 22, Rossington St., Upper Clapton. [4023

8h.p. Chater-Lea Combination, coachbuilt, chains, Cameo, Tan-Sad, lighting set, horn, licence, good order; £65, or nearest.—Iles, Post Office, Wheatley, Oxford. [4807

CHATER-LEA, 1920, 4½h.p. Precision, 3-speed, S.A., K.S., coachbuilt sidecar, 3-fold screen, electric and gas lamps, tax paid, as new; nearest £100.—Thatcher, Premier Place, Putney. [4224

Chater-Lea-Jap.

1920 Chater-Lea-Jap, 6h.p., perfect, K.S., Sturmey-Archer, lamps, etc.; £85, or nearest; 2-seater sidecar if desired.—3, Scrutton St., E.C. [4130

CHATER-LEA-J.A.P. 4h.p., N.S.U. 2-speed, large box sidecar, all in good condition, tax paid; £50.—57a, High St., Sydenham, S.E.26. 'Phone: Sydenham 1493. [4673

Chater-Lea-Werner.

CHATER-LEA-WERNER 2¾h.p., B. mag., B. and B., good tyres, new tubes and belt, hand clutch, overhauled, in good order; £25, or nearest.—16, Yalding Rd., Bermondsey, S.E.1. [5125

Clyno.

CLYNO Combination, 5-6h.p., 1917, reliable lot, tax paid; £75.—Locke, Draper, Penge. [4859

1919 Clyno 2½h.p. 2-stroke, 2-speed, clutch, Klaxon, etc., in good order; £45.—28, Aldersmead Rd., Beckenham. [4863

LATE Clyno Combination, recently overhauled, enamelled Matchless grey; £80.—122, Rannoch Rd., Hammersmith. [4509

1918 6h.p. Clyno, new sidecar, Lucas mag., Senspray, speedometer, lamps, new condition; £80.—76, Western Rd., Southall, W. [4217

CLYNO 1915 Lightweight, accessories, engine just overhauled by makers, perfect condition, tax paid; £38.—44, Brandram Rd., Lee. [4530

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1921 **NEW IMPERIAL,** 3-speed	£73	10
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1921 Model K. **B.S.A.**	£107	0
1921 **ENFIELD** Combination	£160	0
1921 6-7 h.p. **B.S.A.** and Sidecar, and spare wheel	£189	0
1921 4 h.p. **DOUGLAS** Combination	£170	0
1921 **MATCHLESS** Combination	£185	0
1921 8 h.p. **NEW IMPERIAL** Comb.	£168	0
1921 2¾ h.p. 2-speed **DOUGLAS**	£85	0
1921 2¾ h.p. 3-sp. **DOUGLAS** with clutch.	£105	0
1921 4 h.p. **TRIUMPH,** Model H	£115	0
1921 **TRIUMPH,** Model S.D.	£125	0
3½ h.p. I.O.M. **RUDGE-MULTI**	£85	0
3½ h.p. Sports Model **DOUGLAS,** 3-speed	£150	0

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1914 **M.A.G.-MATCHLESS,** 7-9 h.p., 3-sp.	£70	0
1919 2¾ h.p. **NEW IMPERIAL,** 2-speed, clutch, and kick-starter	£54	0
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Clyno.

CLYNO 2½h.p., 2-speed, clutch, late 1919, all ac sories, tax paid; £40, or near offer.—The Gar The Beeches, Kingston Hill, Surrey. [4

6h.p. Clyno and Modern Cane Sidecar, 2-speed, B mag., good running order; £65, or near offe Austen, 85 Oriel Rd., Portsmouth. [4

CLYNO 5-6h.p. Combination, clutch, K.S., all-ch drive, spare wheel, recently overhauled; £8 Macdonald, 217, Peckham Rye, S.E. [4

CLYNO Motor Cycle, 1917, thoroughly renovated new, in 1921 colours; what offers?—K. Pell 16, St. George's Mews, Regent's Park Rd., N.W. [4

CLYNO 3-speed Combination, detachable wh lamps, horn, etc., just been overhauled and painted; bargain, £65.—1, Havelock St., Forest [4

CLYNO 1919 2½h.p., 2-speed, clutch, 2-str F.R.S. mag., electric lighting, speedometer, equipped, little used, licensed; £50.—Horn, 19, Rd., Luton, Beds. [4

8h.p. Clyno Combination, 1917, 3-speed, K.S., per order, J.A.P., Easting screen, pillion seat, wheel and tools, trial; price £100.—Slater, Abbotts Park Rd., Leyton. [4

1918 Clyno, 5-6h.p., perfect, and in brand condition, any trial, tax paid, fully equip spare wheel, etc.; £79.—Harvey, 47, South Lam Rd., S.W.8. Near Vauxhall Station. [4

1921 Clyno Combination, 8h.p. de luxe model, p tically new, electric lighting outfit, sid hood and wind screen with side panels, etc.; £21 Trueman Motor Co., Ltd., 54, Trueman St., Liverp [4

CLYNO Combination, 1917-18, 5-6h.p., enamel plated, and overhauled, spare tools, lamps horn, tax paid, spare wheel, spare tyre, all new t £115; after 6.—King, 448, Wandsworth Rd., Clap [4

CLYNO 5-6h.p. Combination, complete with h screen, electric lights, 4 detachable wheels, many spares, fully licensed and insured.—Grove M Co., 34, Hereford Rd., Westbourne Grove, W. T Park 5420. [5

Connaught.

1915 Connaught 2¾h.p. 2-stroke, single-speed; —Hearn, Liverpool Rd., Burrcough. [4

CONNAUGHT 2-stroke, single speed, fully equip tax paid, perfect throughout; £37/10.—Owen, Scholefield Rd., Upper Holloway. [X

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Cotton.

1921 Cotton-Blackburne in stock, fastest time record for hill 350 class Eastern Va M.C.C., June 9th.—South Wales Distributer: Luther J. Davies, 71, Commercial St., New Mon. 'Phone: 2488. [

Coulson.

NEW 1921 2¾h.p. Coulson B; £80.—Deb Atherstone Mews, Cromwell Rd., S.W. sington 2917. [

COULSON.—All models in stock; deferred paym —Parker's, Bradshawgate, Bolton; also Deansgate, Manchester. [X

COULSON B 1921 Models in Stock.—Sole Wilt Agents, Wessex Motors, Ltd., 60, Catherine Salisbury. 'Phone: 72. [

COULSON B.—Sole concessionnaires London an Southern counties, London Motors, 61, Hol Viaduct, London, E.C.1. [

2¾h.p. Coulson B Solo, thorough order, leg gu 24 Klaxon, lamps, tax paid, ready to ride a £60, or offers.—Baker's Motors, Tonbridge. [

2¾h.p. Coulson, spring frame, export model, 2-s 24 clutch, kick starter; 80 gns.—Edwards, 50, rington Rd., South Kensington. 'Phone: Ken. 3 [

COULSON 1921 4h.p. Blackburne, 3-speed Stur lamps, tax paid, practically new, complete sporting sidecar, very smart and fast; exchan £125.

COULSON, 2¾h.p. J.A.P., sports model, lamps, tax paid, absolutely unscratched.—C 122, Maida Vale (private house). 'Phone: Hamps 1353. [

COULSON B., 1921 4h.p., 3 speeds, Sturmey-Ar not done 100 miles, Lucas lamps, Klaxon, w spring frame, tax paid; £100.—A. R. Hinckley, Farnham Rd., Slough. [

COULSON B.—Winner T.T. Junior Race, B lands, 21st May, London-Exeter, London-L End, London-Edinburgh, 7 gold medals, 4 medals, and numerous local awards, holds w record for 2¾h.p. and sidecar; 2¾h.p. sports m with J.A.P. engine, 90 gns.; ditto, with Blackb engine, 97 gns.; standard de luxe models, from gns. to 120 gns.; sidecar combination, £165; also shop-soiled at bargain prices. Special offer of E Models, 2¾h.p. 80 gns., 4h.p. 90 gns. We can s any of these models immediately either for cash deferred payments. Write for "Book of the Coul —London Motors, 61, Holborn Viaduct, London, E City 4230.

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

IMMEDIATE Delivery of any Douglas Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., Side, Clapham Common, S.W.4. 'Phone: Brix. 2417. [0505

1915 2-speed Douglas, not W.D., fast and reliable, complete with electric lamps, long exhaust, discs, footboards, knee grips, mechanical horn, leg and shields; sacrifice £42.—Parker, 18, Hallswelle Rd., Green. [4587

; 4h.p. Douglas combination, late 1918, wind screen, lamps, etc., in new condition, any trial miles, real bargain; would accept good make not under 3½h.p., as part exchange.—Hodby, dgate Hill, E.C.4. [4494

0 4h.p. Douglas Combination, accessories, Easting, etc., privately owned, little used, equal to insured for £140, tax paid; price £120.—Apply, Harvard Court, West Hampstead; evenings, or Welwyn 50 during day. [4900

h.p. Douglas, 1919, 2-speed, completely equipped, Terrys links, T.T. bars, discs, adjustable pulley, lever carburetter, mechanical condition, enamel, plating perfect; any inspection; take £48 for sale.—Bernard, Jacques Court, Elham, Canter- [5028

NTED, purchasers for any model of new 1921 Douglas motor cycles and combinations, for diate delivery. Your present machine taken in exchange; full market value allowed; distance no —R. Bamber and Co., Ltd., 2, Eastbank St., port. Tel.: 607. [0647

0 2¾h.p. Douglas, 3-speed, clutch, and K.S., best condition, tyres unpunctured, licence paid, insurance till July, 1922, all tools, P. and H. Cowey horn and triple speedometer; £85 cash. view Barkston Garage, 242, Earl's Court Rd., (close to station). [4762

Douglas Combination, 1918-19, guaranteed perfect throughout, equipment includes 3 lamps, 2 carriers, speedometer, horn, mirror, legshields, windshield, tools, apron, etc., tax paid; a genuine £85.—Langford's, 37, Cricklewood Broadway, 'Phone: Hampstead 8616. [5138

Dunelt.

DUNELT Combination, used few times for demonstration purposes; £135; fully guaranteed; complete with spare interchangeable wheel and electric lights.—Frank Whitworth, Ltd., 139, New St., Birmingham. [X7319

Edmund.

GORLAY, the spring frame Edmund agent, Fallow Field, Manchester. [6093

EDMUND, spring frame, 3½h.p. M.A.G. engine, Enfield 2-speed, like new, special machine, fast; £75. Moss, Brooklands, Hall Lane, Chingford. [4610

EDMUND, 2¾h.p. Blackburne or J.A.P. engine, in stock; deferred payments.—Parker's, Bradshaw Gate, Bolton; also 245, Deansgate, Manchester. [X7266

EDMUND-J.A.P., 1921 model, spring frame, 2-speed, £75; also slightly soiled kick start model, second-hand 2-speed model, licence paid, £50. lamps and horn.—Marston, 31, Bridge St., Chester. [4692

Enfield.

NEW 1921 8h.p. Enfield Combinations in Stock; £160.—Lambert's, Thetford. [4392

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

1919 Enfield 6h.p. Combination, good condition £75.—Leavis, 19, Regent St., Cambridge. [4779

NEW 1921 Enfield Combination in stock; £160.—Lounds, Garage, 223, High Rd., Kilburn, N.W. [4447

ENFIELD Combination, 6h.p., excellent condition throughout; 50 gns.—Rose's Garage, Uxbridge. [4817

ENFIELD 1914 Combination, splendid condition, all £90.—822, High Rd., Leyton (near Bakers Arms). [4311

ENFIELD 2¼h.p. Twin, good condition, tax paid, runway; £18.—5, Pitts Rd., Stanhope Lines, Aldershot.

3½h.p. Enfield, 2-speed, good condition, lamps, horn, etc.; tax paid.—125, Wilberforce Rd., Finsbury Park, N.4. [4500

ENFIELD 1920 Combination, hood, screen, electric lighting; £115.—Clark, 7, Exhibition Rd., S. Kensington. [5038

ENFIELD 2¼h.p. 2-stroke, 2-speed, Dunlops, 1921, tyres, slightly soiled; £58.—Bowen, Motor Agent, Dawlish, Narberth. [4412

ENFIELD 2-stroke, 1921, unused (shop-soiled); unusual bargain at £56.—Prior, Southfields, S.W.18. 'Phone: Putney 1694. [4809

3½ Enfield 2¼h.p., 2-speed, expert examination invited, new tyres, lamps, licensed; after 5—105, Camberwell Grove, S.E.5. [4901

ENFIELD Combination, late 1917, Easting wind screen, electric lighting, fully equipped, splendid condition; £110.—71, Triangle, Oldfield Park, Bath. [4192

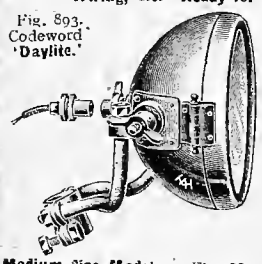
REGISTERED HAH TRADE MARK — H.A.H. Complete Electric Lighting Sets. — REGISTERED HAH TRADE MARK

ACCESSORIES. SPECIALITIES

NOTE REDUCED PRICES.

H.A.H. COMPLETE SETS.—Head, Side, and Tail Lamps, Accumulators, Carrying Cases, Switch, Wiring, etc. Ready for installing.

Fig. 893. Codeword 'Daylite.'



NEW PRICES

Stem or Handlebar fixing. Best quality finish, adjustable, strong, weatherproof.

Nickel-plated, 60/-
Old price, 72/6
Black Plated, 65/-
Old price, 76/6

Medium Size Model. Fig. 881. Best quality finish throughout. Totally insulated holder, with switch and 4-volt bulb, adjustable focus, adjustable brackets, dust and weather-proof front. As illustrated. Fig. 881.

NEW PRICES
Nickel .. 33/-
Black .. 30/-
Old prices:
Nickel .. 43/-
Black .. 40/-

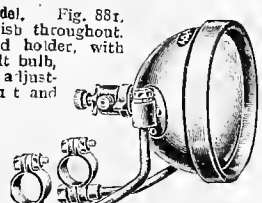


Fig. 870. Similar to Fig. 895, but smaller, and with special "pull on" front. Rubber ring casting for glass. New Price, Black-plated, 40/- each. Old Price, 55/-

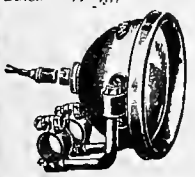


Fig. 560. Sidecar Lamp screw holder, bulb, switch wire complete. price 7/6 each; old price 8/6. Fig. 561. Ditto, bayonet holder, less switch, wire, etc. Price 6/6.

Fig. 573. Shows red danger signal, lights No. plate. Complete with switch, bulb, wire, clip etc. Price 7/6; old price 9/6.

"Force" Hellesen Battery, 9/11

386. Special metal case for "Force" 8/8. Complete rear set, 25/6.

'Speedolite' H.A.H. Patent Speedometer Lamp.

H.A.H. Switches

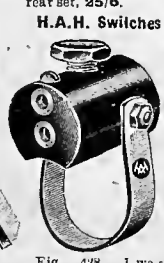


Fig. 347. Spring clip, a switch wire, coloured bulb, etc., complete 7/6 each. Fig. 428. 1-way Motor Cycle type. Price 2/- each. Screw Action, both contacts insulated. Fig. 29. Ditto Dash type 3/6. Fig. 449. 2-way 3/-. Fig. 410. Horn Tapper 2/-.

A. H. HUNT, LTD.,
H.A.H. WORKS,
Tunstall Road, CROYDON, Eng.

Telephones: Croydon 2225, 2226. Telegrams: "Keyage, Croydon."

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD 1921 Combination, mileage 500, lavishly equipped; nearest £150; take lightweight part.—131, Beckett Rd., Doncaster. [4342

STOCK.—Enfield 8h.p. Combination; £160; free insurance. — Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. Hop. 210. [4663

ENFIELD 3h.p., fast, reliable; or exchange late Enfield combination with cash; £50.—Shears, 312, Hailey Rd., Manor Park, E.12. [4154

ENFIELD 1916 3h.p., 2-speed, kick start, clutch, Bosch, guaranteed perfect condition; £55.—Wallace Green, Binfield, Berks. [4275

1918 2¼h.p. 2-stroke 2-speed Enfield, tax paid, complete with accessories, perfect running order; £40.—3, Norwood Rd., Herne Hill, S.E.24. [4979

ROYAL ENFIELD.—8h.p. Combination in stock; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7254

ENFIELD 1920 2-stroke, excellent condition, insured, all accessories; £50; getting combination.—Frazier, 131, Albion Rd., Stoke Newington. [4550

1917 3h.p. Enfield, 2-speed, kick start, lamp, horn, chain drive, original colours, good condition, tax paid; £55.—Deuce, 45, The Grove, Kettering. [4605

1921 8h.p. Enfield Combination, dynamo lighting, £182; and 8h.p. standard £160, lightweights £65.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0341

ENFIELD 1920 2-stroke, in splendid condition, re-enamelled and plated, P.H. lamp and generator, Cowey horn, tax paid; £43.—11, Ruskin Av., Kew. [4878

6h.p. 1915 Royal Enfield Combination, brand new sidecar, machine thoroughly done up, lamps, horn, etc.; £95, or offers.—Baker's Motors, Tonbridge. [4388

NEVER Used.—Enfield 2-speed 2¼h.p., delivered late; owner purchased combination; sacrifice £60; to be seen by appointment.—Box 5,738, c/o *The Motor Cycle.* [4203

S.E. London Service Depot.—In stock, 8h.p. Enfield combination, £160; tandem sidecar, £164; 2¼ h.p. 2-stroke, £65.—Cleare and Co., 125, High St., Woolwich. [5201

ROYAL ENFIELD Combination, 1921, electric lighting, Vickers engine, perfect, mileage 1,500; seen any time.—H.B., 110, Croydon Rd., Caterham Valley, Surrey. [4753

1921 Enfield Combination, 8h.p. J.A.P., lamps, speedometer, horn, wind screen, child's seat, tax paid, insurance, mileage 700; price £155.—41, Chevening Rd., Kensal Rise. [4107

ENFIELD Combination, 6h.p., recent overhaul Enfield works, hood, screen, lamps, horn, V.M. pillion seat and dressguard, tax paid; £80.—Anderson, 66, High St., Evesham. [4179

ENFIELD 1921 8h.p. Combination, brand new, but slightly soiled; usual price £160, accept £139/15 for quick sale; cannot be repeated.—Wilkins, Simpson, opposite Olympia, London. [4245

ENFIELD Combination, 6h.p., 1919, dynamo lighting, hood, screen, horn, mirror, fully insured and licensed, splendid condition; £135, or offer.—57, Hainault Av., Westcliff, Essex. [4143

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Royal Enfield models from stock, combinations and lightweights, from £65; supplied on our easiest of easy payment systems. [4539

ENFIELD 1921 2¼h.p., 2-stroke, 2-speed, brand new, but slightly soiled; usual price £65, sacrifice £57/15; do not miss this bargain.—Wilkins, Simpson, opposite Olympia, London. [4244

3h.p. Enfield, Douglas bars, Lucas lamps and hooter, Stewart speedometer, pillion seat, tools, spare chains, tax 30/- paid, good condition; nearest to £60.—43, Coleraine Rd., Blackheath. [4923

ENFIELD Combination, 1914, lamps, horn, etc., just overhauled makers, in exceptionally good condition, any trial, full insurance, original owner; £95, or near.—82, High St., High Barnet. [5120

ROYAL ENFIELD 2¾h.p. 2-stroke, purchased Feb., 1921, perfect condition, as new, with horn and lamps, complete; 50 gns.; no offers.—10, King's Parade, Ilseworth. 'Phone: 89 Hounslow. [5034

LATE 1920 Royal Enfield Combination, Lucas Magdyno, Easting de Luxe, done only 1,000; sacrifice £135.—James, c/o Bradmore, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [3132

1921 (March) Enfield Combination, J.A.P. engine, Lucas Magdyno lighting, 700×80 Dunlops, Lucas horn and mirror, very little used, unscratched; sacrifice £165 for quick sale.—40, Park Avenue South, Hornsey, N.8. [4226

ENFIELD Combination, late 1916, 6h.p., lamps, horn, etc., spare tube, chains, in good condition, and has been carefully used; £100, or reasonable offer; seen after 6.—Evans, 1, Honeybrook Rd., Clapham Park, S.W. [4615

LATE Enfield Combination, speedometer, oversize tyres, engine thoroughly overhauled, new chains, valves, etc., hood, wind screen, pillion, expensive turnout; 92 gns.; exchanges; evenings.—67, Fernlea Rd., Balham. [5102

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. B25

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Enfield.

1917 3h.p. Enfield, 2-speed, K.S., chain drive, just thoroughly overhauled, appearance and condition as new, licensed for sidecar complete, lamps, horn, speedometer; £48, lowest.—Wagstaff, Barnhurst Farm, Wolverhampton. [4318

ENFIELD 1921 Combination, fully equipped, electric lamps, screen, tax, speedometer, mileage negligible, best offer; also 3h.p. twin, 2-speed, kick start.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4661

£85.—Enfield combination, unused 1921, splendid condition, equipped large tyres, Bosch mag., sound throughout; expert examination and trial invited; worth £100; 1917 model; driving taught if necessary.—35, Whittingstall Rd., Fulham. [4751

ENFIELD 6h.p. Combination, twin J.A.P. engine, electric lighting, C.B. sidecar, new tyres, hood, screen, speedometer; cost £200, new last year; owner will sacrifice under doctor's orders; any trial.—Write Enfield, Box 5,737, c/o *The Motor Cycle*. [4202

1921 Enfield 2-stroke, fitted with electric head and tail lights, C.A.V. 6-volt accumulators, Cowey horn, fully licensed and insured, run only 300 miles, in perfect order and condition; Midlands; best offer over £55.—Box 852, c/o *The Motor Cycle*. [X7295

ENFIELDS.—The cheapest twin on the road. We are North London agents, and can supply from stock standard models £160, electric £182, cash, or deferred payments. All spares in stock. Trade supplied.—Jones' Garage, Muswell Hill, and at Woodside Parade, N. Finchley. [0380

WANTED, purchasers for any model of new 1921 Royal Enfield motor cycles and combinations for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Easthank St., Southport. Tel.: 607. [0645

1920 Enfield 8h.p. Combination, J.A.P., Magdyno lighting, hood, screen, patent spring handles, special luggage box, pillion seat, electric and bulb horns, speedometer, insurance and licence paid, perfect condition throughout; £160.—Ingle, Kazimain, Feckenham Rd., Redditch. [X7316

ENFIELD 1921 Combination, 8h.p. J.A.P., Lucas Magdyno electric lighting, Lucas bulb horn, Enfield patent hood and screen, Cowey trip speedometer, tools, spare tube, etc., tax paid, fully insured, under 2,000; genuine bargain, £160.—Call after 6.30, or write Bangs, Kitwood, Carlyle Rd., Addiscombe, Croydon. [4260

Excelsior.

1919 2¾h.p. Excelsior, Villiers engine, 2-speed, K.S., lamps, licensed, little used; £42/10.—Shaw, Regent St., Wellington, Salop. [X7287

A REAL Bargain for quick sale.—1920 British Excelsior combination; £100. Wanted, late Ford van.—Capt. Blackburn, Regent St., Pocklington. [4714

3½h.p. Excelsior Motor Cycle, clutch model, Lucas lamps, 2 horns, mirror, tools, pump, etc., machine has not been ridden since 1914, and is as new; 80 gns., or near offer.—Box 5,779, c/o *The Motor Cycle*. [4423

BRITISH Excelsior Combination, 1920, 8h.p. J.A.P. engine, Sturmey-Archer 3-speed gear, all-chain drive, roller bearings throughout, spare wheel, all interchangeable Lucas dynamo lighting set, electric horn, leg shields, discs, Bosch magneto, everything guaranteed perfect; £140.—L.A.L., 1, Martahan Rd., Stoke Newington, London, W. Tel.: Tottenham 2285. [4385

F.N.

F.N. 4-cyl., good running order; £25.—11, Royston Rd., St. Albans, Herts. [4825

F.N., 4-cyl., discs, sloping tank, re-enamelled, replated; £24.—52, Adamsville Rd., Sydenham. [4938

F.N., 4-cyl., 2-speed, licensed, and lamps, perfect running order; £22/10.—202, Trinity Rd., S.W.17. [4309

F.N., 4-cyl., 5-6h.p., good running order; £25, or near.—Long, Stone Green, Mersham, Ashford, Kent. [4602

F.N. 4-5h.p., drop frame, Xl'all saddle, Pedley grips, etc., good condition; exchange scooter, or sell cheap.—31, Mill Lane, Southport. [4121

F.N., 5-6h.p., hand clutch, 2-speed, Bosch mag., good tyres wide tank, good condition, tax paid; £27.—Gibson, 129, Finedon Rd., Wellingborough. [4325

IMMEDIATE Delivery of any F.N. model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0500

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY Combination, late model, dynamo lighting, superb turnout; £95.—114, Hill St., Peckham, S.E.15. [4518

£60.—Harley 1915 Combination, sound condition.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. Hop. 210. [4664

HARLEY-DAVIDSON Combination, 1920, electric model, fully equipped, condition like new, licensed; £160.—Bunting's Motor Exchange, Wealdstone. [4973

ENGLEBERT TYRES

Super-reinforced

The cover that has been designed to withstand any strain that it is possible to put it to—that will stand the kick of any motor cycle engine yet made—that will i at out any other make. These covers are a combination of everything that is best in tyre manufacture. The finest possible rubber, the strongest possible walls, and the best brains to make the "best out of them."

ACTUALLY AT HALF PRICE.

Size.	Pattern.	Our Price.	List Price
26×2	Touring 3-ply Rubber Studded	23/-	46/3
"	Passenger 4-ply Rubber Studded	26/6	53/-
26×2½	Touring 3-ply Rubber Studded	24/6	49/-
"	Passenger 4-ply Rubber Studded	27/9	55/6
28×3	Racing Rubber Bars and Studs	50/6	100

We guarantee these Covers to give a minimum mileage of 3,000 miles, and will replace any proving faulty on this basis.

Whatever tyre mileage you are satisfied with, these tyres, are "good for more."

A SPORTING OFFER

In order to increase our post-sale business, we are prepared to refund the remittance on every 100th order, and send the goods, carriage paid, no matter the amount. We keep separate books for post-sales, therefore this offer does not apply to counter customers.

These special Clearance lines are sent Carriage Paid on 7 days' approval against remittance.

ORDER THE ELITE RUBBER CO LTD Tyre Specialists

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LONDON'S LEADING TYRE HOUSE

264-266, VAUXHALL BRIDGE RD. VICTORIA, S.W.1

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44, SURBITON ROAD, KINGSTON-ON-THAMES

Please address all post orders to Vauxhall Bridge Road

TELEPHONE: VICTORIA 2553 & 2554

OUR AGENT IS THE PILLAR-BOX

MOTOR CYCLES FOR SALE.

Harley-Davidson.

HARLEY Sports, brand new, guaranteed, rear speedometer, lamps; £115.—R. B. Clark an 7, Exhibition Rd., S.W.7.

HARLEY Combination, late 1918, £90, re-enam plated, and overhauled, like new; solo, £70. Whitehorse Rd., Croydon.

HARLEY-DAVIDSON 1921 Combination, new, must sell; what offers?—Goad, 122, Vale. 'Phone: Hampstead 1353.

HARLEY-DAVIDSON Late Electric Model bination, mag. ignition, new sidecar; any £110.—22, Princess Rd., Finsbury Park.

7-9h.p. Harley-Davidson Combination, just oughly overhauled, new £30 sidecar, any must sell; £98; offers.—8, Rupert Rd., W. Ki N.W.

HARLEY-DAVIDSON.—All models in stock a reduced prices; deferred payments. — Pa Bradshawgate, Bolton; also 245, Deansgate, chester.

1920 Harley Combination, C. and M. special car, magneto ignition, electric lighting, last, splendid condition; offers.—G. Robertson Rd., Halifax.

HARLEY Combination, 7-9h.p., 1918, electric ing, new tyres, accessories, spares, etc., ne dition; reasonable offer.—20, Overhill Rd., East wich, S.E.22.

1920 7-9h.p. Harley Combination, electric Easting, as new; any expert examinati reasonable offer refused.—6, Havelock Terrace, stang Rd., Preston.

HARLEY-DAVIDSON Coachbuilt Combin 1917, not W.D., electric lamps, tax paid, condition throughout; £97/10.—Owen, 59, Sch Rd., Upper Holloway.

HARLEY-DAVIDSON 1919 Combination, m 2,000, Mills-Fulford extra heavy sidecar, ing, new tyres, mechanically perfect; £120. — Sangley Rd., Catford.

7-9h.p. Harley-Davidson, fitted Watsonian si disc wheels, smart mount, too fast for owner; will exchange lightweight and cash adjustment. Elborough St., Southfields, S.W.18.

HARLEY 7-9h.p., genuine 1915, mag. model overhauled, lamps, horn, tax paid, insuran May, 1922, any trial; £95, or nearest offer.—P. Kendal Rd., Isleworth, Middlesex.

1918 Harley-Davidson 7-9h.p. Combination, lent condition, fully equipped, just overh screen, pillion seat; £120.—Brown, 14, Balliol North Kensington, W.10. After 6 p.m.

1921 Sports Harley-Davidson, 4h.p., speedo fully equipped, mileage 548, brand new tion, insured, tax paid; cost £172 inclusive; offers?—Box 5,799, c/o *The Motor Cycle*.

1920 Electric Model Harley-Davidson, perfect dition, and sidecar, etc., £140; also 1919 new sidecar and hood, £115.—Chauffeur, 10, Crescent Mews West, Marylebone Rd., N.W.

1918 Harley-Davidson 7-9h.p. Electric Model, hauled and repainted, new tyres, screen, horn, etc., magnificent combination, tax paid; £ Morgan, Farningham House, Farningham, Kent.

HARLEY-DAVIDSON, 7-9h.p., with Gloria car, 1916, new tyres, hood, Cameo, mag paid, insurance to June next, excellent cond £110.—Kilmoril, Belle Vue Gardens, Shrewsbu

1920 Harley, dynamo model, C. and M. 87 gn car, screen, disappearing hood, discs, s meter, Tan-Sad, licensed, excellent condition; £ Edwards, 50, Harrington Rd., South Kensingt

SPECIAL Racing K Model Harley-Davidson, many speed events, mileage under 3,000, full of sprockets, spare chains, etc., guaranteed throughout; bargain, £125.—Prescott, Wetheral, berland.

HARLEY-DAVIDSON, 1920, 4h.p. model, sporting sidecar, electric lighting, excellent dition, as new; £175; deferred payments if des Parker's, Bradshawgate, Bolton; also 245, Dea Manchester.

HARLEY-DAVIDSON 1919-20 Combination, Sad, complete Lucas dynamo lighting, all perfect, smart appearance, and in perfect mech condition; £140.—Colonial Motors, 104a, Finchle Hampstead 7822.

HARLEY-DAVIDSON 1919 Model F., fully equ acetylene lighting, speedometer, horn, st sidecar, oversize tyre on rear, discs, 1920 front carefully ridden, licence to December, 1921; £ V.M., 24, Sheffield Terrace, W.8.

HARLEY-DAVIDSON, 1919, October, pur new last year, 7-9h.p., 2-seater sidecar, E wind screen, speedometer, gas lighting set, tax splendid order; £125.—Elce and Co., 15-16, Bl gate Av., Camomile St., E.C.3. 'Phone: A 5548.

1921 7-9h.p. Harley-Davidson Sporting Combin electric lighting and horn, special Harley car fitted with patent screen and collapsible alum hood, undoubtedly one of the finest outfits o road; nearest £200; photo.—27, Malmesbury Par Bournemouth.

MOTOR CYCLES FOR SALE.

Levis.

0 Levis, as new, all accessories, tax paid; £45.—Maitland, 40, Fleming Rd., Kennington, S.E.17. [2561

IL WILLIAMS for immediate delivery of all models Levis.—Chapel Ash Depot, Wolverhampton. [X3819

IS 2¼h.p., enamelled red, long exhaust, wide bars, excellent condition; £30.—Clark, Builders, orley, Herts. [4232

IS, 1915, single speed, electric and acetylene lamps, perfect condition, tax paid; £35.—7, Park d., West Dulwich. [4499

GNS.—2½h.p. Levis, thoroughly overhauled recently, new tyres, lamps, licensed.—Hoe, 46, ighry Park, N.5. [5042

S 1919 2½h.p., all-chain drive, Enfield 2-speed; 5 gns.; exchange single speed and cash.—H. Cradley, Staffs. [X7325

S, 1921, perfect condition guaranteed; £43/10. Goad (private house), 122, Maida Vale. o: Hampsteatd 1353. [4623

S.—Sole Walsall agents; special exchange and eferred payment terms; immediate delivery.—, Walsall Garage, Walsall. [2423

0 Levis, little used, excellent condition, lamps, horn, tax, insurance, spare tyre; £39.—Fielding, gent Sq., Lenzie, near Glasgow. [4256

Lincoln-Elk.

-Lincoln-Elk combination, 4h.p., 2-speed, clutch, ck start, good Dunlops, in excellent order.—151, Kingston Rd., Teddington. [3433

TING 3½h.p. Lincoln-Elk, Bosch, Philipson, and B., fast, powerful, splendid condition: near offer.—58, Gascony Av., Kilburn. [4139

L.M.C.

L.M.C. 6h.p. Combination, lamps, licence; list £180; shop-soiled only, £120; lightweight part. ley, Oswestry. [X7207

L.M.C. 4¼h.p., 3-speed, coachbuilt sidecar, lamps, etc., perfect condition; sacrifice £75.—omwell Rd., Peterborough. [4371

, 6-7h.p., Millford sidecar, luggage grid, wind reen, Lucas lighting set, spare belt and tube, st £200 August, 1920; any trial or examina-00, or nearest offer.—Pinm, 229, Icknield Port rmingham. [4200

Martin.

TIN-ALECTO 1921 Special Sports Model, Binks rburetter, C.A.V. mag., Dunlop tyres, regis-th The British Motor Cycle Racing Club; good or disposal; for quick sale £40, cost over double; eque gets it; seen any time.—11L, Kramer West Brompton, London. [4422

Martinsyde.

INSYDE 1921 Twin Combination; £145, cash exchange.—Collier's Motories, Horton St., [4381

INSYDE Combinations for immediate de-ry; £145; exchanges.—Newnham Motor Co., mmersmith Rd., W.6. 'Phone: Hammersmith [4655

ICALLY New Martinsyde 6h.p. Combination, as lamp, speedometer, horn, Easting screen, sories, tax paid, splendid outfit, small mile-55; take lower power part.—C.S., 14, Swaton v, E.3. Tel.: E3155. [5105

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ERY Free for 150 miles from London t forget, every outfit personally tested by tchless only) expert. I am now booking the new sports model, ready shortly; gradual arranged 5% on balance only.—J. Tassell, mfield Rd., Plumstead, S.E.18. [5374

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GET, T. J. Ross, 86, High Rd., Lee, S.E hone: Lee Green 744.

RAEL in Comfort on a Matchless.

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IGEST Marks Awarded in any passenger class T. J. Ross in A.C.U. 6 days trial 1920.

XURIOUS Riding on a Matchless.

COMICAL in Petrol.

ECOND to None in Price and Workmanship.

TRACTION Guaranteed. Price standard del, £185, with 2-seater sidecar £191/10, with ordinsidecar £180. Easy payments and exchanges rang [8976

THLESS 8h.p. M.A.G. C.B. Combination, 3-sed, tax; £81.—234, Belsize Rd., N.W. [4571

THLESS Combination, 8h.p., 2-speed, fine con-dion, taxed; £48.—17, Heaton Rd., Mitcham. [4887

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The Fascination of the New

is an affliction from which most of us suffer.

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are as good as new in appearance and just as trusty—they are guaranteed for three months at a price within reach of most and terms to suit all.

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MOTOR CYCLES FOR SALE.

Matchless.

1921 Matchless, sports model, brand new, unused; £153, 31, Moore Park Rd., Fulham. After 7 p.m. [4731

MATCHLESS Combination, 8h.p., 2 speeds, excellent running order; offers.—43, Russell Av., Wood Green. [4740

MATCHLESS 1920, Magdyno, every extra, splendid condition; £140—Harneon, Hatfield Heath, Harlow, Essex. [4310

MATCHLESS Sports Combinations; £172; specially tuned.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [5039

1921 Matchless Magdyno Combination, brand new, unused, unregistered, owner must sell; £180.—41, Madrid Rd., Barnes, S.W. [2843

MATCHLESS Combination, 6h.p., 2-speed, all on, spares, sound, trial; £79; bargain.—1, Gordondale Rd., Wimbledon Park, S.W. [4676

1919 Matchless Combination, 8h.p., spare wheel, extra cover, spare valve, tax, insurance paid; £125.—T., The Wilderness, Swanage. [5025

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS 1920 Combination, perfect condition, electric lighting, tax and insurance paid, all accessories; £155.—Scott, 183, Maida Vale. [4375

MATCHLESS Coachbuilt Combination, rear wheel Villiers hub needs repair, machine otherwise in good condition; £45.—Dell, 5, West St., Ware. [4078

LATE 1920 8h.p. Matchless Combination, dynamo lighting, all accessories, must sell this week; £139.—436, Whitehorse Rd., Thornton Heath. [4961

MATCHLESS, Models H and H2, dynamo lighting, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7257

F.O.C.H. have a 1920 Matchless Combination, dynamo, small mileage, tax paid; bargain.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2693

1921 Matchless, all models for immediate delivery, exchanges and deferred payments if required.—Edwards, 50, Harrington Rd, South Kensington. [2844

MATCHLESS Combination, 8h.p. M.A.G., 3-speed, K.S., electric lighting, perfect condition; £95.—Clarence Garage, Richmond, Surrey. 'Phone: Richmond 431. [2536

8h.p. Matchless and Sidecar, 2-speed countershaft and kick starter, lamps, horn, and new tyres on machine; best offer; must be cleared.—Smallwood, 211, Dawes Rd., Fulham. [4559

MATCHLESS Family Combination, Magdyno, electric horn, etc., 55 miles to gallon, new 8 weeks ago, cost £240; sell £210.—Cromack, 76, Compton Row, Harehills, Leeds. [4909

MATCHLESS 1920 Dynamo Lighting Combination, M.A.G. engine, spare wheels, etc.; £155.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4659

MATCHLESS H, Nov., 1920, guaranteed as new, used few times only, horn, screen, spare wheel, tools, tax paid; real bargain, £135.—Bickmore, 2, Seymour Rd., Southfields, S.W.18. [4833

MATCHLESS 2-seater, 1921 Model H2, electric lighting, speedometer, hood, screens, all spares, equal to new; accept £200; must sell; guaranteed perfect.—46, Griffin Rd., Plumstead. (D) [X7350

MATCHLESS, late 1919, Victory model, 8h.p. J.A.P. combination, spare wheel, electric light, fully equipped, tax paid; £110; beautiful condition; evenings.—3, Julien Rd., Northfields, Ealing. [4758

MATCHLESS Combination, 1920-21, M.A.G. engine, dynamo, speedometer, horn, mudshield, step, mileage 2,500, carefully used, excellent condition; £175.—The Limes, St. Mary's Grove, Richmond, Surrey [4228

MATCHLESS Combination; £185; best value on market; spring frame, detachable wheels included.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. Kensington 4096. Exchanges arranged. [9194

1919 8h.p. Matchless Combination for sale, double seater sidecar, 2 wind screens, Tan-Sad, speedometer, spare wheel, in excellent conditionn; selling cheap, £130; owner buying a car.—Richardson, 4, Fossgate, York. [4771

MATCHLESS Combination, 1920 H. Model, 8h.p., very little used, spare wheel, screen, tools, foot pump, tax paid, fully insured (transferable) till May, 1922, perfect condition; £125, bargain.—38, Alodon Rd., Dalston, E.8. [4521

GREENWICH (Phone 751).—Matchless, immediate delivery all models; prices to suit your pockets; cash, exchange, or deferred terms.—Enquire of the Matchless agent, Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [3805

MATCHLESS Combination, 1920-21, Model H, J.A.P. 8h.p., Magdyno lighting, S.O. horns, spare wheel, hood, screen, and luggage carrier, perfect condition; owner buying car; any trial after 7.30 Friday; £160.—Oak Lodge, Redhill, Edgware. 'Phone: Ilford 330. [4991

MOTOR CYCLES FOR SALE.

Matchless.

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbook St. Southport. Tel.: 607. [0651

19 20 Matchless Model H., M.A.G., Lucas electric lighting, spare wheel, wind screen, hood, leg-shields, speedometer, extra tube, Tan-Sad pillion, guaranteed splendid condition, mileage 1,100 only; owner bought car; £170, including all accessories, or nearest offer.—Finch, Hemsby, Kingsway, Gerrards Cross. [4511

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied all spares in stock.—Jones' Garage, Muswell Hill N.10, and at Woodside Parade, North Finchley. [0381

Metro.

METRO-TYLER, 2¾h.p., 2 speeds, running order; £28.—171, Seven Sisters Rd., Finsbury Park. [4600

19 17 Metro-Tyler, 2¾h.p., single-speed, in good condition, equipped, tax paid; £35.—20, Malton St., Plumstead. [4286

Minerva.

MINERVA 4h.p., clutch, coachbuilt sidecar; £27; separate £7.—D.J.E., 22, Cedar Rd., Croydon. [3139

£18; 4½h.p. twin Minerva, mechanical valves, enclosed mag., splendid order.—King, Egrove, Oxford. [X7329

MINERVA 2¾h.p., sporting, low, T.T. bars, long exhaust, knee-grips, new Dunlops; photo; £24.—264, Soho Rd., Birmingham. [4789

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 2-8, Alexandra Rd., Hornsey. [3698

Monarch.

MONARCH-VILLIERS 2-stroke, 2-speed, 1920, almost new, lamps, tax paid, etc.; any test; £42.—371, Earlsfield Rd., London, S.W. [4258

MONARCH 8h.p., November, 1920, special combination, fully equipped, 2-seater sidecar, folding chassis, Easting Royal, hood, legshields, tools, spares, new condition, tyres unpunctured; reasonable offer.—Wilkes, 99, St. Albans Rd., Smethwick, Birmingham [X7340

Moto-Reve.

MOTO-REVE Twin; £15, or exchange.—Hipkins, 4, Furrance Rd., Chadwell Heath. [4835

A MOTO-REVE Motor Cycle, 2¼h.p., good running order; what offers?—Ireland, East Peckham, Kent. [4527

Motosacoche.

MOTOSACOCHE 2½h.p., clutch, fine condition; £16.—17, Heaton Rd., Mitcham. [4888

MOTOSACOCHE Lightweight, 2½h.p., Bosch mag.; £20.—Macdonald, 217, Peckham Rye, S.E. [4091

MOTOSACOCHE 2¾h.p., Bosch, Amac, Palmers, perfect condition; £18.—408, Essex Rd., Islington. [4837

£14.—Motosacoche for sale, lightweight, good running condition, road license paid.—Box 5,754, c/o *The Motor Cycle*. [4282

MOTOSACOCHE 2¼h.p., Bosch, Amac, perfect tune and running order, all on; £28.—Post Office, Friston, Saxmundham. [4079

19 14 Motosacoche 3½h.p. Twin, absolutely perfect must be sold; £35.—Wallis, 23, Hartington Grove, Cambridge. [4133

2½h.p. Motosacoche, in perfect order, new tyres, spare belt, tools, Bosch mag, splendid climber; first £15 secures.—14, Estcourt St., Devizes. [4136

New Hudson.

3½h.p. New Hudson Combination, 3-speed, clutch; £50.—23, Ash Grove, Cricklewood. [4580

NEW HUDSON 2¼h.p., 2-stroke, 2-speed countershaft, lamps; £40.—Fielding, 97, Grove Rd., Walthamstow. [4169

2¼h.p. New Hudson, 1915, good running order, completely equipped, and spare tyre, tax paid; £25.—Isaac, Bargate, Boston. [4082

NEW HUDSON Coachbuilt Combination, 3-speed, clutch, K.S., new Dunlops, splendid order; £50.—120, Sutherland Rd., Croydon. [4899

NEW HUDSON.—2¼h.p. de luxe models in stock; deferred payments. — Parker's, Bradshawgate, Bolton; also 245 Deansgate, Manchester. [X7258

NEW HUDSON Combination, 6h.p., 3-speed countershaft gear, K.S., lamps, horn; £60; exchange part Levis.—108, Dalzie Rd., Well Hall, Eltham. [4145

NEW HUDSON 1914 Combination, 3½h.p., 3-speed countershaft, K.S., clutch, electric light, excellent condition; £45, bargain.—12, Kendrick Mews, South Kensington Station. [5060

CRABTREES' of WISBECH

OUR RE-CONDITIONED DOUGLAS MOTOR CYCLES *ARE THE BEST.*

2¾ h.p., 2-speed .. £65

4 h.p. 3-speed, k.s. and Clutch £85

4 h.p. ditto, and new Sidecar in Douglas Saxe Blue. £105

Practically indistinguishable from new. Complete with full F.R.S. equipment. Over 50% new parts, including new tyres, belt, chain, carburetter, etc. Fully guaranteed for 3 months. Over 500 already supplied to all parts of the country

Deferred Payments Arranged.

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The following are a few items.—

2¾ h.p.—Pistons, **5/-**; Valves, complete, **2/3** Valves only, **1/9**; Valve springs, **3d.**; Fork springs, **1/6**; Front brakes, complete, **13/6**; Carburetter control levers, **7/6**; Plain pulleys, **4/6**; Lubricator glasses, **1/-**.

4 h.p.—Chain covers, **7/6**; Rear stands, **9/6**; Drip feeds, 1915-16, **10/-**; Fork springs, **1/6**; Ratchet pinions, **2/6**; Camshaft wheels, **5/-**; Fork spindles, **1/-**; Silencer barrels, **10/-**; Front exhaust pipes, **10/-**; Hub spindles, **2/6**.

Send for full List.

NEW EX-W.D. COVERS.

28 x 3ins. Kempshall and Macintosh for English Rims only.

22/6 each. Carriage paid

CRABTREE & SON, LTD., Motor Engineers, WISBECH.

London Office: 50, Pall Mall.

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New Hudson.

NEW HUDSON O.B. Combination, 4h.p., 3-spe gear box, all accessories, tax paid; £70; c (with cash) Harley combination or similar.— James' Rd., Kingston, S.W.

19 19 4h.p. New Hudson 3-speed Countersha bination, done 4,000, accessories, leg tax paid; £80, or near; write for appointment. 16 Barons Court Rd., West Kensington.

NEW HUDSON Lightweights, all models, on Popular, 50 gns.; de luxe, 65 gns.; Ace, Spares for 2¼h.p., 3½h.p., and 6h.p machines Deferred payments arranged. Catalogues.—New son Depot, 45, Gray's Inn Rd., Holborn, W.C.

19 19 4h.p. New Hudson Combination, coachb speed, kick, hand clutch, engine fitted w piston rod, crank pin (June), spare tube, belt, lamps, horn, tax paid, ready for anything, app perfect; any trial or examination; £90, or n Hoyle, Palace, Featherstone, Yorks.

New Imperial.

NEW IMPERIAL-J.A.P., 1920, 2 speeds starter, cheap.—20, Park Rd., Cheriton, stone.

NEW IMPERIAL Lightweight, new 1921 special price, £70.—Marston, 31, Brid Chester.

8h.p. Imperial Combination, new; sell, o second-hand machine in part.—Fox, 12, St., Lichfield.

NEW IMPERIAL-J.A.P., 2¾h.p., 1916, 2-spe paid, lamps, horn, running well; £40.—2, Av., Woodford Green.

NEW IMPERIAL 1921 2¾h.p., 3-speed, as accessories, tax paid, ideal tourist machine —J. Powell, Shawbury, Shrewsbury.

19 18 2¾h.p. New Imperial-Jap, countershaft new Dunlops, accessories, licensed; 38 Fersfield, Westbury Rd., New Malden.

NEW IMPERIAL 8h.p. Combination, slightly to be cleared at £115.—Prior, Replingha Southfields, S.W.18. 'Phone: Putney 1694.

19 20 New Imperial 8h.p. Combination, lamps, splendid outfit; £95.—C/o Bra 482, Harrow Rd., Paddington. Tel.: W 1744.

NEW IMPERIAL-J.A.P. 1920 2¾h.p., clutch, kick start, excellent condition; Goad (private house), 122, Maida Vale. Hampstead 1353.

NEW 8h.p. New Imperial Combination, al sories, tax paid; owner going abroad: £120.—Chambers, 138, Knight's Hill, West N 'Phone: Mayfair 2181.

£90.—New Imperial Combination, re-enamel replated throughout, 8h.p. J.A.P., 1919 m great bargain. — Clifford Wilson, 177, West Bridge Rd., S.E.1. Hop. 210.

NEW IMPERIAL 1920 8h.p. Combination screen, electric light, Cowey speedomete tyres, tubes, and tools, mileage 6,500; £125.—S 14a, North Rd., Richmond, Surrey.

NEW IMPERIAL Sales and Combinatio mediate delivery, best allowance on your machine.—Newnham Motor Co., 223, Hamm Rd., W.6. 'Phone: Hammersmith 80.

NEW IMPERIAL 1920 8h.p. Combination, lamps, spare cover, tools, recently overha makers, in beautiful condition; £125; owned.—Colonial Motors, 104a, Finchley Rd. stead 7822.

IMMEDIATE Delivery of any New Imperial cash or deferred payments; book your or and avoid disappointment later.—Burlington Ltd., South Side, Clapham Common, S.W.4. Brixton 2417.

Norton.

PREMIER Motor Co. for 1921 Nortons.

ANY Model Norton delivered to your addr riage paid within 24 hours; easy payme 4% extra.—The Premier Motor Co., Aston B mingham.

19 21 T.T. Norton, fully equipped; £90. Frank Eele, Thame.

NORTON Motor Cycles.—Can deliver anywhe dates.—Kelly, Bachelor's Walk, Dublin

DAN GUY, Weymouth.—Norton Big 4 com £177; sports model, £132; from stock.

NORTON, 1921 famous 16H. model, little us equipped, licensed, very fast; £112.—Mc

CYRIL WILLIAMS for immediate deliver models Norton.—Chapel Ash Depot, Wolv ton.

3½h.p. Norton, new; £132; sell, or take hand machine part.—Fox, 12, Conduit S field.

NORTON 1920½ 4h.p. de Luxe Combinatio lamps, horn, licence, Watford speedomete perfect; £125, bargain; solo part.—Longney,

MOTOR CYCLES FOR SALE.

Norton.

ORTON 1921 3½h.p. 3-speed Sports, licensed, lovely condition, mileage negligible; £110.—Crow Bros., Guildford. [3940

20 4h.p. Norton Combination, all accessories, condition as new; bargain.—Spratt, Victoria Lane, Huddersfield. [4907

ORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. Phone: 72. [5005

ORTON.—Sole Walsall agents; exchanges or deferred payments.—Maudes' Motor Mart, Walsall Garage, Walsall. [2421

ORTON.—All models in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7259

-0 Big Four Norton Combination, fully equipped; £115; unscratched.—Braemar, 17, St. Quintin's Av., North Kensington. [4933

ORTON 3½h.p., single-speed model, very fast; £60; licence paid. Also, new 1921 model, 16H; £132.—Arston, 31, Bridge St., Chester. [4699

21 Norton, Model H16, as new, exceptionally fast; £120.—Kaye Don, Langlands, Anglesea Rd., Kingston. Tel.: Kingston 3381. [4210

LE 1920 Big Four Norton Combination, Henderson sporting car, lavishly equipped; cost £197, sacrifice £115.—24, Balliol Rd., North Kensington. [4592

ORTON 1921 Big Four Combination, luxuriously equipped, Lucas dynamo, Lucas electric horn, Bilt, as new; £166; exchange.—47, Newland Av., Hull. [X7204

20 Big Four Norton and 1921 Henderson Elite sidecar (cost £45), lamps, Klaxon, tools, perfect condition; £145.—12, Leaside Av., Muswell Hill, N.10. [4732

ORTON Big 4 Combination, new Norton de Luxe sidecar, Easting, lamps, all accessories, tax paid, perfect condition throughout; £120; no dealers.—32, Felstead Rd., Wanstead. [4348

—3½h.p. Norton combination, Dinky Petite sidecar, discs, large F.R.S. lamp, tools, etc., tax paid, engine, gear box, etc., in perfect condition; great bargain.—Tucker, Redcliff Hill, Bristol. [3969

ORTON 3½h.p., 3-speed, and Henderson sporting sidecar, lamps and horn, late 1919, very little used, condition little worse than new; £115.—W. G. Bingham, George Street Garage, Pocklington. [4242

ORTON.—Immediate delivery Big 4 and 16H models; spare parts always in stock.—Call, write, or 'phone 4042. G. H. Tucker, the Norton Agent, and Specialist, Redcliffe Hill, Bristol. [3970

Norton 16H. Combination, Cowey, screen, electric light throughout, insurance, new condition, mileage, magnificent engine; best over £130; bought Spratt, Northern Haulage, 1, Sandhill, Newcastle-on-Tyne. [4188

B.R.S. Norton 3½h.p., h.b.c., Philipson, rear drive, speedometer, licensed, spare valves, piston rings nearly new and new spare cover, do well any time; any trial; £75 for quick sale.—T. Ingham, Pickering, Yorks. [4473

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

ONS.—Any model supplied anywhere. 3½h.p. O.M. T.T., actual racing machine, unused since 22 m.p.h., £130, offers; 3½h.p. T.T., 3-speed, 1 week, ready for the road, and if required Mr. Bell will tune to 75 m.p.h.—Bulloughs Motors, Waterloo St., Oldham. [4421

4h.p. Norton, new Douglas sidecar, P. and H. lamps, horn, Bonniksen, £20 spares, including rocket, chains, tyres, valve, straight-through exhaust, 11 months' insurance, condition guaranteed; near offer; must sell; ride to purchaser.—3, Malwood Rd., Balham, S.W.12. [4741

N.S.U.

6h.p. Combination, all on, excellent order, sidecar, tax paid; £50.—Victor, 151a, Oxford St., W.1. [5053

Lightweight, Bosch, B. and B., Dunlops, hooks, footboards, complete, wants tuning; £10.—1, Triangle, Halifax. [4303

3½h.p., spring forks, variable mag. ignition, licence paid Dec. 31st; £17 secures, carriage paid.—Lawson, Awkley, Doncaster. [4869

N.S.U., all black, complete with lamps, etc., splendid condition, ride away; first £12 bargain.—165, High St., Hounslow. [4317

N.U.T.

Latest 1921 Models from Stock: 3½h.p. £110, 5h.p. model £120.—Marston, 31, Bridge St., Chester. [4702

N.U.T. 3½h.p., Magdyno, horn, Tan-Sad, licensed, mileage 100, absolutely unscratched; £120.—Edwards, 50, Harrington Rd., South Kensington. [5048

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FULL MARKET VALUE ALLOWED for your present machine in good condition

VALUE FOR MONEY.

1921 4 h.p. **INDIAN** Scout, electrically equipped, speedometer; cost £180 a few weeks ago **£135**

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1920 2¼ h.p. **METRO-TYLER,** S Type, 2-sp., lamps, horn, licensed; only run 50 miles **£68**

1919-20 **SCOTT** Combination, lamps, horn, speedometer, aluminium pistons, very fast, excellent condition **£105**

1919 8 h.p. **SUNBEAM** and Swan Sidecar, electric lamps, Cowey horn, windscreen, excellent condition **£135**

1919 2½ h.p. **CHATER-LEA,** 2-speed, horn, licensed, very good condition **£38**

1918 8 h.p. **SUNBEAM** Combination, hood and screen, Lucas lamps and horn, spare wheel, licensed, excellent condition **£125**

1915 4-h.p. **DOUGLAS** Combination, Lucas lamps, horn, licensed, excellent condition **£67**

1913 3½ h.p. **TRIUMPH** Combination, 3-sp., hand clutch, K.S., electric lamps, horn, speedometer, excellent condition **£55**

Special 8 h.p. **MATCHLESS-J.A.P.,** overhead valves, very fast, excellent condition **£50**

New **A.B.C.** Skootamota ..... **Offers.**

Our Stock of New Machines include: HARLEY-DAVIDSON, ENFIELD, NORTON, ARIEL, MATCHLESS, Etc., Etc.

SIMPLEX MOTOR ATTACHMENTS for Push Cycles.

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N.U.T.

N.U.T.-J.A.P. 5-6h.p. Twin, 1914, 3-speed, clutch, sporting Canoelet sidecar, tax paid; £50.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [5146

£47/10, bargain.—3½h.p. T.T. twin N.U.T., overhead valves, Sturmey 3-speed countershaft clutch, kick starter tax paid, good condition, very fast. 89, East Hill, Wandsworth. [4045

1921 3½ h.p. N.U.T., dynamo lighting, Lucas horn, Cowey speedometer, watch, knee grips, not run 1,000 miles; nearest £120; as new.—27, Malmesbury Park Rd., Bournemouth. [4207

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, indistinguishable from new; £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7249

N.U.T.—Sole agents for nine counties; special exchange or deferred payment terms; immediate delivery all models; trade supplied.—Maudes' Motor Mart, London, Exeter, and Walsall. [2422

O.K.

O.K. Union 2¼h.p., new in June, 600 miles; £33.—Pantling, Wing, Bucks. [X7371

1921 O.K. 2-stroke, 2¾h.p., as new; £28.—C.S., 14, Swaton Rd., Bow. Tel.: E3155. [5104

1921 O.K. Junior, 2¾h.p.; £50/8—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [5006

2¾h.p. O.K., new last March, lamps, horn, tax; 38 gns.—5, Wyndham Crescent, Tufnell Park Tube. [X7347

O.K. Junior 1915 2¼h.p., 2 speeds, lamps, etc., all new condition; £50.—13, Crook Log, Bexley Heath, S.E. [4874

O.K. 2-stroke, 1916, tax paid, new Dunlops, in fine running order; any trial; £25.—C., 33, West End Lane, Kilburn. [5115

O.K.-VILLIERS, late 1920, perfect order, 2¾h.p., lamps, horn, tax paid, under 200 miles; £35.—33, Belsize Av., N.W.3. [4253

1921 O.K.-Villiers 2¾h.p., 2-speed, complete with lamps, horn, tools, and tax, only ridden 50 miles; first £55 secures a bargain; must sell.—Norris, Talbot, Mere, Wilts. [4160

P. and M.

1918 P. and M., 2-speed, clutch, K.S., perfect order; £50.—56, Park Lane, Kidderminster. [5026

1917 3½h.p. P. and M. and chassis, good order; £60.—1, Bellingham Terrace, Catford. [4394

P. and M. Combination, 1918, excellent condition; £69.—38, Shirley Grove, Lavender Hill, S.W.11. [4630

P. and M. Combination, 1918, taxed, perfect, new sidecar; £68.—38, Sherriff Rd., W. Hampstead, N.W.6. [4645

CYRIL WILLIAMS for immediate delivery of all models P. and M.—Chapel Ash Depot, Wolverhampton. [X3821

3½h.p. P. and M., E.I.C. mag., B. and B. carburetter, 2-speed; £25.—Wallis, Flint Cottages, Buntingford. [4862

1917 P. and M. Combination, condition as new, all on, trial any time; £60.—Holden, Westfield Rd., Crawley. [4415

1920 P. and M. and Sidecar, mileage 300, as new, lamps and horn, etc.; £85.—Apply, 198, Gt. Portland St., W.1. [4632

1918 P. and M., blue-gold, unscratched; £57/10; consider cheaper machine part.—61, New Kent Rd., London, S.E.1. [4804

P. and M., late, 2-speed, kick start, top-hole condition; £35; any trial.—1, Springfield Park Crescent, Catford, S.E.6. [4603

P. and M. Combination, late 1920, lamps, horn, and licence paid, a genuine bargain; £100.—Hull, 150, Tarvin Rd., Chester. [4802

P. and M.—Solo or sidecar in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7256

1919 P. and M. Combination, screen, electric lighting, re-enamelled March, perfect; sacrifice £75.—153, Cromwell Rd., Peterborough. [4370

P. and M. R.A.F. Combination, engine No. 7091, used 10 months, licensed, equipped; £65.—2, Chesterfield Rd., St. Andrews, Bristol. [4754

P. and M. Combination, newly overhauled, licensed, etc.; £60.—Grove Motor Co., 34, Hereford Rd., Westbourne Grove, W. 'Phone: Park 5420. [5021

1916 P. and M. Combination, electric lighting and horn, fully equipped, spares, perfect condition; £70.—11, Merthyr Terrace, Barnes, S.W.13. [4294

P. and M. Combination, 1918, lamps, etc.; £55, a bargain.—Miles, 11, Chichester Rd., West Kilburn, N.W.6. (One minute Kilburn Park Tube.) [5062

£45.—1918 3½h.p. P. and M., 2 speeds, clutch and kick starter, perfect, ride away.—Rae, Kingwater Cottage, Church Walk, Thames Ditton. [4548

P. and M., 1918, and 1920 coachbuilt sporting sidecar, fully equipped, mechanically perfect, tax paid; £72.—85, Ermine Rd., Lewisham, S.E.13. [4051

MOTOR CYCLES FOR SALE.

P. and M.

P. and M. Combination, 1918, tax paid, lamps, Klaxon, splendid condition, just completed tour; £64.—Warren, 94, Southwark Bridge Rd., London. [5083

P. and M. Combination, engine 7822, thoroughly reconditioned, smart, horn, lamps, new tyres, Renold chains; £70; exchange lightweight.—43, Leavesden Rd., Watford. [4819

19 19 P. and M., excellent condition, all accessories, stored 12 months; owner abroad; overhauled by makers (cost £18), since not used; £70, or near offer.—F.M., 2, Cleveland Av., Chiswick. [4111

19 21 P. and M., perfect, mileage about 200, sidecar optional, cost recently £160, all on, insured, tax paid; no reasonable offer refused; appointment.—69, Church Rd., Hendon, N.W.4. [4116

LATE 1918 Phelon-Moore, 1920 sidecar, Easting screen, lamps, accessories, spares, new tyres, overhauled, perfect; offers; 50 miles meet purchaser.—30, Fernepark, Stroud Green, N.4. [4746

P. and M., late 1917-18, newly plated and stoved enamelled, makers' 1921 colours, new Dunlop tyres, tubes, new parts fitted, perfect mechanical condition; £65.—Brooks, 57, Firs Hill Rd., Sheffield. [5831

P. and M. Late 1918 Combination, overhauled, re-enamelled and plated as new, tyres, chains, saddle, and coachbuilt body absolutely new, complete with lamps and accessories, tax paid; £80, or near offer.—224, Pentonville Rd., N.1. [4911

£38.—1917 (late) P. and M., 2-speed, clutch, good appearance, chain cases, toolbags, mechanical horn, spares, £4 tax paid, demonstration; also Gloria spring wheel sidecar chassis off same, £4.—4, St. George's Terrace, Primrose Hill, N.W. [4514

Peugeot.

PEUGEOT 6h.p. Twin, excellent running condition, lamps, Stewart horn, etc., all on; £33.—Barnes, 109, York Rd., Southend-on-Sea. [4549

Premier.

PREMIER, 3½h.p., clutch, good tyres, excellent order; £28, near offer.—Betts, 88, St. John St., Lichfield. [4414

£17, 3½h.p. Premier; £25, 6h.p. Phanamon, good sidecar, £5, must sell.—Morley, 49, Narford Rd., Clapton, London. [5029

4¼h.p. Premier, 1916, 3-speed countershaft, K.S., all on, new tyres, perfect condition, tax paid, take 2 anywhere; £55.—44, Junction Rd., Highgate, N. [4611

4 h.p. Premier, 3-speed C.S., kick starter and clutch, mechanically perfect and appearance as new; £4 tax paid; £65, or offer.—Smallwood, 211, Dawes Rd., Fulham. [4560

3½h.p. 1915 Premier Combination, 3-speed, clutch, K.S., C.B. sidecar, wind screen, electric lighting, Klaxon, good tyres, tax paid; £77.—85, Gartmoor Gardens, Southfields. [4824

PREMIER 1913 3-speed, excellent condition; any trial; £35.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton, S.W.2 (half minute from Brixton Skating Rink). [4434

3½h.p. Premier, free engine, clutch, horn, lamps, new tyres and tubes, 2 belts, tax paid, new carburetter, in good running order; £25, or near offer.—C. Baxter, Waterbeach, Cambs. [4747

PREMIER 1915 4h.p. Countershaft, 3-speed gear box, kick starter, clutch, new tyres, aluminium footboards, smart appearance, guaranteed perfect, tax paid; sacrifice, £45.—Andrews, Yoxford, Suffolk. [4641

P.V.

19 20 P.V. 3½h.p., spring frame, Beardmore-Precision, 2-speed, Cowey speedometer, lamps, etc., as new, unscratched, must sell; £65.—8, Rupert Rd., W. Kilburn, N.W. [4891

Quadrant.

CLIFFORD WILSON Manufacturing Co.—Quadrant official wholesale distributers.—177, Westminster Bridge Rd., S.E.1. [4666

£16.—Quadrant 3½h.p., variable gear, B. and B., Bosch, 2 Lucas lamp sets, horn, tax paid; bargain.—P., 32, Lanfranc Rd., Worthing, Sussex. [4855

£85.—We have several 1920 4½h.p. Quadrant Combinations, guaranteed.—Clifford Wilson Manufacturing Co., 177, Westminster Bridge Rd., S.E.1. [4665

QUADRANT Combination, 4½h.p., 1920 model, little used, lamps, horn, licence paid, little used; £85; equal to new.—Marston, 31, Bridge St., Chester. [4693

QUADRANT Combination, 4½h.p., 1920, all on, insurance, tax paid, perfect condition; best offer; or take new lightweight plus cash.—Pressland, Bellevue, Box, Wilts. [4223

SHOP-SOILED.—We have a few Quadrant combinations at reduced prices, fully guaranteed.—Clifford Wilson Manufacturing Co., 177, Westminster Bridge Rd., S.E.1. [4668

QUADRANT Combination, 1920, 3,000 miles, Easting, P.R.S. head lamp (electric), speedometer, Klaxon, new tyre and tube; cash offers.—Howard, Homesgarth, Letchworth. [4113

EXCHANGES QUOTED

1922 CALTHORPE LIGHT CARS.

NEW MODELS AND PRICES.

De luxe, 2-seater, dickey seat	£410	0
De luxe, 4-seater	£435	0
Popular, 2-seater, dickey seat	£355	0
Popular, 4-seater	£375	0

1921 NEW MOTOR CYCLES.

MARTINSYDE 6 h.p. twin Combination	£145	0
COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL RUBY, 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£165	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	8
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four 3-sp. Combination	£170	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single speed	£98	0
*__DOUGLAS__, 2¾ h.p., 2-speed	£85	0
*__DOUGLAS__, 2¾ h.p., 3-speed, clutch	£105	0
*__DOUGLAS__ 4 h.p. Combination	£160	0
DOUGLAS, 3½ h.p., 3-sp., sports model	£150	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON 1920 Big Four, 3-speed	£110	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
BROUGH, 1916, 3-speed countershaft.	£59	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2-speed, lightweight	£49	10
ARIEL, 1920, 3½ h.p. 3-sp. countershaft	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£42	10
TRIUMPH, 3½ h.p., clutch, good	£47	10
NORTON, 1920, 3½ h.p., sporting	£80	0

PASSENGER MACHINES.

A.V. Monocar, 5-6 h.p. J.A.P.	£79	10
SUNBEAM, 1920, dyno lighting, superb Combination	—	
SUNBEAM 8 h.p. M.A.G. Combination	£145	0
HAZLEWOOD-J.A.P. 6 h.p. Combination, only done 100 miles, tax paid	£140	0
MORGAN, 8 h.p., sporting, tax paid	£105	0
MORGAN, 1915, sporting	£120	0
INDIAN Powerplus Combination	£105	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£99	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£185	0
HARLEY 1920 Combination, electric	£168	10
READING-STANDARD 3-speed Com.	£110	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£75	0
ALECTO 3½ h.p. 2-sp. 1920 coach Com.	£79	10
REX 6 h.p. 2-speed Combination	£52	10
ZENITH-GRADUA, 6 h.p., and Sidecar	£57	10
ENFIELD 1915-16 Combination	£105	0
CHATER-LEA 8 h.p. 3-sp. Combination	£75	0
NORTON Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£125	0

Deferred Payments taken.

Cash offers considered for Second-hand Models.

TRADE SUPPLIED.

SUNDRIES.

1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1¾	£2	2	0
New Army Knapsacks, 13½ × 11in.		5	6
Douglas Carburetter, used 15/-, £1,	£1	10	0
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£18	10	0
Second-hand Douglas Magneto	£1	17	6
Late Amac Carburetter £1 10 0,	£1	17	6
Late B. & B. Carburetter £1 12 6,	£1	19	6
1920 Triumph Carburetter, nearly new	£2	15	0

MOTOR CYCLES FOR SALE.

Quadrant.

2¾h.p. Quadrant, 2-speed, free engine, clutch, start, Bosch, B. and B. footboards, tyres splendid order, nice appearance, tax paid; absolute gain, first £35 gets.—50, Lowfield St., Dartford.

1920 Quadrant, C.B. sidecar, licensed, discs, lamps, speedometer, mirror, wind screen, sound condition; £95; exchange 1920 A.J.S.. A Zenith.—Huret, St. Helens, Hastings. Tel.: 152.

QUADRANT Combinations from Stock, all m free insurance; cash, exchange, or deferred ments; all spares.—Official repairers, Clifford W Manufacturing Co., 177, Westminster Bridge S.E.1. Hop. 210.

Radco.

RADCO, 1920, single-speed; list £52; shop only, £40.—Longney, Oswestry.

RADCO, lamps, horn, tax paid, excellent c tion; £25.—9, Campbell Rd., Walthamst

RADCO 2½h.p., 1918, lamps, horn, tools, and tuned engine, just overhauled; £26/10.—406, ratt Lane, Earlsfield, S.W.

1920 2½h.p. Radco, 2-speed, excellent cond licensed; sacrifice through death, £35.— hurst, Behind 68, Standishgate, Wigan.

Raleigh.

PREMIER Motor Co. for 1921 Raleighs.

EASY Payments only 4% extra. We can d to your address within 24 hours the new R 5-6h.p. flat twin, spring frame, chain drive; solo gns.; sidecar, 176 gns.; spare wheel and tyre, 6 Sole Birmingham Agents, The Premier Motor Aston Rd., Birmingham.

IN Stock, new Raleigh, 5-6h.p.—Wale, 7, Queen' Nuneaton.

RALEIGH Combination, superb machine, as specially tuned engine, Easting Royal, electric lighting, licensed; cost £205, accept any trial.—Sheldon, Wheatley, Oxford.

RALEIGH Solo and Combinations for imm delivery; purchase your machine from s agents, spares in stock, best allowance on your p mount.—Newnham Motor Co., 223, Hammersmith W.6. 'Phone: Hammersmith 80.

Rex.

REX, 3½h.p., magneto missing; £9.—59, D Rd.; Herne Hill, S.E.

REX 4h.p., single, good running order, good £30.—Johnson, 64, Upper Bland St., Borough

REX, 6h.p., clutch, H.S. new Amac, Bosch, K guaranteed, trial; nearest £45.—280, New Rd., S.E.

REX 3½h.p., 2-speed, handle start, recently hauled, tax paid; seen by appointment; Tidey, Station Rd., West Hoathly.

£25.—4h.p. Rex combination, 2 speeds, handle good tyres, Milliford Castor wheel, spring first cash, no offers; really cheap.—89, East Wandsworth.

REX Motor Cycle, 3½h.p., Bosch, B.B. carbu recently enamelled and overhauled, in goo ning order, mechanically perfect; price £30.—A to Box 5,736, c/o *The Motor Cycle.*

4h.p. Rex, Bosch, B. and B., Grado gear, drop cantilever sprung, Klaxon, lamp, fast, goo dition, tax, insurance paid; £21; after 6 o'cloc Bennett St., Blackfriars. Hop. 4321.

REX 8h.p. de Luxe Combination, fast, power speed countershaft, guaranteed as new me cally and appearance, electric lighting, fully equ £80.—46, Cromwell Rd., Walthamstow.

SPECIAL Offer of brand new 8h.p. Rex-Blac combination, detachable wheels, spare makers' list price £218, reduced to £175 cash payments only 4% extra.—The Premier Motor Co., Rd., Birmingham.

Roc.

4h.p. Roc and C.B. sidecar, Juckes 3-speed, K.S., 3 new Palmer cords, tubes, new C.A.V., Binks, and electric set, in good running £45, includes tax and insurance.—19, Theobald N. Finchley, N.12.

Rover

ROVER 1920 3½h.p., T.T., tax paid; £65.—P Brondeg, Llanelly.

NEW 1921 3½h.p. All-chain Rovers in Stock —Lambert's, Thetford.

ROVER 1921 3½h.p., all-chain, accessories, ta done 200 miles; offers.—Earl, Southey St.,

3½h.p. 1913 Rover, 3-speed, reliable 'bus, as n paid; what offers?—Wallace Jones, Builth

ROVER 6h.p. Combination, 3-speed, kick sta latest 1921 model; £165.—Marston, 31, St., Chester.

ROVER 3½h.p. 1919 Model, in first-class con price £50.—Jeffreys, Speedway House, St. N Rd., Sutton, Surrey.

MOTOR CYCLES FOR SALE.

Rover.

OVER 1914 3½h.p., 3-speed, clutch, lamps, horn, etc., tax paid, excellent condition; £45.—Manthpe, Huntingdon. [4278

9h.p. Rover, 3-speed hub, clutch, coach sidecar, mechanically perfect, enamel good; £60.—4, Circh Av., Leicester. [4403

1921 Rover Combination, 5-6h.p., fully equipped, mileage 140; cost £195, take £170, or offer.—9, Francis Rd., Windsor. [4609

OVER Combination, 5-6h.p., July, 1918, mileage 200, enamelled and plated, as new; offers.—Box 5,1, c/o *The Motor Cycle*. [4957

T. Rover, late model, first-class condition, new tyres, fully equipped, tax paid, fast bike; sacrifice 35 gns.—35, High St., Dartford. [4268

LE 1919 3½h.p. Rover, special sidecar, hood, screen, lamps, excellent condition throughout; £1—64, Rochdale Rd., Plumstead, S.E.18. [4457

1913-1914 3½h.p. Rover Combination, 3-speed clutch, Starmer-Archer hub, stored during war, tax paid, perfect condition; bargain, £55.—1, Norwood Rd., Herne Hill, S.E.24. [4977

5h.p. Rover Combination, Nov., 1919, chain enclosed drive, 3 speeds, hand and foot clutch, kick starter, speedometer, horn, electric lighting, mirror windscreen, coachbuilt sidecar, Easting wind screen, waterproof apron, full kit tools, spare inner tube, mechanically perfect, any trial; £130.—King's Head Garage, Romford. [4221

LE 1919 3½h.p. T.T. Rover, hand-controlled Philipson pulley, complete lamp set, Lucas horn, heavy cover and tube, unpunctured, voiturette wheels, knee-grips, tool bags, tools, etc., pump, hinged mudguard, very low, comfortable, fast, and good climber, splendid condition, little used, only wants seeing; bargain, £58.—Stanton, 55, Bulstrode Rd., Hounslow, Middlesex. [4372

Royal Ruby.

1919 8h.p. Royal Ruby Combination, beautifully equipped; £92.—24, Balliol Rd., North Kensington. [4538

ROYAL RUBY Sports Model, 2¾h.p., 1921, as new, mileage 200, fully equipped, tax paid; £68.—130, Brush Rd., London, N.W. [4971

2¾h.p. Royal Ruby, sports model, 1921, quite new, licence paid; £80, bargain.—J. Davies, 3, Old Rd., Brampton, Chesterfield. [4034

2¾h.p. Royal Ruby, 1916, overhauled, enamelled, new mag., complete kit, licensed; £35, or near.—Bird, Whaplode Drove, Wisbech. [4336

SPORTS Model Royal Ruby, 1921, delivered March, slightly shop-soiled; list price 80 gns., nearest offer 63, Grand Parade, Harringay, London. [4799

ROYAL RUBY 3h.p., 1920, spring frame, lamps, horn, tools, spare belt, just overhauled, low mileage, £80.—Yute-Lee, 13, Embankment Gardens, Chelsea. [4055

ROYAL RUBY, 3½h.p. J.A.P., I.O.M., 2-speed, Burton sidecar new; £80; must sell; snip; fast; offers £30.—Mitchell, 19, Andalus Rd., Stockwell, S.W. [4025

ROYAL RUBY 1919 8h.p. Combination, extra large new sidecar, guaranteed perfect, tax paid, very powerful, any trial; £120 quick sale.—10, Eaton Pl., Brixton. [4071

ROYAL RUBY New 1921 8h.p. Combination, spring frame, interchangeable wheels, spare wheel, Lucas magneto lighting, luxurious sidecar, Easting screen, luggage and petrol carrier, tax and insurance paid; £800.—58, High Rd., Willesden Green, N.W.10. [4840

Rudge.

3½ Rudge, brand new T.T. model; £80.—Parker's, Motor Specialists, Kendal. [X7279

£50 Rudge combination, 1914, splendid condition.—10, Kensington Rd., Coventry. [X7231

RUDGE Multi, new 1921, T.T. model, just arrived; £65; excellent value.—Moss, Wem. [X7313

19 Rudge, hand-controlled clutch; £26/10, lowest.—C. Sealey, 101, St. James Rd., Watford. [4927

RUDGE Multi, 1921 (March), lamp and licence; cost £91; done 300; sell £75.—Lougney, Oswestry. [X7211

6h.p. Rudge Multi Combination, 1916-17, guarantee; sacrifice, £60.—Box 5,787, c/o *The Motor Cycle*. [4942

3½h.p. Rudge Multi, brand new, 1921; £75 for quick sale.—Box 5,795, c/o *The Motor Cycle*. [4949

19 3½h.p. Rudge Multi Combination, excellent order; £45; after 7.—7, Leighton Rd., Ealing. [4376

BRAND New 3½h.p. Rudge Multi, unregistered, near London; accept £75.—Box 5,800, c/o *The Motor Cycle*. [4953

£85 Rudge-Whitworth, 1921, pedal starter, multi. I.O.M.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [4670

RUDGE Multi Latest T.T. and Touring Models; £65, from stock.—Marston, 31, Bridge St., Chester. [4688

TYRES AND TUBES

IN PERFECT CONDITION.

There are more pleasant holidays spoilt by faulty tyres than anything else. So look below before you go.

I will refund your money immediately if you are not satisfied.

24×2	
Wood-Milne Special	28/-
Hutchinson Rubber-studded	22/5
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Wood-Milne Extra Strong	32/9
Wood-Milne Combination	44/-
26×2¼	
Dunlop Heavy	36/6
Macintosh Chain	32/6
Avon Sunstone	37/6
Clincher de Luxe Extra Heavy	35/-
Rom Combination	42/-
Avon Combination	38/9
Beldam Combination	35/-
Palmer Heavy Cord	36/9
Palmer Cord	32/6
Skew Rubber Non-skids	29/6
26×2⅜	
Palmer Heavy Cord	37/-
Palmer Cord	33/-
Dunlop Heavy	37/-
Clincher de Luxe Extra Heavy	34/6
Bates Special Heavy	37/6
Wood-Milne Extra Strong	35/-
26×2½ to fit 2¼ Rims.	
Hutchinson Rubber-studded	33/-
Wood-Milne Special	33/-
Wood-Milne Extra Strong	45/-
26×2½	
Rom Combination	45/-
Dunlop Heavy	45/-
Macintosh Chain	36/-
Rom Combination	47/6
Hutchinson Rubber-studded	36/-
Skew Heavy Ribbed	37/6
650×65	
Heavy Rubber Non-skid	26/3
Wood-Milne Special	43/6
*Michelin Steel-studded	52/6
Burcett Grooved	41/9
Dunlop Steel-studded	55/-
*Voiturette fitting.	
700×80 to fit 650×65	
Wood-Milne Special	50/-
Wood-Milne Extra Heavy	55/-
Dunlop Steel Studded	70/-
700×80 (for 650×65) Voiturette Rims	
28×3	
Goodyear Extra Heavy Diamond Tread and Tube	75/-
Wood-Milne Extra Strong 4-ply	29/3
Dunlop Extra Strong 4-ply	50/-
Dunlop Heavy	45/-
Clincher de Luxe Extra heavy	45/-
28×3 to fit 2½ Rims.	
Dunlop Extra Heavy	50/-
28×2½	
Wood-Milne 4-ply	40/-
Hutchinson Heavy Rubber-studded	26/9
Hutchinson Heavy Ribbed	29/6

NEW TUBES, in all Sizes, 7/- each.

Also Clearance TUBES, with one small vulcanised patch by Manufacturers, otherwise quite new, 5/6.

The above lines are sent Seven Days on Approval, and Forward Passenger Train. Carr. Paid

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MOTOR CYCLES FOR SALE.

Rudge.

RUDGE Multi 3½h.p., mechanical order and appearance excellent; £50. — Vicar, Marchington Uttoxeter. [4841

3½h.p. Rudge, clutch, C.A.V., Sensspray, splendid condition throughout; £35.—282, St. Albans Rd., Watford, Herts. [4162

1920 5-6h.p and 7-9h.p. Rudge Combinations, unused; also 1921 I.O.M.—Shepherd, Enfield Highway Tel.: Waltham Cross 31. [0340

1921 Rudge Multi, brand new end June, nicely run in; snip, £74, tax paid.—29, Alderbrook Rd., Clapham Common, S.W.12. [4616

RUDGE 3½h.p., not used during war, Dunlop Magnum tyres, recently overhauled; £28; stored.—Cresswell, High St., Wandsworth. [4216

1920 3½h.p. Rudge Multi, perfect condition, complete with licence, lamps, horn, etc., 700 miles; best offer.—4, Hoopers Sq., Rochester. [4363

RUDGE Multi 3½h.p., 1917-18, fast, excellent condition, lamps, etc.; 39 gns.; after 7 p.m., or write.—73, Sutherland Rd., Edmonton. [5089

3½h.p. Rudge Multi, coachbuilt sidecar, in good running order and condition; £50, or very close offer.—Peerless, Old Windsor, Berks. [4321

1914 3½h.p. Rudge Multi, overhauled and re-enamelled, accessories, buying lightweight; £45.—Rockholme, Leckhampton Hill, Cheltenham. [4904

1920 Rudge Multi, T.T., Sensspray, small mileage, excellent condition, horn, tools, tax paid; £58.—Croy, Hollemeadow Av., Blakenall, Walsall. [4407

1921 Rudge Multi Combination, beautifully equipped, tax paid, as new; £99/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [4479

FOR Sale, 1920 Rudge Multi, 5-6h.p., now at makers being thoroughly overhauled, £4 tax paid; price £85.—Bowers, 27, Fox St., Scunthorpe, Lincs. [4035

RUDGE Multi, 5-6h.p., 1914, £25 worth new parts, tax paid, insured, sound mechanical condition; nearest £50.—Brown, Stanger St., Keswick. [X7243

1914 Rudge Multi, electric lighting, long plated exhaust, T.T. bars, Klaxon, new back wheel, licensed; £38.—17, Sussex Rd., New Malden, Surrey. [4229

RUDGE Multi, late 1914, new Dunlop cover, new belt, new clutch plates, engine perfect, fine condition; £39, or offer.—11, Hadley Gardens, Chiswick. [5113

3½h.p. Rudge Multi, I.O.M., only ridden few hundred miles, nearly new, perfect condition, lamps, accessories; £75.—Norris, Catmos Villa, Oakham. [4334

1920 (late) Rudge Multi, Cowey horn, speedometer, electric head lamp, knee-grips, spares, accessories, new tyre and belt, tax paid; £70.—Hands, Stonehouse Kenilworth. [X7152

1919 Late I.O.M. Rudge Multi, perfect condition, lamps, discs, Hutchinson tyres, speedometer, horn, knee grips; 65 gns.—122, Lower Mortlake Rd., Richmond. [4743

RUDGE Multi Combination, delivered August, 1920, Easting screen, lamp set, tax paid, under 2,000; £95.—Bruton Mews Garage, 8-20, South Bruton Mews, Bond St., W. [4093

1921 I.O.M. Rudge Multi, pedal starter, tax paid, Cowey horn, speedometer; £78, or part exchange for A.V. Monocar; adjustment.—Smith, Market Place, Willenhall, Staffs. [X7317

£65.—3½h.p. Rudge Multi and coachbuilt sidecar, fast, powerful machine, special Binks carburettor, spares, etc.—Seen at Wright's Garage, 249, Camberwell Rd., S.E. Tel.: Hop. 2890. [4461

1921 Rudge, I.O.M., little used, as new, with or without sporting sidecar, complete lamps, horn, tools, etc., tax paid; first reasonable offer secures; must sell.—Norris, Talbot, Mere, Wilts. [4159

RUDGE Multi 7-9h.p. 1920 Combination, all accessories, spares, mileage 2,500, tax paid, owner giving up riding; no reasonable offer refused.—The Cottage, Wensleydale Rd., Hampton. [4324

1914 Rudge Combination, 3-speed, clutch, etc., and renovated, 4-point underslung sidecar, real good outfit, lamps, tools, and tax paid; £65; bargain.—Jowell Rhind and Co., Stone Place, Rusholme. [4481

£37/10.—Rudge Multi, believed 1915-16, wide tank, foot oiler, heavy tyres, clutch, kick starter, perfect, tax paid. Another, exactly same, with Canoelet sidecar, toolbags, lamps, horn, excellent condition; £45; trials; exchanges.—89, East Hill, Wandsworth, S.W.18. [5013

Ruffells.

1920 Ruffells, Villiers 2-speed, 2-stroke, Albion gear box, Amac, special filter to petrol pipe, done 1,000, condition guaranteed as new, licensed; £48.—Unsworth, Station House, Handforth, Cheshire. [4292

Scott.

SCOTT New 1921 Model, special offer; £120.—Marston, 31, Bridge St., Chester. [4698

SCOTT Squirrel, new £130 model; sell, or take second-hand part payment.—Fox, 12, Conduit St., Lichfield. [X7059

SCOTT, engine No. 3317, Lucas lamps and horn, excellent condition; £70.—9, Moncrieff St., Peckham, S.E. [4894

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A33
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Scott.

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [2698

SCOTT and Sidecar Chassis; any trials; £50, or offer. —Gardner, 27, Whitmore Rd., Kingsland. (After 7 o'clock.) [4455

SCOTT Sports, 1920, electric, Palmers, new condition, fast; £85.—Smith, 229, Maryvale Rd., Bournville. [X7321

SCOTT Combination, 1920, electric lighting, licence, beautiful order; £105. — Cockell, Holly Lodge, Dalston, E.8. [4729

SCOTT.—In stock, solo or sidecar; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7260

SCOTT 1920 Solo, fully equipped, best offer.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4658

SCOTT and Sidecar, engine No. 2970, electric lighting, perfect condition, accessories; £75, or offer.—33, Mansell Rd., Acton, W. [4569

SCOTT, 1920, excellent order, T.T. and touring bars, speedometer, tools, tyres good; £90.—Dr. A. Pimm, Addison House, Guildford. Tel.: 608. [4798

SCOTT, 1916, perfect condition, kick start, fine sidecar machine and smart; bargain, £60; or part exchange for lightweight.—28, Bourne Rd., Bexley. [5063

3¾h.p. Scott, 1914-15, 2-speed, clutch, K.S., new condition, tyres, tubes, unpunctured, all on, tax paid; £38/10.—Gilbert, 435, Portland Rd., Hove. [5058

1921 Scott Squirrel, 3¾h.p., brand new July 30th, only ridden holiday week, do over 60 m.p.h.; bargain, £120, or nearest.—26, Grimston Rd., Nottingham. [X7345

1920 (October) Scott, sports model, fully equipped, tax, insurance, perfect condition, low mileage, new tyres; sacrifice £85.—Bradley, Albert Mills, Bingley, Yorks. [4307

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; nt £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

SCOTT Combination, late 1914, overhauled, re enamelled, new parts, chains, etc., Binks, speedometer, Klaxon, screen, hood; owner bought car; £75, offers. —15a, Deansfield Rd., Eltham. [4299

SCOTT Combination, 1921, Lucas Magdyno lighting, speedometer, and full equipment, mileage negligible, a real class outfit, licensed; £160.—Bunting's Motor Exchange, Wealdstone. [4974

SCOTT (November, 1920), done under 4,000, stored 12 months, perfect condition, and runs magnificently, full Lucas equipment, licence paid; any trial; £85.—Hunt, Llanwenarth, Abergavenny. [2983

SCOTT Coachbuilt Combination Sept., 1913, engine 2160, good condition externally and mechanically, lamps, horn, tools, tax paid, new rear Dunlop and main chain; £70.—F. Caiger, Queen Camel, Somerset. (D) [4327

SCOTT Combination, 1921 model, fitted with disc wheels, Scott sidecar, oversize tyres, speedometer, Lucas dynamo, lighting set, Lucas electric horn, mirror, luggage grid, Tan-Sad pillion seat, licence paid until December, only done 150 miles, indistinguishable from brand new; cost £245, our price for quick sale £175.—Braid Bros., Midland Garage, Colwyn Bay. Tel.: 105. [3908

1916 Standard Scott, mechanically perfect, enamel and plating good, Lucas equipment, splendid value, 65 gns.; 1920 Scott, mileage 2,000, guaranteed new condition, tax paid, £99; 1921 Scott Squirrel, slightly shop soiled, £125; Scott, Parkerised, 2-pole Bosch mag., Bonniksen, Lucas electrical equipment close set gears, capable about 60 with full equipment, absolutely new, tax paid, 160 gns.; Scott, Parkerised, as above, with special cylinders fitted with detachable aluminium water jackets, 2 independent exhausts, rotary induction valve, fitted with sporting Canoelet sidecar, Ace aluminium discs throughout, Lucas acetylene equipment, finished in Indian red, mileage 1,000, 175 gns.—James Parker and Son, the Original Scott Specialists, Kendal. [X7280

Singer.

SINGER, 1912, clutch, 3½h.p., sound machine; £26/10.—Longney, Oswestry. [X7210

2¾h.p. Singer, Bosch, B.B., good condition; any reasonable offer.—Gibbs, High St., Ashford, Kent. [4062

SINGER 2¾h.p., single-cyl, 2 speeds, splendid condition, taxed; £23.—17, Heaton Rd., Mitcham. [4889

1914 Singer, 2¾h.p., N.S.U. 2-speed, tax paid, any trial; £20.—Harvey's, 47, South Lambeth Rd., S.W.8. [4597

SINGER 2¾h.p., Druid spring forks, good tyres and tubes, good running order, enamel as new; £18.—Charman, Stamford Hills, Loughborough. [4826

SINGER, engine in back wheel, accumulator and coil ignition, handle-bar control, Amac carburetter, enamelling and plating in new condition, new cyl. and piston fitted; £25, or nearest offer; seen by appointment.—C., 233, Elgin Av., Maida Vale, London, W. [4441

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Approved by all the leading manufacturers, and suitable for any make of motor cycle. Finished in colours to suit.

A scientific production of a Single or Double Sidecar at will. By moving the seat back to the forward position and opening the back locker-lid a further spring back and spring seat are disclosed, suitable for a six-foot passenger.

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Insist that *both* your passengers shall ride in comfort, and not on make-shift dickey seats. A six-foot man can occupy either seat.

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336, Gray's Inn Road, LONDON, W.C.

'Phone—Museum 3427.

MOTOR CYCLES FOR SALE.

Singer.

3½h.p. Singer Combination, 3-speed and Grad and tubes unpunctured, new belt, Bosch lamp, tools, licence, all on; genuine offer; trial —Machell, 3, Gordon Av., Southport.

JACOBS' World's Record Breaking 250 c.c. This machine, which has made history, is cally indistinguishable from new, has counters speed gear box, Ricardo piston, plated mudguar spare handle-bars, tank, piston, 3 new covers, justable pulleys, 3 sprockets, etc.; £60 cash.— 86, Chalk Farm Rd. (opposite Chalk Farm Tube London. 'Phone: Hampstead 2767.

Southey.

SOUTHEY'S 2½h.p. 2-stroke 2-speed Models, horn, licence holder, tools; £60.—Southey Berkhamsted.

SOUTHEY 2½h.p. 2-stroke, 2-speed, Chater Sturmey-Archer gears, clutch and kick lamps, horn, licence holder, tools; £67.—South Co., Berkhamsted.

Standard.

1920 British Standard, 2¾h.p., 2-stroke, over perfect.—Andrew Green, Sidmouth Mews, Inn Rd., W.C.

Star.

4h.p. Star, 1914, chain drive, countershaft long exhaust, lamps, tools, tax paid, perfect nearest £45, or exchange Zenith.—Box 5,695, *Motor Cycle.*

Sun

SUN-VILLIERS, 1916, 2-speed, enamelled overhauled, like new, licensed; £33.—Der Grafton Rd., New Malden.

SUN 2½h.p., 2-speed, free engine, lamps, etc perfect, ride away, tax paid; nearest £ 64, Hobson St., Macclesfield.

£25/10.—Sun-Villiers 2½h.p. 2-stroke, new engine as new, 1916 model, tax paid; bargain, first cheque secures.—Andrews, Suffolk.

Sunbeam.

E. KICKHAM for Sunbeam, sole agent for and district.—Stokes Croft, Bristol.

1921 3½h.p. Sunbeam Combination, milea perfect; £190.—Dosser, Slingsby, Yorks.

WAUCHOPE'S, 9, Shoe Lane, London, 3½h.p. Sunbeam and sidecar, 1915; £90

3½h.p. Sunbeam and Sidecar, 1917-18; Triumph 1920; both perfect; £100 each.—Knight,

1918 3½h.p. Sunbeam Combination, as new or exchange Ford.—1, Bellingham Terra ford.

1920 3½h.p. Sunbeam Combination; £125. A. E. Harling, 123, Great Suffolk St., S.E.1.

1920 3½h.p. Sunbeam, excellent condition small mileage; £110.—Box 5,785, c/o *Cycle.*

1921 3½h.p. Sunbeam Combination, absolut unregistered; £185.—53, Leslie Park Rd don.

SUNBEAM 3½h.p. Combination, 1915, lamp etc., tax paid; £62, or near.—Box 2, B Brighton.

SUNBEAM 3½h.p. Combination, late, indist able from new; £100.—14, Effra Parad ton, S.W.2.

4h.p. Sunbeam Combination, 1919 French Model, chain-cum-belt; price £110.— Berkhamsted.

8h.p. Sunbeam Combination, nearly new, spar accessories, tax, insurance; 145 gns.—19, Rd., Kilburn, N.W.6.

3½h.p. Sunbeam Combination, 1916, black perfect, been stored, overhauled by Sunb pert; £115.—86, High St., Croydon.

SUNBEAM 3½h.p., 1916, complete, Inmp etc., recently overhauled, fine condition Turner, Broad St., Alresford, Hants.

SUNBEAM 3½h.p. Combination, 1916, Blue screen, lamps, horn, tools; nearest offer Hollis, Burton Hill, Melton Mowbray.

8h.p. Sunbeam Combination, in good conditi tric light, quantity spares, including £130.—Liddiard, Downing St., Cambridge.

SUNBEAM 1920 Magdyno 8h.p. Combination ometer, ammeter, all perfect; bargain, Clark, 7, Exhibition Rd., South Kensington.

3½h.p. Sunbeam, 1914, Gloria sidecar, al series, excellent condition; £85, or offer Saltersford House, Uppingham Rd., Leicester.

SUNBEAM Combination, 3½h.p., 1919, Lucas horn, 2 new tyres, excellent condition; £ offers; bought car.—22, Pinewood Rd., Bramle

SUNBEAM 1917 Combination, 3½h.p., bl gold, all chain drive, 3-speed, fully e Easting, tax paid, recently overhauled, perfec tion; £125.—Morgan, Sycamore St., Newcastle

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1920 Model 8h.p., with sidecar, dynamo lighting, horn, licence paid, very little mileage, perfect condition; £170.—Marston, 31, Bridge St., Cheltenham. [4691

3½h.p. Sunbeam Combination, late 1920, Lucas accessories, Sunbeam sidecar, legshields, wind screen, excellent condition; £150.—Wrixon, 41, Richmond Park Rd., S.W.14. [5016

SUNBEAM Combination, 1919, black and gold, lamps and horn, guaranteed order; £98.—Butterworth Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4939

SUNBEAM 1919 3½h.p., Mills-Fulford sidecar, all accessories, mileage about 3,000; owner going abroad; £125, or near offer.—Dawson Bros., Emsworth Rd., Lymington, Hants. [4063

SUNBEAM Combination de Luxe, 3½h.p., new end 1920, insured for and cost £230, electric light, Lucas, speedometer, only 1,600 miles; £170. — The Cottage, Osborn Rd., Farnham. [4174

1920 8h.p. Sunbeam Combination, electric lamps, spare wheel, hood, wind screen, Cowey speedometer, Tan-Sad, perfect condition, tax paid; £185.—Wells, 1, Stanley Terrace, Preston. [4128

SUNBEAM 3½h.p., Mr. De la Hay's 1920 competition mount, special sidecar, Tan-Sad, Easting, spare wheel and tyre, Lucas, tax, insured, perfect as new; £95—Wilson, 111, High St., Stourbridge. [X7201

SUNBEAM 1915 3½h.p. Model with sidecar, complete with all accessories, excellent condition; 100 deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7250

4h.p. Sunbeam Combination, 1916, little used, 2 total mileage only 6,750, speedometer, Lucas lighting and horn, pillion seat, spares, perfect condition, any trial; bargain, £128.—Goddard, 31, Elm Rd., Southsea. [4770

SUNBEAM 8h.p. 1918 Combination, Bosch, double hook, detachable wheels, Tan-Sad, 2 luggage, Eastlaxon, lamps, tyres good, just overhauled; circumstances prevent use; bargain, £140.—Edwin, 50, Hobbs Park Rd., Leyton, E.10. [4024

SUNBEAM Combination, 1919, perfect condition, 3½h.p., chain-cum-belt, Binks carburetter, Lucas series, Bonniksen speedometer, wind screen, spare wheel carrier, numerous spares, etc., low mileage; £140 seen after 7 p.m.—20, Welbeck Av., Southampton. [4917

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part charge; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Easthank St., Southport. Tel.: 607. [0648

Sunbeam 3½h.p., new, unscratched, unpunctured, Lucas Magdyno lighting, Lucas electric, semi-T.T. bars, a beautiful machine, nicely run in, spares, tools, valve, bulbs in case, etc., tax paid, cost; cost £185, receipt shown; owner buying car; £160.—Blackham, 51, Rayleigh Rd., Wolverhampton. 'Phone: 298. [X7391

T.D.C.

T.D.C., Druids, Amac, fast, reliable; bargain; £18.—Shaw, Regent St., Wellington, Salop. [X7285

T.D.C. 2-stroke, good running order, tax paid; £21.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W. 'Phone: Streatham 2707. [4930

T.D.C. 2¾h.p. 2-stroke, fitted new 1920 engine, Amac, C.A.V., 2-speed gear, electric lighting; offers.—Nurseries, Essex Rd., Romford. [4558

Triumph.

TRIUMPH Motor Co. for 1921 Triumphs.

NO 4% Extra for Easy Payments.

We can deliver to your address within 24 hours 3½h.p. lightweight Triumph, £70; W.D.B. (renovated) £95; Type H 4h.p., 3-speed, £115; Type S.D., chain drive; £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph Specialists the Premier Motor Co., Aston Rd., Birmingham. [0627

9 Triumph and Sidecar, perfect, tax paid, lamps, etc.—Banbury, Winkfield, Berks. [4125

3½ Triumph 2¼h.p., complete with lamps, etc., tax paid; £50.—Biggs, Congleton. [4187

9 Model H Triumph, new condition; £89, lowest.—84, Mann St., Walworth, S.E.17. [4636

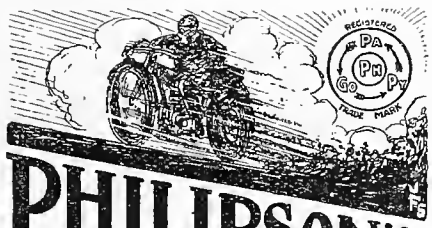
TRIUMPH, Model H, in stock; catalogue price.—Hunting's Motor Exchange, Wealdstone. [4976

NOTTERSHAFT Triumph, renovated like new; £68.—13, Somers Mews, Hyde Park, W.2. [5088

TRIUMPH 3½h.p., 1911, good running order; £28.—Wilson, The Rectory, Ruskington, Lincs. [X7305

9 Junior Triumph; £53, or exchange higher power.—Williams, Roomfield Clinic, Todmorden. [4264

9 Triumph, 3½h.p., clutch, fast machine; £30; private owner.—Stag Garage, East Finchley. [4599



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A sweet, silent drive is only obtainable with a

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No wheels or pinions to chew up.

The lightest, speediest, and simplest gear on the market for direct belt-driven 2-stroke and 4-stroke.

The weight of the Philipson gear complete for Villiers Mark IV. is - - - -	7lbs. 4ozs.
Allow for Villiers pulley - -	2lbs. 13ozs.
This is the total weight added to your machine - - -	4lbs. 7ozs

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Bradbury,	Lincoln Elk,
Ariel,	N.U.T.-Jap,
Swift,	Humber,
Abingdon,	N.S.U.,
Minerva,	Peugeot,
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Villiers Mark IV., and numerous Jap engines.

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Astley Bridge,
BOLTON, LANCS.
(Established over 40 years.)

MOTOR CYCLES FOR SALE.

Triumph.

1919 Triumph Combination; £80. — James, c/o Bradmore's, 482, Harrow Rd., Paddington. [3134

TRIUMPH, 1917, overhauled, first-class; £60.—Clark, 7, Exhibition Rd., South Kensington. [5041

TRIUMPH, sporty, genuine, 1914, 4h.p., tax paid, good condition; £32.—248, Drakefell Rd., Brockley. [4929

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0523

TRIUMPH, 4h.p., 3-speed, countershaft, clutch, and kick start; £65. — Holmes, 15, Queen's Rd., Enfield. [4347

TRIUMPH 3½h.p., clutch, pedal start, T.T. bars, new tyres, all on, licence; £30.—92, Tennyson St., Battersea. [4540

4h.p. Triumph, perfect order, 3-speed countershaft; £55; after 6 o'clock.—89, Dalling Rd., Hammersmith, W.6. [4151

TRIUMPH Junior, in brand new condition, done only 200 miles; bargain, £60.—Prescott, Wetheral, Cumberland. [4280

TRIUMPH 1918 Combination, lamps, horn, tools, excellent condition; £93.—14, Devonshire Rd., Forest Hill. [4845

TRIUMPH 1912 3½h.p., single-speed, lamps, etc.; £30, or nearest.—P. Joice, Bawdeswell, East Dereham, Norfolk. [4910

TRIUMPH, 1919, countershaft, as new in every respect; any trial; bargain, £75.—22, Princess Rd., Finsbury Park. [4749

TRIUMPH Countershaft Combination, perfect running order; £75.—Owen, 59, Scholefield Rd., Upper Holloway. [X7344a

1918 4h.p. Triumph, C.S. gears, fully equipped, tax paid; seen at Barnet; £42/10.—Box 5,601, c/o *The Motor Cycle*. [4954

1920 Triumph 4h.p., countershaft, perfect condition, well equipped; £80.—17, St. Charles Sq., North Kensington, W.10. [2004

LATE 1916 Triumph Combination, first-class condition throughout, fully equipped; 65 gns.—35, High St., Dartford. [4269

1913 Triumph, clutch model, any inspection, excellent order; what offers?—47, Shakespeare Rd., Gillingham, Kent. [4861

TRIUMPH, renovated, T.T. bars, good condition, lamps and horn; £28/10, a gift.—60, Park St., Farnworth, Bolton. [4916

TRIUMPH 3½h.p., 3-speed, clutch, 1914 model, good order and condition; £45.—Cutter, Commercial Rd., Talywain, Mon. [4293

TRIUMPH, 1921, chain model, mileage 300, accessories, tax, insurance; 90 gns.—19, Streatley Rd., Kilburn, N.W.6. [4921a

1914 Triumph 4h.p., 3-speed, Tan-Sad seat, accessories; reasonable offer; view evening.—Carter, 1, North Av., Ealing. [4496

LATE Triumph de Luxe Combination, accessories, complete, perfect; £105; cheaper part.—Walter Jones, Newport, Salop. [4782

TRIUMPH, 1914, 3-speed, clutch, lamp, horn, lot good condition, tax paid; £50.—Guy's Retreat, Buckhurst Hill, Essex. [4032

BABY Triumph, 1914, just overhauled by makers, perfect condition; £45.—Cross, 11, Bridge St., Knighton, Radnorshire. [4745

1920 Triumph Gloria Combination, speedometer, Cameo, perfect condition; £121.—17, Park Rd., Bedworth, near Nuneaton. [X7199

1920 Triumph Combination, Swan sporting sidecar, all accessories; £120.—T. C. Saunders, Stonehenge, S. Hayling Island. [4637

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7252

3½h.p. Triumph, N.S.U. gear, engine in new condition, perfect running order, tax paid; £35; trial.—12, High St., Fulham. [4537

1914 Triumph Combination, sidecar new month ago, new cylinder also fitted; £67.—Edgar Oakey, 78, St. Michael's Rd., Coventry. [X7349

1914 Triumph Combination, first-class condition, lamps, tools, tax; £65.—Rhind and Co., Stone Place, Rusholme, Manchester. [4482

1921 Triumph Chain Drive Combination, cost £170 month ago; sell £138; run 500 miles.—Holland, 50, Marlborough Rd., Coventry. [X7348

28A, Danehurst St., Fulham.—1919 Triumph combination, licensed, equipped, fast, new black and gold body, splendid outfit. [4871

TRIUMPH 3½h.p. and Sidecar, in good running order, tax paid; £40, or near offer.—The Limes, High St., Yiewsley, Middlesex. [4522

1918-19 4h.p. Triumph, splendid condition and appearance, registered, etc.; sacrifice, 59 gns.—4, Elm Gardens, Hammersmith. [4557

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MOTOR CYCLES FOR SALE.

Triumph.

BABY Triumph, 1915, 2-speed, recently overhauled and done up, tax paid; £35, or best offer.—Wheeldon, 3, Central Buildings, S.W.1. [4444

4 h.p. Triumph, countershaft 3-speed, late 1920, as new, mileage under 1,200; for quick sale, £80.—Toicroes, Hillborough, Herne Bay. [4533

TRIUMPH 4h.p. Countershaft and sidecar, with wind screen, electric lighting, discs, etc.; £110.—Marston, 31, Bridge St., Chester. [4694

TRIUMPH-GLORIA Combination, 1920, all accessories, insurance and tax paid; £110, or nearest.—125, Sumner Rd., Peckham, S.E.15. [3039

1921 Triumph Model H, new April, equipped; cost £125; privately owned; £100.—c/o Brewster, Sparkbrook St., Bury St. Edmunds. [4104

£30.—Triumph 3½h.p., single speed, foot clutch, recently overhauled, splendid condition; evenings, 7 o'clock.—51, Mercers Rd., Holloway, N. [4608

1913 Triumph, C.B., foot clutch, N.S.U. 2-speed, tax paid, good running order; £45.—Rhind and Co., Stone Place, Rusholme, Manchester. [4483

1914 Triumph 4h.p., splendid condition, fixed gear, pillion seat, new tyres, lamps, etc., licensed; £39.—Franks, 11, Grace Hill, Folkestone. [4231

1913 3½h.p. Triumph T.T. Model, re-enamelled and plated, splendid condition, licence paid; £35.—Douglas Garage, Sheep St., Northampton. [4848

TRIUMPH Late 1918 Combination, speedometer, lamps, licence, windscreen, tools, spares; £75.—King, 23, North Cross Rd., East Dulwich. [4860

TRIUMPH Combination, would separate, late tax paid, good condition, electric, discs, 3-speed, K.S.; £80.—113, Wimbledon Park Rd., S.W.18. [4140

TRIUMPH Baby, 1920, 2-speed, absolutely as new, all on, tax paid; £55.—House, 2, Lexington St., W.1, or 13, Agate Rd., Hammersmith. [4340

1918 4h.p. Countershaft Triumph, with 1920 Elite bulbous sidecar, lamps, spares, tax; bargain, £90.—4, Bertram Rd., Hendon. Near station. [4543

TRIUMPH Solos and Combinations from £65; extended payments, or discount for cash.—The Hackford Engineering Co., 33, Hackford Rd., Brixton. [5067

TRIUMPH 4h.p. 1920 Model, complete with sidecar, in first-class order throughout; price £120.—Brock, Speedway House, St. Nicholas Rd., Sutton. [4094

T.T. Triumph, clutch, etc., splendid condition, fully equipped, tools, etc.; £43; extended payments; discount for cash; tax paid.—33, Hackford Rd., Brixton. [5068

TRIUMPH Late Model 3-speed Countershaft, hand clutch, Lucas Magdyno lighting, nearly new; £78, or near offer.—58, High Rd., Willesden Green, N.W.10. [4839

1918 Triumph, 4h.p., countershaft, W.D., rebuilt new parts, as new throughout; £75, or best offer.—Barnett, 21, Redborough Rd., Golders Green, N.W. [5092

1920 4h.p. Triumph Montgomery Combination and accessories, excellent condition, tax paid; £95, quick sale.—Capt. Rushton, Maida Barracks, Aldershot. [4127

1919 Triumph Countershaft Combination, Watford speedometer, large H.P. head lamp, sidecar new, tax paid; £90.—Guy's Retreat, Buckhurst Hill, Essex. [4033

TRIUMPH 4h.p. Combination, just overhauled, complete 1919, Easting wind screen, and tools; £110, or nearest.—Dickens, St. Stephen's Vicarage, Tabard St., S.E.1. [4150

1919 Triumph Combination, condition perfect, Lucas lamps, Klaxon, spares, all tools, tax paid, insured March, 1922; £89.—Kingston, Park Rd., Wellingborough. [4239

1919 Triumph Combination, 4h.p., dual lighting, torpedo sidecar, tools, spares, tax paid, perfect condition; £88/10.—Haydon and Pinkham, Boundary Rd., Ramsgate. [4181

1917-18 4h.p. 3-speed, countershaft Triumph, perfect condition, recently overhauled, lamps, horn, license paid; £55.—Beckett, 51, Cambridge Rd., Wanstead, E.11. [4225

TRIUMPH Combination, new condition, Easting, luggage grid, lamps, horn, spares, tax paid, insured, owner bought car; best offer over £95.—52, Cicada Rd., Wandsworth. [4329

TRIUMPH Junior, new 1921 Model, 2-speed, £70; also second-hand Junior Triumph, £45, complete with lamps, horn, licence paid.—Marston, 31, Bridge St., Chester. [4700

TRIUMPH Combination, kick starter, gear box, hood, wind screen, Klaxon, lamps, tax paid; £48, or near offer.—42, Viaduct St., Bethnal Green Rd., London. [4313

TRIUMPH, 1913, C.B. sidecar, Bosch, N.S.U. 2-speed, new tyres, lamps, horn, wind screen, spare pulley, tools; 38 gns.—Reid, Yanwath, Richmond, Surrey. [4601

TRIUMPH, C.S., with Dunhill sidecar, latest model, fully equipped, tax paid, done 500 miles; £140; extended payments, discount for cash.—33, Hackford Rd., Brixton, S.W. [5066

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Triumph.

TRIUMPH, 1914, renovated, condition p Philipson pulley, completely equipped, very any trial; £40.—Clark, Southwick Mews, Cam Place, Paddington.

TRIUMPH, countershaft, brand new, a snip, also 1919 combination, all on, £95.—Mile Chichester Rd., West Kilburn, N.W.6. (One Kilburn Park Tube.).

1914-15 Triumph, 3-speed, countershaft, goo dition, lamps, horn, tax paid, trial; reas offer accepted. — Richmond House, Crescent Shepperton-on-Thames.

TRIUMPH, 1919, 4h.p., mileage 1,500, 3- Cowey speedometer and horn, full acces any trial; £75.—Rowlands, Officers' Mess, Sch Education, Shorncliffe.

1920 Triumph Gloria Combination, engine appearance and mechanical condition ex tyres new, insurance, accessories; £120.—Boyes, sall Green, Manchester.

TRIUMPH 4h.p., 1914, 3-speed, latest Binks retter, nickel exhaust, tyres almost new, r overhauled, tax paid; bargain, £50.—Stewart, 9, gall Sq. North, Belfast.

TRIUMPH (66452) 1919 T.T. Roadster, perfec dition, horn, lamps, Cowey, new tyres, tube Tan-Sad, discs, spare, open exhaust, fast; £6 Seaside Rd., Eastbourne.

TRIUMPH, W.D., renovated by makers, Lucas unused, and horn, tax paid, ridden 150 mil distinguishable from new; nearest £90.—Bather, 1 heath, Chelford, Cheshire.

CROYDON Agent for Triumph motor cycles models in stock ready for immediate deliv Moore's Presto Motor Works, Ltd., 145, North Croydon. 'Phone: 2624.

1920 Triumph 4h.p. Combination, Watsonian car, disc wheels, lamps and tools, in good tion; price £110, or near offer.—Porter, 246, dere Rd., Burton-on-Trent.

BABY Triumph, 1921, electric lamps, tax pa speed, unscratched, guaranteed perfect; bargain.—Goad (private house), 122, Maida 'Phone:, Hampstead 1353.

JUNIOR Triumph, new condition, Lucas horn, lamp, 2¼ Dunlops, Triumph leg-guards scratched), 100 m.p.g., tax paid; £65.—Miss B 128, George St., Coventry. (D)

TRIUMPH 1913 3½h.p., 3-speed Sturmey, tax. This machine is absolutely perfect complete; £38/10.—Goad (private house), 122, Vale. 'Phone: Hampstead 1353.

TRIUMPH, 1918, countershaft, fully equ licensed, spares, good condition; £75; ex Harley combination, cash adjustment; Epping d —Box 5,780, c/o *The Motor Cycle*.

TRIUMPH and Swan C.B. Sidecar, splendid con just overhauled, lamps, wind screen, hood, spares, tax paid; bargain, £80; must sell.—Th 3, Randolph Rd., Maida Vale, W.9.

1917 Triumph, 3-speed S.A. countershaft, and kick fitted, almost new C.B. sidecar paid; £85.—Rhind and Co., Stone Place, Rusl Manchester. 'Phone: 776 Rusholme.

TRIUMPH, 1918, renovated, 3-speed counte flexible exhaust, licensed, new Dunlops, standard silencer, valves, belt, chain, tools, Klaxon; £60.—30, Lancaster Mews, W.2.

1920 4h.p. Triumph Combination, 3-speed, wit lightweight Henderson sidecar, luggage fully equipped, tax paid, solo sprocket, perfect; —Edwards, Brynhelyg, Newcastle Emlyn.

1918 Triumph, C.S., like new, long copper ex spare standard silencer, new tyres, equipped, licensed, specially tuned, very fast; Derrington, Grafton Rd., New Malden.

TRIUMPHS.—We are the North London agent can give immediate delivery; chain drive, cum-belt models.—Jones Garage, Muswell Hill, and at Woodside Parade, North Finchley.

1920 Countershaft Triumph and sporting coac sidecar, 3 lamps, including F.R.S. Major light, horn, and all spares, exceptionally fine tion; £110.—Thompson, 158, Park Av., Hull.

BROOKLANDS Model Triumph, 3-speed c shaft, kick start, new tyres, lamps, watch paid, racing cams, specially tuned, and in top hole £62.—Stanley, 33, West End Lane, Kilburn.

TRIUMPH-GLORIA Combination, excellent tion, tax paid and insured, all accessories; by appointment any evening after 7, or week Firth, 86, Blenheim Crescent, Ladbroke Grove,

3½h.p. Triumph Combination, 2-speed, free e clutch, 2 horns, lamps, and accessories, built sidecar, excellent condition, tax paid; £60 Chester Engineering Co. (1918), Ltd., City Rd., C

WAUCHOPE'S, 9, Shoe Lane, London, E. Triumphs, all models in stock, new chain new chain-cum-belts, solos and combinations; imm delivery; supplied on easiest of easy terms; trad plied.

MOTOR CYCLES FOR SALE.

Triumph.

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

TRIUMPH 4h.p. 3-speed Countershaft Combination, unscratched, electrically equipped, full insurance, all accessories, tax paid, cost over £175 last year; on trial or examination; £115.—Davy, 82, Larden Rd., Acton, W. [3952

TRIUMPH, late model, countershaft, with smart new sidecar, Cowey, Tan-Sad, luggage grid, lamps, etc., all on, licensed, insurance for 11 months; £78.—Cry and Levin, 5, The Boulevard, Balham, S.W. Tel.: Streatham 2417. [4352

1919 4h.p. Countershaft Triumph, all on, splendid condition, fitted with M.M.4 Canoelet sidecar, new May, 1921, wind screen, apron, etc., tax paid; bargain offer about £115, quick sale.—Sharp, 352, Shobnall St., Burton-on-Trent. [X7281

1918-19 Triumph Combination, K.S., clutch, H.B. control, Easting screen, leg shields, lamps, accessories, all in good going order, owner selling owing to ill-health; £80, no offers.—Bennett, c/o Cooper, Loughborough Rd., White Horse, Brixton. [5121

£—4h.p. Countershaft Triumph, late 1918, recently overhauled, plated, and enamelled, guaranteed perfect throughout, lamps, horn, tools; sidecar supplied if desired, new or second-hand.—Langford's, 37, Cricklewood Broadway, N.W.2. 'Phone: Hampstead 8616. [5139

TRIUMPH All-chain Combination (Oct., 1920), electrically equipped, Bonniksen speedometer, horn, 28×3 wheels, 8in. guards, special design sidecar, beautiful running order and condition, £135, or near offer. — 37, Lower Ford St., Coventry. [X7277

1910 Triumph T.T., horn, lamps, licence, knee grips and Pedley grips, small mileage, original tyres, oversize on back, new Pedley belt, Bosch mag., very easy starter, fast and powerful, condition perfect, 100 m.p.g., all tools and spares; £88.—The Brambles, Molner, Berks. [4322

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport Tel.: 607. [0646

TRIUMPH 3½h.p. Combination, Paragon folding chassis sidecar (wicker body), Mabon 9-speed gear, Jones speedometer, exhaust whistle, electric rear lamp, acetylene head and sidecar lamps, new belt and new tyre on rear wheel, all in splendid condition and thoroughly overhauled; price £50, lowest; seen by appointment.—G., 179, High St. North, Dunstable, Beds. [4440

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments, only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from maker's works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

1919 Triumph (April) All-chain Combination, Tan-Sad and back rest, Cowey speedometer and horn, East's screen, telescopic, Lucas head, side, and rear lamps, 3 generators, also electric rear and sidecar, spring footboards, aluminium number plates, spare rear, new Dunlop cover, new Dunlop inner tube, drive chain, exhaust valve, maps, etc., smartest outfit in town, guaranteed perfect condition, better than new, cost £220; accept £180.—37, The Park, Ealing, London. 'Phone: Ealing 1180. [4881

Velocette

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

VELOCETTE, 2¼h.p., 1919, open frame, chain drive, 2-speed, 120 m.p.g., good condition; £50.—F. Tingey, 127, Chatsworth Rd., Morecambe. [4186

1919 (March) Velocette, 2¼h.p., chain-drive 2-speed, sump lubrication, original tyres perfect, hardly distinguishable from new, tax paid; £55.—Toze, Headlands, Kettering. [4110

VELOCETTE, new Easter, 1921, 2-stroke, 249 c.c. engine, 3-speed, special speed model, over 50 m.p.g. guaranteed, all accessories, works machine; £70.—Rd., c/o Veloce, Ltd., Aston, Birmingham. [X7299

WONDERFUL Value.—Special offer of a new 1921 Model D2 2¼h.p. 2-speed Velocette, with new type internal expanding front brake; £65 cash, or £22 down, and 12 monthly instalments of £3/15.—The Premier Motor Co., Aston Rd., Birmingham. [X7377

Verus

1919 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, ridden 250 miles, tax paid; £80.—Shepherd, Enfield Highway. Tel.: Waltham Cross 51. [0656

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0502

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3½ h.p. Sports Model

as supplied to H.R.H. PRINCE HENRY

£150

2¾ h.p., 2-speed	£85
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4 h.p. Sidecar Outfit	£160
4 h.p. Sidecar Outfit without cycle equipment, equipment on sidecar and screen	£152

OUR EXPERT from the Douglas Works will tune up the machine you select, and we guarantee that it shall be to your entire satisfaction.

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LIGHT CAR

A perfect miniature motor car at the price of a sidecar outfit, but with the comfort, accommodation, and weather protection of the car for both passenger and driver. Dynamo lighting, five detachable wire wheels, hood, screen, etc.

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Two special Competition Models **£180** each. **Great Bargain**

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Villiers.

VILLIERS 1921 2¾h.p., Silver Prince motor cycle, brand new, tax paid, cost £56/10; accept £38; bargain.—Goad (private house), 122, Maida Vale. 'Phone: Hampstead 1353. [4621

Vindec.

VINDEC Motor Cycle, 2-stroke, 2-speed, 1915, just overhauled; what offers?—St. Saviour's Garage, Sunbury, Middlesex. [5015

Wanderer.

WANDERER Combination, 3½h.p., 3-speed, clutch, and kick starter; £48.—Butterworth, Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2815. [4940

Wilkin.

WILKIN.—All models in stock; deferred payments. Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7265

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate; Bolton; also 245, Deansgate, Manchester. [X7251

Williamson.

WILLIAMSON Combination, 8h.p. Douglas engine, fully equipped, licensed; £75; exchange lower power.—Alderton Hardwick Rd., Reigate. [4836

Wolf.

1916 4h.p. Wolf, 2-speed, countershaft; £46; all accessories.—28, Spencer St., Islington, N. [4270

4h.p. Wolf Combination, 3-speed, S.A. countershaft, date about 1917, lamps, horn, etc., excellent condition; £70; after 6 p.m.—Necton, Sandy Lane, Beddington, Surrey. [5126

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0503

Wooler.

1920¾ Wooler, speedometer, lamps, horn, mileage 1,800, fine throughout; 65 gns.—12, St. Michael's Terrace, Wood Green, N.22. [4361

1920 Wooler 2¾h.p., perfect, just overhauled by makers, P. and H. lamps, Cowey horn, spares, tax paid; £55; after 6 p.m.—178, High St., Harlesden, N.W. [4579

£52/10.—Famous T.T. (apple green) racing Wooler, tax paid, variable gear, Palmers, tool bags, excellent condition, very fast; genuine bargain; exchange.—89, East Hill, Wandsworth. [4047

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1921 Models for immediate delivery; 5h.p. £115, 8h.p. £128, combination £177.

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ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1. Elevator, 7, Beak St. [4933

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

ZENITH, brand new, 5h.p., sporting model, in stock; £115, Tippen, Marden, Kent. [3463

1921 8h.p. Zenith, Model H; £144.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [5004

£43.—Zenith 1916-17 6h.p., perfect; cash urgently needed.—1, Anchor Alley, Church St., Woolwich. [4356

8h.p. Zenith (sports), very fast, all accessories; £65; exchange lower power.—49, Well St., Hackney, E.9. [5023

£45.—Zenith, C.B. sidecar, accessories, perfect, tax, insurance paid.—112c, Marlborough Rd., Bowes Park, N. [4919

ZENITH 6h.p. Combination, all on, Canoelet, disc wheels, speedometer; £79.—Grimwood, Histon, Cambridge. [4274

1919 Zenith 5-6h.p. Combination, beautifully equipped, practically new; £85.—24, Balliol Rd., North Kensington. [4593

ZENITH-GRADUA 3½h.p., overhauled, running condition, lamps, horn, spares; £30.—21, Norman Rd., Thornton Heath. [4857

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [2692

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH.—All models, solo or sidecar; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7263

ZENITH Combination, 3½h.p., 1914, Gradua gear, excellent running, needs painting; £45.—M., Buntinghill, Haywards Heath [4333

1920 8h.p. Zenith Sports, lamps, horn, spare belt, licensed, good condition; £80.—Edwards, 50, Harrington Rd., South Kensington. [5047

HIGH Compression Single Zenith, single lever Capac, fully equipped; any trial, appointment; £45, offer. —Stapleton, Meadfield, Langley, Bucks. [4030

ZENITH 90×77½ Twin Combination, stored during war, the whole as new; £85, or offer.—Carr, 6, Bennett St., Tottenham Court Rd., N.W. [5094

ZENITH 1920 5h.p. Sporting Model, complete with lamps and horn, in splendid condition, tax paid; £85.—Payremead, Albion Rd., Sutton, Surrey. [4844

ZENITH 8h.p. Sports Model, first-class order, equipped; £50.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4660

ZENITH 8h.p Combination, almost brand new; cost £345; must be sold; accept best offer.—Write for particulars, Wallis, 23, Hartington Grove, Cambridge. [4132

SPORTING Zenith-Gradua, 5-6h.p., 1914, splendid appearance, discs, lamps, tax; £46; exchange lightweight.—Broughton, Stanton St. John, Oxford. [4682

£125.—1920 8h.p. clutch Zenith Combination, first-class order, Bonniksen, Cowey, Tan-sad, etc., tyres perfect, comfortable, economical.—114, Woodstock Rd., Oxford. [4570

SPORTING 8-10h.p. Zenith Gradua, late electric lighting, speedometer, Tan-sad, new condition, unscratched; £55; exchange.—G., 63, Solon Rd., Brixton. [4585

ZENITH Sporting Combination, 4h.p. twin, recently overhauled and enamelled red, tax paid; trial; £75.—Sherman and Button, 6, Russell Rd., Palmer's Green, N.13. [4465

1920 (late) 8h.p. Zenith Countershaft Gradua, with Henderson coachbuilt sidecar, splendid condition, numerous accessories; £150; evenings after 6.—74, Gordon Rd, Ealing. [4312

5h.p. Zenith Countershaft Coachbuilt Combination, 1914, stored war, re-enamelled, new belt, new tyres, overhauled throughout, all on; £75.—6, Thirlmere Rd., Muswell Hill. [4373

1920 2¾h.p. Flat Twin Zenith-Gradua, all accessories, including A.K. knee-grips, long exhaust, mileage about 1,250, looks brand new; £62/10, or offer —199, Fox Lane, Palmer's Green, N.13. [4060

1920 Model H 8h.p. Zenith Coachbuilt Combination, speedometer, luggage grid, lamps, accessories; £135 cash, no offers entertained, would exchange 2-seater car.—Eacock, Sutton, Ely. [3073

1921 Zenith 8h.p. Countershaft Model, with coach painted sidecar, all Lucas accessories, spare tyre, valve, etc., very little used, smart and like new; £165, no offers.—Box 5,757, c/o *The Motor Cycle*. [4285

ZENITH 4h.p. Twin, K.S. and clutch, engine just overhauled by makers, machine perfect in every respect, tyres (Avon) and belt almost new, speedometer, and all accessories, tax paid, any test given; 65 gns.—B., 11, Pleasant Place, N.1. [5099

ZENITH 8h.p. Combination (1916), countershaft, clutch, kick starter, electric lighting, speedometer, Easting, completely overhauled, enamelled, and plated, condition perfect; nearest £90.—13, Sun St., Waltham Abbey. 'Phone: Waltham Cross 99. [4134

1921 6h.p. Sports Zenith, as new, speedometer, Cowey horn, largest lamps, 28×3 tyres, magnificent condition; any trial; many spares and complete tool kit, registered and insured; first cheque £100 secures.—J. W. Hooper, The Oaks, Wembdon, Bridgwater. [X7200

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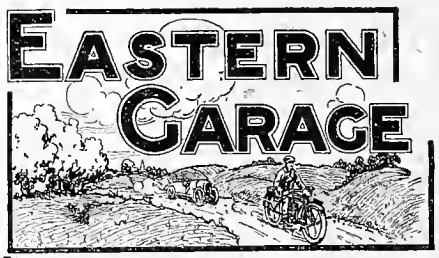
1920 8h.p. Clutch Zenith and sidecar, in splendid condition, fitted with Lucas lamps, Claudel-Hobson carburetter, special engine, very fast, price £135; consider part exchange for Model H16 Norton, or sporting Hailey and sidecar; appointment, letter.—Newbold, 23, Melrose Rd., West Hill, Wandsworth. [4246

ZENITH 8h.p. Combination, in perfect condition, just overhauled, latest J.A.P. valves and tappets, Zenith latest brake and silencer, fitted Lucas large lamps, Elliott speedometer, watch, etc., also child's adjustable bucket seat, hood, screen, and side curtains, finished all black and gold, really smart appearance and perfect in every detail, plenty of spares and fleece lined suit; bargain at £120; seen by appointment.—Symonds, 83a, Haverhill Rd., Balham, S.W. [4085

Ladies' Motor Cycles.

VELOCETTE, 1921 ladies' model, complete, Lucas lamps, Klaxon horn, legshields, fully insured, tax paid, ridden less than 300 miles; what offers.—33, Wellersley Rd., Colchester. [4249



The following is a selection of the machines in our stock. Complete lists will be sent upon request.

NEW 1921 MODELS

A.J.S., 2¾ h.p., 3-speed	£105	0
A.J.S. 7 h.p. Combination	£215	0
ARIEL 4½ h.p. Combination	£150	0
ARIEL 6-7 h.p. Combination, all-chain	£165	0
B.S.A. 6-7 h.p. Combination, with dynamo lighting	£195	15
B.S.A., 4¾ h.p., Model H, and No. 3 Sidecar	£152	0
LEVIS, 2¾ h.p., Popular Model	£80	0
LEVIS, 2¾ h.p., 2-speed	£88	0
MARTINSYDE 6 h.p. Combination	£145	0
MATCHLESS 8 h.p. Combination	£185	0
MATCHLESS 8 h.p. family Combination	£191	10
METRO-TYLER, 2¾ h.p., 2-speed, sports model	£70	0
N.U.T., 3½ h.p., Model P, dynamo lighting	£135	0
NEW IMPERIAL, 2¾ h.p., Model 1	£73	10
NEW IMPERIAL, 2¾ h.p., Model 2	£80	17
NEW IMPERIAL 8 h.p. Combination	£168	0
RALEIGH, 5-6 h.p., flat twin, 3-speed, spring frame	£147	0
RUDGE, 3½ h.p., Multi	£85	0
ROYAL ENFIELD, 2¾ h.p., 2-speed	£65	0
ROYAL ENFIELD, 2¾ h.p., 2-speed, with kick-starter	£70	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL ENFIELD 8 h.p. Combination, with dynamo lighting	£182	0
TRIUMPH, 4 h.p., Model H, chain-cum-belt	£115	0

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One-quarter down and 12 monthly instalments.

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(Overhauled and Guaranteed).

BROUGH, 1920, 5 h.p., 3 speeds, clutch, and kick starter, Swan sporting Sidecar, lamps, horn, speedometer, windscreen, tax paid	£115	0
DOUGLAS W.D., 4 h.p. Combination, 3 speeds, clutch, and kick starter, as new	£105	0
DOUGLAS, 1920, 2¾ h.p., 3 speed, clutch, kick starter, accessories, tax paid	£85	0
ENFIELD 1917 8 h.p. Combination, 2 speeds, clutch, and starter, as new	£120	0
ENFIELD, 1916, 3 h.p., 2 speeds, clutch, and kick starter, tax paid	£40	0
ENFIELD, 1917, 3 h.p., 2 speeds, clutch, and kick starter, lamps, horn, tax paid	£55	0
ENFIELD, 1921, 2¾ h.p., 2-stroke, 2 speeds, clutch, kick starter, lamps, horn, tax paid	£65	0
INVICTA, 1920, 3½ h.p., 3 speeds, clutch, and kick starter, and new Millford Sidecar, shop-soiled only	£110	0
METRO-TYLER, 1920, 2¾ h.p., 2-speed, lamps, and horn	£55	0

CYCLE CARS.

COVENTRY PREMIER, 1921, 8 h.p., dynamo lighting, finished in elephant grey, licence and insurance paid	£220	0
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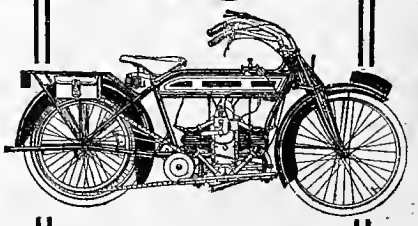

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SLARDES.—Sidecar chassis, brand new, enamelled and plated, quick detachable fittings, complete; £6/17/6; no repaired rubbish stocked.—4913 77, Camberwell Rd., S.E. [4469

SIDEGLAS Bodies, new or second-hand; Scott bodies, from 40/-; chassis, with new tyre and tube and all connections (Douglas), £7/10.—The Effra Motor Works, 14, Effra Parade, Brixton, S.W.2. [5132

SIDEAL Leicester Sidecars are made for comfort. Attachments for any machine; price 18 gns. upwards; have few cars to clear at reduced prices; repairs, repainting, etc.—The Willowbrook Motor Co., Leicester. [0335

SIDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passage in. Tandem and single bodies fitted. Tested over on motors up to 9h.p.—Hopley, Upper High-Street, Birmingham. [0152

SIDEGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and when folded, combination will pass through a doorway. Call and see it demonstrated.—Windcycle, Ltd., 236, High Holborn, W.C.1. [0388

SHEPPELTHWAITE and Watkins have the biggest bargain in the world in underslung sidecar chassis. We can offer a genuine renovated Douglas chassis complete with wheel guard and attachments, springs, etc., at the ridiculous price of £4/10. Also Douglas, P. and M., Chater-Lea, etc. Remember, we have the whole chassis dump from Slough, and must clear, hence the prices.—'Phone: Brixton 1958.—19, Wilcox Rd., Wandsworth Rd., London, S.W.8. [4492

RUNABOUTS AND CYCLE CARS.

ABBONS 1920 2-seater; £95, quick sale.—Messent, Billiter St., E.C.3. [X7047

A.J. 1920 G.P. Morgan, discs, absolutely as new; £89.—47, Newland Av., Hull. [X7205

A.J. GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

A.J. 1920 De Luxe Morgan, run few miles; £155. Balliol Rd., North Kensington. [4589

ALLEN 2-seater from stock, screen, horn, tools, oversize tyres, etc.—Downing and Donovan, Ryde. [4759

For sale to-day

NEW 1921 MODELS

A.J.S. 7 h.p. Combination	£215	0
A.J.S., 2¾ h.p., 3-speed, sports	£105	0
B.S.A. 6-7 h.p. twin Combination	£175	0
B.S.A., 4½ h.p., Model K2	£107	0
B.S.A., 4½ h.p., Model H2	£110	0
B.S.A. No. 3 Sidecar for above ..	£42	0
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ENFIELD 8 h.p. Combination ...	£160	0
LEA-FRANCIS, 3½ h.p., 3-speed ..	£125	0
MARTINSYDE 6 h.p. Combination	£145	0
MATCHLESS Model H Combination	£185	0
MATCHLESS sports Combination .	£180	0
MATCHLESS 2-seater Combination	£191	10
TRIUMPH, 4 h.p., Model H	£115	0
TRIUMPH, 4 h.p., Model S.D. ...	£125	0
RUDGE-MULTI, 3½ h.p., Isle of Man	£85	0
QUADRANT 4½ h.p. Combination	£125	0

CYCLE CARS, LIGHT CARS

ROVER, 8 h.p., 2-seater, dynamo	250 gns.	
G.N., 10 h.p., 2-seater Popular ...	£198	0
MORGAN Runabout, family model	£235	0
MORGAN Runabout, G.P. model .	£218	0
MORGAN Runabout, de luxe model	£228	0

SECOND-HAND

1921 Aero **MORGAN,** o.h.v. engine, dynamo	£225	
1921 **COVENTRY PREMIER,** dynamo, dickey	£210	
1918 **A.J.S.** 5-6 h.p. Combination	£120	
1920 **ENFIELD** 8 h.p. Combination, dynamo	£135	
1921 **BLERIOT WHIPPET** Cycle Car .	£165	
1921 **ARIEL,** 3½ h.p., 3-speed	£85	
1919 **A.V.** 5-6 h.p. Monocar	£65	
1920 **QUADRANT** 4½ h.p. Combination	£85	

EXCHANGES. EXTENDED TERMS.

15-16, BISHOPSGATE AV., CAMOMILE ST., E.C.3.

'Phone—Avenue 5548.
'Grams—"Elecmocyca, Stock, London."

at Elce & Co's

RUNABOUTS AND CYCLE CARS.

1920 Tamplin, complete except engine and gear box; £35; f.o.a. — Box 5,696, c/o *The Motor Cycle.* [4087

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [3313

COVENTRY PREMIER, 1921, delivered this month, not registered yet; £225.—11, Egerton Rd., Greenwich. [4856

1915 Humberette, a.c., good condition throughout, equipped; sacrifice £67/10.—13, New St., Wellington, Salop. [X7282

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Ct. Portland St., London, W.1. [0350

A.C. Delivery Van, Type C; bargain, £30.—Holliday Bros., 20, Queen St., Hammersmith, W.6. 'Phone: Hammersmith 1944. [4969

MORGAN 1920 de Luxe, with dynamo lighting, clock, speedometer, spare tyre, etc.; £185.—Main, 36, Parade Leamington. [3027

G.N. Cycle Cars, latest models, always in stock; £198 and upwards.—Drake and Mount, Ltd., Motor Agents, Bracknell. [3696

CARDEN-J.A.P. Monocar, electric lights, speedometer, tax paid, excellent running condition; £55.—76, Western Rd., Southall, W. [4218

A.C. Sociable, good condition, fully equipped, lamps, speedometer, tax paid; £65; trial.—Write, 64, Park Rd., Dulwich, S.E. [4271

DE DION 6h.p., exceedingly smart little 2-seater car, in fine running order, complete; £75.—11a, Dafforne Rd., Upper Tooting. [3246

G.N., new standard touring, dynamo lighting, just received from works; £275/12/6.—Telford Garage, 47, Streatham Hill, S.W.2. [4960

1920 Model de Luxe Morgan, fully equipped, disc, condition perfect; £155.—Braemar, 17, St. Quintin's Av., North Kensington. [4954

1921 G.P. Morgan, dynamo, discs, etc., only run few miles; £225; good combination part.—C. S., 14, Swaton Rd., Bow, E.3. Tel.: 4155. [5105

3h.p. A.C., less carburetter, valves operated by cam-shaft, Thomson-Bennett mag.; bargain, £6/10.—Apply, Box 892, c/o *The Motor Cycle.* [5032

G.N.'s.—All models for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [3314

G.W.K., 1914, royal blue, excellent condition, tyres new, Stepney, spares, tools; £150 cash; drive away.—Winter, South Mimms, Barnet. [4870

DAN GUY, Weymouth, Morgan Agent.—Family model, M.A.G., £240, De Luxe M.A.G. £233, Grand Prix, M.A.G., £223, from stock. [0624

CASTLE THREE 2-seater, dynamo, detachable wheels and spare, 4 cyls., hood, wind screen; bargain, £235.—Box 5,805, c/o *The Motor Cycle.* [4766

£100.—Morgan-Jap, new hood, electric-acetylene lighting, reliable, registered Nov., 1914; appointment.—61, Weston Hill, Upper Norwood. [2935

G.N. Cycle Cars.—All models in stock from £198 complete; exchanges; easy payments.—A.S.C., 60, Mortimer St., W.1. Tel.: Museum 6626. [4099

MORGAN, G.P., 1919, W.C. J.A.P., lamps, horn, hood, screen, discs, tax paid, spare tube, etc.; £165.—4, Station Rd., Merton Abbey, S.W.19. [4924

1920 Cycle Car, 8h.p. water-cooled J.A.P., exceptionally smart car; cost £450; accept best offer over £200.—Salsbury, Birchwood, Guildford. [4103

MORGAN G.P., genuine o.h.v., electric lighting, discs, Cowey, Klaxon, 1916-17, lovely; sacrifice, or exchange, adjustment any way.—88, Lord St., Southport. [4784

COVENTRY Premier, 1921, latest model, dynamo lighting, spare wheel, dickey seat, tax paid, insurance, watch, etc., as new; £235.—Allen, Ledbury. [X6714

A.C. Sociables, modern, fully equipped, mechanically sound, good appearance, from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [3128

3-WHEEL Runabout, 3 speeds and reverse, speedometer, electric lights and horn, equal new; £85; must sell.—The Haven, 120, Sutherland Rd., Croydon. [4898

MORGAN, A.C., special body, repainted blue, new cylinders, pistons, speedometer, Binks, very fast; photo, stamp; £128.—Highdene, Ridgeway, Enfield. [4194

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

COVENTRY PREMIER Runabouts for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [3315

COVENTRY Premier, new March, most exclusively fitted, clock, Bonniksen, electric Klaxon, hood cover, inside and running board mats, tax paid, consumption 55, absolutely perfect, spare wheel never used; £238.—Payne, Eccleston, Chester. [X6758

RUNABOUTS AND CYCLE CARS.

MORGAN Grand Prix 1920 Model, hood, screen, lamps, horn, luggage grid, discs, Binks, £175; also de luxe model, £170.—Marston, 31, Bridge St., Chester. [4696

ROVER 8h.p. Light Car, new 1921 model; 250 gns.; dynamo lighting, hood, screen, spare wheel, immediate delivery from stock.—Marston, 31, Bridge St., Chester. [4697

COVENTRY Premier Runabout, 3-speed, reverse, spare wheel, hood, screen, lamps, speedometer, etc., mileage 1,500; £200.—Marston, 31, Bridge St., Chester. [4695

1921 (May) Coventry Premier Runabout, dynamo lighting, dickey, spare wheel, etc., trial run; £210.—Butler, 29, Pierrepoint Rd., Acton. 'Phone: Chiswick 755. [3676

1917 G.P. Morgan Runabout, M.A.G. engine, hood, screen, electric lighting, Cox-Atmos carburetter; £140, or close.—Scholes, Eagle Parade, Buxton. 'Phone: 378. [X7288

MORGAN, 1921, G.P., competition machine, M.A.G. engine, winner of team prize in Colmore cup, silver medal in Victory cup; 190 gns.—H. Rock, Cradley, Staffs. [X7323

1921 Morgan de Luxe and Grand Prix Models for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [3312

ADAMSON 9h.p. 2-seater, 3 speeds, reverse, electric lighting, hood, screen, all accessories, splendid condition; £125; offers.—Sherwood, Cheam Rd., Sutton, Surrey. [4180

MORGAN 1915-16 De Luxe, W.C., complete with disc wheels, hood, screen, lamps, etc., tax paid, recently overhauled; a bargain, £120. — 47, Credon Rd., S.E.16. [5123

SPLENDID 3-wheeled Chassis, 700×80 mm. wheels, Chater-Lea fittings, 4-speed, reverse, Coventry Premier type chain shaft drive; £34.—114, Bradgate Rd., Nottingham. [4146

£115.—Morgan 1917 J.A.P., a.c., De Luxe Model, electric light, hood, screen, smart appearance, fully equipped, taxed; bargain.—143, Ravensbury Rd., Earlsfield, London, S.W. [4992

MERRALL-BROWN 1920 3-wheeler, twin rear, detachable wheels, spare, water-cooled, reverse, hood, screen; bargain, £120.—Clark, 7, Exhibition Rd., South Kensington. [5042

MERLIN Cycle Car, 8-10h.p. J.A.P., 3-speed, reverse, C.A.V. dynamo lighting set, tax paid 1921, perfect order, very sporty; bargain, £175.—8, Half Moon Lane, Herne Hill, S.E.24. [4980

£130.—Small 2-seater 1915 Trumbull, 4-cyl., water-cooled, 4 speeds, electric light, hood, screen, good climber, tax paid.—Owner, 8, Randolph Mews, Maida Vale, W.9. (Appointment.) [4554

1921 T.B. 3-wheeler, 3-speed and reverse, spare wheel, disc, lavishly equipped, dynamo lighting; cost £298, accept £155; exchange combination. —24, Balliol Rd., North Kensington. [4590

1920 Bleriot Whippet, hand starter, unused spare wheel and belt in leather cover, horn, licensed, everything in perfect condition; 120 gns.—Edwards, 50, Harrington Rd., South Kensington. [5049

ALLDAYS Midget 2-seater, detachable wheels and spare, new tyres, fully equipped, and in splendid condition; £125.—Gray and Levin, 5, The Boulevard, Balham, S.W. Tel.: Streatham 2417. [4363

G.N., 1920, fast, in beautiful tune, dynamo lighting, full equipment, many mechanical improvements, hood, with envelope, tax paid to 31st Dec.; £200.—Telford Garage, 47, Streatham Hill, S.W.2. [4959

HUMBERETTE, 1914, 8h.p., fully equipped, lamps, horn, mirror, Stepney, tax paid, splendid condition and running order, £90, or would exchange Douglas combination.—18, Kelmore Grove, E. Dulwich, S.E. [4029

BLERIOT WHIPPET, 1921, latest model, spare wheel, electric and gas lighting set, faultless condition; a real bargain, £165.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

MORGANS, new and second-hand, always in stock; spare parts for all models.—Largest contracting agents and trade distributers, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

THURLOW 3-wheeler, late 1920, 8h.p. J.A.P., Sturmey-Archer 3-speed, M-L mag. electric lighting, speedometer, good condition, mileage 1,400, accessories; offers wanted. — 8, Sandringham Av., Merton Park, Surrey. [4323

RICHARDSON Cars.—We are the London agents for this make, and have all models in stock for immediate delivery; exchanges, easy payments; trade inquiries invited.—A.S.C., 60, Mortimer St., W.1. Tel.: Museum 6626. [4100

COVENTRY PREMIER Runabout, beautiful Olympia Show model, finished yellow with black wings, mileage negligible, dynamo lighting, electric horn, speedometer, licensed; £220, close offer, or motor cycle part exchange.—Crow Bros., Guildford. [3939

Tel. No.: Museum 3971.

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GUARANTEED IN PERFECT CONDITION.

Money willingly refunded if not more than satisfied.

ALL GOODS SENT ON SEVEN DAYS' APPROVAL AGAINST REMITTANCE.

26×2.

Wood-Milne Ex. Heavy	25/-
Wood-Milne Heavy	30/-

26×2½.

Palmer Heavy Cord	36/-
Clincher Ex. Heavy	29/6
Dunlop Heavy	36/-
Avon Sunstone	30/-
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Wood-Milne Heavy	26/-
Wood-Milne Extra Heavy	32/-
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26×2¾.

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Dunlop Heavy	36/-
Clincher Extra Heavy	29/6
Avon Heavy Rubber-studded	29/6
Wood-Milne Extra Heavy	32/-
Moseley Extra Heavy	29/6
Hutchinson Tourist Trophy	27/6
Hutchinson Passenger	30/-
Beldam Extra Heavy	29/6

26×2½ for 2½ Rims.

Dunlop Heavy	39/6
Wood-Milne Heavy	26/-
Wood-Milne Extra Heavy	32/-

26×2½ for 2¼ Rims.

Wood-Milne Heavy	30/-

26×3 (Oversize for 650×65).

Wood-Milne Extra Heavy	45/-
Wood-Milne Heavy	42/-

26×3 for 2½ Rims.

Wood-Milne Heavy	32/-

28×3 for American Rims.

Wood-Milne Extra Heavy	29/6

28×2½×2¼.

Wood-Milne Extra Heavy	40/-

650×65.

Dunlop Steel-studded Voiturette	47/6
Wood-Milne Heavy	32/-

700×80 for 650×65.

Goodrich Safety Tread	45/-
Wood-Milne Extra Heavy	46/6

⅛in. Belts, 8ft. 6in.		16/-
⅞in. Belts, any length	per ft.	1/9
¾in. Belts, 6ft. 6in.	each	10/-

INNER TUBES. Best Makes Only.

26×2¼ and 26×2⅜	6/6
26×3 and 650×65	7/6
28×3	7/6

Butt-end, 1/- extra.

When ordering, please write distinctly.

RUNABOUTS AND CYCLE C

MORGAN de Luxe, 1920-21, M.A.G. 10h. cooled, hood and cover, Klaxon, discs, spe unpuncture, oversize Kempshalls, nickel fitti blue, perfect, insured; any trial; £198.—382, Rd., Plaistow, E.13. Tel.: East 3683.

1921 Morgan Runabouts, de luxe, family, models, ready drive away; complete spares, chains, sprockets, tyres, etc.—Main d Monmouthshire: W. Luther J. Davies, 71, cial St., Newport, Mon. 'Phone: 2488.

CYCLE Car, 3-speed and reverse, 650× wheels, domed wings, 2-seater, spec lovely condition, 4-cyl. engine, air-cooled, in inspection; lot £60.—Seen at Heppelthwai Wilcox Rd., Wandsworth Rd., London, S.W.

IN Stock, all models of Morgan runabouts; deferred terms. Example: De Luxe £61/5/6 down, and 11 payments of £16/1 account paid in two months, no charge for within 4 or 6 months, liberal discounts allowe payment price.—Lamb's, 50, High Rd., Woo N.; 387, Euston Rd., N.W.1; 151, High St., stow, E.17.

CARS FOR SALE.

BUICK, 2-seater and dickey, tip-top order, 21, Tindal St., Chelmsford.

£50 down and 12 payments of £5 monthly reliable landaulet.—Palmer's Garage, T

£50 down and 12 monthly payments £7/1 reliable 2-seater.—Palmer's Garage, Tot

£225 Cash secures 1917 Napier chassis, worm drive, detachable wheels.—Palmer' Tooting.

£100 down and 12 monthly payments £1 12-14h.p. Fiat landaulet, cheap runni Palmer's Garage, Tooting.

£100 down and 12 monthly payments £1 cures 18h.p. Oakland open touring c starting.—Palmer's Garage, Tooting.

£50 down and 12 monthly payments £5 very fine 20h.p. N.E.C. ¾ landaulet. Garage, Tooting.

£100 down and 12 monthly payments secures Piccard-Pictet ¾ landaulet, lighting.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £1 15.9h.p. Benz landaulet, 4 speeds, mo Palmer's Garage, Tooting.

£120 cash secures 8h.p. 1914 Swift 2-s speeds, gate, monobloc.—Palmer's Garag ing.

£100 down and 12 monthly payments £10 Sheffield-Simplex ¾ landaulet.—Palmer's Tooting.

£200 cash secures 25-30h.p. Berliet torpedo car, 6 cyls., 4 speeds.—Palmer's Garage,

1920 Deemster, run 1,000 miles only, as paid; £285.—21, Claremont, Hastings, 853.

£275; 1917 11.9h.p. Morris-Cowley 2-seater dynamo, mechanically perfect.—King, Oxford.

£15 to clear.—Old Lanchester car, less bod not used since 1914.—F. C. Lingley, Woo Suffolk.

ABSOLUTE Bargains.—Sixty cars stocked; procures list. Call.—Douglas S. Cox, W wood.

MORRIS-OXFORD, 2-seater and dickey, 191 splendid condition; £250. — 21, Tin Chelmsford.

BUCHET Light Car, 5h.p., water-cooled, good order, less friction drive; £30, b Hale Garage, Mill Hill.

ARMSTRONG-WHITWORTH Landaulet, n 100 miles during war; accept £350, or e new Ford.—A. M. Buckingham, 21, Tindal St., ford.

OVERLAND Model 83 1916 Tourer, dyna starter, speedometer, etc., in excellent tion; £175.—A.S.C., 60, Mortimer St., W.1. Museum 6626.

SEABROOK R.M.C. 2-seater, 18-23h.p., ver ing, excellent appearance, 3 brand new ty paid; trial; accept 130 gns.; exchange.—Mana Waverley Hotel, Southport.

2-SEATERS, 3-speed, reverse, Stepneys, large Fafnir, 4-cyl., £100; Gladiator, 4-cyl., Briton, 2-cyl., £85; trial run. — Clarence Dove Mews, Old Brompton Rd., S.W.7.

SIZAIRE-NAUDIN 14h.p. 4-cyl. 2-seater and exchange for combination, lathe, machine; cash adjustments or sell, £160. offer.—Hellens, 19, Sangley Rd., Catford, S.E.

FORD Ton Van, 1918, delivered 1919, good tion; also Overland car, 1914, 5-seate tyres and condition, self-starter and lightin plete; £315 the 2.—H., St. Asaph, Sunning V Biggin Hill, Kent.

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The 1922 Tourist Trophy Races in Belgium.

THE decision of the A.C.U. Competitions Committee to hold next year's events in Belgium implies an offer to contest supremacy with our Continental rivals on their own ground, and it is sincerely to be hoped that foreign machines will be entered in substantial numbers, and that the result may provide data of benefit to all. At the moment, opinion is divided on the subject of the wisdom of transferring the T.T. from the now famous Isle of Man course to Belgium, and some leading opinions, in reply to an invitation by *The Motor Cycle*, appear in this issue. As a matter of fact, the Competitions Committee's recommendation does not yet appear to have received the ratification of the General Committee of the A.C.U., so that the announcement has come in the nature of a bombshell.

The Tourist Trophy races have always been international in name; but though foreign competitors have taken part in them from time to time, they have only done so half-heartedly.

The A.C.U., as organisers, should be on their mettle, and should be able to give the organisers of Continental competitions an opportunity of learning some useful lessons. While Continental competitions are, without exception, modelled on British events, and every effort is made to carry them through on just lines, the all-important question of timing is by no means well understood.

So far as the accessibility of Spa is concerned, this town is far more comfortably reached than the Isle of Man. Harwich is a port accessible by means of good roads from all parts of England, and those who take their machines by train can leave London in the evening, have a comfortable night on board, and reach Spa in the afternoon. Spa is only a little over four hours' run from Antwerp over steadily improving roads.

There is certain to be some disappointment that such a typically British event should be transferred to the Continent, and it is probable that a large number of motor cyclists, who annually combine their holiday with the Tourist Trophy races in the Isle of Man, may refrain from crossing to Belgium next year. Much can be said on both sides of the question, and the views of our readers will undoubtedly prove interesting.

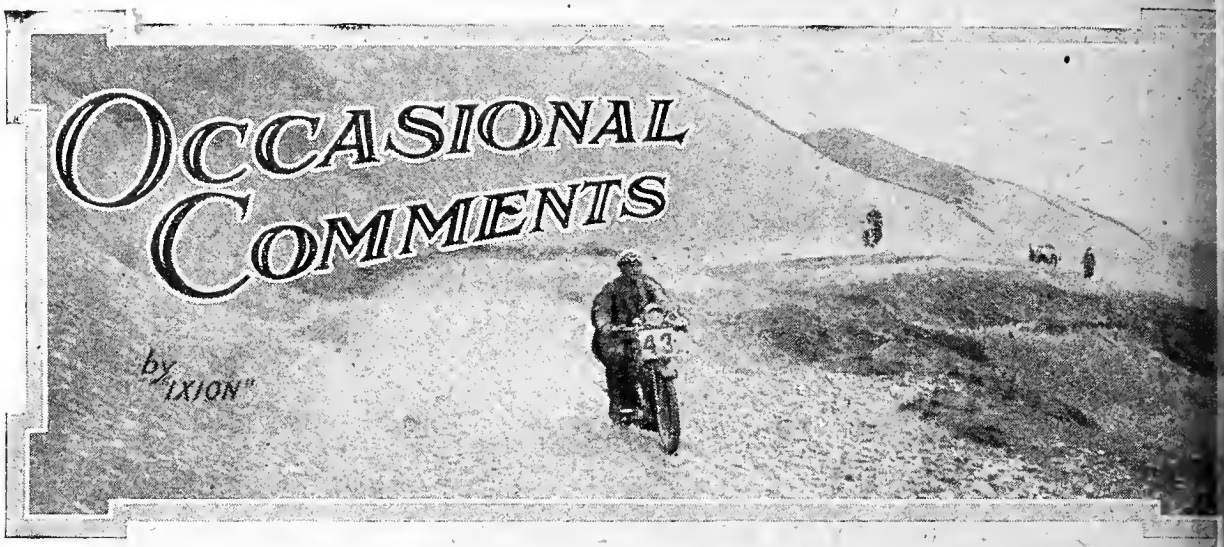
The Cycle Car and the Sidecar.

AMONG a certain section of motorists there has, for many years, been a conviction that eventually the cycle car must supplant the sidecar. If history and tendencies are examined carefully, it must be admitted, however, that prophecies of this nature are no nearer becoming fact than they were a decade ago. In the first place, it should not be overlooked that the cycle car was never intended to be a sidecar substitute, but rather a vehicle to bridge the gap between the popular three-wheeler and the car. How these vehicles failed to do this until they developed into the light car type is now common knowledge. A big gap exists, however, between the sidecar and the light car, and, although this is being narrowed by the lighter form of small four-wheeler sold at a figure in the neighbourhood of £250, a gap still remains between the £250 and the *de luxe* sidecar. Apparently it will always exist for the reason that, at whatever price a light car four-wheeler can be produced, a sidecar of *superior* quality can be offered much more cheaply. The price gap at the present time is approximately £60; present tendencies fail to indicate that next year the prices of the two types will be any nearer.

Apart from this question of initial outlay, sidecar owners always consider the extra cost of upkeep, including taxation and storage. Again, the present-day owner of a first-class sidecar usually prefers to own a vehicle at the apex of one class rather than one which is at the bottom of another.

Everything considered, therefore, it would appear that potential cycle car buyers constitute a section of the community distinct from sidecar owners.

An index to the advertisements in this issue will be found on the page facing the back cover.



How it Strikes an Outsider.

AN old friend of mine—one of those quaint lunatics who love a car, but consider motor cycles a rather boring invention of Satan—got entangled in one of our modern reliability trials the other day, and was sufficiently amused by what he saw to follow the event for a few miles. His impressions follow:

"What nonsense the whole affair was! You might as well smear a haystack with birdlime and stick pumpkins all over it, as expect the men to climb the hill I saw. Most of them fell off. Two or three charged the spectators, some of whom showed the most marvellous acceleration. Six trade riders went up the hill in quite extraordinary fashion, but I did not bother to ask what make of machine they were riding, as if I ordered a duplicate from my ironmonger at Little Slopton, I am quite sure it would not go up the hill; and even if it would, nothing would induce me to let it. I suppose these youngsters find the world rather dull now that there is not any war on."

Stone Cuts.

I HAVE already "done in" several covers this season, and in each case stone cuts have been the prime cause; indeed, I have to go back to pre-war days to recall scrapping a cover through honest wear, *i.e.*, because the road had buffed all the rubber off the tread. Four times this season have I ruefully spotted a gash which exposed the fabric, and on yet another occasion the gash took no spotting, for the stone bit clean through the inner tube as well. None of these tyres had done a reasonable mileage. There is no cure; one may insert a gaiter or a sheath, but in no case will the cover last much longer, and the retreading people will not look at it. One rather hesitates to entrust the gash to a local vulcaniser, knowing that an unskilled hand may overcook the tyre; and if one sends it away to the tyre maker—well, the next mount may take a different size of tyre. Worse still, practically all my own riding is professional rushwork, and I dare not risk a dubious tyre on such jaunts.

Presumably, quite a number of utilitarian riders have had similar experiences. What is the remedy? Are the standard machines of the day undertyred in many cases? Or should we agitate for better roads? T is a tendency amongst competition folk in general (get tyres cheap or gratis) to regard such trou as a mere transient annoyance. We must remen that to some private owners my year's experience w represent a waste of about £10 in hard cash. N of my cuts were sustained on freak roads in trials.

Hotels, Beware!

WHEN I am riding on duty, half an hour m ten miles to me, more or less; and there other people besides journalists for whom means distance. Such folk often find it impos to wait for dinner at the "Stag and Spectacles, they happen to reach that well-known hostelry 6.30 p.m., dinner being listed for 7.30 p.m. have to push on, and round about 7.30 p.m. reach the "Goat and Compasses," thirty miles fur on, and go straight into dinner without any w of time. This process cuts both ways. Someti it happens that the house which you cannot patro is dear, or bad, or both; and that the house pass at the psychological minute gives you a Ca menu at 3s. 6d. More often it is the other round. Last week, for example, the bell was rin for dinner as I passed a very famous motoring of the small roadside type. I entered. Julie soup (*i.e.*, dish-washings); mackerel (cold and grea roast lamb (Canterbury, and badly cooked at th an unrecognisable pudding; and cheese of the mo trappy sort. 7s. 6d. Small bottle of cider, 1s. And the girl expected the change.

The Inevitable Consequence.

CAR owners are squealing at the current co a motor tour which depends on hotels, an is not astounding that the far less pecun motor cyclist is taking to camping. The Israelite old had a fancy for their tents, and I begin to th they knew something. I have amassed what l rather like a large sponge bag. Inside it i portable hotel. Two of us can now go down Porlock or up to Sutton Bank without adding farthing to our living expenses. We have washed dinner along the road. We ride till we have enough, and then camp, and cook a late supper, wh

ccasional Comments.—

oes not cost us £1 a head. Perhaps the motor oaches will compensate the hotels for the motor yclists who have been fleeced away from their portals uring the last two years; but wherever you see a w tents pitched, you will find

(1.) The majority are motor cyclists.
(2.) Who never tried camping till *après la guerre.*

Police and Noise.

RECENT prosecutions show that in many parts of the country the police are taking action against (1) long exhaust pipes on 3½ h.p. singles and) baby two-strokes with standard silencers. Owners d makers alike are waxing gleeful because several these summonses have been dismissed. This is olish. How do they imagine that such prosecutions ise? Because a bored and ambitious constable udies the Motor Car Act, and suddenly pounces, all his own? Such cases are rare. The usual procedure is that some charming resident bumps into e local chief constable at the club or the links or dge, or any old place, and buttonholes him. Said arming fellow has bought a new house on a main ad, or his wife is sick, or the new baby is teething d sleeps lightly, or there is some novel factor in his life which has made quiet nights desirable. He is thereby driven to notice that motor cycles are unduly noisy. So he tickles up his pal in the police. The C.C. takes notice for a few days, and meanwhile one or two people complain to him. Finding the complaint reasonable, he puts his men on the alert.

The Spearpoint.

SO—to my mind—the real urge behind this outcrop of anti-noise summonses is public annoyance, and I take them quite seriously. Moreover, I think less than nothing of the fact that some of these injured innocents demonstrated their alleged noisy machines to sporting benches, and got the cases dismissed. I myself own a machine which can make the very dickens of a row when I want it to, or when I drive it carelessly; but if I were demonstrating it before the average bench, it would purr like a sucking dove. Let us rather tackle the facts. Most baby two-strokes are unpardonably noisy. A good many of the super-tuned sports 3½ h.p. are ditto. People are getting rusty about it. Let's quiet them down. These pleading words ought to come with unusual force from my pen, because I am not—and never have been—in favour of really silent machines, which I regard as a public danger.

This illustration conveys a slight idea of the scenery through which the International Six Days Trials routes passed. The scene is on the Col du Brück, and depicts E. H. Lees (3½ Sunbeam) during the timed hill-climb.

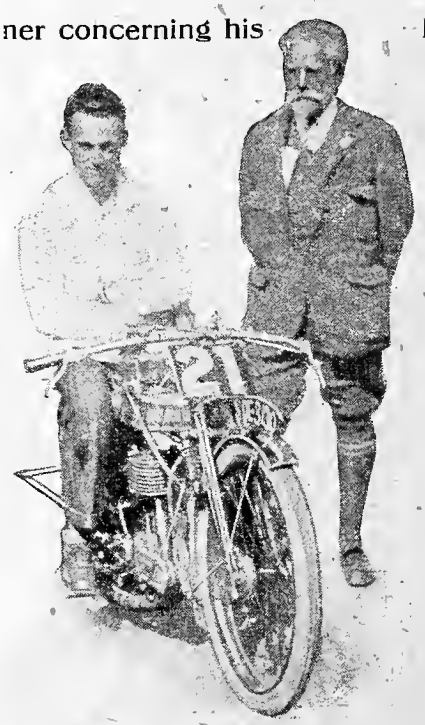
Experiences in the Belgian Grand Prix.

A Chat with the British Winner concerning his Memorable Duel on Wheels.

FRESH from his victory in the Belgian Grand Prix Race, we had an engrossing chat with Hubert W. Hassall. The fact of the Belgian Grand Prix being won on a 3½ h.p. Norton British-made motor cycle completes the chain of successes of British mounts in the three important road races of the year, *i.e.*, the T.T., the French Grand Prix, and the Belgian Grand Prix.

Hassall put up a magnificent ride in the last event and deserved the luck he experienced after the series of misfortunes which befell him in the two earlier races. For instance, he experienced valve trouble in the T.T., was haunted by tyre troubles in France, but finally in the Belgian Grand Prix had a no-trouble run throughout—as we are wont to expect of the speedy Norton.

There was never any doubt about Hassall's skill, for he sits his machine in a businesslike fashion, and his pluck and daring have oftentimes been admired. Hassall is but twenty-three years of age, and his success in Belgium was his first important racing success, despite many hill-climb wins.



H. W. Hassall, winner of the Belgian Grand Prix, on a 3½ h.p. Norton, with Mr. J. L. Norton, designer of the machine.

Favoured the Belgian Course.

He was full of praise for the Belgian course, which he compared favourably to the Manx course, regarding it as similar to the best ten miles of the Island circuit, but the Belgian road surface is in much better condition.

His Norton machine had the usual Sturmey-Archer gear, but with higher ratios, *i.e.*, 4, 5, and 7 to 1.

During practice he imagined that an eleven minutes average would spell success, but actually in the race itself he averaged nine minutes forty-five seconds per lap, proving that it is impossible to reproduce in practice the verve and thrustfulness which a competitor exhibits on an actual race day.

There is one bad bump on the Belgian course which Hassall will never forget. In practice he was lifted clean off the ground, ten spokes in the wheel being broken. He spoke in appreciative terms of the sporting action of the Sarolea manager (himself a rival in the race), who had a new wheel built up for his machine the same day.

Closely Pressed at Half Distance.

On the race day, Hassall made two stops for petrol and oil at the end of the ninth and eighteenth laps, and actually led the field from the third lap. He was not aware until he saw *The Motor Cycle* last week that he was but sixteen seconds ahead of Le Vack at half distance, his outstanding impression of the race being the ding-dong duel he had with F. W. Dixon (the Indian rider) for eight laps. These two doughty exponents ran neck and nec passing and re-passing each oth continually. The crowds of spect tors around the course were n slow to appreciate what w happening, and cheered their respe tive favourites every time the tv riders came round.

Curiously, due to the variety bends, one or other discovered th he was the star turn on particul corners. For instance, Hass could guarantee to leave Dixon one gradual bend which he dar to take without cutting out. Lat on they would encounter a curi which Dixon would swoop arou at over a mile a minute and lea Hassall well in the rear until aga they were linked up.

A Thrilling Episode.

After eight laps of this kind thing, it was only to be expecte that there might be a risk of the touching, and, as a matter of fac Hassall encountered one very thri ling incident at Stavelot, where th two riders, after five laps togethe approached the hairpin bend speed. Dixon forged ahead on the bend, but Hassal with slightly superior acceleration, drew level. Bot at the same instant drew over to the right, b Hassall's front wheel accidentally touched Dixon back wheel, with the result that his machine w turned off the road, over a ditch, round a tree, ar back again on to the road, the rider retaining h presence of mind and controlling his steering throug out—a narrow squeak indeed! The duel temporar ended by Dixon dropping out of the running, d to some minor engine trouble, though Hassall w not aware of this at the time, and two laps later Dixo once again chipped in to continue the whirlwin laps, and Hassall imagined it was another case "blinding" to prevent an American victory. When th race was over, and Hassall had scored a comparativel comfortable victory, he learned from Dixon himse that it was merely strategy which caused him to ove take Hassall, as he was out to crack up the Norto engine if he could—by extreme speed work, of course and so give a chance to Le Vack to bring the othe Indian home to victory. 56.91 m.p.h. was the winner average for approximately 188½ miles.

We tested Hassall's feelings on the A.C.U. decisio to hold the 1922 T.T. race in Belgium, and he wa quite enthusiastic concerning this decision, being on of those who consider 3½ h.p. machines to be to fast to do themselves justice on the Manx course; h thinks the Belgian course much more suitable.

Hassall's winning Norton was equipped with Dunlo tyres, B. and B. carburetter, Renold chains, K.L.G plugs, and C.A.V. magneto. He used Castrol oil.

LIGHTWEIGHTS *in the* INDIAN JUNGLE

How Small Two-stroke Machines served an Overseas Shooting Party.

Jungle mounts of proved utility.

BEGUILED by the comparative coolness of the air and the absence of the blinding sun-glare during the first few days of the monsoon, thoughts in our little up-country station in the United Provinces naturally turned to shooting, memories of our pleasant cold-weather trips having kept us company during the long sultry days and nights which were a forerunner of this season.

It was not without trepidation that our trio, A, B, and C, the proud possessors of baby two-strokes, prepared the machines in anticipation of a run of twenty-five miles into one of the shooting districts, the last seven miles of which were over (it would be more correct to say through) a "fourth-class" road under conditions that are rarely experienced at home—mud and water reaching to the footrests, with an occasional oasis in the surrounding "lake."

Sending on the necessary servants, food, etc., by country cart, we set off with tanks full to the brim, and safely negotiated the "pukka" portion of the road in creditable time, one involuntary stop caused by a choked petrol-pipe being made. With a last reluctant glance at the metalled road we had just traversed, we took the unmetalled portion with a dash, and, with many a sideslip and many a thrust out foot to retain balance, we arrived at a spot where a tempting and apparently flat dry embankment on one side of the road led onwards to our destination. Unconsciously, accelerating at sight of this very inviting track, three confirmed optimists, in a very short space of time, discovered that they had struck the site of an old narrow-gauge steam tramway which had been uprooted during the war, the sleeper beds unfortunately retaining sufficient depth to jolt one's very bones ere it was possible to pull up. B, striking a deeper rut than usual, and having a low ground clearance, pulled up with a damaged silencer.

Without further mishap our destination was reached and, resigning our motor cycles in favour of an elephant, we were transported with the peculiar lumbering gait of our beast of burden to the jungle.

After consultation with the local "shikari," it was decided to beat a thick and almost impassable strip which lay in front of us, and, taking up a position on the west side, we waited with infinite patience, fingers on the triggers of our rifles, for eventualities; the shouts of the beaters as they advanced towards us from the east side, forcing their way through the thick undergrowth, growing momentarily louder and louder. A rustle at the edge of the jungle heralded the approach of game, and a moment later out jumped a herd of chital (Indian deer), wonderfully pretty animals with skins and heads which, if good, are greatly prized. Simultaneously, out rang three rifles: a rather fine buck rolled over and two others were observed to be hit. In quick succession, alarmed by the shouts of the beaters, who were now close upon us, out came a black buck nilgai, and, finally, peacock, partridges, and other birds. For the first named, our rifles were again requisitioned, and then, hastily exchanging rifles for shot guns, the birds were greeted with a blaze of 12-bore.

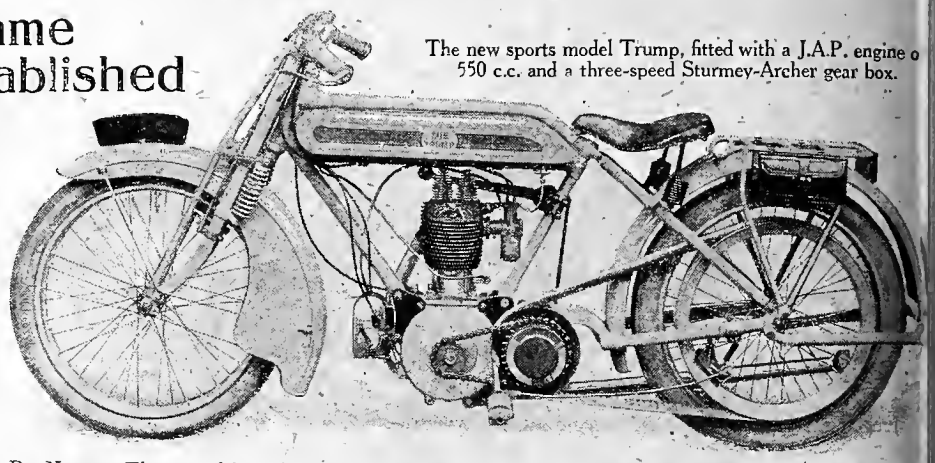
The next day also yielded excellent sport, but the terrors of the muddy road called us away in the early afternoon and despatched us on the return journey.

The value of even "baby" machines in a country of this description, surrounded as we are with good shooting, is inestimable.

T.L.H.

An Old Name Re-established

New 550 c.c. Trump-Jap Sporting Model.



The new sports model Trump, fitted with a J.A.P. engine o 550 c.c. and a three-speed Sturmey-Archer gear box.

BEFORE the days of the war the Trump-Jap machines, which were associated with the name of F. A. McNab, were well known in competition circles, and especially so on Brooklands.

During the present year the name has been revived, and Trump Motors, Ltd., of Byfleet, are again in the field, with Mr. McNab actively engaged in the design and track riding of the machines, and Col. R. N. Stewart in control.

The idea obtaining in the production of these machines is that a series of sporting models shall be made to suit the requirements of the class of rider favouring this type of mount.

A New 4 h.p. J.A.P. Engine.

An 8 h.p. sporting model, having the J.A.P. twin engine, was illustrated in our issue of the 4th inst. on page 141, and another model which is being brought forward is the 4 h.p. single, engined with the new 550 c.c. J.A.P. unit.

The machine follows a conventional lay-out, having Druid forks and a frame with curved top tube. The peak of the saddle is hinged to the latter, the springs being mounted on supports which are carried from the top back stay bridge. 650×65 mm. tyres are fitted, and transmission is by chain and belt through a Sturmey-Archer gear box. The latter may, at option, be one of the special type for speed work, with clutch but minus kick-starter, and with very close gear ratios, or the standard box with kick-starter and the ordinary low bottom and middle ratios.

As yet, the new 550 c.c. single-cylin J.A.P. engine has not becom familiar to the majority of motor cyclists, but will be seen that it follows the lines the 250 c.c. and 350 c.c. models, wh were used with so much success in T.T. The sparking plug is inclined the rear of the inlet port, and large a minium valve caps with radiator flang are used.

A detail refinement is the crank case lease on the timing gear, which is arrang between the valves, so as to blow enou oil spray on to the stems to prevent t valves wearing badly in their guides.

Wrynose Pass in the Cumberland Trial.

New Imperial Lightweight wins the Alan Trophy in Cumberland County M.C.C. Open Even

FULL results are now announced of the Cumberland County M.C.C. open one day trial for the Alan Trophy, which was held on the 13th inst.

Wrynose Pass was, of course, easily the deciding factor of the day, this mountainside, boulder-strewn sheep track proving too much for fully 90% of the entry; both George Dance and T. C. de la Hay were failures here, so some idea of the exceedingly deceptive nature of the hill may be gauged. Our readers will be familiar with the difficulties of Wrynose from various articles that have appeared in past numbers of *The Motor Cycle* from the pen of Mr. George D. Abraham, who incidentally described its conquest by a lightweight machine nearly eight years ago. Kirkstone Pass, Red Bank, Rest and be Thankful (Traveller's Rest), and Buttermere Hause were the other observed hills, but none of these caused much trouble. Regarding the fairness of Wrynose Pass, the following letter from Mr. T. Rutherford, local consul of the Northern Centre A.C.U., is illuminating:

Defending Wrynose.

"As the individual who was responsible for the inclusion of Wrynose Pass in our one day open reliability trial, and likewise in the interests of the makers of the various machines, I venture the following criticism:

"As a competitive rider of some little experience, I venture to state that Wrynose Pass as a test hill, not only for machines but for riders in like measure, is a real discovery.

"The percentage of failures on this hill was abnormally large; but, nevertheless, I am prepared to defend its inclusion to the last degree.

"In my opinion, there was not a single machine in the trial—solo, sidecar, or cycle car class—which had not ample power to make a perfectly clean ascent. I admired every 'bus beyond measure, but I regret to state that I cannot express myself in similar terms with regard to all the riders and drivers. The majority of them displayed very moderate skill and still less discrimination in picking their track. There were, however, some outstanding exceptions, such as B. Kershaw on his 2¾ h.p. New Imperial, H. Williamson on his Norton, J. W. Wills on his Powell, F. Ellis on his Matchless, A. Pape on his Triumph sidecar, and J. E. Greenwood on his Sunbeam and sidecar, who all went up in a way which showed what can be done with present-day machines driven with care, ability, and discrimination.

Traps for the Unwary.

"I admit the hill is full of traps for the unwary; but in an open trial held in this part of the country there is no excuse whatever for anyone being caught napping. If men who are thoroughly well mounted feel disposed to ride more to the gallery than discretion would warrant, then the funeral is theirs. The unfortunate part, however, is that the reputation of the machines they handle may, in the estimation of the outside public, more or less suffer.

"Wrynose Pass as it exists to-day, in my judgment a really good test h and, if only a very slight outlay w expended upon it, it might well becom one of the best and fairest test hi we have got.

"I sincerely trust that the Northe Centre may see its way to consider t further development of Wrynose Pa so that it may become the greatest a truest recognised test in the country.

"Following up the riders was a from Dias's' garage in Carlisle, who w mounted on an old garage hack (Su beam), and whose duty it was to gath up the various observers' sheets and reports, and he doddled up Wrynose Pa from bottom to top in a manner whi the most pretentious rider would do w to emulate."

Full results of the event follow:

ALAN TROPHY (value 65 gns.).—Bert Kersh (2¾ New Imperial).

CUMBERLAND COUNTY TROPHY.—Wate (4½ Humber).

BARRON TROPHY.—F. J. Ellis (8 Matc less sc.).

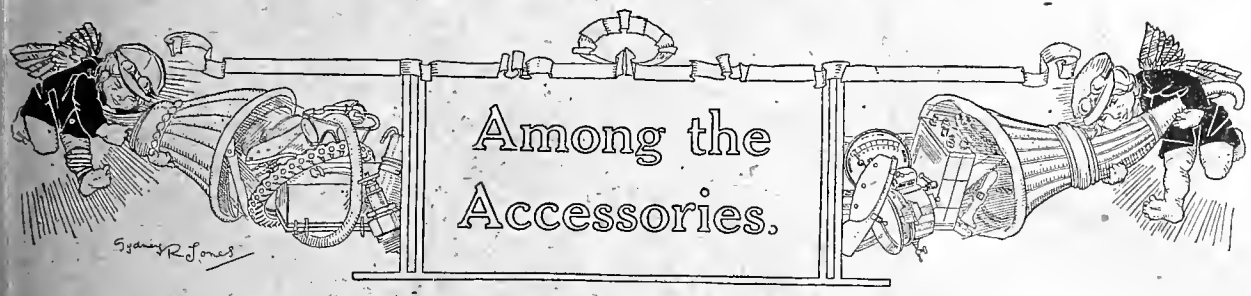
SPECIAL PRIZES.—350 c.c. Class: Edmor (2¾ A.J.S.). 500 c.c. Class: Williamson (3 Norton). 750 c.c. Class: Watson (4½ Humbe 1,000 c.c. Class: F. J. Ellis (8 Matchless sc Amateurs: 1, Williamson (3½ Norton); 2, H (3½ Sunbeam).

FIRST-CLASS AWARDS.—B. Kershaw (2 New Imperial), Watson (4½ Humber), and J. Walker (4¼ B.S.A.).

SECOND-CLASS AWARDS.—Williamson (3 Norton), Aitkinson (3½ Sunbeam), T. C. de Hay (3½ Sunbeam), G. Dance (3½ Sunbeam), J. A. Dias (3½ Sunbeam), Hart (3½ Sunbea Morton (3½ Rover), G. M. Townsend (P. a M.), Gold (8 Blackburne sc.), and Pape Triumph sc.).

THIRD-CLASS AWARD.—J. E. Greenwood (3 Sunbeam sc.).

TEAM PRIZE.—Sunbeam team.



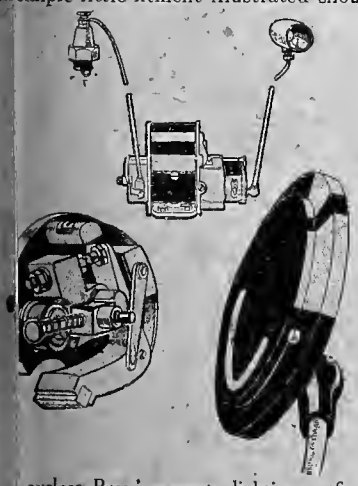
Flexible Petrol Piping.

PETRO - FLEX is an unbreakable tubing built up of animal gut, treated with special glue, thinly wrapped with canvas, and armoured with copper wire. The sketch also shows the type of union fitted when this tubing is used as a petrol pipe. Of course, it is quite impervious to petrol or benzole. Blaisdell Petro - flex Tubing Co., Ltd., Cassiobury Works, St. Albans Road, Watford, Herts., are the manufacturers of Petro-flex piping.

The Petro-flex tubing fitted to a union.

Electric Lighting from the Magneto.

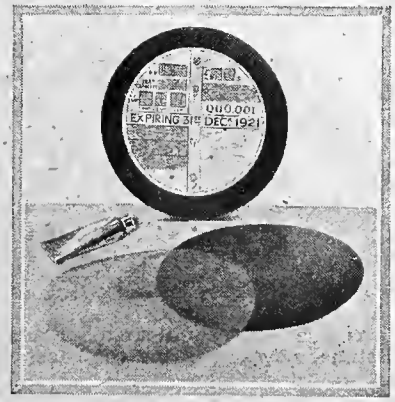
OBTAINING lighting current from a standard magneto is not a new idea, but so many of our readers make enquiries as to how it can be done that the simple little fitment illustrated should fill a steady demand. Briefly a governor brush is fitted to the central screw of the contact breaker, making contact at all normal speeds with a brass segment on the special insulated contact breaker cover. Besides adapting this device for rear lighting, Lovelace Bros. (Crescent Magneto Works, Norbury, London, S.W.), the designers, are prepared to convert existing two-stroke magnetos to supply both head and tail lamps.



Lovelace Bros.' magneto lighting outfit. (Top) Fitted to the magneto. (Left) The rectifying brush in position. (Right) The special contact-breaker cover.

Protecting the Licence Card.

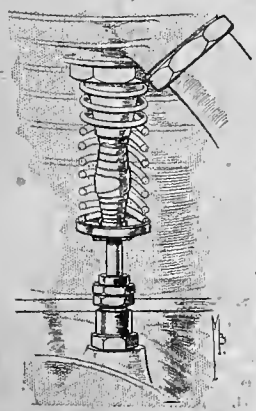
NOT all licence holders are waterproof, but it is stipulated by the regulations that the licence card must be protected from moisture; and, to ensure this being done, the Inventors Sales Agency, Cow Lane, Coventry, has placed on the market the Licenseal, which consists of two (apparently) celluloid discs, one black and the other transparent, between which the licence is placed. The sealing is carried out by means of a compound which forms a joint between the two discs, giving complete protection.



(Above) A licence enclosed in the Licenseal. (Below) The two discs and tube of sealing paste that form this protective covering.

A Valve Lubricator.

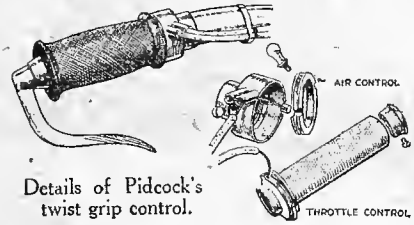
THERE has now been introduced a Flexekas valve stem lubricator and air leak preventer for valves with exceptionally long springs. It is similar in principle to the standard type. (Mr. Clifford Pressland, A. M. I. E. E., Hampton - on - Thames, Surrey.)



The new type of Flexekas valve stem lubricator.

A Twist Grip Control.

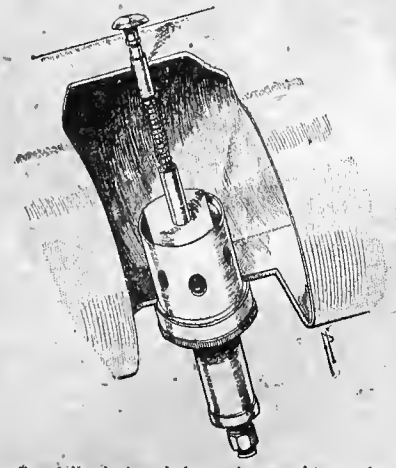
PIDCOCK'S twist grip air and throttle control for use with ordinary Bowden wires is neat, simple, and easily fitted. As may be gathered from the right sketch, showing the device dismantled, the grip itself actuates the throttle, while the air control wire is mounted on a separate slip ring movable by a projecting plug. The other drawing shows the complete control. (Richardson's Garage, Rosslyn Hill, Hampstead, London, N.W.)



Details of Pidcock's twist grip control.

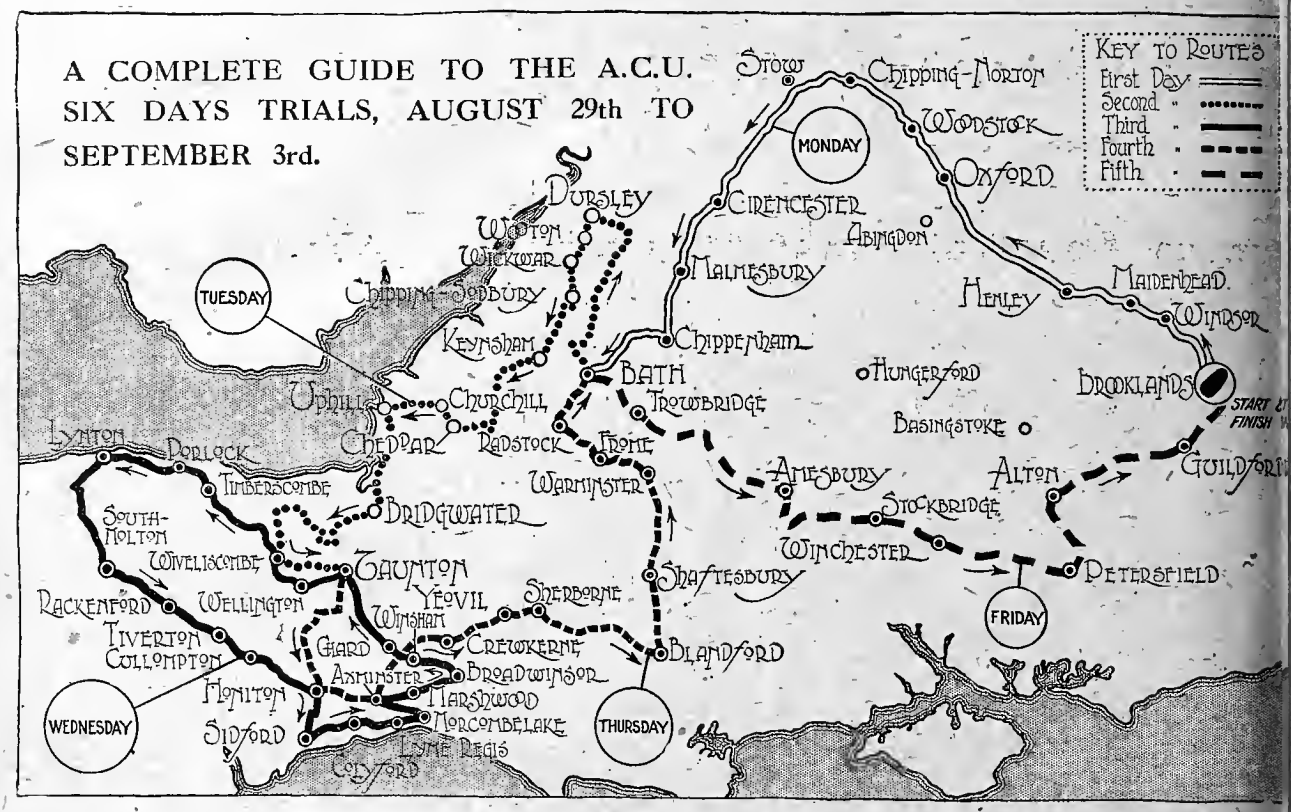
A Special Racing Oil Pump.

WHEN travelling at high speeds the racing motor cyclist often desires to "flood" his engine with oil. To enable him to do this, A. C. Davison, 163, Arlington Road, Camden Town, London, N.W., has introduced an oil pump, fitted with a large container and a large plunger, built into the tank. The oil flows into the pump barrel through the holes shown in the illustration, and a sudden depression of the plunger forces this quantity directly into the engine. The plunger spindle then rises, and the chamber is thus refilled. These pumps are fitted to the racing Harley-Davidsons.



Specially designed for racing machines, the Davison oil pump.

NEXT WEEK'S BIG TRIAL.



The route to be followed on each day's run is clearly indicated. Brooklands is the starting and finishing point, and the total distance covered in the road test will be 739¼ miles.

NEXT week, commencing on Monday, the 29th inst., the A.C.U. Six Days Trials will be held mainly over routes in the West Country, but starting and finishing at Brooklands.

This year, as already indicated in *The Motor Cycle*, instead of introducing a number of freak hills as an eliminating agency, the Union has worded the regulations so that, to gain a premier award, a machine must reach a certain standard of excellence *in each of the following:*

(1.) General reliability. (To be tested during the road portion of the trial.)

(2.) Hill-climbing. (Also to be tested on the road. There will be no freak hills, but any up-grade, however slight, may be observed.)

Silence and Brakes.

(3.) Silence. (Markings will be made by "aural observation." Only those machines, which, in the opinion of the judges, are objectionably noisy, will be penalised.)

(4.) Brakes. (Each brake will be tested separately on the Brooklands test hill.)

(5.) Fuel consumption. (All fuel replenishments during the trial will be carried out by the Union, and a maximum rate of consumption is laid down for each class, varying from 100 m.p.g. (oil, 1800) for solo lightweights to 45 m.p.g. (oil, 500) for the heavy sidecars.)

(6.) Speed. (A speed test of twenty-five laps of Brooklands track will take place on the last day of the trials, the minimum set speeds varying from 30 m.p.h. to 45 m.p.h.)

(7.) Condition at finish of trial—that is, freedom from any undue signs of wear and tear.

> ***"SIX DAYS" DETAILS.***
>
> *DATE — Monday, August 29th, to Saturday, September 3rd.*
>
> *START OF ROAD TEST—Brooklands, 10 a.m.*
>
> *FINISH OF ROAD TEST—Brooklands, Friday, 2nd prox., 3.50 p.m.*
>
> *DISTANCE—739¼ miles.*
>
> *BRAKE TEST—Brooklands (Monday, 29th inst.)*
>
> *SPEED TEST—Brooklands (Saturday, 3rd prox.)*

Only five days, from Monday to Friday inclusive, will be devoted to a road test of the machines, and, as the total mileage is only 739¼, this portion of the trial cannot be regarded as over-strenuous. On the other hand, there are twenty-eight hills having a maximum gradient in excess of 1 in 7, and any of these may be included in non-stop sections and observed.

After the brake test at Brooklands on Monday morning, the competitors (starting at 10 a.m.) proceed *via* Chipping Norton to Bath—a comparatively easy run of 138 miles. On Tuesday they follow a circuitous 155½ mile route to Taunton, ascending seven fairly difficult hills. Wednesday is spent in an out and home run from Taunton, including the well-known hills of Porlock, Lynton, Lynton Station, and Parracombe, and no fewer than ten less famous ascents of more than 1 in 7. Bath is reached again on Thursday night *via* Yeovil—comparatively an easier route than Wednesday and only totalling 135½ miles. On Friday the return journey to Brooklands is made through Winchester, Petersfield and Guildford.

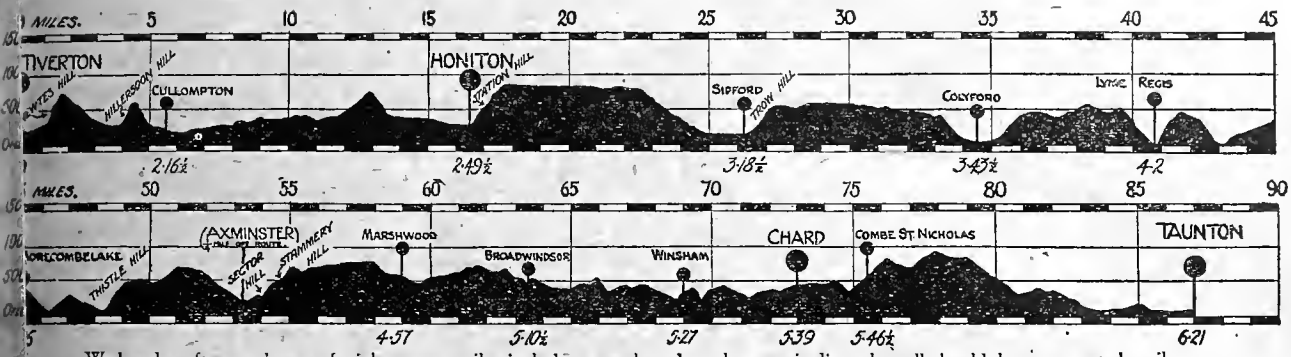
Saturday, as already mentioned, will be devoted to the speed test at Brooklands and the final examination.

Composition of the Entry List.

According to the revised entry list there are ninety-five competitors, made up as follows:

250 c.c. Solo	8
350 c.c. Solo	16
500 c.c. Solo	19
750 c.c. Solo	10
1,000 c.c. Solo	1
*600 c.c. Sidecars	11
1,000 c.c. Sidecars	23
1,100 c.c. Cycle Cars	7

*Includes three 292 c.c. sidecars.



Wednesday afternoon's run of eighty-seven miles includes several moderately steep inclines, but all should be surmounted easily.

POINTS OF INTEREST EN ROUTE AND TIMES OF THE FIRST RIDER.

It will be obvious that, from the point of view of the buying public, these trials are of far greater interest than any previously held by the Union; and, for the benefit of those readers who wish to note the performances of the competitors during the road portion of the test, we append the following tabulated itinerary and map.

MONDAY.

Route.	Accumulating Mileage.	First Competitor's Time.	Hills that may be Observed.
		a.m.	
Broadlands	0	10.00	
Cherry	6¼	10 10½	
Still	9¼	10.20	
Manor	15¼	10.37½	
Maidenhead	21¾	11.00	
Henley	31	11.23½	
		p.m.	
Oxford	54¼	12.33	
Woodstock	62¼	1.00	
Bicester	69	1.18	
CHIPPING NORTON	73¾	a. 1.31½ / d. 2.00	
Northleach	91¾	2.52½	
Cirencester	101½	3.28½	
Cirencester	109½	3.46½	
Malmesbury	113	3.58½	
Chippenham	122¾	4.28½	
Melksham	127¾	—	
Trowbridge	—	—	Ditteridge
Box	133	4.58½	
Bath	138	5.10	

Depot: Bath Tramway Company Garages, London Road.

TUESDAY.

Route.	Accumulating Mileage.	First Competitor's Time.	Hills that may be Observed.
		a.m.	
Bath	0	8.00	
West	2	8.7	Weston Lane
Old Sodbury (nr.)	14½	8.45	
Chipping Sodbury	28¾	9.33	
Wotton	36	9.49½	
Wickwar	40	10.1½	
Chipping Sodbury	44	10.15	
Keynsham	56½	10.52½	Darley Hill
Bishopworth	62¾	11.11½	Dundry Hill
CHEDDAR GORGE	79	a. 11.58 (lunch) d. 12.30	
		p.m.	
Bridgwater	109	2.00	
Spaxton	116	2.21	Buncombe Hill
Kingston	122½	2.40½	Cothelstone Hill
Stogumber	136½	3.30	Pitsford Hill
Wiveliscombe	143¾	3.52½	Axford Hill
Taunton	155½	4.20½	

Depot: Territorial Hall, Taunton.

WEDNESDAY.

Route.	Accumulating Mileage.	First Competitor's Time.	Hills that may be Observed.
		a.m.	
Taunton	0	8.00	
Wellington	7¼	8.20½	
Wiveliscombe	14½	8.40	Whitefield Rocks
Raleighs Cross	20¼	9.00	
Heath Poult Cross	27	9.18	
Timberscombe	31	9.29½	
Porlock	37½	9.50½	Porlock
Lynmouth	49	10.30	Lynmouth, Lynton Station Hill Parracombe
Blackmoor Gate	57	10.53	
S. Molton	70¾	11.36½	
		p.m.	
TIVERTON	89½	a. 12.33 (lunch) d. 2.00	Ash Mill Frankhill Newtes Hill Station Hill
Honiton	106¼	2.49½	
Sidford	116¼	3.18½	
Lyme Regis	132½	4.2	
Morcombelake	136¾	4.16	
Baker's Cross	—	—	Baker's Cross Thistle Hill Sector Hill Stammery Hill
Axminster (nr.)	145	4.40	
Marshwood	150	4.57	
Broadwindsor	155	5.10½	
Chard	164½	5.39	Coombe Head
Taunton	178	6.21	

Depot: Territorial Hall, Taunton.

Lynton Hill, included in Wednesday's run, immediately after the ascent of Porlock.

THURSDAY.

Route.	Accumulating Mileage.	First Competitor's Time.	Hills that may be Observed.
		a.m.	
Taunton	0	8.0	
Wellington Hill	14¾	8.35	Monument Hill
Dunkeswell	21¼	9.0	
Honiton	26¾	9.16½	
Axminster	36	9.44	
Crewkerne	49	10.23	
YEOVIL	58¼	a. 10.50 (lunch) d. 12.30	
		p.m.	
Sherborne	63¾	12.45	
Sturminster Newton	75¼	1.20	
Shaftesbury	92¼	2.10	
Warminster	107½	2.57	East Knoyle
Frome	115	3.18	
Radstock	123	3.40	
Bath	135½	4.20	

Depot: Bath Tramway Co. Garages, London Road.

FRIDAY.

Route.	Accumulating Mileage.	First Competitor's Time.	Hills that may be Observed.
		a.m.	
Bath	0	8.0	
Trowbridge	12	8.33½	
Edington	17¾	8.50	
W. Lavington	23½	9.8	
Maddington	30¾	9.29	
Amesbury	36¼	9.46	
Castle Hill	42¾	10.4	
Stockbridge	56¼	10.46	
WINCHESTER	65¼	a. 11.13 (lunch) d. 12.30	
		p.m.	
Petersfield	84½	1.25½	Wheatham Priors Dean
E. Tisted	94	1.58	
Alton	99	2.11	
Binsted	103	2.23½	Crooksbury Payle Hill
Guildford	120	3.16	
Ripley	126¼	3.34½	
Brooklands	132¼	3.50	

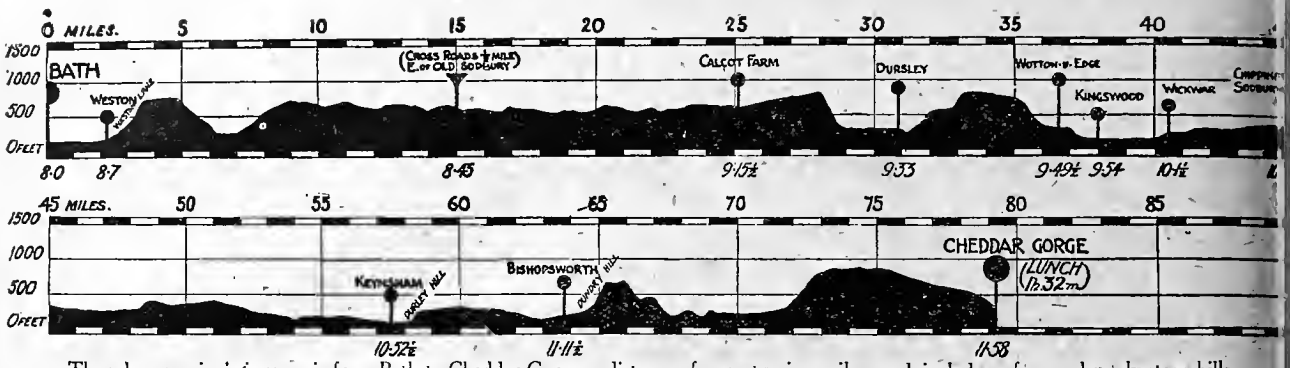
SATURDAY.

Speed Test at Brooklands.

Marks will be deducted for failure to reach, and bonus marks awarded for exceeding, the following minimum rates of speed:

250 c.c. Solo machines	...	30 m.p.h.
350 c.c. Solo machines	...	35 m.p.h.
500 c.c. Solo machines	...	40 m.p.h.
750 c.c. Solo machines	...	42 m.p.h.
1,000 c.c. Solo machines	...	45 m.p.h.
600 c.c. Sidecar machines	...	32 m.p.h.
1,000 c.c. Sidecar machines	...	35 m.p.h.
1,100 c.c. Cycle Cars	...	36 m.p.h.

At the conclusion of the speed test competing machines will be subjected to an examination by the judges.



Thursday morning's journey is from Bath to Cheddar Gorge, a distance of seventy-nine miles, and includes a few moderately steep hills.

Revised and Classified List of Competitors.

95 Entries, comprising 54 Solo and 34 Sidecar Machines, and 7 Cycle Cars (4 Three-wheelers and 3 Four-wheelers).

Types of Power Units Compared: 18 Single Cylinder Two-strokes, 3 Twin Two-strokes, 35 Single Four-strokes, 32 V-twin Four-strokes, 3 Flat Twins, 1 Three Cylinder Radial, and 3 Four Cylinders.

There are 42 Single and 13 Multi-cylinder Solo Machines, but Passenger Outfits have 29 Multi and only 12 Single-cylinder Engines.

CLASS A.—Motor Cycles not exceeding 250 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
1	A. G. Wall (2¼ Cedos)	5.5	17	1	67 × 70	247
2	J. Lidstone (2¼ James)	6	13.3	1	66 × 70	239.5
3	C. H. Hanwell (2¼ Cedos)	5	16	1	67 × 70	247
4	E. Mundey (2¼ New Hudson)	5	15	1	67 × 70	247
5	D. G. Merson (2½ Ready)	6.4	11.35	1	—	250
6	B. Kershaw (2¼ N. Imperial)	6	16	1	64.5 × 76	249
7	D. Prentice (2¼ N. Imperial)	6	16	1	64.5 × 76	249
8	L. Horton (2¼ New Imperial)	6	16	1	64.5 × 76	249

CLASS B.—Motor Cycles not exceeding 350 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
9	J. C. Humphries (2½ Arden)	4.75	19.5	1	70 × 70	269
10	I.F.Anderson (2½ Connaught)	5.5	10.75	1	73 × 70	293
11	G. F. Mason (2½ Connaught)	5.2	14.75	1	73 × 70	293
12	C. L. Sprosen (2½ Connaught)	5.25	15	1	73 × 70	293
13	P. R. Dowson (2¾ Hawker)	5	14	1	70 × 76	292
14	L. H. Wells (2¾ Hawker)	5	14	1	70 × 76	292
15	W. L. Handley (2½ O.K. Jun)	5	14	1	70 × 76	292
16	A. Milner (2½ O.K. Junior)	5	14	1	70 × 76	292
17	J. C. Walker (2¾ Edmund)	5.875	15.25	1	71 × 88	348
18	Graham-Oates (2¾ Edmund)	5	16	1	78 × 81	348
19	C. Williams (2¾ A.J.S.)	5	12	1	74 × 81	349
20	E. Williams (2¾ A.J.S.)	5	12	1	74 × 81	349
21	H. R. Davies (2¾ A.J.S.)	5	12	1	74 × 81	349
22	D. Read (2¾ Ready)	5	13.25	1	70 × 76	292
23	H. F. Edwards (2¾ Coulson)	—	—	1	70 × 90	346
24	G.W.Shepherd(2¾ Beaumont)	5.75	16.65	1	71 × 88	348

CLASS C.—Motor Cycles not exceeding 500 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
25	R. C. Winn (2¾ Douglas)	4.25	10.25	2	68 × 68	499
26	C. W. Vallings (4½ Dunelt)	4	14	1	85 × 88	499
27	B. Cathrick (4½ Dunelt)	4	14	1	85 × 88	499
28	E. Searle (4 Shef.-Henderson)	5.25	14	1	85 × 88	499
29	L.Padley (4 Shef.-Henderson)	5.25	14	1	85 × 88	499
30	A. A. Symes (3½ Martinsyde)	4.5	14.7	2	60 × 88	496
31	H. H. Nicholson (3½ Martinsyde)	4.5	14.7	2	60 × 88	496
32	G. Strange (3½ James)	5.25	14.8	2	64 × 77	496
33	H. F. Fellowes (4 Coulson-B.)	4.5	12	1	85 × 88	499
34	W. L. Danskin (3½ Rudge)	5.3	12.8	1	85 × 88	499
35	F. T. Sibley (3½ Rudge)	5.3	12.8	1	85 × 88	499
36	R. B. Ewens (3½ Rudge)	5.3	12.8	1	85 × 88	499
37	F. A. Longman (3½ Ariel)	4.5	14	1	86.4 × 85	499
38	L. Newey (3½ Ariel)	4.5	14	1	86.4 × 85	499
39	W. Woodcock (3½ Ariel)	4.5	14	1	86.4 × 85	499
40	R. Elliott (3½ Rover)	5.5	16	1	85 × 88	499
41	G. Featherstonhaugh (3½ Rover)	5.5	16	1	85 × 88	499
42	C. Crosthwaite (3½ Duzmo)	5	15	1	89 × 79	496
43	A. J. Wilkes (3½ Rover)	4.88	15	1	85 × 88	499

CLASS D.—Motor Cycles not exceeding 750 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
44	J. Ford (7 F.N.)	4.5	10	4	52 × 82	650
45	H. G. Bell (7 F.N.)	4.5	10	4	52 × 88	748
46	T. W. Buckle (7 F.N.)	4.5	10	4	52 × 88	748
47	W. Leslie Guy (3¾ Scott)	4.5	8.5	2	73 × 63.5	532
48	W. Moore (3¾ Scott)	4.6	8.21	2	73 × 63.5	532
49	W. F. Scott (3¾ Scott)	4.5	8.5	2	73 × 63.5	532
50	E. Foster (6-7 Raleigh)	4.88	11.5	2	77 × 75	700
51	A. Rollason (4½ Ariel)	4.43	13.7	1	92 × 100	665
52	T. Peck (4½ Ariel)	4.43	13.7	1	92 × 100	665
53	H. R. Harveyson (4 Harley-Davidson)	5	13.87	2	69.82 × 76.2	584.02

CLASS E.—Motor Cycles not exceeding 1,000 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
54	J. S. Holroyd (7-9 British-Radial)	—	—	3	75 × 75	991

CLASS F.—Sidecars not exceeding 600 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
55	P. Cunningham (3½ P. & M.)	5.53	18.85	1	82.5 × 88.9	498
56	R. Lewis (3½ P. & M.)	5.53	18.85	1	82.5 × 88.9	498
57	G. M. Townsend (3½ P. & M.)	5.35	18.58	1	82.5 × 88.9	498
58	N. Hall (2½ O.K. Junior)	6.5	21	1	70 × 76	292
59	F. C. North (2½ O.K. Jun.)	6.5	21	1	70 × 76	292
60	W. E. Baylis (4 New Hudson)	5.25	9.2	1	85 × 100	566
61	B. Bourke (4 New Hudson)	5.25	9.2	1	85 × 100	566
62	J. H. Watson (4 Triumph)	5.38	14.88	1	85 × 97	550
63	P. Pehrson (4½ Dunelt)	4.5	16	1	85 × 88	499
64	L. Peaty (2¾ Hawker)	6.25	21	1	70 × 76	292
65	G. W. Ravenhall (3½ Rover)	6	18	1	85 × 88	499

CLASS G.—Sidecars not exceeding 1,000 c.c.

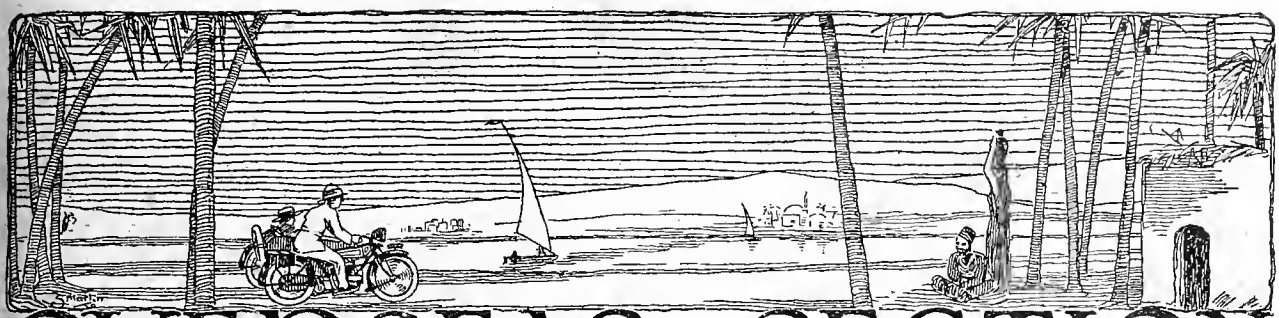
No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
66	J. T. Bashall (6 Martinsyde)	5.5	17.5	2	70 × 88	678
67	E. H. Gifford (6 Martinsyde)	5.5	17.5	2	70 × 88	678
68	W. H. Bashall (6 Martinsyde)	5.5	17.5	2	70 × 88	678
69	F. J. Ellis (8 Matchless)	5.12	15.86	2	82 × 94	993
70	T. J. Ross (7 Matchless)	5.12	15.86	2	82 × 94	993
71	F. O'Brien (7 Matchless)	5.12	15.86	2	82 × 94	993
72	A. L. Cranch (5-6 Rover)	5.5	16	2	70 × 88	680
73	N. Clayton Russell (4 Norton)	5	14.9	1	82 × 120	633
74	G. D. Hardee (7 Matchless)	5.12	15.86	2	82 × 94	993
75	W. A. Fell-Smith (8 Brough Superior)	3.25	10	2	90 × 77.5	986
76	F. J. Watson (6 Ariel)	4.7	14.58	2	73 × 95	798
77	R. C. Davis (8 Chater-Lea)	5	13.9	2	85.5 × 85	976
78	G. E. Stobart (7 James)	5.25	17.74	2	73 × 89.5	749
79	G. S. Arter (7 James)	5.25	17.74	2	73 × 89.5	749
80	H. Boynton (7 James)	5.25	17.74	2	73 × 89.5	749
81	W. E. Singer (7-9 Rudge)	5.3	12.8	2	85 × 88	998
82	F. W. Giles (7 A.J.S.)	5	16	2	74 × 93	800
83	O. Wade (7 A.J.S.)	5	16	2	74 × 93	800
84	Rex G. Mundy (7 A.J.S.)	5	16	2	74 × 93	800
85	M. C. Breese (6 B.S.A.)	5.5	16.7	2	76 × 85	770
86	P. W. White (8 Sunbeam)	4.6	12.6	2	85 × 85	996
87	T. F. Blumfield (6 Ariel)	4.7	14.58	2	73 × 95	798
88	R. Croucher (8 Matchless)	5.12	15.86	2	82 × 94	993

CLASS H.—Cycle Cars not exceeding 1,100 c.c.

No. and Order of Starting	Rider and Machine.	Gear Ratios. Min.	Gear Ratios. Max.	No. of Cyl.	Bore and Stroke. mm.	Cubic Capacity. c.c.
89	N. Chereau (8-9 Blériot Whippet)	4.02	12.31	2	85 × 88	998
90	H. F. S. Morgan (8 Morgan)	4	12	2	85 × 85	983
91	F. Boddington (10 Morgan)	4	12	2	82 × 103	1090
92	S. Hall (10 Morgan)	4.5	11	2	82 × 103	1090
93	A. Fraser Nash (8.7 G.N.)	4	12	2	84 × 98	1086
94	F. Watson (8.7 G.N.)	4	12	2	84 × 98	1086
95	F. S. Spouse (8 T.B.)	5	16	2	85.5 × 85	980

Gear Ratios.

The details of maximum and minimum gear ratios are very interesting. It will be noted that only the three Scotts are relying on low gear ratios of less than double figures while the highest high gear is 3.25 to 1 on W. A. Fell Smith's Brough Superior sidecar.



OVERSEAS SECTION

A Commentary based upon Practical Experience and a Study of Overseas Opinions.

Watersplashes—At Home and Abroad.

THE inclusion of freak watersplashes in one or two recent English reliability trials has given rise to considerable animadversion on the part of both the luckless competitors and the Press. It is argued, and rightly so, that it is most unfair to rob a good machine of the usually hardly earned distinction of a gold medal on account of a failure to navigate a stream that no normally-minded private owner motor cyclist would think of crossing under power. Yet the deepest splash deserves a word or two in its defence, apart from its "entertaining" possibilities and its helpful influence on the club treasury in the matter of reducing the "gold" issue; it reproduces a road condition that sometimes cannot be avoided by our friends overseas, and it proves, or disproves, the airy claims of our magneto manufacturers for complete waterproofing.

On this, and on the following page, are two pictures taken by a Cape Town reader, Mr. N. H. M. Ferguson, when on tour recently; and, although the drifts shown are not quite so deep as the one included in a recent North Wales trial, it would have been all the same if they had! They had to be crossed, simply because there was no other way. Therefore, if the Welsh trial was successful in discovering even one make of "leaky" magneto, it will, perhaps, have served a very good turn to any South African motor cyclists who, on 1922 British machines, may essay a repetition of Mr. Ferguson's tour.

Provided that it is not in a non-stop section, an occasional deep watersplash in English reliability trials is quite in order from the point of view of the overseas motor cyclist. And, if we wish to make the sale of our products world wide, we must study the overseas point of view.

The Paradox of British "Service."

IT is apparent that some of our overseas readers regard the British manufacturer either as a fool or a knave, or both, whose interest in his customer ceases when the customer's cheque is cashed, and who makes motor cycles to be sold and not to be used. Some even go so far as to say that the British manufacturer does not make spares for his machines!

WHERE STREAMS MUST BE FORDED.

Encountered when touring in the ordinary way by a Capetown reader; such a drift as this in South Africa can seldom be avoided by some short switch route as is the case with 99 % of English watersplashes.

Overseas Section.—

Perhaps, by his lack of enterprise in the matter of spares service abroad, the manufacturer himself is to blame; but, in view of the number of letters of appreciation that reach us daily, but which considerations of space prevent us from publishing (it would be easy to fill our correspondence pages weekly with such unsolicitated testimonials alone), we feel that a word or two in his defence is justified. These letters—although admittedly the majority come from the home country, appreciations by overseas readers are not unknown—describe in some cases most remarkably generous treatment, replacing an engine on account of a defective washer being more than once recorded; and, additionally, they illustrate the exceptional promptitude of the spares departments of our leading factories.

Obviously, therefore, it is not the manufacturer who is to blame for neglected overseas customers; it is circumstances, *i.e.*, distance between buyer and seller, plus the system on which he sells his goods, *i.e.*, the lack of system in his spares service outside his own country.

It is a great pity that this should be so, for thus the British manufacturer gains a quite undeservedly bad reputation in countries where he might easily double his sales.

Running alongside the "skeleton" railway bridge in the background will be seen the pedestrians' official path across this South African stream—a giddy affair of three ropes, and obviously unsuited for motor cyclists!

A Selection of Letters from Readers scattered all over the World.

Cut-outs in South Africa.

Feeling on the silence question in South Africa is exemplified by the following letter from Mr. L. E. H. Hamerton, honorary secretary of the Motor Cycle Union of S.A.:

"The motor car to-day is practically silent; and, whilst it is not expected that the motor cycle, with its limitations as to size, will ever attain the same degree of noiselessness as its bigger brother, much could be done in this direction if only manufacturers would give the matter their earnest attention.

"Of late years many manufacturers, realising that noise does not necessarily mean efficiency, have ceased to fit cut-outs to their machines, and it is earnestly to be hoped that the few firms who still fit this attachment may be prevailed upon to discontinue doing so.

"The use of the cut-out and the noisy running of some engines does much to discourage motor cycling amongst the general public, and my council feel that anything which can be done to allow the feeling of irritation which at present undoubtedly exists in the minds of the non-motoring public here, caused by the cut-outs and noisy engines, should receive the hearty support of all who have the welfare of motor cycling at heart.

"The subject of noisy motor cycles has been receiving considerable attention in the South African press; and, unless manufacturers do what they can to remove cause for complaint, repressive legislation is almost certain to follow in the near future."

[For several years the cut-out has been an illegal fitment on motor cycles used in the United Kingdom.—Ed.]

Value for Money in the Philippines.

Trade conditions for the British machine in the Philippines are more than ordinarily difficult, according to Mr. G. H. Golding, who writes as follows:

"I am in the same position as most Britishers here are, as regards backing up the Home Country's products. Much as I would prefer to use an English make of motor cycle, I am forced, if I wish to bring this form of sport within the purchasing powers of my pocket, to support an opposition by getting what is without the least doubt, relatively speaking, the better value for money. Here, of course, the British manufacturer is faced with the 33% tax on all his machines that enter the country, which, combined with the greater initial cost of production, in addition to the high rate of freights, etc., now ruling, renders competition more than ordinarily difficult.

"In Manila, I believe I am correct in saying that we are represented by one machine only. Fortunately, this is the best (in my humble opinion) that exists—the Sunbeam. Although only the 3½ h.p. model, and a sidecar machine at that, it more than favourably compares with the 7-9 h.p. outfits that supply the needs of the U.S. Army.

"An Indian Scout (electrically equipped) costs P.1,100, a peso being exactly the half value of the American dollar. I believe in England the same model is £143, which, even despite the tax, competes with a very fair measure of success with equally non-taxed and equally priced brothers of the United Kingdom."

British Lightweights Wanted in Australia.

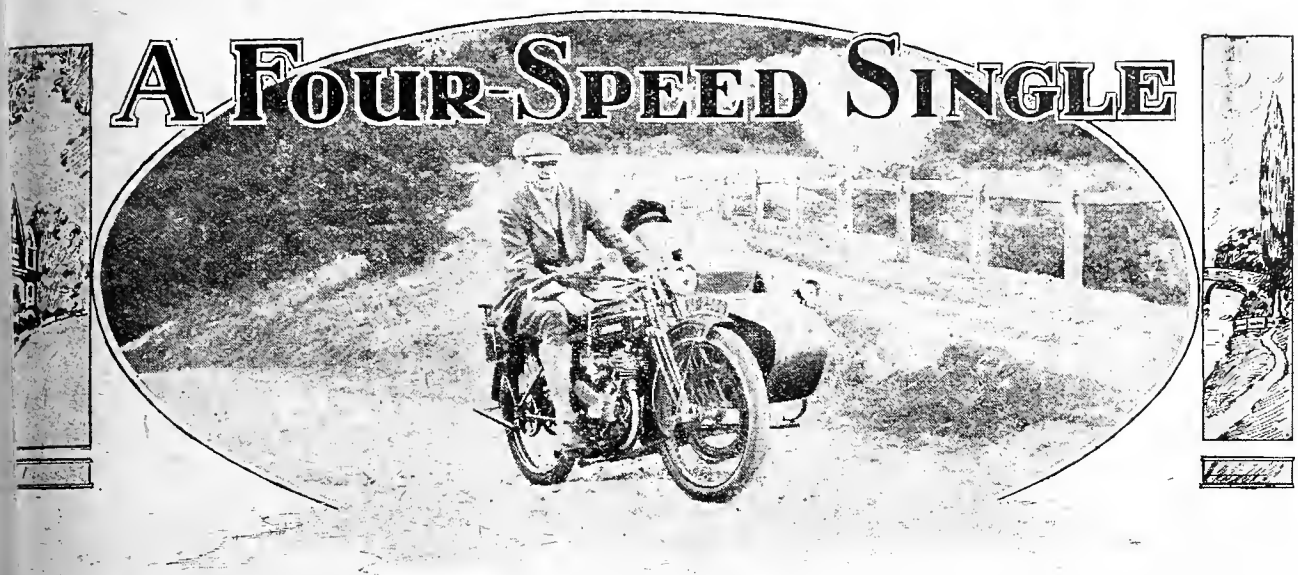
Writing from New South Wales, Australia, "J.H.H." pleads for a greater variety of British lightweights on his market:

"It has occurred to me that British manufacturers of lightweight motor cycles, embodying 2¾ h.p. Blackburne or J.A.P. engines, would be doing a great service to the community of this and similar places if they exported more of their machines for colonial use.

"It must not be imagined that nothing less than a fairly heavy '3½' is sufficient for our needs out here, as such is not the case.

"A man who requires a lightweight four-stroke has little choice other than a New Imperial and a Douglas, and as the present price of Douglas is in the region of £160, there are many prospective buyers who are not in the position to pay such an amount. The consequence is that they must choose between the New Imperial and several of the well-known two-strokes such as the Clyno, New Hudson, Alldays, Allon, and Royal Enfield. Admirable as all these machines are, there are still people who long for more 2¾ h.p. four-stroke lightweights."

A Four-Speed Single



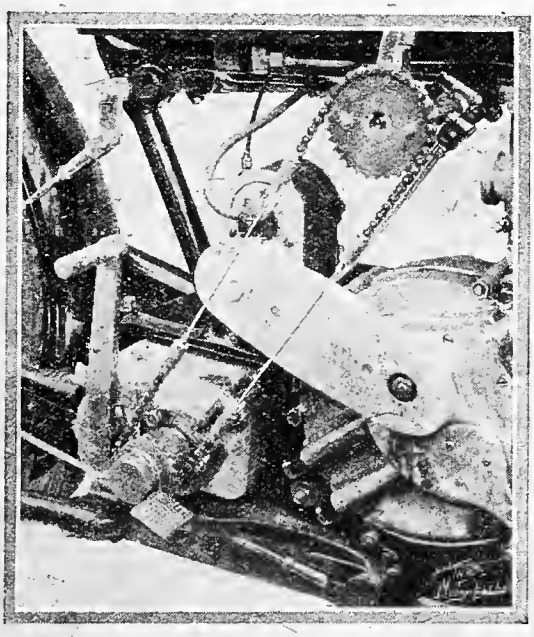
P. and M.'s with Four Speeds in 1922. A Road Test of an A.C.U. Six Days Model 3½ h.p. P. and M. Sidecar.

FOR the first time on record the P. and M. team for the A.C.U. Six Days Trials is this year to consist of three sidecar outfits.

This innovation is rendered practicable by the introduction of a new four-speed gear, which is to make its *début* in the classic event, and the four-speed models will be placed on the market very shortly.

The idea of the makers is to offer a sidecar machine which will realise the condition of being a "go-anywhere" mount in the same sense as the two-speed model has fulfilled that condition for solo purposes. The P. and M. has in the past enjoyed a very excellent reputation as a sidecar machine, its hard pulling, strength, and reliability rendering it unique among low-powered mounts in this respect; but, good as the two-speeder has been, even its most conservative devotees will enthusiastically welcome the addition. The method of introducing the new machine to the public by straightway entering in the most strenuous trial of the year is one which makes a sporting appeal, for only those who have driven in these events realise how searching a test they are for heavy outfits of comparatively low power; but evidently the makers are convinced that the additional "complication" does not detract from their original high standard of reliability set up by the P. and M. machines, while, of course, their sphere of usefulness is considerably increased.

Roughly, the principle is this: Two speeds are given by the selective clutch gear, as in the original model, and the two additional speeds are obtained by driving through the dog clutch gear box instead of directly. Each gear engages in exactly the same method as hitherto—that is, by engagement of the selective clutches, so that it would be possible, if so desired, to pick up from a standstill on any one of the four gears by the engine slowly taking up the load through the familiar expanding ring. While the lever is passing through its motion from one position to another, the dog clutches are engaged or disengaged automatically by the crosswise action—that is, this part of the gear change looks after itself as the lever passes through the neutral position.



Four speeds are obtained on the P. and M. by means of a combination of the normal double chain selective clutch gear and a two-speed dog clutch gear box; the normal type P. and M. gear lever operates all four speeds, and there is no separate clutch control.

The gear lever has two movements, backwards and forwards and inwards and outwards. In passing from first gear to second, the lever is pressed straight forward; in passing from second to third, it comes back, but must be pressed over to the left at the same time; similarly, top gear is obtained by pushing the lever straight forward once more. The backward and forward movement operates the selective clutch gear; the right and left movement operates the dog clutches. Thus, if the gear lever were in second gear position, and it was knocked straight over to the left by a sharp tap of the hand, top gear would be engaged; but in this case it would be necessary to lift the exhaust valve, as the change would be effected simply by slamming in the dog

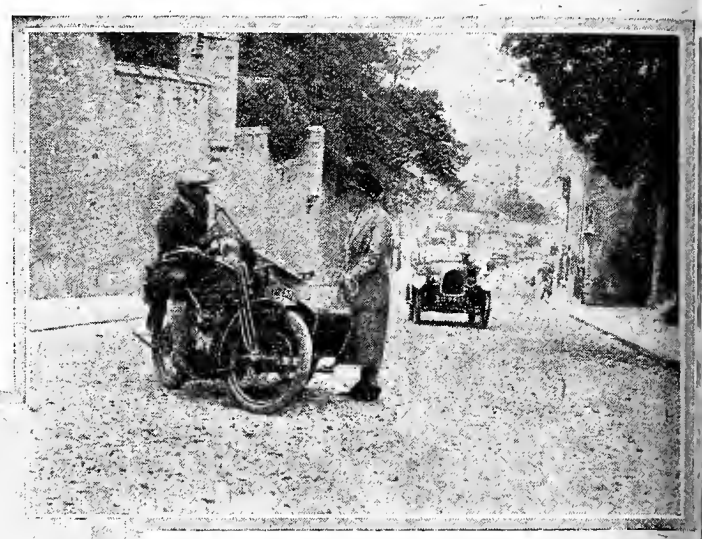
A Four-speed Single—

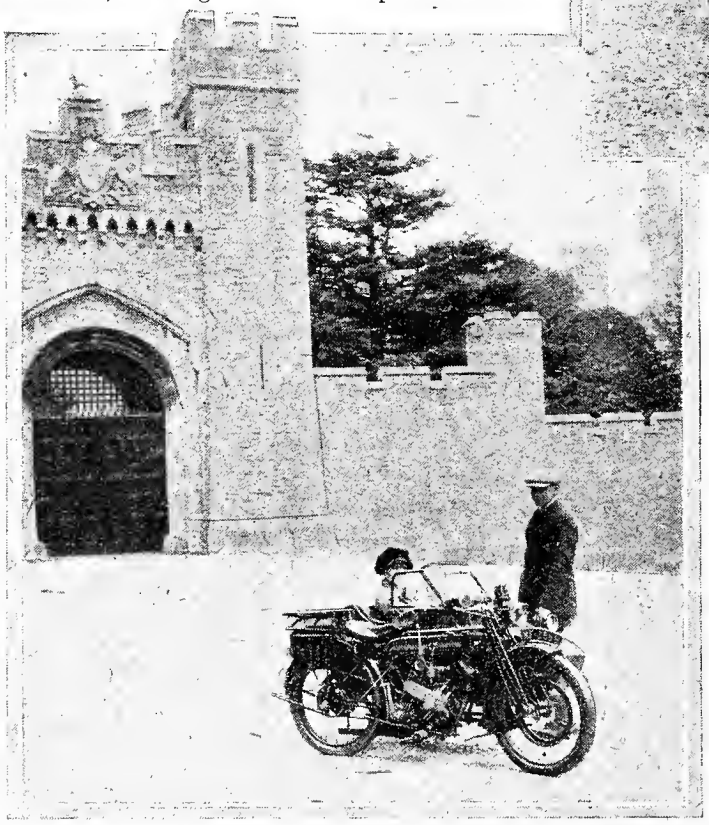
clutch. Having become used to the change, however, all sorts of unique liberties can be taken without risk of damage. Though the action is that of a gate change, no gate is included, as it is unnecessary.

The astute will have gathered that the engine can be started with the kick starter either through the high or low chain ratios, accordingly as the gear lever is in the forward or backward neutral position.

On the Road.

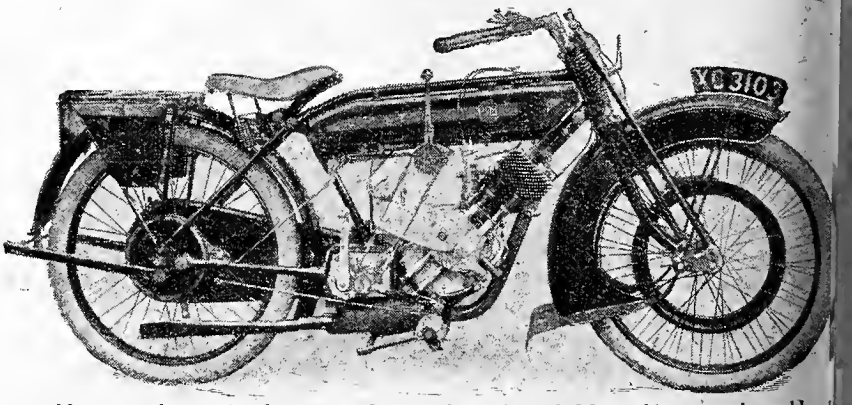
Once having grasped the idea of manipulating the lever, nothing could be simpler than this change, which consists of an ordinary gate action minus the complication of an additional clutch control.





Ample opportunity of judging the advantages of the P. and M. four-speed gear was afforded during a run over the Sussex downs, which finished with stopping and re-starting tests on a short steep hill in Arundel. The illustrations depict scenes in this historic town.

Our trial of the machine lay over the unbeaten tracks of the Sussex downs, and, though of comparatively short duration, it was sufficient to convince anyone being familiar with the make that not only do the two additional gears add enormously to the speed and comfort of the outfit, but also that they render it far more pleasurable and less fatiguing to ride. In the past there has been a tendency to juggle with the controls in order to hang on to "top," owing to the big step down. Now it is simply necessary to engage the third gear immediately the speed begins to flag perceptibly on a hill, and the engine assumes a lively beat, which will carry it over most main road hills. This (the third speed) is a very useful gear, but the second appears less useful. It seems, indeed, that the hill the engine will not take on the third gear is likely to prove a little too steep for the second. The second gear is, however, useful for a long, steep hill, which is, nevertheless, not sufficiently of a freak nature to demand an 18 to 1 ratio. It is more useful in changing up than it is in changing down, for it enables some speed to be attained before changing up on to the higher ratios.

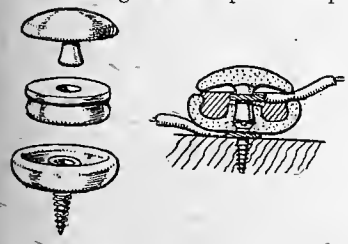


No great changes in the general layout of the P. and M. machine are observable, despite the fitting of the four-speed transmission. These machines will be used with sidecars in next week's Six Days Trials of the Auto Cycle Union.

IDEAS: Useful and Ingenious.

Detachable Electric Connections.

THOSE who go in for much alternate sidecar and solo work with the one electrically equipped motor cycle find that considerable time is wasted in breaking and re-making the sidecar lamp and, possibly, the battery connections. This idea of making use of push-on spring



Showing how push-on studs, normally used for sidecar aprons, etc., may be used as electrical connections.

studs of the "cloth-to-wood" variety such as are normally used for sidecar aprons, etc.) therefore merits consideration. The studs are simply screwed into the sidecar body, the wires being fitted as shown. Some leakage of current may be expected in wet weather, however.—(Miss) R.L.

An Electric Thief Alarm.

FOR those who must often leave their machines unattended in city streets, this suggestion of a thiefproof alarm is much to commend it. It consists of a "concealed" switch for the electric

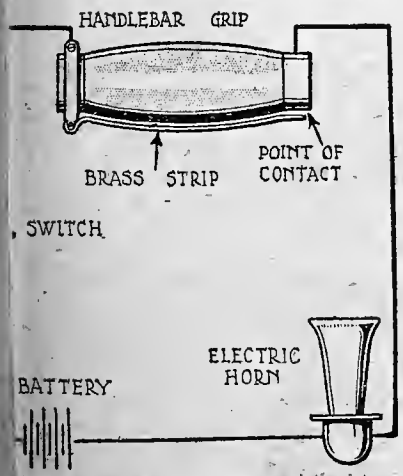
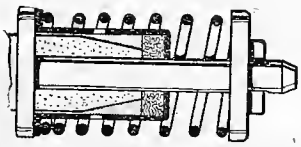


Diagram of a neat handle-bar thief alarm for electrically equipped machines.

horn fitted to the handle-bar grip in such a manner that, immediately the handle is gripped, the horn is set in action. Of course, there is a main switch for putting the device out of action when the machine is in use by the owner.—A.J.K.

Air Leak Preventers.

AS soon as the inlet valve stem begins to wear, an engine loses a certain amount of efficiency through air leaks; a properly constructed air leak preventer, besides sealing the leak, minimises wear by retaining a lubricating

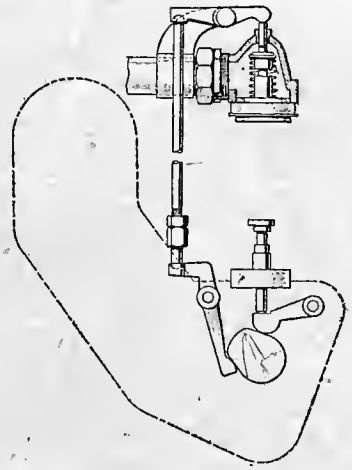


Sturmey-Archer clutch spring boxes make quite efficient valve air-leak preventers.

medium, such as graphite, on the valve stem. In this case a Sturmey gear box clutch spring box has been utilised to hold a felt washer against the valve stem, as shown in the sketch.—G.V.N.

Conversion to M O.I.V.

DETAILS of a conversion from automatic inlet valves to mechanically-operated overhead inlet valves are shown on the accompanying drawing.

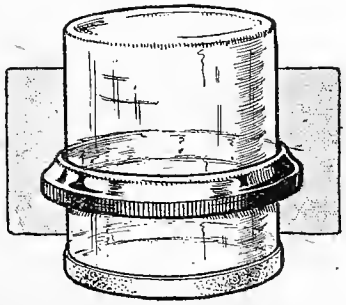


An ingenious conversion from automatic to mechanically operated valve gear.

Beyond the fact that the overhead rocker is set at a slight angle across the frame, the sketch is practically self-explanatory. The existing inlet gear is only slightly modified, and the existing exhaust cam now operates both valves. This idea in its general application might well be adapted to several types of old automatic inlet valve engines in good condition.—A.H.

An Emergency Drip Feed Glass.

DRIP feed glasses are more easily broken than replaced. A satisfactory substitute is an old glass bottle cut off at the end. The cutting process is not difficult if a deep file cut be made where one wishes the glass to break.

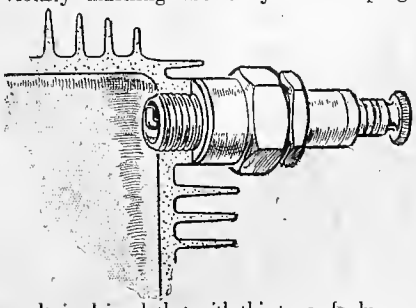


How to improvise a sight feed glass from an old bottle is described in the accompanying paragraph.

Then run a red-hot iron all round, when a sharp tap will cause the end to fall away. This done, a rubber band stuck around the bottom forms a good rim grip. When set, it may be secured in position by means of the usual locking nut.—G.H.H.

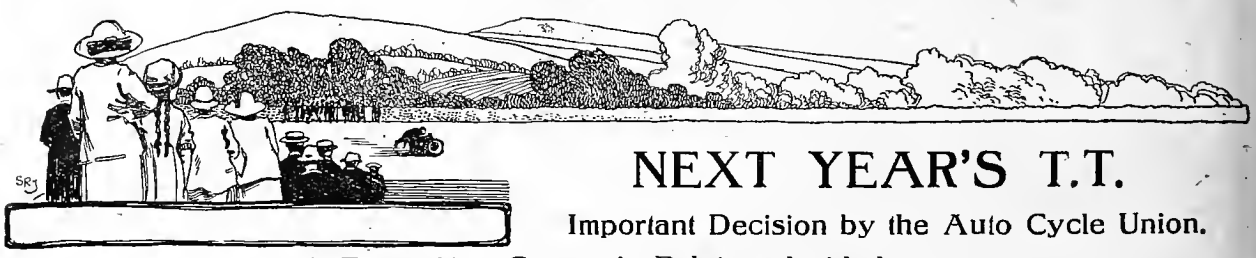
An Easy Starting Tip.

STARTING is facilitated in the case of engines that have inclined or horizontal plugs by the use of the type of plug that has the central electrode bent over, provided that the plug is inserted in the cylinder in a certain position. This position is with the central electrode pointing upwards (as shown in the sketch), and it may be ensured by previously marking the body of the plug.



It is claimed that with this type of plug this setting gives improved starting.

The reason is that with this type of plug used in the position shown, oil or moisture cannot accumulate at the gap in the same manner that it can with other varieties, or with this pattern, should it be fitted with the central electrode turned down.—E.S.



NEXT YEAR'S T.T.

Important Decision by the Auto Cycle Union.

A Thirty Mile Course in Belgium decided upon.

THE Tourist Trophy races are to be held in Belgium during June, 1922. This important decision was reached by the Competitions Committee of the A.C.U. on the 15th inst. It will be recalled that there has been much discussion in the past with regard to the most suitable course for the classic event. England is, unfortunately, ruled out, since a special Act of Parliament would be required to sanction the race, and it is most improbable that such an Act could be carried through. Ireland has been suggested, but the state of the country is not encouraging at the present moment. Thus, the choice is limited to the Isle of Man or a Continental country.

The former place has always been selected in the past, and the Manx course has been looked upon as an inseparable part of the Tourist Trophy races. Nevertheless, there are several reasons why a change has been considered. It has been stated that modern machines are too fast for the course, but there is no unanimity on this point. In addition, the event has not received the wholehearted support of all the Island inhabitants.

Therefore, it comes as no very great surprise to find that the invitation of the *Federation Motocycliste Belge* has been unanimously accepted by the A.C.U.

Details of the New Course.

The new course is about 50 km. (31¼ miles) in length, and was recently inspected by the Secretary of the A.C.U. It starts just outside Spa, where the grandstand will be erected, and climbs the long 5 km. (3⅜ miles) hill referred to in our report of the Belgian Grand Prix as "one of the longest and straightest hills we have ever seen." It touches the course utilised on the 9th inst. near Malmédy, and, climbing all the time, turns a corner and finally reaches the summit, Baraque Michel (formerly in Germany), over 2,000ft. above sea level, a higher altitude than the summit of the road over Snaefell. It then passes Jalhay, and, steadily descending, with two hairpins near Hoigne, reaches Spa again. The country is undulating and wooded, extremely beautiful, and has wide, broad roads as smooth as wood-paving. The summit at the Baraque Michel is open moorland country.

The new course may be described as fast and safe, and there will be many opportunities for rapid acceleration. So far as the conditions of the race are concerned, these will be exactly the same as this year. There is a Senior race for motor cycles with engines not exceeding 500 c.c., a Junior race for motor cycles with engines not exceeding 350 c.c., and a special class for 250 c.c. engines. This latter class, inaugurated for the special encouragement of lightweight motor cycles by *The Motor Cycle*, which journal has always offered a special trophy, will be given more prominence than has hitherto been the case. The organisation will remain entirely in the hands of the A.C.U. of Great Britain, though doubtless the hearty co-operation of the officials of the F.M.B. will be utilised. The municipal authorities at Spa and the Belgian Government are lending their assistance, and we understand that 1,000 troops to patrol the course are to be placed at the disposal of the A.C.U.

Special facilities have already been secured, including favourable assurances as regards railway and steamship services by the G.E.R., concessions in respect of Customs, and special fixed tariffs to be charged by the hotel keepers in the Spa neighbourhood.

Interview with the A.C.U. Secretary.

As may be imagined, we found Mr. Loughborough, who has lately returned from the Continent, to be extremely enthusiastic regarding the running of the T.T. in Belgium. In answer to our question, "Who is responsible for the idea?" he replied:

"I really cannot tell you. The matter was discussed at some length by the Management Committee and the decision was a matter of general agreement."

"Why do you not run the race in the Isle of Man again?" we ventured.

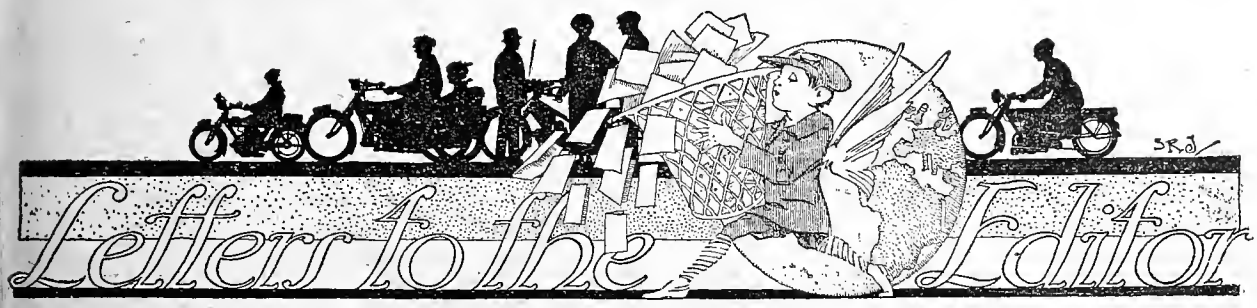
"In the first place, the course is not suitable for 500 c.c. machines, as was clearly evidenced by the fact that this year a Junior machine won the Senior race. Secondly, it is not putting it too bluntly to say that we were somewhat bled by the Manxmen. We were not our own masters, while you know as well as I do the difficulty of transport and absence of any concessions by the I.O.M. Steam Packet Co. Thirdly, and lastly, there is to be a Car T.T. this year, and this would have meant either holding the race early in May or not until September, while if the latter date had been chosen the roads would have been badly cut up by the racing cars."

"Why did you choose Belgium?" we queried.

"Simply because we were looking for the most central spot in Europe within easy reach of all countries interested in motor cycle racing. Spa is easy of access from Holland, France, and Switzerland, and is more comfortably reached from England than the Isle of Man. I would like you to say," stated Mr. Loughborough, "that almost all the members of the trade to whom I have spoken about the idea are distinctly in favour of it. I think it highly desirable that our motor cycle trade with the Continent should be encouraged, and I am sure there is an enormous field the resources of which have as yet hardly been touched."

* * *

Some important opinions upon the decision of the A.C.U. to hold next year's T.T. in Belgium will be found on another page of this issue.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

'OR THE BOY STILL AT SCHOOL.

Sir,—With reference to the letter received by you from 'Public School Boy," I should like to point out that my lub caters especially for the boy still at school. He pays o entrance fee and only half subscription. As many events s possible are run during the holidays. During the present oliday we have a handicap race at Brooklands (August 7th), a night trial (September 3rd), and a social Sunday un (September 11th). H. R. BROWNING,

Hon. Sec., Public Schools M.C.C.

NDERSIZE TUBES FOR OVERSIZE TYRES.

Sir,—I burst an inner tube on my new sidecar when ding without anything going wrong with the outer cover, d on examination I found the size of the tube to be too all. A 700×80 mm. size, the tube measures on the flat rely 3in., and other tubes of the same make and mark easure 3⅜in. I have taken the matter up with the makers, d find they have reduced the size of the tubes, and only th difficulty have I been able to get tubes of the proper e for 700×80 mm. tyres.

I have tried one of these standard tubes by inflating it thout expanding it, and it measures 2in. across, but an mm. tyre is over 3in. on the outside. This shows a eat expansion on the tube, and it is no wonder that they rst. COMMONSENSE.

Barry.

GALITY OF "DUST MULCHING."

Sir,—Our good friend, "Ixion," in his "Occasional Comnts" recently refers to the cyclotracteur race from Putney l to Wisley Hut, and says that, as the device cannot eed 20 m.p.h., the "race" was perfectly safe and legal. hink he must have forgotten the Highway Act of 1835, ich prescribes that it is an offence for any person to play tball or any other game on any part of the highway to t annoyance of any passenger or passengers. With the chines themselves, the escorting fleet of motor cars, and er attendants and circumstances, it would not likely be cult to prove the annoyance.

is also an offence under the same Act to lay any timber, ne, lime, soil, ashes, rubbish, or other matter or thing tsoever upon any highway to the injury, interruption, or sonal danger of any person travelling thereon, and it is h time the institutions which look after our interests took ceedings under the Act against persons, whoever they m be, who lay thick carpets of dust and other such ructions on our roads. DOUGLAS LEECHMAN.

E LAW AND THE LONG EXHAUST PIPE.

r,—With reference to the letter from "Fed Up," in your e of the 11th inst., if the writer is so foolish as to sell his 3½h.p. Norton on account of it being fitted with a straight exhaust pipe and fishtail muffler, that is his own affair. He m not be aware, however, that there are hundreds of Norons and Sunbeams on the road fitted with this type of exhaust, the owners of which have never been interfered with by the police. "Fed Up" apparently had the misfortune to encounter an extra officious constable; but that is no reason wh he should condemn his machine. Even riders of standard Triumphs have been prosecuted before now on account of the exhaust arrangements of their mounts.

a matter of fact, it was recently reported in your paper th a summons against a Norton owner was dismissed, as the Court held the view that the large diameter long exhaust pipe and fishtail muffler in question constituted a silencer. Anyhow, it is not a very difficult matter to fit an expansion chamber of the usual type to a Norton, and "Fed Up" could get this done at any good garage.

As regards the letter from the gentleman who calls himself "The Owl," perhaps the writer would be so good as to inform us how he would propose to get the same degree of silence from a single-cylinder air-cooled unenclosed engine running at a high number of revolutions as from a six-cylinder water-cooled engine which is boxed up in a bonnet, and which is turning over at a fairly moderate speed?

A. ARNOLD.

DERBYSHIRE AS A TOURING GROUND.

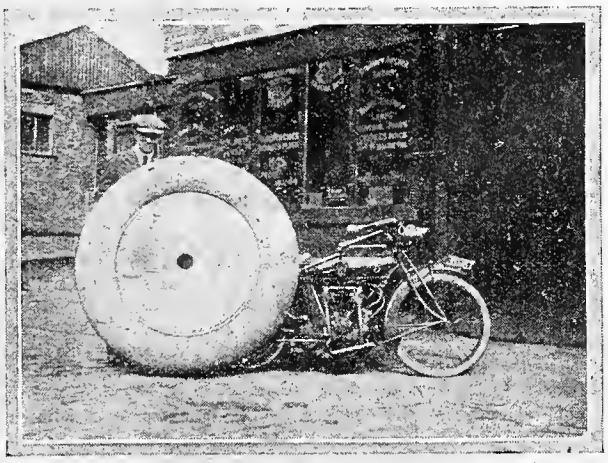
Sir,—I was pleased to notice Mr. A. R. Innes-Smith's appreciation of Derbyshire scenery in a recent issue of *our* paper, and I should like to extend to all motor cyclists a hearty invitation to visit the county.

I have toured Wales on a push cycle and on foot, and the Lake District also on foot; but I always feel that I have a long way to go to beat my own county.

To my mind, the secluded beauty of Dovedale, the massive grandeur of Monsal Head (of Ruskin fame), and such places as Hathersage and Hope are ideal. When travelling, I avoid main roads, since I find the surfaces of the byroads are excellent. I find, however, many severe gradients, long climbs, and freak hills; but I have yet to find the hill that my 3½ h.p. Ariel sidecar will not surmount. Prospective visitors need not, therefore, be afraid of the hills. There is, as your contributor says, usually a choice of a rush up a veritable house side, or of a long strenuous second gear climb.

The county abounds with hotels and country inns, at which one can usually find accommodation. Signposting, however, is not of the best. CH 1588.

Derby.



PUNCTURES NOT A ONE MAN TASK.

Although fitted with 28 × 3in. tyres, the Indian, which belongs to Mr. J. J. Shaw, of Sheffield, looks decidedly under tyred in comparison with the mammoth 1,500 × 300 mm. Palmer cord on an aeroplane wheel.

WHICH IS THE MOST SILENT MACHINE?

Sir,—I thoroughly endorse "The Owl's" views on silence. In my opinion, the value of a mount is much enhanced by its (comparative) silence. My experience of silent machines is mostly confined to towns. I consider the Zenith easily the quietest, with its long wide bore exhaust pipe, and its beautifully mellow note. Surely the note of an exhaust is almost as important as the volume of its sound. I place the 3½ h.p Sunbeam next. When going slowly the engine seems to be pumping from a deep well, from its sound. Four-cylinder machines are, of course, very silent. I have not noticed the new Humber, which has a great reputation for quietness. I may add that Zeniths are extremely popular here, as is also *The Motor Cycle*—only more so!

Cambridge. M.E.L.

Sir,—In reply to your correspondent "The Owl," who asks which is the most silent machine, I should say, in my humble opinion, that the P. and M. fitted with a 1919 pattern silencer would take some beating.

The P. and M. has no gear box to make any noise whatever, and as the chains are enclosed and oiled automatically from the engine these give out a minimum of sound.

A friend of mine who has owned two Triumphs, two Nortons, a Sunbeam, and a Bat-Jap, came a spin with me on my P. and M. sidecar some little time since, and he declared that the P. and M. was the most silent and the most "perfected motor cycle" he had ever ridden. He now owns a new P. and M. himself.

I have no interest with Messrs. Phelon and Moore, other than being a very satisfied owner. P. AND M.

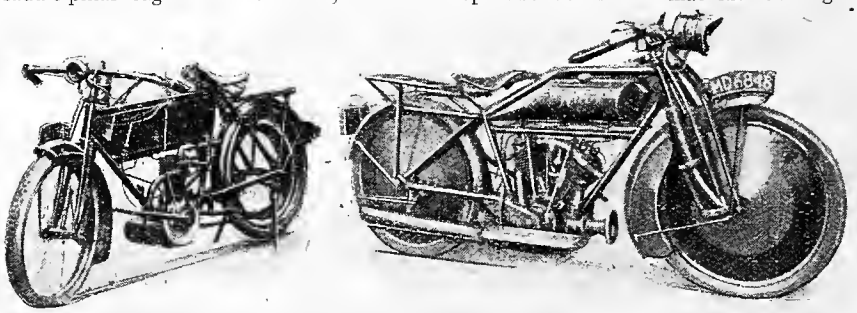
Wolverhampton.

STRIKING MODERNISATION.

Sir,—Accompanying are illustrations of an old-fashioned machine that came into my possession in 1915, which I have since entirely redesigned and endeavoured, as nearly as possible, to bring up to date.

As can be seen, it was a single-cylinder 2¾ h.p. Kerry, with battery and coil enclosed in the forepart of the square tank.

I first of all scrapped the tank, and, having sawn off the saddle-pillar lug from the frame, bent the top tube down until it suited the angle of the new lug I obtained (in order to lower the riding position to conventional proportions), and, having unbrazed the rear forks, I shortened and reset them to suit.



Remarkable modernisation: (left) before and (right) after Mr. A. M. Wright's re-building of a 2¾ h.p. Kerry, which he describes in the accompanying letter.

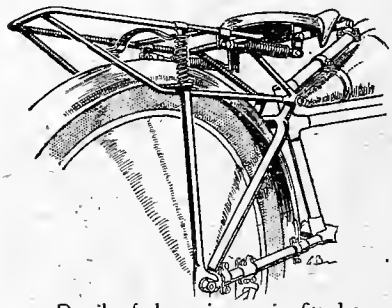
I next obtained a tank of the straight cylindrical variety, the rear end of which I sliced off, and having cut certain of the metal away along the top, lapped and resweated it together, making it to fit my redesigned frame.

The first problem was to stop the side play of the front wheel, which, being mounted on the old rocker system, persistently wore the rubber from the tyre walls by rubbing the forks just below the fork crown.

This was successfully checked by fitting extra forks (shown in illustration), which move up and down with the wheel, but are prevented from moving in any other direction by sliding inside a short tubular guide, pivoted between two plates securely bolted to the crown clip with the existing bolts. The spring was suited to take the extra weight of the twin engine the reconstructed machine was to carry.

I next turned my attention to the rear portion of the machine, being determined to design a sprung carrier which could claim to be a portion of the machine and not a clipped-on accessory.

I first of all bridged two tubes with a 12 gauge strip of steel, and then forked the lower ends to clip on the rear wheel spindle. To this bridge I attached half of the rear mudguard, and secured the rear stays to the fork ends. I then bridged two more tubes in the same way, these being made to slide in the former, and, having slipped a coil spring on each side before inserting the sliding tubes, I had the foundation of the carrier, which, pivoting on a special pivot mounted to the saddle clip, moves up and down on the sprung tubes without any sign of side play. The whole is so arranged that on loosening the rear spindle nuts and slightly expanding the carrier forks, to disengage two washers specially designed to lock the fork to the spindle, the entire unit can be raised right over the tank, bringing up the rear half of the mudguard with it, thus giving access to the rear tyre. The saddle I hung from two lugs on the carrier, as shown.



Details of the spring carrier fitted to Mr. A. M. Wright's 5 h.p. Meteor, late 2¾ h.p. Kerry.

Having completed the frame, the next problem was fitting the Rex engine. I had some difficulty in finding a place for the magneto without further structural alterations to the frame or engine. However, I conceived the idea of placing it in the unconventional position shown in the illustration and running it from a countershaft mounted through the old pedalling gear bearings, the drive from the engine just centring there to a nicety, the only drawback being lack of adjustment for the primary chain, which, however, has given no trouble up to the present. At the time of writing, the machine has no gear or clutch, being purely a sporting mount. The engine is 5 h.p., with direct drive by leather belt. The whole machine as it stands weighs only 198 lb.

A. M. WRIGHT.

DEFENDING THE HINGED FORK.

Sir,—With reference to that portion of the letter signed "Warum," in your issue of August 11th, relating to the design of front forks, your correspondent asks for a defence of the type fitted to the Beardmore-Precision, because the fork is hinged at the crown.

We would ask him to note that when a fork is so constructed there is only one journal bearing, and that structurally the bicycle is as rigid as though it were unsprung, and that the bearing is of such proportions as to resist wear.

There appears to be a misapprehension in the minds of many motor cyclists as to the functions of springs on vehicles. The object of the spring should be to damp out road vibration at the point of contact of the wheel with the ground. If it were possible to do this without any joints at all, as in a four-wheel vehicle, it would be an advantage, but, failing this possibility, the designers should endeavour to reduce the number of joints to a minimum.

Successful springing is accomplished by as nearly as possible keeping the unsprung weight to the wheel itself, and can only be obtained when the spring has sufficient amplitude to give a slow action and a correspondingly slow reaction. Springing devices in which short spiral springs are used, whether in conjunction with links or a rocking motion, are open to objection because of the quickness of the action and reaction which prevents the road shocks being wiped out.

In racing machines, whatever the type of springing adopted, the general practice is to use such strong springs and joints as to bring the machine to an approximately rigid type.

FRANK E. BAKER, Director,
For F. E. BAKER, LTD.

GUINEAS OR POUNDS?

Sir,—The attitude of motor cycle manufacturers on this matter reminds one of King Charles II.'s questions to his Court Physician:

"Pray, sir, can you tell me
Why all physicians take
A guinea for their fee,
When we no guineas make?"

nd of the doctor's reply:

"The answer, sire, is plain,
They're loyal and unwilling
That a Sovereign e'er again
Should be left without a shilling!"

-as was often the case with the Merry Monarch during his tile in the Commonwealth period. MEDICUS.

Brackley.

HERE ARE THE SPRING FRAMES?

Sir,—The letters on the above subject from "Old Timer" nd other correspondents are very interesting, as are the marks on motor cycle comfort, or rather the lack of it, from our able contributor "Ixion."

Having owned machines of many different makes, I have me to the conclusion that the riding position has fully as uch effect on comfort as have springs.

At one time I owned simultaneously two British sidecar tfits, and although the equipment of both was practically entical (as far as provision for comfort went), yet the riding sition of outfit "A" was so infinitely better than that of B" (a machine of very famous make) that I could ride a ng journey on the former without the least discomfort, when similar distance on the latter would leave me tired out, with uscles stiff and aching.

The more machines I ride, the more am I convinced that if nufacturers would pay more attention to this question of iding position" we should hear far fewer complaints on the l scores of bad roads and discomfort.

J. T. SHILLITO.

Sir,—Since writing to *The Motor Cycle* asking for your nders' opinions of spring frames I have purchased a P.V., th Blackburne engine.

The rear springing is most luxurious, and is a revelation er riding a rigid frame. Its appearance is pleasing—in t, a second look is necessary to see that it *is* a spring frame. ere is an absence of shackles and other impedimenta to ar and rattle, and the frame is so constructed that it is olutely rigid laterally, and the makers guarantee it to be from side play for all time.

ornering is as easy as with a rigid frame, and steering is fect at speed. The whole machine is sprung, and not just foothoards and saddle.

o the man requiring comfort, and who knows a sound ineering job when he sees one, the P.V.-Blackburne or J.P. will appeal. OLD TIMER.

axmundham.

MANUFACTURERS AND THE A.C.U. SIX DAYS TRIAL

Sir,—After reading your article on the above, it is ly self-evident why several manufacturers are not supting the trial. I think that "funk" sums the reasons It would appear that when the regulations of a trial lax and there seems a fair chance of 90% of the entry aining "golds," the makers support it, and only those se productions figure amongst the 10% of failures grouse, when the regulations are stricter, so that it seems that 20-30% will obtain "golds," which is as it should be, the makers shy.

last year's "Six Days" some steep hills were included ch accounted for most of the failures—very largely owing ad driving—and the makers raised a shout against freak his. This year the Union has decided to include tests of chnical nature in place of these hills, so that the onus of are will hear more on the maker than on his jockey. ce (long exhaust pipes and Kingston police court); es (when will the horse-shoe front brake finally be pped?); petrol consumption (120 m.p.g. in advertisements 80 m.p.g. on the road). If the makers are frightened, let stay out of the trial, but why do they advertise their of failure by making a fuss? Besides, destructive cism is not very difficult of accomplishment.

F. H. BEVAN.

Sir,—The silence test has given a lot of dissatisfaction among manufacturers, who fear the personal prejudices of the expert judges, in whose minds certain makes may be unconsciously doomed beforehand.

Would not a good compromise be for the judges to be five or six absolutely independent gentlemen, who had never ridden a motor cycle and had no knowledge of its mechanism? They could sit with their backs to the passing machines and simply record their opinion against a number.

This would be judging the machines from the standpoint of the public, and it is the public who object to the unusually noisy motor cycles, more so than the riders, the latter seldom hearing much of the noise of their own exhaust.

FRANK WHITWORTH.

Sir,—As "Ixion" points out, this year's A.C.U. Six Days Trials are to show what modern motor cycles can do, and I think that a manufacturer who does not support them, unless he has some very good reason, as good as owns that the test is too much for his machine. This year's trial is going to be of great use to the potential buyer, for a machine securing a gold will have done a great deal to prove its efficiency.

Now, looking through the list of entries, I see there is only one Triumph entered, and that by a private owner. Is it too much for a Triumph? As a private owner, I say No! But why has it not got the Triumph Co.'s support? I am very glad to see Triumphs back again in trials and races. Was it bad luck or lack of organisation that lost them the Grand Prix? If they had paid more attention to details, such as oil tanks, would they have won the T.T.? What is preventing the manufacturers of Sunbeams, Brough-Superiors, Scotts, Raleighs, and all the other makes which have not entered? Is it too much for all of these? I think it is a great pity that just when the A.C.U. has organised a trial which will do some good the trade fail to support it. My congratulations to the A.C.U. for its splendid trial to be; also, good luck to the plucky little Hawkers.

London, N.12. TRIUMPH MC 8209.

IN THE SHADE OF THE PALMS.

A reader in Alexandria, Egypt, forwards the above pleasing little snapshot of his daughter with a Triumph outfit on the Alexandria-Cairo road.

CHAIN STRAPS FOR LEGGINGS.

Sir,—I notice that "Ixion," in his "Comments," deplores the use of leather as instep straps on waterproof leggings, and wonders if any genius can devise a better method of fastening the aforesaid leggings.

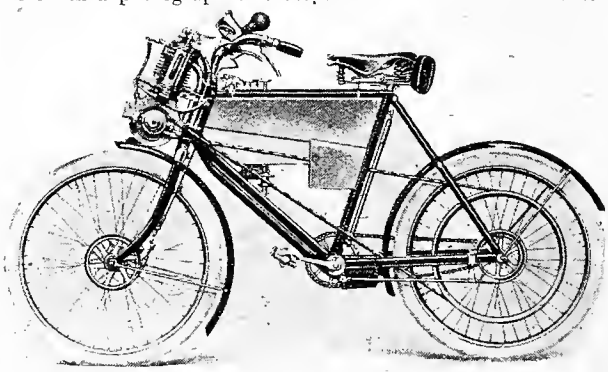
Not being a genius, but still living in hopes, I wondered if he had thought of trying a light chain, as used on spurs, in place of the strap. The chain would be passed under the instep and hooked on to metal studs set in the material of the leggings, and the studs in turn would have to be backed with leather to prevent them wearing the footwear.

I hope that his idea may relieve his mind and also be of some real use to him. D'A.S.G.

Southport.

TWENTY-THREE YEARS AGO.

Sir,—Following the letter published by you from Mr. Percy Richardson in your issue of the 4th inst., we enclose herewith a photograph of a Royal Enfield machine manufactured by us in 1902, which, we think, will be of interest to your readers, illustrating as it does the vast strides made by motor cycle manufacturers during the past twenty years.



Referred to in the accompanying letter from the Enfield Cycle Co., Ltd., this lightweight—a "heavyweight" then—was in 1902 the leading model of the company.

THE ENFIELD CYCLE CO., LTD.

WHAT THE A.C.U. HAS DONE.

Sir,—The letter of your correspondent Mr. Bernard Siffken, appearing in your issue of August 18th, calls, I think, for some answer, as quite a wrong impression may be gathered regarding two points with which he deals.

On the subject of taxation, it is entirely wrong to imply that the Auto Cycle Union put up no fight on behalf of motor cyclists. Whatever criticisms may be offered respecting the present regulations, there can be no question that the present taxation of motor cycles would have been on a much more unsatisfactory basis but for the pressure brought to bear on the Government by the Auto Cycle Union through the Motor Legislation Committee. The modifications of the very drastic scheme originally proposed by the Government were only secured because the Auto Cycle Union, in co-operation with the Manufacturers' Union, was able to present a single and undivided expression of view, which was finally adopted *in toto* by the Ministry of Transport.

When one remembers that the Government originally proposed to tax motor cycles on a horse-power basis, calculated on the bore of cylinder, or cylinders only, and, when this was defeated, endeavoured to impose a minimum annual tax of £5 and later £3 on all motor cycles, it will be appreciated that the concessions secured by the Auto Cycle Union are very real. It was only after a long and strenuous struggle that the 30s. tax for machines under 200 lb. in weight was secured, and by constant pressure up to the last minute in the House of Commons that the scale applicable to a light sidecar was reduced from £4 to £2 10s. I gladly acknowledge the excellent work which Major Stenson Cooke accomplished, but to imply that the Auto Cycle Union did nothing in the matter as Mr. Siffken appears to, is entirely wide of the facts.

Your correspondent's assertion that "while the A.C.U. loses 40% of its membership, the A.A. still forges ahead," is also unjustified. Is it not a fact that since the A.A. raised its subscription its motor cycle membership has also decline Your correspondent would not, I think, find any satisfacti in the fact from the motor cyclist's point of view that t increase of the A.A. membership is entirely accounted l by car members. I think he will admit that motor cycli should be looked after by a motor cycling body, and t only organisation whose efforts are entirely devoted to tl object is the Auto Cycle Union.

T. W. LOUGHBOROUGH, Secretai
The Auto Cycle Union.

DO TWO-STROKE CYLINDERS WEAR RAPIDLY?

Sir,—It may be of interest to owners of Villiers tw stroke engines to know the way in which I cured mine the objectionable hissing noise when wheeling the machir All I did was to take the valve cage from the top of t cylinder and drill three $\frac{3}{16}$in. holes in it. The engi is almost quiet now, and no harm has been done to t cage.

It would be interesting to know if two-stroke cylinde wear as well as four-stroke ones. Having so many holes ports, I should hardly think that a two-stroke cylind would wear round and parallel for the same length of tir as a four-stroke. W. J. STEVENS.

SUMMARY OF CORRESPONDENCE.

We have received a number of letters testifying to t genuineness of the offer of the Elite Rubber Co. to refu the purchase money to every hundredth customer.

"G.C." (Aberdeen) feels that he is speaking on behalf every competitor in the Scottish Six Days when he express his thanks to the organisers of the Pratt's petrol servi throughout the trial.

"L.S.O." (Birmingham) describes a ride from Birmingha to Llandudno and back on a B.S.A., which he complet in well under twenty-four hours.

Miss Maud Nelson, 7, Effingham Road, St. Andrew's Par Bristol, wishes to return a pocket knife to the driver of t Harley-Davidson sidecar who repaired the rear tyre of h Martinsyde outfit on the road near Camelford recently.

"Scott" complains that drivers of large private cars a generally less ready to dim their glaring head lamps on mee ing other vehicles than any other class of road user.

Mr. Geo. Gill describes a 300-mile holiday trip, which accomplished three up on a 5-6 h.p. Bat-Jap sidecar seventeen hours, and the return journey over the sar distance in one hour less.

Regarding the article in *The Motor Cycle* of August 11 describing "A Refined Sporting Mount," Mr. George Brou writes: "If the 'British sporting big twin' referred to is t Brough-Superior, I wish to state that the designer of t lightweight machine above referred to did not evolve t Brough-Superior. He was employed by me as a draughtsm in the ordinary way, and his duties were to put my desig on the drawing board."

BOOKS AND MAPS FOR MOTOR CYCLISTS.

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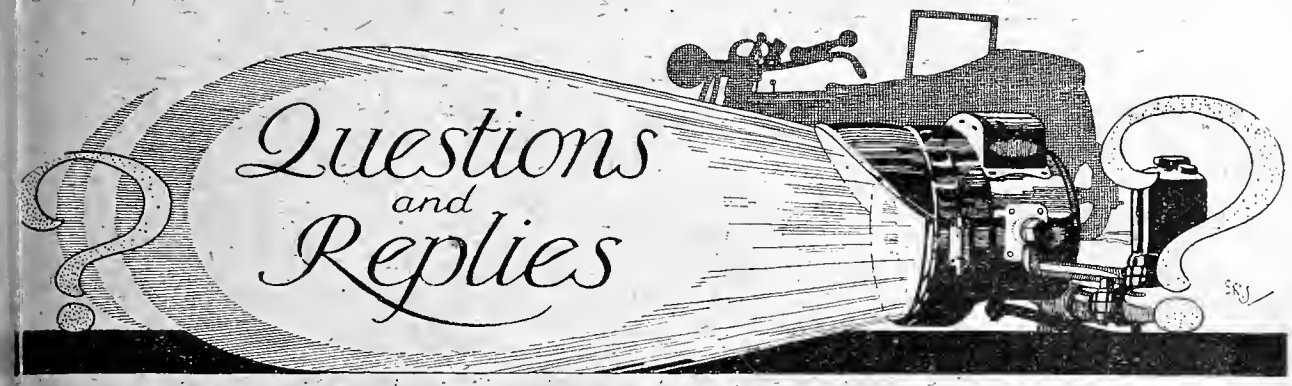


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

OVERHEAD VALVES.

? In what way, as regards efficiency, do overhead valves differ from side-by-side?—M.J.

erhead valves permit a more symmetri- design of the combustion chamber, and is also possible to design the ports much re efficiently than is the case with side- side valves, thus permitting a freer of gas to and from the cylinder.

TWIN MAGNETO FOR SINGLE.

? I have recently bought from the Aero Disposal Board a magneto suitable for a flat twin. I took off one of the cams inside the brass ring and removed the correspond- g brush, and have now fitted it to a ngle De Dion tricycle. Will the very ort cam piece be detrimental to the ficiency of the magneto, and would it e advisable to fit a longer one?—G.L.

A nger cam which would keep the points o n through about 200° would be better. It leading edge should be in exactly the se e position as the leading edge of the sh t cam. The short cam may result in th spark disappearing at high speeds.

CTION OF ACETYLENE ON COPPER.

? Can you give me any informa tion with regard to the action of acetylene gas on copper piping? I have heard one or two people say that it causes a very highly xplosive mixture to be formed. They y this with a profound air of mystery, hich denotes the impossibility of lowing the general public to share this great secret. I may say that have used it myself, and also seen hers use it without any serious results. -W.J.

T compound to which you refer is xtently copper acetylide. It is very doubtful whether this can be formed by passing acetylene gas over the metal copper, especially on such a small scale as obtains in the use of copper tubing on motor cycle acetylene lighting outfit. T writer has used copper and brass tubing indiscriminately for a number of years without experiencing any trouble. ve low engine revolutions.

RUNNING ENGINE ON STAND.

? The exhaust pipe gets red hot when I run my single-cylinder B.S.A. on the stand for three or four minutes, but I notice no difference in the running.—S.W.

Three minutes is too long to run an engine on the stand. The trouble may be due to the exhaust valve not seating properly in the cylinder. It would be best to remove it and examine the condition of the face; if it is badly pitted, have it trued up and grind it in again; also make quite sure that the ignition is not permanently retarded.

Important Dates.

Thurs. Aug. 25th—Ystalyfera and Carmarthen M.C.C. Open Speed Trials.

Mon., Aug. 29th, to Sat., Sept 3rd A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—Liverpool M.C. Open "Reliance Cup" Trial.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Sat., Sept. 17th—Midland Centre A.C.U. Open Hill Climb.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

LIGHTWEIGHT TYRE SIZES.

? The wheels of my lightweight were fitted with 24 × 2in. tyres. (1.) Will 24 × 2¼in. British standard size be suitable? (2.) Is there any difference between 24×2¼in. tyres to fit 24×2in. rims and 24×2¼in. tyres to fit 24×2¼in. rims?—R.T.

(1.) There should be no difficulty in fitting 24×2¼in. tyres to your rims. (2.) A 24×2¼in. cover to fit 24×2in. rim is an oversize tyre, while 24×2¼in. is the correct size for a rim of the same width.

BACK DRAUGHT OF SIDECAR.

? I have an 8 h.p. Enfield which is fitted with a large two-seater (side-by-side) sidecar body, which comes very near the driver. I have a curved windscreen, and am troubled with dust, which seems to follow the sidecar and comes over the back on to the passengers. I have not noticed other machines to be afflicted in the same way.—E.H.S.

The trouble you describe is a fairly common one, and we do not know of any ready means of curing it. It is caused by the partial vacuum created when the machine is travelling forward at speed. This draws the dust in behind the sidecar.

SLIPPED OR STRAINED MAGNETO DRIVE.

? Recently I had the misfortune to break one of the gudgeon pins of my 8 h.p. J.A.P. engine, causing the piston to smash also. I have now fitted another one and cleaned the crank case out, by removing the sprocket wheel side so as not to interfere with the timing, and placed everything together again. I find now that what was the advanced position of the ignition lever is the retard, and I cannot understand how this has occurred. The engine fires regularly enough, and compression is very good, but I cannot get enough speed to pull any weight. The magneto is shaft-driven, and is placed in the tank. When I get the machine, to advance I had to pull the lever up; now I have to push it right down as low as possible. I can only get a start with it right down. If I pull the lever up the engine stops.—R.F.

If you did not dismantle the timing gear, there is absolutely no reason why the variation you speak of should have taken place unless one of the pinions slipped or the shaft twisted when the piston broke. Undoubtedly the magneto drive has been disturbed in some way, and you should verify the timing and alter it if necessary. The spark should occur when the piston is at the top of the compression stroke, with the control lever two-thirds retarded.

HARDENING CRANKSHAFT.

I have a two-stroke engine which has white metal bearings, and a crankshaft which, according to the makers, is a stamping. The bearings, in spite of copious lubrication, wear very quickly. Can you inform me if it is possible to have the crankshaft hardened, and phosphor bronze bearings fitted? I have been informed by friends that it is not possible, because the crankshaft would be distorted.—A.F.P.

It would not be advisable to have the crankshaft hardened in its present state, as the usual method is to harden such parts before the final grinding, in order to correct any slight distortion which may have taken place. It would be worth while, however, having phosphor bronze bearings made for use in conjunction with the existing shaft.

GEAR BOX HUM.

(1.) What is the cause, and cure, of a loud whirring sound that is emitted by the Sturmey gear box on my Triumph when coasting with the clutch engaged and the gear in neutral? The same noise also occurs on throttling down when running in bottom or second. (2.) Should, when changing from middle to top, or running very slowly on top, the engine labour and snatch at the transmission? Most decided jerks occur at these times?—M.J.

(1.) The noise you mention is the customary sound associated with gearing of the type used in this gear box. If it is excessive, it may be that the gear box requires lubrication. It should be filled up to the level of the oil hole with the same kind of oil as used in the engine. (2.) You should not attempt to run too slowly on top gear, and before changing from middle to top you should accelerate the machine up to about 10 m.p.h.

FRICTION DRIVE FOR CYCLE CAR.

(1.) Is friction drive, properly applied, suitable for a three-wheeler runabout on Morgan lines? (2.) Would a 13in. diameter driving disc and a 12in. driven disc be efficient, the 13in. driving discs to carry the friction material and the driven disc just a plain aluminium wheel with a rim face about 1in. wide? (3.) Are 700×80 mm. tyres when on wheels approximately $27\frac{1}{2}\times3\frac{3}{16}$in.? (4.) Which would you advise me to use on a three-wheeled monocar, friction drive or a two-speed gear arrangement on the Morgan principle?—H.W.B.

(1.) No doubt friction drive would be perfectly satisfactory if correctly designed. (2.) The dimensions of the driving disc would be in order, but it is usual for the driven disc to be the larger to carry the friction material. This usually consists of a pack of paper or fibre rings, having a total width of about 1in. (3.) The inch sizes which you give are approximately correct. 700×80 mm tyres are fitted to 650×65 mm. rims. (4.) We cannot advise you on this point, as the choice of the gear depends almost entirely on what you require of the vehicle and to the manufacturing facilities you have. Probably the two-speed arrangement would involve the least experimental work.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"A.P.H." (Waterloo).—1915 four-cylinder Henderson: Lubrication, carburation, adjustment of two-speed hub gear, etc.

Miss A. B. L. (Buxton).—Ner-a-car: Reliability, comfort, climbing, starting, and ease of handling.

"D.M." (Sheffield).—Norton, Model 16H: Consumption, speed, comfort, and reliability.

"N.A." (Bournemouth).—Scott Sociable: General experiences.

"S.G.W." (Middlesbrough).—W.S.R. variable jet on Triumph carburetter.

"F.F.E." (Plumstead, S.E.18.).—6 h.p. Martinsyde and 5-6 h.p. Raleigh sidecar outfits: Especially reliability and workmanship.

"L.S.L." (Brondesbury, N.W.2.).—$2\frac{3}{4}$ h.p. Wooler: Wear of belts on variable gear, reliability, and do springs "bottom" with pillion passenger.

"W.L.R." (Terrington).—$3\frac{1}{2}$ h.p. Norton, Model 16H, with sporting sidecar: Speed, economy, and general reliability.

RECOMMENDED ROUTES.

IPSWICH TO BRADFORD.—F.G.H.

Ipswich, Needham Market, Stowmarket, Bury St. Edmunds, Brandon, Stoke Ferry, West Dereham, Stradsett, King's Lynn, Long Sutton, Holbeach, Fossdyke, Swineshead, Sleaford, Newark, Retford, Doncaster, Wakefield, Ardsley, Dudley Hill, Bradford.

HADLEIGH TO SWANAGE.—E.W.S.

Hadleigh, Kersey, Sudbury, Halstead, Braintree, Great Dunmow, Takeley, Bishop's Stortford, Hadham, Ware, Hatfield, St. Albans, Watford, Rickmansworth, Denham, Slough, Maidenhead, Reading, Theale, Aldermaston, Brimpton, Kingsclere, Whitchurch, Andover, Salisbury, Coombe Bissett, Blandford, Spettisbury, Lytchett Minster, Wareham, Swanage.

EDINBURGH TO LONDON.—D.W.A.

Edinburgh, Fushiebridge, Heriot, Stow, Galashiels, Melrose, Newtown St. Boswells, Jedburgh, Carter Bar, Rochester, Otterburn, Belsay, Ponteland, Newcastle-on-Tyne, Gateshead, Sunderland, Houghton-le-Spring, Ferryhill, Darlington, Stapleton, Barton, Scotch Corner, Catterick, Leeming, Ripon, Ripley, Harrogate, Spofforth, Wetherby, Aberford, Ferrybridge, Doncaster, Bawtry, Retford, Tuxford, Newark, Grantham, Stamford, Wansford, Peterborough, Norman Cross, Stilton, Alconbury Hill, Buckden, Eaton Socon, Biggleswade, Baldock, Stevenage, Welwyn, Hatfield, Potters Bar, Barnet, Tally Ho Corner (Finchley), Ballards Land, Regent's Park Road, Finchley Road, Swiss Cottage, Finchley Road, Wellington Road, St. John's Wood Road Station, branch left, then right into Park Road, from fork bear right into Upper Gloucester Place, Gloucester Place, Portman Square, Portman Street, Oxford Street, Marble Arch, Hyde Park Corner. Approximately 406 miles.

SPARKLET

Competitions in Ceylon.

A reliability trial was held in July ov the most rugged and rough roads in t interior of the island, and it was agre that it was one of the most severe a difficult tests ever held in Ceylon. Thr Ariel riders were successful in winni the cup presented by the *Times of Ceyl* for the best team performance, and o of the team also secured the cup pr sented by Cargills, Ltd., for the best i dividual performance.

More Price Reductions.

Velocette two-speed models are n listed at £65.

Autogliders, also, are not only reduc in price, but are to be fitted with clutch, which was formerly listed as extra. The prices are now: Model £40 (formerly 40 guineas, less clutch Models B and E, £53 (57 guineas, ditto Models C and D, £50 (55 guineas, ditto and *modèle de luxe*, £65, all on guineas, ditto).

A reduction in price of the Astra pe manent magnet dynamos for motor cy lighting has been effected. The 4 v 3-4 amp. type is now offered at £5 10 and the 6 volt 5 amp. type is £7. T complete outfits are reduced by £1 a £1 10s. respectively.

Found on the Road.

A left-hand fur gauntlet glove w found near Sherborne by Mr. S. Barker, of 49, Weston Grove Roa Woolston, Southampton.

Mr. A. G. Parker, of 503, Reddin Lane, Hall Green, Birmingham, found tool-kit near Stafford, while another to bag with contents was picked up ne Kingscote, in the Cotswolds, by Mr. Sachan, of 681, Wandsworth Roa London, S.W.8.

The Auto Cycle Union has recover a licence card in its holder, evidently l from a Triumph sidecar outfit. It w found on the Watford Road, ne Bushey; and, if the loser will forwa the number of the licence and other pa ticulars for identification to the secretar 83, Pall Mall, London, S.W.1, it will restored to him.

A sidecar hood was picked up Mr. W. N. Clinton, of 76, Church Stre Woking, last week-end on the road ru ning from West Clandon to the Port mouth Road.

Catalogues Received.

Barimar, Ltd., 10, Poland Stre London, W.1.: "The Welding Test," booklet describing the Barimar process of welding broken cylinders and oth castings.

Rudge-Whitworth, Ltd., Sparkhill, B mingham: A book convenient for t pocket, and of immense use to engine and designers, is the latest list of Rudg Whitworth ball bearings. Prices, siz loadings, and notes on their applicati are most clearly displayed.

Worcester and District M.C.C.

Open to all clubs in the Western entre A.C.U., speed trials will be held -day, commencing at 3 p.m., on the adresfield Court Drive.

Birmingham M.C.C.

On Saturday next this club is holding s second annual gymkhana at the Castle romwich aerodrome. The whole of the oceeds from the sale of tickets and e receipts from entry fees will be given local charities.

Widnes M.C.

Held over a course of seventy-one miles, e keenly contested reliability trial which ok place recently for the Blake Cup sulted as follows:

A. J. Saudland (8 Morgan), cup and gold dal; 2, H. Baldwin (4 Norton sc.); 3, W. Wat- (4 Harley-Davidson); 4, I. H. Fletcher (4 umph).

Uxbridge and District L.C. and M.C.C.

On Wednesday evening, the 17th inst., e club held its first reliability trial. spite bad weather, a fair number of npetitors turned up. The winner was S. Robinson (2¾ Wooler). Anyone shing to join this club should apply to hon. secretary, Mr. F. F. Hickman,

oergavenny and District M.C. and L.C.C.

Below are full results of the recent cessful hill-climb on Plough Hill, ich was open to all affiliated members the South Wales Centre A.C.U. stest time of the day was made by I. ker, who was mounted on a Sports beam.

ACHINES NOT EXCEEDING 250 c.c. (open). E. Parry (2¼ New Hudson), 1m. 7⅘s.; 2, H. Powell (2¼ New Hudson), 1m. 24⅘s.

ACHINES NOT EXCEEDING 600 c.c. (club mbers only).—1, Jack Thomas (3½ Norton), 3..; 2, Handel Davies (3 A.B.C.), 40⅘s.

ACHINES NOT EXCEEDING 350 c.c. (open). Luther Davies (2¾ Cotton), 43⅘s.; 2, W. C. Pkes (2¾ Douglas), 44⅘s.

ACHINES NOT EXCEEDING 600 c.c. (open). I. Parker (3½ Sunbeam), 36⅘s.; 2, Jack Tmas (3½ Norton), 37⅘s.

ACHINES NOT EXCEEDING 350 c.c. (club mbers).—1, W. C. Parkes (2¾ Douglas), 45s.; 2 uther Davies (2¾ Cotton), 46⅘s.

OLO MACHINES, UNLIMITED (open).—1, J. Thomas (3½ Norton), 36⅘s.; 2, I. Parker (3 Sunbeam), 37⅘s.

DECARS, UNLIMITED (open).—1, Jack Tmas (3½ Norton), 42⅘s.; 2, F. J. Boshier Jones (3 A.B.C.), 44⅘s.

YCLE CARS, UNLIMITED.—1, Luther Davies (8 Morgan), 44⅘s.; 2, W. H. Waller (10 Morgan), 5⅘

Week-end Club Events.

Aug. 25.—Worcester and District M.C.C. Speed Trials.
Aug. 26.—Northern M.C. Gipsy Run to Bamburgh and Wooler.
Aug. 27.—Public Schools M.C.C. Brooklands Meeting.
Aug. 27.—B.M.C.R.C. Fifth Members' Meeting at Brooklands.
Aug. 27.—Blaenavon M.C.C. Inter-club Team Trial, Open to Any Club in A.C.U. Welsh Centres.
Aug. 27.—Middlesbrough and District M.C. Fuel Consumption Test for Sadler Bowl.
Aug. 27.—Ulster M.C.C. One Day Trial.
Aug. 27.—Luton and South Beds. A.C. Children's Outing.
Aug. 27.—Dewsbury and District M.C.C. Reliability Trial.
Aug. 27.—Scottish A.C.U. Meet at Callander.
Aug. 27.—Wolverhampton Auto. Nomads. Circular Run.
Aug. 27.—West Birmingham M.C.C. Half-day Reliability Trial.
Aug. 27.—Saltcoats and District M.C.C. Club Run to Ayr.
Aug. 27.—York and District M.C. Garrowby Hill-climb.
Aug. 27.—Wolverhampton M.C.C. and Kidderminster M.C.C. Joint Hill-climb, Open to Midland Centre, A.C.U.
Aug. 28.—Berkhamsted and District M.C.C. President's Cup Trial.
Aug. 28.—Bury and District M.C. Blake Cup Trial.
Aug. 28.—Doncaster and District M.C.C. Social Run to Fountains Abbey.
Aug. 28.—Stafford and District M.C.C. Picnic at Church Stretton.
Aug. 28.—Leeds and District M.C. Social Run to Plumpton Races.
Aug. 28.—Bridgwater and District M.C. and L.C.C. Club Run to Bournemouth.
Aug. 28.—Brighton and Hove M.C.C. Sheraton and Fielding's Reliability Trial.
Aug. 28.—Basingstoke and District M.C. and L.C.C. Club Run.
Aug. 28.—Rochester, Chatham, and District M.C. and L.C.C. Club Run to Margate.
Aug. 28.—Woolwich, Plumstead, and District M.C. Club Run to Windsor.
Aug. 28.—Cambridge and County M.C. Club Run to Epping Forest.
Aug. 28.—Exeter M.C. and J.C.C. Club Run to Widecombe-in-the-Moor.
Aug. 28.—Newcastle and District M.C. Club Rally.
Aug. 28.—West Kent M.C. Picnic at Toy's Hill.
Aug. 28.—Halifax and District M.C.C. President's Run to Rivington Pike.
Aug. 28.—Central London M.C.C. Club Run to Wycombe Woods.
Aug. 28.—Berwick and District M.C. Knock-out Hill-climb.
Aug. 28.—Portsmouth and District M.C. and L.C.C. Club Run to Shedfield Common.
Aug. 28.—Wakefield and District M.C.C. Reliability Trial.
Aug. 31.—Burton and District M.C.C. Club Run to Ambergate.

Sheffield M.C.C.

H. Oscroft, on an 8 h.p. Enfield side-car, won the Douglas Vickers Trophy in this club's recent reliability trial, H. Johnson (7-9 Indian sc.) being second, and W. Dronfield (7-9 Harley-Davidson sc.) third.

North London M.C.C.

On September 17th the club is holding its annual inter-club rally, and this year a handsome shield is to be competed for by all clubs attending the run. It is to be called the North London Inter-club Rally Challenge Shield, and has kindly been presented by Mr. Beaurain, the captain. It is to be competed for under similar conditions as the Richmond (Yorks.) meet, and the club hopes that some of its Northern friends will spend a day in London on that date. Hendon Aerodrome has been selected as the venue. Other prizes include one for the lady travelling the farthest distance to the meet, for the owner of the best kept machine, and for the owner of the machine fitted with the most ingenious device. These latter prizes are open to all motorists and motor cyclists as well as to members of competing clubs. Flights are being arranged at special prices, and teas, etc., will be served on the ground.

Ilkley M.C. and L.C.C.

The club's competition for the Wilkinson and Armitage Trophy was held over a ninety-six mile course on the 14th inst., and proved to be a decided success. The aim of the organisers was to give all competitors, expert and novice alike, an equal chance of success; and, in pursuit of this object, freak hills, watersplashes, etc., were studiously avoided.

Competitors were despatched at two-minute intervals, each man on departure receiving a card giving the situations of the checks and the shortest distances between them. As the checks were invariably situated at very obscure places, and an average of 20 m.p.h. had to be maintained, a certain amount of "Pelmanism" had to be bestowed upon the maps.

The Trophy and gold medal were won by A. R. Naylor (3½ Sports Sunbeam), who made the least time error at the checks, and rode very consistently throughout. The winners of the silver and bronze medals (for second and third places) have not yet been ascertained.

Incidentally, the success of the trial was in no small way due to the activities of Mr. Sellers (the club's hon. secretary), whose uncanny gift for discovering places hitherto unheard of gave the competitors ample food for thought.

Current Chat

Times to Light Lamps.

Aug. 25th	... ...	8.32 p.m.
,, 27th	... ...	8.28 ,,
,, 29th	... ...	8.24 ,,
,, 31st	... ...	8.19 ,,

Caution.

There have been many (successful) prosecutions for dangerous driving through Littleport, near Ely, during the last month or two.

nter-club Rally at Hendon.

Particulars of an inter-club rally on the lines of the Richmond meet will be found on the "Club News" page this week. It will take place at Hendon on September 17th.

'Ware Birmingham Tramway Cars.

Tram drivers and conductors have been pressed into service by the Birmingham police to report motorists and motor cyclists who drive on the near side past stationary tramcars that are loading or unloading passengers.

Another Stiff Trial in North Wales.

Regulations have now been prepared and entry forms are available for the Liverpool Motor Club's big annual event —the open trial for the Reliance Cup, which in 1920 proved one of the most sporting, difficult, and successful one-day trials of the year. It will be held on Saturday, September 10th, entries (which should be addressed to Mr. N. C. Sclater, jun., 1, Earlston Road, Wallasey, Cheshire) closing on the 3rd prox. Only a rough route has been announced as yet, but it seems likely that Alt-y-Bady ("the worst hill in Wales") and the freak watersplash at Llanfiangel (which caused so many protests and failures in the recent North Wales open event) will both be included. There are three challenge trophies on the award list.

Main London-Worthing Road Diverted.

According to the A.A., the main London-Worthing road, where it crosses the railway bridge between Capel and Kingsfold, will be closed from twelve o'clock midnight on Saturday, September 3rd, until twelve noon on the following Monday. The alternative route is *via* Ockley and Kingsfold village.

Silence.

"They race at a terrific pace, and also make most horrible noises, one of which, we understand, is called 'the cut-out.'" Thus runs an extract from a petition against noisy motor cyclists from Downleaze and Rockleaze residents to the superintendent of the Bristol police. It would be humorous, were it not that the complaint may very possibly be quite justified.

85.69 m.p.h. for 300 Miles.

An American rider, Hepburn, on a 7-9 h.p. Harley-Davidson, won the recent 300 mile race on the two-mile dirt track at Dodge City. His speed over the total distance was 85.69 m.p.h.; for 200 miles, 87.01 m.p.h.; and for 100 miles, 88.39 m.p.h. Application has been made for the recognition of these times as world's records. An Indian was second in the race, while other Harleys occupied third, fourth, fifth, seventh, and eighth positions. Only six Harley-Davidsons were entered.

Special Features.

GUIDE TO THE SIX DAYS TRIALS.
OVERSEAS COMMENTS.
A FOUR-SPEED SINGLE.

Petrol Prices Reduced.

The reduction in the price of petrol foreshadowed by *The Motor Cycle* took place last week. The new prices are: Aviation spirit, 2s. 9½d. per gallon; first quality, 2s. 5½d. per gallon: third quality, 2s. 3½d. per gallon.

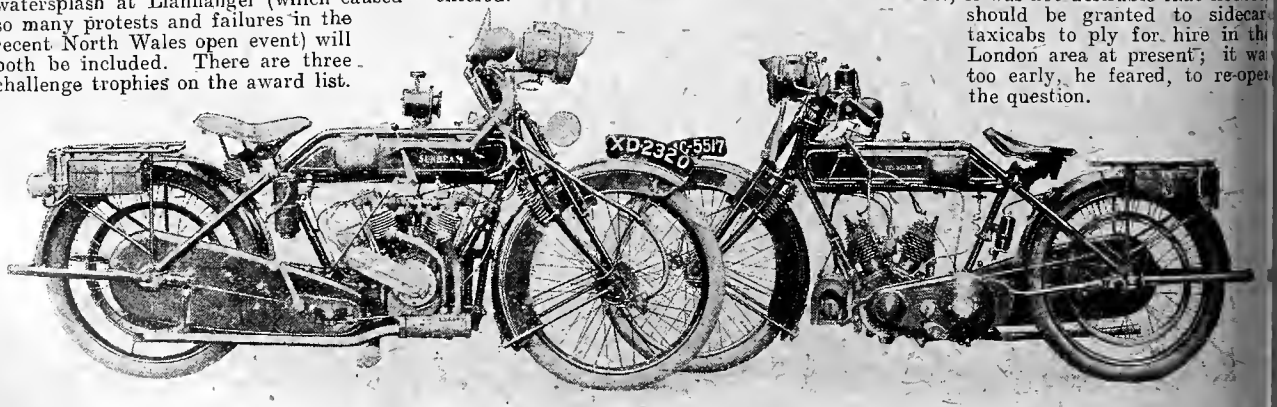
First Midland Open Hill-climb.

This year various clubs in the Midland Centre A.C.U. have held very successful hill-climbs open to members of their neighbouring organisations, but so far the Centre has not held an officially "open" speed event. On Saturday, September 17th, this omission will be rectified, when an open hill-climb will be held on Penkridge Bank, between Wolverhampton and Stafford. Full particulars may be obtained from Mr. H. Boydell, 93, John Bright Street, Birmingham.

Sidecars for Hire.

In the House of Commons recently, Commander Bellairs asked the Home Secretary whether, in view of the success which had attended the introduction of sidecars plying for hire in cities such as Paris and in towns in this country, he could state why they were prevented from being introduced into London?

Mr. Shortt replied that, in view of the recommendation of the Departmental Committee on the Taxation and Regulation of Road Vehicles, dated January 6th last, it was not desirable that licences should be granted to sidecar taxicabs to ply for hire in the London area at present; it was too early, he feared, to re-open the question.



FROM SINGLE TO TWIN.

Evidently more than one small-twin enthusiast regards the oil-bath transmission of the Sunbeam as ideal. We illustrate two examples of Sunbeams which have had 3½ h.p. twins substituted for the standard single. (Left) Mr. B. W. Cox's mount, to which he has fitted a 3½ h.p. M.A.G. twin, and (right) Mr. S. M. Greening's, which now has a 500 c.c. twin J.A.P. power unit.

Obituary.

It is with regret that we announce the death of Mr. A. Libbert, the trials secretary of the Manchester Motor Club, as the result of a motor accident on Monday last week.

Belgium or the I.O.M.?

Opinion is divided on the subject of the A.C.U.'s decision to hold next year's T.T. races in Belgium. Some important opinions from manufacturers of T.T. machines and from leading riders appear on another page of this issue, and a further selection will follow next week.

Well-supported Brooklands Meeting Next Saturday.

A very fine entry has been received for next Saturday's B.M.C.R.C.'s race meeting at Brooklands. There will be races for members of the Public Schools M.C. and the North London M.C.C., in addition to the usual programme.

No Mercy on Pillion Riding.

In the House of Commons on Thursday, Captain Tudor-Rees asked the Home Secretary whether he was aware that an alarming and increasing number of accidents was being caused by pillion riding on motor cycles, and that juries were constantly protesting against the practice; whether he had power to prevent it, and, if so, whether he would consider the advisability of stopping the practice, which was dangerous both to those who engaged in it, and to other road users.

Mr. Neal, Parliamentary Secretary to the Ministry of Transport, in reply, said that he was not aware that accidents attributed to pillion riding were increasing. The matter had been carefully considered by the Departmental Committee on the Regulation of Road Vehicles, who unanimously arrived at the conclusion that, on the information before them, no case had been made out sufficiently strong to justify the prohibition of the practice.

Next Week's Six Days Trials.

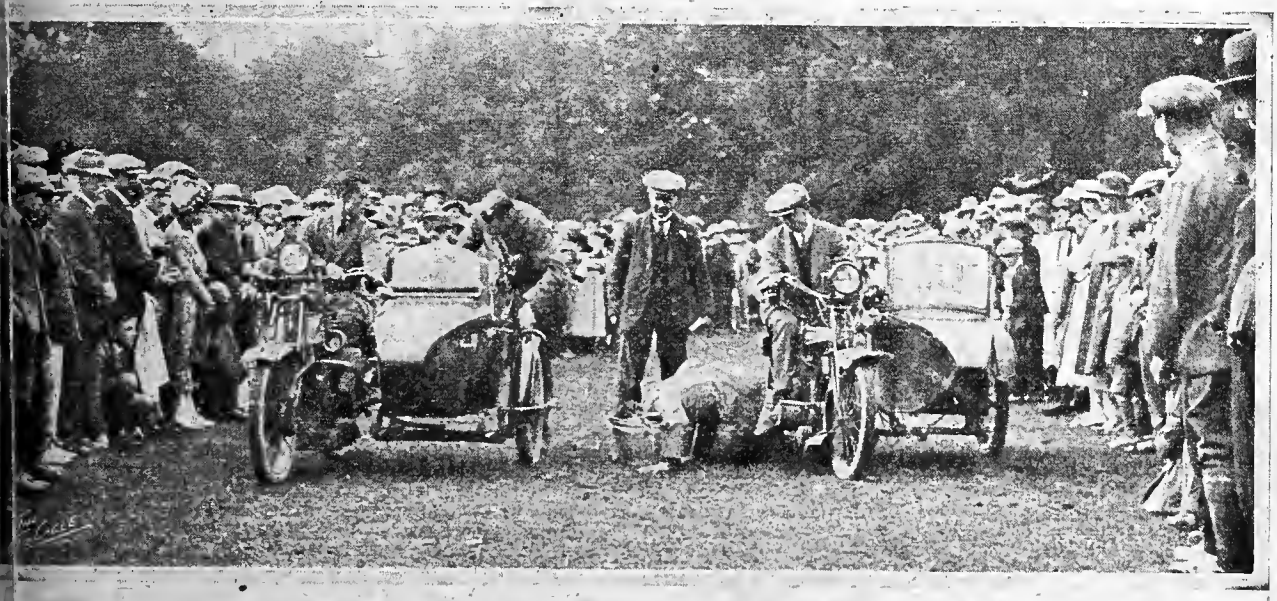
This issue of *The Motor Cycle* constitutes a programme to the A.C.U. annual six days' trials, which start from Brooklands on Monday next at 10 a.m.

To Study Overseas Markets.

As already mentioned in our pages, Mr. J. L. Norton, the veteran motor cyclist and designer of the Norton motor cycle, is embarking on a world tour in order to gain first-hand knowledge of conditions overseas; he will also give a series of lectures to motor cycle clubs. Mr. Norton sails early next week.

Running Costs Reduced.

The recent fall in the prices of lubricating oil and petrol has had its effect on the cost of riding a motor cycle, all to the owner's advantage. Sixpence off the gallon of petrol represents one-eighth of a penny per mile off the cost of running a sidecar outfit, which has a consumption of 50 m.p.g.



The "aquatic apple" contest, an event which delighted the spectators hugely at the East Midland Centre's (A.C.U.) Gymkhana, at Stanford Park, near Loughborough. H. Payne (6 A.J.S. sc.) carried the most expert apple biter as his passenger.

IS THE SCOTT SOCIABLE A SIDECAR?

UNFORTUNATELY a difference of opinion has arisen between the producers of the Scott Sociable and the Trials Committee of the A.C.U., which, at the moment of going to press, bids fair to exclude this interesting machine from the forthcoming Six Days Trials.

On behalf of the makers, Mr. Scott entered his team of machines as belonging to the class for sidecars of under 600 c.c., a class to which he maintains the Sociable rightly belongs; but the entry was refused by the ruling of the committee, on the grounds that the Scott Sociable should be in the cycle car class.

Subsequently, Mr. Scott urged that the machine was essentially a sidecar. It was designed as such; but in such a way that, while maintaining the desirable features of the sidecar in economy, lightness, ease of control, etc., it aimed further at giving the occupants car comforts in the way of upholstered seats, a screen, hood, and so on. The machine, Mr. Scott pointed out, has no points in common with the ordinary three-wheeled runabout. Its weight is approximately 3 cwt.; it has the same track and wheelbase as an ordinary sidecar outfit; it retains the front wheel castor steering motion, together with the same engine position and one wheel drive. It differs from the ordinary sidecar only in so far as appearance and detachability are concerned. If it were to be debarred on the grounds of detachability, the ruling might be expected to include such heavy sidecar combinations as cannot readily be detached, and *are not intended to be*. The Sociable, Mr. Scott pointed out, is confined by the leading press to the motor cycle class. It is a development tending towards the improvement of the motor cycle and sidecar, while the three-wheeled runabout is introduced as an alternative, tending towards the extinction of the sidecar.

In reply, the A.C.U. stated that in view of the present international definition of "combinations," the committee unanimously regretted that the machine could not be accepted in the sidecar class, though they would be pleased to accept the entry as a cycle car.

It has long been urged that the heavy sidecar outfit, intended to be permanently used as such, might at any rate be designed on engineering lines as a one unit construction, giving driver and passenger equal comfort. The Scott Sociable realises this; and since it is the earnest endeavour of one of our leading engineers to solve the knotty problem, many will regret its exclusion from the leading A.C.U. reliability trial of the year.

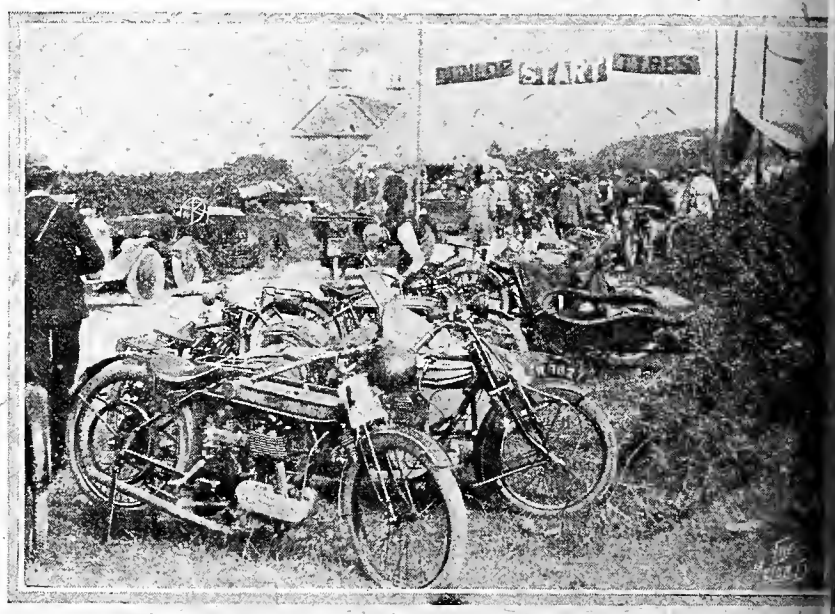
BIG TWIN VERSUS SMALL SINGLE.

L. P. Openshaw's 8 h.p. Zenith makes Record Fastest Time at Western Centre A.C.U. Open Hill-climb; an A.J.S. Lightweight Second.

AT the Western Centre A.C.U. open hill-climb at Kingsdown Hill, near Bath, on Saturday, a long series of twenty-two classes was run off without hitch or accident, and a crowd of some 2,000 spectators was kept interested right to the last man up—a very creditable piece of work.

The hill is excellent in many ways for the purpose of events of this kind; it is delightfully situated. The gradient is neither too severe nor too easy; the faster riders must have crossed the line at 70 m.p.h. on many occasions, for the fastest time of the day exceeded 60 m.p.h. for the full half-mile.

The high grass banks which line the road for the last 200 yards were thronged with spectators, who evinced a keen interest in the times as they were recorded on the blackboard. So good were these arrangements that all those in sight of the board knew each competitor's time and position within a few seconds after he had passed.



A general view at the start, incidentally showing the popularity of the Norton machine at such events.

Previous Record Several Times Broken.

There was some trouble at the start through the crowd encroaching on the course, but this was rectified by the appeals of Messrs. Vernon Brook, Featherstone, and "timekeeper" Reynolds.

The open 350 c.c. class first showed that exceptional speeds were to be expected. The record for the hill was given as 32⅘s., but this was beaten several times during the afternoon.

The riding of G. S. Boston, on his 2¾ h.p. A.J.S., was the outstanding feature of the day. His regularity was remarkable. He gained seven firsts and a second, his solo times being: 33⅕s., 33⅕s., 31⅗s., and 32s.; and with sidecar: 40⅕s., 38⅕s., and 38⅘s. At his third climb he beat the record for the hill, but this was eclipsed later by L. P. Openshaw on a Zenith, who simply streaked up the hill in 28⅘s., thus winning the "John Bull" Challenge Cup.

Howard Davies's mount did not seem up to scratch, and he had to be content with five seconds and two thirds; nor did the Douglas riders show up well until the sidecar classes. S. L. Bailey scored two firsts, one second, and three thirds, and the veteran trials rider, W. B. Gibb, rode well, regularly improving his times at each attempt. A youth, aged sixteen, F. Buckner, showed excellent promise a standard 2¾ h.p. Douglas in the ea classes. He missed medals by a sec or two on several occasions, and riding met with very favourable c ment. Boshier-Jones's Douglas had carburetters fitted, but they did not se him very well. Results:

275 c.c. SOLO (open).—1, A. Kingsmith Morris-Warne), 54⅘s.

350 c.c. SOLO (open).—1, G. S. Boston A.J.S.), 33⅕s.; 2, H. R. Davies (2¾ A.J.S.), 3 3, E. R. Jacobs (2¾ Conlson-B.), 39⅕s.

H. R. Davies (2¾ A.J.S) getting away well in Event 2. His mount was not at its best, however, and he had to be content with second place.

Big Twin versus Small Single.—

350 c.c. SOLO (experts barred).—1, E. R. Jacobs (2¾ Coulson-B.), 38⅘s.; 2, J. Thomas (2¾ Blackburne), 40⅕s.; 3, S. L. Bailey (2¾ Douglas), 41⅘s.

500 c.c. SOLO (open).—1, G. S. Boston (2¾ A.J.S.), 33⅕s.; 2, V. Hassell (3½ Norton), 33⅘s.; 3, H. R. Davies (2¾ A.J.S.), 34s.

500 c.c. SOLO (experts barred).—1, V. G. Tucker (3½ Norton), 35⅕s.; 2, J. Thomas (3½ Norton and W. L. Davies (3 A.B.C.), 35⅘s.; 3, A. W. Thrush (3½ Sunbeam), 37⅕s.

500 c.c. SOLO (private).—J. Thomas (3½ Norton), 35⅘s.; 2, G. L. Gardener (3½ Sunbeam), 39⅘s.; 3, V. C. Anstee (A.B.C.), W. H. Clare (Sunbeam), and C. Eveson (Norton), 40⅘s.

750 c.c. SOLO (open).—1, G. S. Boston (2¾ A.J.S.), 31⅘s.; 2, H. R. Davies (2¾ A.J.S.), 33⅘s.; 3, G. W. Walker (3½ Norton), 34s.

750 c.c. SOLO (experts barred).—1, S. L. Bailey (6 Douglas), 33⅘s.; 2, V. G. Tucker (3½ Norton), 34⅘s.; 3, J. Thomas (3½ Norton), 35⅘s.

UNLIMITED SOLO (open).—1, G. S. Boston (2¾ A.J.S.), 32s.; 2, L. P. Openshaw (8 Zenith), 32⅕s.; 3, G. W. Walker (3½ Norton), 32⅘s.

UNLIMITED SOLO (experts barred).—1, L. P. Openshaw (8 Zenith), 28⅘s.*; 2, S. L. Bailey (6 Douglas), 32⅘s.; 3, W. B. Gibb (3½ Douglas), 34⅘s.

UNLIMITED SOLO (private).—1, J. Thomas (3½ Norton), 36⅘s.; 2, R. Eveson (3½ Norton), 37⅘s.; 3, W. H. Clare (3½ Sunbeam), 39s.

350 c.c. SIDECAR (open).—1, G. S. Boston (2¾ A.J.S. sc.), 40⅕s.; 2, H. R. Davies (2¾ A.J.S. sc.), 40⅘s.; 3, S. L. Bailey (2¾ Douglas sc.), 46⅘s.

600 c.c. SIDECAR (open).—1, G. W. Walker (3½ Norton sc.), 38⅘s.; 2, G. S. Boston (2¾ A.J.S. sc.), 39⅘s.; 3, H. R. Davies (2¾ A.J.S. sc.), 40⅕s.

600 c.c. SIDECAR (experts barred).—1, W. B. Gibb (3½ Douglas sc.), 43⅘s.; 2, J. Thomas (3½ Norton sc.), 43⅘s.; 3, G. H. Tucker (3½ Norton sc.), 45⅕s.

600 c.c. SIDECAR (private).—1, J. Thomas (3½ Norton sc.), 44⅘s.

750 c.c. SIDECAR (open).—1, G. S. Boston (2¾ A.J.S. sc.), 38⅕s.; 2, H. R. Davies (2¾ A.J.S. sc.), 40⅕s.; S. L. Bailey (6 Douglas sc.), 42⅘s.

UNLIMITED SIDECAR AND THREE-WHEELER (open).—1, G. S. Boston (2¾ A.J.S. sc.), 38⅘s.; 2, H. R. Davies (2¾ A.J.S. sc.), 40s.; 3, L. P. Openshaw (8 Zenith sc.), 40⅕s.

UNLIMITED SIDECAR AND THREE-WHEELER (experts barred).—1, S. L. Bailey (6 Douglas sc.), 40s.; 2, W. B. Gibb (3½ Douglas sc.), 41⅕s.; 3, H. Davies (8 Brough Superior sc.), 43⅘s.

UNLIMITED SIDECAR AND THREE-WHEELER (private).—1, J. Thomas (3½ Norton sc.), 44s.

CYCLE CARS (open).—1, H. R. Godfrey (8 G.N.), 36⅘s.; 2, W. L. Davies (8 Morgan), 44s.

* Fastest time of the day; wins the John Bull Cup.

AN EAST MIDLAND GYMKHANA.

Social Event as a Pleasing Change from Strenuous Trials.

As a change from the usual form of competitive event, the East Midland Centre A.C.U. held a gymkhana in the grounds of Stamford Hall, near Loughborough, on Saturday last.

Curiously enough, in view of the fact that many riders complain that the ordinary non-competitive club member is not sufficiently catered for on the social side, the attendance was poor.

Bright sunshine graced the afternoon, and, as a garden *fête* in aid of the local church was being held in the same park, the early arrivals whiled away the time at the various games of skill available.

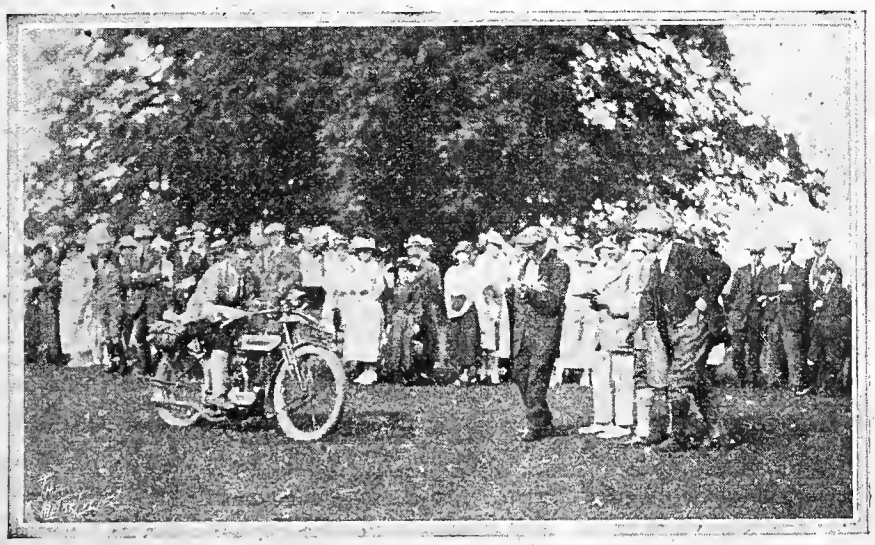
The motor cycle events commenced about 4.30 in the afternoon, musical chairs being the first item.

This event was won by Miss O. Moore, whose driver was H. Louth (3½ Rudge Multi sc.).

Next followed an acceleration test for solo machines, the riders being timed from a standing start (with stationary engines) to a mark fifty yards away.

A fine performance was made by G. W. T. Hartwell, who started his Raleigh engine and covered fifty yards in 6s. He was closely followed by a Triumph rider, who was only ⅕s. slower.

A sidecar acceleration test then followed on the same lines, and this was won by A. Cooper (8 A.V. monocar), whose passenger started the engine by one super-human "heave," and enabled his driver to equal the solo time of 6s.



A Triumph rider passing the timekeeper in the solo acceleration test, which consisted of a timed fifty yards from a start with stationary engines.

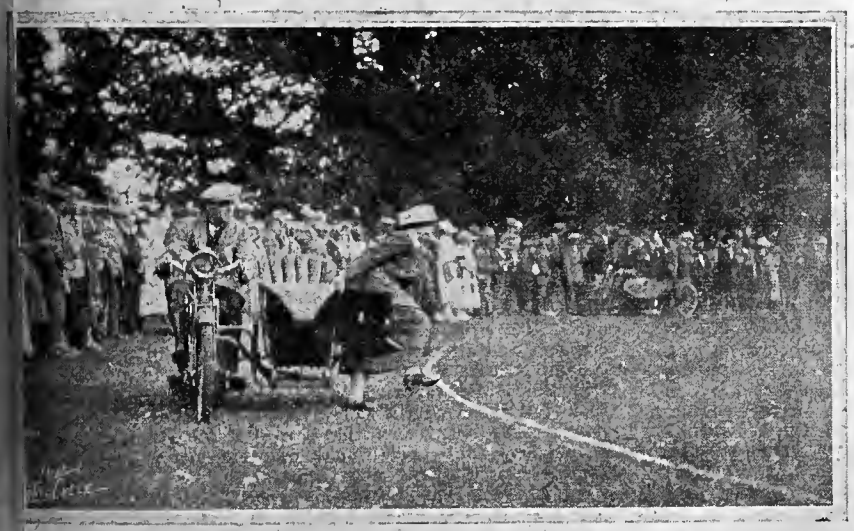
The best sidecar time was a tie between Triumph Raleigh and A.J.S. machines, which all took 8s.

Following this, a contest known as the "Aquatic apple" took place, in which solo riders had to cover fifty yards, secure an apple with the teeth from a tub of water, and then remount, ride another fifty yards, and deposit the apple in a basket. The winner was G. Marsh (2¼ Triumph) in 23s., with Z. Onions (3½ Rudge) second in 36s.

The same test for sidecar machines followed, the passengers having to do the "biting." This was won by H. Payne (6 A.J.S. sc.) in 17⅘s. One incident which was amusing, although it might have taken a serious turn, was the case of a passenger whose mouth refused to close after dropping the apple. He was being taken away to a doctor in a sidecar, and when passing over a bump leaving the field his mouth suddenly closed again, and everything was in order.

Other results were:

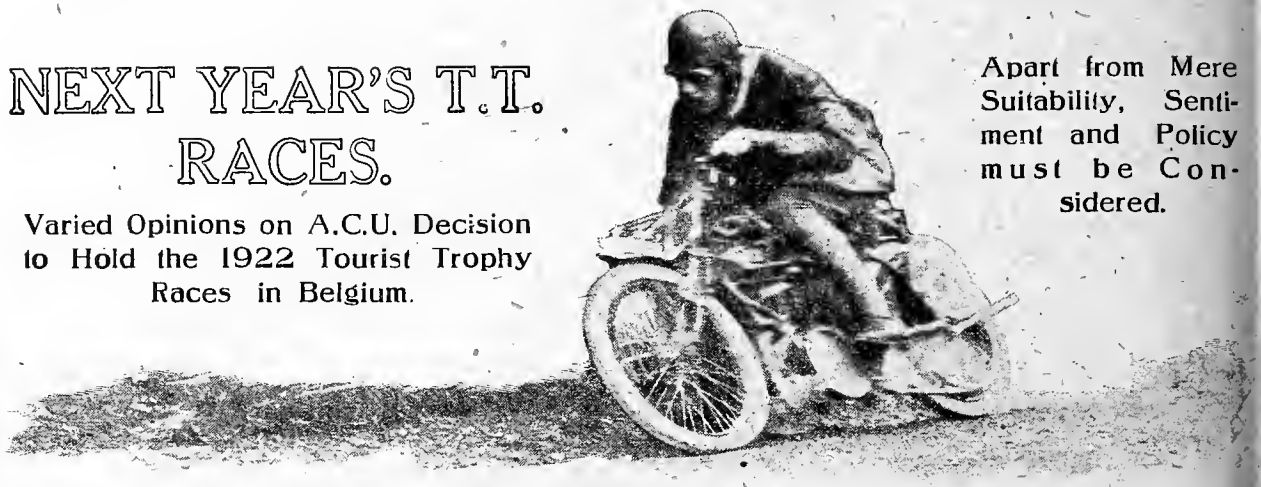
Skilful driving (solo): A. G. Fenn (5-6 Raleigh). Skilful driving (sidecar): W. Bent (5-6 Raleigh sc.). Jump for solo machines: W. Hadfield (4 Triumph). Handkerchief competition (solo): E. Marsh (2¼ Triumph). Handkerchief Competition (sidecar): G. W. T. Hartwell (5-6 Raleigh sc.).



Musical chairs, a popular competition, and a test of driving skill, brakes, and the ease with which a passenger may alight from a sidecar. Last, but not least, of course the result depends on the agility and stamina of the participants.

NEXT YEAR'S T.T. RACES.

Varied Opinions on A.C.U. Decision to Hold the 1922 Tourist Trophy Races in Belgium.



Apart from Mere Suitability, Sentiment and Policy must be Considered.

THE decision of the Auto-Cycle Union to hold the T.T. races in Belgium next year, using Spa as headquarters, has come as a great surprise, not only to motor cyclists, but to the motor cycle trade generally.

To many prominent riders and manufacturers, a letter circulated by *The Motor Cycle* asking for opinions on the change came as the first intimation that such a resolution had been made; but even where precise details were not known, the larger aspects of the case have caused the immediate formation of definite opinions, some of which are not at all favourable.

As it will be seen, a number of our correspondents regret in the main a change of venue, the economic viewpoint regarding the carrying of such a large amount of money out of the British Isles being touched upon by more than one.

Certain people suggest that with proper influence a road race in this country might still be arranged, but this would necessitate a special Act of Parliament. Whether the necessary machinery could be set in motion here is a moot point, but we fear that in such matters the inertia to be overcome is almost overwhelming.

The following are extracts from the letters which *The Motor Cycle* has already received:

Mr. Geo. Stevens, of A. J. Stevens and Co. (1914), Ltd.:

"Until we got your letter, we were unaware that the A.C.U. had decided to hold the 1922 Tourist Trophy races on a fifty kilometre course near Spa.

"As we at present have no knowledge of the nature of the proposed course, it is difficult to pass an opinion as to whether it will be an improvement on the old I.O.M. course.

"If the proposed course is fairly flat, and with few corners, the race would have little more value, as far as testing machines is concerned, than a race on Brooklands, which does little more than test the endurance of the engine. Owing to its tricky corners, the mountain climb, and its general undulating nature, the I.O.M. course would be very hard to beat in putting a motor cycle through a certain test; not only the engine, but gears, transmission, brakes, and frame, to say nothing of its testing the capabilities of the rider.

"Apart from the possibility of the new course being a pure 'blind,' however, we think the change will encourage more entries, especially from our Continental friends, and thus make the race more interesting and more international in character.

"We also think that the races in Belgium would attract a greater number of visitors, because it is easy of access by most of the countries on the Continent, that are interested in motor cycles, and, at the same time, is no further away from this country than is the Isle of Man."

Mr. James L. Norton, of Norton Motors, Ltd.:

"I quite think that holding the 1922 Tourist Trophy Race in Belgium will be of advantage to the British export trade, and will attract more 'international' attention than if held in the Isle of Man. I am also of opinion that the race will be of more international character than hitherto, as, without doubt, other Continental makers will compete.

"The assistance and facilities which the Belgian Government offers are in violent contrast to the restrictions and petty annoyances which have had to be tolerated hitherto."

Mr. H. W. Hassall, also of Norton Motors, Ltd.:

"I think the idea of holding the T.T. in Belgium is excellent. I believe more people than ever will seize the opportunity of a holiday in Belgium in order to witness the T.T. races, and, again, it is a wise decision from the trade point of view."

Mr. W. H. Wells, Hendee Manufacturing Co., is also in favour of the Belgian venue; he writes:

"As one who has participated, either as a competitor or entrant, in every T.T. race held in the Isle of Man since 1907, I have had the feeling for a considerable time that motor cyclists were not exactly welcomed in that beautiful island, and were allowed to go there to hold the T.T. race more or less on sufferance. Further, the last two races held there have convinced me that the 500 c.c. machines had no particular advantage over machines with smaller engine capacity, for the reason that there was little opportunity of giving the bigger engine a chance to exert its speed and power. Therefore, when Mr. Loughborough mentioned to me during our recent visit to Belgium, in connection with the Grand Prix race held there recently, that the Belgian authorities were anxious to have the 1922 race held in their country, and after viewing the major portion of the suggested course, I became very enthusiastic over the idea. Not only will the larger machines have an opportunity of showing their full speed on the long straight stretches of beautifully paved roads, but, from what I saw of the Belgian people, I should say that they would welcome motor cyclists from foreign countries with open arms.

"I am sure that the journey from London to Spa can be made with far less inconvenience than from London to the Isle of Man. The G.E.R. steamers have every facility for quick handling of motor cycles and cars on and off the boats. This is certainly a great contrast to the petty annoyances

Next Year's T.T. Races.—

and fleecing one is subjected to when crossing from England to the Isle of Man.

"Another point which is of great importance is that, from a geographical position, the race, held in Belgium, is bound to be more of an international event, which the international T.T. race when held in the Isle of Man has never been."

Mr. C. R. Collier (of **Matchless** fame) favours the Belgian course:

"I consider the change will be advantageous. First, because it will tend to develop the international character of the race, which was, as the name implies, one of the principal aims of its original promoters. Secondly, I think more publicity in the foreign press will be given to the race if held on the Continent. Thirdly, although I am not familiar with the proposed course, I have no doubt it will not be so difficult as the Isle of Man course, which is, without doubt, undesirably dangerous."

Mr. F. A. Applebee (Senior winner on a **Scott** in 1912):

"The Isle of Man has always been associated with T.T. races, and from a sentimental point of view many will regret that circumstances have made it necessary to find another venue for 1922; but regrets will be less keen when it is realised that such change will result in better transport facilities, and in freedom from the irritating local conditions imposed in the Isle of Man.

"A suitable course appears to have been chosen, and, as a record entry will undoubtedly be received, much greater interest will be taken in the event, and as a result the benefit to the industry is likely to prove far reaching and of great value."

Mr. C. G. Pullin (who won the 1914 Senior T.T. on a **Rudge**), thinks that the Belgian course will permit higher speeds:

"The decision to hold the T.T. race in Belgium is excellent, as it is possible to pick a good course that will allow of the high speeds now possible with the present-day motor cycles, and thus give the public the opportunity of studying the results of the sustained high speeds on the road, whereas the I.O.M. course is more of a test of jockeyship and general handiness of the machine.

"Also, the race is bound to attract considerable Continental enthusiasm and support, but, at the same time, there remains a certain sentimentality with those who have achieved success on that treacherous island."

Triumph Cycle Co., Ltd.:

"With reference to the 1922 Tourist Trophy race, we have certainly heard nothing about this, and until we are officially informed, we would prefer not to pass any comments."

The opinion of **Douglas Motors, Ltd.,** is conveyed by **Mr. S. L. Bailey,** who touches upon the economic aspects of the case:

"We are rather surprised to hear of the decision of the A.C.U. to hold the 1922 Tourist Trophy races in Belgium. Apart from any reasons for changing the course that they might have, we think it is almost a calamity to take so much British money into a foreign country when this country is suffering so acutely from its own financial position.

"We see no reason why the race should be taken from the Isle of Man—in fact, it is far preferable to spend the money here than abroad; but we also think that if the necessary machinery is put in motion and sufficient influence used it could be held in our own country.

"It seems to us that races are being held in France, Belgium, Italy, and America, bringing hundreds of thousands of pounds to the particular country in which they take place; but England, who is badly wanting trade, is endeavouring to assist in sending it to foreign countries.

"Further, there is the question of additional expense to the manufacturer in journeying to the Continent, involving the question of passports, Custom duties, etc., which, unless special arrangements are made, would amount to a considerable addition to the usual cost of this race. If the typical French Grand Prix course is to be selected, the test for the machine will not compare with the gruelling test which the Isle of Man course affords."

Mr. Cyril Williams (winner of the Junior T.T. on a 2¾ h.p. **A.J.S.** in 1920), tabulates his objections to the change thus:

"(1.) It is a mistake to take the races out of the British Isles.

"(2.) I do not think the I.O.M. course can be improved upon, for what is the ostensible purpose of the races, viz., the development of the touring machine. I contend that, without any increase in to-day's maximum speed, but with improved hill-climbing, acceleration, braking, and stability, it is possible to ride the present course at 60 m.p.h. And I think that the improvements mentioned are what are wanted by the average motor cyclist; he is usually quite satisfied with present-day maximum speed."

Mr. T. C. de la Hay, the well-known **Sunbeam** rider and winner of the 1920 Senior race, voices a commonly expressed opinion:

"Regarding the decision of the A.C.U. to hold the 1922 Tourist Trophy race in Belgium, I do not favour this for several reasons.

"The race is promoted indirectly by the British motor cycling public, and the interest shown can be judged by the amount of people who yearly travel to the Isle of Man for the purpose of seeing the race. My Continental experience has been that the average Englishman, owing to his inability to speak various languages, is imposed upon, and, added to this, one must not overlook the greater expense and difficulties with regard to Customs, etc., which visiting the Continent involves as compared with the Isle of Man.

"Furthermore, any race on a course such as is used in Continental events is a test of sheer speed, rather than speed combined with absolute reliability under greatly varying road condition, as encountered on the familiar Isle of Man course.

"I should hardly think the A.C.U. would take such an important step without first ascertaining the opinion of manufacturers."

The Scott Motor Cycle Co., Ltd., write as follows:

"Your letter is the first intimation we have had of the change of venue for the 1922 T.T. We do not care to express an opinion until we hear of the reasons for such a change. However, our views on the matter are, that certainly, if at all possible, a T.T., which has generally been considered as Great Britain's motor cycle event of the year, should be held in the British Isles.

"We are of the opinion that the course proposed in Belgium will not give the same actual road conditions as found in the Isle of Man. We, ourselves, look upon this course as the best possible to find all weaknesses in design and a test to destruction, thereby giving manufacturers useful information in their endeavours to manufacture a foolproof machine. Also, the various bends and mountain climbs do much towards improving the steering qualities and acceleration of the motor cycle.

"We trust that, unless something extraordinary has happened, that the Isle of Man course be selected again for the 1922 T.T. race."

"Astonished," is the expression of **Mr. H. O. Wood,** the Scott exponent and technical adviser to **the Scott Motor Cycle Co., Ltd.:**

"I am very astonished to hear of the A.C.U. decision to hold the 1922 T.T. race in Belgium on a fifty kilometre course.

"Before I can say anything definite, I should like to know the A.C.U. reasons for this astonishing decision.

"It seems to me that competing machines will not be subjected to any climbing or down hill work. There will be a few corners which will test the brakes and acceleration to a certain extent, but nothing like to the extent of the Island course.

"One would imagine that, instead of going to the expense of running the race in Belgium, it might be just as well to hold it on Brooklands, especialy if the competitors are to slow down to a certain speed every few laps.

"I do not think the manufacturers will, as a whole, find the test much different from a Brooklands test, and as for the public flocking to see this race, there will be nothing like the enthusiasm there is and has been in previous years."

Next Year's T.T. Races.—

Mr. Hugh Mason, managing director of **Hugh Mason and Co., Ltd.,** makers of the N.U.T. machines:

"With reference to the 1922 Tourist Trophy races being held in Belgium, I have not the slightest doubt that before the A.C.U. came to such a decision as this it would have just and very good reason for so doing. Its reasons, of course, are unknown to me; but I cannot help thinking that, from the British public interest point of view, it is a mistake. Thousands have witnessed the races in past years in the Isle of Man, many of whom would not consider going to Belgium to witness this event, as apart from the time and expense, I do not think it possible to find anything like such a sporting and suitable course as the 'Four-inch' course in the Isle of Man.

"If a change is necessary, and it could be arranged, I am of the opinion that a sporting course could be found at home or in Ireland."

From a consistent T.T. rider and winner of the Junior Race in both 1914 and 1921, the following statement by **Mr. E. Williams** is worthy of note:

"The Tourist Trophy races being held in Belgium next year brings up two most important points.

"First, the manufacturers: Should the course be fairly flat and straight, as is usual in Continental races, it will be a matter of sheer speed rather than violent acceleration and efficient braking, which go a long way to success on the Isle of Man course. Personally, I believe they would prefer the gruelling I.O.M. course with its six mile of mountain climb as a better test of a machine than the flat straights of Belgium. Secondly, as possibly something like £100,000 is taken and spent by the manufacturers, riders, and race-visitors to the Isle of Man over the practising and races, this amount is going out of the British Isles into a foreign country, very little of which is going to return, whereas the majority of it spent in the Isle of Man is brought back to the mainland. The only thing in its favour is that it may act as a stimulant to our Continental trade.

"It seems remarkable that the only road race organised by a British body should be held in a foreign country."

Opinions from the Isle of Man.

The following extracts from the Isle of Man *Times* are indicative of the keen disappointment felt there in certain circles:

"The loss to the Island is incalculable. Those best able to judge put it at £50,000 hard cash. The figure is probably low. The loss of the advertisement cannot be measured."

"The police took a fiendish delight on 'Sad Sunday' in being objectionable."

"The Island thought that it could do just as it pleased with the motorists, and that, although they squealed, they could never go elsewhere."

"If the Island wants the motor cycle races, let them withdraw these absurd restrictions. Then, but not until, can it reap the great rewards which the races undoubtedly bring."

A Manx supporter of the T.T. writes:

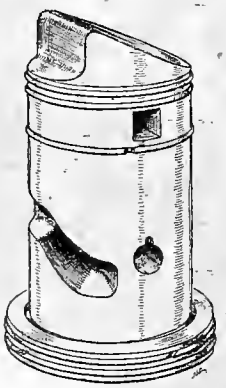
"I trust we can rely, in this Island, on the support of *The Motor Cycle* in trying to induce the A.C.U. not to take the T.T. races from here to Belgium. I can assure you that we, here, feel the loss of these races most intensely."

A NOVEL TWO-STROKE DESIGN.

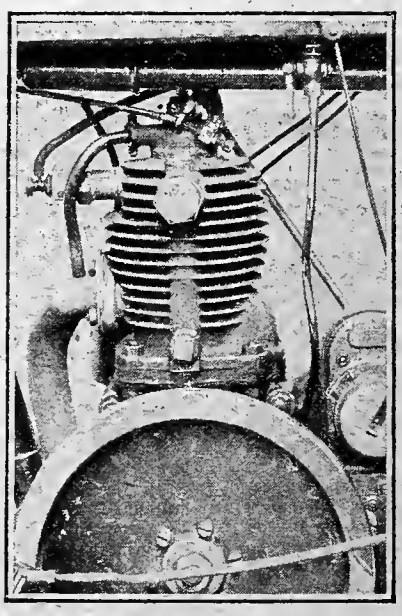
Air Scavenging System. Mixture Injected after Ports Close.

MUCH ingenuity has been expended in order to improve the normal three-port two-stroke, but very frequently such new designs remain in the paper stage. As a contrast we were recently enabled to examine and test an experimental machine operating on an unusual system.

Briefly, the engine, which is the production of Whitehouse and Sarsons, of King Edward Road, Moseley, Birmingham, employs a double diameter piston. The volume of air drawn into the crank case is somewhat greater than the piston displacement. On the down stroke this air is transferred in the normal manner and scavenges the cylinder, while on the same stroke a rich mixture is drawn into the annular space between the normal diameter piston and the cylinder wall of the large diameter piston. On the compression stroke, after the ports have closed, trapping a proportion of the scavenging air, the rich mixture in the annular chamber is compressed to such a degree that it is forced past a spring-loaded non-return valve into the cylinder head, and there fired in a normal manner. In practice the rich mixture is drawn into the annular chamber through a passage formed in the piston, while the air enters the transfer port through a second passage formed in the thrust side of the piston wall. A special carburetter is employed, one lever of which controls the flow of air to the crank case, and the other governs the supply of mixture.

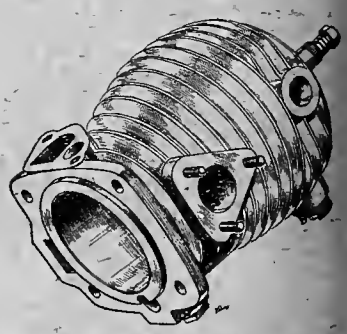


Double diameter piston fitted to the W. and S. two-stroke, showing the arrangement of passages adopted on the experimental model.



The experimental W. and S. engine.

The experimental engine was designed with the object of employing as many parts as possible of a standard make of two-stroke engine, and for comparative purposes the exhaust and transfer ports, piston head, combustion space, and bore and stroke were made identical with this engine. Though no actual bench tests have been carried out, the two engines have been road tested side by side, the gear ratios and conditions being the same in each case, and we are told that the new engine will ascend a certain hill with two up which the standard engine just fails to surmount with only the rider in the saddle. The capacity of the W. and S. engine is 269 c.c., and on the road we found it to be capable of accelerating very rapidly on a slope of 1 in 15 (gear ratio 5.25 to 1), and on the gradient it attained a speed of over 30 m.p.h. by speedometer. It is flexible, and two strokes regularly at low speeds, and appears to develop considerably more power than the average engine of its size.



Showing the general layout of the ports.

AN O.H.V. BIG TWIN.

The 998 c.c. British Anzani V Twin.

OF several engines which made their *début* at the recent five hundred miles race at Brooklands, the British Anzani, mounted in a Zenith motor bicycle, gave a very promising performance.

We recently inspected this engine, which had not been interfered with since the event, and we were at once impressed by its condition. Externally, it had kept remarkably clean, whilst internally all the bearing surfaces were as new.

Two cast iron cylinders, which have a bore and stroke of 83×92 mm: (998 c.c.), are provided with detachable heads, which accommodate the overhead valves, the rocker arms for these being pivoted in brackets mounted on twin lugs. The rocker bearings are lubricated by wicks fed from a cup filled with grease, which liquefies when the engine gets hot.

The engine, it is claimed, has developed 24.5 b.h.p. on the bench at a speed of 3,500 r.p.m.

Mechanical Lubrication.

Lubrication is carried out by means of a plunger pump located in the base of the crank case sump. The plunger has a bore and stroke of 6×6 mm., and delivers oil at the rate of just under half a pint per minute at 3,000 r.p.m., engine speed.

The plunger is driven from an eccentric located outside the two cam wheels on the crankshaft. The oil is led first to the timing side, and thence, by a Y-shaped connection, to the flywheel side mainshaft bearings.

The drilled crankshaft is built up from the flywheel side, and feeds the cams *via* a small hole in the crank case casting, and the magneto bevel spindle through another channel. The flywheel side of the crankshaft is drilled, and conveys the oil to the white metal big end bearing.

An additional oil lead to the front cylinder is regulated by a sight feed drip lubricator fixed on the tank.

Aluminium pistons carry three rings of the deep and narrow variety, the lowest acting as a scraper and distributing the oil in the cylinder. The little end of the connecting rod floats on a hollow gudgeon pin, which is retained in position by brass discs at each end.

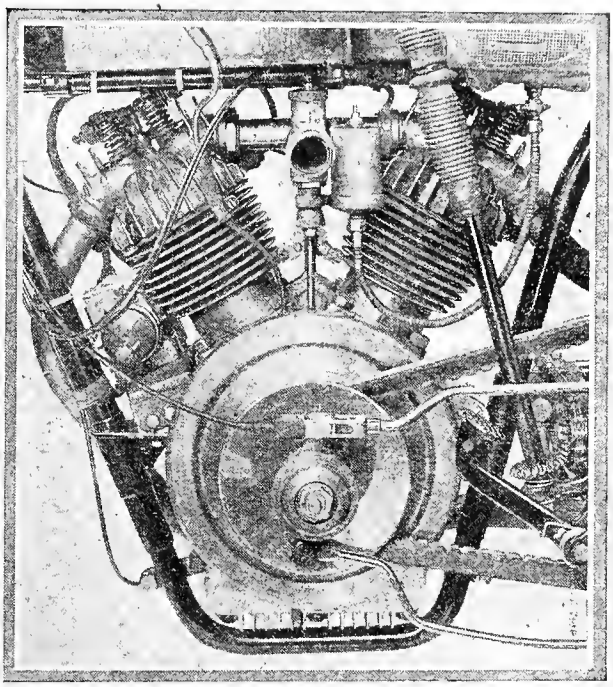
Tappet adjustment is effected in the usual manner, by nuts on the push rods, whilst a long guide is afforded by the use of a brass casting fitted on the top of the crank case.

A quart of oil is contained in the sump, which may be drained by removing a small plug at the base of the pump. The rocker arms, riding over the cams, are provided with Hoffmann rollers—a very effective fitting—whilst the efficiency of the engine relies to a large degree on the special form of cam.

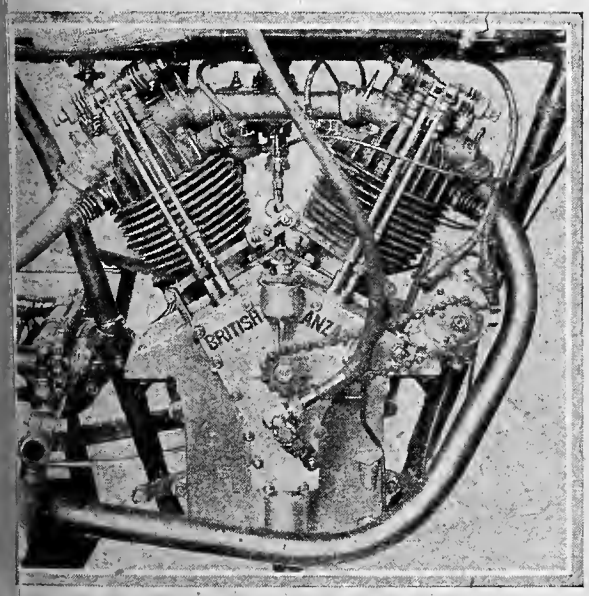
The crank case is held in the frame by four bolts located in shoulders cast at the front and back, while additional support to the engine is also given by two frame tube clips fitted lower down on the casting.

A 1,100 c.c. cycle car engine is also made, and, but for the provision of two belt-driven fans in front of each cylinder, and aluminium cases for the overhead valve gear, is identical with this unit. To meet the special requirements of cycle car transmission, the heavy flywheel is arranged to receive a clutch cone.

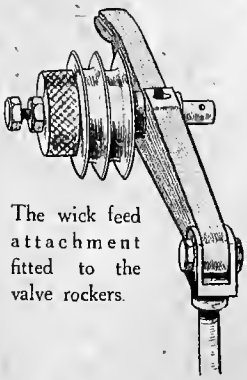
These engines, which are designed by Mr. Hubert Hagens, are made by the British Anzani Engine Co., Ltd., 30, Scrubbs Lane, Willesden, London, N.W.10.



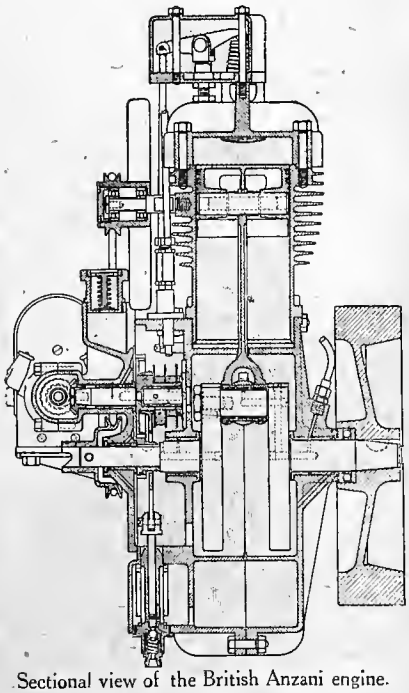
It will be observed that very large combustion heads are used, whilst the crank case anchorage, though somewhat unusual, allows the engine to be removed with ease.



Exhaust valve lifting arrangement and the revolution counter attachment are clearly shown. The dimensions of the oil sump can be gathered from this picture



The wick feed attachment fitted to the valve rockers.



Sectional view of the British Anzani engine.

CLUB NEWS.

(Continued from page 239.)

York and District M.C.

Next Saturday the club is holding a hill-climb at Garrowby, near Stamford, commencing at 2.30 p.m.

Truro and District M.C. and L.C.C.

On Friday afternoon, the 2nd prox., an "open" and closed hill-climb will be held on Porthtowan Hill.

Southport and District M.C.C.

Closed speed trials will be held on September 10th on the Southport sands. Entries should be addressed to Mr. H. F. Brockbank, 58, Lord Street.

Skipton and District M.C. and L.C.C.

An inter-club team trial will take place on September 3rd over a course of approximately 100 miles. Application for membership should be made to Mr. T. Wilkinson, Granville St., Skipton.

Leinster M.C.C.

Chiefly remarkable at Saturday's open race meeting, held at Portmarnock, was the fine riding of Greene, on a 2¼ Enfield lightweight, who scored in three of four events, winning two. Large crowds witnessed the racing. Results:

250 c.c. CLASS (ten mile handicap).—1, Greene (2¼ Enfield), scratch; 2, Watts (2¼ Levis), handicap 4m. 30s. Time, 18m. 30s.

350 c.c. Class (ten mile handicap).—1, Adair (2¾ Douglas), handicap 3m. 40s.; 2, Slevin (2¼ Velocette), 5m. 30s.; 3, Greene (2¼ Enfield), 4m. 3s. Time, 15m. 30s.

600 c.c. CLASS (ten mile handicap).—1, Greene (2¼ Enfield), handicap 5m. 55s.; 2, —— (2¾ Douglas), 4m. 55s.; 3, Holding (Cotton), 1m. 15s. Time, 15m. 45s.

UNLIMITED CLASS (thirty mile handicap).—1, Cathcart (3½ Norton), handicap 1m. 58s.; 2, Redmond (7-9 Indian), owes 3m.; 3, Hampenstall (3½ Rudge), handicap 4m. 30s. Time, 41m. 35s.

Pembrokeshire A. and M.C.C.

On Thursday last this club ran its annual speed trials over a straight course of two and a half miles on the Pendine sands, which were in a very fair condition. Some good racing was seen, the Sunbeams being very speedy; but, of course, Handel Davies's Brough-Superior was easily the fastest machine of the day. In the sidecar class, however, he was very hotly pressed by his brother, Luther Davies, on a Morgan-M.A.G., which was stripped for the event. The outfit which undoubtedly caused the greatest interest was the little 3 h.p. Beardmore-Precision sports model, driven by Archie Cocks. The ear-splitting exhaust of this 350 c.c. engine made everybody sit up and take notice, especially as it flashed over the finishing line at a round 50 m.p.h. This rider was fourth in the 350 c.c. solo race, and was the only two-stroke entered.

Three crashes, in which Graham Ace, Mansel Davies, and E. J. Jeremy were the unfortunates, somewhat marred an otherwise enjoyable afternoon's sport. Results:

CLASS 1 (350 c.c.).—1, S. Green (2¾ A.J.S.); 2, H. G. K. Palmer (2¾ Douglas).

CLASS 2 (350 c.c.). — 1, W. Edwards (2¾ Omega); 2, Handel Davies (2¾ Coulson B).

CLASS 3 (550 c.c.).—1, Mansel Davies (3½ Sunbeam); 2, V. R. McKenzie (4 Triumph).

CLASS 4 (550 c.c.).—1, Mansel Davies (3½ Sunbeam); 2, V. R. McKenzie (4 Triumph).

CLASS 5 (unlimited c.c.).—1, Mansel Davies (3½ Sunbeam); 2, V. R. McKenzie (4 Triumph).

CLASS 6 (unlimited c.c.).—1, Handel Davies (8 Brough Superior); 2, W. Edwards (2¾ Omega).

CLASS 8 (sidecars unlimited).—1, H. Davies (8 Brough Superior sc.); 2, L. Davies (10 Morgan-M.A.G.); 3, Archie Cocks (3 Beardmore-Precision sc.).

Taunton and District M.C. and L.C.C.

The above club is holding its trial for the Taunton Motor Traders' Cup on Thursday, September 22nd. The course, which will commence and finish at Taunton, will be about 160 miles.

Colne and District M.C.C.

W. Gawthorpe (on a 4 Triumph) was the winner of the sporting reliability trial held on the 13th inst. R. Haigh (6 Bradbury sc.) and B. Denton (7 A.J.S. sc.) were second and third respectively, with the only lady competitor, Miss Field (5-6 Coventry-Victor sc.) fourth.

Coventry and Warwickshire M.C.

Only eleven competitors, out of an entry of twenty-three, succeeded in getting through non-stop in the very sporting trial organised by Mr. W. Brandish last Saturday. Two fairly deep watersplashes and a track across fields were included in the twenty-eight mile course, which was covered twice.

E. Barnett (3½ Invicta) and F. E. Shanks (2¾ Douglas) tied for the solo prize, but a secret check gave the win to the former.

W. J. Montgomery (5 Rover sc.), G. Bettridge (4 Triumph sc.), and H. Finch (4 Triumph sc.) were, in the order given, leaders in the sidecar class.

Midland C. and A.C.

Three laps of a sporting twenty-four miles circuit in the Rednal-Hagley Wood neighbourhood were covered by competitors in the inter-team trial last Saturday. Seven teams of six riders apiece took part, the performances of the best two solo and two sidecar members only of each team to count. Results:

FIRST.—BIRMINGHAM M.C.C.

	Marks lost.
R. W. Duke (4 Triumph)	0
A. E. Rollason (3½ Ariel)	15
W. T. Woodcock (6-7 Ariel sc.)	1
T. W. Watson (4 Norton sc.)	0
Total	16

The above riders will receive M.C. and A.C. gold medals.

SECOND.—SOUTH BIRMINGHAM M.C.C.

	Marks lost.
H. Cox (3¾ Scott)	0
J. Walker (4¼ B.S.A.)	5
B. Bird (4¼ B.S.A. sc.)	0
H. Uzzle (4¼ B.S.A. sc.)	19
Total	24

THIRD.—REDDITCH M.C.C.

	Marks lost.
J. Dosher (8 Enfield)	0
L. Sealey (4¼ B.S.A.)	0
T. Weaver (5-6 Verus sc.)	25
H. Poole (4¼ B.S.A. sc.)	4
Total	29

The following riders lost no marks in addition to those already mentioned:

M.C. and A.C.: T. F. Blumfield (6-7 Ariel sc.) and C. Atcherley (4 Triumph).

Sutton Coldfield and North Birmingham A.C.: A. Watson (3½ Sunbeam sc.).

Kidderminster M.C.C.: F. W. Giles (7 A.J.S. sc.).

Wolverhampton M.C.C.: T. C. Greenwood (3½ Sunbeam sc.) and R. Brown (3½ Sunbeam sc.).

A Section devoted to Club Announcements will be found on Supp. xxxix.

Wolverhampton M.C.C. and Kidderminster M.C.C.

A joint hill-climb, organised by the above clubs and open to the Midland Centre A.C.U., will be held on Penkridge Bank, Staffs., next Saturday, commencing at 2 p.m.

Barrow and District M.C.

Only one machine failed on the once dreaded Kirkstone Pass, which was included in the trial for the Fisher Cup. W. A. Singleton (6 Martinsyde sc.) is the winner of the premier award, with H. Jackson (3½ Sunbeam) and J. Morrison (3½ P. and M.) second and third respectively.

Essex M.C.

Open only to members of the club, the annual twenty-four-hour trial from London to Bala and back will be held on Friday and Saturday, September 9th and 10th. Full particulars may be obtained from Messrs. F. A. Applebee and E. A. Colliver, at 208, Great Portland Street, London, W.1.

NEW SIDECAR RECORDS.

Twelve Hour and Five Hundred Miles Records Broken by Norton Sidecar.

ALL sidecar records from fifty miles and one hour up to 500 miles and twelve hours in the 600 c.c. class were captured at Brooklands on the 16th inst. by H. H. Beach, riding a 3½ h.p. Norton outfit.

In addition, the figures for seven, eight, nine, ten, and eleven hours and 400 and 500 miles exceeded the existing 1,000 c.c. sidecar performances for the same distances and times.

The equipment of the machine included Dunlop tyres, Speedwell oil, Shell spirit, K.L.G. plug, C.A.V. magneto, Renold chains, and Binks carburetter; and, as will be seen by the figures below, its speed was very consistent throughout, only gradually dropping towards the end of the twelve hours.

Unfortunately, after the twelve hour times had been clocked, the sidecar axle broke away, and the machine charged down the banking near the members' bridge, striking the rails on the inside of the track, and throwing Beach and his passenger, R. N. Judd, somewhat violently, although neither was seriously damaged.

CLASS F.—SIDECARS UP TO 600 C.C.

Hours.	Miles.	Yards.	M.P.H.
1	55	267	= 55.15
2	108	525	= 54.15
3	161	575	= 53.81
4	214	811	= 53.61
5	269	6	= 53.80
6	318	933	= 53.09
* 7	368	1,756	= 52.71
* 8	412	953	= 51.56
* 9	465	1,746	= 51.78
*10	516	370	= 51.62
*11	559	372	= 50.84
12	576	690	= 48.03

Miles.	h.	m.	s.	M.P.H.
50 ..		54	27.8	= 55.09
100 ..	1	50	45.1	= 54.18
200 ..	3	42	40.5	= 53.89
300 ..	5	39	3.6	= 53.03
*400 ..	7	37	19.2	= 52.48
*500 ..	9	41	22.8	= 51.60

*Also Class G (up to 1,000 c.c.).

Immediate Delivery

RE-PLATED.
RE-ENAMELLED.
RE-BUILT.

Perfect finish in 1920 Colours.

Fitted with New Tyres and Tubes.

½ h.p. **P. & M.**—2-speed, kick-start and clutch—Solo—**£30 down** and 12 monthly payments of £2-12-6, or fitted with well upholstered and roomy new sidecar and chassis, **£40 down** and 12 monthly payments of £3-10-0

Cash: Solo **£60** Combination **£80**

LIMITED NUMBER ONLY.

Acetylene generator, head and tail lamps, tools, pump, and mechanical horn, £5 the set.

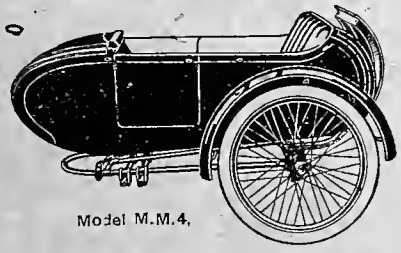
MOTOR VEHICLES (Engineering and Supply) ASSOCIATION, Ltd.
15, 16 & 17, Eldon Street, London, E.C.2.
'Phone: Wall 5436.

MONEY CAN BUY NO MORE

than the perfection of any Canoelet model. All that is known about Sidecars, gathered in the years of our specialised experience, is embodied in every Canoelet model, which is recognised as the quintessence of comfort and durability,—whichever one you choose. We have plain and luxurious models to suit all needs, but anything more expensive than can be found in our catalogue is money wasted. Choose a Canoelet, money can buy no more.

MEAD & DEAKIN, Tyseley, BIRMINGHAM.

CANOELET



Model M.M.4.

MOTOR-CYCLING.

Cut from the 'Daily Mail' Aug 11. 21.

LIGHT-WEIGHT VOGUE.

BABY SIDE-CARETTES.

By A MOTOR-CYCLIST.

Each week more people are looking to the light-weight motor-cycle as their future transport, and there is every excuse for adopting a very optimistic attitude towards this part of the industry.

It is, however, remarkable that, despite the achievements of this type in the biggest events of the last two years, there should still remain a doubt in the minds of a section of the public of their soundness and reliability. I know this exists from my correspondence.

There are now something like 60 light-weight machines on the market. It is more than likely because of their popularity many back-street cycle-makers will come into the light-weight trade. My advice to buyers is to stick to the proved "makes." It will pay them.

Nearly all the older makes, particularly those which have been produced for years are soundly constructed and there is as scientific a design as any of their brothers, but there are the "back-street" eyes on the

* * * * *

For instance, "the little bus with the big heart"—the

O.K. Junior

If any machine has been proved, this has, and the twenty years' experience behind it, and its renown throughout the world, are absolute guarantees of good design and general efficiency. Remember the O.K. Junior is the product of the Pioneers in Lightweight Construction — remember, it climbed Snowdon as early as 1914 — remember, that ever since it has been putting up wonderful records in all the classic trials — remember, that its latest achievement was in the Scottish Six Days, when, notwithstanding the fact that the conditions of running were more strenuous than in any previous trial, the two O.K.'s came through with flying colours, being awarded Gold and Silver Medals. Remember—and then "stick to the O.K."

Ask for Catalogue and name of nearest of 400 Agents selling it.

Humphries & Dawes, Ld., Hall Green, B'ham.

are excellent and [illegible] reliable. Those [illegible] dropping the pedal [illegible] consider the [illegible] particularly if their work demands [illegible] stopping and starting. But I repeat the [illegible] "keep to the proved makes." All of them, two-stroke and four-stroke, are very light on petrol, oil, and tyres, and a season's riding, using it to go to town for business, to the tennis court or the golf course in the evening, and good runs during the week-ends, need not be expensive.

* * * * *

As regards speed, several of the bigger machines are capable of 50 miles an hour, but very, very few are ridden at more than 35. Some of the smallest four-stroke light-weights are so speedy that they would not be left far behind in a long run. Most makers now produce two-speed-gear models, which increase the touring radius of the machines. Even the smallest of them are quite capable of climbing any gradient likely to be met with in an average ride. Most are amply mud-guarded and clean to ride.

The two speeds also give them an extended scope as two-passenger machines, and, with "Tan-Sad" seats on the carrier, have become exceedingly popular as permanent pillion mounts, no matter how

New Imperial Motor Cycles

INTERNATIONAL SIX DAYS TRIAL

AUGUST 1st—6th.

ANOTHER 100% SUCCESS.

TWO

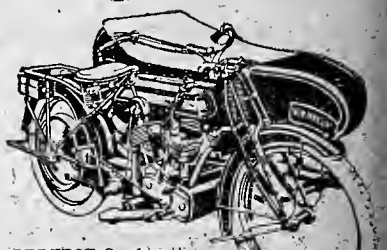
2¾ H.P. STANDARD MACHINES COMPETED IN THIS EXACTING TRIAL IN THE MOUNTAINS OF SWITZERLAND & BOTH GAINED GOLD MEDALS.

This only emphasises the excellencies of these machines, which combine with PERFECT DEPENDABILITY, SPEED, Ease of Control, Flexibility at Slow Speeds, Comfortable Riding Position, and Certainty that they will not let you down.

DON'T TAKE RISKS—BUY A "NEW IMPERIAL"

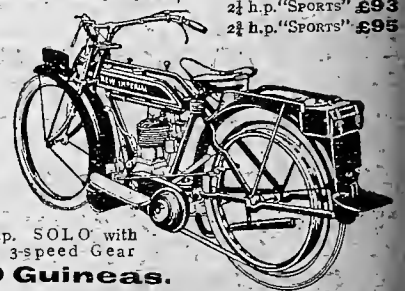
THE 8 H.P. FAMILY MACHINE OR THE 2¾ H.P. SOLO WILL GIVE YOU FULL SATISFACTION.

NEW IMPERIAL CYCLES, LTD., BIRMINGHAM (Est. over 30 years).
(Dept. R.)



8 h.p. PERFECT Combination 3-speed
160 Guineas.
Allow us to send you particulars.

2¾ h.p. "SPORTS" £93
2¾ h.p. "SPORTS" £95



2¾ h.p. SOLO with T.T. 3-speed Gear
70 Guineas.

N.B.—No Lightweight is complete without a Three-speed Gear.

WELDING

WE SPECIALISE IN HIGH-CLASS WELDING REPAIRS OF ALL KINDS AND IN ALL METALS.

Scored Cylinders, Broken Flanges, Aluminium Crank Cases, Frames, Pistons, Cracked Water Jackets, Valve Seatings, Malleable Castings, etc.

SATISFACTION GUARANTEED OR MONEY REFUNDED.

Electric and Oxy-acetylene welding. All work finished and machined.

We are Specialists in the repairing of N.S.U. Gears. Estimates Free.

'Phone: 1550. **OLDHAM WELDING & CENTRAL MOTORS, Ltd.** 'Grams: "Welding," Oldham.

185a, Huddersfield Rd., OLDHAM.

The cure for ignition troubles

E·I·C MAGNETOS

Fully guaranteed. Ask your agent for prices

E·I·C MAGNETOS Ltd.
Sampson Rd North,
BIRMINGHAM.

West of England Service Depot
W. B. CORAM
140 Victoria St, Bristol

The Wright

Neat. Light. Clean. Bright. Cheap.

Embossed Aluminium DOUBLE-SIDED, FRONT & SQUARE REAR NUMBER PLATES *for Motor Cycles.*

With or without Licence Holder.

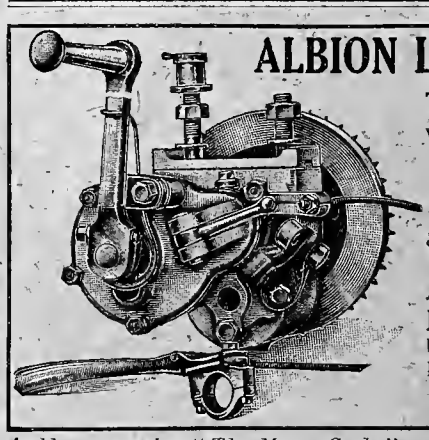
Delivery by return.
WRIGHT & SON,
Dept. C1
Edgware, Midd'x.
'Phone: "Edgware Four."

17/6 A PAIR *postage & packing paid*

Licence Holder 5/- extra.

Hackney, Carriage and other plates supplied

ALBION Lightweight



Two-speed Gear with Clutch and Kick-starter.

Price:
£12-0-0

ALBION Eng. Co., Ltd.
Upper Highgate St.
BIRMINGHAM.
'Phone: Mid. 1017.
'Grams: "Eastart."

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words charged double rate. Each paragraph is charged separately. Name and address must counted. Series discounts, conditions, and special terms to regular trade advertisers will quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable LIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the word Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½ %. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., late 1920, as new, all accessories, tax paid; £85, or nearest.—45, York St., Wigan. [6045

1920 A.B.C., in perfect condition, all accessories; £85.—7, Denmark Terrace, Fortis Green Rd., East Finchley, London. [5453

SEASON TICKET or SINGLE FARE?

Say you are purchasing a brand new Motor Cycle. You go through the whole alphabet of Agents, and find there is no difference in price, which is very rightly fixed by the manufacturer.

But although there is no difference in price, there is a difference, and a very big difference, in values. Some agents will give you the Single Ticket of Service (which means that, having taken your money, they have no further interest in you), whilst others present you with a Season Ticket of Service, and are always anxious to help and assist.

This is why it pays to deal with Godfrey's, whose ungrudging, willing, and cheerful service adds pounds to the value of any machine sold by them.

NEW 1921 MODELS IN STOCK.

A.J.S.	HAWKER
ARIEL	LEVIS
BLACKBURNE	MARTINSYDE
B.S.A.	MATCHLESS
CALTHORPE	NEW IMPERIAL
COULSON-B.	RADCO
COVENTRY EAGLE	RUDGE
DOUGLAS	ROYAL ENFIELD
EXCELSIOR	SCOTT
INDIAN	TRIUMPH
INDIAN SCOUT	ZENITH

SECOND-HAND MACHINES.
(Guaranteed for Three Months.)

NORTON, 1920, 3½ h.p., T.T.	£72
RUDGE, 1920, I.O.M. Model	£75
*B.S.A., 1920, 4½ h.p., C.B.	£89
*B.S.A., 1920, 4½ h.p., B.S.A. Sc.	£150
DOUGLAS, 1920, 2¾ h.p., 3-sp.	£78
INDIAN Scout, 1921, 4 h.p., elec	£132
RUDGE, 1920, I.O.M. Model	£82
*INDIAN Comb., 1915, 7 h.p.	£105
*INDIAN Comb., 1916, 7 h.p.	£125
*SCOTT, 1920, and Sidecar	£105
JAMES, 1919, 6 h.p. Millford Sc.	£115
SCOTT, 1915, 3½ h.p.	£69
LEVIS, 1920, 2½ h.p.	£42
NEW IMPERIAL, 1920, 2½ h.p., 2-speed, K.S.	£64

*Sidecar Combinations.
ALL FULLY LICENSED.

SHOP-SOILED MODELS (NEW).

COVENTRY EAGLE, 3½ h.p., 3-speed, 1920	£92
INVICTA, 1920, 3½ h.p., 3-speed	£92
BLACKBURNE, 1921, 4 h.p.	£93
BLACKBURNE 8 h.p. Combination, spare wheel, 1921	£170

Write for full lists.

Cash or Deferred Payments

GODFREY'S Ltd.,
208, Gt. Portland St., LONDON, W.1.

'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

1920 A.B.C., perfect condition, with 1921 Grindlay sporting sidecar, £105; without, £90; photo, stamp.—4, Hanover St., W.1. [5367

A.B.C., 1920, Magdyno, very fine order, fast, licensed; £97/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6116

1921 A.B.C. Machines in stock, complete stock of spares stocked.—W. Luther J. Davies, 71, Commercial St., Newport, Mon. 'Phone: 2488. [0639

1920 A.B.C., winner of numerous hill-climbs and speed events this season; any examination or trial; £85.—Marshall, 5, Station Rd., Edgware, Middlesex. [X7649

A.B.C. Combination de Luxe, Aug., 1920, sidecar new 1921, dynamo lighting, speedometer, spare tyre and many other spares, small mileage; £125.—Harrison, 21, Wicker, Sheffield. [X7837

1921 A.B.C., brand new, unused, kick start; standard and T.T. solo £109, combination £136; licensed, with all accessories, £114/10 solo, £141/10 combination.—Derrington, Grafton Rd., New Malden. [5142

Abingdon.

ABINGDON Combination, 7-8h.p., 3-speed, guaranteed thorough overhauling; trial run; accept £65:—104, Fortess Rd., N.W.5. (Between 9-6.) [5257

ABINGDON King Dick 4h.p. Combination, 1914 model, tax paid, perfect condition, all on; £50, or offer; after 6.—33, King's Rd., Harlesden Rd., Willesden Green. [5455

Acme.

1920 Acme-Jap 8h.p. Combination, hood, screen, lamps, horn, Tan-Sad, spare wheel, licensed, excellent condition; £120.—Edwards, 50, Harrington Rd., South Kensington. [5043

A.J.S

A.J.S. 6h.p., 1916, and sidecar, any trial; £78.—Greaves, Saxons, Weybridge. [5709

A.J.S., best after test, all models.—Merrick's Stores, 174, Listerhills Rd., Bradford. [2219

1921 2¾h.p. A.J.S., 3-speed, brand new; any offers.—13, New St., Wellington, Salop. [X7756

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts [8592

A.J.S. Combination, 1920, little used, insured, excellent condition; £175.—26, Hadleigh Rd., Leigh-on-Sea. [4429

2¾h.p. A.J.S., speeds, C.K.S., little used, licensed, fine order; £50.—13, New St., Wellington, Salop. [X7755

1920 A.J.S. Combination, every conceivable accessory, practically new; £150.—18, Hestercombe Av., Fulham. [5856

1921 A.J.S., 2¾h.p., genuine, new condition, unpunctured, mileage 310, licensed; £92.—26, Wanderers Av., Wolverhampton. [5920

A.J.S.—London and Walsall agents; immediate delivery; exchanges or deferred payments.—Maudes' Motor Mart, London and Walsall. [2420

A.J.S. 6h.p., just overhauled, tyres practically new, Eastings wind screen, lamps; best offer over £100; after 4 p.m.—297, Prescot Rd., Liverpool. [5495

A.J.S. 1916 4h.p. Combinatoin, spare wheel, in thorough running order, all tyres and lamps good; £86.—41, Gresley Rd., N.19. After 6. [6155

1921 A.J.S. Combination, 7h.p., electric light, insurance paid until next April, tax paid, small mileage; £205.—Batt, 386, High St., Chatham. [5305

A.J.S. 6h.p. Combination, 1914-15, fine condition, lamps, horn, speedometer, tax paid; £90.—Wilkin, Rosemount, Belmont Rd., Wallington. [6162

6h.p. A.J.S. Combination, 1916, full equipment, spares, registration paid, sound; price £115, or nearest.—R. Nunnerley, 25, Scarisbrick St., Southport. [5224

A.J.S. Combination (1920), electric light, speedometer, horns, screen, apron, spare wheel, guaranteed perfect; £140.—Reeves, Alvecote House, Tamworth. [X7604

A.J.S. 1920 6h.p. Combination, spare wheel, lavishly equipped, small mileage, unscratched; £145.—Braemar, 17, St. Quintin's Av., North Kensington. [5777

1921 A.J.S. 7h.p. Combination, as new, Lucas lamps, licence paid end of year; cost £225, accept £190; any trial.—Webber, 34, Queen's Terrace, Morecambe, Lancs. [5221

A.J.S., 1916, 3-speed, kick start, overhauled by makers, detachable head, lamps, horn; tax paid, perfect; any trial; £60, or exchange for 2-stroke.—47, Windsor Rd., Penarth. [5298

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Combination, 1917, khaki model, Lucas lamps, good tyres, in beautiful condition; £125, or exchange for good Sunbeam combination.—Annan, Stourport Rd., Kidderminster. [6027

1916 5h.p. A.J.S. Combination, complete lamps, tools, spare wheel, Binks carburetter, tax paid, splendid running order; £110, or near offer.—Geddes, 27, Market St., Galashiels. [5612

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

1916 A.J.S. 6h.p., Canoelet sidecar, adjustable wind screen, hood, apron, interchangeable wheels, fully insured, tax paid, speedometer, horn, 3 lamps, spares, light car tyres; £105.—57, Mayfield Rd., Sanderstead, Croydon. [5193

A.J.S., 1921.—All models in stock for immediate delivery; 7h.p. combination, £195; 2¾h.p. 3-speed solo, £95; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

A.J.S. 1920 6h.p. Combination, Lucas dynamo, fully equipped and insured, all spares, open to any examination or trial; consider Morgan in exchange; lowest cash price £155; seen any time.—Snow, Laurel St., Queens Rd., Dalston, E.8. [6166

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

1921 7h.p. A.J.S. and Montgomery tandem sidecar, upholstered red, hood, screen, Lucas dynamo lighting, Cowey speedometer, Cox Atmos carburetter, Sunbeam pattern legshields, spare wheel (unused), perfect condition, small mileage; £200.—Schofield, 123, Northumberland Rd., Old Trafford, Manchester. [X7636

Alldays.

E. KICKHAM for Allon, sole agent for Bristol and district.—Stokes Croft, Bristol. [3356

ALLON, 2¾h.p., Aug., 1919, 2-speed, legshields, pillion seat, with footrests; £45.—61, Albany Rd., Coventry. [X7739

LATE 1917 Allon, fully equipped, licensed; £45; exchange considered. — Bergholt, High St., Harpenden. [5600

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ALLDAYS Allon, 1918, 2-speed, clutch, legshields, splendid condition, tax paid; 38 gns.—25, Shirlock Rd., Hampstead, N.W.3. [5671

ALLDAYS Allon, 1921, soiled only, list price £75; special cash price, £65.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6117

ALLDAYS Allon, 2¾h.p., 2 speeds, clutch, kick starter; in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7711

2¾h.p. 2-stroke Alldays Allon Motor Cycle, in excellent condition, 2-speed gear, complete with lamps and licence; price £35.—Royd Garage, Ltd., Hebden Bridge. [5202

ALLDAYS Allon, 1919, clutch, fully equipped, taxed, and insured, perfect running order; £50, or near offer; private owner.—Seen at 33, High St., West Norwood, S.E.27. [5348

ALLDAYS-ALLON, countershaft, tyres perfect, good condition, 25 gns.; 1920 Excelsior Baby Triumph, 2-speed, kick start, etc., unscratched, £40; exchanges; evenings.—67, Fernlea Rd., Balham. [6187

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American X.

1920 7-9h.p. American Excelsior Sporting Combination, as new, guaranteed perfect; £110, or nearest offer.—Pasmore, 5a, Lanark Place, Maida Vale, W.9. [5240

AMERICAN X 1920 7-9h.p., Swan sporting sidecar, dynamo lighting, indistinguishable from new; £125; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7700

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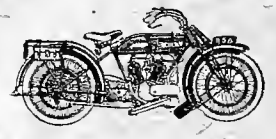

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4 h.p. **BRADBURY**	£95	0
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ARIEL 6-7h.p. Combination, 3 months old; £195, sell £145.—Highstone Garage, Leytonsto [5

ARIEL 3½h.p., 1914, 3-speed, excellent conditi £32.—7, Exhibition Rd., South Kensington. [6

ARIEL Motor Cycle, good order; £25; seen appointment.—Vail, 57, Colebrooke Row, Isl ton, N.1. [5

3½h.p. Ariel, good condition, new B. and B., Bos £28 for quick sale.—Lane, Church St., brook, Derbyshire. [5

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20-21 Cotton-Villiers, 2 speeds, lamps, tools; £50. —Mayo, Leonard Stanley, Glos. [5954

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OLSON B 1921 Models in Stock.—Sole Wiltshire Agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5007

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GENUINE Army Despatch Rider 2-stroke, discs, low, sporty, and fast, very uncommon machine; a bargain, £38, or offer:—Dental, 769, Romford Rd., Manor Park, London, E. [5616

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DOUGLAS 1916 2¾h.p., W.D., good condition, tax paid; £40.—D.H., 5, Lichfield Rd., Grove Rd., Bow, E.3. [5268

1918 Douglas, 4h.p., enamel, plating as new, perfect condition; a gift, £55.—9, Church Rd., Willesden. [5932

DOUGLAS 2¾h.p., 1920, 3-speed, clutch, K.S., not W.D., perfect; £78.—Parsons, 1, Acton Lane, Chiswick. [6014

DOUGLAS 1920 4h.p. Combination, all on, very good condition, wind screen; £90.—Reading, Norton, Stourbridge. [5420

£30.—2¾h.p. Douglas, 2 speeds, electric lamps, licensed, mechanically perfect.—King, Egrove Farm, Oxford. [X7781

DOUGLAS 4h.p. Combination, wind screen, all on, tax paid, perfect condition; £85.—78, Royal Rd., Kennington Park. [5263

DOUGLAS Combination, 1916, good condition, tax paid; £67/10. — Dodd, Park Rd., Shirbeck Quarter, Boston. [5983

HALIFAX.—Douglas 1921 models; cash, exchange, or deferred payments.—Motor Exchange, 25, Horton St., Halifax. [5550

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1921 **ENFIELD,** 2-stroke, 2-speed gear, all on, tax paid, not done 200 miles. **£52-10-0**

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Douglas.

DOUGLAS, 1916, 2¾h.p., 2-speed, fully equipp splendid condition; £50; no dealers.—31, Ba Rd., Lee, S.E.12. [5

4h.p. Douglas Combination, 1919, lamps, scre hood, luggage grid, pillion, perfect.—27a, A ley Park, Anerley. [6

4h.p. Douglas Combination, 1915, 3-speed and clut and kick starter model; £65.—Wauchope's, Shoe Lane, London. [9

DOUGLAS 1920 Combination, equipped, excell condition; £105; any trial.—Clark, 7, Exhibit Rd., South Kensington. [6

DOUGLAS 2¾h.p., 2-speed, 1912-13, all-on, tax p good condition, good tyres; trial; £35.—R. Gil Bedfont, Middlesex. [5

1915 2¾h.p. Douglas, 3-speed, speedometer, lam horn, accessories, licensed; £40.—Bradley, G Lines Mess, Chatham. [X7

1920 2¾h.p. 3-speed Douglas and accessories, paid, in good condition; £72.—Bonnds, 2 High Rd., Kilburn, N.W. [5

DOUGLAS 1919 2¾h.p., 2-speed; £47/10.—Ne ham Motor Co., 223, Hammersmith Rd., W 'Phone: Hammersmith 80. [5

DOUGLAS Combination, 4h.p., 1919, running o Binks, Easting, Tan-Sad; £70; after 6 p.m.— Havelock Terrace, Gateshead. [X7

DOUGLAS, 2¾h.p., 2-speed, lamps, etc., fast, g running order; £35; after 6 p.m. — Nech Sandy Lane, Beddington, Surrey. [5

1920 4h.p. Douglas Combination, wind screen, lam speedometer, all accessories, like new; £13 Blay, 192, Heath Rd., Twickenham. [5

1921 2¾h.p. 2-speed Douglas, all on, still in cra What offers?—Howard, Electricity Works, G.E. Norton Folgate, Bishopsgate, E.C. [6

DOUGLAS 4h.p., 1919, engine and finish unus new condition, solo £75, combination £8 Wilton, White Swan, Upper Norwood. [6

DOUGLAS 4h.p. 1917 Combination, 3-speed, k start, equipped, taxed, Easting, sound throu out; £74.—136, Wesgate, Gloucester. [6

DOUGLAS 2¾h.p., 1916, splendid condition, in ance, tax paid, all accessories, discs; £60, c —51, Brailsford Rd., Brixton, S.W.2. [5

DOUGLAS 2¾h.p., 1916, excellent condition, la and accessories, tax and insurance paid; £5 Smith, 62, East Dulwich Rd., London. [5

F.O.C.H. have several new and second-hand Dou combinations and solos; bargains.—5, Heath Hampstead (nr. Hampstead Tube Station). [5

DOUGLAS 4h.p. Combination, 1921, done a 100 miles; £140; accept lightweight in exchan —Grimes, 18, Bruton Place, Bond St., W. [5

DOUGLAS Combination, 1917, engine 4243, E ing screen, accessories, spares, all new Dunl trial; £65.—12, Parade Mews, West Norwood. [5

4h.p. Douglas Combination, 1920, Easting, sp spares, practically new; expert examination vited; nearest £110.—Clark, Charlton, Elstree. [5

DOUGLAS, 1917, 2¾h.p., 2-speed, enamel, plati and mechanically splendid condition, equipp £46.—30, Crystal Palace Park Rd., Sydenham. [5

DOUGLAS 2¾h.p., 2-speed, uncrated June, 19 Cowey trip speedometer, lamps, horn, plenty sp good, fast; £50.—49, Turnpike Lane, Hornsey. [5

£100.—1919 4h.p. Douglas combination, speedom Easting, lamps, mileage 2,000, plating, ena ling as new; deposit system.—9, Fleet St., Torqua [5

4h.p. (late) Douglas Combination, 3-speed conn shaft, K.S., smart, Easting screen, fully equipp fast, powerful; £65.—52a, Bristol St., Manchester. [X7

4h.p. Douglas Combination, late model, overhau expert, mechanically perfect, new tyres, horn, w screen; £98.—Clevedon, Somerset Rd., New Barns [5

DOUGLAS 1920 2¾h.p., 3-speed, Lucas lamp horn, aluminium discs, spare valves, inner t and belt; £75.—52, Lower Hillmorton Rd., Rugby. [X7

DOUGLAS. 1915, lamps, horn, tax paid, just o hauled, enamel and plate as new; snip, £4 Stanley, 8, Warwick Sq. Mews, Warwick St., Victo [6

DOUGLAS.—All models in stock at new redu prices; deferred payments.—Parker's, Bradsh gate, Bolton; also 245, Deansgate, Manchester. [X7

DOUGLAS Combination, 1920, 4h.p., accumul lighting, discs, just overhauled; best over £1 accept solo part.—Blundell, Cowpers House, Hunting [4

DOUGLAS. 4h.p., 1917, good condition, per order, all accessories, Tan-Sad, licensed, insu £55; after 5.30 p.m.—40, Whitworth Rd., S. wood. [5

£40.—Douglas, 1916, 2¾h.p., 2-speed, copper haust, alluminium discs, etc., as new, tax pai 1, Albert Cottages, Marlborough Rd., Old Kent S.E.1. [6

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FRANCIS-BARNETT 1921 Model de Luxe, 2¾h.p. J.A.P., 2-speed, K.S., M-L Maglita outfit, speedo-meter, usual accessories, done 1,500 miles, perfect; £38—Apply, Box 5,888, c/o *The Motor Cycle.* [5322

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GRANDEX Motor Cycle, 3h.p., 4-stroke, 2-speed, hand clutch, P. and H. lighting set, horn, etc., overhaul, enamelling and plating as new, smart and beautiful machine; £48, or offer.—Blackmore, 769, Romford Rd., Manor Park, London, E. [5615

Harley-Davidson.

7 h.p. Harley-Davidson Combination; £110, bargain.—Lewis, 84, Empress Rd., Derby. [5792

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY Combination, good order; any trial; £90, or nearest offer.—5, Grayling Rd., Stoke Newington. [5700

HARLEY Solo, perfect throughout, any trial; first cheque £100 secures.—Povey, Ham Common, Surrey. [5738

1920 Harley Electric Combination, sale or exchange; offers.—McCormick, Ashton Lodge, Teignmouth [5482

HARLEY Combination, late model, dynamo lighting, superb turnout; £95.—152, Meeting House Lane, Peckham, S.E.15. [6216

£—Harley 1915 combination; exchange considered.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [6069

1918 Harley-Davidson, 7-9h.p., with C.B. sidecar, excellent condition; £110.—18, Junction Rd., Brentwood, Essex. (P) [5425

HARLEY Sports, brand new, guaranteed, rear drive speedometer, lamps; £115.—R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [6097

SEX; 1920 4h.p. Sports Harley, lamps, Klaxon, speedometer, mileage 2,000; best offer over £110. —B 5,919, c/o *The Motor Cycle.* [6002

1918 Harley-Davidson Combination, new condition, lamps, tax paid; £90 cash; owner bought 2-seat.—Underhill Farm, Barnet, Herts. [5701

LATE 1919 7-9h.p. Harley-Davidson (solo), in perfect condition, re-enamelled grey (discs), tax, insurance paid £110.—Pearson, 29, Villette Rd., Sunderland. [5163

1921 GNS.—1920-21 Harley flat twin coachbuilt combination, equipped, speedometer, tax paid, exchange Morgan.—17, Woolstone Rd., S.E.6. [5598

HARLEY-DAVIDSON Combination, 1919; £110; exchange solo and cash.—Newnham Motor Co., 223, Hammersmith Rd. W.6. 'Phone: Hammersmith 80. [5523

9-h.p. Harley-Davidson Combination, electric light, £180 beautifully fitted with all accessories; bargain, —Ewens Motors, 133, Christchurch Rd., Bournemouth. [X7538

HARLEY-DAVIDSON.—All models in stock at new reduced prices; deferred payments.—Parker's, Trawgate, Bolton; also 245, Deansgate, Manchester. [X7718

1919 Harley-Davidson 7-9h.p., speedometer, horn, lamps, 2-seater Swan sidecar, guaranteed, any trial lowest £145.—106, Barlow Moor Rd., Didsbury, Manchester. [6012

HARLEY-DAVIDSON 1915 7-9h.p. Combination, in good condition; £65.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

£80 bargain; late 1918 Harley-Davidson combination, 3 speeds, clutch, kick starter, licensed, fine tyres, storm cover, perfect engine, Klaxon, lamps.—19, Hill Hill, Wandsworth. [5670

HARLEY-DAVIDSON twin Combination, 1919, mirror, luggage grid, speedometer, disc wheels, condition perfect, cost £200; £115.—2, Lime Tree Terrace, Pitt St., Peckham. [5471

HARLEY-DAVIDSON Combination, 1916, in perfect running order, excellent condition; £100; trial after 12 noon, or Sundays.—Rattenbury, 15, Jeffrey St., Stepney, E.1. [5262

LATE 1920 7-9h.p. Harley-Davidson Combination, new, mileage 1,458, tax paid, speedometer, Klaxon horn, lighting set; £150, or nearest.—Baston, Yeo's Farm, Alphington, Exeter. [5840

1919 Electric Model Harley-Davidson, perfect condition, and sidecar, etc., £140; also 1919 same, new sidecar and hood, £115.—Chauffeur, 10, Park Crescent Mews West, Marylebone Rd., N.W. [3170

HARLEY Combination, new October, 1921, practically unused, complete, speedometer, wind screen, etc., unpunctured, tax paid; cost over £210, bargain, £145.—19, Cambridge Terrace, W.2. [5784

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HARLEY Combination, 1919, fully equipped, lamps, horn, rear drive speedometer, hood and screen, tyres as new; £130; too fast for owner; exchange lower power and cash.—132, High Rd., East Finchley, N.2. [6054

HARLEY-DAVIDSON 1918 7-9h.p. Combination, fully equipped and licensed, a very fine outfit, of nice appearance and in exceptional condition mechanically, not W.D.; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6125

HARLEY-DAVIDSON 1919 Model F, fully equipped, acetylene lighting, speedometer, horn, standard sidecar, oversize tyres on rear, discs, 1920 front forks, carefully ridden, licence to December, 1921; £130.—V.M., 24, Sheffield Terrace, W.8. [5486

1921 Harley-Davidson 7-9h.p., C. and M. sidecar, dynamo lighting, electric horn, speedometer, discs, licensed, V wind screen, as brand new, smartest outfit on the road; what offers?—Apply, Moore's Presto Motor Works, Ltd., North End, Croydon. 'Phone: 2624. [5208

1921 Harley-Davidson, electric model, Henderson Elite sidecar, Aero wind screen, discs, speedometer, ridden few miles only by expert, one of the smartest, fastest on the road, licensed, insured March, 1922; £165; any trial; bargain.—Deane, Matlock Bath, Derbyshire. [X7793

HARLEY-DAVIDSON 1919 7-9h.p., Matchless sidecar, electric lighting and horn, screen, speedometer, etc., perfect condition, tax paid, insured all risks, little used; £130 lowest; would exchange as part payment for late model 4-seater car.—1, King Edward Rd., Hackney, E.9. [5592

HARLEY-DAVIDSON 7-9h.p. Combination, large coachbuilt body with locker at rear, luggage carrier, new spring wheel chassis, 3 years' guarantee, screen, storm apron, dual lighting, spare chains, spare tyre, very fast machine, insured, tax paid, perfect condition; £145.—Young, 22, Racton Rd., West Brompton, S.W.6. [5680

HARLEY-DAVIDSON 7-9h.p. Sporting Combination, 1917, almost new Swan sports sidecar, disc wheels throughout, mag., separate electric lighting set, Apollo horn, lately been thoroughly overhauled and enamelled throughout, spares, extremely smart and fast sporting outfit; £100; seen Sussex.—Box 5,925, c/o *The Motor Cycle.* [6052

Hazlewood.

HAZLEWOOD Combination, 5-6h.p. J.A.P. engine, thoroughly overhauled, good condition, £65, or near offer; also Douglas cycle, purchased Jan., 1919, not W.D. model, overhauled, good condition, pillion seat, speedometer, horn, etc., tax paid; £50, or near offer.—C.M., 53, Elgne Rd., Hereford. [5585

Henderson

E. KICKHAM for Henderson, sole agent for Bristol and Bath districts.—Stokes Croft, Bristol. [3354

HENDERSON Model A., featerweight coachbuilt sidecar, dark green; £12.—43, Maybury Rd., Woking. [5414

HENDERSON 1921, 4-cyl., with Millford 2-seater sidecar, equal new, insured; £235; less power part exchange.—Atkinson, Brook Nook, Outwood Lane, Horsforth, Leeds. [X7820

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1920 4-cyl. Henderson Combination, Lucas lamps, rear drive speedometer, mileage under 2,000, all as new, guaranteed; £155.—Jones' Garage, Muswell Hill. [5570

1920 4-cyl. Henderson, Mills-Fulford de luxe sidecar, Easting Royal wind screen, D.A. lighting, Cowey speedometer, engine No. 2Z6521, splendid condition; spot cash £135.—Mason's Garage, Commerce Av., Letchworth. [4895

HENDERSON 1920 10h.p., 4-cyl., 3 speeds, hand and foot brakes, 2-seater sidecar, apron, Sandum screen, Sterling legshields, 3 electric lamps, Cowey horn, Cowey speedometer, spare chain, etc., tax paid; £135.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [5704

Hobart.

1919 Hobart 2-stroke, fine condition, go anywhere; £35, offers.—72, Beechfield Rd., Harringay, N.4. [5823

HOBART-VILLIERS 2-stroke, 2½h.p., 2-speed, in perfect running order, tax paid; £30, or near offer.—Mattock Motor Co., Mattock Lane, Ealing, W.5. [5847

NEW 2½h.p. Hobart, Villiers engine, 2-speed gear, old price £75; reduced to £59; only one available; easy payments.—Harrods Motor Showrooms, 118, Brompton Rd., London, S.W.1. [5648

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BRAND New 1920 Hobart, 2¼h.p. Villiers engine; a gift, £47.—Jones' Garage, Muswell Hill. [5569

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19 20 4½h.p. Humber Flat Twin, unscratched; £110. —Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0655

2¾h.p. Twin Sporting Humber, 3-speed, clutch, discs, wheels, T.T. bars, very fast; £28.—14, Phoenix St., Euston, N.W.1. [5734

HUMBER 3½h.p., 2-speed, handle starter, in new condition, tax paid; £25, or offer.—64, Church St., Edgware Rd., N.W.8. [6150

HUMBER 2¾h.p., T.T. twin, 1914, in good condition, new Dunlop heavy tyres; £32, or offer.—16, Woodville Rd., South Woodford. [5177

HUMBER Coachbuilt Combination, 3½h.p., 2-speed, overhauled Humbers, cost £20 (receipts shown), exceptional condition; £29/10.—61, New Kent Rd., London, S.E.1. [5874

Indian.

E. KICKHAM for Indian, sole agent for Bristol and district.—Stokes Croft, Bristol. [3353

7-9h.p Indian Combination, 1912; £55 cash.—Wauchope's, 9, Shoe Lane, London. [9015

19 18 7-9h.p. Indian Combination; £115; exchange car.—44, Alkincoates Rd., Colne, Lancs. [5946

19 14 Indian Combination, engine good condition, very fast; £55, or offers.—Farrell, Vale Cottage, Stratton, Cirencester. [X7522

19 16 Indian Combination, overhauled, tax, insurance paid, splendid condition; £75.—Abbott, 9, Ely Place, Holborn. [5385

19 15 7-9h.p. T.T. Clutch Indian, good tyres, licensed, equipped; £37/10, bargain.—Shaw, Regent St., Wellington, Salop. [X7757

19 19 Indian Powerplus Combination, sporting sidecar, tax paid; sacrifice, £98; after 6 o'clock.—91, Spa Hill, Norwood. [5374

7-9h.p. Indian, 1914, new tyres, chains, pillion, electric lamps, perfect; £29; exchange.—White Cottage, Clinton, Leatherhead. [5830

19 16 Indian Powerplus Combination, spring frame, 3 speeds, K.S., equipped; sacrifice £65.—Fisher, 24, Tremadoc Rd., S.W.4. [5630

19 19 7-9h.p. Sporting Indian, aluminium discs, etc., little used, perfect condition, fast; £85.—Anderson, Avington, London Rd., Guildford. [5435

INDIAN Scout, late 1920, electrically equipped, all on, tax paid, little used; nearest £110; bought car.—161, Coventry Rd., Birmingham. [X7780

NEARLY New Powerplus Indian, 3-speed, hand and foot clutch; £60, or exchange lower power.—C.S., 14, Swaton Rd., Bow, E. Tel.: E3155. [6169

INDIAN Scout, 1921, dynamo, electric horn, all complete, in perfect condition, new April; £135; exchange dynamo A.B.C.—43, Freezywater, N. [5484

INDIAN Combination, 7-9h.p., 3-speed kick start, clutch, lamps, and tools, go anywhere; £75.—52, St. Agnes Place, Kennington Park, London. [5795

19 19 Indian Combination, 1920, Watsonian sidecar, lamps, Klaxon, all accessories; £93; ready to ride away.—Crisp, The Chase, King's Lynn. [5236

LATE 1918 Indian, 7-9h.p., 3-speed, clutch, K.S., lamps, pillion seat, licence, perfect condition; £65; would consider exchange.—14, Kildoran Rd., Brixton. [5781

INDIAN 1916 7-9h.p. Powerplus Combination, 3-speed, fully equipped, spares, overhauled this season, 10 months' insurance.—172, Whippendell Rd., Watford. [5359

19 19 7-9h.p. Indian Powerplus, £75, or offer; 1919 7-9h.p. Indian combination, £115; exchange considered.—Robinson and Sleight, Hainton Garage, Grimsby. [5318

T.T. 7-9h.p. Indian, best offer secures, engine perfect, enamel good, handle-bars and spring guides need repair; any evening.—10, Rosedale Av., Hayes End, Middlesex. [5234

19 14 Indian Combination, 7h.p., spring frame, 2-speed, clutch, speedometer, electric lamps and horn, hood, screen, fine condition; £60, lowest.—85, Deodar Rd., Putney. [5684

£90.—Powerplus late model Indian and sidecar, fully equipped, hood and screen, perfect mechanically, paint good; real snip; trial any time.—Wright, 12, Albert St., Poplar, London. [6107

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19 20 7-9h.p. Indian Combination, dynamo lighting, rear drive speedometer, Easting wind screen, new rear Brampton spring chain, all in A1 condition; £145.—Jones' Garage, Muswell Hill.

19 14 7-9h.p. Spring Frame Indian, 2-speed and clutch, renovated as new; £47/10.—Jones' Garage, Muswell Hill. [5558

19 18 Powerplus Indian 7-9h.p., 3 speeds, clutch, kick starter, tax paid, new tyre, chain, indistinguishable from new; bargain, £68; exchange American X.—89, East Hill, Wandsworth. [5669

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INDIAN, 1920 4h.p. Scout Model, with Gros sporting sidecar, in colour to match, equipped, speedometer, horn, tax paid; £155; def payments if desired.—Parker's, Bradshawgate, Bo also 245, Deansgate, Manchester. [X

INDIAN 4h.p., Scout model, complete as per ma specification, fitted with dynamo lighting set, tric horn, speedometer, etc.; retail price: £172, b new but shop-soiled, clearance price £135.—I Bros., Midland Garage, Colwyn Bay. Tel.: 105. [

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Ivy.

IVY 2-stroke, genuine, good order, tax paid; 6 o'clock; £30.—Grocer, 21, Ledbury St., I ham.

IVY 1921 Models.—Sole district agents, We Motors, Ltd., 60, Catherine St., Salisb 'Phone: 72. [

Ixion.

IXION 1920 Model 2¾h.p., 2-speed, kick starter, clutch, Lucas lamps, horn, guaranteed per any trial; sacrifice £50, cost £85.—Adie, Atlas W Oozells St., Birmingham. [X

James.

DAN GUY, Weymouth.—1921 4¼h.p. James combination from stock; price £155. [

19 18 2¼h.p. James 2-stroke, 2-speed, fully equip £40.—Jones' Garage, Muswell Hill. [

19 20 James Lightweight, nearly new, tax p £50. — Hughes, 211, Queen's Rd., Peckh S.E. [

INCOMPLETE James, 1918 4¼h.p. model, good dition; stamp reply.—Box 5,918, c/o *The M Cycle*. [

19 20 James 2¾h.p., 2-speed, perfect order, licen lamps; £45.—Spragg, 3, Allen Rd., Wimbo Dorset. [

F.O.C.H. have several James solos and combinati cheap.—5, Heath St., Hampstead (or. Hamps Tube Station). [

LATE 1920 James Lightweight, 2-speed, lamps, paid, good condition; £58.—Biltmare, Brams Chase, Hindhead. [

4¼h.p. James, 2 speeds, F.E., Tan-Sad, lamps, £35, no offers.—The Firs, Chertsey Windlesham, Surrey. [

19 21 James 2¼h.p., 2-speed, unscratched, la horn, tax paid, cost £81; offers?—Kwato, keard Gardens, Blackheath. [

19 20 5-6h.p. James Combination, hood, wind sc lamps, all accessories, like new; £120.—1 192, Heath Rd., Twickenham. [

JAMES 5-6h.p. Combination, screen, lamps, B carburetter, ride 50 miles to purchaser; £12 near offer.—Slade House, Sutton Coldfield. [

19 16 James 3½h.p. Combination, 3-speed, K.S., l ing, speedometer, tax paid, all accessories; trial; £70.—G. Taylor, Garrison Office, Tidworth. [

JAMES 5-6h.p. 1919 Combination, special extra l sidecar, Magdyno lighting, legshields, foot ch accessories, beautiful condition; £158.—Smith, Earl's Court Rd., S.W.5. [

JAMES 3½h.p., K.S., lamps, speedometer, fine dition, December, 1920, licence and insu best offers.—Millward, Beecher House, Cradley He [

ALL Second-hand Machines advertised by Jo Garage, Muswell Hill, and Woodside Parade, Finchley, are thoroughly overhauled and guaran bargains.—'Phone: Hornsey 2917, Finchley 2334.

19 19 6h.p. James Combination, licence paid, al A1 order and condition; £95.—Jones' Gar Muswell Hill. [

IMMEDIATE Delivery of any James Model; cash deferred payments: book your order now, avoid disappointment later.—Burlington Motors, E South Side, Clapham Common, S.W.4. 'Phone: B ton 2417. [

JAMES 4¼hp. (Aug.) 1919 Combination, all ch 3-speed, K.S., all accessories, tax paid, excel condition, about 3,000 miles, any trial; £95, nearest offer; owner purchasing car.—Richer, B down, Goudhurst, Kent. [

MOTOR CYCLES FOR SALE.

New Hudson.

V HUDSON 1914 6-8h.p. Combination, just overhauled, excellent condition; offers. — Lieut. ir, Apse Heath, I.O.W. [5975

V HUDSON Coachbuilt Combination, 3 speeds, lutch, K.S., new Dunlops, perfect; £50; near 120, Sutherland Rd., Croydon. [6010

V HUDSON.—2¼h.p. de luxe models in stock; deferred payments. — Parker's, Bradshawgate, t; also 245, Deansgate, Manchester. [X7721

V HUDSON, 2¼h.p. J.A.P. engine, 3-speed and lutch, excellent order; £29.—Newnham Motor 3, Hammersmith Rd., W.6. 'Phone: Hammer- it 80. [5524

New Hudson, C.B. sidecar, all on, only done 500 miles since new (late 1914), tax paid: must l; £85, or offers. — Harrison, 3, Wood St., ith, Port Talbot. [5890

V HUDSON Lightweights, all models, on view: opular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns or 2¼b.p., 3½h.p., and 6h.p. machines stocked d payments arranged. Catalogues.—New Hudpot, 45, Gray's Inn Rd., Holborn, W.C.2. [3936

9 (Whitsun) New Hudson Ace, specially tuned genuine), Lucas lamps, horn, licence, spark in- r, 75 m.p.h., Stewart speedometer (248 miles) p, heavy Dunlop, cost £95, ridden solely by mechanic); sell £85.—Hudson, Tetbury Hill, bury. [5653

New Imperial.

. New Imperial, 2-speed, with clutch and kick starter; reduced to £72/10.

Combination; £168; in stock for immediate ivery; easy payments.—Harrods Motor Show- 118, Brompton Rd., London, S.W.1. [5645

IMPERIAL 2¾h.p., 2-speed, only shop-soiled; cial price, £65.—Edwin Knight, Church St., [6050

9 New Imperial 2¾h.p., 2-speed, kick starter; particulars on request.—Box 5,917, c/o *The cycle.* [6000

IMPERIAL-J.A.P., Aug., 1919, 2¾h.p., 2- ed, excellent condition; £49.—104, Lillington toria, S.W.1. [5691

IMPERIAL-J.A.P., late model, 2-speed, all beautiful condition; £50.—Gorringe, 21, Rd., Leyton, E.10. [5654

IMPERIAL-J.A.P., 2¾b.p., 2-speed, fully uipped, original tyres, perfect condition; 42 Perran Rd., Tulse Hill. [5831

9 2¾h.p. New Imperial-Jap, 3-speed, clutch, kick tart, licensed, as new; £70.—Edwards, 50, on Rd., South Kensington. [6061

IMPERIAL, 2¾h.p. J.A.P., 1920, 2 speeds, ps, tax, excellent condition; £53/10.—Goad, 2, Nida Vale (private house). Hampstead 1353. [6182

2h New Imperial-Jap, 2-speed, excellent condi- on, recently overhauled by makers, good tyres, mps, tc.; £45.—Mace, 4, Eversley Rd., Bexhill-on- a. [5225

9 2 New Imperial 8h.p. Combination, Klaxon, mps, splendid outfit; £95.—C/o Bradmore's, rrow Rd., Paddington. Tel.: Willesden [3131

IMPERIAL Solo and Combinations for imme- e delivery; exchanges.—Newnham Motor Co., 3, mmersmith Rd., W.6. 'Phone: Hammer- ith [5520

IMPERIAL 1919 2¾h.p., 2-speed, clutch, kick t, sound little machine, completely equipped; Leyton Garages, 30, Holywell St., Oxford. hone 581. [6131

IMPERIAL-J.A.P., 1920, 2¾h.p., done only 1 miles, in new condition, lamps, and tools; Pellant, 16, St. George's Mews, Regent's rk L, N.W.1. [6037

IMPERIAL 1919 Combination, 8h.p., 3 eds, clutch, K.S., lamps, horn, wind screen, ols, good condition; £88.—136, Ravensbury Rd., rlsne, London, S.W. [6043

IMPERIAL, 2¾h.p. J.A.P., 1920, engine No. 8/37a, 2-speed, clutch, K.S., excellent condi- n, ly equipped, insured, tax paid; £60.—Calde- urt, 5, Mount Pleasant Lane, Clapton, E.5. [5431

MEDIATE Delivery of any New Imperial Model; ca or deferred payments; book your order now d avoid disappointment later.—Burlington Motors, d., Sth Side, Clapham Common, S.W.4. 'Phone: rixton 417. [0506

ATE Model New Imperial 8h.p., Canoelet bulbous sidecar, Easting screen, speedometer, full insur- ce; £100, or lightweight solo part payment; en Nth London, appointment.—Box 4,911, c/o *e Motor Cycle.* [5579

h.p. w Imperial, only done few miles, Mills-Fulford sidecar, 5-point fixing, new spare tyre and tube, mps, ols complete, Klaxon horn, stormproof apron; y trade given; £100, bargain.—Beecher, 472, Archway d, London, N.6. [5731

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1919-20 **SCOTT** Combination, lamps, horn, speedometer, aluminium pistons, very fast, excellent condition **£105**

1919 8 h.p. **SUNBEAM** and Swan Sidecar, electric lamps, Cowey horn, windscreen, excellent condition **£135**

1919 2¾ h.p. **EDMUND** and nearly new HENDERSON Sidecar, horn, licensed, excellent condition **£57**

1915 4 h.p. **DOUGLAS** Combination, Lucas lamps, horn, licensed, excellent condition **£67**

1913 3½ h.p. **TRIUMPH** Combination, 3-sp., band clutch, K.S., electric lamps, horn, speedometer, excellent condition **£88**

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NEW IMPERIAL-J.A.P. 2¾h.p., late 1917, clutch, K.S., lamps, mirror, all on, whole thing like new, very powerful, take 2 anywhere, insurance paid, overhauled by expert 1st August, 1921; £60, or near offer.—18, Chatsworth Rd., Clapton, E.5. [5695

ONE 6h.p. 1920 New Imperial Combination with Sunbeam sidecar, complete with speedometer, Cowey mechanical horn, Easting wind screen, and all lamps; £130, or would entertain lightweight in part exchange.—Royd Garage, Ltd., Hebden Bridge. [5201

Norton.

PREMIER Motor Co. for 1921 Nortons.

ANY Model Norton delivered to your address, carriage paid within 24 hours; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [0625

NORTON Motor Cycles.—Can deliver anywhere; early dates.—Kelly, Bachelor's Walk, Dublin [3973

DAN GUY, Weymouth.—Norton Big 4 combination, £177; sports model, £132; from stock. [0686

CYRIL WILLIAMS for immediate delivery of all models Norton.—Chapel Ash Depot, Wolverhampton. [X3820

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5005

NORTON.—Sole Walsall agents; exchanges or deferred payments.—Maudes' Motor Mart, Walsall Garage, Walsall. [2421

NORTON Big Four Combination, 3-speed, kick starter, all accessories, 1919; 105 gns.—Wakefield, Honey Hill, Uxbridge. [5276

NORTON.—All models in stock; deferred payments. —Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7722

1920 Big Four Norton Combination, absolutely like new; sacrifice £110.—Braemar, 17, St. Quintin's Av., North Kensington. [5778

3½h.p. Sports Norton, Sturmey, 3-speed countershaft, all chain, Bicks, discs; £88; wants Levis.—148, Station Rd., Ilkeston. [5918

1920 Norton 4h.p. Combination, dynamo lighting, complete, perfect; any trial.—Apply, Percy Gummer, Clifton Lane, Rotherham. [5437

NORTON 1921 3½h.p., 3-speed, sports model, fine condition, very fast; £115.—The Laytoo Garages, 30, Holywell St., Oxford. 'Phone: 581. [6132

LATE 1920 Big Four Norton Combination, beautifully equipped, exceptionally fast; £110. — 24, Balliol Rd., North Kensington, London. [5801

NORTON 4h.p. Coachbuilt Combination, 2 speeds, good order and condition; £60, offers.—Darke, 2, Warwick Place, Paddington, London, W.7. [5219

NORTON Big 4 De Luxe Combination, appearance and mechanism perfect, licensed, Easting, all accessories; £115.—32, Felstead Rd., Woodstead, Essex. [5383

1920 Norton, T.T., with Philipson, speedometer, lamps, and horn, insured till next May; £80. —Flight-Lt. Johnston, R.A.F., Netheravon, Wilts. [5798

NORTON 1920½ 4h.p. de Luxe Combination, Lucas lamps, horn, licence, Watford speedometer, 4,000, perfect; £125, bargain; solo part.—Longney, Oswestry. [X7208

1920 Big Four Norton and 1921 Henderson Elite sidecar (cost £45), lamps, Klaxon, tools, perfect condition; £135.—12, Leaside Av., Muswell Hill, N.10. [4732

NORTON 3½h.p. C.B. Combination, fully equipped, many spares, open to expert examination; any trial; £98, or offer.—1, Fairhaven Rd., Back-o'-th'-Bank, Bolton. [X7690

NORTON 1920 Big Four, Dunhill limousine sidecar, Lucas lamps, Watford, 700×80, good condition, any trial, special front brake; £135.—Duniva, Epsom Rd., Guildford. [5736

REG. GREEN'S Competition Norton, H16, fully equipped, 21 gold and silver medals, specially tuned, as new; £118; exchange sports Sunbeam.—32, High St., Reigate. [5681

4h.p. Norton, 1916-17, all-chain drive, winner of several premier awards, overhauled, and in good condition; £75, quick sale, no offers.—Wintle, 6, Highgate Rd., Birmingham. [5314

1921 3½h.p. Norton, B.R.S. engine, 3-speed, special finish, as new throughout, certified speed, licensed, accessories, spares; £120.—Williams, 51, Beckenham Lane, Bromley, Kent. [5994

1921 16H. 3½h.p. Norton, Bonniksen speedometer, Cowey horn, Lucas lamps, mileage 600, new condition; £105, or nearest.—K.G.S.H., Winchester House, Old Broad St., E.C.2. [5714

NORTON.—Immediate delivery Big 4 and 16H Models; spare parts always in stock.—Call, wire, write, or 'phone 4042. G. H. Tucker, the Norton Rider, Agent, and Specialist, Redcliffe Hill, Bristol. [3970

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. B25

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MOTOR CYCLES FOR SALE.

Norton.

JULY (1921), 16h. Norton, not done 500 miles, lighting set, knee-grips, tax paid; any trial and inspection; £125. Wanted, Magdyno N.U.T.—Write S. Bailey, Ivydene, Tichborne St., Leicester. [5787

1921 16H Special Competition Machine, close ratio box, small mileage, fully equipped, special Bonniksen, spare sprockets, etc., many extras; £112.—Whitaker, 3, Eastern Rd., Brighton. [5872

NORTON, 1919, 3½h.p., T.T., just rebushed, and new main bearing, new Norton tank and mudguard, h.b.c. Philipson, 1921 Binks, good accessories; £75.—Wells, Dunira, Epsom Rd., Guildford. [5842

1920 T.T. Norton, 65 m.p.h., licensed, lamp, generator, Klaxon, 2 belts, unpunctured and unmarked tyres, mileage 2,000, carefully tuned and ridden; appointment.—Ince, Silver Hawk Motor Co., Cobham, Surrey. [5924

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

GET your new 1921 Norton from the Layton Garages, who can give immediate delivery of any model; exchanges quoted; balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, or London Rd., Bicester. [6139

N.S.U.

3h.p. N.S.U., dropped frame, B. and B. mag., Druids, m.o.i.v., good running order; £17/10.—Syd Pearson, Gate House, Cheylesmore, Coventry. [X7842

N.S.U., 6h.p., V.S. gears, pedal starter, coachbuilt sidecar (strong, reliable affair), lamps, tax paid; bargain, £45 lowest.—Carroll, 41, Kellett Rd., Brixton. [5601

N.U.T.

N.U.T. 3½h.p., 1921, very little used, about 600 miles; offers.—Ward, Oakroyd, Potters Bar. [5328

N.U.T. 3½h.p. Twin, 1920 (late), Magdyno lighting, condition lovely; offers.—Williams, Garage, Cheltenham. [6039

BRAND New 1921 3½h.p. N.U.T., with Lucas Magdyno; accept £110 for sharp sale.—1a, Bradford St., Bolton. [X7845

3½h.p. N.U.T., N.S.U. gear, good condition, licensed, lamp, etc.; best cash offer.—Apply, C., 44, St. Dunstan's Rd., W.6. [5238

6h.p. N.U.T.-J.A.P. Combination, 1921, Sturmey 3-speed gear box, clutch and K.S.; £95, or nearest offer.—Link, Newchurch, New Romney, Kent. [5980

N.U.T. 1920 3½h.p., Magdyno, lavishly equipped, and almost as new; £105 cash.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6133

1921 N.U.T. 3½h.p., Magdyno, horn, Tan-Sad, licensed, mileage 100, absolutely unscratched; £120.—Edwards, 50, Harrington Rd., South Kensington. [5048

N.U.T., late 1920, dynamo lighting, electric horn, speedometer, engine just overhauled, perfect, likewise tyres; £120; owner buying combination.—20, Addiscombe Grove, Croydon. [5593

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, indistinguishable from new; £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7704

N.U.T.—Sole agents for nine counties; special exchange or deferred payment terms; immediate delivery all models; trade supplied.—Maudes' Motor Mart, London, Exeter, and Walsall. [2422

O.K.

1920 O.K. Union; £35, or near; perfect; licensed.—Allston, Bergholt, High St., Harpenden. [5599

O.K.-UNION 2¾h.p., Nov., 1920, accessories, tax, as new; £35.—1, Guildford Rd., West Croydon. [6758

O.K. Lightweight, 2-speed, countershaft, any trial; £32.—57, Kenbury St., Camberwell, London. [5094

£30.—1920 O.K. 2¾h.p., 2-stroke, new condition, tax paid.—23, Bedford Rd., West Ealing, Middlesex. [5702

O.K. Junior, new Sept., 1920, little used, excellent order, licence paid; £32; approval.—Corston, Bunwell, Norfolk. [5405

ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

1920 O.K.-Villiers, 2¼h.p., 2-speed, legshields, all lamps, licence paid; a real good bargain, £45.—Jones' Garage, Muswell Hill. [5576

Omega

OMEGA-J.A.P. 2¾h.p., clutch, 2-speed, excellent condition; £45, or exchange.—Ansell, 184, New North Rd., Islington, London. [5460

OMEGA, 1921½, 2-speed, clutch, and kick start, cost over £80, almost new condition; cash £55.—76, Dalling Rd., Hammersmith. [5448

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Wood-Milne Special	29/-
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Wood-Milne Combination	44/-
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Beldam Combination	35/-
Palmer Heavy Cord	36/9
Palmer Cord	32/6
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Palmer Heavy Cord	37/-
Palmer Cord	33/-
Dunlop Heavy	37/-
Clincher de Luxe Extra Heavy	34/8
Wood-Milne Extra Strong	35/-
26×2½ to fit 2¼ Rims.	
Hutchinson Rubber-studded	33/-
Wood-Milne Special	33/-
Wood-Milne Extra Strong	45/-
26×2½	
Rom Combination	45/-
Dunlop Heavy	45/-
Macintosh Chain	36/-
Rom Combination	47/6
Hutchinson Rubber-studded	36/-
Skew Heavy Ribbed	37/3
650×65	
Heavy Rubber Non-skid	26/3
Wood-Milne Special	43/6
*Michelin Steel-studded	52/6
Burnett Grooved	41/9
Dunlop Steel-studded	88/-
*Voiturette fitting.	
700×80 to fit 650×65	
Wood-Milne Special	50/-
Wood-Milne Extra Heavy	88/-
Dunlop Steel Studded	70/-
700×80 (for 650×65) Voiturette Rims	
28×3	
Wood-Milne Extra Strong 4-ply	29/3
Dunlop Extra Strong 4-ply	50/-
Dunlop Heavy	45/-
Clincher de Luxe Extra heavy	45/-
28×3 to fit 2½ Rims.	
Dunlop Extra Heavy	50/-
28×2½	
Wood-Milne 4-ply	40/-
Hutchinson Heavy Rubber-studded	26/9
Hutchinson Heavy Ribbed	29/6

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OMEGA, 2¾h.p. J.A.P., 1919, 2 speeds, just hauled, tax paid; £39/10; bargain.—Goa Maida Vale, W.9 (private house). 'Phone: stead 1[illegible]

Overstone.

OVERSTONE-J.A.P. 2¾h.p., 1919, 2-speed equipped, as new; £40.—229, Balsall Heat Birmingham.

Paragon.

1920 Paragon, 3h.p., 2-stroke, 2-speed, lamps spring frame, tax paid; £35.—240, Blyth Shepherd's Bush Rd., Hammersmith.

P. and M.

P. and M., 1919, taxed, perfect, solo, sp £53.—38, Sherriff Rd., West Hampstead,

CYRIL WILLIAMS for immediate delivery models P. and M.—Chapel Ash Depot, hampton.

P. and M., R.A.F. Model, good appearance, wi wheels; bargain, £40.—127, Marina, St. Le on-Sea.

P. and M. Combination, licensed, lamps, new and tyres, in good condition; £70.—58, Hill, Balham.

P. and M. 3½h.p., R.A.F., accessories, tax pa exceptional bargain, £40.—Levett, Bro March, Cambs.

P. and M. Combination, 1918, tax paid, all cellent condition; £59.—64, Framfield Rd. well, London, W.

1918 P. and M., blue-gold, unscratched; £ consider cheaper machine part.—61, New Rd., London, S.E.1.

P. and M. Combination, good condition, Bosch back tyre, tax paid; £58.—Lane, Churo Ockbrook, Derbyshire.

P. and M. 1919 Combination, bought March tax paid, all on; £70, or near offer.—10, S St., Southwark, S.E.1.

P. and M., 2-speed, excellent condition, lamp tyres, tubes, chains, tax paid; £50.—30, field Rd., Crawley, Sussex.

P. and M., 1918, K4 sidecar, good tyres, 70 well equipped, enamel as new; best over 34, Saltram Crescent, W.9.

P. and M.—Solo or sidecar in stock; deferre ments.—Parker's, Bradshawgate, Bolton 245, Deansgate, Manchester.

P. and M., late 1919, K.S., 2 speeds, discs, sories, wind screen, licensed, excellent con £70, or offer.—Owner, 8, Pretoria Rd., Halstead.

P. and M., 1918, thoroughly renovated solo, £ parts; £60; no reasonable offer refused.— Whiting, c/o Eton Garage, 260, Balham High

P. and M. Combination, 1919, new sidecar, horn, wind screen and discs, mileage 3,000; bargain, £95.—Belcher, Ltd., 25a, Milton St., bam.

LATE 1920 3½h.p. P. and M., guarante scratched and equal brand new, only us times; bargain, £90.—19, Wellington St., Mos Manchester.

P. and M., early 1918, with Henderson light lamps, horn, etc., tax paid, good running first reasonable offer accepted.—59, Market St., Lancashire.

1918 R.A.F. P. and M., 3½h.p., lamps, tyres nearly new, tax paid, running spl £50; seen by appointment after 6 p.m.—May, 60, land Rise, Muswell Hill, N.10.

1920 P. and M. (Sep.), 3½h.p., Cowey trip, P windshields, Lucas lamps, Clayrite, tools, insurance, done 550 miles, as new; bargain, Marchant, West St., Boston.

1919 P. and M. Combination, tyres new, m cally perfect, sidecar as new, all accessori paid; £120, or nearest.—Hicks, Hartford Terrace ley Wintney, Basingstoke, Hants.

P. and M. Combination, 3½h.p., new condition colours, 2-speed, K.S., decompressor, tyr amelling, plating, perfect, lamps, etc., tax paid —82, Doddington Grove, Kennington Park.

GET your new 1921 P. and M. from the Garages, who can give immediate delivery model; exchanges quoted; balance may be paid income if desired. Enquiries treated persona with every courtesy.—The Layton Garages, 30, St., Oxford, or London Rd., Bicester.

Precision.

PRECISION-GRANDEX, 4½h.p., 2-speed (N.S.U.), Cowey, P. and H., basket sidecar —Lowndes, 5, Dorset Rd., Lexhill.

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PREMIER 2½h.p., lamps, etc., tax paid, go dition; £20.—40, Railway St., Barnes, S.

PREMIER 3½h.p., 3-speed hub, clutch ove insurance premium paid, both recently; Gandy, Brockenhurst.

MOTOR CYCLES FOR SALE.

Spur.

Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed. 'Phone: Hornsey 2917, Finchley 2334.

Spur-Villiers, 2-speed, absolutely as new, guaranteed; £45.—Jones' Garage, Muswell Hill. [5556

Sun

Sun-Vitesse, just delivered; £42.—Blay, 192, Heath Rd., Twickenham. [5643

VILLIERS, 1916, 2-speed, enamelled and overhauled, like new, licensed; £33.—Derrington, Rd., New Malden. [5143

Sunbeam.

BEAM 1921 3½h.p., new, reduced price.—Forster, Graham's Rd., Falkirk. [X7772

ICKHAM for Sunbeam, sole agent for Bristol and district.—Stokes Croft, Bristol. [3352

CHOPE'S, 9, Shoe Lane, London, E.C.4.—½h.p. Sunbeam and sidecar, 1915; £90. [4019

BEAM, 2¾h.p., T.T., perfect, equipped, insured; £5; bargain.—107, King St., Hammersmith. [5610

Sunbeam Combination, 1919 French Military Model, chain-cum-belt; price £110.—Southey, Ormsted. [0684

BEAM 3½h.p. Combination, smart turnout, perfect condition; first over £90 secures.—The Duck, Wealdstone. [5403

BEAM 2¾h.p., countershaft, chain, accessories, tax, insurance, overhauled; £55, offers.—Robinson, Eastgate, Louth, Lincs. [5949

BEAM New 3½h.p. Combination, Magdyno lighting; accept second-hand part payment.—Williams, Garage, Cheltenham. [6040

BEAM 8h.p. Combination, 1916, perfect condition, all accessories; any trial; selling through illness £130.—83, Grove Rd., Holloway. [5362

A 1920 3½h.p. Sunbeam, 600 miles, as new, Millolite incandescent lighting, horn, Pillion seat, £125.—Bevan, Lucania, Llanelly. [5278

BEAM Combination, 1919, 8h.p., spare wheel, hood, screen, perfect condition; £155, or offer. Westbourne Rd., Barnsbury, N.7. [5588

BEAM 1920 Magdyno 8h.p. Combination, speedometer, ammeter, all perfect; bargain, £165.—7, Exhibition Rd., South Kensington. [6100

BEAM Combination, 3½h.p., 1919, Lucas lamps, horn, 2 new tyres, excellent condition; £115; no bought car.—22, Pinewood Rd., Bromley, Kent. [5090

Sunbeam Combination, mileage 1,500, all new, expert examination invited; nearest £110.—Jones, Allt, Llangennech, S. Wales. (D) [5880

Sunbeam (Nov.) with 1920 (Aug.) Watsonian Monarch sidecar, fully equipped, fine condition; offers invited, cost £175.—Webb, Sherborne, Street. [5692

BEAM, latest 3½h.p. touring model, £155/8; 3½h.p. sports model, £152/5; in stock.—Cambridge Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [6111

BEAM 3½h.p. Combination, late 1918, fully equipped, Easting screen, battery side and tail first-class condition; £140.—36, Hartington Rd., Stockwell-cum-Hardy, Manchester. [5226

BEAM Combination, 8h.p., late 1920, with spare wheel, hood, and wind screen, Lucas Magdyno lighting set, and Cowey speedometer, only done 2,000 miles; £220.—McCallum, Laighpark, Paisley. [5380

Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed. 'Phone: Hornsey 2917, Finchley 2334.

AT 1919 3½h.p. Sunbeam, all lamps, not done 100 miles, guaranteed as new; £105.—Jones' Garage, Muswell Hill.

23½h.p. Sunbeam and Sidecar, fully equipped, fitted with 1921 Brooks cantilever saddle; a bargain, £130.—Jones' Garage, Muswell Hill.

8h.p. Sunbeam Lucas Magdyno Combination, wind screen, hood, luggage carrier, all in A1 order; £140.—Jones' Garage, Muswell Hill. [5571

BEAM 1915 3½h.p. Model with sidecar, complete with all accessories, excellent condition; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7706

BEAM Twin Combination, 6h.p. J.A.P., fully equipped, first-rate order; £90; a rare opportunity to secure one of these high-class outfits much below current value.—Bunting's Motors, Wealdstone. [6249

23½h.p. Magdyno Sunbeam, actual show model, hardly run in, otherwise as new, tyres unpunctured, aluminium number plates, incorporating licence, horn, lean-over stand, valve spring protectors; £190, what offers?—Fraser, 23, Elm Park, S.W. [5636

EXCHANGES QUOTED

1922 CALTHORPE LIGHT CARS.

NEW MODELS AND PRICES.

De luxe, 2-seater, dickey seat	£410	0
De luxe, 4-seater	£435	0
Popular, 2-seater, dickey seat	£355	0
Popular, 4-seater	£375	0

1921 NEW MODELS

STANDARD, 11.6 h.p., 2-seater	£550	0
LAGONDA, 11.9 coupe	£420	0
MARTINSYDE 6 h.p. twin Combination	£145	0
COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL RUBY 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY, 6 h.p., and Sidecar	£165	0
TRIUMPH, chain drive, and Sidecar	£165	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four 3-sp. Combination	£170	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single speed	£98	0
***DOUGLAS,** 2¾ h.p., 2-speed	£85	0
***DOUGLAS,** 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£160	0
DOUGLAS, 3½ h.p., 3-sp., sports model	£150	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON 1920 Big Four, 3-speed	£110	0
EDMUND, 2¾ h.p., 1920, 300 miles	£69	10
BROUGH, 1916, 3-speed countershaft	£52	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2½ h.p., 2-speed, 300 miles	£49	10
ARIEL, 1920, 3½ h.p. 3-sp. countershaft	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£37	10
TRIUMPH, 3½ h.p., clutch, good	£47	10
NORTON, 1920, 3½ h.p., sporting	£80	0
E.N., 3½ h.p., special frame	£19	10
ROYAL RUBY, 2½ h.p., 2-speed	£42	0

PASSENGER MACHINES.

A.V. Monocar, 5-6 h.p. J.A.P.	£79	10
SUNBEAM 8 h.p. M.A.G. Combination	£145	0
ENFIELD Combin., 1921 tax paid	£150	0
MORGAN, 8 h.p., sporting, tax paid	£105	0
MORGAN, 1915, sporting, hood, screen	£120	0
INDIAN, 1918-19, Powerplus Combin.	£105	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£97	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£175	0
HARLEY 1920 Combination, electric	£160	0
READING-STANDARD 3-speed Com.	£110	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£59	10
TRIUMPH 3-speed 4 h.p. coach Com.	£75	0
ALECTO 3½ h.p. 2-sp. 1920 coach Com.	£79	10
REX 6 h.p. 2-speed Combination	£52	10
ENFIELD 1915-16 Combination	£95	0
CHATER-LEA 8 h.p. 3-sp. Combination	£75	0
NORTON, 1920, Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£125	0

Deferred Payments taken.

Cash offers considered for Second-hand Models.

TRADE SUPPLIED.

SUNDRIES.

1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1⅛	£2	2	0
New Army Knapsacks, 13½ × 11in.	5	6	
Douglas Carburetter, used 15/-, £1,	£1	10	0
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£18	10	0
Second-hand Douglas Magneto	£1	17	6
Late Amac Carburetter	£1	10	0,
Late B. & B. Carburetter	£1	12	6,
1920 Triumph Carburetter, nearly new	£2	12	6

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 3½h.p. Sports, Dec., 1919, black, gold discs, Lucas lamps, horn, Watford trip speedometer, just overhauled by makers, used only week-ends; owner going abroad; £105; after 6 p.m.—Price, 83, Finlay St., Fulham, S.W.6. [5693

SUNBEAM 1921 3½h.p., Magdyno combination, genuine Sunbeam sidecar with deck and wind screen, exceptionally fine condition, small mileage, guaranteed in every way; £190.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6123

1921 Sunbeam 8h.p. Combination, Lucas dynamo lighting, electric horn, speedometer, hood, screen, side screen, Tan-Sad, spare wheel unused, condition as new, tax paid; accept £235, or offer.—Paynter, Longcauseway, Farnworth, near Bolton. [5443

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

1921 (June) Sports Sunbeam, Lucas lamps and horn, Bonniksen speedometer, tax paid and insured, absolutely as new, done 250 miles only; cost over £165, accept £145, no offers or exchanges; seen by appointment.—Forton House, Montford Bridge, Shrewsbury. [5814

GET your new 1921 Sunbeam from the Layton Garages, who can give immediate delivery of any model; exchanges quoted; balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, or London Rd., Bicester. [6142

SUNBEAM 1920 8h.p. Combination, Magdyno lighting, electric horn, Bonniksen speedometer, mudshields, Ace discs, 760×90 cover on rear wheel, tax paid, indistinguishable from new; this outfit would cost to-day £294; for quick sale, £200; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7707

3½h.p. Sports Sunbeam, late model, engine No. 6810, frame No. 6246, fast, good condition, run carefully, low mileage, complete with 2 acetylene lamps and generators, new large Lucas King of the Road head lamp, Stewart speedometer, bulb horn, foot pump, knee grips, Tan-Sad, discs, complete set of tools, spare valve and plugs, etc., good tyres; 100 gns.—Waugh, Glover's Farm, Sedgeford, Norfolk. [6035

1921 3½h.p. Sunbeam and Montgomery Sporting sidecar, black and gold outfit, 3 weeks old, indistinguishable from new, complete with Lucas lamps No. 462, horn, Cowey trip speedometer, long plated exhaust, mechanical oil pump, sporting Amac carburetter, aluminium valve cap, etc., tax and insurance paid, cost £210; will accept £165 for quick sale, genuine bargain; owner buying car.—W. Eadington, Alderley Edge, Cheshire. [X7769

T.D.C.

DE LUXE T.D.C., 2½h.p., perfect running order, lamps, horn; £20, or near offer.—Thomson, Teviot Crescent, Hawick. [5416

Triumph.

PREMIER Motor Co. for 1921 Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; W.D.B. (renovated), £95; Type H 4h.p., 3-speed, £115; Type S.D., chain drive; £125; sidecars from £20 to £50.—Buy your machine direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

1914 3-speed Triumph, complete; £40.—Cross, Agent, Rotherham. [X7764

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X7761

TRIUMPH, Bosch mag., good running order, tax paid; £12.—Walliker, Kingham, Oxford. [5771

1920 Triumph Model H, new condition; £89, lowest.—84, Mann St., Walworth, S.E.17. [5724

TRIUMPH 4h.p., countershaft, tax paid, perfect; £60.—42, Clifton Gardens, Chiswick. [6015

TRIUMPH, countershaft, late 1918, all on, tax paid; £70.—73, Sydney Rd., West Ealing, W.13. [6018

TRIUMPH 4h.p., C.S., absolutely new; £82/10, quick sale.—Wilton, White Swan, Upper Norwood. [6218

1918 Triumphs, countershaft, from £50.—24, Balliol Rd., North Kensington, London. [5803

JUNIOR Triumph, unridden, tax paid, brand new; £65.—E.J.H., Brockenton, Belmont, Surrey. [5206

TRIUMPH, h.b. clutch, nearly new tyres, lamps, fine order.—Letters, Box 5,868, c/o *The Motor Cycle.* [5306

TRIUMPH, 1914, perfect, best offer; also Amac, two 26×2½ covers.—119, Brecknock Rd., N.19. [5444

TRIUMPH, 1917, overhauled, first-class; £60.—Clark, 7, Exhibition Rd., South Kensington. [6095

TRIUMPH Coachbuilt Combination, 2-speed, good condition; £45.—Sims, 33, Crompton St., Derby. [X7686

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. B29

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

19 14 3½h.p. Triumph, roomy sidecar, good condition; £50, cheap.—Heggie, Ardington, Wantage. [5973

19 18 Triumph Combination, 1920 sidecar; £73, no offers.—33, Tunley Rd., Harlesden, N.W.10. [5659

19 19 Triumph Combination; £80. — James, c/o Bradmore's, 482, Harrow Rd., Paddington. [3134

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH, renovated £95, registered May, condition as new; what offers?—Box 5,920, c/o *The Motor Cycle*. [6003

19 14 Triumph, 3-speed, speedometer, tax paid, overhauled; £45.—Guerney and Ewer, High St., Pinner. [5213

TRIUMPH Lightweight, 1921 model, very little used, in perfect condition; £60.—33, Harlington St., Derby. [5422

19 20 Junior Triumph, accessories, spares; £55, or best offer.—Rees, University, Edgbaston, Birmingham. [X7789

19 20 Baby Triumph; £39; engine No. 3362, 2-speed; ride-away anywhere.—Ewers, Newton Rd., Burton-on-Trent. [5818

TRIUMPH 4h.p., coachbuilt sidecar, 3-speed, clutch, kick start; £45, or near offer.—Threlfall, Starbeck, Harrogate. [5956

TRIUMPH, 1911, splendid condition, fully equipped; must sell; £28.—25, Ravensbourne Rd., Stanstead Rd., Catford. [5409

19 19 Triumph Combination, licensed, equipped, condition new, bulbous back, fast; £90.—4, Gowen Av., Fulham. [6192

TRIUMPH 4h.p., 3-speed countershaft, 1917-18, in good running order; £75, or near offer.—Howes, Bray, Berks. [5218

TRIUMPH, T.T., clutch, etc., splendid condition, fully equipped, tools, etc., etc.; £35.—33, Hackford Rd., Brixton. [6206

2¼h.p. Baby Triumph, well equipped and guaranteed, mileage under 400 miles; £54.—Box 5,889, c/o *The Motor Cycle*. [5323

4h.p. Triumph, latest S.A. gears, reliable machine also sidecar; £80, or nearest.—25, Ringstead Rd., Catford, S.E.6. [5256

TRIUMPH, done about 2,000 miles, not W.D., perfect condition, like new; £85.—Grimes, 18, Bruton Place, Bond St., W. [5325

19 18 Countershaft Triumph, fully equipped, engine No. 55207; £55.—'Phone: 5541. 204, Ladbroke Grove, W.10. [6017

19 20 Junior Triumph, perfect running order lamps, tax paid; £60.—Hintoo, 19, Wootton Bassett Rd., Swindon. [5344

TRIUMPH Junior, 1921, all on, ridden about 500 miles; owner leaving; best offer.—10, Wendover Av., Aigburth, Liverpool. [5302

TRIUMPH Combination, only done 1,000 miles; £115; seen by appointment. — Underhill, 94, Akerman Rd., Brixton, S.W.9. [6208

19 20 W.D. Triumph Combination, Sunbeam sidecar, fully equipped, tax paid; £95.—Watford, 80, Chatsworth Rd., Clapton, E.5. [5674

£59; 1918-19 4h.p. Triumph, condition and appearance as new, registered, etc.; bargain.—4, Elm Gardens, Hammersmith. [5664

TRIUMPH, 1918-19, 3-speed, K.S., lamps, horn, tools, tax, any trial or examination; £68.—Fox, 102a, Church St., Chelsea. [5864

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7725

19 18-19 Triumph Countershaft Model, as new, tax paid; bargain, £65; stamp reply.—Beecher, 472, Archway Rd., London, N.6. [5730

19 18 Triumph Combination, electric lights, Easting screen, tax paid, good condition; £75.—260, Balham High Rd., London. [5752

TRIUMPH-GLORIA Combination, 1920, complete with lamps, tax paid, absolutely unscratched and as new; £115; exchanges.—Below.

TRIUMPH 1913 3½h.p., 3-speed Sturmey, lamps, tax. This machines is absolutely perfect and complete.—Goad, 122, Maida Vale, W.9 (private house). 'Phone: Hampstead 1353. [6177

TRIUMPH Junior, late 1919, in perfect running order, complete with lamps, etc.; £50.—Mattock Motor Co., Mattock Lane, Ealing, W.5. [5845

19 14 Triumph, 4h.p., No. 1 Montgomery sidecar, first-class condition, perfect running order; £70, or nearest.—182, Sandon Rd., Stafford. [5974

TRIUMPH, renovated, 4h.p., countershaft, 3 speeds, fully equipped, perfect condition; 55 gns.; before 7.—40, Dempster Rd., Wandsworth, S.W. [5438

19 19 Triumph 4h.p., Mills-Fulford s.c., electric light, Cameo, mechanical horn, perfect running order; £90, lowest.—45, Catherine St., St. Albans. [5167

INDISPENSABLE TINNED GOODS BY POST.

ROBBIALAC ENAMEL. Supplied in Glossy or Matt. We recommend one coating of matt, with a finishing coat of glossy. Black, White, Cream, Service Green, Indian Red, Rover Grey, Scott Purple, Matchless Grey, Harley-Davidson Khaki, Olive. Small tins, **2/11**; Medium tins, **3/9**; Large tins, **6/7**; post paid. The best enamel for renovations or touching up.

JOINT!LAC. A special size for making oil-tight joints on crank cases, cylinder bases, gear boxes, etc.; **1/4**, post paid.

HUB LUBRICANT. A grease specially manufactured for ball bearing hubs. Will not run out; ½ lb. tins, **1/11**; 1 lb. tins, **2/11**; post pd.

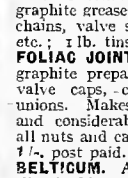
FOLIAC HEAT-PROOF GREASE. A thick graphite grease. Lubricates countershaft gear chains, valve stems, springs, plain bearings, etc.; 1 lb. tins, **3/3**, post paid.

FOLIAC JOINTING COMPOUND. A special graphite preparation for smearing on plugs, valve caps, cylinder heads, exhaust pipe unions. Makes an absolutely air-tight joint, and considerably facilitates the removal of all nuts and caps that are subjected to heat; **1/-**, post paid.

BELTICUM. A preparation for prevention of slip of rubber or leather belts. Quickly applied, and immediately effective; **1/-**, post paid.

SPECIAL SALE LIST

Post Free upon application.



TAN LEATHER HELMETS—30 only **Best Quality** lined cotton fleece, as illustration. Usual price 18/6. **Reduced to 11/8.**

18 only. **Best Quality Fawn Gabardine Helmets,** lined cotton fleece, as illustration. Usual price 14/6. **Reduc'd to 7/3**

OILSKINS, RAIN-PROOFS

Service No. 1—Belted.

As illustrated. Made in extra stout Double Twill, interlined Rubber. All seams stitched, solutioned, and taped, giving **absolute** weather protection.

20 only **Jackets,** D.B., 40in. long, fitted wind cuffs, storm collar, four out pockets. Usual price 60/-. **Reduced to 52/6.**

23 only **Seatless Trousers,** openings have gussets inserted to exclude all wet and mud, patent clip fasteners. Usual price 38/6. **Reduced to 33/-.**

17 only **Legging Overalls.** Style as seatless trousers. Usual price 28/6. **Reduced to 23/6.** State chest and leg measurements.

HUNDREDS OF GENUINE BARGAINS.

49 pairs **Best Quality "Asbestol" Mittens,** heavy woollen inner cuff, tan or black. Usual price 37/6. **Reduced to 27/6.**

32 pairs **Best Quality "Asbestol" Gauntlets,** lined wool, strap wrist, tan only. Usual price 39/6. **Reduced to 29/6.**

The Service Company Ltd. (LONDON)

289-293, High Holborn, London

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH, 1918, C.S., 1921 Zenith sidecar, l tools, chains, tax; £85; any trial.—2, M Rd., Barnes. 'Phone: 888 Hammersmith.

TRIUMPH, 1914, 3-speed, clutch, underslung, bulbous back coach, smart; £45; exchan Taylor, 637, Seven Sisters Rd., Tottenham.

19 21 Triumph, late Model, H, lamps, horn tools, carefully ridden, as new; bargain —Lewis, 50, Christchurch Rd., Doncaster. [P

19 20 (Late) 4h.p. Triumph, countershaft, as mileage under 1,200, Cowey speedometer horn; £80.—Torcross, Hillborough, Herne Bay.

TRIUMPH, 4h.p., 3-speed gear, overhauled enamelled, pull sidecar anywhere, licensed; fice, £49.—Hayes, 20, Derby Rd., Worcester.

19 14 Triumph Combination, in splendid cond Easting screen, luggage grid, speedometer, l etc.; £67.—85, Dalberg Rd., Brixton, S.W.2.

TRIUMPH, 1913, all on, Bosch, Philipson p new tyres, renovated, overhauled, excellent c tion; £30.—Warren, 31, Market St., Stourbridge.

19 13 Triumph Combination, 3-speed hub, boards fitted, lamps, all accessories, new gondola sidecar; £50, offer.—156, Greenvale, El

19 19 Triumph Combination, indistinguishable new, special bulbous sidecar; 100 gns.; equipped; will separate.—9, Church Rd., Willesd

TRIUMPH Combination, C.S., underslung, C.B. equipped, licensed, perfect condition; real gain, £79.—116, Sternhold Av., Streatham Hill, S

GLORIA-TRIUMPH Combination, 1919, conc and appearance like new, accessories, sc licensed; nearest £110.—39, Warren Rd., Wanste

COUNTERSHAFT Triumph, enamel, plating, mechanism splendid condition, lamps, horn paid; £68.—30, Crystal Palace Park Rd., Sydenh

TRIUMPH, about 1912, lamps, horn, tax round cornered tank, splendid condition, r engine; £8.—Danson, 34, Ampthill Rd., Bedford

19 20 Triumph and Cancelet sidecar, Boun lamps, etc., Cameo wind screen; £90.—(North-Eastern Hospital, St. Ann's Rd., Tottenh

TRIUMPH Junior, 1920, 2¼h.p., 2-speed, equipped and licensed, very fine order; £55. Layton Garages, 30, Holywell St., Oxford. 'Ph 581.

TRIUMPH 1921 4h.p., countershaft, Type H; in stock.—Cambridge agents, Herbert Rob Ltd., 32-35, Green St., Cambridge. Tel.: 985. Bicycles.

LATE 1920 Triumph Gloria Combination, equal little used, splendidly equipped, cost £195; gain; first £118.—31, Claremont Rd., Alexandra Manchester. [P

TRIUMPH, 1918, in perfect condition, as ne and H. lamp set (large), speedometer, Cowey tax paid, insurance and tools; £78.—4a, Pete Rd., Richmond. [P

TRIUMPH Combination, 1919, as new, 4h.p., screen, lamps, speedometer, accessories, tax, over 80 m.p.g.; £85, near offer.—9, King-George Greenwich, S.E.

BARGAINS.—Triumph, modernised dropped f £33; strong bulbous sidecar, £8; chassis, variable pulley, 25/-; back stays, 10/-.—11, He bury Lane, Coventry. [P

TRIUMPH-SANDUM Combination, 4h.p., 1921 fect condition, lamps, speedometer, tax surance; £115; view Friday.—68, Bolingbroke Wandsworth Common.

TRIUMPH 1921 Models in stock.—Model H SD £125; exchanges or extended terms.—El Co., 15-16, Bishopsgate Av., Camomile St., 'Phone: Avenue 5548.

3½h.p. Triumph Combination, N.S.U., oversize Cameo, apron, 2 lockers, spare belt, tube, any trial; £52; would separate, solo £40.—71, S Rd., Balham, S.W.12.

CROYDON Agent for Triumph motor cycles models in stock ready for immediate deliv Moore's Presto Motor Works, Ltd., 145, North Croydon. 'Phone: 2624.

19 18 W.D. Triumph and Lightweight Hend Sidecar, all accessories; £80; can be seen time.—Apply, W. R. Glazebrook, Berrington H Handcroft, Berwick-on-Tweed.

19 14 Triumph, Sturmey 3-speed, Amac carbu belt, horn, all new, lighting set, all acces lately overhauled, tax paid; £70; must sell.—190, Green, Winsford, Cheshire.

TRIUMPH Junior, 2¼h.p., 2-speed, splendid tion and running order, lamps, tools, new spare tube, tax paid; £48, or offers.—8, Garde Vauxhall Bridge Rd., S.W.1.

TRIUMPH 1920 4h.p. Model, Triumph Gloria car, horn, Watford speedometer; £155; de payments if desired.—Parker's, Bradshawgate, B also 245, Deansgate, Manchester. [P

OTOR CYCLES FOR SALE.

Triumph.

Triumph Countershaft Combination, bulbous luxe body, new tyres, footboards, speedo- nsurance, fully equipped; £95.—84, Oxford W.10. 'Phone: Park 5541. [6016

IPH, C.S., 3-speed, etc., with Dunhill sidecar, est model, as new, fully equipped, tax paid, miles; £135; extended payments; discount —33, Hackford Rd., Brixton. [6207

Triumph, C.S., like new, long copper exhaust, are standard silencer, new tyres, fully licensed, specially tuned, very fast; £70.— n, Grafton Rd., New Malden. [5144

PH Combination, engine 54813, exceptional dition, re-enamelled, replated, reconditioned 1921, fully equipped; bargain, £105.— omley Rd., Shortlands Station. [5457

PH and C.B. Sidecar, countershaft, 3 speeds, clutch, engine No. 52826, any part dis- for examination, enamel and plate perfect; 1, Walsgrave Rd., Coventry. [X7792

PH, 1912, fixed engine, new piston, cylinder red, tank and frame re-enamelled, new belt, B. and B., Bosch, £30, or offers.—Chas. 6, Waverley Place, Tranent, N.B. [5228

PHS.—We are the North London agents, and give immediate delivery; chain drive, chain- models.—Jones Garage, Muswell Hill, N.10; oodside Parade, North Finchley. [0382

econd-hand Machines advertised by Jones' ge, Muswell Hill, and Woodside Parade, N. are thoroughly overhauled and guaranteed 'Phone: Hornsey 2917, Finchley 2334.

h.p. Countershaft Triumph, T.T. bars, in d running order, licence paid; £60.—Jones' uswell Hill.

919 4h.p. Triumph Combination, not done miles, guaranteed perfect, all accessories; nes' Garage, Muswell Hill. [5572

PH Combination, Aug., 1920, Montgomery car, hood, screen, Stewart horn, Lucas lamps, der, small mileage, as new; £110; after 6 unheved Rd. North, West Croydon. [X7638

HOPE'S, 9, Shoe Lane, London, E.C.4.— umphs, all models in stock, new chain drives, cum-belts, solos and combinations; immediate upplied on easiest of easy terms; trade sup- [4537

ATE Delivery of any Triumph Model; cash erred payments; book your order now, and ppointment later.—Burlington Motors, Ltd., S., Clapham Common, S.W.4. 'Phone: Brix- [0504

te) 4h.p. Triumph and Gloria Sidecar, elec- lamps, Cowey horn, original tyres, tools, ds, appearance as new; seen by appointment, bargain, £135.—Apply, H. Seamark, Well- ambs. [5372

H, late 1917 4h.p. countershaft, engine No. , all accessories, tax and insurance paid, dition, with new coachbuilt sidecar; £85.— 5, Chalk Farm Rd., opposite Chalk Farm on. [6237

H Combination, 1914, 3-speed, Bosch, speed- r, all accessories, tax and insurance paid, ion, very little used; £50.—Bathurst, Law- ildings, High St., Stoke Newington, N.16. ton 2837. [5237

20 umph Montgomery Combination, Easting, y speedometer and horn, electric and acety- ing, new Brooks cantilever saddle, licence splendid order; any trial; £115.—Dr. Hare, Framlingham, Suffolk. [5331

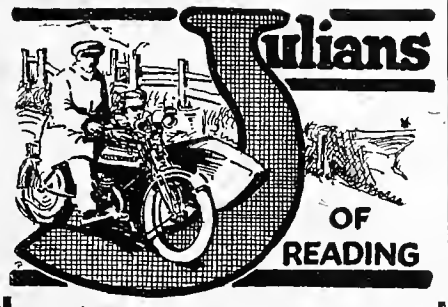
H 1917-18 Countershaft Combination, 3- 4h.p., clutch, kick start, aluminium discs, es, spares, lamps, tools, Klaxon, tax paid, cluded, engine perfect; £87/10.—New Cross Rye Lane, Peckham, S.E.15. [5401

20 umph Gloria Combination, Bluemels screen, ometer, luggage and petrol carrier, tax and id, many extras; owner leaving country; sed; nearest offer £150 accepted.—James, 2, sions, Gondar Gardens, West Hampstead. [5676

H Combination, 1918, 4h.p., countershaft, 3-sp d, engine 52183, mechanically perfect, sidecar, luggage grid, Easting, lamps, nt condition, appearance; for quick sale, gain.—Gibson, Brimstone Bottom, Ludgers- [6047

ET yr new 1921 Triumph from the Layton Garges, who can give immediate delivery of any el; exanges quoted; balance may be paid out of me if desired. Enquiries treated personally and every courtesy.—The Layton Garages, 30, Holywell Oxfo or London Rd., Bicester. [6143

TONHING Offer of New Triumph Sidecar Com- bluans.—Brand new 1921 type H 4h.p. 3- d Triph, with new coachbuilt sidecar, Coverall m, 4 int attachments, £135 cash; easy pay- ts on 4% extra, not shop-soiled or renovated hines, ut brand new 1921 models direct from ers' rks; free delivery to any address.—The ner Mtor Co., Aston Rd., Birmingham. [0667



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NEW IMPERIAL, 2½ h.p., 3-sp...	**70 Gns.**
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A.J.S., 2¾ h.p..	**£95 0**
O.K. JUNIOR, Mark IX.	**38 Gns.**
B.S.A., 4½ h.p., all-chain and new B.S.A. (1920) Sidecar	**£136 0**

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WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport Tel.: 607. [0646

TRIUMPH 1919 4h.p. Combination, in splendid order, engine and gear box overhauled, not done 8,000 miles, complete with lamps, horn, spare tyres, tools, etc., tax paid, a very smart outfit for quick sale; £115.—Seen by appointment at Wilkins, Simpson, opposite Olympia, London. [5396

1921 Triumph (April) All-Chain Combination, Tan-Sad, and backrest, Cowey speedometer and horn, Easting telescopic screen, Lucas head, rear, and side lamps, 3 generators, also electric rear and sidecar, spring footboards, aluminium number plates, spares, Dunlop cover, new Dunlop inner tube, driving chain, exhaust valve, etc., smart outfit, perfect condition; nearest offer to £165; seen by appointment.—37, The Park, Ealing. 'Phone: Ealing 1180. [5849

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VELOCETTE, enamel and running good, 120 m.p.g.; £37 cash.—92, Savernake Rd., N.W.3. [5672

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

WONDERFUL Value.—Special offer of a new 1921 Model D2 2¼h.p. 2-speed Velocette, with new type internal expanding front brake; £65 cash, or £22/12 down, and 12 monthly instalments of £3/15.—The Premier Motor Co., Aston Rd., Birmingham. [X7754

GET Your New 1921 Velocette from The Layton Garages, who can give immediate delivery of any model. Exchanges quoted, balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford; or London Rd., Bicester. [6145

Verus.

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, ridden 250 miles, tax paid; £80.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

VERUS-BLACKBURNE 1920 2¾h.p., 2-speed, K.S., clutch, electric horn and lights, discs, speedometer, long copper exhaust, smart lot; worth seeing; £80.—19, Wellhall Parade, Eltham, S.E.9. [5282

VERUS 2¾h.p. Blackburne, late 1920 model, 2-speed countershaft, K.S., ridden only 500 miles, tax, insurance paid, many spares, indistinguishable from new; £78, or nearest offer.—Miss Littlehales, Wilmslow. [X7768

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0502

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VICTOR 1921 Sports Model, 8h.p. Precision engine, ideal sporting machine; £75; seen any time.—Loweth, 6, Mount Pleasant Rd., Ealing. [5828

Vindec.

BARGAINS.—Vindec Special, 5-6h.p. twin, 2-speed, Bosch, B. and B.; nearest £20, or in parts.—MacLeod, Burnside, Dingwall. [X7517a

Wilkin.

WILKIN.—All models in stock; deferred payments. Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7726

1920 Wilkin, 4h.p. Blackburne engine, Sturmey 3-speed gear, clutch, and kick starter, Henderson sidecar, condition as new; offers.—Best, The Terrace, Eyam, Derbyshire. [5490

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7709

Williamson.

8h.p. Water-cooled Williamson and sidecar, good tyres just been completely overhauled; price £70, or exchange.—135, George St., Blackpool. [5341

WILLIAMSON Combination, 8h.p., W.C., splendid condition and appearance, dynamo lighting, Easting, tax; £80, or offer.—Hall, Laughton, Theddingworth, Rugby. [5740

Wolf.

WOLF-J.A.P. 2¾h.p., 3-speed Sturmey-Archer, F.E clutch, sound throughout; £36.—Kirkman, 90 Mill Rd., Kettering. [X7633

WOLF 2¾h.p., 2-stroke, 2-speed, clutch, semi-T.T. fast; £35, or near offer.—Briggs, Glenholme, Hessle Common, Hull. [5347

1920 Wolf-Jap 2¾h.p., S.A. 2-speed, clutch, K.S. perfect condition, unscratched, done about 600, lamps, horn, tax paid; bargain, £48.—Richardson, 25, Ellys Rd., Coventry. [X7840

WOLF-J.A.P., late 1920, 2¾h.p., Burman 2-speed, clutch, kick, Amac, Druids, Dunlops, lamps Klaxon, tax paid, as new; sacrifice £50.—Newton, 23, Warrington Rd., Northwich, Cheshire. [5330

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WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler.

ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

BRAND New 1920 2¾h.p. Wooler; a snip, £70.—Jones' Garage, Woodside Parade, N. Finchley. [5573

NEW 2¾h.p. Wooler Flat Twin, Brooklands sports model, fully equipped with accessories, old price £105; reduced to £85; only one available at this price; easy payments.—Harrods Motor Showrooms, 118, Brompton Rd., London, S.W.1. [5647

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

ZENITH, 8h.p., sports, 1920, electric lighting; £85.—Vickers, 21, Erith Rd., Belvedere. [5878

ZENITH 4h.p., variable jet, Bosch, excellent condition, reliable; £48.—Harris, 35a, Midmoor Rd., Balham, S.W.12. [5449

1919 5h.p. Sporting Zenith and sidecar, tax paid; £85.—Bounds, 223, High Rd., Kilburn, N.W. [5358

ZENITH 3½h.p. 1914 T.T. Model, all accessories, tax paid; £35.—Cardo, Edgware House, Edgware, Middlesex. [X7648

ZENITH-GRADUA 3½h.p., semi-T.T., low, fast, comfortable, excellent condition; £30.—Corston, Buswell, Norfolk. [5406

1919 Zenith Combination, 5-6h.p., unscratched, perfect; £78.—24, Balliol Rd., North Kensington, London. [5802

ZENITH 3½h.p., Gradua, discs, accessories, posh condition; £40, near offer.—Taylor, Dentist, Greenwich. 'Phone: 1055. [5211

1921 Zenith 5h.p. Sports Model, Bonniksen, spare belt, valve, practically new; £90.—Jakins, 247, High Rd., Lee, S.E. [5485

ZENITH 5h.p. countershaft, 1921, under 100 miles, fully licensed; £125; exchange Douglas.—Dr. Warren, Ponders End. [5466

F.O.C.H. for Zeniths; new and second-hand machines in stock.—5, Heath St., Hampstead (near Hampstead Tube Station). [5905

ZENITH.—All models, solo or sidecar; deferred payments. — Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X7727

ZENITH, 8h.p., sports model, as new, guaranteed; bargain, £53, or exchange lightweight.—217, Belsize Rd., Kilburn, N.W.6. [5863

ZENITH, Dec., 1920, 8h.p., all accessories, lamps, horn, tools, spares; 100 gns.; private.—Zenith, The Grove, Addlestone, Surrey. [5833

1920 8h.p. Zenith Sports, lamps, horn, spare belt, licensed, good condition; £75.—Edwards, 50, Harrington Rd., South Kensington. [5047

5-6h.p. Zenith, 1919½, engine No. 8/80397/A, lamps, Klaxon, discs, guarantee faultless, original tyres; £80.—153, Knollys Rd., Streatham. [5498

ZENITH 5h.p. Sports Model, bought March, 1921, mileage under 1,000; £85; what offers?—Baker, 56, Elmwood Rd., Herne Hill, S.E.24. [6229

ZENITH Combination, tax paid, hood, screen, all lamps, speedometer, coachbuilt; £85, or near offer.—Wildey, 31, Roderick Rd., N.W.3. [5445

ZENITH-GRADUA 3½-4h.p. Combination, tax paid, lamps, wind screen, speedometer, etc., splendid condition; £50.—58, Victoria Rd., Clapham, S.W.4. [5993

ZENITH 8h.p Combination, almost brand new; cost £345; must be sold; accept best offer.—Write for particulars, Wallis, 23, Hartington Grove, Cambridge. [4132

SPECIAL 90 Bore Twin Zenith Combination, all accessories, splendid condition, very fast; £75, or exchange lower power.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [6170

LATE 5-6h.p. Zenith, absolutely complete less engine, new condition; £26, or exchange with cash for any complete machine.—Seward, 9, Red Hill, Bassett, Southampton. [5962

ZENITH 1920 8h.p. Sports Model, issued new by ourselves April, 1921, licensed, and in exceptionally fine order; £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [6130

ZENITH Combination, Dec., 1919, clutch model, special 8h.p. J.A.P. engine, speedometer, lamps, spare belt, chain, etc., guaranteed perfect; £138.—Rutter, Chemist, Sydenham. [5968

1920 8h.p. Zenith and Lightweight Henderson Sidecar, Stewart speedometer, electric side and rear lamp, Lucas head lamp, tax paid, Binks carburetter, very fast; price £95.—Duncan and Shepherd, 33, The Parade, Golders Green. [5985

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ZENITH 1915 90 Bore C.B. Combination, v oversize tank, plating, etc., splendid speed lamps, screen, grid, mat, and plenty spare nearly new, oversize on back; price £90.—B Garage, Bedford Rd., N. Finchley.

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FOR Sale, special 748 c.c. 1920 Zenit machine is one of the fastest Zenith's in e has been timed on Brooklands at over 80, an winner of numerous firsts at speed trials a climbs; this machine is guaranteed perfect respect, numerous spares including pistons, cams, racing back stays, etc., enamelled blac son and gold, complete with polished alumini car, 5-point attachment, all Lucas accessories; Hudson, 52, Gladstone Rd., Altrincham.

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LADY'S Ivy Motor Cycles; this dainty 2-str lists.—Agents, Frank Whitworth, Ltd., 1 St., Birmingham.

1921 Open Frame, with light sidecar, gu perfect, carry 3; 3-wheeler runabout re Dr. Cooke, Elmwood, Moatcroft Rd., Eastboure

Miscellaneous.

LATE 1920 Douglas Combination, excellen tion; sacrifice, £100.—Below.

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1911 Triumph, splendid running order; Wright, Tram Terminus, Christlet Chester.

£25; 3½h.p., T.T. model, E.I.C., B. and B. licence; £10 new parts.—G., 63, Solon R ton.

TRIUMPH, 33 gns.; Radco, 28 gns., tax p feet machine; sacrifice, must sell.—2, Aus Uxbridge.

4h.p. Triumph, 1918, 60 m.p.h., £65; al Sports Scott, as new, £110.—Enterprise G Nuneaton.

HALIFAX.—Bargain list of new and sec machines.—Halifax Motor Exchange, Ho Halifax.

DOUGLAS, 4h.p., 1918, large sidecar, electr Cameo wind screen, Klaxon, luggage spare, tax paid, excellent running order; £85.

1½h.p. J.E.S. Motor Cycle; £15.—35, Wingu Church Rd., Tottenham.

UNIBUS, 1921, lady's motor cycle, 2½h.p tion as new; £65, or offer.—May Heath and Wiltshires, Aldershot.

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ANDSWORTH.—1919½ beautiful Rudge Multi coachbuilt combination, 5-6h.p., lamps, speedo; 79 gns.—Below.

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ANDSWORTH.—Zenith coachbuilt combination, twin J.A.P., runs well, licensed; only 59 gns.—Below.

ANDSWORTH.—Rex coachbuilt combination, 5-6 h.p. twin, mag., 2 speeds; cheap, 46 gns.—Below.

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ANDSWORTH.—Henderson 8h.p., 4-cyl., mag., 2 speeds, kick; very cheap, 48 gns.—Below.

ANDSWORTH.—F.N. 5-6h.p., 4 cyls., waterproof Bosch, 2 speeds, lamps, licensed; 45 gns.—Below.

ANDSWORTH.—Rudge 3½h.p., mag., 2 speeds, countershaft, kick, runs well; 39 gns.—Below.

ANDSWORTH.—Abingdon King Dick, 3½h.p., mag., 2 speeds, kick, beauty; 38 gns.—Below.

ANDSWORTH. — Abingdon-King Dick, 3½h.p., mag., 2 speeds, handle start; 32 gns.—Below.

ANDSWORTH. — Matchless-Jap twin, mag., 3 speeds, clutch, runs splendidly; 49 gns.—Below.

ANDSWORTH. — Bat-Jap 4h.p., Bosch, spring frame, runs well; only 29 gns.—Below.

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ANDSWORTH.—Magnificent F.N., latest 5-6h.p., 3 speeds, lamps, Klaxon; bargain, 68 gns.—Below.

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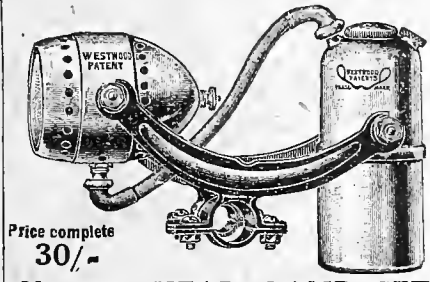
ANDSWORTH Exchanges. — Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). Phone: Putney 4686. [6103

RAND New 1921 Motor Cycles to be cleared at bargain prices to make room for light cars.—Sam Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4995

2¼h.p. Hockley, 2-stroke, B. and B., C.A.V. mag., 4 speed hub, strand new, £17; Amac, 1½in., heavyweight, £8; Bowden, 35/-.—Hood, 98, Watford Rd., King's Norton, Birmingham. [X7794

1920 3½h.p., 2-speed, clutch, kick, coach combination, screen, lamps, registered, fine condition; 3 owners; trial arranged.—Gill, 51, Nassington Rd., Hampstead, N.W.3. [6225



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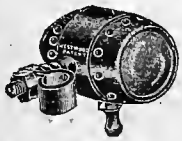

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Price 4/- each.

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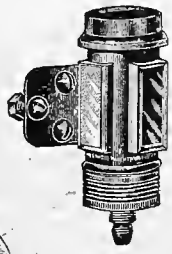
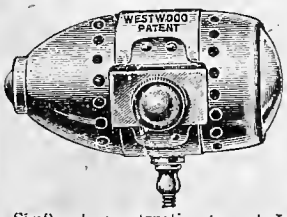
List No. 19/1.
Price 5/6 each.





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Similar in construction to 19/4 Lamp, but having 1¾in. diameter lens, and also Ruby Lens in rear. List No. 205. Price 8/6 each. Plated finish.

SIDE LAMP.
List No. 19/4.
Price 16/- each.
Right or left fitting

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List No. 19/2.
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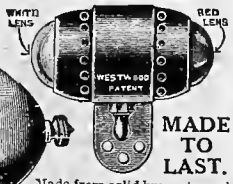

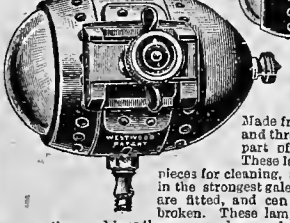

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Made from solid brass, turned and threaded at joints. Every part of solid construction. These lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on, and are absolutely rustless.

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ELECTRIC LIGHTING OUTFITS.
Solo £5 5 0. Combination £7 7 0
ILLUSTRATED LISTS FREE.

Licence Holders
(For Motor Cycles).

Number plate fitting, as illustrated, complete with nuts and screws.
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Handlebar fitting, complete with 2 pairs of clips and screws.
Price 4/- each
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Westwood Special Lines are stocked by all reputable agents.

TRADE MARK
WESTWOOD RIM & PATENTS LTD
LAWDEN RD BORDESLEY BIRMINGHAM.

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Miscellaneous.

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LONGMAN Bros.—Brand new 1921 Triumph, shop-soiled; £110.

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LONGMAN Bros.—Matchless-M.A.G. combination, 1915, 8h.p., 3-speed, all-chain, perfect, complete with all accessories; 85 gns.

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LONGMAN Bros. are special agents for all the leading makes, and can make you excellent allowances on your old machine. [5822

M.C. Depot Bargains.—7-9h.p. Indian coach combination, spring frame, insured, licence; £40; given away.—Below.

M.C. Depot.—1914 4¼h.p. Zenith, licence, excellent condition; £47.—Below.

M.C. Depot.—1918 Allon, licence, equipped, tyres, etc., perfect; £39.—Below.

M.C. Depot.—1920 Regent, less engine and gears, also spare frame; £28 the lot.—Below.

M.C. Depot.—1914 Morgan, overhauled, licence, hood, screen; any trial; £99.—Below.

THE M.C. Depot, 257, Cavendish Rd., Balham, S.W.12. [5982

FOR Sale, 2¾h.p. motor cycle, mag. ignition, tax paid, in running order; £18.—68, Cromwell Rd., South Bank, Yorkshire. [5851

ALLBER Garage, Thornsett Rd., Earlsfield, London (opp. EarlsfieldStation, L.S.W. Ry.). 'Phone: Latchmere 4388. We sell for cash or terms.

CALCOTT, 2¾h.p., single-speed, good tyres, complete with lamps, horn, and tax paid, splendid machine, in new condition; £30.

EDMUND, 1917, 2¾h.p. J.A.P., spring frame, Enfield 2-speed gear, all lamps, horn, etc., splendid machine; £40.

ROVER, 3½h.p., 3 speds and clutch, starter, good tyres, all lamps, horn, etc., in beautiful condition and running order; £37/10.

INDIAN, 5-6h.p., countershaft, 3-speed, clutch, kick starter, all accessories, splendid order; £55.

INDIAN Combination, 7h.p., 3-speed, clutch, kick starter, electric lighting, good tyres, tax paid, in splendid running order; real bargain, £60.

TRIUMPH 1920 Combination, 4h.p., 3-speed, hand clutch, kick starter, all lamps, horn, wind screen, tools, etc., tax paid, absolutely as new; £100.

INDIAN Combination, 1919, 7h.p., 3-speed, clutch, kick starter, Phœnix sporting sidecar, wind screen, condition as new; bargain, £95. [5824

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½h.p. Ariel, £110; 1921 7h.p. Ariel, £125.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3h.p. twin Humber, 3-speed, £18/15.—Booths Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6h.p. Chater-Lea, Grade gear, £21/15.—Booths Motories, Halifax.

BARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P. and M., 1914, £39/15.—Booths Motories, Halifax.

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/15; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [3301

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Miscellaneous.

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [7906

SOLD Again: over 20 from last week's advt., but not yet sold out; several motor cycles waiting from £5 to £30, at which figure the fortunate first buyer can secure a twin Rex combination, well equipped and going like new.—Bunting's Motor Exchange, Wealdstone. [6251

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged; any new motor cycle combination or car supplied, cash or easy payments. — Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [5909

MOTOR Cycles at bargain prices.—Mebes and Mebes, the original light car specialists, have a limited number of 1920 motor cycles, popular makes, all brand new, for which they are prepared to accept any reasonable offer. Call and inspect, and make your offer. They are relinquishing this department owing to limited space being required for light cars.—154-6, Gt. Portland St., W.1. 'Phone: Langham 2230. [5402

TRIUMPH Pattern W.D. Handle-bars, wide, sporting, brand new, 23/3 pair; saddles, brand new, latest type, fit any machine, 25/-; Amac carburetter, new, fit ⅞in. induction pipe, 27/6, lightweight; Triumph countershaft carburetter, new, 39/9. All goods post free. Every Triumph and most Premier parts in stock, new or second-hand. Stamp for reply, please.—Jack Ward, 11, Radford Rd., Leamington Spa. [X7806

MOTOR CYCLES FOR HIRE.

HIRE.—A.J.S. combination, 1920, week £5/10, capable rider essential; Wolverhampton district.—Box 5,886, c/o *The Motor Cycle*. [5320

DOUGLAS' Motor Cycle and Sidecar for hire, absolutely reliable, 15/- per day, 50/- per week-end, 100/- per week.—Write Rodwell, 38, Brook Green; or 'Phone: Haynes Garage, Western 2253. [3287

MOTOR ATTACHMENTS.

AUTO-WHEEL, Oct., 1920, perfect condition; £14; tax paid.—Treverbyn, Harold Wood. [5245

YOUNG, fitted new lady's cycle, not ridden 5 miles; £21/10, or separate; offers?—Lander, Chilwell, Notts. [5749

1921 Young Attachment, fitted on cycle, complete, perfect; £17/10.—181, Newton Rd., Burton-on-Trent. [5817

WALL Auto Wheel, excellent condition, number-plates, tax paid; £10.—3, Cardigan Rd., Richmond, Surrey. [5679

GENUINE Wall Auto-wheel, single lever control, complete with fixing clips; £12.—Murray, 37a, Charles St., Hatton Garden, Holborn. [X7674

GREAT Snip.—Young attachment, new and complete; first cheque for £20 secures.—A. W. Turley, Cycle and Motor Agent, 32, High St., Rusthall, Kent. [5785

ECONOMIC Motor Wheel, attached specially made cycle, nearly new; owner recently purchased combination; accept £25, or near offer.—Apply, Holie, Whissendine, Oakham. [5408

AUTO-WHEEL De Luxe, perfect, together with gent's B.S.A. 3-speed cycle, accessories, nearly new, tax paid; £25, or exchange lightweight motor cycle; after 6.—G. Manning, 51, Maysoule Rd., Clapham Junction. [5264

TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catalogue free.—Rayner, 10-12, George St., Blackpool. [5248

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

ARIEL Tricycle; £15; 3½h.p., water-cooled, mag., 2 speeds, free engine, licensed, good condition, lamps; cheap.—Letters, H.W., 19, Cheadle Av., Prescot Rd., Liverpool. [X7685

TRICARS FOR SALE.

AUSTRAL 2-seater Tricar, £75; or exchange good solo or combination.—Elton, Badden, Shepton Mallet. [5464

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—3, Kendall Mews, George St., W.1. [1442

DRIPED Scooter, late 1918, little used; nearest £20.—MacLeod, Burnside, Dingwall. [X7517

A.B.C. Skootamotas, new, latest model; offered at £25, a bargain.—Fowler and Co., Cowes. [5432

AUTOPED Scooter, good running order; cheap for quick sale.—28, St. John St., Cirencester, Glos. [5716

SKOOTAMOTA, A.B.C.; this is the only real skoota; £31/10.—Agents, Frank Whitworth, Ltd., 139, New St., Birmingham. [X7748

CUSTOMERS' OPINIONS OF OUR RE-CONDITIONED DOUGLAS MOTOR CYCLES

A FEW EXTRACTS FROM THE MANY GOOD OPINIONS RECEIVED.

"With reference to the 4 h.p. renovated Douglas Combination I obtained from you four months ago, I think you will be interested to hear that I have just returned from a tour of some 500 miles, including a return run Birmingham to Ilfracombe. The total mileage covered since the machine has been in my possession now exceeds 4,000 miles, and I have yet to spend money to put right any mechanical trouble. I have used the machine daily, and my weekly average is about 250. I have not yet decarbonized the machine, as she still does 60 miles to the gallon."—G.W.S., Birmingham.

"The machine was run through Hampshire last week and gave the utmost satisfaction, no adjustments of any kind being required, and still running perfectly. It is a credit to your re-assembling."—G.H.T., Borough, S.E.

Later—"The machine is running better than ever."

"The Douglas (2¾ h.p.) I got from you is running Ar. It has quite come up to my expectations, so I am quite satisfied with it."—F.A.T., Barnsley.

"I was recommended to you by a man who has at different times purchased three re-built machines from you which are still running as new. As these machines are used for hire work (one of which I am using at present) and ridden by various people, I think there can be little doubt that machines supplied by you are reliable.—W.T., Folkestone.

2¾ h.p., 2-speed .. £65

4 h.p. 3-speed, k.s. and Clutch £85

4 h.p. ditto, and new Sidecar in Douglas Saxe Blue. £105

Practically indistinguishable from new. Complete with full F.R.S. equipment. Over 50% new parts, including new tyres, belt, chain, carburetter, etc. Fully guaranteed for 3 months. Over 500 already supplied to all parts of the country

Deferred Payments Arranged.

Trade Supplied.

NEW SURPLUS W.D. DOUGLAS PARTS FOR DISPOSAL.

See Miscellaneous Advertisements.

CRABTREE & SON, LTD.,

Motor Engineers, WISBECH.

London Office: 50, Pall Mall.

MOTOR SCOOTERS.

A.B.C. Skootamota, 1921, brand new condition, on ridden few miles, guaranteed; £22/10.—Harvey 47, South Lambeth Rd., S.W.8. [61

A.B.C.—Latest model, brand new, original price 6 gns.; accept £29.—Parker's, Bradshawgate Bolton, also 245, Deansgate, Manchester. [X76

ABBOTSFORD Motor Scooter, 1921, 3-wheeler, fitt 2½h.p. o.h.v. engine, in perfect running ord tyres as new, very little used, plenty of room for lu gage; owner must sell; cost £42, sell £14.—20, Hea Rd., Twickenham 'Phone: Richmond 96. [52

HOODS, WIND SCREENS, ETC.

SANDHAM'S make thousands of hoods every yea 50/- each. First quality twill waterproof.

SANDUMS.—The Sandum Patent Wind Screen of 1 positions, as shown at Olympia. Finest scre on the market; 90/-.

SANDHAM Engineering Co., Ltd., 336, Gray's I Rd., W.C.1. 'Phone: Museum 3427. [08

HERCULES Hoods and Aprons. Write for list Hercules Hood Co., 698, Seven Sisters Rd., Totte ham. [11

BENT Hoops, hood fittings, straps, turnbutton twill, etc.—Henry Jones, 778, High Rd., Totte ham, London. [51

CELLULOID.—Clear transparent, cut to any si 2/- per sq. ft.; carriage paid for cash.—The Ess Accumulator Co., Ltd., 499, Grove Green Rd., Leyto stone, E.11. [06

WIND Screens Actually in Stock: Eastings, Bal Standard, Royal, Bluemels latest; Cameo hoo finest quality, waterproof, with curtains round; £3, —64 Bishopsgate, London. [08

ABANDON Ugly Goggles. Waynham's patent screen, perfect visibility, steamproof, unbre able, invisible; instantly raised or lowered; each P 2/-.—Radio Corporation, City Stock Rooms, Birmi ham. [X76

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FOR

SANDUM, the largest and most renowned side body builders in country.

SANDUMS have put on the market over 10,000 si car bodies.

SANDUMS have the only adult 2-seater body on market which is not unsightly. Write for Dual-purpose Body catalogue.

SANDUMS Repair Bodies and Chassis of any m with the use of up-to-date machinery in factories.

SANDHAM Engineering Co., Ltd., 336, Gray's Rd., London, W.C.1. 'Phone: Museum 3427 [0

VENUS Step Bodies are the best for old chassis.

VENUS Bulbous Bodies are roomy and very smar

VENUS Tandems hold 2 persons. Strong and li but not unsightly. Get one.

VENUS Bodies are made in a factory and suppl direct. Catalogue free.

VENUS Sidecar Co., 6-14, Gonrley St., S. Tottenh [0

SWAN Sporting Body, excellent condition; £7/1 55, Edgar Rd., Sanderstead, near Croydon. [5

SIDECAR Bodies, coachbuilt, best quality, £7 original £12/12.—64, Bishopsgate, London. [0

EDWARDES have a lot sidecar bodies, cheap clear; suit all chassis. Call and inspect.— Camberwell Rd., S.E. [5

MILLFORD Corvette Body, as new, with spri only done 100 miles; best offer accepted.— Daleham Mews, Hampstead, London, N.W. 'Pho 4608. [5

EDWARDES.—Bodies painted any colour, spr back, £5; bulbous back, £5/15; larger sizes stock. Call and inspect my value.—277, Camber Rd., S.E. Hop. 4913.

TOURING, Sporting, 2-seater, Stepped, Bul Bodies; few models to clear up; or send req ments.—T. Williams, Manufacturer, 9, Lower Chad St., Oxford Rd., Manchester. [X7

ROYAL Leicester Sidecar Bodies fit any chassis, fi class finish; have a few coachbuilt bodies, cl ance lines from £5 each; extra good value.— Willowbrook Motor Co., Leicester. [0

BASTONE'S for coachbuilt bodies (no better cheaper house), sporting models, bulbous back step pattern. All at low prices. Call or send your quirements.—228, Pentonville Rd., King's Cross, don, N.1. Tel.: 2481 North.

SIDECAR Body Designs for the trade only. W ing, coloured, pencil, or line drawings of orig designs, also working drawings, full-sized or to sca Cooper's Vehicle Journal, Ltd., established desig to the coach trade for over 80 years. Consult us w designing new ideas.—20, Tudor St., London, E.C. [0

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BODIES.

HT Car and Motor Cycle Engineering Co.—De luxe body, specially made for Millford chassis, tit step, £10/10; cheaper pattern, with step, 7/; any body made to your own design; we clise in high-grade bodies at low prices; at any come and see us, we never sell rubbish; we pply new bodies from £5/5, any colour.—Light nd Motor Cycle Engineering Co., 26, Tulse Hill, n. (Half minute from Brixton Skating Rink.) [5539

SIDECAR ATTACHMENTS.

ADHAM, the smartest sidecar specialists.

DUM Sidecars.—Best value in Olympia Show.

DUM Chassis.—Insist on having our enclosed heel type of chassis for safety.

DUM Models.—The Exquisite 23 gns., and sports gns., are of distinctive appearance.

DUM Elite Sidecar, 27 gns.; the smartest side- r on the road; highly recommended in "The Cycle."

DUM Dual Purpose Sidecar (patented). A single 2-seater sidecar as required in 5 seconds. Size by as our single-seater Elite. Luxuriously com- seating for 2 adults, with the weight in cor- sition over rear axle. Finished in colours to by make of machine, 42 gns.; bodies only, The latest development of the 2-seater as d by us, and approved by the recognised

DUM Featherweight Streamline Body, smart and y, weight 18 lbs.; price £4/17/6.

DHAM Engineering Co., Ltd., 336, Gray's Inn W.C.1. 'Phone: Museum 3427. Factories: 165, Pentonville Rd., N.; and Britannia Britannia St., W.C. [0019

DLETON'S Patent Spring Wheel Sidecars are uaranteed 3 years.

DLETON'S Patent Unbreakable Chassis for igh-powered machines: Zenith, Harleys, New Imperials, Sunbeams, Blackburnes, etc.

NS with kick starter on left present no dignity with Middleton's special model.

DLETON'S specialise in frame repairs of all nd Twisted motor cycle frames and forks rly corrected.

ND-HANDS of various makes for sale. Your sidecar taken in part exchange.

DLETON'S Spring Wheel Sidecars are not only ter and more comfortable, but are faster on ds than rigids. They give to the bumps, not to them.

DLETON'S, London's oldest established side- r makers, wholesale, retail, and export, 27, Green Rd., Finsbury Park (near Tube). Hornsey 1584. [0522

DAR, C.B., green, 26×2¼; £5.—48, Gt. Western , Paddington. [5893

orting coachbuilt sidecar, low, light, new , 4-point.—King, Egrove, Oxford. [X7784

DAR, C.B., off Triumph, complete fittings; .—12, Winchester St., Taunton. [5582

OLLR.—Have your sidecar converted into a ley folder, and save garage.—Below.

DER.—Have a Hopley folding sidecar. Saves ge. Attached to motor will go through pas- . Tandem and single bodies fitted. Tested n motors up to 9h.p.—Hopley, Upper High- Birmingham. [0152

B. lecar, excellent condition, off Triumph; £10. —Bentinck Mews, Marylebone Lane, W.1. [5637

PECL Aluminium Body on Douglas chassis; 10, worth £25.—63, Walm Lane, N.W.2. [X7775

LLFORD Cane Sidecar, complete, nice condition; gain, £6/10.—41, Ashford Rd., Cricklewood. [5797

HAS and wicker sidecar, complete, in good con- ion; £7.—30, First Cross Rd., Twickenham. [5735

EVEAL Sidecars; cheap; room wanted; fitted ro-57, Kenbury St., Camberwell, London. [5896

ARGIN.—Millford sidecar, coachbuilt, spring wheel; , cost £40.—Searle's Stores, Southborough. [5747

IDECAR, wicker, Chater-Lea, 26×2½ good tyre, tu £4.—39, Selkirk Rd., Tooting, S.W.17. [5514

ARGINS.—Shop-soiled £27/10 sidecar, suit Triumph or B.S.A.; £18/15.—Booths Motories, lifax.

ARGINS.—Nearly new Henderson sidecar, suit Rge, £16/18; Millford 27 gn. sidecar, nearly , £7/10.—Booths Motories, Halifax.

ARGINS.—New full-size coach body, locker under set £6/19/6; cane body, 25/-. —Booths tories, Halifax. [5302

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LIGHTING SETS for Cars and Motor Cycles

REDUCTION IN PRICES OF DYNAMOS

4 volt 3-4 amp. Type from
£6-10-0 to £5-10-0

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Complete Motor Cycle Sets with all necessary fittings for most machines include 4 volt Dynamo, Accumulator in Case with Switches, Head Lamp with bulb and brackets, Tail Lamp with bulb, Wiring, Special Pulley, Dynamo Bracket, Belt with Fastener

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Total Weight of complete set is under 10 lbs. more than the average acetylene set. **The Power to Drive** the 4 volt dynamo at maximum speed is **Less than** $\frac{1}{16}$ h.p. Therefore, the sets are equally suitable for lightweights or large machines.

Fully Illustrated Catalogue free on request.

We specialise in repairs to **MIRA Dynamos**

ALL KINDS OF MOTOR LAMPS AND ACCESSORIES SUPPLIED.

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ASTRA DYNAMO Co.
110, VICTORIA ST., S.W.1.
Telephone: Victoria 7545.

SIDECAR ATTACHMENTS.

£5.—Splendid underslung chassis, with cane body, 26in. wheel, 4-point.—King, Egrove Farm, Oxford. [X7785

SEVERAL Brand New Canoelet Sidecars at less than cost.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [6072

BASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars from £14/18/6.

BASTONE'S.—We have a few soiled sidecars and bodies to clear at low prices.

BASTONE'S.—Distributing agents for the famous Montgomery sidecars. Latest 1921 sporting and other models in stock; trade supplied.

BASTONE'S (Sidecar Dept.), 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6850

NEARLY New Coachbuilt Sidecar, complete, ready for fixing, off Triumph; £10/15.—5, Addison Av., Holland Park, W.11. [6189

LARGE 7-9h.p. Milford Indian Spring Frame Touring Sidecar, nearly new; £22; offers.—Seward, Red Hill, Bassett, Southampton. [5964

SPUR Lightweight, almost new, large body, Cameo wind screen, coverall, apron, lamp; £18.—Pearson, The Downs, Ashtead, Surrey. [5391

1921 Light Sporting Watsonian, unscratched, universal fittings, lamp and generator; 12½ gns.—106, North End Rd., West Kensington. [5940

MILLFORD, suit P. and M. or Triumph, £16; Douglas, £16; Bramble, suit P. and M., £12; Dunhill, suit twin, £25.—33, Hackford Rd., Brixton. [6209

COACH Sidecar, fit Scott, Magnu as new, aluminium disc, Bluemel wind screen; bargain, £8; exchange for stationary engine, about 2h.p.—876, Garratt Lane, Tooting. [5756

MILLFORD Sidecar, 4-point attachment, almost new, fitted with Easting wind screen; £20.—Mays, Sans Souci, Ashurst Rd., North Finchley, London. [6149

RENNOC Sidecars, bodies, hoods, screens, largest stock in London, actual manufacturers throughout. Send for our 1921 catalogue, 32 pages, 80 illustrations.

PHŒNIX Sidecars.—All spare parts in stock by the Rennoc Sidecar Co.

RENNOC Sidecar Co. specialise in sidecars for Indian motors, with left-hand kick starters, and can deliver.

RENNOC Co. have 50 second-hand and clearance sidecars, bodies, hoods, etc., all to clear at knock-out prices. Note: Write for special clearance list.

RENNOC Co. have the finest selection of complete sidecars in the trade.

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RENNOC Co. have in stock sidecars to fit all makes, English and American.

RENNOC Co. again ask you to send for their 1921 catalogue, the most comprehensive issued by any manufacturers.

RENNOC Motors, Ltd., Head Office and Engineering Works, Victoria Works, Victoria Rd., Stroud Green, N.4. 'Phone: Hornsey 850. Body Building Dept., Progress Works, Marlborough Rd., Holloway, N.19. 'Phone: Hornsey 1589. [2931

EDWARDES.—Sidecar chassis to clear, £6/17/6, complete with wheel, brand new, not repaired rubbish. Call and inspect.—Edwardes, 277, Camberwell Rd., S.E. Hop. 4913. [5760

B.S.A. New No. 3 Sidecar, 26×2½ Palmer, 4-point, large locker, apron, list £42, nearest £32; also 1921 heavyweight Senspray, unused, 1¼in., list £3/12, offers.—Bibey, 6, Broad St., Ross-on-Wye. [5978

COACH Sidecars complete; bodies and chassis supplied separately; hoods, screens (Cameo, Easting); repairs; repainting.—T. Williams, Manufacturer, 9, Lower Chatham St., Oxford Rd., Manchester. [X7744

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RUNABOUTS AND CYCLE CARS.

DAN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

BRITON 2-seater, complete, perfect; £145; combination part.—Garage, Millett St., Bury. [5214

SINGER 10h.p., 1913, good order, discs; £190; combination in part exchange.—36, High St., Skegness. [5495

6 h.p. Rover 2-seater, modern body, overhauled; £50 —Whispings, Church Gate Rd., Cheshunt, Herts. [5607

G.N., 1921, standard model, dynamo lighting, spare wheel; £240.—Forrester, Graham's Rd., Falkirk. [X7773

DAN GUY, Weymouth, Morgan agent; reduced price; Grand Prix 10h.p. M.A.G., £197, from stock. [0624

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [3313

1920 De Luxe Morgan, lavishly equipped, perfect; £145.—24, Balliol Rd., North Kensington, London. [5800

HUMBERETTE 2-seater, air-cooled, first-rate condition; £120, or near offer.—Brushford Rectory, Dulverton. [5233

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

CARDEN, 6h.p. J.A.P., electric lighting, tax paid, perfect condition; £35.—Cox, 43, Eltisley Av., Cambridge. [6114

TAMPLIN Bi-car, 1920, well equipped, tax paid, paint, etc., like new; £95.—Bunting's Motor Exchange, Wealdstone. [6250

1919 Carden, 8h.p. J.A.P., hood and screen; £45, or exchange 2-stroke; tax paid.—4, Thornton St., Kempston, Bedford. [5737

MORGAN de Luxe, 1920, speedometer, very fast, unscratched; £150.—Braemar, 17, St. Quintin's Av., North Kensington. [5779

1921 Burney Cycle Car, 8h.p. Blackburne, 3-speed and reverse; offers?—Burney, 36, Frederick Rd., Aston, Birmingham. [X7740

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MORGAN De Luxe, excellent condition; reasonable offer accepted or motor cycle and cash.—Hollies, Churchdown, Gloucester. [5955

G.N. Cycle Cars, latest models, always in stock; £198 and upwards.—Drake and Mount, Ltd., Motor Agents, Bracknell. [3696

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CARDEN, mileage 500, standard extras plus Cowey, etc., tax, insurance paid; £125.—Woodward, Morthen Hall, near Rotherham. [5440

G.N. New Standard Touring, dynamo lighting, just received from works; £275/12/6. — Telford Garage, 47, Streatham Hill, S.W.2. [5532

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CYCLE Car, less tyres and gear box, 10h.p. 4-cyl. Standard engine, bodywork unfinished; owner going abroad; £45.—Sharp, Workshops, Bovington Camp, Wool. [5231

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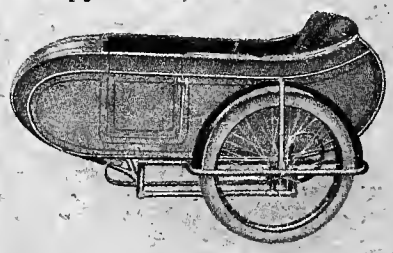

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BURST Motor Cycle Tyres, chafed beads, remou made perfect, tube vulcanising, butt-ends f retreading; send for list.—Melton Mowbray R Works, Melton Mowbray.

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EXCEPTIONAL Opportunity. Nearly 50% o price. 7 days' approval.—Wood-Milne R covers, new, 26×2¼, 29/6, list £2/13/8; 26×2½, list 57/6; 26×2⅜, 33/6, list 62/-; 650×65 motor bead, 35/6, list 65/6; 26×2¼ Englebert heavy studded passenger, 33/6, list 46/3.—Armstrong, 17, hawk Rd., Shepherd's Bush, London.

NEW 28×3 Rom Combination Covers, £2/10 26×3 Dunlop combination covers, £2/10 26×2½ Avon Sunstone covers, £1/17/6; new 2 Hutchinsons covers, T.T., £1/15; new Clincher de covers, 26×2⅜; new 24×2 Wood-Milne covers, new 700×80 Clincher, fit 650×65, £2/5; new 2 Engleberts wired, £1/5; new 28×2½ Silvera £1/5.—Murrays, 37a, Charles St., Hatton Garden horn.

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COVENTRY Tankers, Ltd., makers to the pri manufacturers; petrol tanks for any style plied.—Hearsall Works, Coventry.

TANKS Re-enamelled to Pattern. High-class only.—D. Jenkins and Sons, 6, Richard St kinson St Deansgate Manchester Establish years

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BELTS, 6ft. 6in.×1in. Dunlop, round top, 12/ —Excelsior Motor Co., Ltd., Tyseley, Bi ham.

MISS DOOLEY.—Good second-hand ¾in. belti makes, 6ft. 6in. lengths; 6/-.—Apply, E. 33, Killyon Rd., Clapham.

LIGHT Car and Motor Cycle Engineering Co. a large consignment of motor cycle bell makes, from ¾in. to 1in., from 3/6 to 7/6.— Car and Motor Cycle Engineering Co., 26, Tulse Brixton. (Half minute from Brixton Skating

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CENTRAL Garage.—Most of this belting is all the same stuff, although there is little doubt we had the first pick. Brand new Pedley, Dunlop, or Clipper: 6ft. 6in. ¾in. 12/6, 8ft 6in. 1in. 18/6, ⅞in., any length, 1/9 per ft.; carriage 9d.; approval.—London R. Thornton Heath, Croydon. [5912

LARGE Quantity of New Belts, not clearance: Clipper, 9ft.×1in., 22/- each; 8ft. 6in. ditto, 21/-; surplus by leading makers, ⅞in., any lengths, 2/- a foot; special offer at 6ft. 6in. of ⅞in. at 10/-, ¾in. ditto, 12/6.—H. Emanuel, Tyre Factor, 77, Brade Rd., N.16. Stores: 37a, Balls Pond Rd., Dalston, N.1. 'Phone: Dalston 3161. [0348

BELTS.—Clincher, unused, not W.D., ¾in., 6ft. 6in., 9/6; 7ft. 6in., 10/11; 8ft., 11/9; ⅞in., 7ft. 6in., 15/-; 8ft. 6in., 14/9; 1in., 7ft. 6in., 16/6; 8ft., 18/-; 1⅛in., 7ft., 18/6; 8ft. 21/-; 8ft. 6in., 23/-; Bags, short lengths, ¾in., 5ft., 5/-; 5ft. 6in., 5/6; 6ft. 4ft. 6in., 5/6; 5ft., 6/3; 5ft. 6in., 7/6; 1in., 4ft. 6in., 6/9; 5ft., 7/3; 5ft. 6in., 8/3; leather belts, ¾, at 2/6 per ft.; belt fasteners, 9d. and 1/- each. Postage 1/- extra.—Bancroftian Co., 64, Bishopsgate, London. [0617

PATENT AGENTS.

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [1049

FETCHER WILSON, of Coventry, Chartered Patent Agent and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

H. N. & W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.Tech.E., A.I.A.E. Associate I.E.E., etc.; W. S. Skerrett, A.I.A.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

AGENCIES.

THE Mohawk Cycle Co., Ltd., require solo agents for their celebrated motor cycles in districts where they are not already represented.—Write for lists and terms to Mohawk Cycle Co., Ltd., Alexandra Rd., Hornsey, N.8. [2505

AGENTS (Buying) wanted in each county or district in U.K., and also for export, for sale of Parson's Seamless Nipple for Bowden wires. Repair effected in two minutes without tools. Invaluable to repairers and motor cyclists. No competition. Reputable agents send full particulars and state ground covered to T., Commercial Units, 24, Gray's Inn Rd., W.C.2. [5260

AGENTS Wanted. Applications are invited from travellers having big connection among garages and accessory stockists in British Isles, who can introduce new and important line having a ready sale. Applicants must state full particulars of their business connections, ground covered, etc. Exclusive ground allotted, secure. See our advertisement in this issue. Machin and Bowmer, Ltd., 19, Brazenose St., Manchester. [6076

INSURANCE.

RISKS, Ltd., effect insurances of all kinds. Enquiries invited.—170, Gt. Portland St., London. [0055

COMPREHENSIVE 4h.p. Policy, £3; others in proportion.—Ernest Bass, Insurance Broker, 40, Chancery Lane, W.C.2. [0005

CLIFFORD WILSON can place your insurance with any company at lower rates than obtainable elsewhere. Short period. Special risks, etc. Comprehensive policies from 50/-.—177, Westminster Bridge Rd., S.E.1. Immediate cover: Hop 210. [6063

THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motorcycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefit, minimum rates. Full particulars and prospectus on application. The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

GARAGES.

BRIXTON.—Combinations 3/- weekly, solos 2/-, private lock-ups 5/-.—G.B. Garage, 26b, Ingleton St. [5491

SITUATIONS WANTED.

WANTED, position as junior salesman in motor firm; young, experienced, practical.—46, Western Rd., Putney. [5169

GOOD All-round Mechanic and Ford, fine rider, driver, requires position with any firm, single, age 23, board and lodging if possible.—7, Manchester St., Newport, Mon. [5266

AMATEUR Rider, technical knowledge and works experience, seeks situation, any capacity, own machine available; low salary start.—Box 5,872, c/o The Motor Cycle. [5310

GENTLEMAN (23), public school education, desires position as salesman-demonstrator; successful salesman and rider, good tuner; moderate salary.—Box 5,869, c/o The Motor Cycle. [5308

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New Clearance and ex-W.D. Stock. Approval against remittance.

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	List Price.	Our Price.
26 × 2¼	£3 0 6	£1 10 0
26 × 2½ to fit 26 × 2¼	£3 11 0	£1 18 0
26 × 2½	£3 9 0	£1 17 0
650 × 65	£3 7 0	£2 4 0
700 × 80 to fit 650 × 65	£3 16 6	£2 5 0
28 × 3	£5 0 0	£2 11 6

26×1¾	British Made	15/-
24×2	Hutchinson Rubber-studded	22/6
24×2¼	Clincher Heavy	32/6
26×2¼	Hutchinson Brooklands	23/-
"	Hutchinson Tourist Trophy	27/9
"	Rom Rubber Non-skid, Heavy	32/-
"	Rom Combination	42/-
"	Macintosh Chain Pattern, Heavy	32/6
"	Avon Sunstone	33/-
"	Wood-Milne 3-ply	26/9
"	Wood-Milne, Extra Heavy	32/6
26×2⅜	Clincher de Luxe, Heavy	34/6
"	Hutchinson T.T. Rubber-studded	30/-
"	Hutchinson Passenger Rubber-stud.	35/-
26×2¼ for 26×2¼ rim	Hutchinson T.T. Rubber-studded	33/-
	Clincher de Luxe, Heavy	35/-
26×2¼ or 26×2¼ rim	Michelin Fine-ribbed	21/-
	Hutchinson T.T. Rubber studded	30/-
	Hutchinson Passenger Rub.-stud.	32/-
	Macintosh Chain Pattern	36/-
	Englebert Raised-rib (wired edge)	25/-
	Englebert Rub.-stud. (wired edge)	30/-
"	Hutchinson 3-ribbed	45/-
23×3	Hutchinson 3-ribbed	45/-
"	Englebert, Hy, Racing Rub. Bars	47/-
"	Goodyear All weather Tread	65/-
"	Dunlop Extra Heavy	50/-
28×3 to fit 28×2½	Dunlop Extra Heavy	50/-
700×80 fit 650×65 rim	Hutchinson 3-ribbed	50/-

TUBES.

26×2¼	Hutchinson	5/9
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28×3	Hutchinson	7/9
"	Goodyear (butted)	9/6

The above are sent carriage paid.

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New John Bull (Deep Drive)

¾"	⅞"	1"	1½"	
2/5	2/10	3/5	4/-	per foot

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Bowden Magneto Controls, complete "	15/-

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Telegrams—"Bastones, London."

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TRAVELLERS Required for British Isles by well-known firm in Midlands manufacturing cycles and motor cycles. Applicants to give full particulars, with experience of district covered.—Box W.3590, Brown, Gould and Co., Ltd., 132, Salisbury Sq., London, E.C.4. [5316

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YOUR Maiden Aunt will be charmed with the Old Barn Teahouse, Stock's Green, Hildenborough, beyond Sevenoaks. [4442

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TO the Trade.—Write for our lists of nuts and bolts, split pins, spring washers, and carborundum wheels.—You will save money.—Owen W. Jones, 47, Holt Rd., Liverpool. [4430

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PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

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PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—Auction fee for motor cycles under £50 reserve, 5/-; over £50 reserve, 10/-. No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday commencing 2 p.m. [6245

WANTED, latest 4h.p. high-class model.—14, Chadwell Rd., Offerton, Stockport. [5741

SIDECAR, coachbuilt, for 1916-17 5-6h.p. Clyno.—28, London Rd., Camberley, Surrey. [5473

LARGE Size 7-9h.p. Indian Sidecar.—Address, Bramwell, 101, Bridge End, Belfast. [5644

WANTED, Philipson pulley, for Fafnir engine.—77, Handsworth Rd., S. Tottenham, N. [5527

LEVIS Wanted and little cash for 1914-15 Scott and sidecar.—9, West Bank, Scarborough. [5381

WANTED, good solo or combination.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [6175

WANTED, step coachbuilt body, mica wind screen.—17, St. Martin's Rd., Knowle, Bristol. [5254

WANTED, 7h.p. F.N., in any condition if cheap.—Schubert, Wardington, Banbury, Oxon. [5478

WANTED, modern lightweight, cheap for cash.—C.G., 17, Birchington Rd., Kilburn, N.W. [6184

3-SPEED Gear Box, all-chain, good condition essential.—Coe, P.O., St. Anne's, Bristol. [5215

WANTED, motor cycle or combination; cheap for cash.—Letters, 12, Winchester St., Taunton. [5581

COX-ATMOS, good condition, latest pattern, for 6h.p. A.J.S.—Thomas, 43, High St., Criccieth. [5229

WANTED at Once, good condition, Bradbury cylinder and piston, 1911.—Baylis, Stretham, Cambs. [5379

SPEEDOMETERS and Parts, Stewart or Watford preferred.—Robins, 97, Latchmere Rd., Battersea. [2403

WANTED, P. and M., any condition; cheap for cash.—C.M., 50, Chiswick Lane, Chiswick, W.4. [5170

PAIR Forks (Druid or similar) for 24in. wheels.—Atkinson, 32, Portland St., Leamington Spa. [X7520

WANTED, combination or solo; cash waiting.—Bracmar, 17, St. Quintin's Av., North Kensington. [5776

WANTED, old Rudge Multi for spare parts; wheel forks, etc.—Smith, Broomknowes, Tenzie, Glasgow. [5925

WANTED, second-hand carburetter with controls, ⅞ induction, cheap.—McKenzie, Woodfield House, Ayr. [X7525

FOR 7-9h.p. Indian, wind screen, leg and engine shield, luggage grid.—Hughes, Tanlan, Bettws-y-Coed. [5384

WANTED, two Minerva cylinders, 5-6h.p., 1910.—Write, J. Anderson, 41, Bute St., Crookes, Sheffield. [5273

SUNBEAM Combination, 8h.p.; exchange Norton Big Four combination and cash.—26, Schubert Rd., Putney. [5938

WANTED, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons. Wandsworth Motor Exchange, Ebner St., Wandsworth. [3151

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A41

WANTED.

WANTED, second-hand Morgans in good condition. —Reys, 378-384, Euston Rd., N.W.1. Phone: Museum 6436. [3316

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3152

WANTED, treadle lathe, in exchange for 1918 B.S.A., or 1920 Avon and cash.—4a, Petersham Rd., Richmond. [X7839

LIGHTWEIGHT Solo for Cash, limit £50; early offers, please, to Miller, 55, Maybury Rd., Woking, Surrey. [5789

WANTED, 1911 Triumph frame complete, tank, wheels if possible; £5.—Higgins, 5, Salisbury Villas, Cambridge. [5430

WANTED, countershaft Triumph, cheap; one in need of repair not objected to.—33, Hackford Rd., Brixton, S.W. [6205

WANTED, Triumph countershaft spares, every description, new or second-hand.—33, Hackford Rd., Brixton, S.W.9. [6211

WANTED, Enfield sidecar chassis, speedometer; state condition; cash.—Anderson, Greenlaw, Basildon, Billericay, Essex. [5429

WANTED for Cash, Binks 3-jet carburetter, perfect condition, for 2¾h.p. Douglas.—C.D.H., Wantly Manor, Henfield. [5397

WANTED, countershaft Triumph, exchange 5-6h.p. Rudge combination or 2¾h.p. Douglas and cash.—King, Egrove, Oxford. [X7786

WANTED, 1919 or 1920 solo or combination; must be really cheap for cash.—Write only, R., 49, Queens Rd., Finsbury Park. [0681

WANTED, 3-speed gear box for 2¾h.p. Douglas, in excellent condition; deposit.—Hamilton, 31, Kelvinside Gardens, Glasgow. [5354

HALIFAX.—Cash offers wanted for second-hand machines to clear. List free.—Halifax Motor Exchange, Horton St., Halifax. [5553

WANTED, for cash, a good modern combination; must be leading make, and cheap.—29, Allsop St., Upper Baker St., London, N.W. [3129

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

2-STROKE or 4-stroke, any make, power, under £35, mechanically sound, by instalments.—Write, Box 5,854, c/o *The Motor Cycle*. [5243

WANTED, lightweight connecting rod, 7in. or 7⅛in. between centres, to fit a ⅞in. crank pin.—Greenwood, Motor-Engineer, Leathley, Otley. [5837

WANTED, combination or solo.—Call, write, or 'phone, James, c/o Dentist, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [3135

MOTOR Cycles and Sidecars; cash offer on sight.—Wellington Garage, Wellington Mews, Ledbury Rd., Bayswater, W.11. 'Phone: 3699 Park. [5227

TRIUMPH, only genuine 1912 T.T. fixed gear machine considered, cheap for cash.—Weyside Engineering Works, Ltd., Farnham Rd., Guildford. [5197

WANTED, cheap, countershaft Triumph, or exchange nearly new 4h.p. Douglas, cash adjustment, or sell £80.—Derrett, 29, Orwell Rd., Clacton-on-Sea. [5497

WANTED, good motor cycles and combinations for cash; also machines accepted for sale on commission.—Ratcliffe Bros., 200, Gt. Portland St., W. [X7770

CASH Waiting: solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0604

WANTED, 7-9h.p. Indian, 3-speed preferred, or 3½ Rudge Multi, must be good condition and cheap cash.—Particulars, M., 23, Chadwick Rd., Leytonstone, E.11. [5860

MOTOR Cycles, combinations, or sidecars bought for cash or sold for small commission; send details first.—South Eastern Garage, 1-7, Norwood Rd., Herne Hill, S.E.24. [5902

ENGINES, singles and twins, J.A.P., Triumphs, M.A.G., Clyno, etc.; also gears and magnetos, hub or C.S.; cheap. State price. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [1646

W. T. DUNN, Ltd., 326, Euston Rd., N.W.1, require unlimited quantity modern solos, combinations, Morgans, light cars, etc.; top prices paid; cash on sight.—'Phone: Museum 5391, write, or call. [0332

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares; purchased outright. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [5394

WANTED, cash waiting for modern lightweight, J.A.P. engine preferred, must be in good condition; also good 4h.p. combination.—Goad, 122, Maida Vale (private house). 'Phone: Hampstead 1353. [6183

3½ H.P.

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MOTOR CYCLES

Ex R.A.F.

Engine fitted with—

Brown & Barlow or Senspray Carburetter.

Bosch ZE1 or E.I.C. Magneto.

Guaranteed to start by kick-starter.

Countershaft gear; many with new sprockets.

All **new** chains fitted, *i.e.*, magneto chain, change speed chain, kick-start chain, driving chains from engine to gear, and from gear to back wheel.

New Dunlop or Clincher tyres fitted.

New ball bearings throughout each machine.

Sidecars coach painted and trimmed in two colours, *i.e.*, Royal Blue or Imperial Green.

Equipped with kit of tools, pump.

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GUARANTEED FOR THREE MONTHS:

SOLO: £60-0-0

COMBINATION: £80-0-0

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Ansell Rd., DORKING

Telephone: 199 Dorking.

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CASH on Sight for new and second-hand m cycles and combinations, any make or condi —Call, write, or 'phone, Short and Glass, Ltd., 493, Upper Richmond Rd., East Sheen, S.W. 'Ph Richmond 2362 and 2363.

F.O.C.H. pays highest prices for sound mach Bring the 'bus along and take the cash away changes arranged.—Fair Offer Car House, 5, H St., Hampstead (near Hampstead Tube Station). 'Ph Hampstead 3752. Hours 9-7, including Saturday

SEND Your Motor Cycle to Palmer's Garage Motor Auction Rooms, High St., Tooting. offer telegraphed immediately on receipt; ne station Wimbledon. We will collect from any Lo station. Machine can be included in auction e desired.—Sole address, Palmer's Garage, Tootin

EXCHANGE.

DOUGLAS 2¾h.p., value £55, for 2-stroke and —165, Church Rd., Mitcham.

GOOD Lightweight; wanted, Drummond or good —18, Freelands Rd., Bromley, Kent.

TRICAR, Lagonda, 3-speed reverse, drive licensed; £75, offers.—Hunt, Writtle.

FIFTY Cars, from £45, for exchange; printed free.—Douglas S. Cox, West Norwood.

1920 Viper-Jap, 2¾h.p., 2 speeds, for higher solo.—Scott, Pine House, Uppingham. [X

£20 Cash and 2¾h.p. Douglas, 2-speed, for cou shaft Triumph.—King, Egrove, Oxford. [X

MAGNETO, nearly new 55°, for Clyno Wal lever watch.—20, Goldsmith Row, E.2.

HARLEY Combination, smart turnout, for good solo, cash adjustment.—82, Caledonian Rd.,

EXCHANGE, Indian combination for small 2-s car (see Indian).—125, Ancona Rd., Plum S.E.

1915 Sporting Bat and Sidecar, £60; exch 1920-21 lightweight.—5, Speenham Rd., ton.

EXCHANGE 5-6h.p. Rudge Multi and Coac Sidecar for countershaft Triumph.—King, Eg Oxford. [X

4h.p. C.S. Triumph, 1918, for 4h.p. Douglas year, cash adjustment.—Leach, 120, London Bognor.

£2/10.—Ace discs, black enamelled, 26in. w exchange Lucas head lamp set.—57, Foleshill Coventry. [X

WANTED, G.N., in exchange for Douglas 1919 bination and cash.—Knox, Hazeldene, Le Rd., Ware.

MATCHLESS Combination, 8h.p., for solo and or sell £85.—39, Beaconsfield Rd., New S gate, N.11.

LIGHTWEIGHT, for 2-seater or cycle car, cas justment.—Letters only, Johnson, 52, St. Ge Rd., S.W.1.

INDIAN 1920 or 1921 Touring Handle-bars wa in exchange for T.T. ditto.—14, Bushey Harlington, Hounslow.

EXCHANGE M.R. Lightweight, 2h.p., p start, for higher power, any make.—Box 4 c/o *The Motor Cycle*.

JAMES 1915 4h.p. Combination, 3-speed, pe exchange with cash later make, or sell.—Na Jeweller, Withernsea.

1919 New Imperial 8h.p. Combination, p throughout; £120, or lower power and cash Timperley St., Widnes.

EXCHANGE, brand new motor cycle suit, fit ta man, for anything useful.—Cook, Short Pinewoods, Ash, Surrey.

CHASSIS.—New triangular and second-hand, In etc. Old chassis part exchange.—26, Barn Rd., Brixton, S.W.9.

EXCHANGE Lagonda 2-seater, 10-12h.p., 4-cyl. paid December, combination.—65, Church Edgware Rd., London.

3½h.p. Rudge Multi, 1921, brand new, for 1 weight and cash, or sell.—9, Riversley Nuneaton, Warwickshire.

MOTOR Cycle, value £45, for treadle lathe; adjustment.—Robinson, 22, Basinghall St., 'Phone: Brixton 1000.

SIDEBOARD, 4ft., mahogany, inlaid satin £50; exchange sidecar motor cycle, leve Chesham Rd., Kingston.

EXCHANGE 1920 Ford Van, electric starter, for combination and cash.—C.S., 14, Swaton Bow, E.3. Tel.: E3155.

EXCHANGE Indian, 3-speed, clutch, K.S., s frame, 1914, for 4h.p. Douglas, or sell £ 551, Holloway Rd., N.19.

EXCEPTIONALLY Fine 3h.p. Enfield for A similar; sell £65.—17, Coney Green Drive, bridge Estate, Birmingham.

SEE Matchless Columns. Exchange for late 3 Sunbeam, Norton, Triumph, and cash. Broughton St., Beeston, Notts.

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

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This Week's Big Trial.

THIRTY-SEVEN different makes of machines are represented in this week's annual reliability trials organised by the Auto Cycle Union. Last year the number of manufacturers represented was forty, so it will be seen that the withholding of support on the part of a section of the trade has not affected the value of the trial so materially as was expected. None-the-less, one can only express regret that the one English Six Days event has not received the unanimous support of the motor cycle industry. This year there are ninety-five entrants as against last year's one hundred and thirty-three; but the numbers of machines of any one make in this week's trial are not nearly so large, which is probably due to the fact that private owners have not shown their usual enthusiasm for the trial.

Of the ninety-five entrants eighty-eight started from Brooklands on Monday last, and, while the actual hill-climbing is not so severe as it was last year (with the possible exception of Wednesday's run), there are sufficient really severe hills combined with the exacting regulations to eliminate every motor cycle not in every way capable of fulfilling the requirements of the private owner.

Judged as a whole, the ninety odd machines in the trial impressed us at the start as being extremely workmanlike. What is more, there are fewer special fitments in their specification, in fact, the great majority of the mounts are as sold to the public. We were glad to observe that the entries in the lightweight classes have not fallen off preceptibly, and the inclusion of miniature sidecar outfits is an extremely interesting development, which will be closely watched.

There is no doubt that the new regulations concerning petrol and oil consumption have resulted in close attention being paid to economy, which no doubt accounts for several of the new carburetters on the competing machines.

A review of the features of the trial's machines, as well as impressions of the early stages of the trial up to the time of going to press, appear elsewhere in this issue. An account of the trial, from personal observations, together with exclusive photographs, by *The Motor Cycle* staff, will appear in next week's issue.

To Belgium for the T.T.?

FROM the point of view of the A.C.U., there is at present no query as to whether the 1922 T.T. races will be held at Spa; the average motor cyclist, however, and, of still greater importance, that large section of the trade who view the change with disfavour, still regard the matter with an open mind.

How many factors have had their bearing upon the A.C.U.'s decision is not generally known, but at the moment it would appear that, at any rate, there are enough probable trade supporters of the move to Belgium to ensure the success of the event financially, even though it might not be entirely representative of the British manufacturers. From the trade aspect, opinion seems fairly evenly divided, although there is a slight preponderance in favour of abandoning the Isle of Man.

So far, our readers have not had the opportunity of expressing their views on the matter, although we learn that some already look forward to the opportunity of a Continental trip with an object and a motor cycle flavour.

The motor cycle interests in the Isle of Man, of course, are indignant, and may be more so if there is anything in the rumour that a substantial financial inducement was offered by the Belgian authorities to the A.C.U. to transfer the event to Belgian soil. It is realised, however, that the police and official annoyances this year had much to do with the change. Our aid has been invoked on behalf of the Manx motor cyclists, but in such a matter *The Motor Cycle* cannot take sides; our columns are open, however, for exchanging all shades of opinion, and our support must go to advance the greatest good for the greatest number.

An Index to the advertisements in this issue will be found on the page facing the back cover.

The Eternal If?

AS we near the end of yet another summer, the magnitude of the puncture bogey stands out as my main impression. How often this year have I seen tyres destroy a rider's chance of success in race or in reliability trials! How often have I myself been held up by the same old trouble. I can go out to pay a call two miles away or to reach a competition venue 300 miles away, and practically guarantee myself a non-stop ride, *if* only my tyres hold up. Each season I find myself using heavier tyres and experimenting with various anti-puncture gadgets—nailcatchers, road sweeping flaps, patented inner tubes, and the like. Frequently my experiences are moderately encouraging, though never decisive. The motor cycle fraternity seem to have resigned themselves to the inevitable tyre stop. Mr. Rapson, the only man who has dangled a possible immunity before our eyes, seems to have forgotten and deserted us. I suppose we shall start another season in 1922 under the threat of the same old bugbear? Is human ingenuity exhausted in this sphere?

A.A. and A.C.U.

I HAVE just had my renewal notice from the A.C.U., and, like many other readers, have weighed the question of cutting the painter. During the past twelve months I have derived no very obvious benefit from my membership. In fact, my contact with the Union has been limited to press relationships, and to an application under their "get-you-home" scheme, which was promptly turned down. On the other hand, the A.A. are always rendering me little services which may be petty in value—scouts, hotels, etc.—but are at any rate a direct, personal return for the subscription.

However, when I had digested the matter, I decided to rejoin, concluding that the A.C.U. had rendered me bigger services than its rival, albeit its work is of a less ostentatious character. The difference between the two is the difference between rates and taxes. In return for my rates I get road repa round my house, a water supply, and other obvi benefits. In return for my taxes I get the protect of the British Army and Navy, etc., etc. The A. represent the rates. The A.C.U. represents the taxe the Union—like the navy—never approaches my do step, but it looks after the breed of motor cyc very admirably.

We ought all to support both policies; the both is that the two separate organisations demand t separate — and quite considerable — subscriptions each year.

Brake Durability.

I RIDE a lot of machines in each year, so it d not often happen that I cover more than 3,c miles on the same 'bus. Yet, during 1921, have worn out the shoes of two belt rim brak One of them bottomed in the pulley after just o 1,000 miles, and the other after 1,800 miles. A reader who studies our report of the Swiss Six D will see that the week was more than enough destroy the brake efficiency of several machi entered. This is simply ridiculous. A machine can be said to be well braked when its front brake merely a legal fiction, and its rear brake can outlast one week's hard work. There are lots cars—and a few motor cycles—on the road wh can show good braking after a full year of wo The two commonest faults visible in belt rim bra are: (1) soft shoes, and (2) shallow rim grooves, which a shoe bottoms after quite brief usage. third—and less common fault—is that it is sometim difficult to keep the shoe in accurate alignment w the pulley through the vicissitudes of adjusting brake, the footrests, and the rear wheel. The m brake on my Cedos wore out rapidly for this reas and I notice that the latest pattern has a floating sl of so simple a character that it does not incre manufacturing costs. On one of my 1920 machi the shoe was never in perfect alignment if the r wheel and rear chain were adjusted truthfully. T

Occasional Comments.—

shoe's angle of entry depended on two rigidly mounted pins; nobody but a manufacturer of scientific instruments could have guaranteed permanent and simultaneous alignment; and it would have cost him thousands to do so, for a variation of 1° in the lie of the frame tubes would upset matters. I used three shoes in three months on that machine.

My Coat.

YESTERDAY found me ruefully eyeing a rather expensive coat, purchased at the commencement of the year. It is still waterproof. There not a solitary tear in it anywhere. It may be a trifle ackled in parts, and does not sit the contours of my anly frame as smartly as once it did, but it is quite rviceable. Yet I cannot wear it. A kind of microopic grime is daubed over its whole surface, and the eaner's quotation for rendering it presentable is out half the cost of a new garment. Moreover, know from experience that the cleaner will use petrol get the dirt off, and that when his fell work is ished, the coat will be about as waterproof as tissue per. There are people who profess to reproof these ill coats, but I never yet found a coat was really encher proof after it had been re-treated. Does anydy know a coat material which does not magnetise the grime in the vicinity, which does not rip after e manner of oilskins, and which yet is impenetrable wet?

Bicycle or "Push-bike"?

A MEMBER of the Anfield B.C. expostulates with me in the most friendly way for occasional allusions to "push-bikes." He states that ny members of the great cycling clubs, such as e Bath Road, the North Road, and the Anfield, are o motor cyclists, and that the cyclist-cum-motor clist greatly resents the term "push-bike." In e respect his letter smites my conscience. I try squeeze a smile wherever I see one lurking, and I st confess that I have occasionally underlined tain comic aspects of cycling, just as my risible faculties are frequently tickled by motor cycle happenings. But surely he is just a *leetle* fussy in objecting to the term "push-bike"? Even if it were intended to be slighting (which it is not), many good motor cyclists and true refer affectionately to their 'buses as "stink-wheels," just as they call their fairies "face-ache," or by some other mock-opprobrious term. Any serious effort to depreciate what must always be the manliest form of two-wheeler deserves the severest censure; and I for one would never sneer at a brother of the road because his taste differed from mine, or his pocket was shallower, or his calves were better developed. I, too, am a cyclist, and I ask "Anfielder" and anybody who feels like him to accept my word that *The Motor Cycle* holds cycling as a sister pursuit in equal honour with stink-wheeling. But the harmless, necessary word "push-bike" has crept into the British language; we cannot do without it.

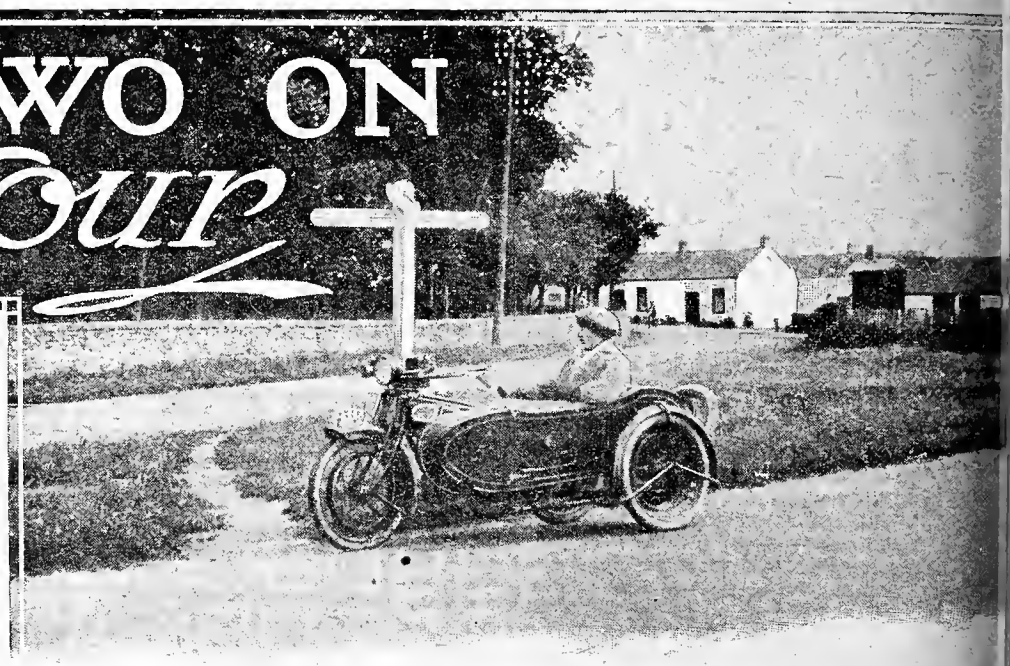
Cyclists and Motor Cyclists.

"ANFIELDER" is evidently anxious to promote better relations between cyclists and motor cyclists, which are certainly necessary. It cannot be pretended that motorists have improved the cyclist's lot. Noise and dust and pot-holes are all the concomitants of motoring, and are anathema to cyclists. Speed, whether reckless or discreet, is apt to alarm the more nervous pedallers. But, according to "Anfielder," the real trouble is that the tag-rag and bobtail of both camps are mistaken for the genuine article of each camp. He is sure that if the typical cyclist and the typical motorist could "get together" rather more than they do, a better mutual understanding would be created, and would often lead to combined action, *e.g.*, in such matters as dust-mulching of the roads, of which I wrote on August 11th. I suggest that motoring clubs should invite local cycling organisations to their annual dinners, and to any winter lectures, whist drives, dances, sing-songs, etc., on their programme. Years ago, when I innocently accepted a job as club secretary, I found my local cyclist friends invaluable helpers in running off our competitions.

ON THE ROUTE OF THE SIX DAYS TRIALS.

Yesterday (Wednesday), competitors, after climbing Lynton and Porlock, had to cross the wild expanse of Exmoor.

TWO ON TOUR



A 1,000 Miles Trip on a Dunelt Sidecar.

* * *

At Gretna Green, just over the border.

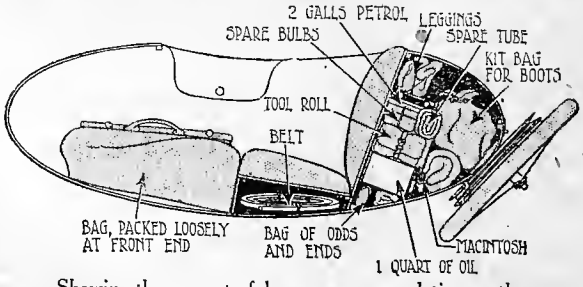
WHEN holiday time comes round one is apt to find a shortage of accommodation in one's pet corner of the British Isles, and the question of where to go becomes a very real problem.

A motor cycle and sidecar, however, presents a simple and satisfactory solution, for it enables its owner and passenger to tour far afield and see the beauties of the country at a very moderate cost.

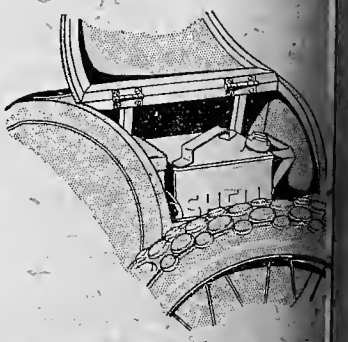
Towards the end of the recent drought a member of *The Motor Cycle* staff decided to set out with his wife and luggage in a northerly direction, with no more definite objective than the West Coast of Scotland. Having previously taken delivery of a 500 c.c. two-stroke Dunelt and sidecar, which was just nicely "run in," preparations were largely confined to the question of the stowage of a fortnight's kit. Since no definite port of call had been arranged, the outfit had to be entirely self-contained, and no extras could be sent on to wait till called for.

Luggage Accommodation.

No luggage carrier is fitted to the sidecar chassis, and the spare wheel occupies the space usually allocated to this fitting, but the sidecar is unusually roomy and the bulbous back is capable of containing a considerable amount of luggage in addition to a two-gall can of petrol; as a matter of interest, a loadi diagram is appended. The rear compartment co tained two gallons of benzole, one quart of oil, petr funnel, tools, spare tube, spare electric bulbs, bag odds and ends (belt fasteners, etc.), kit bag of boot extra waterproof, overall leggings, and a parcel clothes to fill up an odd space and prevent rattle. front of the sidecar seat was placed a Gladstone b packed loosely at the front end and covered with rug. This formed a kind of leg rest and was declar to add to the passenger's comfort rather than detra from it. Under the seat lay a spare belt, in one sid car pocket a spare driving chain, repair outfit, a small odds and ends, and in the other pocket a sma Kodak, a telescope, and maps, etc. A bag on t motor cycle carrier contained necessities for a o night stay, and, in addition, a cushion cover pack with soft clothes was utilised as a back rest for t passenger. Thus, with a little ingenuity, necessiti and even a few luxuries for a fortnight's trip were stowed without discomfort to the passenger. It should be added that a light steel fishing rod was attached to the sidecar chassis and some trout tackle bestowed in the "boot." The driver's comfort was attended to by a Brooks B600 cantilever suspen-



Showing the amount of luggage accommodation on the Dunelt Watsonian sidecar.



A two-gallon petrol can, a quart o oil, and all tools and spares, may be carried in the capacious "boot," still leaving room for a considerable amount of luggage.

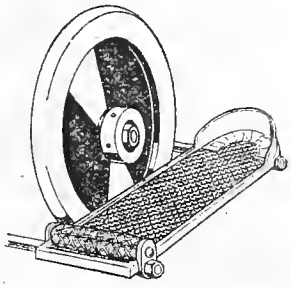
The heavily ribbed head g is a characteristic ature of the Dunel

sion saddle, wide mudguards, and the Dunelt combined footrest and footplates.

For one who is accustomed to ride long distances to schedule time, it is a pleasant change to set out with no fixed plans, and no definite daily mileage to be covered—indeed, a maximum of 150 miles per day was agreed upon, so as to ensure a complete rest and plenty of time to see the country.

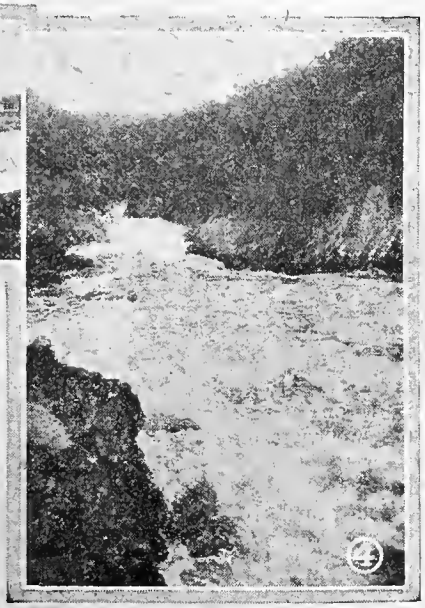
The first day's trip was a short one, from Kenilworth to Wrexham, where we took the opportunity of looking round the Powell works, and examining e production methods of the Powell motor cycle. It ust not be imagined that the firm are newcomers to ernal combustion engine work, and we were able t inspect an interesting development in small stionary engines, which may be started from cold paraffin without previous heating of carburetter or l supply. Thence *via* Chester and the Birkenhead ry to Liverpool, and up the West Coast route to ndal, and, after a stop for tea, r Shap Fell to Penrith. Incidtally, the authorities of the City o Lancaster deserve special praise f the admirable system of sign ting which they have erected. ere is probably no town in the ited Kingdom which is more ly traversed.

Up to this time the roads had n good on the whole, and excelle in places, but the approach to Shp is very rough, and the surface of he hill is loose. A top gear of 4 to 1 was obviously too high to enable the heavily loaded outfit to make a high gear ascent, but the climb was made on "middle" with power in hand, in spite of the fact that a following breeze gave little opportunity for reasonable cooling. On the subsequent descent came our first incident, for the rear tyre burst without warning. How we blessed the Dunelt knock-out spindle and interchangeable wheels, for, in a few minutes, the spare wheel was in position, and we were once more upon our way. The burst, however, was a nasty one, and it was deemed advisable to procure a new cover at Penrith, and this was duly fitted to the spare wheel at leisure. The following day's run to Glasgow, *via* Carlisle, Crawford, and Lesmahagow, included several very long but well-graded climbs, such as the steady rise to Beattock summit (over 1,000ft., taken on top gear all the way), and the wonderful pulling powers of the big two-stroke showed to advantage. Even after miles of climbing with the heavy load and liberal throttle opening, there were no signs of tiring or drying up, and on reaching Glasgow, after fourteen miles of tramlines and cobbles, the engine was as fresh as the day it left the works.



Combined footrest and footboard offers alternative riding positions. Note the special flywheel withdrawing nut.

From Glasgow onwards, our trip became a mazy wandering round Loch Lomond, Loch Fyne, and Loch Awe. We were primarily in search of a small "out-of-the-way" hotel with fishing attached, and we eventually found our ideal in the Loch Gair Hotel on the



(1) The Dunelt at the summit of Glen Croe after ascending the famous Rest and be Thankful.

(2) Loch Gair Hotel, beautifully situated on the west of Loch Fynne.

(3) The bridge over the Tweed at the quaint town of Berwick.

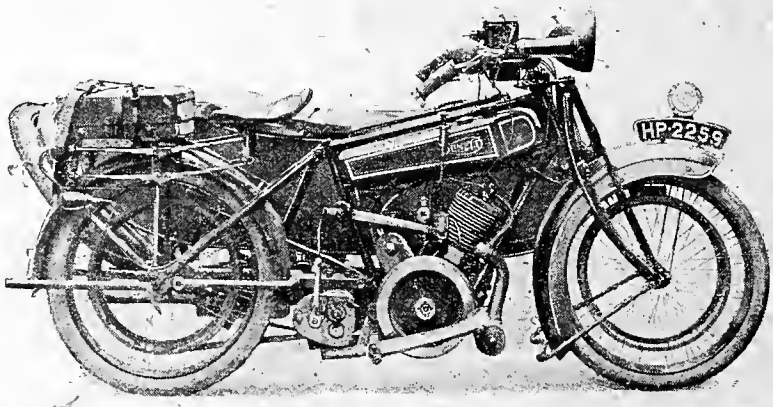
(4) Where the river Leny leaves Loch Lubnaig—the Leny Falls, near Callander.

Two on Tour.—

north side of Loch Fyne. The country here is perfect, there is excellent loch and sea fishing, the hotel is all that could be desired, and terms very moderate. Four blissful days were spent at this delightful spot, and it was only when time was getting short that we left to continue our wanderings.

A Good Climb.

Before reaching Loch Gair, we had ascended Glen Croe and Rest and be Thankful. On a hill shortly after leaving Arrochar we suffered belt slip, and a hasty shortening led to a broken fastener. This was the only road stop due to the machine throughout the trip, with the exception of the burst tyre already mentioned. Immediately afterwards, we made an excellent ascent of the Rest and be Thankful, using low gear for the first time on our journey, but having plenty in hand all the way up. At the summit we stopped to enjoy the view and to watch two modern cars essay the long climb with its rough surface and 1 in 7 gradient. The first was compelled to shed its passengers, and the second, a powerful six-cylinder landaulet, made an excellent ascent, but arrived at the top boiling steadily. The "Rest" is not a "freak" hill, but it is considerably more severe than anything encountered in an ordinary tour, and it is no mean performance for a very heavily loaded 500 c.c. machine and sidecar to make an easy climb with such high gear ratios. During the descent to Loch Fyne, we were lucky enough to get an excellent close-up view of three golden eagles, two of which were accommodating enough to sit on rocks within eighty yards of the roadside, and our telescope, which had been brought for just such an occasion, proved most useful.



The Dunelt in touring trim. Note the Brooks leaf spring B600 saddle and the Maglita ignition and lighting set. This photo was taken at the conclusion of the 1,000 miles trip.

After leaving Loch Gair, we travelled in a south-westerly direction to Loch Gilphead, then, following the Oban Road to Ford, turned up the easterly side of Loch Awe and spent a glorious morning along the shores of the loch to Dalmally. Then followed a long climb to Tyndrum, thence onwards towards Killin, but, just short of this place, we turned right through Glen Ogle to Callander and Bridge of Allan. In order to avoid the Falkirk and Linlithgow Road from Stirling to Edinburgh, we tried the north side of the Forth *via* Alloa, Dunfermline, and Queensferry. The roads on this section are reasonable, but not good, and we were charged eight shillings and twopence to cross on the ferry in contrast to elevenpence for the same load by the Birkenhead-Liverpool ferry.

Southward from Edinburgh, the main road was followed through Berwick, Newcastle, and Darlington, then down Leeming Lane to Boroughbridge and the North Road, through Newark and Grantham till just beyond Welwyn, where we cut across country to spend a night near Harpenden. The following day we completed the round tour of 997 miles by a run up the London Road to Coventry.

A No-trouble Trip.

In all this time the Dunelt ran like a clock. Our two road stops were due to a tyre and a belt fastener, and the only adjustments consisted of tightening the driving chain. No attempt was made to put up high average speeds, but there was never the slightest difficulty in maintaining a legal average. Fuel consumption worked out at approximately 40 m.p.g. and considering the very heavy loading and the nature of the roads, this is a reasonable figure especially for a big two-stroke. Benzole or a mixture of benzole and petrol not only improved the performance of the machine, but also increased the mileage obtainable per gallon. Unfortunately we were only able to obtain benzole once throughout our trip, though twice we passed garages advertising this fuel shortly after the tank had been filled. Nearly three quarts of oil were used, but this very liberal allowance is largely accounted for by the hill country traversed and a 150 mile run against a strong head wind. Normally this figure could be reduced.

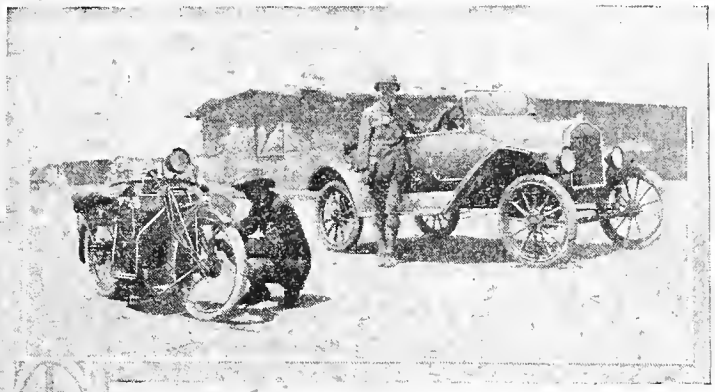
The engine ran perfectly throughout the trip, and the only misfire (on the last day) was caused by starvation due to a choked air vent in the filler cap. There was ample power for all touring needs, and though the Dunelt is not a fast machine, it can hold its own on the level with most touring mounts of its capacity, and will maintain a wonderfully steady average. The passenger, who has had considerable experience in that capacity, states that the sidecar is most comfortable and the springing excellent, and the easy riding provided for the driver by the Brooks cantilever suspension saddle has to be experienced to be believed. Only once were the working parts oiled. The Maglita combined ignition and lighting set functioned perfectly, and the K.L.G. plug supplied with the machine has never been replaced.

The worst roads encountered in order of villainy were Morpeth-Newcastle (atrocious), Crianlarich-Killin (very bad in places), and Lochgilphead-Kilmartin (bad). Parts of the Great North Road near Wetherby bad, Glasgow-Alexandria bad, and a few poor roads round parts of Loch Fyne.

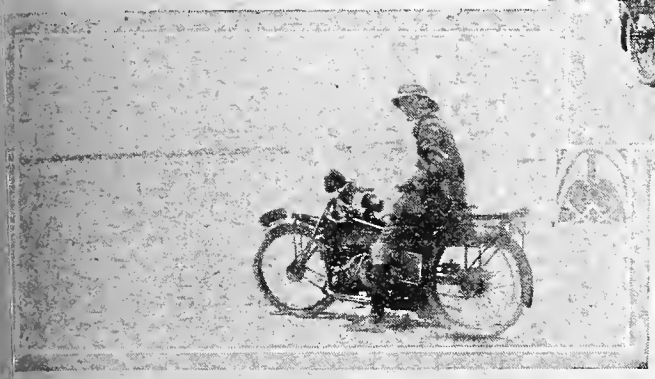
At the conclusion of a delightful holiday we are tempted to advise all those who possess good sidecar machines to start off "into the blue." In this way one is never behind time; there is nearly always comfortable accommodation to be obtained in the smaller towns, and one can stop just where fancy dictates.

PILLION RIDING IN THE DESERT.

Retrieving a Derelict Car—Motor Cycle Carries Help and Spares over Forgotten Tracks.



The A.B.C. beside the Ford car which it rescued from the Egyptian Desert.



IGHTY miles of desert separated me from my old Ford car, which lay blistering to death in the tropical sun at Suez. Meanwhile I impatiently ited at Heliopolis (Cairo) until sufficient funds could l raised to pay the exorbitant freightage which the rlway company would charge to bring it over their 10 mile semi-circular route.

The dilemma, however, was circumvented by an aventurous pal who owned a 1920 A.B.C.; moreover, w had heard rumours of an old institution known as t Cairo-Suez Mailroad—long disused. This road fmerly ran in a straight line across the desert, al, before the Suez Canal was opened, was one of tl most important and best kept highways in the wld. Since then, however, thousands of sandstorms h e raged over it, and for long distances little evidence rmains of its former existence but the ruins of the o watch towers at intervals of about six miles.

t was enough! We supplied ourselves with revolvers. w erbottles, and bully beef, and strapped Ford differenal cases and a radius rod on the A.B.C. We spnt the night before our pilgrimage in prayer, faing, and fixing a new rear cover on the 'bus. At 4.0 a.m. we prepared to set off to meet the rising su. We took ground strips with us as a precaution aginst getting lost, and, if nothing was heard of us a Vickers Vimy was to search for our ground strip sigals in the desert.

ood Track Changes to Sand and Boulders.

or forty miles the remains of the road were extraordinrily good, and we sped along, two up, at an avrage speed of 20 m.p.h. Then the road became lik the bed of a river, and our torture commenced. ver this surface the strain on the driver's wrists wa so bad that we had to alternate between driving an riding on the flapper bracket every few miles. Th way was surfaced with a dreadful variation of clely-packed boulders and soft sand, whose consisncy for riding purposes was that of sticky clay.

he last ten miles were across the desert, and we steed on the mirage of the Suez Oil Refineries, which, in the shimmering haze engendered by the scorching sun, appeared miraculously suspended in the air hundreds of feet above the sandy horizon.

At last, as we approached our destination, the surface improved somewhat, and we finished in good style, our trip taking five and a half hours.

Spring Frame Appreciated.

There can be nothing but praise for the performance of the little A.B.C. under the most appalling conditions. The spring frame carried the driver easily, immune from the shocks that sent the passenger, without exaggeration, two feet off his cushion. The engine ran splendidly and did not overheat in spite of much low gear work and a temperature which would have been 110° in the shade (if there had been any). We arrived with our exposed knees looking like over-ripe tomatoes and faces a colour which was not justified until we had been at least two minutes at a liquor supply.

Twenty-four hours sufficed to get the Ford functioning, and the return journey was performed without mishap to the A.B.C., which proved by far the most comfortable vehicle when ridden solo. W.A.B.B.

ALCOHOL FROM TROPICAL JUNGLES.

PROFESSOR WHITFORD, of the Yale School of Forestry, recently made the statement that alcohol could be economically manufactured from the moist vegetation of tropical forests and jungles. "The evidence is conclusive," said Professor Whitford, "that the tropical sun has the power to store up more energy in the form of cellulose in a given time than has the temperate sun. If this is in a utilisable form, it remains for the ingenuity of man to overcome the difficulties of profitably applying it. With the increasing needs of the nation it is reasonable to expect that sooner or later it will be necessary to utilise more fully the plant resources of the tropics." Professor Whitford said that the annual production of alcohol from the nipa plant in the Philippines was now nearly 3,000,000 gallons, and that one distillery there had produced 93% alcohol at a cost of about 20 cents a gallon, and, if operated to full capacity, could make it at a cost of 15 cents a gallon.—*Scientific American.*

FURTHER VIEWS ON THE NEXT T.T.

More Opinions on the Belgian Venue from Prominent Firms and Riders, supplementary to those published last week.

IN our last issue extracts from fifteen letters were published on the subject of the wisdom of the A.C.U. in transferring the T.T. races next year from the Isle of Man to Belgium.

These letters were forwarded to us from past winners and from the makers of winning machines in a series of races which have been held in the Isle of Man from 1907 to 1921. As was evident from their contents, the opinions of the writers were widely diversified; many imagined that the course would not provide the same test of both machine and rider as does the Isle of Man circuit, and, while certain firms regard the change to Belgium as valuable from an international and business-propaganda point of view, others feel strongly that in the present financial state of the country, the step is an unwise one, having regard to the amount of money to be taken out of this country.

So far as the man in the street is concerned, the majority, perhaps, will be little influenced, because only a comparatively small proportion of motor cyclists make the journey to the Isle of Man; it would appear reasonable to suppose that a still smaller number will travel to Belgium. Despite the war, the average Britisher does not "go abroad" very freely, although the journey to Harwich is more convenient than that to Liverpool (but by no means so for those resident in the more northerly counties). It must not be overlooked that the motor cyclist who is present in the mere capacity of spectator can walk from the Douglas landing stage to the grandstand or other point of the races, whereas, on arrival in Belgium, an eighty-mile journey through a non-English speaking country confronts the visitor; moreover, Customs formalities, passports, etc., will be needed, whereas the Isle of Man visitor, if unhampered by a motor cycle, undergoes no formalities at all.

It would appear, therefore, that from the ordinary motor cyclists' point of view, the holding of the races in Belgium or elsewhere is a matter of comparatively small moment (if it *could* be held in England, *what* a gate there would be!), and, in view of the mixed reception by the trade, it seems that the final test of the decision will be in the number of entries received.

Rudge-Whitworth, Ltd., advise us that:

"They do not regard the holding of the T.T. in Belgium with favour, primarily because of the fact that the associations connected with the event are essentially British, and secondarily because it is unlikely that a course selected in Belgium will compare with the I.O.M. course as an all-round searching test calculated to bring out the most desirable features of motor cycles."

Mr. Harry Bashall, prominent in pre-war T.T. races, and now associated with the **Martinsyde** machines, writes:

"I think in many ways the decision of the A.C.U. to hold the 1922 T.T. races in Belgium will benefit the trade of this country, as the T.T. will have a real international interest.

"I take it that we shall see the cream of the Continental trade competing with us. Previously it has been far too expensive for the Continental manufacturer to send a team to compete in the I.O.M. Taking things generally, I look forward to seeing a very hard fought race of a real international kind. I and my brother hope to be competing. It will do the trade a lot of good if we secure a British success."

Unfortunately, the opinion given under the name of **Mr. C. R. Collier**, in our last issue, was that communicated by his brother, **Mr. H. A. Collier.** As there is some divergence in the ideas of these well-known brother **Matchless** riders, we here present Mr. C. R. Collier's views on the subject:

"The nett effect will be to increase the speed, with possibly a slight reduction in personal risk, but as an all round test for design of engine, gear box, frame, etc., the Isle of Man course is infinitely superior. The A.C.U. is to be commended upon its desire to eliminate danger, but it remains to be seen whether the straighter course will have this effect. My opinion is that, with the increased speed which is inevitable, the risk will remain approximately the same; and, taking all things into account, I do not consider the decision a wise one."

Mr. H. Rem. Fowler, who won the twin-cylinder class of the first T.T. race in 1907, favours the choice of Belgium:

"There are points both for and against the change. As a race for speed only, the limit has just about been reached on the Isle of Man course, but for showing up reliability, acceleration, braking, etc., we shall have to go a long way to find a better one, and, after all, that is what the race is run for. I have never seen the Belgian course, but I expect much higher speeds will be reached.

"Then there is the question of advertisement. A race on this course ought to give much more valuable results than when held in the Isle of Man, owing to it being more international in character and easier of access, thereby bringing a far greater number of spectators."

A further letter from **Mr. W. H. Wells** (of **Indian** interests) will clear certain popular misconceptions regarding the selected course in Belgium:

"After reading the opinions in last week's issue of *The Motor Cycle*, in regard to holding the 1922 races in Belgium I notice that several of your correspondents have got the impression that the proposed new course consists of flat straights, similar to the Le Mans course in France.

"The Belgian course is quite as hilly as the one in the Isle of Man, and at one particular point rises considerably higher in altitude than the mountain (Snaefell) road. From personal inspection of the proposed new course, I should say unhesitatingly that the machine without a three-speed gear would stand a poor chance of winning, and there are just as many opportunities for testing out the efficiency of brakes, as well as the skill of riders, as there are on the Island course.

"It is quite true that holding the races in Belgium would mean taking money out of Great Britain, but I am sure that manufacturers must realise that the holding of the T.T. races in a foreign country would boom business abroad and create an interest in British products, which eventually would bring in far more money to this country than has ever gone to the Isle of Man.

"It must not be overlooked that the Island authorities absolutely ignored the A.C.U. when they gave the month of June, 1922, to the R.A.C. for the car races, showing how little they cared about motor cyclists when they have an opportunity to cater for cars. This means that the races, if held in the Isle of Man, would either have to take place in May, which is really too early in the season, or in September, when the mornings are too short for practice. Furthermore, remembering what happened to the roads after the last "Four Inch" car race, I doubt if the Isle of Man people would be able to get the roads back in anything like suitable condition for motor cycle racing by September."

Further Views on the Next T.T.—

Speaking for **New Imperial Cycles, Ltd.** (makers of the 1921 250 c.c. class winner of *The Motor Cycle* Cup), **Mr. Norman T. Downs** favours the A.C.U. decision:

"I fully approve of this move on the part of the A.C.U.

"It will be good from the point of view of publicity, as there is no doubt that riders of motor cycles and the public will be attracted from most countries in Europe. It will also make the T.T. more of an international contest, as no doubt the Continental makes of motor cycles will compete, which cannot but be regarded as desirable.

"In favourably considering this suggestion, I am influenced by the fact that the course, while having long stretches of straight road, at the same time includes those features which are so necessary, by way of hills and corners, such as will fully test machines in all parts, as was done on the Isle of Man course.

"The Belgian authorities have, I believe, promised very adequate military assistance, so that it should help the A.C.U. to organise the race in a very perfect manner, and this, I feel sure, will be expected of them. There were a number of unfortunate features in this year's T.T. race, which left something to be desired, but I have no doubt that the A.C.U. will rectify these in next year's race."

Butterfields, Ltd., makers of the **Levis** machines, which have performed so well in the T.T. races and to one of which *The Motor Cycle* Cup for the 250 c.c. class winner was awarded in 1920, think that the change will be beneficial; they write:

"All things considered, we are of the opinion that the change is likely to be a good one. We cannot help but feel sorry that our own antiquated laws render the holding of the T.T. on the English mainland impossible, and while it is consequently a pity that it is necessary to go abroad in order to find a suitable course, this can hardly be helped. We think it quite likely that the various authorities concerned might quite easily make things pleasanter for the manufacturers and their riders, and for visitors, and as regards transport machines no doubt a very great improvement can be made."

WILL THE T.T. IN BELGIUM BE POPULAR?

Twenty-one communications from manufacturers and riders of previous T.T. winning machines have already been published in "The Motor Cycle." TEN of the writers AGREE with the holding of the 1922 races in Belgium, NINE look upon the change with DISFAVOUR, ONE adopts a NEUTRAL attitude, the remaining ONE withholds an opinion.

Those whom the change will affect most nearly have given us their views, and all are valuable, whatever the attitude; NOW WHAT DO PRIVATE OWNERS THINK? Readers who make a point of visiting the Isle of Man for the T.T. are invited to express their opinion of the change.

RECORDS BROKEN AT BROOKLANDS.

Douglas and Triumph Machines make Successful Attempts on Short and Intermediate Distance Figures.

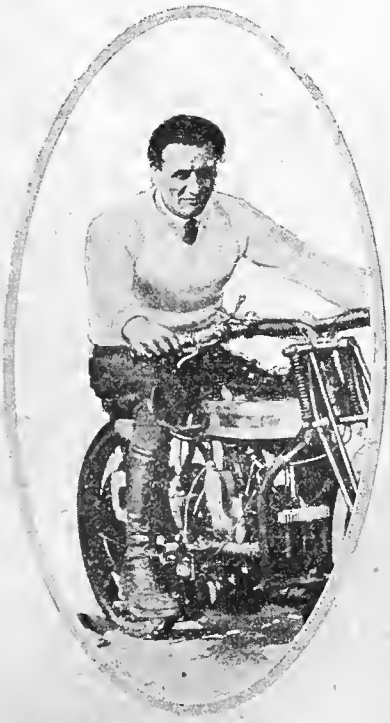
F. B. Halford, who, on a 3½ h.p. o.h.v. Triumph, broke the five miles (flying start) and the ten miles (standing start) records at Brooklands last week for 500 c.c. and 750 c.c. machines.

A SERIES of records was broken on Brooklands track on August 24th by two well-known machines and riders. The first of these, a 3½ h.p. o.h.v. Triumph, ridden by Major F. B. Halford, was triumphant in the C and D classes (500 c.c. and 750 c.c.). The flying five miles was accomplished in 3m. 51.7s., a speed of 77.69 m.p.h. (125.03 km.p.h.). The time occupied for the ten miles record, standing start, was 7m. 53.6s., 76.01 m.p.h. (122.33 km.p.h.). It is interesting to note that Halford's fastest lap was accomplished at 79.03 m.p.h.—a remarkably fine performance—which indicates that this machine is attaining the form which it originally promised.

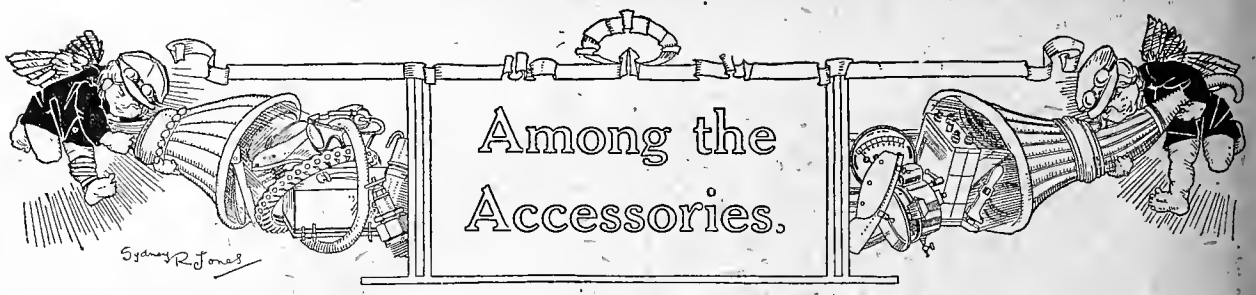
Nearly 73 in the Hour.

On the same morning J. L. Emerson, riding a 3½ h.p. Douglas, also broke a series of records, covering the fifty miles in 40m. 30.8s., a speed of 73.99 m.p.h. (119.07 km.p.h.). The hundred miles were covered in 1h. 23m. 7.8s. at a speed of 72.18 m.p.h. (116.15 km.p.h.). In one hour he travelled 72 miles 1,533 yards, which is equivalent to a speed of 72.87 m.p.h. (117.27 km.p.h.).

The day was dull, but there was practically no wind, and the weather conditions were ideal. Emerson would have made a much better performance in the hour had he not had to stop for petrol before completing the last two laps. His equipment consisted of K.L.G. plugs, Castrol oil, Pratt's spirit, Flexi carburetter, E.I.C. magneto, Hutchinson tyres, and Renold chains; while Halford's o.h.v. Triumph used similar lubricating oil, Dunlop tyres, M-L magneto, K.L.G. plug, and Renold chains.

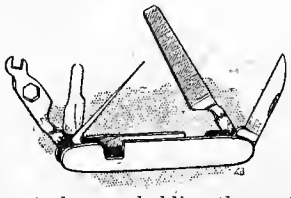


J. L. Emerson, who broke the fifty, the hundred miles, and the one hour records for 500 c.c. machines on a 3½ h.p. Douglas at Brooklands last week. Emerson has for some years been a prolific record-breaker, and has not always confined his attention to flat twins.



A Useful Magneto Knife.

A HANDY knife for motor cyclists' use has been introduced by Messrs. T. E. Rowbotham and Son, Globe Works, Penistone Road, Sheffield. From the sketch it will be seen that the knife includes two grades of files, a spanner for the contact points, another to remove the

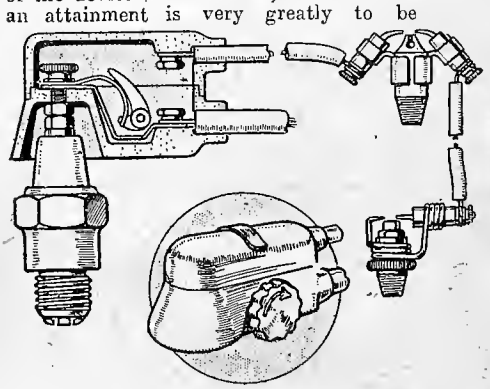


Rowbotham's magneto knife in the "all open" position.

central screw holding the contact breaker, a spark gap gauge, and, in addition to the ordinary knife blade, a prong. Being small and compact, it is very suitable for carrying in the waistcoat pocket. The price is 3s. 9d., plus postage.

An Electrical Lighter for Gas Lamp.

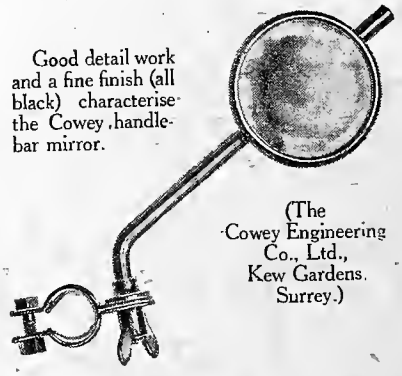
TO enable acetylene lamps to be lit without dismounting and without the use of matches is the purpose of the device we illustrate; whether such an attainment is very greatly to be



Part sectional drawing of the Moss-White "Redilite," and (inset) an exterior view of the terminal portion.

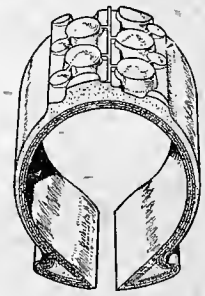
desired is a matter for individual choice. In this case anyhow the "inevitable added complication" is almost negligible. As may be gathered from the drawing a turn of the switch sends the high tension current along an easier path, across the lamp burner, than across the plug points in a cylinder on the compression stroke. The device, which clips on to any standard plug, also serves as a useful waterproof terminal. 10s. 6d. for the solo model (illustrated), it is sold by Messrs. Moss and White, 23, Newbold Terrace, Leamington Spa.

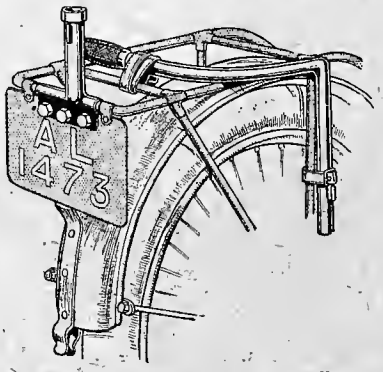
Good detail work and a fine finish (all black) characterise the Cowey handle-bar mirror.



(The Cowey Engineering Co., Ltd., Kew Gardens, Surrey.)

Sectional view of the new 26 × 3in. Dunlop Magnum tyre, which may be fitted as standard next year by several manufacturers.





For the convenience of the pillion passenger, a detachable arm rest, which, fitted in the socket shown, provides something handy "to hold on to." (S. G. Baker, 2, Avondale Road, Sparkhill, Birmingham.)

Showing the very attractive lines of the new F.R.S. "stream-line" horn. There are no visible twists. (F.R.S. Lamps, Beam Works, Vere Street, Birmingham.)

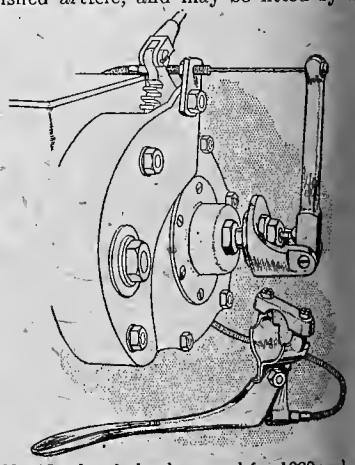
Quickly Detachable Electrode.

THE central electrode (and insulation) of the Slipper plug is a taper fit in the main body, so that explosion pressure in the cylinder maintains a gas-tight joint, while a sharp tap dismantles the plug for cleaning purposes. The terminal is waterproof. The makers are Commercial Units, Ltd., 24, Gray's Inn Road, London, W.C.1.

Component parts of the Slipper plug.

From Foot to Hand Clutch Control.

UNTIL this year B.S.A. motor bicycles have been fitted with foot clutch control, and owners of the older models often desire to effect a conversion to the handle-bar lever method. This may now be done with comparative ease by means of the Vertiflex conversion set, sold complete with cable and lever by Haggard and Co. 120a, Salop Street, Wolverhampton. It is a very well-finished article, and may be fitted by the



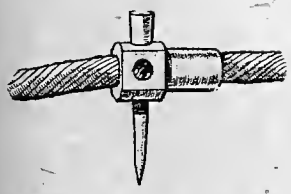
Vertiflex hand clutch control for 1920 and earlier B.S.A. motor cycles.

average amateur in less than half an hour, for all that needs to be done is to remove the adjusting screw from the centre of the operating quick-thread nut, and to replace with the Vertiflex fitting. The foot control is retained, and may be worked independently.

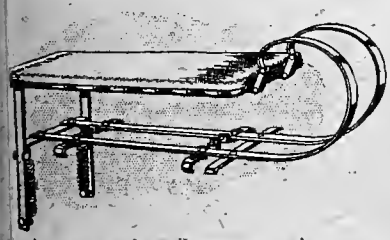
Among the Accessories.—

A simple form of folding foot-rest produced for the benefit of pillion riders by C. W. F. Price, 355, Garden Lane, Chester.

The latest accessory for Tan-Sad seats and saddles is a new back rest, which may be fitted to either. It costs 9s. Stirrups for pillion riders cost 5s.

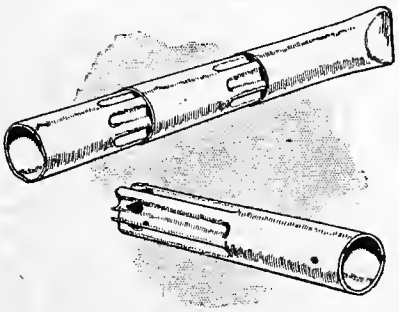


An emergency Bowden wire nipple—the Parsons—which should appeal very much to those who like "to be prepared." It is an efficient and neat little article. (Commercial Units, Ltd., 24, Gray's Inn Road, London, W.C.1.)



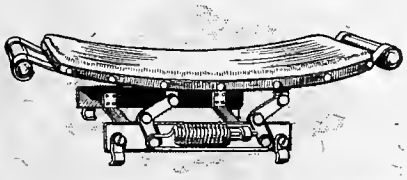
A new and well-sprung carrier seat, which is manufactured by A. H. Swinford, 19, Queen's Road, Battersea, London, S.W.11.

Instantly adjustable, and with an ingenious locking action, the Gripio wrench possesses at least two attributes that should be found in the perfect spanner. It may also be used as a pipe wrench. (The Patent Gripio Wrench and Spanner Co., Ltd., Batavia Bldgs., 12, Hackins Hey, Liverpool.)



A long exhaust pipe, which, it is claimed, by reason of air-inlet louvres really does act as a silencer. It is built up in sections, as shown. (Matthew Harvey and Co., Ltd., Glebeland Works, Walsall.)

A simple silencer, complete with baffle device, which should meet the needs of many "long exhaust" enthusiasts. Such a fitment for any size of pipe is sold by the E. W. L. Accessories Co., of 102, Lancaster Road, East Ham, London, E.1, at 10s. 6d.



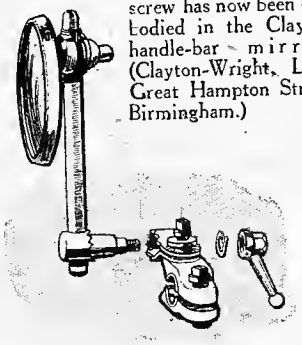
A pillion seat introduced by the Tynesider Works, 9 and 10, Union Street, North Shields. It costs 45/- When folding backrest, armrests, foot-rest, and leg guards are supplied, the cost is £3 10s.

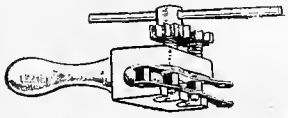
A simple and well-made belt fastener, made by the Challenge Manufacturing Co., Ltd., 49, Summer Row, Birmingham.

The Endell pillion seat, built on simple lines, and marketed by A. J. Dew and Co., 19a, Endell Street, Long Acre, London, W.C.2.

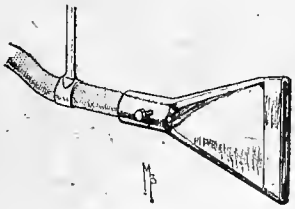
A grip consisting simply of a suitably shaped, closely "woven" coil spring. It is easily fixed by the special clip shown. (The British Spring Co., Wentworth Works, Wentworth Street, Peterborough.)

A convenient clip with a "quick action" finger screw has now been embodied in the Clayrite handle-bar mirror. (Clayton-Wright, Ltd., Great Hampton Street, Birmingham.)

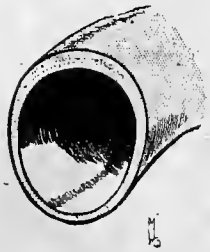




How the R.S. rivet extractor removes two rivets at one operation is at once clear from the sketch. The inventor is G. R. Salt 18, Cherry Street, Coventry.



The E.W.L. Accessories Co., of 102, Lancaster Road, East Ham, London, E.6, makes all kinds of silencing fitments, its latest product being the auxiliary fish-tail exhaust shown. The outlet is six inches across.



A tube recently introduced by Hutchinson Tyres, Ltd., 70, Basinghall Street, London, E.C.2. As will be seen by the section shown, it has been thickened considerably at the out, or "road," side.

ON THE COMMON, NEAR WIMBLEDON.

ROAD TESTS of NEW MODELS

THE 2½ h.p. HAWKER TWO-STROKE LIGHTWEIGHT.

SPECIFICATION.

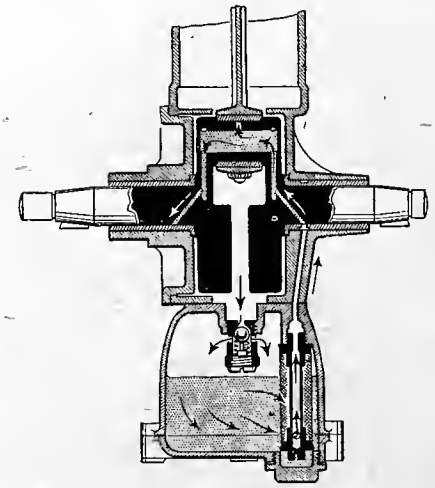
ENGINE: 70 × 76 mm. = 292 c.c. two-stroke.
LUBRICATION: Automatic pressure feed from sump.
MAGNETO: Flywheel type.
CARBURETTER: Claudel-Hobson automatic.
FRAME: Rigid.
WEIGHT: 160 lb.
GEARS: 2-speed chain gearing.
TRANSMISSION: Chain-cum-belt.
WHEELS: 26 × 2¼ in.
PRICE: £60.

IN taking the Hawker two-stroke machine through a test run of approximately 100 miles, its performance was judged with due regard to the fact that the machine was designed and produced by the H. G. Hawker Engineering Co., Ltd., of Kingston-on-Thames, as a comparatively inexpensive and extremely simple lightweight motor cycle.

Mechanical simplicity, reasonable hill-climbing powers, comfortable riding, and ease of maintenance at the outset, were considered to be features of primary importance, and although such *desiderata* are invariably sought by most makers of small machines, it is, at the same time, not often that their accomplishment is attained at the first attempt. For instance, it sometimes happens that mechanical simplicity is gradually lost in a promising design by various alterations as the machine is passed through the proving process, and with it, very often, ease of maintenance as a corollary.

Original Design.

In the case of the Hawker lightweight, the design is original in many respects, and the ease of maintenance has been brought down to an extremely simple item for the inexpert person. For example, the lubrication system of the engine has no working parts, is entirely automatic in action, and one filling of oil lasts 500 miles. Then again, the speed gear consists of two primary chains running over sprockets of different sizes which are engaged by dog clutches located within a miniature "gear" box, while decarbonisation is reduced to the simplest of jobs—due to the detachable head—an important point in two-stroke engines.



Section of the crank case and sump of the Hawker two-stroke engine. Pressure is maintained in the sump by crank case compression acting through a non-return valve in the base chamber. The crankshaft main bearings, of exceptional size, are lubricated by the oil en route from the sump to the big end.

Good Service.

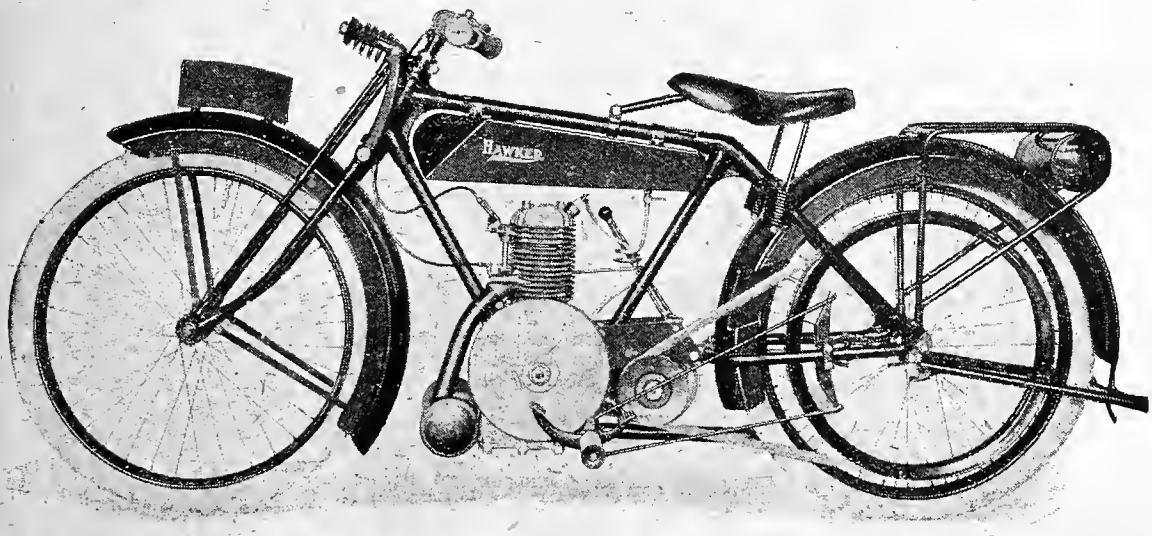
Our run was taken through ordinary country roads at average speeds from 15 to 30 m.p.h., and the first noticeable point in the machine's behaviour was the good steering qualities and really comfortable saddle. It is possible to ride "hands off" without side sway, and pot-holes do not affect steering. We found that the engine had enough power for the average hill on top gear, and at 25-30 m.p.h. the unit runs smoothly, and with a nice reserve of power. No signs at any time of overheating were revealed during our run; and for hills of some severity, such as are often found away from the main road, the lower gear provides all the climbing powers required, as has been proved in recent trials.

Road Tests of New Models.

Our test of the Hawker also included some city traffic work to and from the office, and the machine proved to be nippy and manageable in town traffic, the twin rear brakes proving efficient in use, on dry roads at any rate. It is in traffic work that a light solo mount scores, for the test specimens are so handy and easy to manipulate.

The Hawker is an essentially no-trouble lightweight. The flywheel magneto is of very robust construction, and in the event of the engine being taken down, the timing of the magneto cannot be carried out wrongly on reassembly. The chains of the speed gear are on the opposite side of the engine to the flywheel, and, on removal of the cast aluminium chain case, are very accessible and easily adjusted. As mentioned before, the lubrication system is entirely automatic—it feeds oil under pressure to the big end of the connecting rod, and there is no drip feed to watch when riding; while in regard to the machine, apart from the engine and transmission, the only points in the frame that require lubricating are the main spindle of the front forks and the wheel hubs.

Generally speaking, we were very pleased with the behaviour of the Hawker, and at £60 it represents really good value for the person who has limited means and requires a simple and easily-looked-after mount. During the 100 odd miles of our run, the oil consumption was one-third of a pint, which is equivalent to 2,400 m.p.g., and petrol consumption about 95 m.p.g.; the first figure is excellent and the second well up to the average.



Near-side view of the Hawker lightweight. The magneto and flywheel are in one unit, but the contact breaker is very easily accessible through a small inspection cover in the flywheel casing. Note the twin belt rim brakes at the rear, operated by independent toe and heel pedals on the footrest. The saddle is of very simple design, but is exceedingly comfortable.

THE MOTOR CYCLE IN AUTUMN.

The Charms of Nature and Wild Life in the Fall of the Year.

TO many people autumn is the most pleasant time of the year. Admittedly spring is very attractive, for then comes the awakening of nature after the hardships of winter, but there is not that mellowness and beauty of foliage in evidence as there is during the later months of the year.

Those who live in the country will appreciate the glorious mornings of the season. The dawn comes in haze, while, as the light strengthens, we see the tinge of blue through the layers of morning upper mists; then, later in the day, the sun lighting up the wondrously woven tapestries of the surrounding woods and the warm brown glory of the chestnut trees.

The Best Season.

With hard roads, a tinge of cold in the air, and a sweetly running mount, autumn is certainly the ideal season for joyous health-giving spins. Gone is the heat and dust and heavy traffic of summer.

Happy are the days when we pack our rods, tackle, and lunch, on the trusty mount, and, with jovial companion, make our way to the reed-fringed mere, there to try a bout with the big pike that are hidden beneath its waters. Not until the sun is disappearing over the wood, colouring the sky like a sheet of red flame, do we pack up and join the open road once more, which to-night has an enchanted appearance in the wonderful twilight.

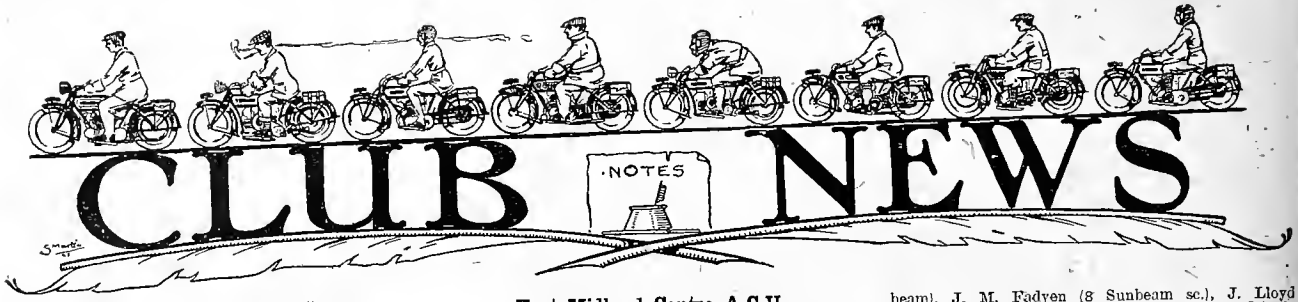
The Homeward Ride.

As the evening becomes chilly and the mist rises in the little hollows, our thoughts turn to home, a fire, warm food, and an atmosphere of comfort.

Surely there are few things better than this, unless it be a day in the rougher land of the county, with a gun instead of the rod. After hard tramping for many miles and a try at all sorts of game, one is glad to return to the saddle and make speed into the gathering darkness.

To the sportsman, the motor cyclist, and the lover of nature, autumn is indeed a glorious season.

T.L W.



North-western Centre A.C.U.

Next Saturday the Centre is holding a rally and gymkhana at Blackpool, the committee of the Blackpool and Fylde M.C.C. being responsible for the local arrangements. Centre speed trials will take place on Southport Sands on the 17th inst.

Dunheved (Launceston) and District M.C.

In the last hill-climb arranged by this club, Claude Truscott (3¾ Scott) was first in the solo class, and Maurice Prent (10 Morgan) was the winner in the class for passenger machines; his Morgan carried two passengers.

The club is arranging an open amateur hill-climb for next Wednesday, which will take place on a hill at Lifton, about four miles from Launceston, and a large entry is expected.

Brecon M.C.

Several well-known Welsh riders attended the recent hill-climb on Warren Hill. Results:

350 c.c.—Closed: A. Williams (Diamond-Jap), 1m. 32½s. Open: 1, Luther Davies (Cotton-Blackburne), 1m. 26⅘s.; 2, R. D. Jones (Diamond-Jap), 1m. 29s.; 3, A. Williams (Diamond-Jap), 1m. 34⅘s.

600 c.c.—Closed: 1, A. O. Lewis (B.S.A.), 1m. 27s.; 2, D. P. Jones (Triumph), 1m. 31s.; 3, D. J. Jones (Triumph), 1m. 31½s. Open: 1, Dr. Lindsay (Norton) and Jack Thomas (Norton), tied, 1m. 5s.; 2, W. R. Evans (Sunbeam), 1m. 6½s.; 3, J. Parker (Sunbeam), 1m. 7⅘s.

UNLIMITED.—Open: 1, Dr. Lindsay (Norton), 1m. 4s.; 2, W. R. Evans (Sunbeam), 1m. 4⅘s.; 3, Jack Thomas (Norton), 1m. 5s.

East Midland Centre A.C.U.

The Centre has arranged a hill-climb, open to Centre residents only, to take place near Chesterfield on September 10th. In this event will be incorporated the event for the Centre Cup, which was postponed from Clipstone Drive Speed Trials.

Glasgow Western M.C.C.

The open reliability trial on August 20th for the James Challenge Shield was stiffened by the inclusion of Ballochandrain, one of the Scottish Six Days observed hills. The course was from Glasgow to Dunoon and back to Inverbeg. It proved a fairly severe event, few riders being able to keep up schedule time, and many failing on the observed hills; out of thirty-one starters twenty completed the course. The winner of the James Challenge Shield, D. Wright (secretary of Selkirk M.C.C.), rode most consistently on his 4 h.p. Indian Scout, and made excellent ascents on all hills. Results:

JAMES SHIELD.—D. Wright (4 Indian Scout).

PRIZES PRESENTED BY MANUFACTURERS' UNION.—Solo, D. Wright (4 Indian Scout); sidecar, J. Littlewood (7 A.J.S. sc.).

SPECIAL PRIZES CONFINED TO CLUB MEMBERS.—Solo, R. Watson (4½ Humber); sidecar, J. Littlewood (7 A.J.S. sc.); private owner, T. M'Creadie (3½ Sunbeam).

GOLD MEDALS.—D. Wright (4 Indian Scout), R. Watson (4½ Humber), J. W. Morton (3½ Rover), and B. Gold (4 Blackburne).

SILVER MEDALS.—J. Littlewood (7 A.J.S. sc.), J. Burton (3½ Norton), T. M'Creadie (3½ Sunbeam), J. M. Fadyen (8 Sunbeam sc.), J. Lloyd (3½ Norton), R. M. Wilson (2¾ Hobart), W. S. Brown (3½ Ariel), and G. C. Proctor (6-7 Ariel).

BRONZE MEDALS.—E. F. Elliott (3½ Ariel), G. Elliott (3½ Beardmore), G. Grinton (7-9 Harley-Davidson sc.), A. A. Hunter (2¾ Douglas), and W. A. M'Innes (8 Matchless sc.).

Doncaster and District M.C.C.

Very well-supported speed trials were held recently on the Sandall Beat Road, where on October 1st the club will hold its open speed trials. Full results follow:

250 c.c SOLO.—Private Owners: 1, T. Hilary (2¼ Triumph); 2, P. A. Illingworth (2¼ Velocette). General: 1, H. C. Dodds (2¼ Radco); 2, P. A. Illingworth (2¼ Velocette).

300 c.c. SOLO.—General: 1, E. Sayles (2¼ New Imperial), 36⅘s.; 2, A. B. Dodds (2¼ Levis), 41⅕s.; 3, H. C. Dodds (2¼ Radco), 45⅕s.

350 c.c. SOLO.—Private Owners: 1, H. Thomas (2¾ Douglas), 35⅖s.; 2, H. Wilson (2¾ Douglas), 37⅕s. General: 1, R. Gray (2¾ New Scale), 34s.; 2, H. Thomas (2¾ Douglas), 35s.

500 c.c. SOLO.—Private Owners: 1, J. J. Lister (3½ Norton), 27s.; 2, C. E. Keyser (3½ Sunbeam), 27⅘s. General: 1, J. J. Lister (3½ Norton), 27⅘s.; 2, J. H. Wilkinson (3½ Norton), 28s.; 3, C. E. Keyser (3½ Sunbeam), 30s.

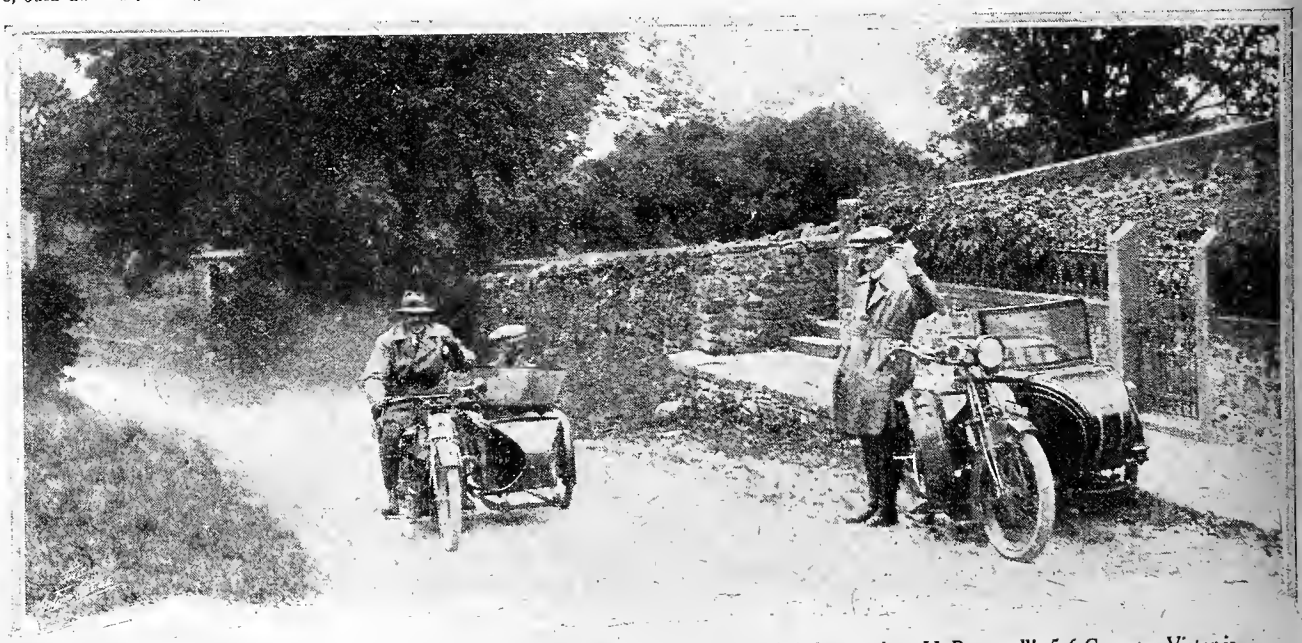
750 c.c. SOLO.—Private Owners: 1, J. J. Lister (3½ Norton), 27⅘s.; 2, C. E. Keyser (3½ Sunbeam), 28⅘s.; 3, F. B. Leach (3¾ Scott Squirrel), 30s. General: 1, J. H. Wilkinson (4 Norton), 28⅘s.; 2, J. E. Claybourne (4 Triumph), 28s.; 3, C. E. Keyser (3½ Sunbeam), 29s.

UNLIMITED SOLO.—General: 1, J. E. Claybourne (4 Triumph), 28s.; 2, J. H. Wilkinson (4 Norton), 28⅘s.; 3, C. E. Keyser (3½ Sunbeam), 30s.

750 c.c. SIDECARS.—1, J. J. Lister (3½ Norton sc.), 34s.; 2, J. H. Wilkinson (4 Norton sc.), 35⅘s.; 3, H. Hopkinson (4 Triumph sc.), 38⅘s.

UNLIMITED SIDECARS.—1, J. J. Lister (3½ Norton sc.); 2, J. H. Wilkinson (4 Norton sc.); 3, E. Sayles (4 Triumph sc.).

FASTEST TIME OF DAY.—J. J. Lister (3½ Norton), 27s. (distance half-mile).



A competitor in the sporting reliability trial held by the Clitheroe and District M.C.C. last week. H. Bracewell's 5-6 Coventry Victor is evidently running well.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

POWER UNIT FOR AN INVALID MOTOR CHAIR.

Sir,—Can any reader recommend a suitable water-cooled engine to fit on an invalid chair for an ex-Service man who has lost both legs but has the use of both arms?

He is approximately 14 st., and requires at least a 3½ h.p. engine, as the district is very hilly. The power unit should be hand-controlled, have a hand starter, and be capable of slow running without excessive heat. WORKSHOP.

Crymmych.

INTERNATIONAL RECOGNITION OF THE LIGHT-WEIGHT SIDECAR.

Sir,—On page 194 of *The Motor Cycle*, in reporting F.I.C.M. Congress at Geneva, you state that the proposal in the name of Mr. Ebblewhite, to the effect that 350 c.c sidecar machines should be reintroduced, met with *violent opposition*, and was not adopted. I wonder why? Is it that these gentlemen fear so much for the safety of the riders of this light and efficient vehicle, or is it the mere fact that they fear general efficiency, being probably interested in something much bigger and more expensive?

After all the lightweight sidecar has done in this country, the manner in which it has proved its efficiency as a commercial vehicle for the delivery of goods, quite apart from the pleasure given to hundreds of owners in Britain, makes me wonder why those gentlemen so *violently* were in opposition to this proposal.

Perhaps M. Neher, who was in the chair, would like to offer me, through the courtesy of your columns, an explanation as to this violent opposition. E. H. HUMPHRIES.

HUMPHRIES AND DAWES, LTD.

WHICH IS THE MOST SILENT MACHINE?

Sir,—I should like to express satisfaction at the silence and sweet running of my new combination—a 1921 Enfield, with Vickers engine. To me it appears to be one of the quietest machines on the road—in fact, a thoroughly commonsense outfit at a reasonable price.

Petrol consumption with the Amac two-lever, 26 jet, averages nearly 70 m.p.g. P. H. ROGERS.

Sir,—"Fed Up," in your issue of August 11th, seems greatly annoyed at having been summoned for riding an excessively noisy standard machine. Silence or the reverse, as far as the exhaust is concerned, is a matter of taste, but it is my belief that a motor cyclist who is summoned for riding a noisy machine has only himself to blame.

Practically any make of machine, with certain notable exceptions, can be excessively noisy if the rider races his engine, and if this is done in a town the "bobby" is likely to prick up his ears.

Last summer, in a cycle car of my own construction, I ran from Torquay to Ipswich *via* London (Westminster, Trafalgar Square, Tottenham Court Road, etc.), with only 6in. × 1½in. stub pipes from the cylinders of my 90° o.h.i.v. J.A.P. This is not my usual arrangement, the exhaust pipe was deleted by a crash following a burst tyre.

Throughout all this journey no trouble was experienced with the police, as I made a point of using great care in gear changing and starting in towns in order to keep the "revs." down. VINCENT O. GRECH.

Sir,—I now pick up my pen and all that rot to reply to "Mr. Owl," who specialises in silence.

Yes, no doubt we all know the difference between a Rolls-Royce and a motor cycle.

I really do not admire his choice in giving £30 more and sacrificing 15 m.p.h. to obtain the silence of a Rolls.

The average machine, say, will do 50 m.p.h. (this is a fair average, I think). Well, 15 from that; 35 is not much good.

He seems to forget that a machine going at 65, less silencer, more often runs just as sweetly as at 10 m.p.h. There is not any need for anything to be noisy except the exhaust. Really, I could let him have a book on this, could write on it for hours, but it is hardly fair to the Editor.

I should write to Dr. Low, B.Sc., F.I.C., D.Sc., etc., etc., and ask him "Why does not a motor cycle run as quietly as a Rolls-Royce car?" I am not sure as to these degrees of Dr. Low's.

By the way our mount is a 4 h.p. Triumph with a 2in. diameter exhaust pipe (one piece), and the "cough" is a dream. I should like to sign myself "Cockatoo," but it is so undignified. THE METALLIC BROS.

Doncaster.

Sir,—I was really interested in "The Owl's" letter in the current issue of *The Motor Cycle* regarding the silence of a Rolls-Royce moving swiftly along the road. Is it not a fact that much of the power of these fine cars has to be sacrificed to obtain that silence so much sought after by "The Owl"? I mean, of course, by muffling the exhaust gases to such an extent in their path to the atmosphere that piston speed is very much interfered with, which, of course, would not be the case with a clear exhaust pipe. I wonder if "The Owl" would like to sacrifice 25% or 30% of his 3½ h.p. to silence his exhaust alone.

Now, turning to the screech of the valve gear, I believe it would very much add to the price of any machine if tappet rattle were eliminated, though I believe much of the mechanical noises one hears when riding a motor cycle is due to the chattering of the whole machine for the want of efficient springing.

Anyhow, I have what I consider is the most silent single-cylinder machine—perfectly quiet unless some steep hill is encountered—but at what cost? For instance, valve stems enclosed and automatically oiled by cool oil vapour (in fact, everything enclosed), with an exhaust of special design. W.E.C

Swansea.

A double pillion seat constructed by Mr. J. Fudge, of Chippenham. When an additional passenger is seated in the sidecar the rear tyre would appear to be well loaded.

PILLION RIDING THAT IS NOT DANGEROUS.

Sir,—It has probably been brought to your notice that a certain London morning paper has been launching a protest against pillion riding, but, as is common with most of these agitators, the true facts are not made clear—that is, the difference between pillion riding with a solo mount and pillion riding with a sidecar outfit. Knowing this paper's reputation for "both sides of the question," "give us back our freedom," and such like ideals, I wrote and asked them to publish my letter explaining the difference, in the interests of family sidecar drivers. But they have not done so. May I ask the favour of you publishing this, as probably many letters of protest were received by them and not published.

The matter of pillion riding was even taken to Parliament; but was very rightly thrown out without debate, and thereby we are "given back our freedom."

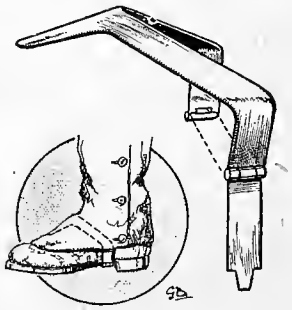
FRANK C. ARMITAGE.

NDESTRUCTIBLE INSTEP STRAPS FOR LEGGINGS.

Sir,—In reply to "Ixion's" comments of August 4th *re* overall trousers instep straps, I agree with him that leather straps for this purpose are utterly ridiculous. Mr. W. H. Townsend and myself having come to this conclusion, some time ago we invented a device that entirely does away with these straps.

We have had one in use some time, which we find is a great improvement, in every way proving more satisfactory than the strap now fitted.

We have now applied for provisional protection, as we realise the fault is general, and not individual, as at first expected.



Steel instep straps for leggings designed by Mr. D. W. Williams. (See accompanying letter.)

This invention consists of a spring steel strip shaped to fit over the instep, and made to clip *underneath* the instep, as shown, to ensure a complete grip with no fear of slipping over the boot. A locking device of the simplest pattern is employed—a strip of steel hinged at one end with a pointed piece at the other end, which fits into a slot. To fasten or unfasten, the spring has simply to be opened out. This device enables the gaiter to fit tightly in place round the boot.

D. W. WILLIAMS.

BRITISH BIG TWINS—FROM VARIOUS VIEWPOINTS.

Sir,—I should like to say a few words on behalf of the British big twin. True, it has not excelled on the track of late, but for roadworthy every day service I think we can hold our own with any foreign built twin. What about the Matchless, Sunbeam, Brough Superior, Excelsior, etc.?

Personally, I am a variable gear enthusiast, and have recently taken delivery of a 7-9 h.p. Rudge Multwin, and find it, with T.T. bars, absolutely ideal for both solo and sporting sidecar work.

For combined lightness (only about 30 lb. more than a 3½ h.p.), control, sweet slow running, terrific acceleration, and speed, I have never ridden anything to equal it.

It takes a streamline sidecar and passenger practically everywhere on top (3½ to 1), and I have nothing to fear from any three-speed all-chain 'bns in the matter of speed, either solo or sidecar. This machine sells for £120; a similar variable geared machine—the Zenith—I believe, costs more, but even then both are well below the price of any foreign big twin.

I have no interest in Rudge-Whitworths except a more than satisfied user since 1913. As for their twin, I can only paraphrase Omar and say: "I wonder what the makers buy, one half so precious as the goods they sell."

H. G. HARRISON.

Sir,—As an interested reader of the correspondence *re* "British Big Twins," I think Mr. Karslake's letter only begs the question. Long distance trials, with all their attendant faking and fixing up, are not to be compared for a moment to a test like the 500 mile race at Brooklands, where every machine was on its mettle, going ding dong, lap after lap.

I thought it a great pity myself that the Brough Superior was not entered, because it would then have been directly up against the American big twins, out for speed, and if it can do the 80 m.p.h. claimed for it, would have stood a good chance against machines of similar size.

Judging by the performance of the British big twins in the 500 mile race, we have a lot to learn yet, when 8 h.p. machines are beaten by 4 h.p. singles (Norton and Triumph) and a 5 h.p. flat twin (Coventry Victor). Our manufacturers must tackle the invasion of the American big twins seriously, and show equal performances if we are to obtain British supremacy in this field.

Road distance, like road speeds, are talked about far too loosely. A race at Brooklands is the thing to find out the best, and is the only proper place for speed.

Coventry. BIG TWIN.

Sir,—In your issue of July 28th, your correspondent, writing about a "super-British twin," has been misinformed regarding the engine of the Brough Superior when he writes about giving it a season in which "to shake its feathers." I believe the type of engine is a 1913 model, and has been driven at Brooklands by E. B. Ware and E. Remington, both J.A.P. riders at that time. By this, I think the engine has had ample time to show up the "Yankees," as your correspondent terms them. Personally, I do not think the Brough Superior would stand up to a 500 miles duel alongside Indian or Harley-Davidson machines. However, I think your correspondent will agree that it is opportune for our big twin manufacturers to recover the laurels and arrange a contest of 500 miles between British and American twin-cylinder machines of 1,000 c.c. OBSERVANT.

London, N.17.

Sir,—It has always surprised me that in the correspondence which takes place under the heading of British *v.* American machines no one ever instances a point which, in my humble opinion, goes a long way to make or mar a machine, viz., the clutch and shock-absorbing qualities of the transmission. I think in this respect British machines can put it all over the "Yanks," as one seldom finds an American twin that will run with the clutch *in* (not slipping) on top gear *without chain snatch* at any speed under about 15 m.p.h., whereas the majority of English bicycles and single-cylinders at that will run on top gear at anything above 8 m.p.h. and accelerate from that speed with a drive as sweet as a belt. Although on the American 'bus the clutch is designed to allow the rider to slip it, it is very frequently a case of either "in or out," which undoubtedly must have a lot to do with the short life of chains as compared to the mileages one gets from chains on English bicycles. It seems somewhat surprising that American manufacturers do not take a leaf from the British manufacturers' book in this respect, as in many respects they are ahead, though not so far as they used to be. Such items as big tyres, mechanical lubrication, automatic carburetter, all chain drive, spring frames, etc., are comparatively recent additions to English bicycles, whereas American manufacturers included them in their specifications years ago.

Why is it that the majority of English machines having an ideal transmission spoil the picture by not having a decent gear change? Watch, or listen to, an American and an English machine getting away from a standing start. The rider of the former looks and is at ease. The latter looks as though he is trying to do the three card trick (unless he changes with the aid of the exhaust lifter), and it could all be avoided by fitting a foot-controlled clutch.

As regards twist grips *v.* levers for controls, I reckon honours are about even. The actual controlling *movement* is infinitely better with twist grips, and they leave the bars clear of gadgets; but, for racing, I think one has a better control over the steering on a bicycle with levers, as once they are put they stay put; and one can get a decent grip of the bars and leave the controls alone, instead of having to hang on by the end of the twist grip, and one can only remedy this by experiencing it on a pretty rough road. Still, one can get used to anything, and "one man's meat," etc.

As I have already encroached overmuch on your valuable space I will not transgress further, except to wish you continued success with your excellent journal, of which I have been a constant reader for nine years. SAPPER.

Melbourne, Australia.

SKILFUL DRIVING BY UNKNOWN RIDER.

Sir,—May I take the unusual course of thanking, through your columns, the motor cyclist who averted a nasty smash on the high road over the Snake from Glossop to Sheffield on a recent Monday.

I was teaching my wife to drive my James outfit, and, stopping on a hill, we commenced to slide backwards across the road just on a nasty bend. A few seconds later a motor cyclist flashed round the bend at a high speed and a terrible smash seemed inevitable. The rider, however, instantly swerved, charged up the steep grass bank at the side of the road, and was away like a flash without looking round. I tremble to think of the result if he had hesitated a fraction of a second, and I would like to congratulate the driver of the machine whose number was, I believe, WA 4084, on a most marvellous exhibition of cool judgment and magnificent driving. The bank he charged up was strewn with large boulders, and how he avoided them is a mystery. Were we all possessed of such iron nerve the high roads would be much safer for such as

Sheffield. NOVICE.

OBTURATOR RINGS FOR MOTOR CYCLE ENGINES.

Sir,—Referring to the remarks of "C.C.C.," in your issue of August 4th, advocating the use of obturator rings for motor cycle engines, I have had a fair amount of experience with rotary aero engines, and found that, taking an average of thirty hours running at 1,130 to 1,200 r.p.m., the obturator ring gets burnt at the gap, so that when overhauling the engine new rings have to be fitted. This does not refer to an aluminium obturator ring, but to the copper and silver alloy ones. As I am still rather interested in aero engines, I should like to know what make of engine is fitted with aluminium obturator rings.

Say one of these rings was fitted to an ordinary motor cycle engine and ran for fifty hours at 20 m.p.h., that only makes a difference of 1,000 miles. Double that, and you would only get 2,000. How many riders nowadays would care to have to fit new piston rings after every 2,000 miles? Again, compare the lubrication system of the rotary aero engine to the present day motor cycle engine. No, sir, I am afraid fitting an ⊓ shaped obturator ring to a motor cycle engine would not prove satisfactory, except from the point of view of the agent who supplied it. MONO.

Duxford.

MORE EXTENDED ROAD TESTS SUGGESTED.

Sir,—I should like to endorse your editorial remarks on "Running-in."

I have just had a long and troublous spell of adjustment on a new machine of expensive make, and would suggest that all motor cycle manufacturers should lay out a test course around their works, completed machines to be required to make a certain number of rounds of the course (including a test hill) to a very close schedule and checked petrol consumption. This would eliminate such troubles as overheating due to oversize jets, or loose parts, etc. I would suggest, too, that only stock machines selected by a club official should be permitted entry in reliability trials.

I cannot believe that some machines are subjected to any works tests at all, else how is it possible to despatch a new machine so spotlessly clean?

Some manufacturers make machines with fixed and some with adjustable ignition. In the former case, would it not be a reasonable compromise to interconnect the air and ignition levers so that with closed air we get retarded ignition and *vice versa?*

On automatic carburetters the automatically operated air slide could be made sufficiently powerful in action to operate the ignition advance, and so we could achieve single lever control. Of course, I admit that the scheme is imperfect; but think it superior either to fixed or ordinary adjustable ignition. It would be interesting to hear the views of others.

Stafford. IDEALIST.

ENCLOSED AND OIL-COOLED VALVES SUGGESTED.

Sir,—Mr. Bradshaw tells us that an engine may be cooled with oil. He then encloses his cylinders in the crank case to prove his assertion. Well, why doesn't he enclose the valves as well? It seems that improvements in various engine details goes on continually; but no one seems to trouble about the valves. It seems hardly the thing to make sure that all the other parts get ample lubrication, yet the valves, surely one of the most important parts, have to "carry on" with no lubrication whatever, and in a position where they are subject to heat and dust as well. Is it not possible to enclose the valves, as in a car, with a detachable plate, draw the mixture actually through the valve guide, as we used to do in the days of the old a.i.v. engine, and so do away with the annoying air leaks which upset our carburation, especially at low speeds, and, at the same time, arrange that oil shall be supplied to the valve stems and springs?

It seems that an engine on the lines of the Martinsyde, with overhead exhaust and side inlet valve could be best adapted to this arrangement. The various attachments sold to stop air leaks are all very well in their way, but at best can only be described as makeshifts.

Why do not more people fit sidecar wheel brakes? Let them come out here a bit, then they would find the need for such brakes; also, for a brake which will stop on if required, on the same lines as a motor car brake. Possibly some of the competitors in the International Six Days in Switzerland could support these statements! C. E. CLARK.

SUNDAY COMPETITIONS.

Sir,—Your leader in the issue of *The Motor Cycle* for August 18th was discussed at our board meeting on Saturday last, and I was instructed to write strongly protesting against your statements *re* Sunday trials.

You appear in the South to be entirely ignorant of the conditions ruling in the North of England.

Sunday is absolutely the only day where it is possible for the members all to meet, and, as you are no doubt aware, we can fix a comparatively stiff course for a reliability trial, without interfering in any way with the section of the community who are in opposition to our type of pleasures.

We have more than one course in the North of England where we could hold a speed trial, which is more than one mile from any house, and probably five miles from the nearest church. Also, as a very large proportion of the community, at least in our area, are enthusiastic motor cyclists, or relatives thereof, it is looked upon in a totally different light from what seems to be the accepted standard in the South.

J. H. HALL,
Secretary North-Western Centre, A.C.U.

[From the earliest days of the motor cycle movement *The Motor Cycle* has been averse to Sunday sporting competitions, and although *all* our readers may not agree with us on this point, our opinion unquestionably is supported by the bulk of public opinion, and by the Auto Cycle Union, and the British Cycle and Motor Cycle Manufacturers' Union. Conditions such as mentioned by our correspondent prevail in almost every part of the country, and with any large club or centre. Sunday, probably, is the most convenient day, but this does not make it any more propitious. No one can cavil at the popularity of Sunday touring, but we affirm that the best interests of the sport are not served by holding sporting events for a comparatively small number of motor cyclists at the inconvenience of the public.—ED.]

16,000 MILES—ONE OVERHAUL.

An enthusiastic rider of a twin-cylinder Ariel sidecarrier, Mr. Monk, Waltham Abbey. He reports that his machine has covered 16,000 miles, and the engine has only been taken down once since it was delivered.

PROTECTING A DISABLED LEG.

Sir,—In reply to "Dislip's" letter, I am similarly disabled to him, in the left leg, and used to ride a 2¼ h.p. Ivy with footboards, but found that on rough roads my foot would not stay on the boards, very often jolting right off. On this machine I had several left-hand side-slips, but found that if I kept my foot on the board and did not attempt to keep myself up with it I would fall on my shoulder, and the handle-bars would prevent the machine from crushing my leg to a detrimental degree.

I am now riding a 3½ h.p. three-speed Norton, which is fitted with footrests, and have found them much more satisfactory than footboards, the rests in this case being rather far back, so that my weight helps to keep the feet firmly down.

Incidentally, I might add that the weight of my present machine is about 300 lb., and I am riding solo.

Birmingham. NON-HURT

THE F.N. EULOGISED AND CRITICISED.

Sir,—Many years ago, when motor cycles were noisome, unpleasant things, the four-cylinder shaft-driven F.N. astonished and charmed everybody by its vibrationless and comparatively silent running.

But, for some reason, this in many ways unique machine has failed to become popular over here in the same way as other foreign makes—American, for example.

Perhaps it is the altogether unconventional appearance, long high frame and handle-bars, together with the purely imaginary complications of construction, that account for the very few modern F.N.'s encountered on the road to-day.

My own solo experiences of one of the more recent 7 h.p. models may possibly serve to dispel any such impressions that may still remain among some of your readers.

I have had many modern machines—British and American, 3½ to 7 h.p., twin, single, and even four-cylinder—but none has, in my opinion, quite earned the high praise I willingly accord this 7 h.p. F.N. of mine.

At no speed is there the slightest sign of splutter, back-fire, or racing. It may be the three-jet Zenith, combined with the superb balance of the engine; it may be the petrol-benzole-Castrol mixture on which I run. The fact remains that, at less than balancing pace, this machine will run without manipulation of any lever or pedal on the low speed, and perform in a similar manner with the clutch half depressed on top. I have never seen the like of it except in a very good car.

The maximum pace is much faster than the somewhat "unsporting" build and riding position will allow. I put it at somewhere in the neighbourhood of 50 m.p.h.

The engine runs up to this pace from zero, on a slight up grade, without a tremor of vibration. Consumption is from 50 to 60 m.p.g. solo.

I have not yet succeeded in making the engine hot or even moderately warm. This is rather a drawback, as the machine, excellent in all other ways, declines to pull anything but bottom gear until thoroughly warmed up, which means a mile on second or bottom speed unless one is willing to wait till the engine behaves properly on the stand.

As regards riding comfort, I have certainly ridden more comfortable machines. The fact that one cannot grip with one's knees on the F.N., combined with the small 26in. wheel and rather "bouncy" spring forks, make the negotiation of a really bad road (Cricklewood to the Aerodrome, for example) an evil dream! but for anything like a good road the position is particularly comfortable and free from strain.

Other excellent points about the F.N. include the positive pressure lubrication, which appears to function at all speeds to perfection.

The three-speed gear box is quite noticeably silent, which cannot, however, be said of the bevel, which, though efficient and otherwise excellent, is inclined to whirr badly between 15 and 25 m.p.h. This is perhaps the one annoying feature of the whole machine.

The clutch is, with the exception of the A.J.S. and Lea-Francis perhaps, the best I have ever handled, but it needs the oilcan rather too frequently.

To sum up my impressions, this 7 h.p. F.N. possesses all those "four-cylinder" features which one associates with a really good modern light car, and which no twin-cylinder engine, however well balanced, can ever quite attain. Its riding comfort, reliability, flexibility, and general excellence, combined with the magnificent finish and workmanship (which, to me, is a joy to contemplate), make the modern F.N. a most attractive machine to ride. Usual disclaimer.

Watford. NK 2098.

FOR AND AGAINST THE HINGED FORK.

Sir,—I feel that "Warum" voices the sentiments of many scientific motor cyclists in his letter criticising the Triumph type of fork, which is apparently a simple lever of the first order.

If a shock from the road be considered, it will be seen that it must be split up into two components—one along the centre line of the fork and the other at right angles to this, representing the line of action of the two extremities of the fork, where it partakes of a radial motion, working against the spring. A glance at a parallelogram of forces, which could be constructed at any given position of the fork, will show that there must always be a certain amount of actual thrust on the fork hinge, or bearing, and that this thrust is nearly as great as the road shock itself. Moreover, until the fork assumes an angle of 45° with the vertical, the thrust on the fork hinge is always more than the component acting against the spring.

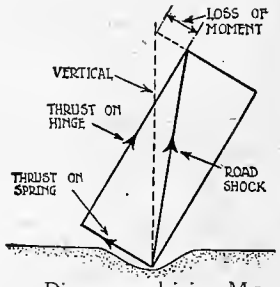


Diagram explaining Mr. L. S Lyons's remarks on the hinged type of fork.

It would seem that a hammering action on the bearing would immediately follow any looseness in the hinge, which, if not soon rectified, would quickly accelerate in intensity.

It will also be seen that many bad road shocks, such as those caused by pot-holes, would incline their line of action towards the centre line of the fork. In such cases, just when the fork requires to be most flexible, the decreased moment caused by this deviation from the vertical places the fork at a disadvantage and the hinge is called on to take more of the thrust than ever.

In the parallel link type of fork, the shock is absorbed directly by the spring or springs, but in the type under discussion the shock has to act on the hinge before the spring can dissipate it. I consider the Beardmore-Precision fork to be a vast improvement, as it transmits the shocks directly to the cantilever spring, the hinge under the steering column functioning more as a pure guide than as a thrust bearing.

The only justifications I can perceive for the Triumph type are fewness of working parts and consequent low cost.

L. S. LYONS.

SUMMARY OF CORRESPONDENCE.

Capt. S. Wallick recommends very highly his Connaught lightweight, which he uses in the course of Government work over a large and scattered district.

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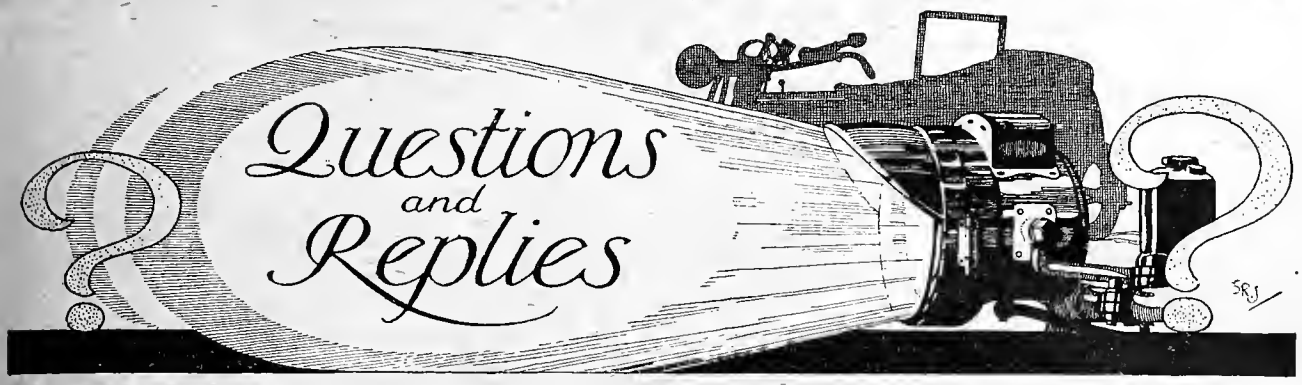


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

ENGINE WILL NOT RUN.

My 2¼ h.p. Levis recently stopped suddenly. I tried the plug and found it perfect; there was no stoppage in the petrol pipe, so I had the engine dismantled and found all in order. I reassembled it, and still got no result. I have tried plug, compression, petrol, carburetter, and crank case leaks. The magneto has been tested under compression by the makers.—H.S.

If the plug, compression, carburetter, and magneto are in order there is absolutely no reason why the engine should not run quite satisfactorily, provided it was correctly reassembled. You might verify the timing, as it is quite possible that the magneto sprocket slips on the armature shaft. The spark should be timed to occur when the piston is on top dead centre, with the control fully retarded. It is also advisable to make sure that the flywheel is tight on the engine-shaft.

COMPRESSION RATIO.

Is it at all possible to get too high a compression in a 2¼ h.p. two-stroke engine? In taking mine down last winter, I found a 1/16in. packing between the cylinder and crank case, and, thinking to improve matters, substituted a 1/32in. instead. Although I can get a good speed on the level, I cannot climb hills as well as my friend who has the same make of machine; but his compression is not half so good as mine. I should be glad to hear if there is any formula on compression space compared with the bore and stroke to get the best efficiency.—H.H.S.

y substituting a thinner packing between ie cylinder and crank case you alter the ort timing of a two-stroke engine. We nnot give you any formula on compres-on space in relation to bore and stroke, the compression ratio in most comercial engines has usually been arrived by experiment. It does not follow that creasing the compression will improve e efficiency of any particular engine, other undesirable complications may sult.

REMOVING BELT FROM IDLE MACHINE.

When garaging a machine, is it at all necessary or advisable to remove the belt?—M.J.

It is not necessary to remove the belt, although it would be advisable to do so if the machine is left for a long period.

Important Dates.

Mon., Aug. 29th, to Sat., Sept 3rd A.C.U. Six Days Trial.

Thurs., Sept. 8th—Norfolk M.C. and L.C.C. Open Speed Trials.

Sat., Sept. 10th—Liverpool M.C. Open "Reliance Cup" Trial.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Sat., Sept. 17th—Midland Centre A.C.U. Open Hill Climb.

Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Motor Show (including motor cycles).

GEAR QUESTIONS.

Is it possible to put a kick-start of some description on an N.S.U. gear? and can a gate change be fitted? Is there anything to damage or unscrew if I run this gear left-hand instead of right, as I am thinking of converting mine into a countershaft?—H.R.

A kick-starter cannot be fitted to the N.S.U. gear, but if you transferred it to the countershaft position, it might be possible to arrange some form of kick-starter working on the engine-shaft. We do not know of any control now available which can be substituted for the standard rotating handle. You cannot run the gear in the opposite way from that which is intended by the makers, as you will tend to unscrew the pulley from the main body of the gear, thus causing the two sections of the main ball bearings to come apart.

WHICH VALVE NEEDS ATTENTION?

Having been a motorist and motor cyclist for nineteen years, I have always, in taking down an engine, looked at the exhaust valve first, since I have always believed that if the exhaust valve was all right the inlet valve, which has far less burning, would be all right also. A friend, whose experience is very great, says he always looks at the inlet valve first, since, if that is all right, the exhaust will be all right. Who is correct?—K.C.

It is usual to pay more attention to the exhaust valve when a machine is being overhauled, as in many cases the seating of the inlet valve remains in perfectly good order for very long periods, even if the exhaust valve seating is badly burnt. It certainly does not follow if the inlet valve is in order that the exhaust valve seating will also be undamaged.

LACK OF SPEED.

Having recently purchased a two-stroke lightweight, I find I can only get 28 to 30 m.p.h. out of it, which I put down to the carburetter; the timing is correct, no air leaks being present. I have a 28 jet and cannot obtain any more speed after opening the throttle one-third and the air threequarters.—C.H.E.

If your machine is a new one, it may not be possible to obtain a higher speed until it has had some use, as the plain bearings in these engines usually take some considerable time before becoming perfectly free. You should find that the running will improve over the first 1,000 miles. Possibly a slightly larger jet would improve matters, and you should make quite sure that the petrol supply is unobstructed. Two-stroke engines are particularly susceptible to variations in ignition timing, and you might try the effect of permanently advancing the ignition a little more than the standard setting of the makers. Set the contact breaker so that the points fully separate with the control at full retard, when the piston is on top dead centre.

TWO-SPEED HUB GEAR.

Would you please tell me (1) how to prevent oil working on to the brake drums of a Roc two-speed hub? (2.) What is the cause of a grating sound in these gears when coasting down a hill in free engine?—A.A.

(1.) Probably you are using an oil which is too thin, and at the same time over-lubricating the gears. Try a very thick engine oil, or have the gears dismantled and packed with grease. (2.) Without actual inspection it is impossible to explain the cause of the grating sound which arises from the gears. It may be due to one of the contracting bands rubbing on some part of the hub.

POWER FOR FAMILY SIDECAR.

Anticipating the purchase of a sidecar outfit, I am told that a 3½ h.p. machine will be quite up to my needs. I weigh 15 st., my wife 11 st., and our two children weigh about 10 st. together. Will you favour me with your opinion, and can you give me any idea of the best type of machine?—W.H.A.

A good single-cylinder machine of 4 or 4¼ h.p. should answer your requirements perfectly well, provided you do not expect too much in the way of hill-climbing with such a heavy load. The chief difficulty will be fixing up a sidecar with a sufficiently roomy body on the size of chassis usually supplied with a machine of this type. In other respects such engines are quite capable of dealing with the work, but a 6 or 8 h.p. machine would be better, especially if you have any serious hills to negotiate in your usual runs.

A KNOCK AT SPEED.

My Junior Triumph has lately developed a knock. This begins as soon as the engine gets warm, and, if speed is increased, assumes alarming proportions. At a slow speed it is not audible. To cure it I have taken the engine down and decarbonised it, fitted new piston rings, new gudgeon pin, and taken up the big end bearing, but all to no purpose. Thinking it was not getting enough oil, I poured oil into the crank case, and this had a good effect until the blue smoke disappears from the exhaust when the knock recommenced. There is no visible wear in the cylinder, and all the bearings appear correctly adjusted throughout. The magneto is timed according to the makers' instructions; it has been retimed several times without altering the "knock." Do you think "piston slap" is the cause? If so, I suppose the remedy is a new piston. Would an auxiliary oil pump be of use? The petroil system is the one at present used.—A.R.H.B.

If the engine bearings are all in good order, as your letter implies, in all probability it is the piston which is responsible for the knock. We take it that you have made quite sure that the noise does not arise from any part of the transmission, and also that the sparking plug is not giving rise to pre-ignition. It should not be necessary to use an auxiliary oil supply, as the petroil system works perfectly well on these engines. Correct adjustment of contact breaker gap. (1/32in.) should be assured.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"A.J.L." (Lewisham).—Any kind of puncture-proof tyre filling.

"W.R.H." (Thurgoland).—Any make of attachment for pedal cycle, other than Auto-wheel.

"H.S." (East Newport). — Millford-Rock sidecar on 8 h.p. Sunbeam: Strength of wheel in comparison with enclosed axle type, comfort, and safety of connections.

"G.H.T." (Criccieth). — Cox-Atmos carburetter on 6 h.p. A.J.S.

"W.J.S.B." (Taunton).—A.V. Monocar: Hill-climbing, braking, stability, suspension, and general remarks.

"F.I'A." (Windsor).—A.B.C.: Consumption, springing, reliability (especially of valve gear).

READER'S REPLY.

SIDECAR WORK FOR AN ESSENTIALLY SOLO MOUNT.

Re "J.J.L.'s" query in the issue of August 18th concerning conversion of a 3½ h.p. N.U.T. for sidecar work: I suggest a smaller belt pulley on the countershaft gear. This can be brought to 3 to 1, and consequently reduce the total gear ratio on top to 5 to 1. "J.J.L." might like to hear of the suggestion. I am doing the job to my machine.—KENNETH S. HUGHES.

RECOMMENDED ROUTES.

LEICESTER TO BRIDGEND.—G.H.H.

Leicester, Blaby, Lutterworth, Rugby, Blue Boar Corner, Bubbenhall, Leamington, Warwick, Stratford-on-Avon, Alcester, Flyford Flavell, Worcester, Powick, Malvern Link, Great Malvern, Wynds Point, Ledbury, Ross, Wilton, Monmouth, Raglan, Usk, Llangibby, Caerleon, Newport, St. Mellons, Cardiff, Canton, Ely Station, St. Nicholas, Bobvilston, Cowbridge, Brocastle, Bridgend.

WOLVERHAMPTON TO OWSTON FERRY.—A.T.P.

Wolverhampton, Gailey, Penkridge, Dunston, Stafford, Weston, Uttoxeter, Rocester, Mayfield, Ashbourne, Longcliff, Grange Mill, Via Gellia, Cromford, Matlock Bath, Matlock Bridge, Rowsley, Beeley, Chatsworth Park, Edensor, Baslow, Chesterfield, Brimington, Staveley, Barlborough, Whitwell, Worksop, Ranby, Retford, Saundby, Beckingham, Walkeringham, Minsterton, Haxey, Owston Ferry. Approx. 119½ miles.

BARROW TO CHESTERFIELD.—G.H.R.

Barrow, Dalton, Ulverston, Haverthwaite, Newby Bridge, Lindale-in-Cartmel, Levens Bridge, Kirkby Lonsdale, Ingleton, Clapham, Settle, Long Preston, Hellifield, Gargrave, Skipton, Bolton Bridge, Addingham, Ilkley, Burley-in-Wharfedale, Otley, Pool, Arthington, Collingham, Bramham, Aberford, Ferrybridge, Doncaster, Balby, Wadworth, Tickhill, Oldcoates, Carlton, Worksop, Whitwell, Barlborough, Staveley, Brimington, Chesterfield. Approximately 169 miles.

SPARKLETS

Three-wheeler Price Reductions.

A new model of the T.B. runabout is now available, fitted with J.A.P. engine, at the reduced price of £235.

Found on the Road.

An aluminium number plate with rear lamp attached was recovered after it dropped from a sidecar machine at Grays, Essex, by Mr. A. Carder, 106, London Road, Grays, on August 17th.

The Loveland Magneto Lighting Device.

In our last issue the magneto lighting device illustrated on page 223 was described as the Lovelace. The correct name of the manufacturers is Loveland Bros., Crescent Magneto Works, Norbury, London, S.W.

British Success in Canada.

In the recent 540 miles reliability trial of the Toronto M.C.C., the best trade performance was made by a Triumph rider, B. Mallory, whose machine was equipped with Bates tyres and Amac carburetter. The second amateur was also mounted on a Triumph. Amateurs had to average 20 m.p.h., but the trade riders ran to a 24 m.p.h. schedule.

Cross-Channel Rates for Motor Cycles.

We have received a leaflet from the London, Brighton, and South Coast Railway Co., concerning their Newhaven-Dieppe service. Motor cycles not exceeding 130 lb. in weight are conveyed from Newhaven to Dieppe for 12s., and 9d. is charged for every 10 lb. or part of 10 lb. over this weight. Sidecar outfits not exceeding 200 lb. are carried for 31s. 6d., and the same excess rate is charged.

Mem. for Trials Secretaries.

Samples of direction arrows for reliability trials, which are supplied on request to motor cycle clubs, have been submitted to us by the Leicester Rubber Co., Ltd., Post Office Place, Leicester. The arrows are of large dimensions, and have large heads, while, whether the competitors are expected to turn right or left is indicated by L. or R., printed in red. Similar signs are issued showing when the competitors have to travel straight on.

Review.

"Where's Where: The A.B.C. Motor Marine and Airoraft Guide, 1921," by W. C. Bersey and A. Dorey (17s. 6d.: The Technical Publishing Co., Ltd., 1, Gough Square, London, E.C.4), is a useful guide to various towns and villages in the United Kingdom, giving a large amount of information of value to motorists, such as Parliamentary Divisions, police authorities, registration authorities, speed limits, railways, local clubs, motor omnibus services, and R.A.C., A.C.U., or A.A. and M.U. appointed hotels and garages. There is also a list of manufacturers and dealers in motor cars, motor cycles, and parts.

SPECTACULAR RACING ON THE SANDS.

Wolverhampton Machines share Chief Welsh Championships at Pendine. Exciting Finishes.

FIVE laps of a two-mile course, with a complete "about turn" each mile, at a speed of considerably over 60 m.p.h., was the remarkable record of George Dance and one or two other star riders at the West Wales Centre A.C.U. open race meeting at Pendine Sands last Thursday.

Motor cycle races have been staged at Pendine for nearly twenty years now, but not until last week has there been an officially open meeting on that fine natural speedway. This is rather surprising, for undoubtedly racing on the sand has an attraction all its own, Thursday's being quite the most interesting British speed event of the year, excluding only the Tourist Trophy and the 500-mile race.

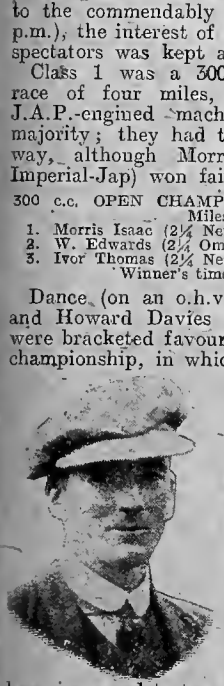
Twelve Events in Three Hours.

There were twelve events down for decision, and from the rather belated start to the commendably prompt finish (4.15 p.m.), the interest of a thronging mass of spectators was kept at fever pitch.

Class 1 was a 300 c.c. championship race of four miles, in which 2¼ h.p. J.A.P.-engined machines were in the majority; they had things all their own way, although Morris Isaac (2¼ New Imperial-Jap) won fairly easily. Result:

300 c.c. OPEN CHAMPIONSHIP (Distance, 4 Miles).
1. Morris Isaac (2¼ New Imperial-J.A.P.).
2. W. Edwards (2¼ Omega).
3. Ivor Thomas (2¼ New Imperial-J.A.P.).
Winner's time, 4m. 37s.

Dance (on an o.h.v. 2¾ h.p. Sunbeam) and Howard Davies (on a T.T. A.J.S.) were bracketed favourites for the 350 c.c. championship, in which the distance had



Morris Isaac, a prominent Carmarthen rider, who, on a 2¼ h.p. New Imperial, won the 300 c.c. championship with ease.

been increased to ten miles, *i.e.*, five laps. The field of five all got off the mark well, but the favourites soon drew ahead, and for two laps there was not more than fifty yards between them. Then the Sunbeam toured in with an oiled-up plug; two others retired; and Brockbank (2¾ Brock-Blackburne), who was none too happy with his brakes, was quite unable to catch the T.T. winner.

350 c.c. OPEN CHAMPIONSHIP (Distance, 10 Miles).
1. H. R. Davies (2¾ A.J.S.).
2. H. F. Brockbank (2¾ Brock-Blackburne).
Winner's time, 9m. 34s.

Dance, however, retrieved himself in the 560 c.c. championship. Fourteen starters made the "get ready" period an ear-splitting one, but an exceptionally fine start compensated those standing by for such minor inconveniences. On an o.h.v. 3½ h.p. Sunbeam the Wolverhampton rider just led the field first time round; very close on his heels, and all in a bunch, were Sgonina (on his o.h.v. Norton), Ogwin Lewis (Norton), and Jack Thomas (Norton). At the fourth mile the positions of the first two were unchanged, but H. R. Davies had crept up to third. Sgonina led at the third lap, but Dance was ahead again at eight miles, and at ten—the finish.

560 c.c. OPEN CHAMPIONSHIP (Distance, 10 Miles).
1. George Dance (3½ Sunbeam).
2. C. Sgonina (3½ Norton).
3. H. R. Davies (2¾ A.J.S.).
Winner's time, 9m. 18⅘s.

The final championship event—for machines of unlimited capacity—was, but for the absence of Sgonina, and the presence of a fast newcomer, F. P. Bush (7-9 Harley-Davidson), almost a repetition of the previous race. First lap order was retained throughout, as follows:

UNLIMITED OPEN CHAMPIONSHIP (Distance, 10 Miles).
1. George Dance (3½ Sunbeam).
2. H. R. Davies (2¾ A.J.S.).
3. F. P. Bush (7-9 Harley-Davidson).
Winner's time, 9m. 24s.

Two things probably account for the slower time in the last race: (1) There was no Sgonina to keep Dance thoroughly busy, and (2) the turns were becoming dangerously wet—so much so that one or two of the local men became somewhat hair-raising in their cornering.

One word dismisses Class 5, the open one mile sprint: "Dance," who won by what seemed at least 300 yards. Unfortunately, the sprints were not timed.

OPEN MILE SPRINT.
1. George Dance (3½ Sunbeam).
2. F. P. Bush (7-9 Harley-Davidson).
3. Ivor Thomas (3½ Sunbeam).

Exciting "Closed" Events.

Now followed a similar series of races (all of four miles) confined to members of West Wales clubs; but they were not one whit less exciting than the open classes.

The result of the lightweight class speaks for itself; the other five competitors "were nowhere." It was noticeable, too, that several of the local riders failed to "get down to it" in the approved manner, thus losing fully 3 m.p.h. on the straight.

300 c.c. WEST WALES CENTRE FOUR MILES RACE.
1. Morris Isaac (2¼ New Imperial-J.A.P.).
2. W. Edwards (2¼ Omega).
*3. H. Church (2¼ Velocette.
*Special prize for fastest two-stroke.
Winner's time, 4m. 36⅕s.

The "2¾ h.p.'s" struggle deserves fuller comment, for Morris Isaac rode Dance's Sunbeam, Jack Thomas Davies's A.J.S., and T. G. Stevens the Brock-Blackburne. Isaac obtained a fifty yards lead by superior acceleration at the start, which he held for one lap. Next, and last, time round he was seen to hold his position, as they swept down to the finish; apparently he did not realise how closely he was being pursued, for almost right on the line the A.J.S. drew past, and won "by a short wheel." Result:

350 c.c. WEST WALES CENTRE FOUR MILES RACE.
1. Jack Thomas (2¾ A.J.S.).
2. Morris Isaac (2¾ Sunbeam).
3. T. G. Stevens (2¾ Brock-Blackburne).
Winner's time, 4m. 25s.

Thomas was rather keen on riding the victorious A.J.S. in the next class; but, as he had entered another make, the committee was adamant. F. J. Boshier Jones had been riding so well and consistently in almost every event, and just failing to get placed, that we all hoped he would retain his first lap short lead in this race. It was not to be, however, for, after a thrilling tussle, Ivor Thomas (Sunbeam) won by a length from P. Bush (Norton), with the Douglas third.

560 c.c. WEST WALES CENTRE FOUR MILES RACE.
1. Ivor Thomas (3½ Sunbeam).
2. F. P. Bush (3½ Norton).
3. F. J. Boshier Jones (3½ Douglas).
Winner's time, 3m. 56⅕s.

Flat Twins to the Fore.

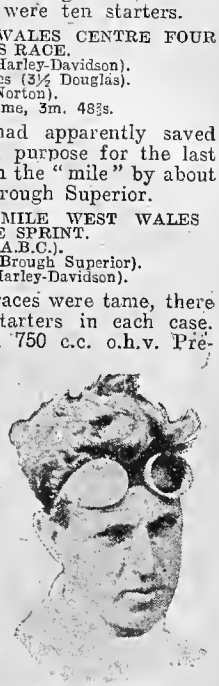
In the last four-mile race Bush's Harley led the field throughout, but Boshier-Jones grimly held second place, and was but a length behind the big twin at the finish; and there were ten starters.

UNLIMITED WEST WALES CENTRE FOUR MILES RACE.
1. F. P. Bush (7-9 Harley-Davidson).
2. F. J. Boshier Jones (3½ Douglas).
3. F. J. Bush (3½ Norton).
Winner's time, 3m. 48⅗s.

Luther Davies had apparently saved his A.B.C. to good purpose for the last solo class, for he won the "mile" by about ten yards from a Brough Superior.

UNLIMITED ONE MILE WEST WALES CENTRE SPRINT.
1. Luther Davies (3 A.B.C.).
2. Handel Davies (8 Brough Superior).
3. F. P. Bush (7-9 Harley-Davidson).

Both the sidecar races were tame, there being only three starters in each case. The "Veriot" had 750 c.c. o.h.v. Precision twin engine.



George Dance does not rest on his laurels for long. On Thursday he rode in four races, and won three, including the 560 c.c. and unlimited championships.

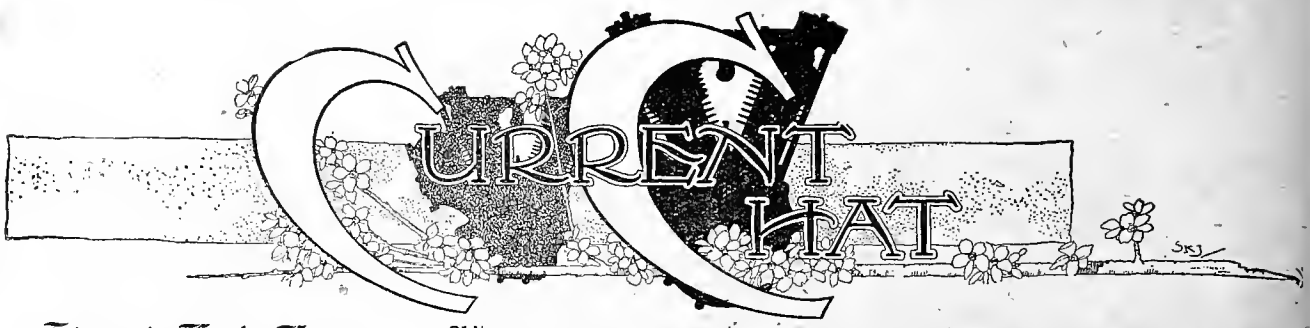
750 c.c. SIDECARS ONE MILE SPRINT.
1. R. W. Hill (5-6 Veriot-Precision sc.).
2. — Griffiths (5-6 James sc.).

UNLIMITED SIDECARS ONE MILE SPRINT.
1. Handel Davies (8 Brough Superior sc.).
2. R. W. Hill (5-6 Veriot-Precision sc.).

Not on the Programme.

As a consequence of the close finish in the local 350 c.c. race, an extra match was arranged between the A.J.S., the Sunbeam, and the Brock, piloted by Jack Thomas, Isaac, and Brockbank respectively. It was anybody's race at the second mile, but the Sunbeam drew ahead before the last turn, and finished an easy first.

No accident, mishap, or untoward incident marred the day, and the organisers are to be heartily congratulated in pointing the way to other centres on how to liven up a speed event.



Times to Light Lamps.

Sept	1st	... ...	8.16 p.m.
,,	3rd	... ...	8.11 ,,
,,	5th	... ...	8.8 ,,
,,	7th	... ...	8.3 ,,

New Models.

There are several 1922 models being tried out in this week's big trial

January to June Index.

An index to the volume of *The Motor Cycle* from January to June last may be obtained from the publishers, Messrs. Iliffe and Sons Ltd., 20, Tudor Street, London, E.C.4, at a cost of 7d., post free.

On Point Duty.

Before being assigned the duty of directing traffic, those provincial policemen who merely shut their eyes and wave their arms should serve an apprenticeship in London.

Notable Absentee at Pendine.

Whilst practising, on the previous day, for the Pendine Sands open race meeting last Thursday, Dr. Lindsay, the well-known Welsh motor cyclist, "crashed" rather severely. His absence from the meeting, where he was a favourite for several events, was greatly regretted, but it is to be hoped that by the time these lines appear he will have quite recovered.

Obituary.

We regret to announce the death on the 23rd ult. of Mr. Charles Vernon Pugh, J.P., founder of the Whitworth Cycle Co. His name was best known to motor cyclists in connection with Messrs. Rudge-Whitworth, Ltd. He was also chairman of C. H. Pugh, Ltd., and the Lanchester Motor Co. His loss will be felt throughout the trade, and our sympathies are extended to his widow and children.

Next week's issue will contain an illustrated description of the Six Days Trials, written by members of the staff of this journal, who are accompanying the competitors on the route.

Estate Planning.

Those who are at present planning new suburbs should bear in mind that a large percentage of prospective buyers of houses from £1,000 to £1,500 are owners of motor cycles or light cars. Despite the known demand for houses with garages or "with room for garage," speculative builders still carve up the land as if the main object were to exclude motorists.

Special Features.

MACHINES IN THE SIX DAYS TRIALS.
TWO ON TOUR.
PILLION RIDING IN THE DESERT.

Further Successes of o.h.v. Engines.

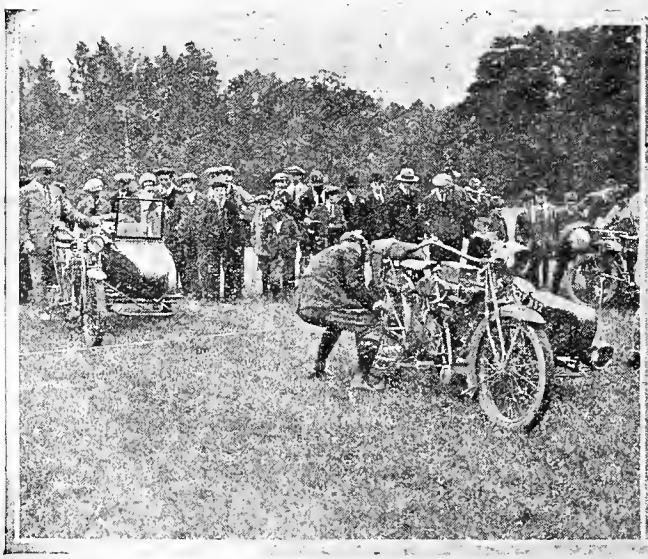
Overhead valve engines practically swept the board at last week's big race meeting of the West Wales Centre A.C.U.

Hundred Miles Race in Ireland.

On the 17th inst. the Ulster M.C.C. will hold speed trials on Magillan Sands, including a hundred miles scratch race for the Championship of Ulster. All machines up to 600 c.c. are eligible. There will also be a hundred miles handicap for solo machines of any capacity.

A New Italian Machine.

In the recent Biella-Oropa hill-climb a new Italian motor bicycle considerably distinguished itself. This was the 2¾ h.p. Maffeis, ridden by Mario Sassi, who won his class, beating a Douglas, A.B.C., and a Frera. The new Maffeis is a high-efficiency twin-cylinder V type, with valves in the cylinder head. The frame is on standard lines. Sassi competed in the French Grand Prix, but retired early owing to a fall.



A CHANGE FROM TRIALS AND SPEED EVENTS.
(Left) Matchless owners in the wheel-changing competitions at the recent Woolwich, Plumstead, and District M.C. Gymkhana.
(Right) Scott and Sunbeam riders busy netting eggs.

A.C.U. Six Days Trials

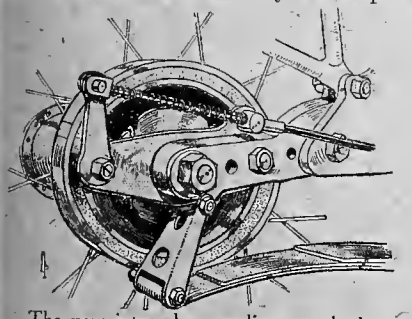
88 Starters in this Week's Big Trial. Well-known Makes Absent. 1922 Models Foreshadowed.

USUALLY, the day preceding the A.C.U. annual Six Days Trials is one that spreads animation over whichever town from which the trial may be starting. Last year it was Darlington, the year before Llandrindod Wells; and most of the competitors arrived on the Saturday evening, filling all the important hotels, where regulations and prospects were discussed at length.

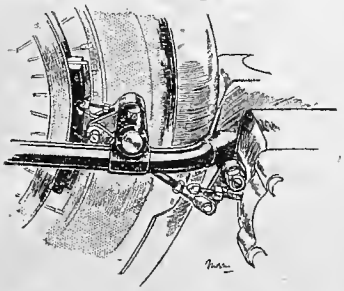
With the riders were prominent members of the trade, and in hotel *foyers* they expressed their views on divers subjects of interest to all who have the welfare of the motor cycle at heart.

Such occasions were general reunions of manufacturers, accessory makers, riders and the press, as are the T.T. races and the Show; but this year at Brooklands all seemed changed.

There had been no fraternising prior to the official examination last Sunday. The competitors arrived from north, south, east and west, and very few manufacturers accompanied them. Yet one cannot say that the total entry was a poor one; indeed, it was very good, for nearly a hundred competitors are sufficient to make the trial quite representative.



The new internal expanding rear brake fitted to the Coulson-B.



Rear brake mechanism on the new chain drive O.K. sidecar outfits. Adjustment is provided at two points.

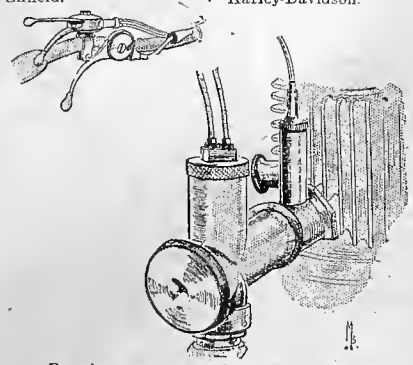
All the same, there can be no doubt that the interest of the event would have been enhanced had those few important firms who have withheld their support been represented. We are sure that this decision not to support the big British trial in which the general public takes such an interest, is arousing criticism and absurd interpretations.

The two main points in the A.C.U. regulations to which this section of the trade took exception are the petrol and oil consumption tests, which are considered to be unreasonable, and the possibility of losing awards on silence. It also appears that there has been friction between the Manufacturers' Union and the A.C.U.; and the withholding of support is, we are informed, more in the nature of a protest than anything else. Nevertheless, the public has a right to think what it likes until the absent manufacturers make out their case; but in the meantime it should be borne in mind that, while the machines of some of the absentees do not enjoy reputations for silence, others are notoriously quiet.

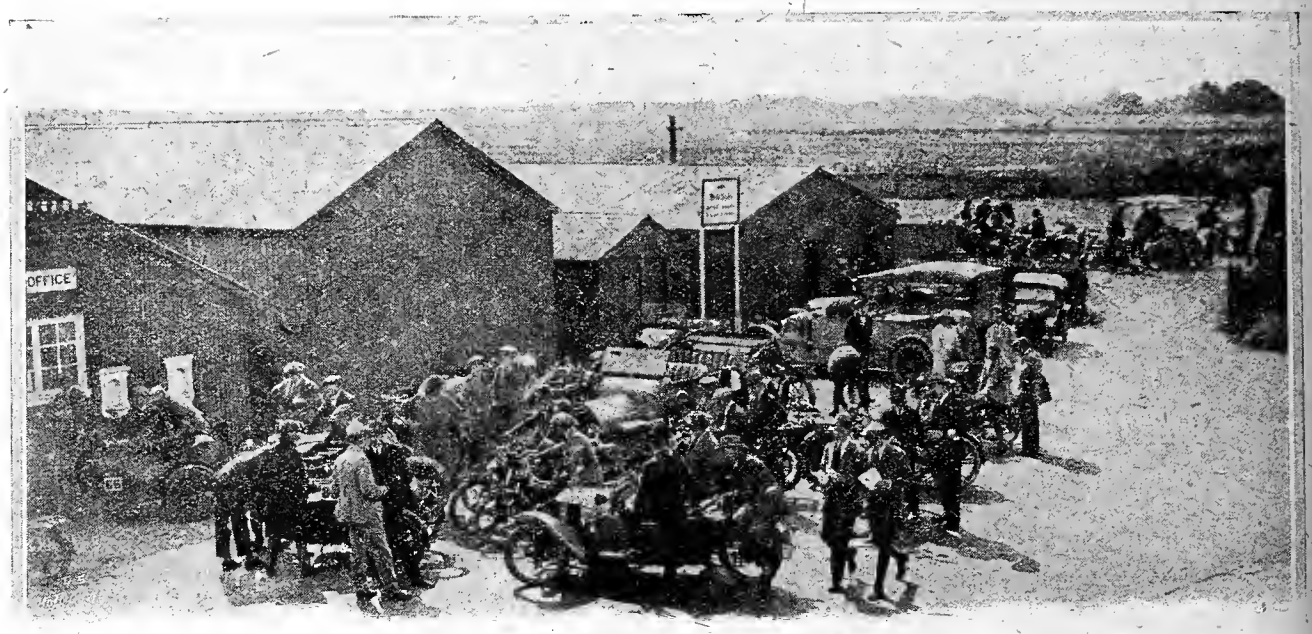
All the machines we have in mind have proved their reliability and hill-climbing capabilities in previous Six Days events, and naturally the public, which is insistent with its demands for "reasonable silence" and economy, would have liked to have seen how they performed under this year's regulati s.

Among the better known firms who decided not to enter this year are the makers of the following:

Triumph.	Indian.
Humber.	Zenith.
Douglas.	Norton.
Beardmore-Precision.	Levis.
Blackburne.	Verus.
B.S.A.	Dot-Jap.
Sunbeam.	Velocette.
Diamond.	N.U.T.
Enfield.	Harley-Davidson.



Bowden extra air valve used on all the A.J.S. machines. The inset shows the mounting of the handle-bar control.



All Sunday afternoon competitors formed a queue to enter the enclosure where the machines were officially examined and sealed.

Of these, however, private owners are riding a B.S.A., Norton, Sunbeam, Harley-Davidson, and Douglas.

As an offset against the above-mentioned there are at least two well-known makes which re-enter the official big trial after several years' absence. We refer to the Rudge entry of four, and the three four-cylinder F.N.'s.

The various types of engines fitted on the competing machines in this and last years' trials are shown below. It will be seen that flat twins are not very well represented this year, but otherwise the 1921 entry may be said to be representative of all the types of machines now offered to the public.

	Singles.		V Twins.		Flat Twins.	
	1921.	1920.	1921.	1920.	1921.	1920.
2-strokes	18	19	—	—	—	—
4-strokes	35	46	32	48	3	12

	Side-by-side Twins.		Three-cyl.		Four-cyl.	
	1921.	1920.	1921.	1920.	1921.	1920.
2-strokes	3	6	—	—	—	—
4-strokes	—	—	1	2	3	—

1921 and 1920 Entries Compared.

The numbers of machines in the various classes are as below, together with the figures of last year's entries:

	1921.	1920.
250 c.c. solo	8	—
275 c.c. solo	—	14
350 c.c. solo	16	17
500 c.c. solo	19	25
750 c.c. solo	10	36
1,000 c.c. solo	1	3
500 c.c. passenger	—	3
600 c.c. passenger	11	—
750 c.c. passenger	—	11
1,000 c.c. passenger	26†	21
Over 1,000 c.c. passenger	4*	3
	95	133

* Cycle cars.
† Including three cycle cars.

It must not be thought that the difference in the total entries is due entirely to the differences between the A.C.U. and members of the Manufacturers' Union.

Several makers contemplate changing their models for 1922, and they are not yet ready. Last year there were four Harley-Davidsons in the trial, as against this year's single entry. This year there are but three Scotts, while last year there were six. In 1920 ten Rovers were entered against five in 1921, and New Imperials three in 1921 and four in 1920, Matchless five this year and six last. It would also appear that the 1921 Trial has failed to attract the private owner so much as in previous years.

THE COMPETING MACHINES.

There is nothing of a very startling nature in the specifications of the competing machines. Brakes, chains, and single lever carburetters seem to be the outstanding features. External expanding front wheel brakes—mostly the Webb type — are almost universal. James, A.J.S., New Imperial, Rover, Ariel, and Douglas are amongst the many which have internal brakes on either front or rear, or both, wheels.

The tiny $2\frac{1}{4}$ h.p. New Imperials have adopted final chain drive, in addition to internal brakes for both wheels. M. C. Breese is riding a "light" 6 h.p. B.S.A., the standard engine being mounted in a modified $4\frac{1}{2}$ h.p. frame, without detachable wheels. This model may be included in the B.S.A. range next year. A small extra petrol tank is attached to the side of the main tank of Breese's machine.

New Models.

New models include a $2\frac{3}{4}$ h.p. Edmund with Blackburne engine, three-speed Burman gear box, and all-chain drive, and the new $3\frac{1}{2}$ h.p. Martinsyde, which is an attractive-looking solo mount.

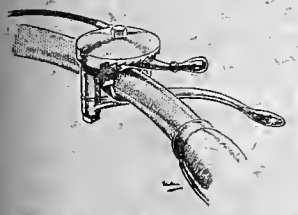
The James twins have expanding brakes all round. The little two-stroke James has a new two-speed sliding gear

Filling up with petrol and oil at the official supply station, Brooklands.

A.C.U. Six Days Trials—

with clutch, kick-starter, and all-chain drive.

It is good to see the four-cylinder F.N.'s in open competition once more, and the four-speed P. and M.'s with sidecars form a novelty from the Cleckheaton works. An overhead valve Duzmo is competing with the close ratio Sturmey gear, and a new four-speed gear, which utilises chains instead of spur wheels, is fitted to Clayton Russell's "big four" Norton outfit.



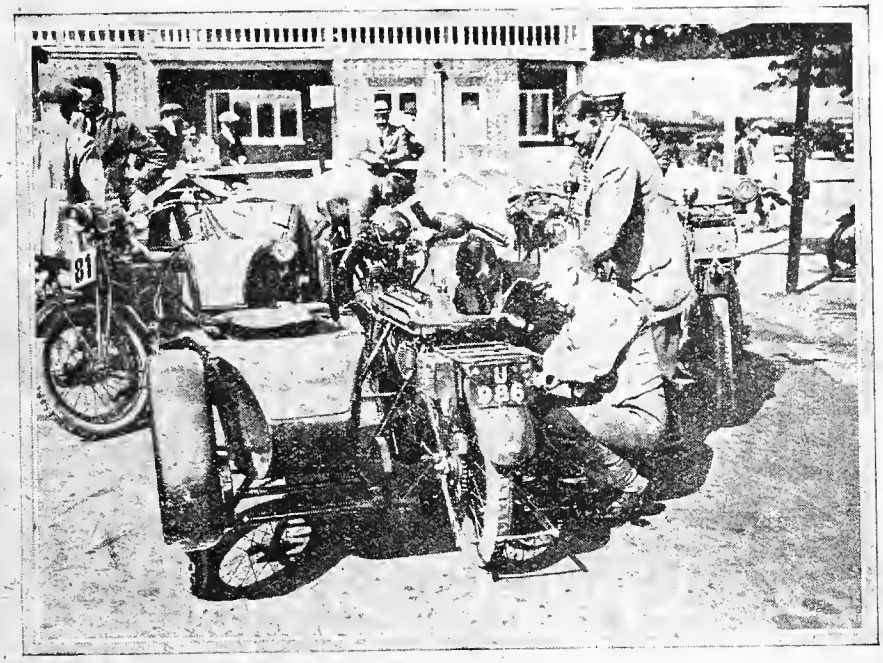
Throttle and accelerator lever on L.H. Wells' Hawker

N. Hall and F. C. North are piloting 2½ h.p. O.K. two-strokes with sidecars attached. These little machines have three-speed Albion gears, all-chain drive, 26×2½in. tyres, and a powerful parallel action rear rim brake. The performances of these tiny outfits will be watched with interest as will Capt. Peatty's little Hawker outfit, which did so well in the Scottish trials.

Another lightweight convert to chain transmission is the little New Hudson, which is also fitted with a Sturmey-Archer three-speed gear, with clutch and kick-starter. Expanding brakes are fitted to both wheels.

Carburetters.

Cox carburetters are fitted to a large number of competing machines. Croucher's Matchless has an Ekon single-lever carburetter—a new device which is reminiscent of the Eta carburetter, a design already published in *The Motor Cycle*. Dowson's Hawker has a Wex single-lever carburetter, but Wells, on a similar machine, pins his faith on the new Mills single-lever instrument, which, in this case, is operated by an accelerator lever with a slow-running setting. All the A.J.S. machines have two-lever Amacs fitted with the Bowden extra air inlet.



Machines ready for the official seal. Mr. A. V. Ebblewhite busy on a Norton outfit.

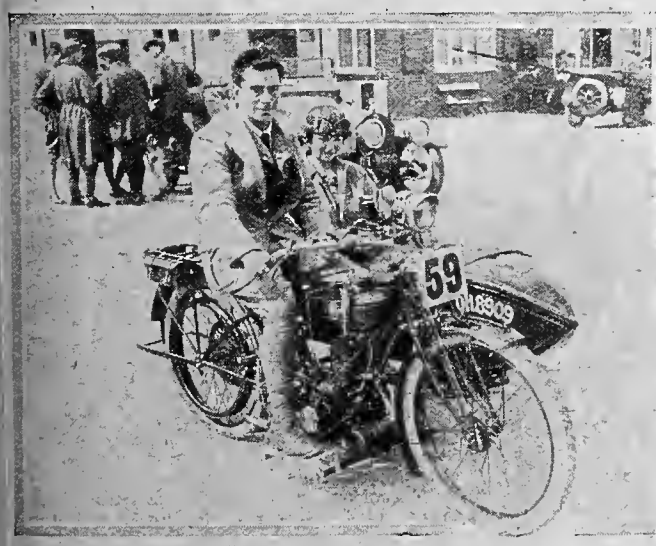
Spare Wheels.

All kinds of positions are employed for the carrying of spare wheels. The Chater-Lea has a carrier well forward of the sidecar, whereas the James spare is almost parallel with the driving wheel, while the new sports Matchless outfits have their spare wheels, with extra spare cover, at the rear of the sidecars.

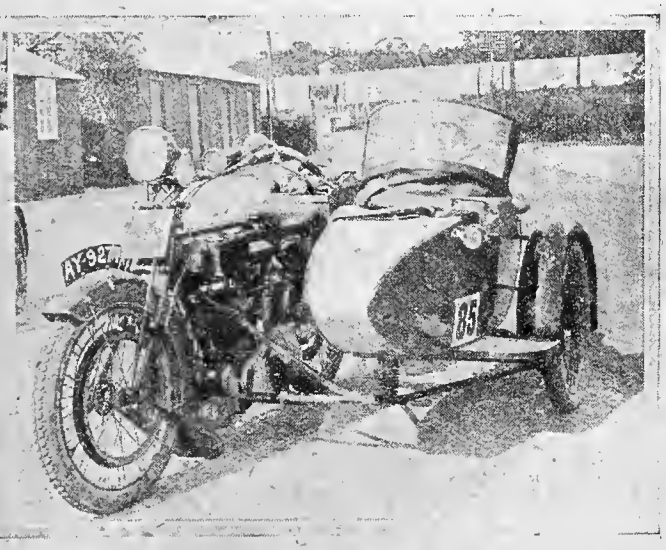
Although not a new machine, the 2¾ h.p. A.J.S. is making its first really important effort in an open trial; the cylinder is reminiscent of the 7 h.p. machine, and all the fittings are in keeping with the firm's high reputation. A Burman three-speed gear is fitted to Sprosen's Connaught, otherwise the Connaught entry is standard. All Rudge machines have engine-shaft clutches, three-speed gears, and, of course, foot-operated oil pumps. Two solo and one sidecar Dunelts represent the large two-stroke, and the performance of this machine in last year's Six Days will not be forgotten. This year a new lighting set off the magneto is fitted to all three machines.

Two brakes on a rear belt rim are used by the Hawker and Henderson machines.

Spring frames are represented by Coulson, Raleigh, Matchless, and Edmund.



The new 2½ h.p. O.K. chain-driven sidecar that is being ridden by Neville Hall, a well-known exponent of lightweights.



A new twin model B.S.A. which differs from the standard twin in frame construction, the weight being considerably less.

The A.C.U. Six Days Trials.—

Amongst the cycle cars, the G.N.'s appear to be quite standard, except for cord-bound springs, and the T.B. has a neater radiator and compensated front wheel brakes. S. Hall's Morgan has a water-cooled M.A.G. engine, while H. F. S. Morgan himself is using a short wheel-base model.

We also observed that the Cedos has a vertical air intake to stop blow back. A new feature on this machine is the new type of cone brakes on the rear wheel; they are actuated together.

Some Alterations in the Programme.

The new 7-9 h.p. British Radial was not ready in time for the trial. The experimental engine is at present undergoing its bench tests.

Another machine which its manufacturers could not get ready is the Duzmo, entered in the name of C. Crossthwaite. His place has been taken by Arnold Eckersley, who offered to ride his new three-speed Sturmey-Archer model Duzmo in the trial.

Geoffrey Hill is riding Leslie Guy's Scott, as the latter has not sufficiently recovered from a recent spill.

The two new 4 h.p. New Hudson sidecar outfits, which were to have made their *début* to the public, did not materialise.

The brake test. Observe the A.C.U. official with flag carefully scrutinising H. F. Fellows on a 4 h.p. Coulson-B.

ELEVENTH HOUR IMPRESSIONS.

BRILLIANT sunshine with real summer heat attended the competitors during the official examination at Brooklands. It would not be an A.C.U. trial if someone did not grumble, but it was distinctly noticeable that there was less grumbling last Sunday than prior to any previous English Six Days. Certainly the riders had little to grumble about, for there is every possible convenience at Brooklands for the business at hand. They were not asked to go to the railway yard to be weighed, the Brooklands weighbridge is right on the spot, a restaurant is adjacent, there is shelter from sun or rain, and there are no suspicious policemen and curious small boys to interfere with the proceedings.

Bert Kershaw arrived astride an 8 h.p. New Imperial, with his competition light-weight fixed on a special sidecar chassis.

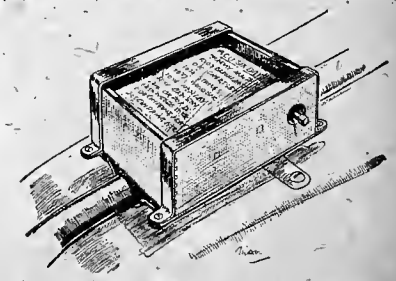
The methods of sealing were by no means uniform. Some Sturmey-Archer gear boxes merely had a wire around the body of the box, and the entire unit could have been dismantled quite easily. On other gear boxes of the same type the wire was over the kick-starter mechanism cover. We also observed several cylinders which could have been removed.

THE BRAKE TEST.

IT was about 8.15 a.m. when the first competitor presented himself at the top of the test hill for the purpose of the brake test. This was actually the beginning of the trial, and, after leaving the mark, no work was permitted on the machine. The procedure was as follows:

First, the competitor was told to descend with his brakes off, and, on receiving the word from an official, applied his rear brakes, and then released them, applying the front or other brake on reaching the second official. A third official also took note if the competitor had both brakes on at once.

Oates (2¾ Edmund) broke his rear brake wire during the test. Exceptionally good performances were put up by J. Lidstone (2¼ James), E. Mundey (2¼ New Hudson),

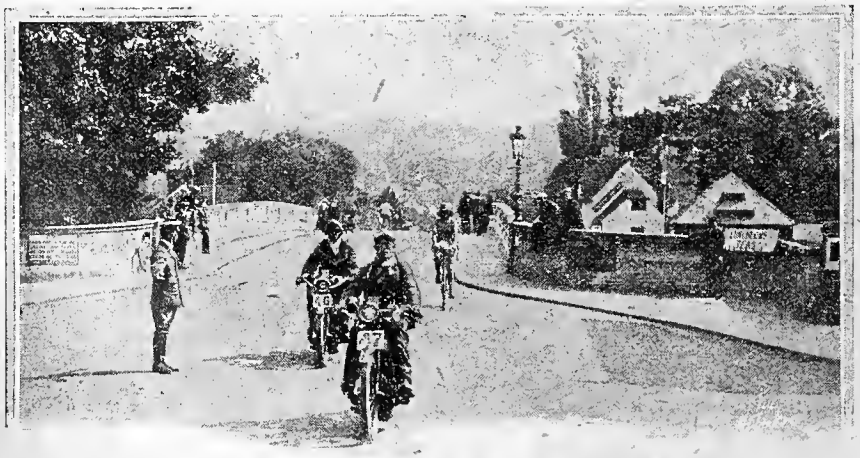


In case of rain. Waterproof roller route card on the top tube of R. C. Winn's Douglas.

Moore (3¾ Scott), W. F. Scott (3¾ Scott), and A. Rollason (4½ Ariel). Twenty-two motor bicycles behaved extremely well.

Of the sidecar machines, nearly all locked their rear wheels, and the outfits travelled on, and their front or "other" brakes were mostly poor.

Exceptionally good performances were made by H. Boynton (7 James sc.), L. Peatty (2¾ Hawker sc.), G. E. Stobart (7 James sc.), F. O'Brien (7 Matchless sc.), F. Watson (8 G.N.), F. Boddington (10 Morgan), and A. F. Nash (8-10 G.N.).



H. G. Bell and T. W. Buckle, on four-cylinder F.N.'s at Henley, on a section of good main road, so different from the average Six Days' routes.

The A.C.U. Six Days Trials.—

THE FIRST DAY'S RUN.

BRILLIANT sun, blue sky flecked with light clouds, and a cool west wind—what better starting conditions for a Six Days could man desire? Some of the riders opined that the head breeze would spoil their petrol consumption. The men, as usual, were full of chaff and forebodings. Most of the chaff was aimed at the A.C.U. officials for their sagacity in holding the brake test on the first day instead of on the last; but some was reserved for those unfortunates who had been tinkering right up to the fifty-ninth minute of the eleventh hour, and notably for one poor fellow who seized his engine on Saturday, and had since reduced his piston diameter by .001in. with a hand file. Alarmist rumours were current about Lynton Hill, which is said to have been newly stoned from the bottom to the top, including even the narrow footpath on the right, for which all motor cyclists instinctively make.

"Go as You Please."

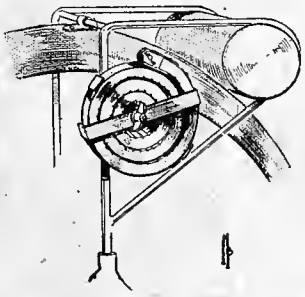
The roads this morning were practically level, and most of the mileage was over smooth tar, so that even the most infantile small two-stroke could average 30 m.p.h. without flurrying itself. There were no fixed timing stations, and if Mr. Ebblewhite took any "secret" checks, his car was far too ostentatiously posted to catch anybody napping. Neither was there any official lunch; the men got food where they pleased, and the 28½m. timed stop at Chipping Norton was solely arranged to allow for the measuring of fuel replenishments.

Checking the petrol consumption promises to be a cruel business. At Chipping Norton the riders queued up towards two petrol vendors, who were equipped with one large enamel—quart jug apiece. R.A.C. guides cut the seal off the tank stoppers, and presently affixed new seals. The job was wearisome to a degree; and, as no cover was available, it is fortunate that the day was fine. Entering Oxford, a colossal placard wished "Good luck!" on behalf of Morris Garages, Ltd.

No special incidents marked the very easy morning run, except that C. H. Hanwell, who had been working late, went to sleep, and fell off his machine two or three times. The Royal borough of Windsor was traversed *via* side streets.

The first official petrol stop at Chipping Norton. M. C. Breese's **6 h.p.** B.S.A. sidecar is in the foreground.

Monday afternoon's run proved as easy as the morning's, the sixty-five miles containing nothing worth calling a hill, though Read's Ready failed on an easy slope near Colerne, because his bottom gear was damaged. The weather continued fine, except for a sharp shower at six o'clock, which nonplussed some of the polish and duster brigade. Many riders suffered from choked jets, ascribable to draining their tanks on Sunday; this washed the dirt on to the tank bottom, and subsequent refilling washed it into the carburetters. Punctures were not infrequent, Bell's F.N. sustaining two in quick succession.



An ingenious method of securing the spare belt on the Hawker two-stroke.

Unforeseen Happenings.

After lunch it transpired that the night stop was the sole timed check of the day, though unofficial times were recorded for the petrol stop at Chipping Norton in case anybody was unduly delayed thereby. Several cases of major trouble were recorded. Creak Davis retired at Oxford through indisposition, the jet of Hanwell's Cedos came unscrewed and drained his tank, compelling him to break the seals and incidentally revealing a flaw in the petrol regulations. The tank of Nicholson's 3½ h.p. Martinsyde ran dry within pushing distance of Bath, where the local club had made excellent hotel and garage arrangements.

Two of the lightweight sidecars (Peaty's 2¾ Hawker and Hall's 2½ O.K.) were seen in trouble near Chipping Norton.

The bulk of the men checked in at Bath, with their mounts in showroom condition after the easiest day ever experienced in a big trial.

RETIREMENTS.

C. Hanwell (2¼ Cedos).
J. C. Walker (2¾ Edmund).
N. Hall (2½ O.K. sc.).
L. Peaty (2¾ Hawker sc.).
E. H. Gifford (6 Martinsyde sc.).
R. C. Davis (8 Chater-Lea sc.).

TIME LOST.

L. H. Wells (2¾ Hawker), 29m.
H. H. Nicholson (3½ Martinsyde), 18m.
A. Eckersley (3½ Duzmo), 12½m.

Tuesday morning broke fine, the dust being laid by night rain.

Two of the Martinsyde sidecars passing at Yarnton, between Oxford and Woodstock, during the first morning's run. The drivers are J. T. Bashall (leading) and E. H. Gifford

MEN AND MACHINES IN THE TRIAL.

A.J.S.
C. Williams (2¾).
E. Williams (2¾).
H. R. Davies (2¾).
F. W. Giles (7 sc.).
O. Wade (7 sc.).
Rex G. Mundy (7 sc.).

ARIEL.
F. A. Longman (3½).
L. Newey (3½).
W. Woodcock (3½).
A. Rollason (4½).
T. Peck (4½).
F. J. Watson (6 sc.).

ARDEN.
J. C. Humphries (2½).

BROUGH SUPERIOR.
W. A. Fell-Smith (8 sc.).

B.S.A.
M. C. Breese (6 sc.).

CEDOS.
A. G. Wall (2¼).
C. H. Hanwell (2¼).

CONNAUGHT.
I. F. Anderson (2½).
G. F. Mason (2½).
C. L. Sprosen (2½).

COULSON.
H. F. Edwards (2¾)
H. F. Fellowes (4).

CHATER-LEA.
R. C. Davis (8 sc.).

DOUGLAS.
R. C. Winn (3½).

DUNELT.
C. W. Vallings (4½).
B. Cathrick (4½).
P. Pehrson (4½ sc.).

DUZMO.
A. Eckersley (3½).

EDMUND.
J. C. Walker (2¾).
Graham Oates (2¾).

F.N.
J. Ford (7).
H. G. Bell (7).
T. W. Buckle (7).

G.N.
A. Fraser Nash (8.7).
F. Watson (8.7).

HARLEY-DAVIDSON.
H. R. Harveyson (4).

HAWKER.
P. R. Dowson (2¾).
L. H. Wells (2¾).
L. Peaty (2¾ sc.).

JAMES.
J. Lidstone (2¼).
G. Strange (3½).
G. E. Stobart (7 sc.).
H. Boynton (7 sc.).
G. S. Arter (7 sc.).

MATCHLESS.
F. J. Ellis (8 sc.).
F. O'Brien (7 sc.).
T. J. Ross (7 sc.).
G. D. Hardee (7 sc.).
R. Croucher (8 sc.).

MARTINSYDE.
A. A. Symes (3½).
H. H. Nicholson (3½).
J. T. Bashall (6 sc.).
G. H. Gifford (6 sc.).
W. H. Bashall (6 sc.).

MORGAN.
H. F. S. Morgan (8).
F. Boddington (10).
W. H. Elce (10).

NEW HUDSON.
E. Mundey (2¼).

NEW IMPERIAL.
B. Kershaw (2¼).
D. Prentice (2¼).
L. Horton (2¼).

NORTON.
N. Clayton Rusell (4 sc.).

O.K.
W. L. Handley (2½).
A. Milner (2½).
N. Hall (2½ sc.).
F. C. North (2½ sc.).

P. AND M.
P. Cunningham (3½ sc.).
R. Lewis (3½ sc.).
G. M. Townend (3½ sc.).

ROVER.
R. Elliott (3½).
G. Featherstonhaugh (3½).
A. J. Wilkes (3½).
A. L. Cranch (5-6 sc.).
G. W. Ravenhall (3½).

READY.
D. G. Merson (2¼).
D. Read (2¾).

RUDGE.
W. L. Danskin (3½).
R. B. Ewens (3½).
F. T. Sibley (3½).
W. E. Singer (7-9 sc.).

RALEIGH.
E. Foster (5-6).

SCOTT.
G. Hill (3¾).
W. Moore (3¾).
W. F. Scott (3¾).

SUNBEAM.
P. W. White (8 sc.).

SHEFFIELD-HENDERSON.
E. Searle (4).
L. Padley (4).

T.B.
F. S. Spouse (8).

THE HOUR RECORD.

AMONGST records, the 500 c.c. (Class C) figures for the hour are in the classic category, and they have almost invariably been held by riders of single-cylinder machines; only one rider in the history of motor cycle records, J. L. Emerson, has held the coveted title for a 500 c.c. twin-cylinder machine. As recorded on another page, he has set up new figures on a 3½ h.p. Douglas, and previously he gained a similar distinction for another flat twin mount.

NEXT YEAR'S T.T.

A LETTER from Mr. H. O. Wood, of the Scott Motor Cycle Co., Ltd., asks that as a result of reading in *The Motor Cycle* the full details of the proposed T.T. course in Belgium, his previously expressed views on the suitability of the change should be withdrawn so far as they regard the nature of the usual type of course used in Continental races. He considers from the description that the course will be as satisfactory as the Manx one.

NEW O.H.V. ROVER.

AT Saturday's Brooklands meeting Collard was mounted on a new overhead valve Rover. The valves, which are situated fore and aft, are inclined, and have simple rocker gear.

ANGLO-DUTCH TRIAL.

THE British team in the Anglo-Dutch Trial, to be held on Monday, September 26th, is almost complete; applications from private owners of 350 c.c. machines may still be considered.

CLUB NEWS.

(Continued from page 262.)

Dublin and District M.C.C.

This year a new route was selected for the annual twenty-four hours trial, which took place on Friday and Saturday, the customary journey to Donegal and back being impossible owing to so many of the roads in Co. Tyrone being trenched. Consequently, instead of Glengesh being the crucial point of the trial, the series of hills between Ballyvoy and Cushendun, near Fair Head in Co. Antrim, so well known in connection with the End-to-end trials, was the test piece of the day's run. Twenty-two riders took part.

Throughout the night and day rain fell persistently, and the test section near Fair Head was in the worst possible condition. Only nine made clean ascents, and of these the star performance was that of Dene Allen's Norton sidecar, which was the only passenger machine to make a clean ascent. Unfortunately, Allen had already gone astray, and lost marks. No lightweight made a clean ascent. All the survivors did well in the Co. Down non-stop section. Fifteen finished.

The trial was generally regarded as the severest of the year, not more than five gold medals being likely to be awarded. Likely winners of these are: Woods and Hurse on B.S.A.'s, Carton and O'Connor on Nortons, and McAllister on a Triumph. The sidecar prize will probably go to Doyle (8 New Imperial sc.), who was the only sidecarist in addition to Allen to finish.

Week-end Club Events.

Sept. 1.—Cambridge and County M.C. Hill-climb.
Sept. 1.—Doncaster and District M.C.C. Paper-chase.
Sept. 2.—Truro and District M.C. and L.C.C. Hill-climb at Porthtowan.
Sept. 3.—Skipton and District M.C. and L.C.C. Inter-team Trial.
Sept. 3.—Coventry Triangle M.C. Week-end Run to Dovedale and Matlock.
Sept. 3.—North Wales M.C.C. Fault Finding Competition.
Sept. 3.—Coventry and Warwickshire M.C. Social Run.
Sept. 3.—Glasgow M.C.C. 100 Miles Non-stop Trial.
Sept. 4.—Taunton and District M.C. and L.C.C. Picnic at Kiloe.
Sept. 4.—Barrow and District M.C. Club Run and Speed Judging Contest.
Sept. 4.—Leeds M.U. Club Run to Birstwith.
Sept. 4.—Canterbury and District M.C.C. Speed Trials.
Sept. 4.—Burton and District M.C.C. Club Run to Breedon-on-the-Hill.
Sept. 4.—Sheffield M.C.C. Inter-club Meet at Matlock.
Sept. 4.—Exeter M.C. and J.C.C. Club Run to Seaton.
Sept. 4.—Eastbourne and District M.C.C. Picnic at Lamberhurst.
Sept. 4.—Halifax and District M.C.C. Club Run to Worksop.
Sept. 4.—Wakefield and District M.C.C. Club Run to Brimham Rocks.
Sept. 4.—Portsmouth and District M.C. and L.C.C. Reliability Trial.
Sept. 4.—Woolwich, Plumstead, and District M.C. Club Run to Eastbourne.
Sept. 4.—Central London M.C.C. Social Run to Cæsar's Camp.

Eastern Centre A.C.U.

The prize for the best club attendance at the rally on the 21st ult. was won by the Ipswich Club.

Central Cornwall M.C.C.

Perhaps the most exciting event at the annual gymkhana on Wednesday of last week was the "long jump," the three winning machines clearing 32ft. 3in., 27ft. 10in., and 24ft. 6in. respectively. A Triumph made the 32ft. jump.

East Midland Centre A.C.U.

The winner of the skilful driving contest for sidecars at the Stanford Park gymkhana, reported in our last issue, was A. G. Fenn (5-6 Raleigh sc.), not W. Bent, as announced.

Birmingham M.C.C.

There was a big muster of competitors and spectators (nearly 800) at the second annual charity gymkhana which was held at Castle Bromwich on Saturday. Numerous prizes, all useful, were awarded.

Many novel events caused considerable amusement and excitement; and, as all the expenses were borne by the club, local charities should benefit from the undoubted success of the venture.

On the week-end, September 10-11th, a closed trial will be held, the route being to Chepstow and back. Entries close on Saturday next.

HILL-CLIMBING UNDER IDEAL CONDITIONS.

Midland Centre Event on a Hill with a Perfect Surface.

IF in many districts the war left a legacy of battered road surfaces for the everyday rider, the club speedmen may rejoice in some of the perfect stretches of ideal tarred roadway to be found in certain derelict military camps.

The East Midland Centre "discovered" a splendid speed kilometre, on which over 90 m.p.h. has been achieved, at Clipstone Camp, near Mansfield; while the Midland Centre has made a speciality, a climb of gentle curve and gentle gradient, at Penkridge Camp. It lies in the heart of Cannock Chase, and the summit commands some glorious views.

On Saturday last, when the Wolverhampton and Kidderminster M.C.C.'s held their hill-climb, the weather was not propitious, but, despite a strong wind blowing down the hill, some quite reasonably high speeds were attained. No doubt the proximity of the "Six Days" accounted for the absence of the "big shouts" in the Wolverhampton district, for, with the exception of Bennett (the Grand Prix winner) and Reg. Brown, the first flighters were absent. For once in a while, therefore, the day lacked the inevitable A.J.S.-Sunbeam duel of Davies and Dance.

Changing the wristlet between the tapes in the relay race on Penkridge Bank. A H. Mee (2¼ Diamond-Jap) "handing over" to A. Bennett (3½ Sunbeam).

Few Sidecar Entries.

The sidecar classes were run off first, but the entries were few. In the 500 c.c. class Reg. Brown (3½ Sunbeam sc.) tied with F. J. Adam (3½ Norton sc.) in 54s., but the former polished up his opponent by 2⅝s. on the re-run. T. C. Greenwood (4 Sunbeam sc.) enjoyed his trip in the "over 500 c.c." sidecar class, having a walk-over, and beat Reg. Brown in the next class for "any capacity."

Next followed the 275 c.c. solo mounts, a mixed field of seven producing an outstanding performer, to wit, A. R. Evans, whose 2¼ h.p. J.A.P. covered the uphill kilometre, wind, and all, in 50s. (45 m.p.h.). Immediately following, the 275 to 350 c.c. class demonstrated, if nothing else, the astonishing speed of the little engine which won the previous event; none of the 349 c.c. machines got within 10s. of it.

Amongst the 500 c.c. machines, a Norton rider, A. L. Tompkins, speed-wobbled all the way up the hill in 39⅕s (57.4 m.p.h.), being just too fast for Bennet (3½ Sunbeam), who took four-fifths of a second longer. Class 7, for solo machines over 500 c.c., provided fastest time of the day, 36s. (62.5 m.p.h.), T. C. Greenwood being the rider, on a 4 h.p. Sunbeam.

A Handicap and a Relay Race.

As an interlude, or comic relief, from the high-speed climbs to which the spectators had got accustomed, a match between two Ner-a-cars took place. The winner's time was 2m. 9s. (17.4 m.p.h.).

The last event having satiated the crowd with speed, a handicap based on the previous best performances was run off, and the outstanding riders were most fairly penalised, for the nett times of the whole of the mixed field of seventeen show fourteen within four seconds of the winner.

Followed a relay race, in which pairs of riders competed. One man stationed himself between two tapes halfway up the hill; the other raced from the start, after placing an elastic band on his wrist, pulled up between the tapes, handed over the wristlet, which the second man took over and carried to the summit. Timed from the first man's start to the second man's finish; an interesting event with all the spectators concentrated at the change-over point, and the timekeeper alone at the top in solitary state. Results:

CLASS 1.—SIDECARS, UNDER 500 C.C.

	Time.
R. Brown (3½ Sunbeam)	51⅕s.
F. J. Adam (3½ Norton)	53⅗s.

First run a tie in 54s.

CLASS 2.—SIDECARS, OVER 500 C.C.

T. C. Greenwood (4 Sunbeam), walk over ..	45⅖s.

CLASS 3.—SIDECARS, ANY CAPACITY.

T. C. Greenwood (4 Sunbeam)	46⅕s.
R. Brown (3½ Sunbeam)	53⅗s.

CLASS 4.—SOLO, UNDER 275 C.C.

A. R. Evans (2¼ J.A.P.)	50s.
G. Hill (2¼ Diamond-Jap)	52⅖s.
D. Atkin (2¼ Hobart-Jap)	53⅗s.

CLASS 5.—SOLO, FROM 275 C.C. TO 350 C.C.

S. T. Abbotts (2¾ Blackburne)..	61⅖s.
J. E. Turton (2¾ A.J.S.)	62s.
C. E. Greenwood (2¾ Sunbeam)	65⅕s.

CLASS 6.—SOLO, 350 C.C. TO 500 C.C.

(OPEN.)

A. Bennett (3½ Sunbeam)	40s.
F. J. Adam (3½ Norton)	40⅖s.
Reg. Brown (3½ Sunbeam)..	41s.

(CLOSED.)

A. L. Tompkins (3½ Norton)	39⅕s.
R. Eveson (3½ Norton)	40⅖s.
Reg. Brown (3½ Sunbeam)	41s.

CLASS 7.—SOLO, OVER 500 C.C.

T. C. Greenwood (4 Sunbeam)	*36s.
B. Richardson (4 Sunbeam)	50⅖s.

* Fastest time of day.

CLASS 8.—SOLO, ANY CAPACITY.

(OPEN.)

T. C. Greenwood (4 Sunbeam)	37⅖s.
F. J. Adam (3½ Norton)	40⅖s.
Reg. Brown (3½ Sunbeam)	42⅖s.

(CLOSED.)

A. L. Tompkins (3½ Norton)	40s.
R. Eveson (3½ Norton)	41⅕s.
Reg. Brown (3½ Sunbeam)	42⅖s.

MATCH BETWEEN TWO NER-A-CAR RIDERS.

W. Rudge (2¼ Ner-a-car)	2m. 9s.
J. T. Ireland (2¼ Ner-a-car)	2m. 17⅕s.

CLASS 9.—HANDICAP.

J. G. Nicksou (3½ Douglas, handicap 12⅖s.)	36s.
F. C. Ingram (2¼ Villiers, 30⅖s.)	36⅕s.
G. W. Jones (2¼) New Hudson, 36⅖s.) } R. Eveson (3½ Norton, 1⅖s.) .. .. }	37⅖s.

CLASS 10.—RELAY RACE.

A. R. Evans (3½ Sunbeam) and E. Wheeler (2¼ New Imperial)	63s.
A. H. Mee (2¼ Diamond) and A. Bennett (3½ Sunbeam)	64⅖s.
C. E. Greenwood (2¾ Sunbeam) and T. C. Greenwood (3½ Sunbeam)	66s.

LONG DISTANCE TRIAL IN CANADA.

THE Toronto M.C.C. recently held its annual endurance run from Toronto to Windsor and return—a distance of 540 miles. Twenty-three started, and thirteen finished. Taking it all the way through, it was a gruelling contest, some bad spots on the roads and the terrific heat making rough going.

The best performance in the run was made by B. Mallory, mounted on a single-cylinder Triumph. He obtained one of the three perfect scores in the professional class (at 24 m.p.h. average).

One untoward incident occurred. George Fox, a solo rider, had something go wrong with one of his controls, a bad toss resulting. George Wood gave him first aid, and saw him safely to the hospital, but in doing so sacrificed his chances in the competition. In the words of our local correspondent: "We are just thinking that this is a darned creditable act after a rider has had two days' fighting to keep his score perfect, when it would be so easy to slip by and pass the buck to the next man."

The results were as follows:

CLASS 1. Solo, Professional (24 m.p.h.).—B. Mallory (4 Triumph). Only finisher in this class.

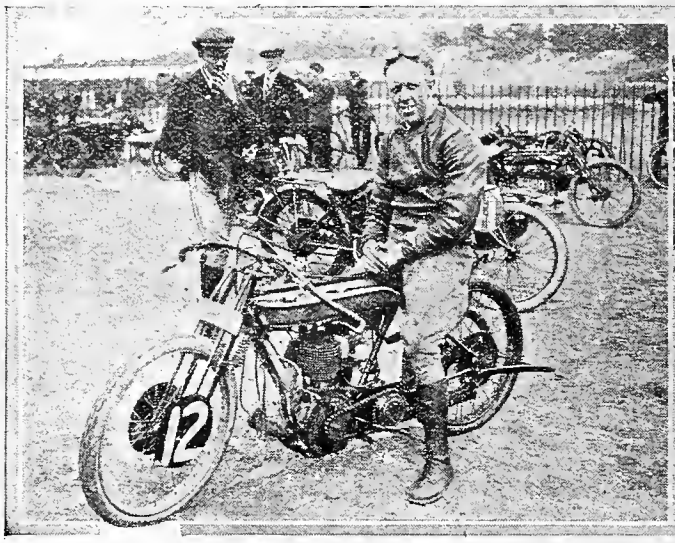
CLASS 2. Sidecar, Professional (24 m.p.h.).—P. McBride (10 Henderson sc.) and A. Blackall (7-9 Harley-Davidson sc.).

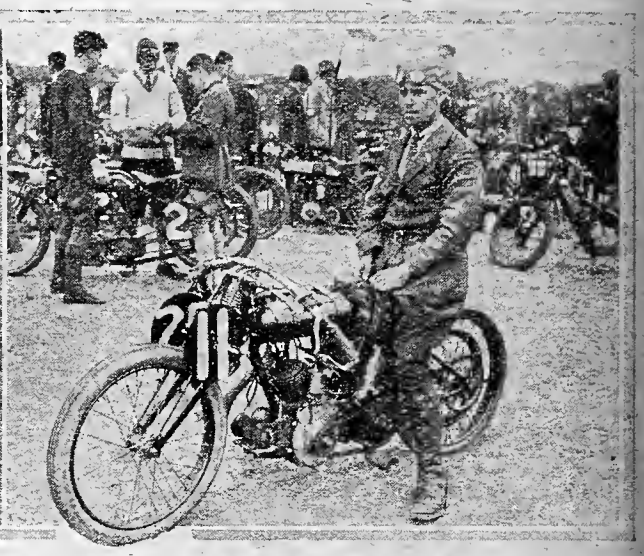
CLASS 3. Solo, Amateur (20 m.p.h.).— 1, G. Tackey (7-9 Reading-Standard); 2, W. St. George (4 Triumph); 3, A. Shuttleworth (7-9 Indian).

CLASS 4. Sidecar, Amateur.—1, A. Cartwright (7-9 Harley-Davidson sc.); 2, G. Meade (7-9 Harley-Davidson sc.).

DULL RACING AT BROOKLANDS.

Series of "Walk-overs" at Fifth B.M.C.R.C. Race Meeting. Harley-Davidson Records.





Two wins apiece fell to G. H. Tucker on a 3½ h.p. Norton (left) and E. H. Gifford (right) on the 3½ h.p. and 6 h.p. Martinsyde.

THE weather, though dull and breezy, kept fine for the B.M.C.R.C. meeting at Brooklands last Saturday.

Racing began punctually at 2 p.m., with the three-lap handicap for motor cycles over 500 c.c. Remington (Blackburne), and Packman (Sunbeam) got away in good form, but at the end of the first lap Allchin (Harley-Davidson) was leading, with Gifford (Martinsyde) second, and Packman (Sunbeam-Jap) some way behind. The result was an easy win for the Martinsyde at 71.31 m.p.h.

	Start. m. s.
1. E. H. Gifford (3½ Martinsyde) ...	1 39
2. C. F. Temple (7-9 Harley-Davidson)	scr.
3. G. Packman (8 Sunbeam-Jap) ...	1 6

Also ran: A. G. Miller (7-9 Indian), T. R. Allchin (4 Harley-Davidson), H. R. Harveyson (7-9 Harley-Davidson), H. Le Vack (7-9 Indian), O. M. Baldwin (8 Matchless), and J. E. Harwood (8 Zenith-Jap).

The second race, like all the others (excepting one sprint), was a three-lap handicap, and was open to machines not exceeding 500 c.c. Both the recent record breakers, Emerson and Halford, were competing in this event, and the former's Douglas went off with a mighty roar. Tucker (3½ Norton) won easily at 70.99 m.p.h.

	Start. m. s.
1. G. H. Tucker (3½ Norton) ...	0 57
2. F. B. Halford (3½ o.h.v. Triumph)	0 12
3. H. Le Vack (7-9 Indian)	0 9

Also ran: J. W. Tollady (3½ Scott Squirrel), J. L. Emerson (3½ Douglas), V. Horsman (3½ Norton), Eric Longden (3½ Coulson-Jap), S. L. Bailey (3½ Douglas), F. A. Longman (3½ Ariel), C. Rayersbach (3½ Norton), A. V. Eckersley (3½ Duzmo), and F. Boshier-Jones (3½ Douglas).

The third race was for lightweights not exceeding 275 c.c., and did not attract many entries. Tollady, this time on a Velocette, was limit man, and the others never got near him.

	Start. m. s.
1. J. W. Tollady (2½ Velocette) ...	2 3
2. J. V. Prestwich (2½ Diamond-Jap)	0 21
3. C. Fairweather (2½ Blackburne)	0 51

Also ran: S. M. Greening (2½ Francis-Barnett-Jap), E. J. Anderson (2½ New Imperial-Jap), and A. King-Smith (2½ Morris).

The fourth race, for motor cycles exceeding 275 c.c. but not exceeding 350 c.c., was hardly more entertaining than its predecessors. It was fairly well supported, but provided no excitement, either as regards speeds or close finishes. Swan (2¼ New Imperial) led until the final lap, when Brockbank passed him, winning at 63.20 m.p.h.

	Start. m. s.
1. H. F. Brockbank (2¾ Brock-Blackburne)	0 54
2. A. A. Swan (2½ New-Imperial)	2 18
3. H. J. Line (2¾ Martin-Jap) ...	1 18

Also ran: E. Remington (2¾ Blackburne), A. G. Miller (2¾ Martin-Jap), A. Watson (2¾ Douglas), K. Don (2¾ Massey-Arran), E. Longden (2¾ Coulson-Jap), S. E. Longman (2¾ Wooler), E. D. Dowell (2¾ Douglas), and C. Fairweather (2¾ Blackburne).

Sidecar outfits not exceeding 1,000 c.c. and two cycle cars, one four-wheeled and one three-wheeled, competed in the fifth event. Here Tucker again distinguished himself, while the two cycle cars were not placed.

Tucker's win was an easy one, his speed being 59.29 m.p.h.

	Start. m. s.
1. G. H. Tucker (3½ Norton sc.) ...	2 6
2. C. F. Temple (7-9 Harley-Davidson sc.)	0 6
3. R. C. Charlesworth (6 Zenith sc.)	2 6

Also ran: O. de Lissa (8 Motosacoche sc.), W. H. Marchant (8 Zenith sc.), D. R. O'Donovan (3½ Norton sc.), S. E. Longman (8 Zenith-Jap sc.), H. Le Vack (7-9 Indian sc.), E. Bridgeman (7-9 Indian sc.), S. L. Bailey (6 Douglas sc.), R. Dequin (8 Zenith-M.A.G. sc.), E. Baragwanath (8 Martin-M.A.G. sc.), and E. B. Ware (8 Morgan-Jap).

The one scratch race, unlimited, was well supported, and all got away well except Le Vack and Harveyson, who both stopped after a few yards. The result was a very easy win for Remington.

1. E. Remington (8 Blackburne).
2. C. F. Temple (7-9 Harley-Davidson).
3. O. M. Baldwin (8 Matchless-M.A.G.).

Also ran: F. B. Halford (3½ Triumph), J. Emerson (3½ Douglas), W. E. Dann (8 Zenith), A. G. Miller (7-9 Indian), E. Longden (3½ Coulson-Jap), F. J. Boshier-Jones (3½ Douglas), and F. Roberts (3½ Coventry Eagle).

Motor cycles of any capacity, driven by members of the B.M.C.R.C. who had never won a first prize on Brooklands, competed in the seventh event, which was started twenty minutes late, as the handicaps had to be revised. Swan (New Imperial) led easily in the first two laps. At the end of the third lap he dropped back to sixth place, and Gifford (Martinsyde) was again triumphant, but there was a keen struggle for second place between Brockbank and Packman. Gifford's speed was 72.05 m.p.h.

	Start. m. s.
1. E. H. Gifford (6 Martinsyde) ...	0 48
2. H. F. Brockbank (2¾ Brock-Blackburne)	1 9
3. G. Packman (8 Sunbeam-Jap) ...	0 15

Also ran: H. J. Line (2¾ Martin), J. P. Riddock (3½ Blackburne), A. A. Swan (2½ New Imperial), A. G. Miller (7-9 Indian), R. E. Dicker (3½ Norton), C. H. Mocatta (2¾ Coulson), E. J. Anderson (2½ New Imperial), and J. E. Harwood (8 Zenith).

Quite a good entry was received for Event 8, open to members of the Public Schools M.C.C. The winner's speed was 50.38 m.p.h.

	Start. m. s.
1. L. Yeowell (3½ Rudge)	3 51
2. N. A. Lindley (2½ Omega-Jap) ...	5 12
3. H. B. Browning (3¾ Scott) ...	3 18

Also ran: D. W. Bonham-Carter (3 A.B.C.), C. Keith Robinson (3 A.B.C.), A. G. Miller (2¾ Martin-Jap), C. H. Mocatta (2¾ Coulson-Jap), R. C. Charlesworth (6 Zenith), W. E. Bishop (5 Zenith), and J. T. A. Temple (3½ Norton).

The final event was open to members of the North London M.C.C. Greaves, the winner, averaged 53.17 m.p.h.

	Start. m. s.
1. R. W. Greaves (4 Norton sc.) ...	3 45
2. G. H. Thompson (3 A.B.C.) ...	1 36
3. H. R. Harveyson (7-9 Harley-Davidson)	scr.

Also ran: C. Wade (3 A.B.C.), S. M. Greening (2½ Francis-Barnett), D. Culon (7-9 Indian sc.), and A. H. Harrison (3¾ Scott).

During the day C. F. Temple, on a 7-9 h.p. Harley-Davidson, beat the Class E (1,000 c.c.) flying five miles solo and sidecar records, at the remarkable speeds of 94.49 m.p.h. and 74.72 m.p.h. His times were:

CLASS E.

	Time.
FLYING FIVE MILES (Solo) ..	3m. 10.5s.
FLYING FIVE MILES (Sidecar) ..	4m. 0.9s.

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4½ h.p. Combination £138 0
2¾ h.p. Blackburne engine .. £88 0
2½ h.p. 2-stroke, sporting .. £48 6

MARTINSYDE.
6 h.p. Combination £145 0

MATCHLESS.
8 h.p. standard Combination £185 0
8 h.p. sports Combination .. £160 0

ENFIELD.
8 h.p. Combination £160 0
2¼ h.p., 2-stroke £65 0

ZENITH.
8 h.p. Combination £177 0
5 h.p. sports £115 0

ARIEL.
3½ h.p. solo £100 0
4½ h.p. Combination £150 0
6-7 h.p. Combination £165 0

B.S.A.
4¼ h.p. Combination £152 0
6-7 h.p. Combination £175 0

RALEIGH.
5-6 h.p. Combination £184 16

O.K.-JUNIOR.
2½ h.p. solo £39 18

TRIUMPH.
4 h.p. Combination £165 0

P. & M.
3½ h.p. Combination £155 0

NEW 1921/22 CARS

G.N. Popular £188 0
MORGAN de Luxe £188 0
A.B.C., standard £383 0
A.B.C., sports £346 10
ROVER £262 0
LAGONDA, 4-seater £420 0
MORRIS-COWLEY, 4-seater. £425 0
MORRIS-COWLEY, 2-seater. £375 0

TAYLORS

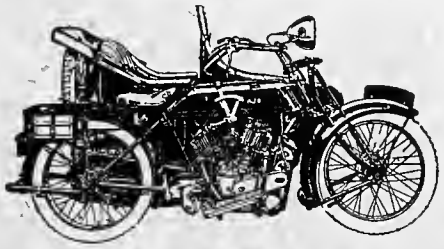
CASH OR CREDIT

For the convenience of those wishing to purchase out of income, we will supply any motor cycle, combination, or light car, of our own stock, listed on this page, on the deferred payment system.

HERE IS AN EXAMPLE:

Cash price of Combination	£100 0 0
Deposit	34 0 0
	£66 0 0
Interest at 7½%	4 19 0
Balance ..	£70 19 0
Payable in 12 monthly instalments of ..	£5 18 3

We deal direct with you, and not through financial agents.



Immediate Delivery of all Models

A.J.S. 7 h.p. 2-seater, sidecar £203 0
A.J.S. 7 h.p. 1921 Combination £195 0
A.J.S. 2¾ h.p. 1921 Sports Model £95 0

Sole London and District Distributors for BRITISH EXCELSIOR

SHOWROOM SOILED AND USED MOUNTS

1921 **SCOTT** Combination, dynamo lighting £185 0
1921 2¾ h.p. **WOOLER,** Brooklands model £76 0
1921 8 h.p. **ZENITH** Comb. £165 0
1921 8 h.p. **ROYAL ENFIELD** Combination £150 0
1921 3½ h.p. **P. & M.** Comb. £138 10
1921 4 h.p. **TRIUMPH** Combination, all chain drive £162 0
1921 8 h.p. **BRITISH EXCELSIOR** de luxe Combination, dynamo, hood, screen, etc. £206 10
1920 3½ h.p. **P. & M.,** solo, equipped £85 0
1920 **A.J.S.** Combination, dynamo £175 0
1920 **A.J.S.** Combination, fully equipped £165 0
1920 4 h.p. **TRIUMPH** and Canoelet Sidecar £120 0
1919 **A.J.S.** Combination .. £135 0
1918 **A.J.S.** Combination .. £115 0
1918 8 h.p. **ENFIELD** Comb. £115 0
1918 4 h.p. **TRIUMPH** and Sidecar £83 10
1916 4 h.p. **DOUGLAS** Comb. £80 0
1914 4 h.p. **B.S.A.** Combination, dynamo lighting . £75 0
1914 3½ h.p. **SINGER** and Sidecar £60 0
1914 6 h.p. **ENFIELD** Comb. £65 0
1920 3 h.p. **A.B.C.,** dynamo lighting £100 0

SPECIAL SIDECAR OFFER

A limited number of the famous **WATSONIAN SIDECARS** for Zenith and Harley-Davidson Motor Cycles at the greatly reduced price of **£28.** Other makes at London's Lowest Prices.

For Business, Pleasure, or Health, the motor cycle is a sound investment

H. TAYLOR & CO., LTD.

SHOWROOMS 52/53, Sussex Place, South Kensington, S.W.
21a, Tottenham Court Road, London, W.C.

'Phones .. .. Kensington 7260; Museum 1240
Telegrams .. .. "Dynametro, Westcent, London."

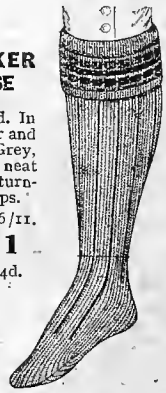
GAMAGES

THE PREMIER MOTOR CYCLISTS' STORE OF THE WORLD

N.B.—Money returned in full if you are not satisfied.

MEN'S WOOLLIES (as illustration).
A really good cardigan coat, slightly brushed, with two pockets and ribbed borders, in Canary and the new Maize shade The ideal golf coat. Must be cleared. Worth 30/-. Post 6d. **21/-**

SLEEVELESS WOOLLIES.
A cardigan coat without sleeves, giving perfect freedom to the arms Made with two pockets and woven border, in brown, canary, camel, and grey shades.
Special Price. Post free..... **17/11**
With contrasting coloured border. Well worth 25/6 today. Post free.... **18/11**



KNICKER HOSE
Brushed. In Heather and Lovat Grey, with neat fancy turn-over tops.
Worth 6/11.
4/11
Post 4d.

The "TT" Safety Helmet
Successfully used at the T.T. Races, Isle of Man, 1914, 1920, and 1921. Price complete **55/-**

Write now for our latest **MOTOR CYCLISTS' NEEDS LIST** sent post free on request.

"Brooklands" HELMET
In fine selected skins Neat fitting flap, opening or closed as desired, and can be neatly rolled. Buckle and strap chin fastening. Fleecy lined. Our price Post 4d. **6/6**

THE CYCLE CAP
Fawn, Waterproof Light weight, Ear and Neck Flaps. **10/6**
Also in Holland Crash material....4/6.

THE "DOUGLAS" SUIT
Specially recommended for Motor Cyclists, consisting of double-breasted Jacket and Leggings, with gaiter front as illustrated. Strong double Texture in Fawn. Suit complete..... **47/6**
Superior quality, 60/-. Send chest and inside leg measurement.

SEATLESS TROUSERS
only, with full protection to the body Superior quality 25/6 per pair. **20/-**

GAMAGES, HOLBORN, LONDON, E.C.1.

'GRIPIO'

has gripped Public favour.

8in. size
7/11
Post Free.

The Wrench that does not Monkey with the Nuts.

'Gripio' has proved itself so useful that orders for thousands have been dealt with. It grips any pipe, bolt, nut, or fitting, merely with a slight thumb pressure. No power is wasted. It is all converted into a gripping, turning force. Motorists, mechanics, and workmen all over the country are praising it.

Money back Guarantee with each Wrench sold.

Applications from live Agents invited.

PATENT 'GRIPIO' WRENCH AND SPANNER CO., LTD., 12, Hackins Hey, Dale Street, LIVERPOOL.

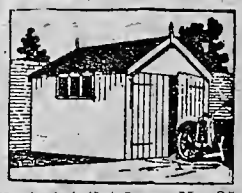
K

PORTABLE WOOD IRON ASBESTOS BUILDINGS

OF EVERY DESCRIPTION

Horticultural, Rustic, and Poultry Appliances.

MOTOR CYCLE HOUSES FROM £7 15 0



MOTOR CAR HOUSES FROM £10 2 6

Send for Illustrated Catalogue No. 85, Post Free.

T. BATH & CO., LTD., 18, SAVOY STREET, LONDON, W.C.2

OUR NEW SHOWROOMS ARE NOW OPEN.

The Wright

Neat. Light. Clean. Bright. Cheap.

Embossed Aluminium DOUBLE-SIDED FRONT & SQUARE REAR NUMBER PLATES *for Motor Cycles*

With or without Licence Holder.
Delivery by return.
WRIGHT & SON, Dept. C1
Edgware, Midd'x.
Phone: "Edgware Four."

17/6 A PAIR *postage & packing paid*
Licence Holder 5/- extra.

Hackney Carriage and other plates supplied

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable & Co. to ILIFFE & SONS Ltd., and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box ooo, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. ooo, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½ %. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited. The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., June, 1921, as new throughout, Lucas dynamo lighting, Lucas horn, fitted Clincher extra heavy, £5 worth spare parts, also spare jet, new Palmers, very best, tax paid; £110.—Young, 76, Mitcham Lane, Streatham. [6537

EASTERN GARAGE

The following is a selection of machines in our stock. Complete lists sent upon request. Purchase may be made by the payment of one quarter down and the balance extended over twelve months.

NEW 1921 MODELS

A.J.S., 2¾ h.p., 3-speed	£95	0
A.J.S. 7 h.p. Combination	£195	0
ARIEL 4½ h.p. Combination	£150	0
ARIEL 6-7 h.p. Combination, all chain	£165	0
B.S.A. 6-7 h.p. Combination, with dynamo lighting	£195	15
B.S.A., 4½ h.p., Model H, and No. 3 Sidecar	£152	0
LEVIS, 2¼ h.p., Popular Model	£60	0
LEVIS, 2¼ h.p., 2-speed	£66	0
MARTINSYDE 6 h.p. Combination	£145	0
MATCHLESS 8 h.p. Combination	£185	0
MATCHLESS 8 h.p. Family Combination	£191	10
METRO-TYLER, 2½ h.p., 2-sp., sports model	£60	0
N.U.T., 3½ h.p., Model P, dynamo light.	£135	0
NEW IMPERIAL, 2½ h.p., Model 1	£73	10
NEW IMPERIAL, 2½ h.p., Model 2	£80	17
NEW IMPERIAL 8 h.p. Combination	£168	0
RALEIGH, 5-6 h.p. flat twin, 3-speed, spring frame	£147	0
RUDGE-MULTI, 3½ h.p.	£85	0
ROYAL ENFIELD, 2¼ h.p., 2-speed	£65	0
ROYAL ENFIELD, 2¼ h.p., 2-speed, with kick-starter	£70	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL ENFIELD 8 h.p. Combination, with dynamo lighting	£182	0
TRIUMPH, 4 h.p., Model H, chain-cum-belt	£115	0
TRIUMPH, 4 h.p., Model S.D.	£125	0
TRIUMPH, 2¼ h.p., Junior Model	£70	0

SECOND-HAND

(Overhauled and Guaranteed).

BROUGH, 1920, 5 h.p., 3-speed, clutch and kick-starter, Swan sporting Sidecar, lamps, horn, speedometer, windscreen. Tax paid	£115
DOUGLAS W.D. 4 h.p. Combination, 3-speed, clutch and kick-starter, as new	£105
DOUGLAS, 1920, 2¾ h.p., 3-speed, clutch, kick-starter, accessories. Tax paid	£85
ENFIELD 1917 8 h.p. Combination, 2-sp., clutch and kick-starter, as new	£120
ENFIELD, 1917, 3 h.p., 2-speed, clutch and kick-starter, lamps, horn. Tax paid	£55
ENFIELD, 1921, 2¼ h.p., 2-stroke, 2-speed, Lucas lamps, horn. Tax paid, as new	£57
INVICTA, 1920, 3½ h.p., 3-speed, clutch and kick-starter, and new Millford Sidecar. Shop-soiled only	£110
MATCHLESS 1920 8 h.p. Combination, 3 speed, clutch and kick-starter, lamps, horns, speedometer, hood, screen. Tax paid	£140
METRO-TYLER, 1920, 2¾ h.p., 2-speed, lamps, and horn	£55

CYCLECARS.

COVENTRY PREMIER, 1921, 8 h.p., dynamo lighting, finished in elephant grey, licence and insurance paid	£220

EXCHANGES ARRANGED.

Eastern Garage Co.,
Official Repairers to R.A.C., A.C.U., A.A. & M.U.
418, Romford Rd., Forest Gate, E.7
'Phone: 490 East Ham. 'Grams: Egaraco, L'don.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., late 1920, dynamo, insurance, licensed, mileage 900, as new; £99; evenings.—86, Norwood Rd., Tulse Hill. [6704

A.B.C. 3h.p., 1920, Lucas dynamo lighting, Cowey horn, long copper exhaust pipes, tax paid; bargain, £95.—P. J. Evans, 81-91, John Bright St., Birmingham. [X8099

Ace.

ACE Combination, 1921, dynamo lighting, horn, mirror, speedometer, C. and M. de luxe sidecar with disappearing hood and screen, tax paid, cost £320, 800 miles; £205.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6478

Acme.

1920 Acme-Jap 8h.p. Combination, hood, screen, lamps, horn, Tan-Sad, spare wheel, licensed, excellent condition; £115.—Edwards, 50, Harrington Rd., South Kensington. [7164

A.J.S.

PREMIER Motor Co. for 1921 A.J.S.

ONLY 4% Extra for Easy Payments.

IMMEDIATE Delivery of Latest 7h.p. Combination, spare wheel, screen, etc., £195; 2¾h.p. 3-speed solo, £95; exchanges arranged.—The Premier Motor Co., Aston Rd., Birmingham. [X7750

A.J.S., best after test, all models.—Merrick's Stores, 174, Listerhills Rd., Bradford. [2219

1915 6h.p. A.J.S. Combination; £75.—J. Hall, Engineer, Wigton, Cumberland. [7211

1914 A.J.S. and Millford Sidecar, complete lamps, etc.; £95.—Cross, Agent, Rotherham. [X8151

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

LATE 1920 A.J.S. Combination, every accessory, practically new condition throughout; £145.—18, Hestercombe Av., Fulham. [7269

1916 A.J.S. 6h.p. Combination, interchangeable wheels, equipped with speedometer, lamps, Tan-Sad; £75.—37, Arlington Rd., Surbiton. [6976

STANLEY Motor Cycle Co.—Immediate delivery any A.J.S. model; spares stocked; deferred payments. —173-4, Railway Approach, Shepherd's Bush. [6271

A.J.S. Combination for sale, 1918, faultless condition, accessories, screen; nearest £120; part exchange solo.—H. Rowdon, Lyndhurst, Hants. [6804

A.J.S. Combination, perfect condition, 4 detachable wheels, all accessories, very good tyres, tax paid; £90, or near offer.—Hall's Garage, Ltd., Stevenage. [6378

LATE 1919 6h.p. A.J.S. Combination, complete reconstruction due to damage by fire; £150, or nearest.—Anderson, Whitehouse, Inveresk, Midlothian. [6510

SMART 1918 A.J.S. Combination, Lucas lamps, Klaxon, speedometer, new extra large bulbous sidecar, tyres as new; £145.—330, Burdett Rd., Limehouse. [7093

1921 A.J.S. 7h.p. Combination, as new, Lucas lamps, licence paid end of year; cost £225, accept £190; any trial.—Webber, 34, Queen's Terrace, Morecambe, Lancs. [5221

6h.p. A.J.S. Combination, late 1919, complete with electric light, spare wheel, storm apron, etc., in very good order, tax paid; £135.—J. Fridlington, Dunnington, York. [6512

A.J.S. 1920 6h.p. Combination, condition as new, all on, Tan-Sad, clutch hand and foot controlled, tax and insurance paid; £150.—Hudson, 114, Dartmouth Park Hill, N.19. [6817

1920 A.J.S. 6h.p. Combination, dynamo lighting, speedometer, fully insured and equipped; bargain, £155, or level exchange Morgan.—Snow, 91, Mapledene Rd., Dalston, E.8. [7257

A.J.S. 1921 7h.p. Combination, brand new, in stock; immediate delivery, at makers' reduced price, £195. Make sure of this now.—Wilkins, Simpson, opposite Olympia, London. [4244

NEW 1921 A.J.S. Combination, spare wheel complete, horn, done 500 miles only, insured and tax paid; bargain, £185; owner buying car.—M.M., 51, Victoria Rd., Darlington. [6333

A.J.S. 1916 4h.p. Combination, Henderson spring frame, acetylene and accumulator lighting, makers' overhaul July, excellent condition.—Pakenham, Wetwood, Eccleshall, Staffs. [6932

1920 A.J.S. Combination, completely equipped, speedometer, Tan-Sad, Easting, and special toolbox, lucas lamps; £150, no offers.—Capt. Fitzgerald, Central Flying School, Upavon, Wilts. [6909

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Combination, new 1919, hood, screen, lamps, D.A. lighting, speedometer, horn, spare wheel, all in new condition; price £130, or offer. — D., 102, Salterford Rd., Tooting, London. [7050

£180.—1921 A.J.S. combination, lamps, horn, etc., in magnificent condition, mileage under 1,000; cost last month £226, very great bargain.—H. Julian, 84, Broad St., Reading. 'Phone: 1024. [6379

2¾h.p. A.J.S., 2-speed, clutch, new cylinder, piston, valves, tappets, chain sprockets, chain, Thomson-Bennett mag., Binks, Dunlops; £39; take 2-stroke engine part.—Platt, Duxbury, Chorley, Lancs. [6282

2¾h.p. A.J.S., 3-speed, K.S., good appearance and mechanical condition, many new parts, new Binks, good tyres, and new chains, fully equipped; £50, no offers.—Airey, Oxspring, Penistone. [6313

1916 A.J.S. 2¾h.p., competition machine, special cylinder, with variable compression, new gears, etc., in perfect condition, long exhaust, very fast; price £60.—63, South End, Croydon. 'Phone: 2431. [6403

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

LATE 1919 A.J.S. Combination, licensed, fully equipped, speedometer, spare electric lamps, handle-bars, small mileage, excellent condition; bargain, £140.—Walker, Upperfold, Roehampton. Putney 379. [7058

A.J.S. 1918 6h.p. Combination, in splendid order, hood, screen, Lucas lamps and horn, Cowey speedometer; a real bargain, £120.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

1921 (April) A.J.S. 7h.p. Combination, Cowey trip speedometer, D.A. lighting, mechanical horn, mileage 1,300, spare wheel used, condition as new, tax and insurance paid, Binks carburetter, all spares; bargain, best over £200.—76, Wharfedale Gardens, Norbury. [6800

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

£48.—A.J.S. 1913 5-6h.p., kick start, clutch, recently enamelled, engine overhauled, new big and little end bearings, almost new Palmer cord and Dunlop extra heavy, new tubes, Tan-Sad, tax paid, powerful solo or good sidecar machine.—Griffiths, Albany Rd., Hersham, Walton-on-Thames. [X8217

Alldays

2¾h.p. Alldays Allon, hand clutch, 2-speed, late 1919.—Pidduck, Whitchurch, Salop. [X8134

ALLON, 1920, 2-speed, clutch, kick start, lamps, accessories; £54.—Spokes, Hightown, Crewe. [6983

ALLDAYS-ALLON, countershaft, tyres perfect, good condition; 25 gns.; evenings.—67, Fernlea Rd., Balham. [7243

ALLDAY 6-8h.p. Combination, 3-speed, countershaft, chain drive, luxurious sidecar; £70, no offers.—80, Manor Park, Lee, S.E. [7094

ALLDAYS Allon, 2¾h.p., 2 speeds, clutch, kick starter; in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8070

ALLDAYS Allon, 2¾h.p., 2 speeds, equipped, splendid condition; £35.—245, Lower Rd., Rotherhithe, S.E. (15 mins. tram or bus London Bridge.) [7066

ALLDAYS Allon, 2¾h.p., 1921 model, Lucas lighting set, only ridden fortnight, unscratched, tax paid; £70; receipt shown.—Gunary, South Hall, Rainham, Essex. [6776

1914 Alldays 8h.p. Twin Combination, chain driven, 3 speeds, Bosch mag., good tyres, Canoelet sidecar, wind screen, P.H. lights, tax paid; £90, near offer.—8, St. Helens Rd., Bolton. [6917

ALLDAYS Allon, 1916-17, 2-stroke, 2-speed, overhauled, new parts, excellent condition, fully equipped, tax; £37, offers, exchange equal make 4-stroke, cash adjustment.—29, Lower Clapton Rd., E.5. [6677

American X.

AMERICAN X 7-9h.p. C.B. Combination, 2 speeds, fast, wind screen, tax paid; £58.—R., 32, Arthur Rd., N. Brixton, S.W.9. [7065

1920 7-9h.p. American Excelsior Sporting Combination, as new, guaranteed perfect; £110, or nearest offer.—Pasmore, 5a, Lanark Place, Maida Vale, W.9. [5240

AMERICAN X 1920 7-9h.p., Henderson sidecar, 500 miles, lamps, horn, tools, etc.; £120, or nearest offer.—Roberts, 122, Thomas Lane, Broadgreen, Liverpool. [6895

SPECIAL Offer of brand new 1921 American X, 7-9 h.p., 3-speed, Millford De Luxe sidecar, 27×3½ Firestone tyres; list price £217; reduced to £175 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X8121

The House for Value!

THE BIRMINGHAM HOUSE FOR MOTORISTS

P. J. EVANS

HAS A LIMITED NUMBER

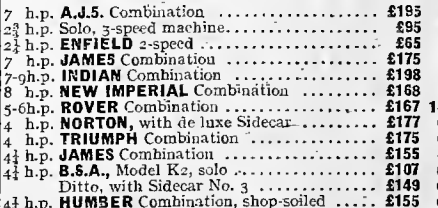
of 1921 Shop-soiled Motor Cycles at real

BARGAIN PRICES.

CALL AND INSPECT OR SEND POSTCARD FOR LIST.

1921 MOTOR CYCLES IN STOCK.

7 h.p.	**A.J.S.** Combination	£195	0
2¾ h.p.	Solo, 3-speed machine	£95	0
2¾ h.p.	**ENFIELD** 2-speed	£65	0
7 h.p.	**JAMES** Combination	£175	0
7-9h.p.	**INDIAN** Combination	£198	0
8 h.p.	**NEW IMPERIAL** Combination	£168	0
5-6h.p.	**ROVER** Combination	£167	10
4 h.p.	**NORTON**, with de luxe Sidecar	£177	0
4 h.p.	**TRIUMPH** Combination	£175	0
4¼ h.p.	**JAMES** Combination	£155	0
4¼ h.p.	**B.S.A.**, Model Kz, solo	£107	0
	Ditto, with Sidecar No. 3	£149	0
4¼ h.p.	**HUMBER** Combination, shop-soiled	£155	0
4¼ h.p.	**HUMBER**, shop-soiled	£125	0
4 h.p.	**INDIAN** Scout	£132	0
3½ h.p.	**ROVER** and special Sidecar	£137	10
4¾ h.p.	**B.S.A.**, Model K, special Sidecar	£123	0
4 h.p.	**TRIUMPH**, 3-speed, chain-cum-belt	£115	0
4 h.p.	**TRIUMPH**, all-chain drive	£125	0
3½ h.p.	**JAMES** twin solo	£120	0
3 h.p.	**CALTHORPE** Combination, M-L Maglita	£110	5
3½ h.p.	**ROVER**, 3-speed, chain drive	£115	0
3½ h.p.	**NORTON**, 3-speed	£132	0
2¾ h.p.	**NEW IMPERIAL**, kick-start	£80	17
2¾ h.p.	**MASSEY-ARRAN**, Blackburne	95 gns.	
2¾ h.p.	**EDMUND-BLACKBURNE**, 2-speed, kick-start, shop-soiled	£88	0
2¾ h.p.	Ditto, J.A.P. engine, shop-soiled	£80	0
2¾ h.p.	**CALTHORPE-J.A.P.**, 2-speed	66 gns.	
2¾ h.p.	**CALTHORPE**, single-speed	43 gns.	
2¼ h.p.	**TRIUMPH**, 2-speed	£70	0
2¼ h.p.	**JAMES**, 2-stroke, 2-speed	£67	10



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AMERICAN X. Combination, late 1920, Canoelet M.M.4 bulbous back sidecar, 6-volt accumulator lighting system, Tan-Sad, Stewart horn, all in very fine condition, fast and powerful, 1921 tax paid, and fully insured; £130.—11, Newcombe Rd., Northampton. [7212

Ariel.

DAN GUY, Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0688

ARIEL 4½h.p. Combination; £150, from stock.—A. J. Young and Co., Ltd., Newmarket. [6627

CYRIL WILLIAMS for immediate delivery of all model Ariel.—Chapel Ash Depot, Wolverhampton. [X3793

1914 3-speed Ariel, in good condition, lamps, etc. £40.—W. G. Churchill, The Grove, Dorchester. [6966

ARIEL 3½h.p., 1914, 3-speed, excellent condition £32.—7, Exhibition Rd., South Keosington. [7103

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AUTOVEYORS, Ltd., are authorised agents for the Ariel motor cycle; models in stock.—Service Depot, 4-12, Palmer St., S.W.1. [0468

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ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 1919 3½h.p. Coachbuilt Combination, sidecar screen, apron, and luggage carrier, little used and condition as new; £83.—Chinery, 1, Hammersmith Rd., Kensington. [6971

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ARIEL 1920 3½h.p. Combination, countershaft model, kick start, splendid condition, tax paid, full insurance, lamps, horn, tools, etc.; any trial, by appointment; £85.—Hayward, 52, Avondale Rd., Peckham, S.E. [6455

ARIEL, 1921, all chain, 4 months old, Easting, speedometer, Klaxon, Lucas lamps, insured, tax paid, spare chain, valves, inner tube, tyres unpuncture; £140; no offers.—Davis, 50, Pollards Hill East, Norbury, S.W. [7069

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ARNO 3½h.p. T.T., latest model, all accessories, splendid condition; any trial; £28.—147, Monument Rd., Birmingham. [6340

Bat.

BAT-J.A.P. Combination, new, 8h.p., Magdyno, oversize tyres, hood, large sidecar; £165.—72, East Dulwich Rd., S.E. [6785

BAT.—Solo or Combination in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8071

1920 Bat Spring Frame Combination; trial, pleasure; 90 gns., gift; take solo part payment.—88, Lord St., Southport. [7150

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BAT-J.A.P., 4h.p., 3-speed, clutch model, enamelled grey, complete with lamps, horn, etc., beautiful machine, only wants seeing, £58, no offers; also brand new Douglas sidecar chassis, never been used, £8 secures. — Bevis, 10, Albert Bridge Rd., Battersea, S.W.11. [6300

1920 (June) Bat-Jap 8h.p. Combination, 3 lamps, speedometer, horn, mirror, special saddle, Tan-Sad, Easting wind screen, hood, apron, spare parts, tyre, tax and insurance paid, perfect order; write full particulars; £150, offers.—Emery, Southdown Hydro, St. Anne's-on-Sea, Lancs. [6913

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1921 2½h.p. Clyno, 2-speed, mileage under 250; £55.—Buckingham, Myrtle House, Park Rd., Worthing. Tel.: 363 Worthing. [6939

CLYNO 1920 2-stroke, 2-speed, clutch, not done 200 miles, unscratched; £62, or nearest.—Heaton, Longshaw, Billinge, Wigan. [6519

1914 2¼h.p. 2-stroke Clyno Motor Cycle, complete with head lamp, tail lamp, horn, tax paid, in really splendid condition; price £35.—Cordingley and Sons, Haslingden. Tel.: 102. [6610

1921 8h.p. Clyno, electrically fitted, De Luxe model, fully equipped, perfect, new condition, insured £305, owner buying car; £195.—Roberts, opposite 4 Camp, Kinmel Park, near Rhyl. [5284

CLYNO 1917 6h.p., 3-speed, all chain, with large coachbuilt sidecar, practically as new throughout, must sell; £65, or offer.—Apply, Malvern Garage, Malvern Rd., Thornton Heath, Surrey. [6556

6h.p. Clyno Combination, just assembled, engine only run in, gear box as new, Lucas electric lighting (new), Klaxon electric, new Amac, T.B. mag., car tyres (unpunctured), chains, and Tan-Sad; £95.—Jurren, 128, Copenhagen St., King's Cross, N.1. [6662

CLYNO 5-6h.p. Combination, 1916-17 models, rebuilt, replated, enamelled black, 3 speeds, kick start, foot clutch, new carburetters, magnetos, interchangeable wheels, enclosed chain drive, new sidecars, painted to choice, as new; solo, £75; combinations, £90; deferred payments.—Hearn Bros., 94, Brixton Hill, S.W.2. 'Phone: Brixton 2888. [6468

Coulson.

1921 2¾h.p. Coulson B, 2-speed, kick start, brand new, unused; £77.—41, Madrid Rd., Barnes. [7165

COULSON B 1921 Models in Stock.—Sole Wiltshire Agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5007

COULSON-BLACKBURNE 1921 4h.p., 3-speed, Sturmey, lamps, horn; £105.—Emsley, 22, Morley Rd., Doncaster. [6520

COULSON.—All models in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245 Deansgate, Manchester. [X8073

COULSON, 1921, 2¾h.p. J.A.P., 2-speed, clutch, sports model, spring frame, absolutely unscratched; £87/10.—Below.

COULSON, 1921, 2¾h.p. Blackburne, 3-speed, clutch, kick start, shop-soiled, to be sold cheap; exchanges.—Goad, 122, Maida Vale (private house). 'Phone: Hampstead 1353. [7198

¾h.p. Coulson B, 2-speed, clutch, kick start, in stock; list price, 80 gns.—Edwards, 50, Harrington Rd., South Kensington. [7166

1921 (June) 4h.p. Coulson B, equipped, Lucas horn, lamps, tax, perfect, reason medical; cost £137, accept £110, or offer.—Smith, Kiln Farm, Bourne, Farnham, Surrey. [7071

COULSON.—R. B. Clark's 1921 2¾h.p. 3-speed medal winner, new condition, equipped, 80 gns.; export models, Blackburne engine, £84, in stock.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [7104

BARTLING Reductions.—Brand new, just received from makers: 1921 2¾h.p. 3-speed Coulson-B., price £117/12, will accept £109; one 4h.p. as above, list price £126, will accept £115.—22, Rodney St., Liverpool. [6652

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COVENTRY EAGLE, 2¼h.p. 1915 Villiers 2-stroke, lamps, horn, tax paid, good condition; £20.—Bella, Burroughs, Hendon, N.W.4. [6278

1920 Coventry Eagle, J.A.P. 2¾h.p., 2-speed, clutch, K.S., fully equipped, tax paid, as new; £50, or offer, genuine bargain.—Westin, 13, William St., N.1. [6540

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CYRIL WILLIAMS for immediate delivery of all models Diamond.—Chapel Ash Depot, Wolverhampton. [X3817

A FEW Early 1921 Diamond Models E and F, used for demonstration only; bargain.—Apply, Diamond Works, Wolverhampton. [6929

NEW 1921 2¾h.p. Diamond-Jap, Enfield 2-speed gear; £73/10; easy payments only 4% extra.—Premier Motor Co., Aston Rd., Birmingham. [X8122

1921 o.h.v. 2¼h.p. Diamond, very successful in speed trials, racing Amac, excellent touring machine, unscratched, 2-speed, guaranteed perfect; £—, 2, Arnside Rd., Southport. [X8126

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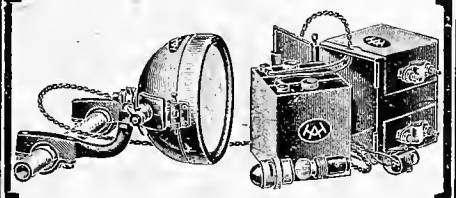

Comprising:

Fig. 875:	6¾in. Head Lamp, Nickel with patent adjustable brackets	60/-
,, 576.	Rear Lamp (bayonet)	4/9
,, 1150.	H.H. Ebonite 6 volt Accumulator	51/6
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,, 428.	1-way screw type Switch	2/-
	Price of Set	127/6

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	Price of Set	135/-

Bayonet Bulbs up to 1 amp., 2/6 each extra.
Flat Twin Cap Tyre Cable, per yard, 1/6 extra.

Set C1—For Medium Solo Machines.

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Fig. 881,	5½" Head Lamp, Nickel	36/-
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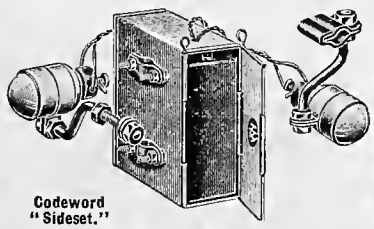

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DOUGLAS Machines are our speciality

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£78.—The above 4h.p. Douglas machine, with Douglas sidecar, the body finished as new, completely upholstered and repainted.

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3½h.p. Sports Model; £135

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1914 2¾h.p. Douglas, re-enamelled, splendid order; £33.—Below.

1915 2¾h.p. Douglas, speedy; bargain, £33.—Maynard, 8, Silver St., Enfield. [6839

DOUGLAS 2¾h.p., new 3-speed, all on; cheap.—33, Pennard Rd., W. [7013

HERBERT ROBINSON, Ltd., 32-35, Green St., Cambridge.—Below.

DOUGLAS 1921 New 2¾h.p., 2-speed, including P. and H. lamps, horn, and licence holder; £85; in stock; exchanges.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles.

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E. KICKHAM for Douglas and spares; trade supplied.—Stokes Croft, Bristol. [3351

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1918 4h.p. Douglas, first-class condition; £50; exchanges.—9, Church Rd., Harlesden. [7060

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DOUGLAS 2¾h.p., 1917, excellent condition and appearance; £42/10.—17, Heaton Rd., Mitcham. [6769

£27.—1913 2¾h.p. Douglas, T.T., plain countershaft, new Dunlops.—King, Egrove Farm, Oxford. [X8140

19 18 4h.p. Douglas Combination, splendid condition; £62/10.—79, Friern Rd., Peckham Rye. [6781

2¾h.p. Douglas, 2-speed, footboards, discs, accessories, tax paid; £35.—8, Helmsly Place, Hackney, E.8. [6975

DOUGLAS 2¾h.p., 2-speed, new condition, tax paid, all accessories; £50; after 6.—47, Thornhill Sq., N.1. [6693

CYRIL WILLIAMS for immediate delivery of all models Douglas.—Chapel Ash Depot, Wolverhampton. [X3818

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DOUGLAS Combination, 1919, lamps, horns, speedometer, any trial; £87.—130, Drayton Park, Highbury, N.5. [6728

DOUGLAS 4h.p., 1918, perfect condition, undershield, Stewart; £55.—Reynolds, 63, Luton Av., West Ealing. [6484

19 16 2¾h.p. Douglas, excellent condition, sporting, tax paid; £47, or best offer.—23, Astwood Mews, S.W.7. [6277

DOUGLAS 2¾h.p. 1916, speed, lamps, registration, insurance; £51.—Coppen, Allan and Co., 89, Gt Portland St., W. [6479

19 18 Douglas, hardly used, electric lighting, all accessories; £48, or offer.—Kyle, 4, Denman Place, Piccadilly. [6275

19 19 Douglas 4h.p. Combination, as new, all on, new tyres, screen; £95. — 48, Burchell Rd., Peckham, S.E.15. [6887

DOUGLAS 4h.p. Combination, lamps, horn, and discs, tax paid, very fast; £65.—261, Mitcham Lane, Streatham. [7089

19 18 4h.p. Douglas Combination, equipped, tax paid, electric lighting, screen, hood; 75 gns.—9, Kilman Rd., Fulham. [6673

4h.p. Douglas Combination, 1915, 3-speed and clutch, and kick starter model; £65.—Wauchope's, 9, Shoe Lane, London. [9014

HALIFAX.—Douglas 1921 models; cash, exchange, or deferred payments.—Motor Exchange, 25, Horton St., Halifax. [6638

19 16 Douglas, 2¾h.p., 2-speed, fully equipped, tax paid, splendid machine; £38.—156, Stockwell Rd., Brixton, S.W.9. [6811

£40.—2¾h.p. Douglas, 1916, entirely rebuilt, new mag., new tyres, tax paid.—13, Somers Mews, Paddington. Padd. 899. [7255

19 20 4h.p. Douglas Combination, Easting, discs, Klaxon, lamps, etc.; 90 gns.—Fersfield, Westbury Rd., New Malden. [6547

DOUGLAS 1920 Combination, equipped, excellent condition; £105; any trial.—Clark, 7, Exhibition Rd., South Kensington. [7110

2¾h.p. 2-speed Douglas, all on, tax paid, £35; also Alecto, 3-speed, 2-stroke, best over £30.—135, Brook St., Stepney, E.1. [6536

4h.p. Douglas Combination, Aug., 1920, Tan-Sad pillion seat, lot spares, perfect condition; £120.—26, Kestrel Av., Herne Hill. [6701

T.T. Douglas 2¾h.p., 2-speed, fast, reliable, long exhaust, all on, spares; £42/10.—Mann, 159, Ebury St., Victoria, London. [7223

19 18 4h.p. Douglas, 3-speed, clutch, sidecar, Easting, all accessories, tax paid; £85.—8, Half Moon Lane, Herne Hill, S.E.24. [7122

DOUGLAS 2¾h.p., renovated, enamelled, and plated, new mag., new tyres, tool bags, etc., any trial; £38.—Dowell, Pyrford, Surrey. [7185

19 15 Colonial Model Douglas, 3 speeds, 2¾h.p., equipped, tax paid, new condition; sacrifice, £45.—Marks, 121, Acton Lane, W.4. [7133

DOUGLAS 4h.p., 1919, engine and finish unused, new condition, solo £75, combination £88.—Wilton, White Swan, Upper Norwood. [6219

DOUGLAS 1920 2¾h.p., 3-speed, K.S., clutch, practically as new throughout, licensed; £65.—Bunting's Motor Exchange, Wealdstone. [7216

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MOTOR CYCLES FOR SALE.

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19 20 4h.p. Douglas Combination, perfect conditio sidecar as new, Easting screen; quick sale £11 tax paid.—Stevens, 48, Park Rd., Dartford. [63

DOUGLAS 4h.p. Combination, 1921, done abo 100 miles; £140; accept lightweight in exchang —Grimes, 18, Brnton Place, Bond St., W. [53

19 20 Douglas 2¾h.p., 3-speed, new condition throug out, not D.D., accessories, licensed; sacrifi £72/10.—Chandler, 43, Hillfield Av., Hornsey. [63

DOUGLAS, 1917, 2¾h.p., 2-speed, enamel, platin and mechanism splendid condition, equippe £46.—30, Crystal Palace Park Rd., Sydenham. [70

DOUGLAS Combination, 1920, 4h.p., accumulat lighting, discs, just overhauled; best over £10 accept solo part.—Blundell, Cowpers House, Huntingdo [45

39 GNS.—1916 Douglas, 2¾h.p., excellent cond tion, fully equipped, footboards.—Seen at Ga age, Hansler Rd., East Dulwich. Sydenham 2452. [68

19 17 4h.p. Douglas Combination, exceptionally fi condition, tax paid; £67/10, bargain.—Goa 122, Maida Vale, London. 'Phone: Hampstead 135 [71

2¾h.p. Douglas, 1918, 2-speed, 1921 Amac carb retter, new tyres, belt, etc., all on, condition new; £45.—2, Aboyne Rd., Lower Tooting, S.W.17. [72

DOUGLAS.—All models in stock at new reduce prices; deferred payments.—Parker's, Bradsha gate, Bolton; also 245, Deansgate, Manchester. [X80

DOUGLAS Combination, 1919, Dunlop tyres, win screen, lamps, tools, all on, perfect condition, an mechanical order; £80 nearest.—1, Park Hill Rd Ewell. [65

DOUGLAS New 2¾h.p., 2-speed All-on models f immediate delivery; £85.—Elce and Co., 15-1 Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenu 5548. [00

DOUGLAS 4h.p. Combination, 1920, small mileag tax paid, lamps, horn, etc.; 100 gns. any trial. 'Phone: Waltham Cross 299. 44, Sun St., Walthar Abbey. [68

2¾h.p. Douglas, Aug., 1920, 3-speed, K.S., tax pai tyres unpunctured, all on, splendid condition £75.—A. C. Tarry, 4, Court Cottages, Banstea Surrey. [658

SAVE Garage.—Douglas W.D. 4h.p., with folding Ho ley 2-seater sidecar, 1920, Easting, spares, ele tric; £130, offer.—G., Burcott, Derby Rd., Sutto Surrey. [695

DOUGLAS 2¾h.p., single speed, Bosch, tyres an belt very good, runs beautifully, fast, climbs well £12; bargain.—R. Watson, Victoria Rd., Aldeburgh Suffolk. [679

19 16 Douglas Combination, new sidecar body, ne wheels, 2 new tyres, speedometer, Klaxon, lamps, spares, etc., perfect; offers.—92, Stapletonhal Rd., N.4. [652

DOUGLAS 1915 2¾h.p., 2-speed, new tyres, belt lamps, bags, and accessories, in good condition £45, a bargain.—2, Nora Villas, Manor Lane, Sunbury Middlesex. [636

LATE 1920 Douglas 2¾h.p., 3-speed, semi T.T under 2,000 miles, all on, tax paid; £85; firm price; owner buying combination.—P., 14, Highfield Av., N.W.11. [683

DOUGLAS 1916 2¾h.p., 2-speed, lamps, horn, tools tax paid, splendid order; £45.—Elce and Co., 15 16, Bishopsgate Av., Camomile St., E.C.3. 'Phone Avenue 5548. [006

19 17 Douglas, good tyres, 1920 coachbuilt sidecar lamps, horn, and spares, very nice condition £57/10; bargain; no offers.—Edwardes, 277, Camber well Rd., S.E. [683

19 17 Douglas 2¾h.p., fine condition, new Amac speedometer, lamps, spares, etc.; sell £58; o exchange higher power.—Bonnett, 11, Bunbury St., Bat tersea, S.W.11. [696

19 18 2¾h.p. Douglas, uncrated 1919, 2 speeds makers' colours, original enamel, lamps, acces sories, licence, new condition, unscratched; £50.—63 Solon Rd., Brixton. [6754

DOUGLAS 1919 4h.p. Combination, recently over hauled, condition perfect, sidecar re-enamelled F.R.S. lamps, spares, any trial; £85.—Bramley, 8 Stanier St., Swindon. [6774

DOUGLAS 2¾h.p., 1919, excellent condition, new back cover and tube, complete with lamps and licence; 60 gns., or offer; seen Streatham.—Box 6,043 c/o *The Motor Cycle.* [7290

DOUGLAS 1920 2¾h.p., 3-speed, footboards, fully equipped, tax paid; £75; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245 Deansgate, Manchester. [X806

19 20 4h.p. Douglas Combination, splendid condition insured, lots of spares, including waterproof overalls, owner forbidden to ride; £120.—E. Midgley, 55, Church St., Keigley. [X813

MOTOR CYCLES FOR SALE.

Harley-Davidson.

7-9h.p. Harley Combination, August, 1920, electric model, Harley sidecar with hood and screen, all fittings and full tool kit, muffs, mirror, and footboard, cost over £260, guaranteed in first-class order, smart, and especially fast, fully insured to June; buying car; bargain, £160, or near offer.—16, Rydal Rd., Newhall Lane, Bolton. [7134

H.B.

H.B., Blackburne 2¾h.p., 1920, all on, excellent machine; £67/10.—Rev. Stephens, Watcombe Circus, Nottingham. [6993

Henderson

1916 Henderson 4-cyl. 2-speed Combination; exchange with cash for late Morgan W.C.—16, Longmead Rd., S.W.17. [7080

HENDERSON 8h.p., 4-cyl., mag., F.E. clutch, handle starting, lamps, licensed; bargain, 49 gns.—1, Ebner St., Wandsworth. [7128

1921 Henderson, P. and H. dynamo lighting set, Klaxon horn, speedometer, reverse gear, latest type Millford-Tandem sidecar, hood, 2 screens, 27×3½ tyres, cost over £300 recently, small mileage.—Can be seen at Robertsons Motors, Ltd., 157b, Gt. Portland St., W.1. [6651

Hobart.

1921 Hobart 2¾h.p., J.A.P., 2-speed, clutch, K.S., lighting set, not done 100 miles, equal new, tax paid; nearest £75 gets it.—Newman, Shifnal, Salop. [6399

HOBART-VILLIERS, 2¾h.p., 1919, 2-speed, leg-shields, lamps, horn, licensed, perfect condition; bargain, £35.—Tuckwell, 25C, Kingwood Rd., Fulham, S.W.6. [6688

Humber.

3½h.p. Humber, 2-speed, overhauled, new belt, all on; £30.—20, Forthbridge Rd., Lavender Hill, S.W.11. [6690

1920 4½h.p. Humber Flat Twin, unscratched; £110. —Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0655

3½h.p. Humber Flat Twin, w.c., Millford sidecar, perfect condition; £140—Raynham, 14, May St., Heckthorpes. [6508

HUMBER 4½h.p. Combination, cost June (1921) £195, accept £140; perfect condition.—Offers to Chase Hill, Enfield. [6697

3½h.p. Humber, 2-speed gear and free engine, new tyres and belt; best offer over £20.—William Guntar, Daisybank, Coldercruix. [7056

3½h.p. Humber, 2-speed, clutch, Busch, B. and B., dropped frame, take sidecar, fine running order; £23, near.—Argyle Lodge, Newton Rd., Burton-on-Trent. [6753

1921 4½h.p. Humber, 3-speed, kick start, chain drive, been used for demonstration purposes only; list price £140, sell £119.—Johnson's Motor Works, King's Lynn. [7208

HUMBER 4h.p. 1915 Splendid Coachbuilt Underslung Combination, 3 speeds, kick start, simple, new Dunlop belt, tyres, guaranteed perfect, lamps, this, tax paid; trial any time; bargain, £55.—Owner, Salmons Lane, Commercial Rd., Stepney, London. [6914

1921 (April) Humber 4½h.p., 3-speed, Lucas dynamo lighting and horn, Brooks cantilever saddle, Tan-Sad, open exhausts, all black finish, exceptional condition and appearance; Midland district; £40.—Further particulars, Box 930, c/o *The Motor Cycle.* [X8118

Indian.

9h.p. Indian Combination, 1912; £55 cash. Waucbope's, 9, Shoe Lane, London. [901[illegible]

INDIAN Combination, 5-6h.p., all accessories, discs, wind screen; £55.—30, Eton Av., N. Finchley. [6863

INDIAN, 1912, 7-9h.p., 2 speeds, foot clutch, tax paid; £25.—Maudes', 100, Ct. Portland St., W.1. [72[illegible]

INDIAN 7-9h.p. Combination, Easting, perfect condition; £75.—62b, Highgate Rd., Kentish Town. [7053

1916 7-9h.p. Powerplus Indian Combination, mag-dynamo lighting, tax paid; £88.—Ross, 86, High St., Lee. [6431

1914 Indian Combination, 2-speed countershaft; £65.—Rhind and Co., Stone Place, Rusholme, Manchester. [6590

INDIAN, 1919, and 1921 sidecar, unused; no reasonable offer refused.—Merser Motor Works, Acre Lane, Brixton. [6531

INDIAN 1915 5-6h.p., 3-speed countershaft, K.S., and large sidecar, lamps, etc.; £60.—19, Linden Grove, Peckham. [6720

INDIAN 1919 Combination, 7-9h.p., large bulbous sidecar, electric lighting; any trial; £105.—East End Farm, Pinner. [6564

1920 Indian Combination, as new, low mileage; £150.—241, Goldhawk Rd., London. 'Phone: Hammersmith 1203. [6789

7h.p. Powerplus Indian Combination, 1916-17, fully equipped, electric lights, aluminium number plates, beautiful sidecar, fully insured and taxed, perfect as new; £90; any trial.—64, Clifton Rd., Peckham, S.E.15. [6779

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MOTOR CYCLES FOR SALE.

Indian.

INDIAN 1920 7-9h.p. Combination, electrical Model de Luxe, perfect; £140.—137, Cambridge Rd., Raynes Park, S.W.20. [6459

7-9h.p. Indian, speed gears, kick start, fully equipped, excellent condition; £75.—Bell, 36, Station Rd., South Shore, Blackpool. [6595

1919 Indian Powerplus Combination, sporting sidecar, tax paid; sacrifice, £98; after 6 o'clock.—91, Spa Hill, Norwood. [5374

INDIAN 7-9h.p. Combination, spring frame, fine condition, all on; £65, near.—33, Orlando Rd., North Side, Clapham Common. [6433

1919 7-9h.p. Indian Combination, electric lighting, tax paid, in excellent condition; £110.—Ufton, Bourne End, Bucks. [7135

7-9h.p. Indian, with double sidecar (seats 2 adults), splendid condition, low mileage.—A., Greenmount, Norbury Av., S.W. [7279

INDIAN 1915 5-6h.p., 3-speed clutch, kick start, lamps, good order, condition; £55; after 6.—Long, 3, Cromwell Rd., Teddington. [7000

HANDSOME Late 5-6h.p. Indian Combination, every refinement; any trial; offers.—Write or view, 19, Clipstone Rd., Attercliffe, Sheffield. [6406

INDIAN 1920 7-9h.p. Powerplus Combination, dynamo lighting, speedometer, tax paid; bargain, £110.—76, Cornwall Rd., Bayswater, W. [6284

1921 Indian Scout Combination, de luxe sidecar, speedometer, 3-speeds, dynamo lighting and acetylene; £135.—Boorman and Son, Woking. [6317

7-9h.p. Indian, 1915 F, clutch, new tyres, chains, lamps, just overhauled, too powerful; £50, or lightweight and cash.—80a, High St., Bexley. [7272

INDIAN 1915 7-9h.p. Combination, coachbuilt sidecar, good condition; £50, or near offer.—19, Kinnerton St., Knightsbridge, S.W. 'Phone: Vic. 9480. [6338

INDIAN Combination (June, 1920), little used, condition equal new, tax paid; genuine bargain, £150. —Reade, Draper, 214, High Rd., Wood Green, London. [6577

INDIAN, little used, 7-9h.p. solo, variable gear, overhauled, mechanically perfect, very fast, fully equipped, tax paid; any trial; £65.—121, Denmark Hill, S.E. [6341

1920 7-9h.p. Indian Powerplus Combination, dynamo lighting, speedometer, Easting, beautiful outfit, as new, tax paid; £135.—114, Brixton Hill, S.W.2. [6737

LATE Powerplus Indian, as new, 3-speed, kick start, clutch, licensed, insured, new tyre, chain, beautiful condition, too fast; £65; exchange.—89, East Hill, Wandsworth. [7033

INDIAN 7-9h.p. Combination, 1917, spring frame, electric lighting, tax paid, spare tubes, new cover, large luggage grid; 75 gns.; after 6.—43, Caldervale Rd., Clapham, S.W. [6910

1920 Indian Powerplus 7-9h.p. Combination, dynamo lighting, speedometer, ammeter, Easting, electric horn, condition as new; £160; insured, tax paid.—Batty, 97, Wood St., Barnet. [6372

1920 Indian, 7-9h.p., Henderson Elite sidecar, under 4,000 miles, tyres nearly new, just overhauled by Godfreys; 120 gns., or offer.—Watson, 3D, Morpeth Terrace, S.W.1. [6709

7-9h.p. 3-speed Indian Combination, 1914, discs, long exhaust, just overhauled, very smart; trial and examination invited; £75; solo part exchange.—Crowsley, 133, Kennedy Rd., Barking. [6873

1920 Indian, Millford de luxe sidecar, Cameo screen, luggage grid, electric lamps and horn, tools, spare chains and tyres, perfect tune; £160.—Thompson, 175, Evering Rd., Stoke Newington. [7052

1916 Indian Combination, 5-6h.p., just overhauled, Binks carburetter, Tan-Sad, tools, and spares, including new cover and tube; will accept best offer; any trial.—45, St. James's Rd., Southsea. [6777

1920 Indian Combination, 7-9h.p., dynamo lighting, electric horn, speedometer, tools, and spares, fully equipped, like new; exchange for sports Sunbeam. —D. Thomas, 9, Mostyn Crescent, Llandudno. [7291

POWERPLUS Indian, 1917, spring frame, 3-speed, clutch, kick start, electric light, horn, licensed, overhauled, in perfect condition; best offer for quick sale.—Ben Oades, Castle Garage, Woodford Green. [X8056

INDIAN 1920 4h.p. Scot Model with Grosvenor sporting sidecar to match, fully equipped, speedometer, horn, tax paid; £155; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8062

RIDICULOUS Bargain, £50.—1916 1-3 Powerplus Indian combination, sporting slipper sidecar, wants overhauling, but absurd bargain; £50; first deposit secures.—Douglas S. Cox, 6, Lansdowne Hill, West Norwood. [7195

INDIAN 7-9h.p. Combination (Mills-Fulford), 1914, engine and gears recently overhauled, good tyres (not war surplus), tool kit and many spares, tax and insurance paid, ready for touring, only wants seeing; bargain, £80; view Saturday or Sunday; exchanges considered; no dealers.—15, Woodville Rd., Thornton Heath. [6464

MOTOR CYCLES FOR SALE.

Indian.

1919 Indian 7-9h.p. Combination, electric light, speedometer, fully equipped, splendid condition, only wants seeing; owner giving up motoring by doctor's orders; £130, or near offer.—Wright, 2, Upper Tollington Park, Finsbury Park, N. [6725

INDIAN 1920 Powerplus Combination, dynamo light and horn, speedometer, disc wheels, hood and screen, luggage grid, specially designed comfortable handle-bars, done 7,000, just overhauled; accept £145.—McClure, 80, Eccleston Sq., London. [6323

INDIAN 1916 7-9h.p. Powerplus Combination (not W.D.), K.S., 3-speed, h. and f. clutch, 1920 B. and B. carburetter, speedometer, lamps, tools, spare chains and valve, Millford sidecar, Easting wind screen, tax paid; £90.—Hancock, Wargrave Rd., Twyford, Berks. [6999

WANTED, purchasers for any model of new 1921 Indian motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Easthank St., Southport. Tel.: 607. [0650

BEST Bargain This Week.—Late 1920 Indian 7-9h.p. Powerplus combination, M.F. sidecar, dynamo lighting, semi-T.T. bars, indistinguishable from new, guaranteed only done 2,140 miles; reason for selling, owner abroad; first £135 secures.—Brown, 11, Higher Albert St., Chesterfield. [X8148

AM Going Abroad in 2 weeks' time, and will sacrifice my 1921 7-9h.p. sporting Indian and Swan sporting sidecar, electrically equipped, drop handlebars, sidecar step, not scratched, 2,500 miles, unpunctured, guaranteed to do with passenger in sidecar over 50 m.p.h., solo attains speed 68 m.p.h.; open copper exhausts, speedometer, everything A1, most sporting outfit on the road, trial willingly, absolutely perfect; first cheque over £130 sold; cost me 4 months ago over £200.—Arnett, 74, Masons Av., Wealdstone, Middlesex. [6527

Ivy.

IVY 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

James.

DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

TWO James 2-strokes, 2 speeds, excellent order, both tax paid; £40 and £50.—114, Brixton Hill, S.W.2. [6743

JAMES Combination de Luxe, Aug., 1919, excellent condition; £110, or near.—120, Whitaker Rd., Derby. [7021

JAMES 1920 2¼h.p., 2-speed, accessories, good running order, tax paid; £48, or nearest.—Rea, Risley, Derby. [X8135

F.O.C.H. have several James solos and combinations, cheap.—5, Ilcath St., Hampstead (nr. Hampstead Tube Station). [5907

£45; 1921 James lightweight, all accessories, tax paid, as new.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7189

JAMES 1920 Lightweight, 2-speed, splendid condition, 700 miles, all on, tax paid; £58.—6, Dyers Hall Rd., Leytonstone. [6896

1920 4¼h.p. James Combination, 3-speed, K.S., Easting's screen, Lucas lamps, horn, tax paid, everything in first-class condition; best offer over £107.—Call after 6 p.m., Bricklayers' Arms, Grays. [6561

JAMES Late 1919 De Luxe Combination, Binks, Easting screen, foot clutch, speedometer, Lucas lamps, D.A. cylinders, Lucas horn, splendid condition; £140; registered.—Snow, 60, East St., Epsom. [6695

IMMEDIATE Delivery of any James Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0503

5-6h.p. James Combination, 1919 Government model, excellent condition throughout, just overhauled by makers, all tyres Dunlop extra heavy and in good condition, new spare cover and tube; trial run arranged; seen any time; bargain, £90.—Lawrence, Ash Cottage, Gravelly Hill, Birmingham. [6552

J.A.P.

J.A.P. 5h.p. Twin, hand clutch, lamps, fast, sporty; £45.—57, West St., Grimsbury, Banbury. [6712

J.A.P. 8-10h.p., 90 bore racing, 3-speed, clutch, new Palmer cords, speedometer, lamps, Klaxon, excellent condition; £45.—1, Park Hill Rd., Ewell. [6568

J.E.S.

J.E.S. 1½h.p., 1921, absolutely as new; gift, £33.—243, Lynton Rd., Bermondsey. [6483

J.H.

7-9h.p. M.A.G. Twin J.H. Combination, fitted with handsome coachbuilt sidecar; £65.—Wauchope's, 9, Shoe Lane, London. [9016

Juno.

JUNO, 2-speed 2-stroke Villiers engine, good running order; £30.—A. J. Young and Co., Ltd., Newmarket. [6634

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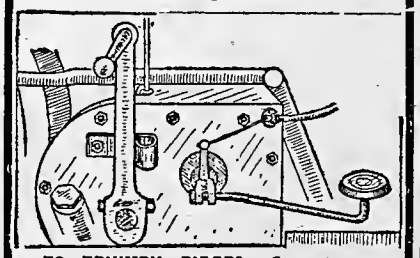

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Lea-Francis.

BRAND New Lea-Francis 3½h.p. M.A.C.; list price, £115; to clear, £90.—Apply, 198, Gt. Portland St., W.1. [4633

£100; 1920 Lea-Francis combination, absolutely as new.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7190

LEA-FRANCIS 3½h.p. Twin and sports sidecar; no reasonable offer refused.—Merser Motor Works, Acre Lane, Brixton. [6532

LEA-FRANCIS.—All models in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8079

LEA-FRANCIS 1920 3½h.p., standard model, in first-class condition, speedometer, licence; £85.—A. J. Young and Co., Ltd., Newmarket. [6630

LEA-FRANCIS, believed 1918, 1921 sidecar, 2-speed countershaft, K.S., tax paid, equipped; trial; nearest £75.—48, Gresham Rd., Brixton, after 6 p.m. [6763

1920 Lea-Francis Combination, 3½h.p. M.A.G. engine, 2 speeds, clutch and kick starter, lamps, horn, tools, and speedometer, Easting wind screen; £100.—John C. Beadle, Ltd., Dartford. [5189

Levis.

DAN GUY, Weymouth.—Levis 1921 models in stock; £60. [0554

LEVIS 2¼h.p., tax paid; £28.—Pope, 124, Belgrave Rd., Wanstead, E.11. [6847

LEVIS, 2¼h.p., lamps, tax paid, running splendidly; £35.—39, Glebe Rd., Hornsey, N. [7064

CYRIL WILLIAMS for immediate delivery of all models Levis.—Chapel Ash Depot, Wolverhampton. [X3819

1920 Levis Popular, 2¼h.p., in splendid condition, Dunlop tyres, tax paid; £45.—Jones, Glandwr, Barmouth. [6394

1920 Levis, as new, accessories; must sell; cash offer wanted.—Maitland, 40, Fleming Rd., Kennington, S.E.17. [5722

1920 Levis 2¼h.p., fully equipped, tax, everything guaranteed in perfect and new condition; £40.—128, London Rd., King's Lynn. [6919

LEVIS 2¼h.p., 1919, enamelling and plating unscratched, tyres new, engine perfect condition throughout; £36.—Brooker, Mill House, Salter's Rd., King's Lynn. [6920

1921 Levis, supplied on deferred payments at only 4% extra; all models in stock for immediate delivery. 2¼h.p. Touring or Sports model, £60; Model S, 2¼h.p., 2-speed, handle-bar controlled clutch, £68.—Buy your machine direct from the Levis specialists, The Premier Motor Co., Aston Rd., Birmingham. [X6123

Lloyd.

3½h.p. Lloyd Motor Cycle, perfect order, tax paid; bargain, £12.—24, Lyham Rd., Brixton. [6937

L.M.C.

NEW 1921 L.M.C., 6h.p., belt drive model; £100, or near offer; exchange smaller power and cash considered.—Shaw, 130, Harehills Av., Leeds. [7049

Martin.

MARTIN-J.A.P., 2¾h.p., 2-speed, Amac, Dunlops, speedometer, spares, fast, reliable; £40, or near.—82, Orbel St., Battersea, S.W.11. [6708

1914 8-10h.p. Martin-Jap, 90×77½ o.h.v. engine, speedometer, horn, etc. This machine has done over 92 m.p.h., proof given; accept £75.—Fox, Inglehurst, Ilkley. [X8116

Martinsyde.

NEARLY New Martinsyde Combination, all accessories; £125, or exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [7264

MARTINSYDE Combination, new; price reduced; £145; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [6602

6h.p. Martinsyde Combination, done 200 miles only, brand new August 1st, guaranteed perfect, tax paid; £134.—Clarke, 12, Queen St., Louth. [6254

BRAND New Martinsyde Combination, must sell owing to unforeseen circumstances; £135; exchange solo and cash.—37, Arlington Rd., Surbiton. [6977

MARTINSYDE 6h.p. Combination, complete with lamps and horn, brand new, but shop-soiled; bargain price for immediate sale, £130.—Braid Bros., Midland Garage, Colwyn Bay. Tel.: 105. [3908

Matchless.

MATCHLESS.

DELIVERY Free for 150 miles from London. Don't forget, every outfit personally tested by the (Matchless only) expert. Sports model now ready, the fastest and best outfit; gradual payments arranged 5% on balance only.—J. Tassell, 1a, Bloomfield Rd., Plumstead, S.E.18. [5374

MATCHLESS 8h.p., 2 speeds, perfect, licensed, new appearance; £40.—17, Heaton Rd., Mitcham. [6767

MOTOR CYCLES FOR SALE.

N.U.T.

19 20 N.U.T., Magdyno, speedometer; £110; exchange, Norton preferred.—Maynard, Lea Bridge, Leyton. [6503

N.U.T. 3½h.p., electric, mileage 3,000, Cowey horn, speedometer, Binks, new tyres; any trial; quick sale, £95.—Rootes, Maidstone. [6475

6 h.p. N.U.T.-J.A.P. Combination, 1921, Sturmey 3-speed gear box, clutch and K.S.; £95, or nearest offer.—Link, Newchurch, New Romney, Kent. [5980

N.U.T. 1920 3½h.p., dynamo lighting, tax paid; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8064

N.U.T. Late 1920 3½h.p. Twin, Lucas Magdyno lighting set, splendid order; £90.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

LATE 1920 N.U.T. 3½h.p., Lucas Magdyno lighting, absolutely like new, all on; accept £115, or part exchange lightweight and cash.—Edwin Moore, Main St., Hawes. [6357

O.K.

O.K.-UNION, 1920, lamps, horn, excellent condition; £35.—5, Frederica Rd., Chingford. [6864

O.K. Junior, K.S., 2-speed, new, demonstration; 50 gns.—Box 5,992, c/o *The Motor Cycle*. [6469

O.K.-VILLIERS, 1920, 2-speed, unscratched, sound, reliable, insurance, tax, accessories; £42/10, bargain.—288, Sangley Rd., Catford. [7019

19 21 O.K. 2¾h.p., 2-speed, clutch, kick starter, fully equipped, licensed, perfect; £42.—Edwards, 50, Harrington Rd., South Kensington. [7172

O.K.-VILLIERS 1920 2½h.p., 2-stroke, 2-speed, tax paid, hardly used; £55, or near offer; trial by appointment.—S.B.S., 15, St. Julian's Farm Rd., West Norwood, S.E.27. [6808

Omega.

OMEGA, 1919, 2¾h.p. J.A.P., 2-speed, tax paid, good condition; bargain, £38/10.—Goad, 122, Maida Vale (private house). 'Phone: Hampstead 1353. [7205

OMEGA-J.A.P. (June, 1921), unscratched, 2¾h.p. 2-speed, tax paid, tools, £55; also Burman 2-speed gear box, practically new, £7.—Box 6011, c/o *The Motor Cycle*. [X7621

OMEGA 1920 2¾h.p., 4-stroke J.A.P., perfect condition, all complete, electric front lamp; offers wanted, cash; going to New Zealand.—Particulars, 35, Glossop St., Leicester. [6541

P. and M.

19 17 3½h.p. P. and M., good order; bargain, £35.—1 Bellingham Terrace, Catford. [7227

3½ h.p. P. and M., 2-speed, free engine, perfect order, tax paid; £32.—256, Fore St., Edmonton. [6967

3½ h.p. P. and M. Standard Model, just overhauled; £500.—A. J. Young and Co., Ltd., Newmarket. [6632

P. and M. Combination, No. 4167, all on, ready for tour; £65.—42, Combe Rd., Malden, near Kingston. [6723

P. and M. and Coachbuilt Sidecar, in first-class condition; £55.—Apply, 198, Gt. Portland St., W.1. [7196

P. and M., 3½h.p., Aug., 1917, 2-speed, K.S., perfect condition; £45.—62b, Highgate Rd., Kentish Town. [7064

CYRIL WILLIAMS for immediate delivery of all models P. and M.—Chapel Ash Depot, Wolverhampton. [X3821

19 19 P. and M. Combination, fully equipped, Cameo, splendid condition; £100.—90, Park Av., Barrow-in-Furness. [6496

P. and M. (Aug., 1920), fully equipped, perfect condition, mileage 2,000; £90. — 341, Bath Rd., Hounslow. [7276

P. and M. Combination, lamps, horn, sidecar as new, trial given, good tyres; £65.—261, Mitcham Lane, Streatham. [7090

P. and M. 1918 Combination, restoved, plated, new tyres, lamps, Klaxon, tax; £60.—106, North End Rd., W.14. [7028

P. and M.—Solo or sidecar in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8083

19 18 P. and M., all on, tax paid, in excellent running order; £45.—Write for appointment, S., 44, Church Path, Acton Green, W.4. [6534

P. and M. and Sidecar, 1918, lamps, horn, licence paid, Dunlops, like new; £65.—Geo. Taylor, 28, Lower Addiscombe Rd., East Croydon. [6884

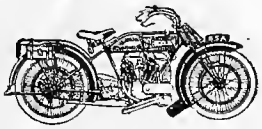
19 19 P. and M., with Henderson lightweight C.B. sidecar, in splendid condition; exchange considered; £75.—Walton, Ashroyd, Bingley. [6453

19 18 P. and M. Combination, coachbuilt, licensed, accessories, fast and powerful; £60; as solo £52.—Derrington, Grafton Rd., New Malden. [7288

19 16 P. and M. Combination, electric lighting and horn, fully equipped, spares, perfect condition; £65.—11, Merthyr Terrace, Barnes, S.W.13. [6513

THE BEST THAT MONEY CAN BUY with the additional advantage of

ALEXANDER SERVICE



The Famous 4¼ h.p. B.S.A. Wonderful Value, £110

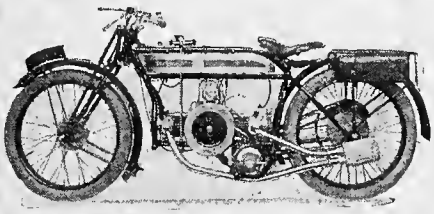
1921 MOTOR CYCLES IN STOCK.

2¾ h.p.	**DOUGLAS**, 2-speed	£85 0
2¾ h.p.	**DOUGLAS**, 3-speed	£105 0
4 h.p.	**DOUGLAS**	£125 0
Ditto, with Sidecar		£160 0
8 h.p.	**MATCHLESS** Combination	£185 0
4 h.p.	**INDIAN** Scout, shop-soiled	£132 0
7-9h.p.	**INDIAN** Combination, shop-soiled	£198 0
3½ h.p.	**NORTON**, Model 16H	£132 0
4 h.p.	**NORTON**, with de luxe Sidecar	£177 0
2¼ h.p.	**VELOCETTE**, 2-stroke, 2-speed	£75 0
2¼ h.p.	**ENFIELD**, 2-stroke	£65 0
8 h.p.	**ENFIELD** Combination	£165 0
4 h.p.	**COULSON-BLACKBURNE**, 3-speed	£102 10
3½ h.p.	**P. & M.**	£115 0
With Sidecar		£150 0
4 h.p.	**OMEGA-BLACKBURNE**	£120 0
4 h.p.	**BRADBURY**	£95 0
6-7h.p.	**B.S.A.**, twin	£133 0
2¾ h.p.	**DIAMOND**, 2-stroke, 2-speed	£70 7
2¾ h.p.	**CALTHORPE-J.A.P.**, 2-speed	£73 10
2¼ h.p.	**LEVIS**, 2-stroke	£60 0
2¾ h.p.	**NEW IMPERIAL**, K.S.	£80 17
2½ h.p.	**SPARKBROOK**, 2-speed, clutch, and K.S.	£77 10
2¾ h.p.	**COULSON-BLACKBURNE**, 2-speed	£84 0
5 h.p.	**ZENITH**, Model C	£115 0
3½ h.p.	**COVENTRY EAGLE**, 3-speed	£112 0
2¾ h.p.	**INVICTA-J.A.P.**, 2-speed	£78 15
4 h.p.	**BAT**	£120 0
3 h.p.	**CALTHORPE** Combination, 2-stroke, dyn. electric lighting	105 gns.
6 h.p.	**MARTINSYDE** Combination	£145 0

SPEED MODELS:

Immediate Delivery from Stock to-day.

DOUGLAS, Sports Model (500 c.c.), 3½ h.p., overhead valves, 3-speed, Clutch, kick-starter **£150**



NEW IMPERIAL, T.T. Model, (350 c.c.), 2¾ h.p., 3-sp., hand-controlled clutch, long exhaust pipe .. **£96**

SEND FOR A COPY OF OUR BUYERS' GUIDE, GIVING PARTICULARS OF THE MAKES WHICH WE CAN OFFER YOU.

Full Market Value allowed for your old Machine in part payment.

If you are interested in Light Cars or Runabouts — MORGAN, CALTHORPE, DOUGLAS, G.W.K., UNIT No. 1, all in stock to-day.

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

P. and M.

19 19 P. and M., tax paid, all accessories, engine recently overhauled and tank repainted, perfect condition; £60.—Mason, 2, Cleveland Av., Chiswick. [6384

19 16 P. and M., with new Lancaster sidecar with screen, all accessories, tax paid, good running order; bargain, £65.—3, Norwood Rd., Herne Hill, S.E.24. [7121

19 18 P. and M. Combination, Millford sidecar, wind screen, electric lighting set, speedometer, Klaxon, mechanically sound, privately owned by engineer; real bargain, £58. 1, Primrose Villas, Stanwell Rd., Staines, Middlesex. [X8219

THE Secretary of The Layton Garages offers his own privately owned 3½h.p. P. and M. combination (Sep., 1920), complete with electric lighting, horn and licence; cash offers are invited near £110.—Address: London Rd., Bicester. [6257

Paragon.

PARAGON 1920 2-stroke, 3h.p., 2 speeds, countershaft, C.A.V. mag., latest Amac carburetter, spring frame, original tyres as new, lamps, horn, etc.; sacrifice £32/10; cost over £70.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [6797

Perfect.

PERFECT 2¾h.p., sporting, long stroke, T.T. bars, knee-grips; photo; £24, tax paid.—264, Soho Rd., Birmingham. [6933

Precision.

PRECISION 2-stroke, 2¾h.p., very low frame, single gear, lamps, etc.; £18/10.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6747

Premier.

£25.—3½h.p. Premier T.T. model, E.I.C., B. and B., lamps, licence, £10 new parts.—G., 63, Solon Rd., Brixton. [7289

PREMIER 1916 3½h.p., countershaft 3-speed, clutch, B.B., Bosch, good condition; best offer; after 6.—46, Enfield Rd., Brentford. [6526

PREMIER Combination, 7-9h.p., countershaft, electric light, all on, tax paid, powerful machine; £55.—Busby, 64, Stoughton St., Leicester. [6952

PREMIER 2½h.p., Grade gear, licensed, fast, little machine, pulls well, new tyres and belt; £21.—Derrington, Grafton Rd., New Malden. [7286

PREMIER 5-6h.p. Combination, 2-speed, handle starter, splendid condition, ride away; £55.—Smellie, 25, Stanmore Rd., Tottenham, N.15. [6557

PREMIER, fitted with Fafnir engine, nearly new cover and belt, magneto needs attention, low built, lamps, tax paid; £14.—Ford, 34, Portway, Warminster. [6367

P.V.

19 19 P.V., spring frame, 2½h.p. Villiers, 2-speed, Tan-Sad, B. and L. lubrication, full equipment and spares, 100 m.p.g. guaranteed; £60, or offer.—Write, or apply after 6.30, Cracknell, 2, Stamford Grove West, Oldhill St., Clapton Common, N.16. [6578

Quadrant.

19 20 Quadrant Combination, nice order; £85.—Ross, 86, High Rd., Lee, S.E. [6419

19 16 Quadrant Combination, countershaft, perfect, little used.—Ferndale, 1, St. George's Rd., Kingston-on-Thames. [6345

CLIFFORD WILSON Manufacturing Co.—Quadrant official wholesale distributers.—177, Westminster Bridge Rd., S.E.1. [4666

QUADRANT 3h.p., m.o.v., new Senspray carburetter, good condition; bargain, £9/10.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8065

QUADRANT 4½h.p., new 24/12/19, engine specially balanced, new back tyre, chains and sprocket, lamps, Tan-Sad, legshields; £65.—Batten, Westfield Rd., Beckenham. [6846

19 21 Quadrant Combination, Maglita dynamo lighting, insured, special sidecar extra roomy, luggage grid, excellent condition; £110.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7188

QUADRANT Combinations from Stock, all models, free insurance; cash, exchange, or deferred payments; all spares.—Official repairers, Clifford Wilson Manufacturing Co., 177, Westminster Bridge Rd., S.E.1. Hop. 210. [4667

QUADRANT Combination, 1920 4½h.p., 3-speed, clutch, kick starter, complete new spare chains, sprockets, Easting, in grand condition, tax paid; £85.—'Phone Park 5572, or apply 24, Archer St., Notting Hill, before 7 o'clock. [6722

Radco.

RADCO, 1916, perfect, new tyres, fully insured; £33.—79, South Norwood Hill, S.E.25. [6409

19 19 Radco, perfect condition, every accessory, disc wheels, etc.; £33.—Jackson, 54, Victoria Rd., Surbiton. [6308

19 20 Radco 2½h.p., 2-speed lightweight; cost £63 last August, mileage 500, guaranteed perfect; £40, real bargain.—36, St. Thomas Rd., South Hackney. [6576

MOTOR CYCLES FOR SALE.

Raleigh.

PREMIER Motor Co. for 1921 Raleighs.

EASY Payments only 4% extra. We can deliver to your address within 24 hours the new Raleigh 5-6h.p. flat twin, spring frame, chain drive; solo, 140 gns.; sidecar, 176 gns.; spare wheel and tyre, 6 gns.—Sole Birmingham Agents, The Premier Motor Co., Aston Rd., Birmingham. [0626

RALEIGH Latest 5h.p. Flat Twin, with standard or Grindlay sporting sidecar; immediate delivery; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [6604

Reading-Standard.

1916 Reading-Standard Combination, splendid value; £85.—Ross, 86, High Rd., Lee. [6424

READING-STANDARD Combination, 2-speed, electric lighting and horn; £65.—King, 2, Westwell Rd., Streatham. [6671

RALEIGH Combination, absolutely new, owner bought car; accept 160 gns.—70, Lytham Rd., Fulwood, Preston, Lancs. [7041

1921 Reading-Standard Super Sporting Combination, brand new; £170, or nearest offer.—Pasmore, 5a, Lanark Place, Maida Vale, W.9. [5241

READING-STANDARD, 1921, dynamo lighting, all lamps, M.P. cantilever sidecar, coverall apron; £140.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6477

Regal.

2¾h.p. Regal-Precision, 1915, short wheelbased racing 'bus, Amac, Eisemann, long open exhaust. Triumph undershield, adjustable pulley, Best and Lloyd, saddle recovered, tyres absolutely as new, enamelling perfect, low riding position, engine just overhauled, all worn parts replaced, tax paid; £40; exchange.—Lyndale, Balaclava Rd., Surbiton. [6505

Rex.

6h.p. Rex Combination, 2-speed, free, all in good condition; £45; exchange lower power.—Appleton, Gaywood, King's Lynn. [6662

REX 1912 2-speed Combination, lamps, horn, tax paid, perfect condition, ride away; £45.—87, Union Rd., Warwick. [X8211

REX 6h.p., clutch, cane Canoelet sidecar, tax paid, smart appearance, running order; £25, offers.—187, Stooey Lane, Birmingham. [X8168

6h.p. Rex Combination, 2 speeds, new Amac, new belt, Bosch, C.B. sidecar; £35, or exchange for lightweight.—G. R. Hughes, 50, Staines Rd., Sunbury Common, Middlesex. [7084

SPECIAL Offer of brand new 8h.p. Rex-Blackburne combination, detachable wheels, spare wheel; makers' list price £218, reduced to £175 cash; easy payments only 4% extra.—The Premier Motor Co., Astoo Rd., Birmingham. [X8124

TWIN Rex Combination, 3-speed, K.S., Bosch mag., lamps, new tyres, horn, Easting wind screen; trial; £40; would exchange for late Triumph combination or other good make; cash adjustment.—Bell, St. Margaret's, Pound St., Carshalton, Surrey. [6335

REX 3½h.p., with the following goods, all new, belt, inner tubes, mudguards, toolbags, carrier, rear lamp, front brake, piston, and rebushed, tax paid; price £30, or what offer in cash? owner going abroad.—380, Bolton Rd., Darwen, Lancashire. [7102

Roe.

4¼h.p. Roe, 2-speed, handle start, new B.B., tyres, Lloyd's drip, sporty, splendid order; unemployed.—Baynton, 74, Milton Rd., Hampton. [6331

Rover

3½h.p. Rover clutch model, good condition; £37/10.—A. J. Young and Co., Ltd., Newmarket. [6633

£35.—1914 3½h.p. Rover, 3 speeds, clutch, equipped, perfect; bargain.—King, Egrove Farm, Oxford. [X8145

ROVER Combination, 3½h.p., chain drive, 1920, new last month; £137/10, including extras, mileage 165.—46, St. George's Rd., Canterbury. [6918

ROVER 1921 3½h.p., done about 600 miles; would accept Douglas or lightweight; £90, offers.—Grimes, 18, Bruton Place, Bond St., W.1. [5327

NEW Late 5-6h.p. Rover Combination, less engine and body, almost complete; £55; will entertain exchange; after 8.—47, Burnfoot Av., Fulham. [6899

ROVER 1920 3½h.p. Combination, under 1,000, perfect, speedometer, Easting, all accessories, tax paid; £110.—Mummery, 26, St. John St., E.C.1. [6366

ROVER, 3½h.p., chain drive, lamps, and horn, too heavy for owner, unridden, no licence; no reasonable offer refused.—Box 6,014, c/o *The Motor Cycle.* [7144

ROVER Combination, 5-6h.p., 1920 model, tax paid recently, overhauled, and in excellent order and condition; £100.—Wise, 171, Church St., Notting Hill Gate, W.8. [6868

6h.p. Rover 1919 Combination, lamps, speedometer, screen, roomy sidecar, large locker space, perfect, any trial, tax and insurance paid; £110.—67, Church St., Camberwell. [6901

EXCHANGES QUOTED

1922 CALTHORPE LIGHT CARS.

NEW MODELS AND PRICES.

De luxe, 2-seater, dickey seat	£410	0
De luxe, 4-seater	£435	0
Popular, 2-seater, dickey seat	£355	0
Popular, 4-seater	£375	0

1921 NEW MODELS

STANDARD, 11.6 h.p., 2-seater	£550	0
LAGONDA, 11.9 coupe	£420	0
MARTINSYDE 6 h.p. twin Combination	£145	0
COVENTRY PREMIER 3-wheeler	£250	0
ROYAL ENFIELD 8 h.p. Combination	£160	0
ROYAL RUBY 2¾ h.p., 2-speed, sports	80 gns.	
NEW IMPERIAL, 8 h.p., and Sidecar	160 gns.	
NEW IMPERIAL, 2½ h.p., 3-speed	70 gns.	
SCOTT Combination	£170	0
SCOTT, new Squirrel model	£130	0
BRADBURY. 6 h.p., and Sidecar	£165	0
TRIUMPH, 4 h.p., chain drive, c/shaft	£125	0
B.S.A. twin Combination	£175	0
B.S.A. 4½ h.p. all-chain Combination	£152	10
SUNBEAM, 3½ h.p., new type, sporting	£152	5
SUNBEAM, 3½ h.p., touring	£155	8
NORTON Big Four 3-sp. Combination	£170	0
NORTON, 3½ h.p., 3-speed, T.T.	£132	0
NORTON, 3½ h.p., single speed	£98	0
***DOUGLAS,** 2¾ h.p., 2-speed	£85	0
***DOUGLAS,** 2¾ h.p., 3-speed, clutch	£105	0
***DOUGLAS** 4 h.p. Combination	£160	0
DOUGLAS, 3½ h.p., 3-sp., sports model	£150	0

Deferred Payments quoted.

*Including lamps, generator, horn, licence-holder.

SECOND-HAND MACHINES.

Guaranteed in Running Order.

NORTON 1920 Big Four, 3-speed	£105	0
EDMUND, 2¾ h.p., 1920, 300 miles	£65	0
BROUGH, 1916, 3-speed countershaft	£52	10
DOUGLAS, 1919, 2¾ h.p., 2-sp., tax paid	£65	0
CLYNO, 1920, 2½ h.p., 2-speed, 300 miles	£49	10
ARIEL, 1920, 3½ h.p. 3-sp. countershaft	£84	10
VINDEC, 7-9 h.p., 2-speed, F.E.	£37	10
TRIUMPH, 3½ h.p., clutch, good	£45	0
NORTON, 1920, 3½ h.p., sporting	£80	0
E.N., 3½ h.p., special frame	£19	10
ROYAL RUBY, 2½ h.p., 2-speed	£42	0

PASSENGER MACHINES.

A.V. Monocar, 5-6 h.p. J.A.P.	£79	10
SUNBEAM 8 h.p. M.A.G. Combination	£145	0
ENFIELD Combin., 1921, tax paid	£150	0
MORGAN, 8 h.p., sporting, tax paid	£105	0
MORGAN, 1915, sporting, hood, screen	£120	0
INDIAN, 1918-19, Powerplus Combin.	£105	0
ARIEL 3½ h.p. 1920 3-sp. Combination	£97	10
HENDERSON 10 h.p. 4-cyl. Combination, very smart condition	£175	0
HARLEY 1920 Combination, electric	£160	0
READING-STANDARD 3-speed Com.	£110	0
BRADBURY, 3½ h.p., 3-speed, Sidecar	£69	10
TRIUMPH 3-speed 4 h.p. coach Com.	£69	10
ALECTO 3½ h.p. 2-sp. 1920 coach Com.	£79	10
REX 6 h.p. 2-speed Combination	£52	10
ENFIELD 1915-16 Combination	£95	0
ZENITH, c/shaft twin, and Sidecar	£85	0
NORTON, 1920, Big Four, new Sidecar	£135	0
SCOTT 1920 Combination, very special	£125	0

Deferred Payments taken.

Cash offers considered for Second-hand Models.

TRADE SUPPLIED.

SUNDRIES.

1920 Amac Automatic Carburetter	£1	17	6
1920 Shop-soiled Capac, 1½	£1	19	6
New Army Knapsacks, 13½×11in.	5	6	
Douglas Carburetter, used 15/-, £1,	£1	10	0
New Miller's Lamp Set	£2	4	0
New "Perfection" Sidecar Body	£6	15	0
New "Perfection" Coach Sidecar, shop-soiled only, for Triumph	£18	10	0
Second-hand Douglas Magneto	£1	17	6
Late Amac Carburetter	£1	10	0, £1 17 6
Late B. & B. Carburetter	£1	12	6, £1 10 6
1920 Triumph Carburetter, nearly new	£2	9	6

MOTOR CYCLES FOR SALE.

Rover.

ROVER Combination, 5-6h.p. J.A.P., March, 1921, mileage 1,200, electric, Cameo, S.W. district; bargain, £155, or nearest offer; owner buying car.—Box 6,030, c/o *The Motor Cycle.* [7163

ROVER 3½h.p., T.T., £12 new parts, long flexible exhaust, discs, racing B. and B., exceptionally fast and flexible, fully insured, tax paid, Tan-Sad; £50.—1, Park Hill Rd., Ewell. [6569

1913-1914 3½h.p. Rover Combination, 3-speed clutch, Sturmey-Archer hub, stored during war, tax paid, perfect condition; bargain, £55.—1, Norwood Rd., Herne Hill, S.E.24. [7119

ROVER Combination 3½h.p., new Jan., 1920, first-class condition, just overhauled, speedometer, accumulator electric lighting, horn, tools, tax paid; £90.—Neve, 49, Addiscombe Rd., Croydon. [6646

ROVER Combination 3½h.p., 1915, countershaft, 3-speed, complete with lamps, horn, tax paid, splendid order; £65.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

ROVER 1921 3½h.p., T.T. speed model, with special racing engine, guaranteed as new, racing Amac, knee-grips, long 2in. plated exhaust, can do 70, many spares; any trial or expert examination; cost £135, accept £95 for quick sale.—Stanworths Motors, Higham, near Burnley. [6575

ROVER, 1919, T.T., hand controlled, racing Philipson, makers' selected engine, fastest time Day hill-climb, 1920, guaranteed 70 m.p.h., accessories, Lucas lamps, horn, A.K. knee grips, long exhaust, excellent tyres, small mileage, nearly new condition; sacrifice, £66.—32, Winchester Rd., Colchester. [7086

Royal Ruby.

ROYAL RUBY, 2¾h.p. Villiers, condition perfect, all accessories, discs; £28.—34, Magdala Rd., N.19. [6759

1918 Royal Ruby, 2¾h.p. Villiers engine, in splendid condition, all on; 32 gns., bargain.—Day, St. Just, Portland Rd., Hove. [6693

1919 8h.p. Royal Ruby Combination, electric light, in perfect condition; any trial; £150.—Lock, Coal Merchant, South St., Dorchester. [6962

1920 Royal Ruby Combination, 8h.p., well equipped, hood, screen, original tyres, perfect condition; sacrifice £150; exchanges.—17, St. Charles Sq., W.10. [6824

ROYAL RUBY 1920 3h.p., tax paid, spring frame, just overhauled; bargain, £48/10.—Goad, 122, Maida Vale (private house). 'Phone: Hampstead 1353. [7204

ROYAL RUBY 8h.p. Combination, with Plus One sidecar and spare wheel, Lucas Magdyno and all lamps; £232.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6480.

Rudge.

RUDGE Multi, 1917, first-class order; £45.—Wood, 30, Perryn Rd., Acton, W.3. [6689

3½h.p. Rudge Multi, brand new, 1921; £75 for quick sale.—Box 5,795, c/o *The Motor Cycle.* [4949

RUDGE, 3½h.p., clutch, perfect condition, new tyres and belt; £33.—Palmer, The Cannon, Wisbech. [6878

£25; Rudge 3½h.p., tax paid, good condition, ride away; after 6 p.m.—Belcher, 92, Florence Rd., Wimbledon. [6584

RUDGE Coachbuilt Combination, 3-speed, kick start; splendid bargain, £45.—636, Harrow Rd., Paddington. [6687

RUDGE Multi, 1920 I.O.M. 3½h.p., tax, accessories, exceptionally fast, guaranteed perfect; £67/10; consider exchange lightweight and cash.—288, Sangley Rd., Catford. [7017

1920 5-6h.p. and 7-9h.p. Rudge Combinations, unused; also 1921 I.O.M.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

RUDGE, 3½h.p., 2-speed, free, take sidecar, tax paid, new tyres; £42; photo.—Apply, Riley, Elkstone, Buxton, Staffs. [6299

RUDGE, 1912, 3½h.p., N.S.U. 2 speeds, belt drive, kick starter, Canoelet sidecar; £38.—Mandes, 100, Gt. Portland St., W.1. [7297

RUDGE Multi 3½h.p., T.T., with pedal starting, immediate delivery; £85.—Peacock, 219, High Rd., Balham. 'Phone: Streatham 170. [7175

1921 Rudge Multi Combination, 3½h.p., lamps, tools, accessories, tax paid; bargain.—Rhind and Co., Stone Place, Rusholme, Manchester. [6592

1914 Rudge Coach Combination, foot oiler, electric lighting, new tyres, excellent order; bargain, £55, near offer.—3, Waverley Rd., St. Albans. [6437

1914 3½h.p. Rudge Multi Combination, 2 new tyres, excellent condition; £45, or level exchange C.S. Triumph solo.—7, Leighton Rd., W. Ealing. [6842

1919 (late) I.O.M. Rudge, perfect, lamps, speedometer, discs, horn, knee-grips; nearest £65, or exchange; 7 p.m.—122, Lower Mortlake Rd., Richmond. [7003

RUDGE, 3½h.p., Mabon variable gear, mechanically perfect, go anywhere; £43; seen by appointment.—Munday, 42, Silvester Rd., E. Dulwich. [7271

MOTOR CYCLES FOR SALE.

Rudge.

RUDGE Multi 3½h.p. Roadster, new June, Klaxon, mirror, tools, etc., tax paid, genuine sacrifice, health reasons; £75.—James, 15, Gloucester Place, Windsor. [6498

RUDGE Multi 1921 3½h.p., Isle of Man model, for immediate delivery, brand new; £85.—Elce and Co., 15-16, Bishopsgate Av., Cannomile St., E.C.3. 'Phone: Avenue 5548. [6070

BARGAIN. — 3½h.p. T.T. Rudge Multi, fully equipped, speedometer, spares, perfect condition, 5 to 60 m.p.h.; sell or exchange; £75.—Towell, Electricity Works, Banbury. [6710

£37/10; Rudge Multi, 1915-16 approximately, clutch, kick start, lamps, licensed, heavy tyres, wide tank, foot oiler, perfect, sidecar £4; exchange.—89, East Hill, Wandsworth. [7032

RUDGE Combination, 3-speed Sturmey-Archer, clutch and pedal start, 4-point underslung sidecar, very smart outfit; £65.—Rhind and Co., Stone Place, Rusholme, Manchester. [6591

1920 (Dec.) 3½h.p. I.O.M. T.T. Rudge Multi, engine specially tuned by makers, full tool kit, and all best accessories, original tyres, very fast; £70.—Buckingham, Underriver, Sevenoaks, Kent. (P) [6991

1920 (late) Rudge Multi, 3½h.p., sloping top tube, F.R.S. lamps, mechanical horn, unpunctured, perfect condition, as new, tax paid; best offer over £70.—44, Watkin Lane, Lostock Hall, Preston. [6398

Scott.

£25.—3¾h.p. Scott, 2 speeds, clutch, K.S., splendid running order.—King, Egrove Farm, Oxford. [X8142

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [5911

SCOTT and Sidecar, 1915, perfect condition, electric lighting, accessories; £70, quick sale.—33, Mansell Rd., Acton. [6970

SCOTT, 2-speed, K.S., overhauled, as new; £60; exchange for lightweight and cash.—28, Bourne Rd., Bexley. [7274

SCOTT Squirrel, June, 1921, ridden few miles, guaranteed perfect; cost £130, take £100.—19, Silver St., Doncaster. [X8097

SCOTT, 1913, 2-speed, kick start, Bosch, Binks, lamp, horn, tax paid, good condition; £32.—Rose Cottage, Naburn, York. [6751

SCOTT.—In stock, solo or sidecar; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8084

SCOTT 1920 Solo, electric lighting, complete; £85; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [6605

SCOTT Combination, almost new, Palmer cord 3in. tyres, fully equipped; reasonable offer.—George Williams, Post Office Staff, Llanelly. [6521

SCOTT 1920 Sports, T.T. bars, lamps, horn, mirror, tools, discs, spares, guaranteed perfect; any trial; £115.—Jackson, 93, Shaw Lane, Barnsley. [6490

1914 Scott, Montgomery sidecar, Binks, Cowey horn, speedometer, pillion, wind screen, lamps, tools; ride 40 miles; nearest £80.—Fernlea, Sanghall, Chester. [6390

SCOTT and Sidecar, engine 2349, equipped, licensed and insured, good condition throughout; £85, or offer. Also 3½h.p. Kerry solo; £18.—49, Grant Rd., Addiscombe, Croydon. [6686

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; nt £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

1919 Scott Combination, 3 lamps, horn, etc., very good order; £95, or exchange monocar or good solo, with cash adjustment.—'Phone: Richmond 1676. 17, Waldegrave Park, Twickenham. [6778

1921 Scott, new from works June, indistinguishable from brand new, mileage under 500, T.T. handle-bars, insurance, every conceivable accessory fitted, guaranteed perfect; cost £151 ten weeks ago, will accept bargain price £105; buying car.—51, The Valley, Scarborough. [7048

Singer.

SINGER 2¾h.p., 2-speed countershaft, licensed, perfect; £23.—17, Heaton Rd., Mitcham. [6768

SINGER, 2½h.p., N.S.U. gear, Xl'all saddle, spares; £35.—Baldwin, 105, Marsala Rd., Lewisham. [6289

SINGER 2¾h.p., M-L mag., tax paid, good running order, less front tyres only; £16.—Write, Brentwood, c/o Hermitage, Ovingham-on-Tyne. [6397

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Southey.

SOUTHEY'S 2½h.p. 2-stroke 2-speed Models, lamps, horn, licence holder, tools; £60.—Southey and Co., Berkhamsted. [0686

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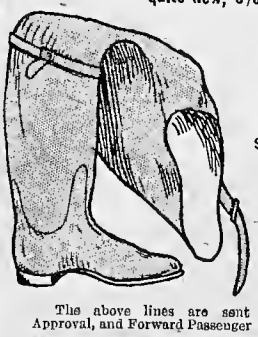

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SOUTHEY 2½h.p. 2-stroke, 2-speed, Chater-Lea or Sturmey-Archer gears, clutch and kick starter, lamps, horn, licence holder, tools; £67.—Southey and Co., Berkhamsted. [0685

Sparkbrook.

SPARKBROOK 2¾h.p., 2-stroke, late model, 2-speed, as new, all lamps, tools, spares, tax paid; £33.—18, St. Mary's Rd., Peckham, S.E. [7250

1921 Sparkbrook 2¾h.p., 2-speed, Tan-Sad, speedometer, lamps, horn, etc., tax apid; £65.—14, Devonshire Rd., Forest Hill, S.E.13. [6972

Sun.

SUN 2¼h.p. 1914 2-stroke, splendid condition; £26.—Palmer, The Cannon, Wisbech. [6879

1920 Sun Villiers, 2-speed, 2-stroke, tax paid, lamps, special mudshields, and all accessories, equal to new; £45.—Durose, Foston, Derby. [6611

Sunbeam.

SUNBEAM 3½h.p., electric light, low mileage; £95; Dorset.—Box 6,018, c/o *The Motor Cycle.* [7143

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Sunbeam and sidecar, 1915; £90. [4019

SUNBEAM Sporting Model 3½h.p., enamel and plating as new; £85.—Paine, Borough, Canterbury. [6495

1915 Sunbeam 3½h.p. T.T. Roadster, just renovated by makers; £95.—A. J. Young and Co., Ltd., Newmarket. [6631

3½h.p. Sunbeam, complete with Lucas lamps, horn, tax paid, etc., like new; £158.—Cross, Agent, Rotherham. [X8152

4h.p. Sunbeam Combination, 1919 French Military Model, chain-cum-belt; price £110.—Southey, Berkhamsted. [0684

SUNBEAM, 2¾h.p., as new, unused 4 years, ideal solo machine; nearest £55. — Pearse, Nursery Walk, Worcester. [7079

8h.p. Sunbeam Combination (Oct., 1919), electric lighting, fully equipped; £145; tax paid.—Hampton, 166, Muswell Hill Rd., N.10. [6501

LATE 1919 3½h.p. Sunbeam, just recently overhauled, fully equipped; £100.—Brewster, Sparhawk St., Bury St. Edmund's. [6783

1921 Sports Sunbeam, unscratched, licensed; £130, or exchange Triumph and cash.—Jackson, Grappenall Rd., Stockton Heath, Warrington. [6549

SUNBEAM, 3½h.p., 1921, April, perfect condition, done 400 miles, tax, insurance paid; £120.—Bennett, 16, Hinton Rd., Gloucester. [6762

1919 3½h.p. Twin Jap-Sunbeam, fully equipped, licensed, absolutely perfect; 100 gns.—Edwards, 50, Harrington Rd., South Kensington. [7171

2¾h.p. Sunbeam, speeds, kick start, unpunctured, clutch, fully equipped, photo; best offer over £70.—132, Merridale St., Wolverhampton. [6668

SUNBEAM 1920 Magdyno 8h.p. Combination, speedometer, ammeter, all perfect; bargain, £165.—Clark, 7, Exhibition Rd., South Kensington. [7106

1914 3½h.p., Sunbeam Combination, electric lighting all round, good condition, Easting wind screen; bargain, price £80.—63, South End, Croydon. 'Phone: 2431. [6402

8h.p. Sunbeam and Sidecar, delivered Jan., 1920, not used this year, original tyres, screen, electric lighting, excellent condition; quick sale, £140.—Rootes, Maidstone. [6474

8h.p. Sunbeam, with 2-seater sidecar, spare wheel, hood, screen, lamps, horn, tax paid, in excellent order, unscratched; £125.—Pangbourne, 64, York St., Twickenham. [6416

SUNBEAM, 1920 (June), 3½h.p., 3-speed, K.S., Lucas lamps and horn, absolutely good going order, just overhauled by makers; £125.—Roberts, Haulwen, Builth. [6889

LATE 1919 Sunbeam Combination, 3½h.p., tax paid, electric Lucas lamps, perfect condition; £110, or offer; after 6 o'clock.—133, Liverpool Rd., Islington, London. [7047

1921 Sports Sunbeam, mileage 100, Lucas accessories, speedometer, A.K.'s, spares, perfect; £146. See Exchanges.—Heath, 168, Wellington Rd. South, Hounslow, Middlesex. [6376

SUNBEAM Combination, 8h.p., late 1919, screen, hood, spare wheel, grid, lamps, accessories, tax, privately owned, excellent condition; £175.—Nicholes, Mill Rd., Cambridge. [6504

1921 (June) 3½h.p. Sunbeam, Lucas lamps, done 700 miles, tax paid, fully insured, tools, etc., cost £170; owner buying car; £150, or near offer.—G. D. Fanshawe, R.M.A., Woolwich, S.E.18. [6502

SUNBEAM Twin Countershaft Combination, fully equipped, Easting screen, tyres good, mechanically perfect, enamel medium, licensed; £90.—Bunting's Motor Exchange, Wealdstone. [7213

SUNBEAM, latest 3½h.p. touring model, £155/8; 3½h.p. sports model, £152/5; in stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [6111

MOTOR CYCLES FOR SALE.

Sunbeam.

1921 Semi-sports Sunbeam, plated exhaust, Klaxon, lamps, insurance to April, 4 months old, absolutely perfect; £155; inspection by appointment.—Seth Smith, Silvermere, Cobham, Surrey. [6412

SUNBEAM Combination, 1920 touring model, 3½h.p., in excellent condition, with lamps, horn, tools, screen, speedometer, luggage grid; going cheap for best offer over £155.—Cheeseright, Sutton, Cambs. [6488

SUNBEAM 1918 3½h.p. Model with sidecar, complete with all accessories, excellent condition; £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8066

SUNBEAM 1920 (July) 3½h.p., 3-speed, K.S., small mileage, better than new, Klaxon, F.R.S. Major (unused), Lucas back, Binks 3-jet, licensed; cost £168, take £115; without F.R.S., £110.—Newitt, Eaton Villa, Market Drayton. [6982

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

SUNBEAM Combination, 1919, black and gold, all lamps, Sunbeam sidecar, £87/10; another similar combination, not a Sunbeam sidecar, £82/10.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6746

SPECIAL Sporting 3½h.p. Twin M.A.G. Sunbeam (photo "The Motor Cycle," Aug. 25th), delivered January, special Enots mechanical lubrication, mileage 1,500, tyres unpunctured, long plated exhaust, It; best over £130; special sporting torpedo sidecar £30 extra. Evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X8149

SUNBEAM 1920 8h.p. Combination, Magdyno lighting, electric horn, Bonniksen speedometer, mudshields, Ace discs, 760×90 cover on rear wheel, tax paid, indistinguishable from new; this outfit would cost to-day £294; for quick sale, £200; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8067

T.D.C.

T.D.C., 1920, 2¾h.p., 2-speed, fully equipped, tax paid; £35.—69, Park Av., Wood Green. [6320

Torpedo.

4¼h.p. Torpedo-Precision, S.A. 3-speed and clutch, Bosch mag., Seaspray, mechanically perfect, trial; £35.—7, Jerningham Rd., New Cross, S.E. [6718

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1920 Triumph, C.S. 3-speed, etc., as new; £80.—33, Hackford Rd., Brixton. [7233

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X8150

TRIUMPH, 1918, 3-speed; nearest offer £70.—Davison, 170, Hornsey Lane, Highgate. [6263

TRIUMPH, 1917, countershaft, tax, lamps, excellent order; £60.—1, Park Hill Rd., Ewell. [6567

TRIUMPH, 1916, C.S., excellent condition; nearest £57.—2, Poplar Grove, Hammersmith. [6685

1920 Triumph, Model H, new condition; £89 lowest.—84, Mann St., Walworth, S.E.17. [6814

TRIUMPH 4h.p., C.S., absolutely new; £82/10, quick sale.—Wilton, White Swan, Upper Norwood. [6218

APRIL Chain Triumph Combination, tyres unpunctured; £149.—Moss, Beecham's, St. Helens, Lancs. [6894

1914 Triumph 4h.p. Combination, 3-speed, clutch, K.S.; £58.—60, Carleton Rd., Holloway, N.7. [7015

TRIUMPH, 1917, overhauled, first-class; £60.—Clark, 7, Exhibition Rd., South Kensington. [7113

3½h.p. Triumph, T.T., clutch, splendid condition, fully equipped; snip, £35.—33, Hackford Rd., Brixton. [7234

1920 Triumph, Model H, in perfect condition, ready ride away; £80.—17, St. Charles Sq., W.10. [6821

1919; £37; Baby Triumph, 2-speed, ride away anywhere.—Ewers, Newton Rd., Burton-on-Trent. [6752

TRIUMPH, 1919, new bulbous 1921 sidecar, Easting; £98.—1, Cedar Rd., Cricklewood, N.W.2. [6809

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH, 1913, 3½h.p., Bosch mag., Triumph carburetter; £37.—Maudes', 100, Gt. Portland St., W.1. [7293

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SMART Triumph Combination, spares, electric equipped; £100.—Particulars, 46, Western Rd., Southall. [6760

TRIUMPH 3½h.p., clutch, pedal start, T.T. bars, new tyres, all on, licence; £28.—92, Tennyson St., Battersea. [6957

TRIUMPH 2-speed Combination, Bosch, Seaspray, perfect order; offers.—Seen 12, Parade Mews, Tulse Hill. [7001

£75; 1918 Triumph, just renovated by makers, perfect.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7192

TRIUMPH 3½h.p., good condition, lamps, new Dunlops; £30, nearest.—Apply, Kidd, Caretaker, Aerodrome, Norwich. [6922

TRIUMPH, 4h.p., 3-speed, and Swan sporting sidecar, fully equipped, tax paid; £80.—785, Old Kent Rd., S.E. [7278

TRIUMPH, 1911, 3½h.p., N.S.U. 2-speed gear; Bosch mag., Seaspray; £30.—Maudes', 100, Gt. Portland St., W.1. [7294

UNRIDDEN, Unregistered Countershaft Triumph, fully equipped; bargain, £85, no offers.—33, Hackford Rd., Brixton. [7231

1913 Triumph 3½h.p., 3-speed gear, in excellent condition; price £40, or offer.—East Grinstead Motor Garage, Ltd. [6622

1912 Triumph 3½h.p., single speed, in good running order; price £28, or offer.—East Grinstead Motor Garage, Ltd. [6623

1914 Triumph, 4h.p., 3-speed, special sidecar, 3 lamps; £60, or offer.—35, St. Albans Rd., Seven Kings, Essex. [6923

1920 Triumph Combination, beautiful condition, well equipped, hood, etc.; £100.—17, St. Charles Sq., W.10. [6822

1920 Triumph-Gloria Combination, fully equipped, very good condition; £110.—Boyes, Crumpsall Green, Manchester. [X8220

4h.p. Triumph Combination, 3 speeds, fully equipped, excellent condition; bargain, £55.—Davis, Croft Lane, Letchworth. [7027

TRIUMPH, done about 2,000 miles, not W.D., perfect condition, like new; £85.—Grimes, 18, Bruton Place, Bond St., W. [5325

TRIUMPH 1921 Model Combination, Montgomery sidecar, perfect condition, nearly new.—Mitchell Bros., Romsey, Hants. [6359

£58.—Countershaft Triumph, entirely rebuilt, good as new, accessories guaranteed.—13, Somers Mews, Paddington. Padd. 899. [7254

TRIUMPH, 1921, chain drive, nearly new, licence, horn; £105, or exchange combination.—14, Morton St., Royston, Herts. [7138

JUNIOR Triumph, perfect condition, very little used, lamps, horn, etc., tax paid; £50.—52, Copleston Rd., East Dulwich, S.E. [6700

TRIUMPH, 1921, not done 1,000 miles, lamps, tax paid; £90.—West, 50, Maldon Rd., Acacia Rd., Horn Lane, Acton, W.3. [6780

GENUINE Triumph, believed 1912, 3½h.p., disc wheels, excellent order throughout; £26.—Bayley, 5, Glengall Rd., Kilburn. [6924

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8085

TRIUMPH 2-stroke, 1921, just overhauled and renovated by makers; £53; condition good.—H. Bolwell, 18, Cleveland St., W.1. [6296

1920 Triumph 4h.p., C.S., kick start, complete, and in excellent condition; price £70, or offer.—East Grinstead Motor Garage, Ltd. [6621

1919 Triumph Combination, mileage 2,000, appearance as new, fully equipped; exchanges; £100.—9, Church Rd., Harlesden. [7039

1918 Triumph Countershaft, with 1921 Sturmey gear box, all accessories, like new; £58.—65, Church St., Edgware Rd., N.W. [7241

COUNTERSHAFT Triumph, late model, all accessories; £58; exchange with cash Norton, Sunbeam.—49, Well St., Hackney, E.9. [6562

TRIUMPH, 4h.p., 3-speed, countershaft, excellent condition, very fast, lamps, etc.; £70.—Keep, Hazeldene, Sandhurst, Berks. [6888

TRIUMPH Combination, coachbuilt sidecar, fully equipped, tax paid; £50.—Braemar, 17, St. Quintin's Av., North Kensington. [6947

TRIUMPH, 1914, 3-speed hub, in perfect condition throughout, speedometer, horn, watch, etc.; £55.—24a, Lidfield Rd., London, N. [6368

TRIUMPH (1919) and Sidecar, perfect condition, all accessories, tax and insurance paid.—C. Badulla, Chobham Rd., Woking. [7281

COUNTERSHAFT Triumph Combination, 1918, electric lamps, fully equipped, Burlington sidecar; snip, £65.—33, Hackford Rd., Brixton. [7232

TRIUMPH 4h.p., late 1919, and 1920 Henderson de Luxe sidecar, complete; £100, bargain, or sell separately.—Lees, Matlock Bath, Derbyshire. [6548

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH, 1917-18, just overhauled, coachbuilt sidecar, splendid condition, lamps, etc.; after 6 p.m.; £95, or near offer.—55, Highbury Quadrant, N.5. [6264

TRIUMPH, new Nov., 1919, equipped spares, Millford sidecar, Easting, licensed, insured, perfect; £100.—G.E., 3, Grotes Place, Blackheath. [6826

TRIUMPH 1919 Combination, perfect condition, all accessories; £85.—Morgan, 353, Goldhawk Rd., Stamford Brook (opposite District station), W. [6843

TRIUMPH Combination, 1919, licensed, equipped, all spares, excellent condition; £90, lowest.—Lieut. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [6865

TRIUMPH, T.T. model, with Philipson pulley, long exhaust, very fast bike, splendid order; £42.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [7263

1920 4h.p. Triumph, Grindlay de luxe sidecar, all accessories, £120; also 5-6h.p. Zenith, o.h. valves, fast, £50, offers.—Boyd, Ardgowan, Saltcoats. [6319

TRIUMPH Combination, latest model, Dunhill sidecar, done 500 miles, tax paid; bargain, £115; extended payments or cash.—33, Hackford Rd., Brixton [7235

BARGAIN.—Triumph combination, 4h.p., countershaft, engine No. 52200, C.B. sidecar, tax paid, all on; first £67.—18, St. Mary's Rd., Peckham, S.E. [7256

4h.p. 1918 Renovated Triumph Combination; cost £115 last year; bargain; any trial; guarantee; best cash offer £93.—Allerton, Eaton Rise, Ealing. [6727

TRIUMPHS, 1918 at £71 and £73, 1919 C.S. £84, 3 months' guarantee given; also 1914 3-speed S.A. hub gear models, £45.—Ross, 86, High Rd., Leyton. [6429

TRIUMPH, 1917, renovated by makers, very good condition, disc wheels, Sturmey-Archer 3-speed, all on; £70.—Rosemead, Nether St., Finchley, N.3. [7087

COUNTERSHAFT Trimph, enamel, plating, and mechanism splendid condition, lamps, horn, tax paid; £65.—30, Crystal Palace Park Rd., Sydenham. [7068

TRIUMPH, 4h.p. countershaft, 3-speed, solo, good tyres and belt, condition as new, lamps and horn, any trial; £67/10.—261, Mitcham Lane, Streatham. [7091

TRIUMPH 1918 4h.p. Combination, fully equipped, perfect condition throughout; £85; any trial evenings.—1, Broomhill Rd., Goodmayes, Ilford. (D) [6583

TRIUMPH, 1912, new N.S.U. gear, fully equipped, spare belt, pulley, new tyres, tax paid, good running order.—Forster, Rookhope, Eastgate, Durham. (D) [6316

1914 4h.p. Triumph, fixed engine, decompressor, Philipson pulley, mechanical condition and appearance like new; £33.—Maynard, 8, Silver St., Enfield. [6840

TRIUMPH 1921 4h.p., countershaft, Type H; £115; in stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [6110

TRIUMPH, 1918, Montgomery sidecar, Easting, Tan-Sad, lamps, and horn, tax paid, perfect condition; £87/10.—Clark, 7, Exhibition Rd., South Kensington. [7108

LATE 1920 Triumph Combination, little used, condition perfect, complete with all accessories, cost £170; nearest £115.—100, Humphrey St., Old Trafford, Manchester. [6953

TRIUMPH, 4h.p., April, 1921, Model H, with Mills-Fulford sidecar, lamps, horn, Cameo wind screen, perfect, as new, very small mileage.—Palmer, The Cannon, Wisbech. [6876

TRIUMPH, 1914, with Middleton sporting sidecar, latest tank, bars, new hub gears, ready to ride away; any trial: £68. After 6 p.m.—17, Lansdowne Rd., Muswell Hill. [6938

TRIUMPH Combination, 1914, 3-speed, electric lighting, speedometer, licensed; £45; biggest value for money ever offered.—Bunting's Motor Exchange, Wealdstone. [7214

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1914 Triumph, Sturmey 3-speed, Amac carburetter, belt, horn, all new, lighting set, all accessories, lately overhauled, tax paid; £70; must sell.—190, Ways Green, Winsford, Cheshire. [5336

1919 4h.p. Countershaft Triumph, all on, splendid condition, fitted with M.M.4 Cancelet sidecar; best offer about £105, quick sale.—Sharp, 352, Shobnall St., Burton-on-Trent. [6395

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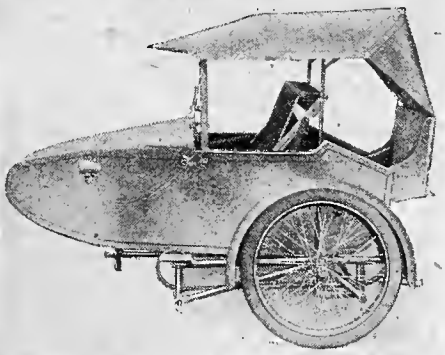

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1913 Triumph, 3-speed hub, Gloria cane sidecar, lamps, horn, speedometer, new tyres, new carburetter, good condition, tax paid, insurance; £55; seen by appointment.—19, Kyrle Rd., West Side, Clapham Common, S.W. [6543

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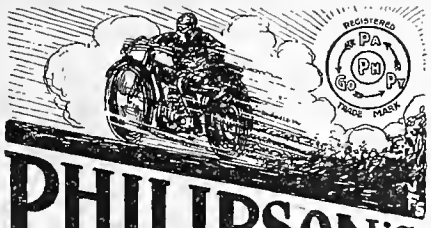
MORGAN, £110; Bradbury combination, £34; 2-stroke wanted.—186, Sovereign Rd., Coventry. [X8210



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Miscellaneous.

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2¾h.p. Motor Cycle, Raleigh engine, good tyres and running order, license; £20.—Abbey, Watton, Norfolk. [6392

BARGAINS.—New O.K.'s, Ariel's, Harleys, Omega, Quadrants; exchanges entertained. — Booths Motories, Halifax.

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BARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P. and M., 1914, £39/15.—Booths Motories, Halifax.

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SCORES of Up-to-date Lightweights and guaranteed in good running order, from £20 to £60; inspection and enquiries invited. — Bunting's, Motor Exchange, Wealdstone. [7115

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COMBINATION, 3-speed S.A. box, with kick start, New Hudson engine, 4h.p., spring frame; £65.—C.G.L. Engineering Co., High St., Swanley Junction, Kent. [6281

BRAND New 1921 Motor Cycles to be cleared at bargain prices to make room for light cars.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [4995

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J.E.S. Attachment, engine No. B202, back wheel, belt rim, electric head and tail lamps, 4 volt 40 amp. hour accumulator; £18.—C. Elbrow, Longworth, Faringdon, Berkshire. [7051

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ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

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PHANOMOBILE Tricar, 1914, 8h.p., hood, wind screen, all equipment, mechanically sound, new tyres, taxed, overhaul cost £40; inspection Manchester; £80, or best offer.—Box 6,004, c/o *The Motor Cycle*. (P) [6620

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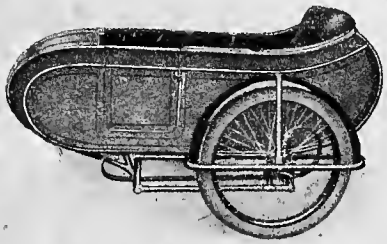

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PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0388

A.W. Manufacturing Co. have still a few early season sidecars for disposal cheap. We can make any sidecar, sporting or touring, cheap or high-class with or without chassis. Call and see us a few minutes from Willesden Green Station. — 'Phone: Willesden 2805.—13 to 24, Avenue Close, Poplars Av., Willesden Green, N.W. [7206

HEPPELTHWAITE and Watkins, having bought the entire remaining stock of chassis at Slough Dump, are clearing at following prices, all renovated and repairs as new: Douglas chassis, complete with all fittings and guard, £4/10; P. and M., complete less guard, £4/10; Clyno, less wheel and guard, £4; body to suit Douglas, saxe blue, bulbous back, new, £8/10, or with chassis, £12/10; P. and M. pattern body, £7/10. Seize the opportunity while it lasts; advice of Old Man Hep.—'Phone: 1958 Brixton. 17-19, Wilcox Rd., South Lambeth, nr. Swan, Stockwell, London, S.W.8. [6660

SIDECAR Bodies and Chassis.—Light Car and Motor Cycle Engineering Co.—Bodies made to your own design. We specialise in high-grade bodies at low prices. Model de luxe, bulbous back, luxuriously upholstered, made for Millford chassis, without step, £10/10; smaller bodies for all types, equally well upholstered and finished, from £5/5. Call and see our stock. Chassis and bodies, complete with all fittings, including new tyre, from £11/10; chassis complete with all fittings, stove enamelled as new, with new tyre, from £7. We are stockists of Mills-Fulford chassis fittings.—Light Car and Motor Cycle Engineering Co., 28, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). [7183

MEAD-DEAKIN M.M.4 Sidecar, new, Harley green, £33; Whitworth-Stevens Sidecar, new, Harley green, £33; M.P. cantilever sprung sidecar, shop-soiled, £30; Sidecar chassis, for fitting to 8h.p. Sunbeam, suitable for tradesman's carrier, £7; Norton sidecar, sports, new, for 3½h.p. Big Four, £31/10.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6481

RUNABOUTS AND CYCLE CARS.

DAN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

CARDEN, ready at works; best offer; £15 deposit receipt.—Booth, Arkley, Barnet. [6311

NEW 3-wheeler, twin 2-stroke, 2-seater; £50; photo stamp.—228, Brixton Hill, S.W. [6285

G.N. Popular, shop-soiled only; £175.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [6646

TAMPLIN 1921 2-seater, little used, guaranteed order; £115.—Box 6,012, c/o *The Motor Cycle*. [7141

DAN GUY, Weymouth, Morgan agent; reduced price; Grand Prix 10h.p. M.A.G., £197, from stock. [0624

DENBY-J.A.P. 8h.p. 2-seater Cycle Car, friction drive, in good condition; £65.—8, Hope St., Maidstone. [6405

1920 De Luxe Morgan, lavishly equipped, fast and smart; £130.—24, Balliol Rd., North Kensington. [6942

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [6645

1920 De Luxe Morgan, lavishly equipped; £130.—Braemar, 17, St. Quintin's Av., North Kensington. [6946

1918 G.P. Morgan, repainted, upholstered, overhauled, very smart; £150.—18, Hestercombe Av., Fulham. [7270

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

8-10h.p. J.A.P. Cycle Car, good condition, hood, screen, lamps; cheap.—Gould, Montague Chambers, Dogpole, Shrewsbury. [6276

G.N. Cycle Cars, latest models, always in stock; £198 and upwards.—Drake and Mount, Ltd., Motor Agents, Bracknell. [3696

G.N., splendid 2-seater, twin-cyl., mag., 2 speeds, hood, licensed; 79 gns.; exchange combination; also easy terms.—Below.

VIOLETTE-BOGEY 2-seater, 6h.p., mag., 4 speeds, hood, screen, lamps; 68 gns.; exchange combination; also easy terms.—Below.

HUMBERETTE, 1914, fine 2-seater, 8.7h.p., 3 speeds, hood, screen, lamps, licensed; 89 gns.; exchanges; easy terms.—Below.

CARDEN (June, 1919) Monocar, 8h.p. twin J.A.P., 3 speeds, hood, screen, lamps; 96 gns.; exchange combination; easy terms.—Below.

MORGAN, 1916, smart 2-seater, 8h.p. J.A.P., 2 speeds, hood, screen, lamps; only 115 gns.; easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [7127

MORGAN de Luxe, excellent condition; reasonable offer accepted, or motor cycle and cash.—Hollies, Churchdown, Gloucester. [6831

1913 Enfield Alldays Car, 2-cyl., water cooled, 3-speed and reverse; £140.—Lock, Coal Merchant, South St., Dorchester. [6963

1916 Grand Prix Morgan, very fast; £150, or exchange for combination with cash adjustment.—Ross, 86, High Rd., Lee. [6428

1920 Coventry Premier, splendid condition, dynamo lighting, spare wheel, not done 3,000 miles; £190.—Ross, 86, High Rd., Lee. [6430

MORGAN Sporting 1918 A.C., in perfect order, all accessories, electric and acetylene; £80.—Box 6,024, c/o *The Motor Cycle*. [7156

G.N. New Standard Touring, dynamo lighting, just received from works; £275/12/6.—Telford Garage, 47, Streatham Hill, S.W.2. [6613

BLACK PRINCE Runabout, lamps, horn, hood, screen, mileage 300; sacrifice, £55; privately owned.—Sheldon, Wheatley, Oxford. [6968

SPORTING Cycle Car, 8h.p., Bosch mag., Schebler carburetter; £50.—Henry, 22, Grosvenor Rd., Chiswick, W.4. 'Phone: 1186 Chiswick. [6841

1920 (December) Morgan de Luxe, water-cooled, in splendid condition, fully equipped, tax paid; £175.—F. C. Lingley, Woodbridge, Suffolk. [6869

MORGAN de Luxe, nearly new, 10h.p. M.A.G., water-cooled, electric lighting, discs, perfect; trial.—Inglewood, 127, Plains Rd., Mapperley, Nottingham. [6473

A.C. Sociables, modern, fully equipped, mechanically sound, good appearance, from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [3128

G.N. 1920 Standard Model, with spare wheel, all over-size tyres, run 800 only; offers wanted; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [6599

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MOTOR CYCLES
Ex R.A.F.

Engine fitted with—

Brown & Barlow or Senspray Carburetter.

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Guaranteed to start by kick-starter.

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TANDEM Cycle Car, 8h.p., a.c., 3-speed and reverse, silent chain, and double belt drive, engine overhauled by makers.—Snowdon, Crook, Durham. [6890

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0873

GIBBONS Cycle Car, 2-seater, new tyres, lamps, wind screen, etc., only wants gear to complete; quick sale £65.—John Robinson, 3, Barnsley Rd., Wombwell, Yorks. [6356

1921 Morgan de Luxe and Grand Prix Models, for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [0644

A.V. Monocar, 6h.p., electric lighting, Zenith carburetter, under 800 miles, licensed, very smart; £65.—Adeney, 8, Gloucester Terrace, Paddington, W.2. [6705

1921 G.N., April, mileage negligible, as new, over-size tyres, tax, insurance; £180; late combination and cash taken in exchange.—17, St. Charles Sq., W.10. [6823

MORGAN, 1917, a.c., M.A.G. engine, recently overhauled and repainted, several parts renewed, excellent condition; £125.—Pratt, 73, Woodlands Rd., Middlesbrough. [5176

BUCKINGHAM 8h.p. W.O. 2-seater, hood, speedometer, C.A.V. lighting, perfect condition; £80, near offer, or exchange; after 6.30 p.m.—30, Cottage Grove, Mile End, E.3. [6258

MORGAN 1914 Sporting Model, fully equipped, good condition; any trial; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8063

COVENTRY-PREMIER 8h.p., 3 speeds, reverse, dynamo lighting, dickey seat, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8074

MERRALL-BROWN 1920 3-wheeler, twin rear, detachable wheels, spare, water-cooled, reverse, hood, screen; bargain, £120.—Clark,—7, Exhibition Rd., South Kensington. [7114

A.V. Monocar, 8h.p., perfect condition and appearance, complete, tools, lamps, etc.; any examination; trial; sacrifice, £90.—Cox, Post Office, Eglingham, Northumberland. [6979

3-WHEEL Runabout, 3-speed, reverse, electric lighting and horn, speedometer, new tyres; £85; exchange combination and cash.—The Haven, 120, Sutherland Rd., Croydon. [6926

1921 Standard G.N., fitted with dynamo lighting, dickey seat, in splendid condition throughout; owner going abroad, must sell; £190.—F. E. Wootten, Ltd., 55, High St., Oxford. [6471

1913 9h.p. Enfield 2-seater, 3-speed, detachable wire wheels, speedometer, lamps, hood, screen, licensed, excellent condition; £75.—Edwards, 50, Harrington Rd., South Kensington. [7174

B.S.A. 1914 2-seater, Silent Knight engine, D.A. and electric light, guaranteed mechanically sound; £200; accept combination part exchange.—121, Rosebery Av., London, E.C. [7260

MORGAN Latest 1921 Models for immediate delivery at latest reduced prices; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0076

1921 Bleriot Whippet, brand new, latest model, spare wheel, lighting set complete; any reasonable trial; £165.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

£130.—Small 2-seater 1915 Trumbull, 4-cyl., water-cooled, 4 speeds, electric light, hood, screen, good climber, tax paid.—Owner, 8, Randolph Mews, Maida Vale, W.9. (Appointment.) [4554

MORGAN, prize winner Brooklands, water-cooled, o.h.v., almost new J.A.P. engine, mechanically perfect, 60 m.p.h. speedometer, 5 lamps, tax paid; £175.—Longden, 122, Shaftesbury Av., W.1. [6467

MORGAN, in tip-top condition, 1914 model, just retyred all-round, repainted and varnished, screen, speedometer, lamps, tools, and spares; must sell; £85.—23, Kempshott Rd., Streatham, S.W.16. [6499

1920 Bleriot Whippet, hand starter, unused spare wheel and belt in leather cover, horn, licensed, everything in perfect condition; 120 gns.—Edwards, 50, Harrington Rd., South Kensington. [7170

G.N., 1920, fast, in beautiful tune, dynamo lighting, full equipment, many mechanical improvements, hood with envelope, tax paid to 31st Dec.; £200.—Telford Garage, 47, Streatham Hill, S.W.2. [6612

ROVER 8h.p. Light Car, brand new 1921 model, dynamo lighting, hood, screen, speedometer, detachable wheels and spare; immediate delivery from stock.—Clark, 7, Exhibition Rd., South Kensington. [7107

1921 Morgan de Luxe, J.A.P. water-cooled, absolutely as new, unsoiled, all best accessories, delightful machine, tax paid, insurance transferred; cost £254, £210.—74, Valley Rd., Streatham, S.W.16. [7095

COVENTRY PREMIER 1921 Runabout, dynamo lighting, spare wheel, all accessories, owner driver, condition perfect; seen and tried appointment.—Anderson, 5, Saint Michael's Mansions, Ship St., Oxford. [6369

RUNABOUTS AND CYCLE CARS.

BRAND New 1921-1922 Grand Prix Morgan, with w.c. M.A.G. engine, disc wheels, and horn, at the new price, £205 complete, in stock.—Walbro Motor Cycle Co., High St., Saffron Walden, Essex. 'Phone: 45. [X8092

MORGAN G.P., 1918, w.c. J.A.P., electric lighting, speedometer, hood, screen, horn, fixed starting handle, Bowden mag. control, excellent running condition, tax paid; £165.—Lloyd, 63, South Rd., Smethwick. [X8041

GENUINE Bargain, Grahame White, shop-soiled, new and unregistered, 2-seater, buckboard, speeds, clutch, kick start, absolutely perfect, inspection invited; £45 cash; exchange value £60.—89, East Hill, Wandsworth. [7035

VICTOR Cycle Car, 1915, 2-cyl., water-cooled, 2 speeds and reverse, hood, screen, electric lamps, 2 new tyres, in good order; any trial; £95.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6750

CARDEN Monocar, 5h.p., identical A.V., J.A.P., 2 speeds, electric lighting, all tyres very good, perfect condition throughout, any trial and examination, a real snip; £37/10; first cheque secures.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [6798

TAMPLIN-CARDEN 9h.p., 1920, 3 speeds, 2 large seats, specially built sporting, yellow and black, wind screen, hood, electric lamps, Klaxon, tax, insured March next, climb anywhere; £110.—51, Morley Rd., Richmond Bridge, East Twickenham. [6355

1921 Morgan Runabouts, de luxe, family, and aero models, ready drive away; complete stock of spares, chains, sprockets, tyres, etc.—Main distributer Monmouthshire: W. Luther J. Davies, 71, Commercial St., Newport, Mon. 'Phone: 2488. [0642

MORGAN, Grand Prix, 1916, water-cooled J.A.P., overhauled, many new parts, repainted red, 3 lamps, speedometer, clock, mechanical horn, hood and screen, tools, tax paid; £155; exchanges.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [7123

CYCLE Car less Engine, £45 to clear, no offers; also complete Singer, Morgan type chassis, all except power unit, with all chains, gear box, Sturmey, £18.—Seen at Heppelthwaite's Garage ('phone 1958 Brixton), 19, Wilcox Rd., South Lambeth, nr. Swan, Stockwell, London, S.W.8. [6658

IN Stock, all models of Morgan runabouts; cash or deferred terms. Example: De Luxe models, £61/5/6 down, and 11 payments of £16/12/5. If account paid in two months, no charge for terms; if within 4 or 6 months, liberal discounts allowed off easy payment price.—Lamb's, 50, High Rd., Wood Green, N.; 387, Euston Rd., N.W.1; 151, High St., Walthamstow, E.17. [3410

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COX's.—Full printed list fifty cars, £45 to £850, free on application. Call.

DOUGLAS S. COX, the Absolutely Straight Motor Man, 6, Lansdowne Hill, West Norwood, has fifty cars stocked. Call 9-6 (Saturdays 4); no business Sundays. Established 1902. [7194

£225 cash secures 1917 Napier chassis, 4 cyls., worm drive, detachable wheels.—Palmer's Garage, Tooting.

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£75 down and 12 monthly payments £5 secures 12h.p. Darracq landaulet, 4 cyls. monobloc.—Palmer's Garage, Tooting.

£200 cash secures 30h.p. Berliet touring car, torpedo, 4 speeds.—Palmer's Garage, Tooting.

£325 cash secures nearly new 1920 12h.p. Rover 4-seater, dynamo lighting, detachable wheels.—Palmer's Garage, Tooting.

£200 cash secures 20h.p. Minerva ¾ landaulet, 4 speeds, Bedford cord.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £10 secures 15.9h.p. Benz landaulet, monobloc, 4 speeds.—Palmer's Garage, Tooting.

£500.—Brand new 1921 11h.p. Peugeot 4-seater, 4 speeds, dynamo lighting and self-starting.—Palmer's Garage, Tooting.

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£60 down and 12 payments of £5 monthly secures reliable landaulet.—Palmer's Garage, Tooting.

£50 down and 12 monthly payments £7/10 secures reliable 2-seater.—Palmer's Garage, Tooting. [6857

DE DION 6h.p., exceedingly smart little 2-seater car, in fine running order, complete; £75.—11a, Dafforne Rd., Upper Tooting. [3246

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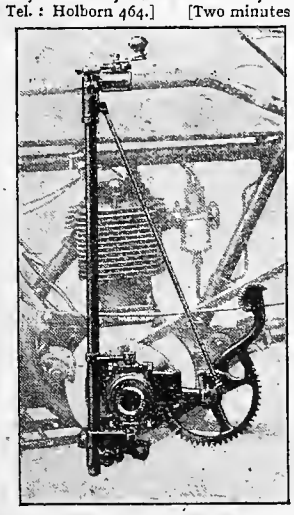

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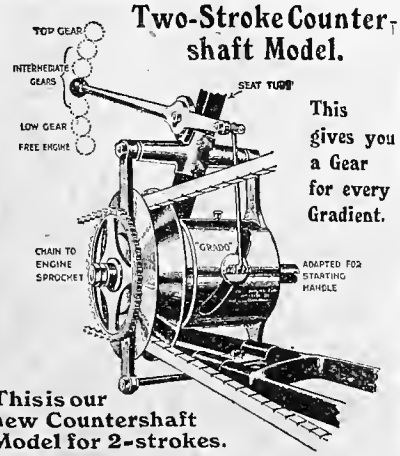

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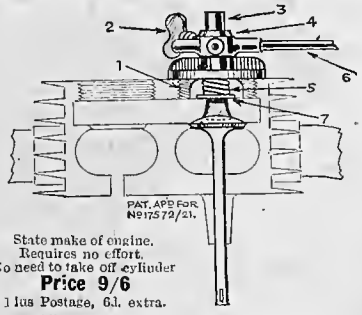

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2-SEATER Humberette, in excellent condition, hood, screen, lamps, tax paid, insurance policy; £120.—Rhind and Co., Stone Place, Rusholme. [6594

LANCHESTER Car, 2-cyl., opposed engine, less body; really a genuine bargain, £12; room badly wanted.—F. C. Lingley, Woodbridge, Suffolk. [6870

TRUMBULL 1916 2-seater, 13h.p., 4-cyl., gate change, new tyres and hood, repainted, perfect; £150.—1, Townley Rd., E. Dulwich, S.E.22. [6732

HALIFAX.—Calthorpe, Lagonda, Standard, and Airedale cars; get our exchange quotation.—Halifax Motor Exchange, 25, Horton St., Halifax. [6640

£75.—Humber 4-cyl., 1908, modernised 2-seater and dickey body, new screen, hood, and tyres, in excellent running order.—Cornford, Bindon, Wool, Dorset. [6928

1920 Douglas 2-seater, C.A.V. dynamo lighting, self-starter, electric horn, speedometer, 5 detachable wheels, small mileage; £280, or nearest offer; list price £500.—407, Coldharbour Lane, Brixton. [6321

1921 Singer 10h.p., new April, lighting and starting, speedometer, small mileage, perfect condition, extras; bargain, £350; consider 1921 Triumph, Sunbeam part exchange.—Holmes, 7, Ouse Av., King's Lynn. [X7518

1919 Chevrolet Touring Car, dynamo lighting, self-starter, 5 detachable wheels, repainted as new, perfect running order; £210, or exchange motor cycle or combination and cash.—5, Norwood Rd., Herne Hill, S.E.24. [7120

CLYDE 10h.p. 2-seater Car, White-Poppe engine, Bosch, overhauled thoroughly, new hood, screen, Stepney, repainted, tyres, etc., in perfect running order; guarantee 3 months; £115.—Wait and Co., Ltd., Queen St., Leicester. [7099

ARGYLL 4-seater Touring Car, C.A.V. dynamo lighting, 5 detachable wheels, enamelled dark grey, smart, recent, reliable, £270; also 4-ton Maudslay lorry, 1918, any examination, £350; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [6607

MOTOR TRANSPORT VEHICLES.

A.C. Box Carrier, excellent condition; £40, or exchange Sociable.—12, Lesbourne Rd., Reigate. [7131

£100 Down and 12 monthly payments of £25 secures a magnificent 3-ton lorry.—Details, Palmer's Garage, Tooting [6849

GIRLING 6h.p. Tradesman's Box Van, 3-wheeler; seen running; great bargain, £35.—Speechley, 86, Churchfield Rd., Acton, W.3. [6872

£35.—6h.p. Girling tradesman's 3-wheel van, fully equipped; seen at work; smart turnout, tax paid.—Speechley, 86, Churchfield Rd., Acton, W.3. [6435

TAXICABS.

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SIDECAR Taxi Combinations.—Consult us, the originators and experts.—County Cycle and Motor Co., B.S.A. Specialists, Broad St., Birmingham. [3694

TAXI Sidecar, 1921, British Excelsior, 8h.p. Blackburne, Watsonian sidecar, licensed, and running at Eastbourne; reason for selling, etc., on application.—A. Barrett, No. 4 Garage, Cornfield Lane, Eastbourne. [6466

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HALIFAX.—We quote best terms for new and second-hand motor cycles, combinations, and light cars.—Halifax Motor Exchange, Horton St., Halifax. [6642

FOR Best Treatment and best terms for light cars, cycle cars, or motor cycles of any make, new or second-hand, write Service Co., 292, High Holborn, W.C.1. [0672

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8h.p. J.A.P., magneto, Amac, silencer, as new; £30.—80a, High St., Bexley. [7273

1916 2¾h.p. J.A.P. Engine, magneto, Amac, Burman 2-speed; £12.—36, Ripon St., Greenheys, Manchester. [6298

P. and M. Engine and Carburetter and kick start, late; £9.—1, Springfield Park Cres., Catford, S.E.6. [6812

5-6h.p. A.C. Engine, B. type, sound, with Bosch magneto and carburetter and exhaust.—Webb, Paddock Wood, Kent. [6304

2¾h.p. Douglas Engine, 1916, complete mag., carburetter, silencer; £18.—13, Somers Mews, Paddington, W.2. [7252

1921 Villiers Engine, flywheel mag., perfect; £18, or near.—J. Veascy, Crofton House, High St., Eltham, S.E.9. [6736

ENGINES.

5h.p. 2-cyl. V Engine, Bosch mag., Vici carburetter, automatic inlet valve; £6.—Tondeur, 4a, Chapel St., Edgware Rd., N.W.1. [6389

METRIC Engine, 80×100, overhead valves, brand new; bargain, £10.—Cole, 457, Rathgar Rd., Longhborough Junction, S.W.9. [5489

4h.p. W. and P., m.o.v., mag. and carburetter, engine plates, mag. platform, chain, complete unit; £6/10.—Marks, 121, Acton Lane, W.4. [7132

YOU Will Never Tire a Broler 3½h.p. 2-stroke. It runs on ball and roller bearings. Unequalled for speed and power.—Brocks, Trasler and Cox, Narborough, Leicester. [X7524

2¼h.p. Precision 2-stroke Engine, magneto, carburetter, gears, frame, tank, fitted up, excellent condition; bargain, £17.—W. Bater, Farrs, Chittlehamholt, Chulmleigh. [6585

J.A.P. Engine, 8-10h.p., water-cooled, complete with Bosch magneto, inlet pipe, the complete Unit brand new light car coupling; £35; deposit.—Box 6,032, c/o *The Motor Cycle.* [7220

INDIAN.—A few Powerplus 7-9h.p. engines at the remarkably low price of 15 gns. each.—Smith'e, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [6717

3½h.p. Triumph, complete, £8; 1920 Villiers 2¾h.p. 2-stroke, complete with magneto and silencer, £10; all Triumph and Villiers and Premier engine parts in stock. — Forfield Motors, Forfield Place, Leamington Spa. [X8207

BRAND New Engines.—2¾h.p. J.A.P., 70/76, complete with exhaust pipe and silencer, magneto platform, and induction pipe, compression tap, bargain, £16, plus carriage; also brand new Villiers 2-stroke, complete with silencer and mag., £16, plus carriage.—Box 6,023, c/o *The Motor Cycle.* [7155

HEPPELTHWAITE.—5-6h.p. J.A.P., as new, off Rover, £15/15; 5-6h.p. Rex, £5/10; 3½h.p. Fafnir, £3/15; 3½h.p. Clyde, £3/10, requires bushing; T.D.C. unit, 2¾h.p., 2-stroke, £12/12; new W.C. twin, 12h.p., £10, with clutch; 4½h.p. Auto, £8; single-cyl. magnetos, 30/- upwards. Stamp please.—Phone: 1958 Brixton. 17-19, Wilcox Rd., South Lambeth, nr. Swan, Stockwell, London, S.W.8. [6659

J.A.P Engines. J.A.P. Engines. J.A.P. Engines.—I have the largest stock of J.A.P. engines and parts in England; over 30 engines always in stock to select from, and the price: 5h.p. twins, £17/10; 8h.p., fitted with new pistons and 1921 cylinders, £20; and 8h.p. at £18/10. Parts: 8h.p. J.A.P. crank cases, 50/- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam wheels complete, 15/- each; valves complete, 4/- each; valve guides, 3/6 each; tappet guides, 2/6 each; exhaust valve and inlet cap, 4/- each; tappets complete, 2/6 each; cam levers, inlet and exhaust, 4/- each; gudgeon pins, 5/- each; and all parts for J.A.P. engines. Stamp for reply.—Hawkins, 455, York Rd., Wandsworth. [3949

IGNITION APPLIANCES.

COUNTY of London Engineering Works, Ltd.

MAGNETOS. Magnetos. Magnetos.

GOVERNMENT Surplus Unused Magnetos.—Having bought the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

COUNTY of London Engineering Works, Ltd.

PLUGS, high-tension wire, plugs.

GOVERNMENT Surplus; new plugs in boxes.

A.C. (Titan), 1/6; K.L.G. type 7, detachable, 2/6; high-tension wire, new, unperished, 9 mm., 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., 2d. per yard, 25 yard coil 2/-.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d.; (see other goods under Miscellaneous.)—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below.

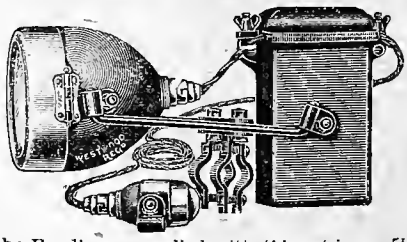
COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [5583

BOSCH Magneto, DA1, needs attention; what offers? —Surrey Arms, East Croydon, Surrey. [6448

K.L.G. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 59, Queen St., Wolverhampton. [5031

FELLOWS Magnetos, brand new; £5 each; twin, clockwise, 180°.—Victors, 58, Woodfield Rd., Ealing, W.5. [4989

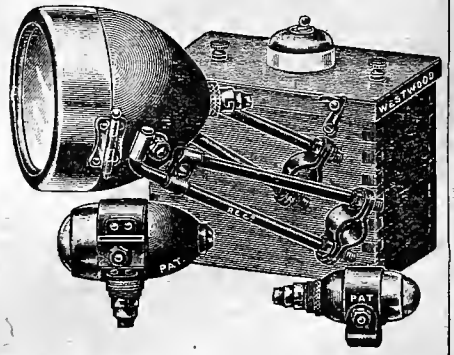
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

Complete Outfit, List No. 30/1, Price £5 5 0
(If tail lamp is not required, deduct 12/6).

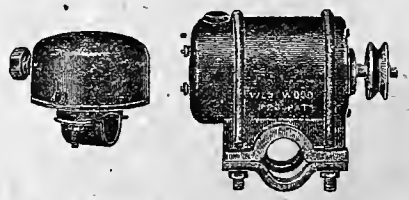
"DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The Accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting and will give very satisfactory service in use. Many have now been in use two or three years, and are as efficient as when first purchased. All our Accumulators are specially made to stand vibration. Ordinary accumulators are never satisfactory for motor cycle work. The hard wood case supplied with this set is finished ebony black, and is specially treated to withstand acid. This outfit is despatched completely assembled with bulbs and all necessary wiring, etc.

Complete Outfit, List No. 30/2, £7 7 0.

DYNAMO & SWITCH BOX



(Write for List No. 7.)
4.6 volts 20 watts. List No. 30/8, Price £7 10 0

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RIM & PATENTS LTD
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IGNITION APPLIANCES.

RELIANCE Magneto Repairing Co. for repairs an new magnetos.—See below.

RELIANCE guarantee to return your magnet within 3 days, and if necessary 24 hours, with written guarantee for 12 months.

RELIANCE Test Every Magneto after repair unde all running conditions, and, as we contract fo many of the largest concerns, you need have no hes tation in placing your repairs and orders with us.

RELIANCE Manufacture and Stock Spares fo Thomson-Bennett, E.I.C., C.A.V., Splitdorf, U.H. Bosch, Dixie, etc.; special line, genuine platinum screws for every make, 12/- per pair.

RELIANCE Will be Pleased to give advice free o charge upon any question concerning ignition troubles, as we place our long-standing experience a your disposal, and old and new customers may be cer tain of getting the usual promptness and courtesy tha we have always endeavoured to give.—Reliance Magnet Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co., 283, St. John St., E.C.1, for new and second-hand magnetos.—See below.

THOMSON-BENNETT Magnetos, waterproof, variabl ignition. These magnetos leave us in perfect con dition, and carry our guarantee to either replace o refund cash if found unsatisfactory. Single-cyls., clock or anti, suit any machine, 55/-; 45, 48, 50, 55, 180 deg., for J.A.P., Clyno, Douglas, etc., 55/-.—See below

C.A.V. Magnetos, brand new, single and twin-cyl. ideal for Douglas, Levis, Calthorpe, O.K., or an lightweight, single or 180° twin, 55/-.

E.I.C. Magnetos, absolutely brand new, not shop soiled, ready to fit on Triumph, P. and M., B.S.A. Norton, Sunbeam, etc.; £4. The above are genuin E.I.C. standard fitting magnetos.

BOSCH ZA2, 180° twin, absolutely brand new, no shop-soiled, for Douglas, Scott, or any 180° twin approval against cash 14 days; few only; £6/10.

BOSCH DAL Magnetos, soiled only, otherwise new suitable for any stationary engine or big single price £3/18/6. All the above magnetos are water proof, variable ignition, and sent out with written guarantee for 12 months; postage 1/6 on each magneto.

RELIANCE Magneto Repairing Co. hold one of th largest stocks of magnetos in London, and ca be depended upon for a straight deal at the right price When buying it pays to deal with a firm of repute;

RELIANCE cordially invite customers to their work to see any of the above on test; fuller particulars upon application.—Reliance Magneto Repairing Co. 283, St. John St., London, E.C.1. [4018

H.B. Ignition Co. for unused W.D. Thomson-Bennett magnetos, 500 in stock.

H.B. can supply from stock single and twin T.B. 42, 45, 50, 55, and 180 degrees, clock and anti with baseplate and bolts for fixing on Triumph, P.M., B.S.A., J.A.P., Douglas, etc.; £2/10, postage 1/6.

H.B. sends all goods on approval per return post on receipt of cash; every magneto sent out carries H.B. 12 months' guarantee.

H.B. will take your old magneto in payment.

H.B. can offer you large discount for quantities of A.C. Titan plugs in boxes, 1/6 each. Send your enquiries to an old-established firm.—H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. [0694

WEST London Magneto Co., London's leading magneto repairers, guarantee every repair for 12 months.

WEST London Magneto Co. invite enquiries concerning magnetos and spare parts of every type.

WEST London Magneto Co.'s 48 hour repair service for country orders must interest you, or if you are in the London area, ring Hammersmith 2757 and have your magneto collected, repaired, and delivered within 36 hours.

WEST London Magneto Co. specialise in motor cycle lighting sets, etc.

WEST London Magneto Co., 164, Shepherd's Bush Rd., London, W.6. (2 mins. from Hammersmith Station.) [3961

MAGNETOS, Dixie, clockwise, twin, unused, perfect, £3/3, must sell; Thomson-Bennett, single, as new, £3/15.—64, Bishopsgate, London. [0615

DOUGLAS Magnetos.—Thomson-Bennet, new, for 2¾h.p. or 4h.p., 40/-; C.A.V., brand new, for 2¾h.p., variable ignition, 60/-; various other magnetos cheap.—Dowell, Pyrford, Surrey. [7184

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [8614

IGNITION APPLIANCES.

MAGNETOS. The real thing, not converted starter magnetos. Genuine Bosch 1914 type, waterproof, anti-clock, ZE1, £3/7/6.—Marble Arch Motor Exchange, 135, Edgware Rd., W. 'Phone: Padd. 789. [4437

MAGNETOS.—Thomson-Bennett, clock or anti-clockwise, 42, 45, 50, 55, 180 degrees and single-cyl., 4-stroke 50/-, 2-stroke 45/-; variable ignition, new, waterproof, guaranteed; write for particulars.—Below.

BOSCH Magnetos, single-cyl., waterproof; £3 each.—Super Power Co., 81, Northside, Clapham, S.W.4. [7042

MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [6850

BOSCH 50° and 45°,—new condition, £4/10 each; C.A.V. 180°, clock and anti (not converted Aero), £3; Bosch type ZA2, £3/10; several 1-cyl. from 35/-; all guaranteed perfect and sent on approval.—Laviver Co., Elnathan Mews, Paddington, W.9. [7076

U.H. Magneto Repairs.—We specialise in these magnetos and can be relied upon to give you good service. A1, B1, AO, KB1, KB2V, KZ2V type spares stocked; prices moderate; 12 months written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [7623

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2381

LOVELAND Magneto Repair Service, established 1900, for efficient repairs. Spare parts for all makes: platinum contact screws from 12/6 per pair, Z Type breakers 15/- each, re-magnetising by special process 6/6 per pair, electric lighting sets £5/5. Write for Folder E.—'Phone: Streatham 1390.—Loveland Brothers, Crescent Magneto Works, Norbury, S.W. [3141

MOTOR Cycle Magnetos, brand new ex-Govt. surplus, by Thomson-Bennett, C.A.V., M.L., singles and twins, fitted with leads, variable ignition. Two brand new sparking plugs dispatched free with each magneto; £2/12/6; this includes postage. Magnetos of all degrees in stock. Cash refunded immediately if dissatisfied.—The Central Ignition Works, 14a, Loughborough Rd., Brixton, S.W. [4506

RUNBAKEN Repair Service.—Thorough and efficient repairs to any make of dynamo, starter, or mag. We have the spare parts, plant, and skilled labour turning out guaranteed work only.—Enclose instructions and send by rail to The Runbaken Magneto Co., Ltd., 115 Gt. Portland St., London, W. ('Phone: Mayfair 3586) North of England: Derby St., Cheetham, Manchester ('Phone: City 8266). [0258

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1 'Phone: Museum 1158. T.A.: Kumagnelec, Euston Road, London [6015

STANDARD Magneto Co., Magneto Repair Specialists.—We undertake the repair of any type of magneto. Bosch, Berling, Eisemann, U.H., Mea, Splitdorf, M.L., E.I.C., etc., 12 months guarantee returned with every magneto. If your magneto is urgent you can depend upon it being on its way back to you in 24 hours for 10% above usual prices, normal time 2-4 days. We have practically every make of spare and reconstructed single and twin magneto in stock, which are guaranteed for 12 months and sent on 7 days' approval. State the nature of your repair, or make of magneto desired, and let us quote you.—The Standard Magneto Co., 55, Churchfield Rd., Acton, London. 'Phone: Chiswick 1518. [5766

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos, Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approved A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Euroad, London. [0263

TYRES.

DUNLOP extra heavy 26×3×2½, unwrapped; 45/-.—43, St. Leonards Rd., Weymouth. [6898

DUNLOP Heavy 26×2¼; 37/6; brand new 1921 stock.—Victors, 58, Woodfield Rd., Ealing, W.5 [4988

MOTOR Cycle Tyres on Easy Terms, standard makes; list post free.—J. G. Graves, Ltd., Sheffield. [0589

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GREAT BARGAINS in Douglas MOTOR CYCLES.

1921 fully equipped

DEMONSTRATION

Models. Must be cleared at greatly reduced prices. All specially tuned by our Expert from the Douglas Works.

2¾ h.p.	2-speed	£77
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The Depot for all Douglas supplies,

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HERBERT ROBINSON, Ltd., Green St., Cambridge.

SPECIAL Manufacturers' Clearance Lines and W.D. Stock, every cover guaranteed and sent on 7 days' approval, post free. We will pay return carriage if you are not more than satisfied.

26×2¼ Dunlop, 37/6; Bates special heavy, 45/-; Palmer cord, 36/-; Macintosh, 34/6; Clincher heavy, 35/-; Beldam combination, 36/11; Avon tricar, 33/-; Matchless, 20/-; Avon Sunstone, 35/-; John Bull extra heavy, 39/-; Cuthbe, 42/-; Avon lightweight, 25/-; Pedley, 35/-; tubes, all makes, 6/6.—Robinson's.

26×2⅜ Dunlop, 37/6; John Bull rib stud, 48/6; Hutchinson T.T., 32/-; Moseley extra heavy, 30/11; Hutchinson passenger, 35/-; Macintosh, 34/6; Clincher extra heavy, 35/-; Bates special heavy, 50/-; Beldam, 30/11; tubes, all makes, 7/6.—Robinson's.

26×2½ John Bull heavy, 48/6; Bates special heavy, 50/-; Avon combination, 53/6; Matchless, 20/-; tubes, all makes, 7/6.—Robinson's.

26×2½, to fit 2¼, John Bull special heavy, 48/6; Bates heavy, 50/-; Cuthbe Cycar, 48/-; tubes, 7/6.—Robinson's.

28×2½ Dunlop extra heavy, for American rims, listed 82/6, our price 55/-; tubes, 7/6.—Robinson's.

28×3, for American rims, Dunlop extra heavy, 52/-; tubes, 7/11.—Robinson's.

28×3 Moseley heavy, 30/11; Cuthbe Cycar, 63/-; Avon extra heavy 3-ribbed, 50/-; tubes, 7/11.—Robinson's.

650×65 Cuthbe Cycar, 56/-; Avon 3-rib extra heavy, 50/-; rubber-studded, 45/-.—Robinson's.

700×80 Avon extra heavy 3-ribbed, 50/-; Cuthbe Cycar, 70/-.

HERBERT ROBINSON, Ltd., Green St., Cambridge. [6112

6/6 is the cost of repairing your damaged cover, returned carriage paid in 2 days.—Below.

EVERY Job Guaranteed Sound and Reliable before leaving works.—Below.

OLD Covers Retreaded in 3 days, with extra heavy studded treads; satisfaction guaranteed; 26×2, 14/6; 26×2¼, 26×2⅜, 26×2½, 17/6; 650×65, 700×80, 28×3, 20/-.—Below.

LOOK up your old tyres; send by parcel post or rail to be repaired and save money.—Below.

PHŒNIX Tyre Repairing Co., 224, Sherlock St., Birmingham. [X8156

THE Difference between a good retread and a bad one is its mileage; try us; watch results.—Melton Rubber Works, Melton Mowbray. [0636

SCOTTISH Readers will find it advantageous to purchase their tyres from McArthur, Hill and Co. 47, Carrick St., Glasgow. Lists post free. [7065

A FEW Real Bargains for Scottish Readers, surplus Government, etc., covers and tubes. Write for list.—McArthur-Hill, 47, Carrick St., Glasgow. [7062

TRY Us for 3,000 mile retreads. Burst tyres made perfect; tube repairs 24 hours, carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [8182

TYRES, 28×2½in. (American rims), extra heavy, rubber studded, best make: 45/- each, listed 73/-; approval anywhere.—Alltyres, 81, Dale End, Birmingham. [6260

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [6068

650×65 Clincher De Luxe, extra heavy, unused, 42/-, original cost 80/9; 650×65 Oylers, heavy, 38/6, original cost 65/-.—64, Bishopsgate, London. [0618

ECONOMIC Tyre Co.—Special offer of Wood-Milne Keygrip covers, new and in perfect condition, at 50% off list prices. All goods carriage paid, on approval against remittance.

ECONOMIC.—Wood-Milne 26×2 heavy, 25/-; extra heavy, 30/-; 26×2¼ heavy, 26/10; extra heavy, 34/-; 26×2½×2¼ extra heavy, 35/-.

ECONOMIC.—Wood-Milne 26×2½ O.S., 31/10; extra heavy, 36/-; 28×2½ American extra heavy, 40/4.

ECONOMIC.—Wood-Milne 650×65 heavy, 32/4; 700×80 heavy, 43/6; extra heavy, 46/6.

ECONOMIC.—The following are W.D. clearance, new, and in perfect condition.

ECONOMIC.—26×2¼ Bates special heavy, 33/-; Clincher de luxe extra heavy, 33/9.

ECONOMIC.—26×2⅜ Bates special heavy No. 1, 34/6; No. 2, 36/6; Clincher de luxe heavy, 30/-; Hutchinson Passenger, 32/6; Tourist Trophy, 30/-; all oversize for 2¼in. rims.

ECONOMIC.—24×2¼ (oversize 2in. rims) Clincher de Luxe heavy, 27/6.

ECONOMIC.—Fully guaranteed Dunlop rubber-stud, 24×2 26/3, 24×2¼, 26×2 28/9, 26×2¼ 30/-.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [6075

TYRES.

28×3 Tubes, brand-new Bates and St. Helens, guaranteed perfect, in original boxes; 4/6 each, postage 1/-.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [4436

BALE and Co.—Special offer of Wood-Milne covers, new and condition perfect, at prices approximately 50% under list; all goods carriage paid against remittance; money refunded if not satisfied.

BALE and Co.—26×2¼ 26/6, extra heavy 32/6; 26×2⅜, extra heavy 33/-; 26×3 (to fit 650×65), 40/-, extra heavy 45/-, 650×65 32/6, 26×3 34/-, extra heavy 42/-, 26×2½ 34/-, extra heavy 36/-.

BALE and Co.—Hutchinson T.T. 26×2¾, 35/-; passenger, 36/-; Clincher de luxe, extra heavy, 34/-; Palmer 26×2¼ and 2⅜, 35/-; Avon rubber studded 26×2¼×2⅜, 32/6; Dunlop heavy rubber studded 26×2¼×2⅜, 37/6.—126, High St., Croydon. 'Phone: 1882. [8380

BURST Motor Cycle Tyres, chafed beads, remoulded, made perfect, tube vulcanising, butt-ends fitted, retreading; send for list.—Melton Mowbray Rubber Works, Melton Mowbray. [0347

CENTRAL Garage.—Second-hand covers salved from army machines, mostly nearly new, and good for several thousand miles, 12/6 each; immediately returned if dissatisfied; state size and make preferred; carriage 1/-.—Below.

CENTRAL Garage.—Special line of genuine Goodrich Safety Tread covers, equal to Dunlop extra heavy, oversize for 26×2¼ only, at 30/- each with vulcaniser. Sent on approval against cash.—Below.

CENTRAL Garage, Thornton Heath, Croydon.—Free, with any of our covers, a small compact and efficient vulcanising machine. Not a toy, but a suitable apparatus for repairing small holes in covers and tubes. We guarantee dispatch within an hour of receipt of order, and return cash immediately if goods are returned. Brand new Wood-Milne covers, 26×2¼, 26/6, extra heavy 32/6; 26×2⅜ 27/6, E.H. 33/-; 26×2½×2¼ 30/-, E.H. 35/-; 26×2½ 34/-, E.H. 36/-; 26×3×2½ 32/-, E.H. 40/-; 26×3 34/-; E.H. 42/-; 650×65 32/6, E.H. 37/6; 700×80 or 26×3 (to fit 650×65) 40/-, E.H. 45/-; heavy tubes, 6/6; carriage 1/6.—Below.

CENTRAL Garage.—Special line of 28×3 extra heavy Wood-Milne, 30/- each listed at 87/-; tubes, 7/6.—Below.

CENTRAL Garage.—Dunlop covers, all sizes, heavy, extra heavy, and combination steel stud. Send cutting of lowest advertised, and we will supply, together with free vulcaniser, on approval.—Below.

CENTRAL Garage.—Bates 3-ribbed covers, 34/6; Palmer, 35/-; Hutchinson, Avon, or Macintosh, 34/-; 26×2¼ or 2⅜; all approval against cash; carriage 1/6. Anyone going elsewhere does not know how to buy.—London Rd., Thornton Heath. [6994

HOMERTON Bargains.—New Avon or Michelin steel-studded covers, W.D., 700×65 35/- each; new Beldam clearance covers, all sizes, 30/- each (except 28×3 and 650×65, 40/- each, 700×80 50/- each).—Homerton Rubber Works, Brooksby's Walk, Homerton, E.9. [0331

EMANUEL'S have a special line of real live 26×2¼ and 2¾ rubber-studded second-hand covers, guaranteed sound and never been repaired; inner tubes to match, 20/- the pair; a few other sizes on application.—H. Emanuel, Tyre Factor, 37a, Balls Pond Rd., Dalston, N.1. [0235

26×2½ New Beaded Covers, 24/-; new best quality tubes, 24×2¼, 6/-; 26×2, 6/-; 26×2¼, 6/6; 26×2½, 7/6; 26×2½×2¼, 8/-; 26×3, 9/-; 700×80, 9/6; 750×75, 10/-; 28×3, 10/6; new rubber belts, 6ft. 2in.×1in., 10/6; 15in. inflators, 2/3; sent approval; carriage paid receipt remittance.—Palmer's Garage, Tooting, S.W. [6854

TANKS.

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied.—Hearsall Works, Coventry. [X6953

B.B.F. Co., Melbourne Rd., Coventry. 'Phone: No. 1965. Petrol tanks of any description made and repaired; trade enquiries solicited; work guaranteed. [X8137

TANKS Re-enamelled to Pattern. High-class work only.—D. Jenkins and Sons, 6, Richard St., Atkinson St Deansgate Manchester Established 25 years [3601

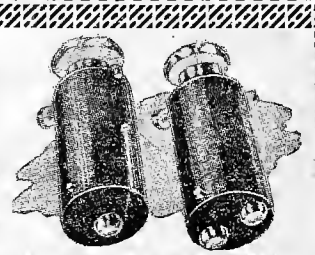
TANKS Repaired, re-enamelled, partition leakage, drip feeds, burnt and damaged tanks rebuilt as new, re-enamelling makers' colours and transfers guaranteed.—Park Works, 1a, Paradise Rd., Green Lanes, Highbury, N.5. [5815

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges.—Send postage for illustrated price list to A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

BELTS.

CENTRAL Garage.—Most of this belting is all the same stuff, although there is little doubt we had the first pick. Brand new Pedley, Dunlop, or Clipper 6ft. 6in. ¾in. 12/6, 8ft 6in. 1in. 18/6, ⅞in., any length. 1/9 per ft.; carriage 9d.; approval.—London Rd., Thornton Heath, Croydon. [6996

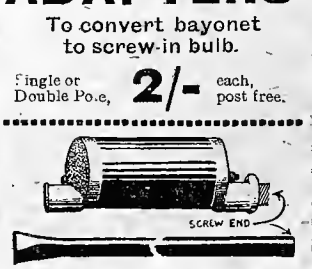
ACCESSORIES



ADAPTERS

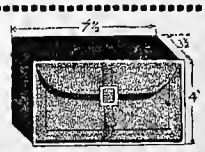
To convert bayonet to screw-in bulb.

Single or Double Pole, **2/-** each, post free.



SILENCERS FOR HARLEYS.

CARRIAGE **16/6** PAID.



METAL CASED TOOL BAGS.

Leather front. Two clips supplied with each bag.

5/9 each. **10/9** per pair.

CARRIAGE PAID.

We have in stock and can supply Repair Parts for B.S.A. Machines, J.A.P. and VILLIERS Engines, DRUID Spring Forks, BEST and LLOYD Lubricators, BOWDEN Brake Parts, and STURMEY-ARCHER Hub on Countershaft gears. Also spare parts and jets for Amac, Brown & Barlow, Binks, and Sensspray Carburetters, and Chater-Lea lugs and races, etc. Write us to-day.

TURNER'S STORES

The Motor Cyclists' Accessory House,

180-1-2, Railway Approach, SHEPHERD'S BUSH, W.12

'Phone:—Western 6177.

BELTS.

LARGE Quantity of New Belts, not clearance: Clipper, 9ft.×1in., 22/- each; 8ft. 6in. ditto, 21/- each; surplus by leading makers, ⅞in., any lengths, 2/1 a foot; special offer at 6ft. 6in. of ⅞in. at 10/- each, ¾in. ditto, 12/6.—H. Emanuel, Tyre Factor, 37, Belgrade Rd., N.16. Stores: 37a, Balls Pond Rd., Dalston, N.1. 'Phone: Dalston 3161. [0348

LIGHT Car and Motor Cycle Engineering Co.—Belts, Belts, Belts.—We have a large stock of motor cycle belts, all makes, from ¾in. to 1in., all serviceable, from 3/6 to 7/-; ¾in., brand new, in makers' cases, 6ft. 6in., 12/6.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). [7181

BELTS.—Clincher, unused, not W.D., ¾in., 6ft. 6in., 9/6; 7ft. 6in., 10/11; 8ft., 11/9; ⅞in., 7ft. 6in., 12/9; 8ft. 6in., 14/9; 1in., 7ft. 6in., 16/6; 8ft., 18/6; 1⅛in., 7ft., 18/6; 8ft. 21/-; 8ft. 6in., 23/-; Bates, short lengths, ¾in., 5ft., 5/-; 5ft. 6in., 5/6; ⅞in., 4ft. 6in., 5/6; 5ft., 6/3; 5ft. 6in., 7/6; 1in., 4ft. 6in., 6/9; 5ft., 7/3; 5ft. 6in., 8/3; leather belts, ¾in., at 2/6 per ft.; belt fasteners, 9d. and 1/- each. Postage 1/- extra.—Bancroftian Co., 64, Bishopsgate, London. [0617

PATENTS.

VARIABLE Gear, giving wide variations, simple, efficient, for sale, with sole rights.—Box 6,007, c/o *The Motor Cycle*. [6619

PATENT AGENTS.

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [6129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [1049

FLETCHER WILSON, of Coventry, Chartered Patent Agent and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

SITUATIONS WANTED.

MECHANIC (21) seeks situation in repair shop or garage, use centre lathe.—W.P., 17a, Lytchett Terrace, Richmond. [6283

COMPETITION Rider, with T.T. experience, desires position with firm, competition department, good references, first-class mechanic.—19, Milton Av., Bath. [7129

GENTLEMAN, late head test dept., Midland firm, considerable experience, extending some 10 years, of motor cycle, car, and aero engines, also experienced salesman-demonstrator, desires fresh appointment, any capacity, highest credentials, consider partnership.—Box 6,019, c/o *The Motor Cycle*. [7149

WANTED, a chance.—Young motor engineer, Public School, theory, and practice, high speed I.C. engines, etc., would appreciate offer from manufacturers or others wanting a live wire worker, careful and accurate mechanic, keen on drawing board stage onwards, will undertake absolutely anything and do his utmost to achieve success, desires to establish the earnestness of his endeavours before accepting remuneration.—A.J., 14, Oak Rd., Withington, Manchester. [7222

STOLEN.

£7 Reward.—Stolen from Brighton Racecourse, 4/8/21, a 2¾h.p. Douglas motor cycle, Reg. No. PB 2913, licence No. 816275, Amac carburetter, C.A.V. magneto, tyres Continental, stamped "W.D.", Klaxon horn, no front brake, footrests covered plain brown linoleum.

THE Above Reward will be paid by Francis Dod and Co., Assessors, 11, Grocers' Hall Court, Poultry, E.C., to the first person or persons giving such information as will lead to the arrest of the thief and recovery of the missing motor cycle or pro rata to the value recovered. [6328

TUITION.

HOUSE and Estate Agency, Auctioneering, etc.—Train by post for this paying profession. Start a business of your own. Prospectus free.—Agricultural Correspondence College (Dept. T.), Ripon. [0389

CONSULTING ENGINEERS.

EXPERT on Works Efficiency, production, costs, development of inventions and experimental work.—W. H. Sumner, A.M.I.Mech.E., M.I.A.E., 28 and 30, Victoria St., Westminster, S.W.1 'Phone: Victoria 7573 and 1702. [9301

AGENCIES.

THE Mohawk Cycle Co., Ltd., require sole agents for their celebrated motor cycles in districts where they are not already represented.—Write for lists and terms to Mohawk Cycle Co., Ltd., Alexandra Rd., Hornsey, N.8. [2506

GENTLEMAN with city office, of excellent address, representing one of the best known accessory manufacturers, seeks additional agency, commission basis, unique opportunity for a firm requiring London address with well-known representative of ability.—Box 6,021, c/o *The Motor Cycle*. [7153

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
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Telephone: 10, Coventry (5 lines).

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Telegrams: "Autopress, Birmingham."
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Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
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Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

The Six Days Trials in Retrospect.

IT was generally agreed on Saturday that the 1921 Six Days Trials of the Auto Cycle Union were the easiest yet planned. But for Wednesday's trip over Exmoor, the conditions encountered were less severe than a motor cyclist includes in his holiday tour. Whether the easy nature of the conditions was due to fear of the wrath of the Manufacturers' Union is not too certain, but one is inclined to the thought that the much maligned A.C.U. were over-influenced when selecting the trials route. In years gone by, local motor cyclists in their thousands have gathered on their local test-hills to witness the riders, but this year, having no notable hill to go to, since the organisers in the main avoided side tracks, they had perforce to assemble on corners or main road inclines, and the number of spectators was noticeably less on that account. Has the manufacturers' boycott been properly understood, we wonder? Apart from the question of "silence," one recalls that the chief complaints of the past have not been directed against excessive gradients at all, but to the boulder-strewn tracks which render success so much a matter of luck. Surely more hills with reasonably good surfaces could have been embraced in the West Country—no one would have cavilled at that, and the trial would thus have been more in keeping with the capabilities of the modern motor cycle.

Speed and Consumption Tests.

The most difficult test of all was undoubtedly the twenty-five laps of Brooklands as a wind-up to the road test. Trouble and breakdowns were frequent in this speed burst, some of them admittedly due to the riders setting themselves too hot a pace in order to gain bonus marks. Of the petrol and oil consumption tests during the road stages from Monday to Friday, one can only remark that the results are artificial in the extreme. Every downhill stretch was seized upon by the wily competitors to declutch and freewheel in order to conserve fuel supplies, and lubricating oil was cut down to vanishing point, which is not good for the engines. A smoky exhaust was a thing unknown—until the riders reached Brooklands! Notwithstanding, the figures recorded for petrol consumption are interesting, but of the lubricating oil consumed, one can only express the opinion that the figures are in some cases unbelievable.

Possibly due to the fact that many representative manufacturers refrained from entering the trial, the percentage of failures is large—too large, indeed, at this stage of progress in motor cycle production. The severity of the trial could in no way account for eleven riders withdrawing before Tuesday evening—on roads absurdly easy, judged from the capabilities of a modern motor cycle; unpreparedness must be the real reason. Tyres caused a goodly number of lost marks, and it is still a fact to be admitted that motor cycles are not so well shod as cars. Of the eighty-nine starters, fifty-four are awarded gold medals, six silver medals, three bronze, and five certificates, one of the survivors being disqualified.

Passenger Machine Successes.

Passenger machines showed up prominently, particularly the powerful variety, and this, notwithstanding an unusual percentage of trouble on the track, due to the high speeds attempted. The three-wheeled runabouts in particular have cause for congratulation, for they mostly performed well throughout, and, more important still, were in first-rate condition when the examination stage arrived. The percentage of passenger machines to gain gold medals is far superior to the solo mounts, being actually twenty-six gold and three silver medals of the thirty-six starters.

Next year, one earnestly hopes that the Manufacturers' Union and the A.C.U. will have settled their differences, and so enable a difficult and useful Six Days event, representative of all manufacturers, to be arranged once more for the general good.

An index to the advertisements in this issue will be found on the page facing the back cover.

The Note of Hooters.

THE more I see of modern traffic, the more convinced I become that hooters would convey far more safety if their note was higher. In almost every case, whether the hooter be a bulb horn or electric, its note is distinctly bass, and a gruff, raucous growl is about as accurate a description of it as one can get. Such a note travels fairly well when there is no counter-noise. But it is not decently audible above the rumble of a waggon or the burble of an ordinary engine. I have heard it stated that a really deaf man can only hear two sounds—the squeak of a door hinge and the squeak of an ungreased waggon wheel. Be that as it may, I still remember that of all the alarms I have used in over twenty years of motoring, the exhaust whistle was the most effective. I believe that as our roads get more and more choked with fast traffic, of which a percentage must ever remain rather undisciplined, we shall need hooters of more penetrating power. At any rate, such an innovation might be a useful auxiliary to the removal of road dangers and the instruction of young drivers in "safety first" principles.

Prop Stands.

IF my correspondence affords any index, there will be rows and rows of prop stands at the next Show. The motor cycling world is just tumbling to the folly of needless exertion. To the fact that kerbs are too high, or too low. That many absurd roads have flush edges. That lifting 3 cwt. is no joke. That the proper function of a rear stand is to minister towards tyre repair. That a Rolls-Royce does not have to be laboriously hoisted on to four jacks whenever the crew dismount. That—in short—we have been silly jugginses, and do not intend to remain such any longer. I cannot give free advts. to them all, but a lot of earnest people are sitting up at nights with pencils, and several patterns seem likely to eventuate.

Never Said It.

AN irate reader denounces me soundly for "writing up the babies." He recommends me to buy a motor bicycle or a box of tin soldiers or wooden bricks. I have never said that a baby was the correct all-purpose mount. If I were limited to a solitary jigger, nothing but grievous impecuniosity would cause me to select a baby. They are not fast enough for one thing. For another thing, they mostly joggle one up too much on genuinely prolonged rides. But I always try to keep one for local pottering, because they are so reliable, so cheap to run, and so easy to handle in a hurry or on a multi-stop sort of jaunt. A baby Cedos has graced my stable for the best part of a year. I am never going to sell it, and I would not be without it for years. But if it did not generally boast a big stable companion, I might possibly hate it; for after the fashion of all engines with jam jar cylinders, it feels every slope, and its all-out gait is probably rather under forty than over it.

Those Wasted Years.

DO not quiver, prurient reader. You are not going to be treated to a tabloid summary of my lurid past. My cross-heading is inspired by the thought of the vast sums, now, alas, gone beyond recall, which I have expended on hotel bills during a somewhat vagrant existence. I hinted the other week that I have recently purchased one of those portable hotels known as campers' tents. I have just spent a healthful and interesting week with it. Trying moments occurred. The Primus stove carboned up its jet and perished its pump washer (mere trifles to a veteran motor cyclist). A needlessly bloodthirsty bull broke into my camping ground at 2 a.m. and sniffed horrifically at the partly open tent door—the far end of the tent being hermetically sealed by numerous ties and stout pegs. Once I waxed almost poetic in spirit as I gazed out of the door at 5 a.m. towards a sombre sea—and spied an enormous rat combing his whiskers after a hearty meal on my corned beef. There were earwigs. Also wasps. But take my word, it is the life, gentlemen. I am as brown as a berry, and ready to keep my temper whilst I tackle a rained out magneto in the open.

Tent v. Hotel.

I CAMPED last week next door to a well-known schoolmaster, who was in charge of a baker's dozen of young England. Their week's expenses came to a round 30s. less than my hotel bills for the last Six Days Trial which I attended. No, I am quite a sober man. Yes, I may have lots of friends, but I do not spend my evenings in the bar, calling for drinks round. The plain fact is that you can give a dozen lads a jolly good supper and breakfast for less money than the "dinner, bed, and breakfast" charge of a secondary hotel, and you pay no rent, and next to nothing for housing, on the beach or the field. Nor do rates or staff or licence cost you a cent. I look forward to the day when the country will be dotted by the camping enclosures of a great motoring organisation, bossed by the A.C.U. or the A.A. For the main trouble about camping is finding the perfect site in a district which you do not know, and the second problem is getting leave to use it when you have found it. Shelter, good ground, and a plentiful water supply in sight of pleasant scenery are the main requisites of the ideal site; and "dirty campers" have

Occasional Comments.—

enraged so many land holders that even a Mason of marked personal beauty and distinctly engaging manners meets with more refusals than permissions. My last site was freely decorated with open tins full of decomposed salmon and poisoned wasps. So neither my mystic signs, nor my sad, sweet smile, nor my honied words won the landlord. Old campers say the best "Open Sesame" is to take with you a pretty girl, preferably clad in one of those cretonne frocks which begin late and finish early.

Dearer than Arrows!

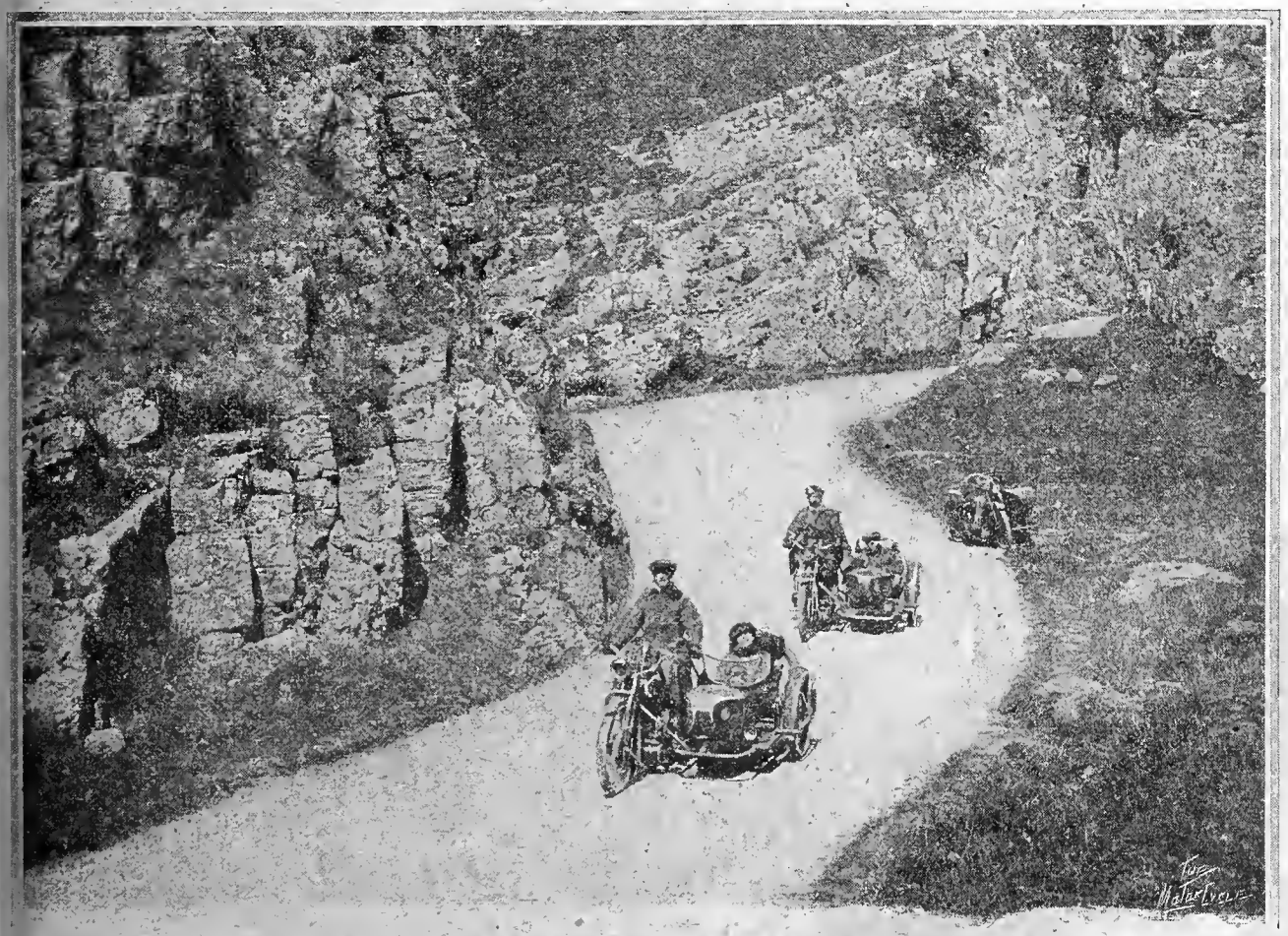
THE blue powder used by the A.C.U. for marking the route in last week's Six Days is dry paint, and costs between £30 and £40 per ton. Major Dixon-Spain used 5 cwt. (all but 4 lb.) in marking Tuesday's route, so the week's outlay is quite considerable. This year the A.C.U. elected to use a pale shade of blue (mixed ultra-marine and white), which was not particularly effective, for after a few hours' exposure and it is often laid twenty-four hours in advance) it harmonises too closely with blue shadows thrown by trees and with certain tints in the tar. I do not know that I am a very warm advocate of road staining; at dangerous junctions it is rather apt to distract the men's attention from the road.

Potty Hills?

REALLY there is no pleasing some people. Last year the A.C.U. hills were criticised as machine-smashing precipices, and this year, with one or two exceptions, as the sort of grade up which any healthy troop of boy scouts could double with their trek carts. I noticed that each hill, however insignificant, drew its assembly of the local k'nuts, whose rapt earnestness proclaimed that they were interested in the climbing. If this type of rider ventures to visit Porlock or Lynmouth, he talks about it for months, or even years, afterwards. I believe the 1921 trials represent popular hill-climbing standards far more accurately than ever the 1920 event did.

Really, Doctor!

DR. LOW refuses to admit that the A.C.U. officials have ever dared to criticise design. His memory has failed him, for—to quote one famous occasion only—they came near advising the trade to scrap air-cooling in favour of water-cooling; and I believe Dr. Low was a judge in the trial under notice. I quite admit that the water-cooled Scott put up such a fine show in the event as to justify public attention being directed to its cooling. But the judges' report of that year went a great deal further than the mere record of observed facts.

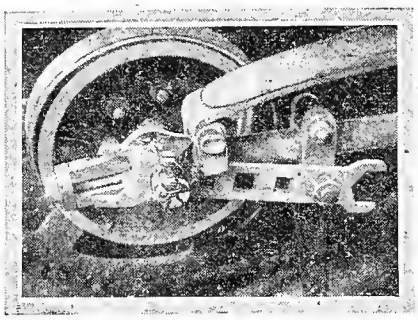


IN A SOMERSET PLAYGROUND.
F. J. Ellis and F. O'Brien piloting their Matchless sidecar outfits through Cheddar Gorge during the Six Days Trials. This famous beauty spot is one of the most popular resorts in the West Country.

PASSENGER MACHINE TOPICS.

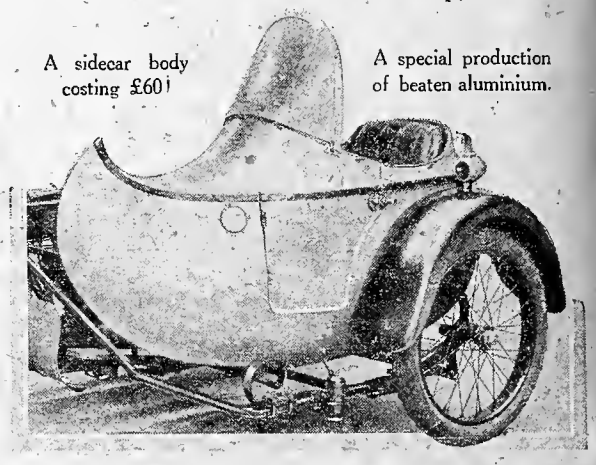
Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers. Collated by "Vedette."

IT is not often that a severe frame breakage can be so securely repaired on the road that a further sixty mile journey may be accomplished without mishap. Yet this was done by Mr. W. H. Trigg, of Newbridge, Monmouthshire, and, what makes the feat even more ommendable, to the rear stay of a Morgan, which takes a considerably greater strain than the corresponding member on a sidecar outfit. The accompanying illustration show how the repair was effected with the aid of a spanner from the toolkit.



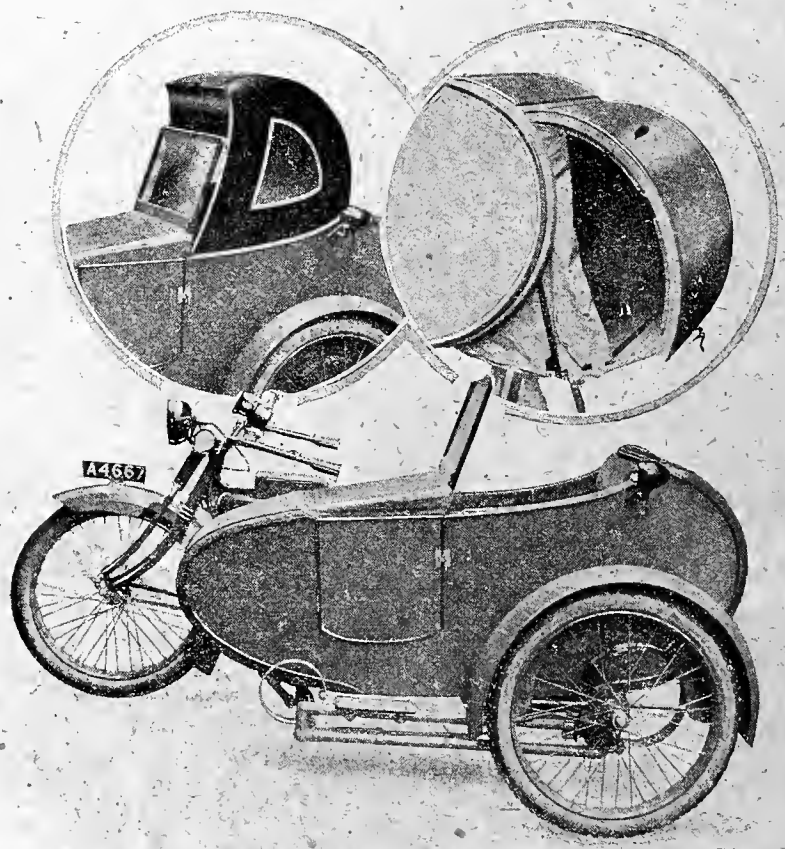
An ingenious repair to a broken rear fork on a Morgan.

THE battle against the elements, so far as the sidecarist is concerned, has resulted in many ingenious devices for the protection of the rider and passenger. A novel disappearing hood, the product of Mr. A. C. Goad, 13-24, Avenue Close, Poplars Avenue, Willesden Green, London, N.W., is shown in the accompanying illustrations of a new sidecar by this designer. So far as the hood is concerned, it cannot fail to provide complete protection for the passenger, since the sides and top are as one piece, whilst the front aperture is covered, first by the windscreen, and above that by a metal flap. Mica side windows are provided, and the whole slips comfortably away into the rear of the body when the retaining clips are released. Mr. Goad hinges the bulbous back of his sidecar at the top, whilst the lower end, when drawn out, unfolds a metal luggage grid. This is supported by two metal strips fixed to the body and to the centre hinge of the grid. To render this large compartment absolutely rainproof, not only is the underside of the grid covered with waterproof material, but canvas side pieces are fixed in position by metal clips. This construction, although ingenious, is not altogether suitable for the loading of large articles, such as suit cases, etc.



A sidecar body costing £60!

A special production of beaten aluminium.

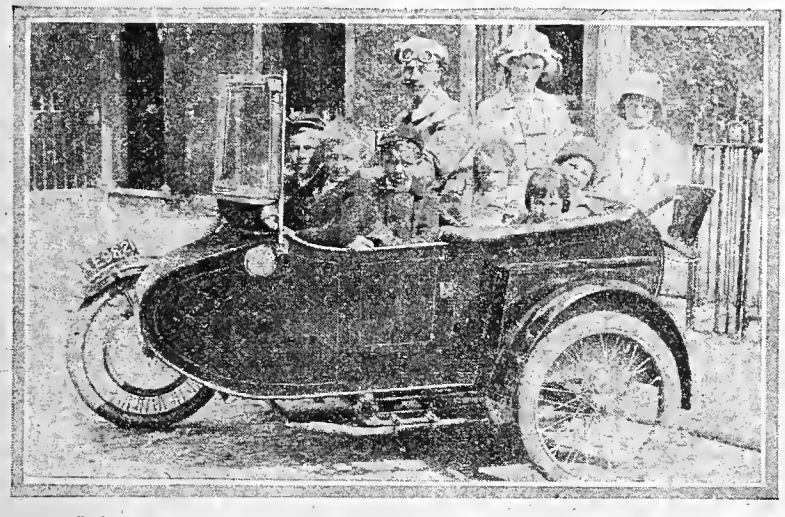


A new sidecar design, the hood of which folds completely out of sight. The inset on right depicts the ingeniously conceived luggage grid.

A SIDECAR body for £60 represents more than the majority of us would care to pay. Yet that figure is the estimated cost of a body similar to the one illustrated, which was made specially by Messrs. Wolf and Pitney, of 48-50, Mersey Street, Notting Hill, London. It is constructed throughout of sixteen-gauge

Passenger Machine Topics.—

aluminium, and, although fitted to a standard Enfield chassis, is wide enough to seat two passengers of medium size side-by-side. As might be imagined, it has ample locker accommodation.



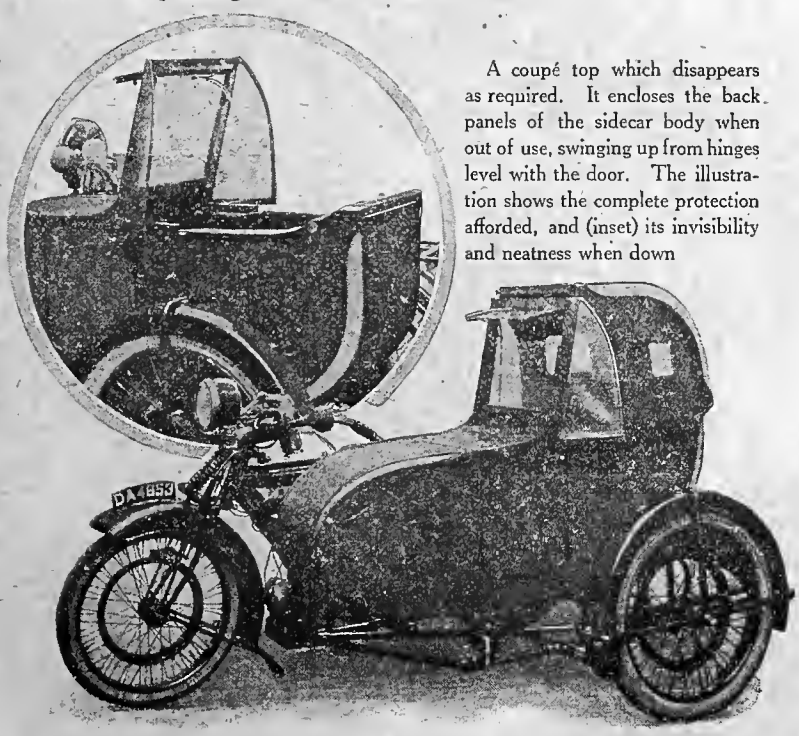
Eight or nine passengers is a normal load for this 5-6 h.p. Enfield outfit of Mr. W. L. Driver.

THE owner of the very much family sidecar illustrated on this page (Mr. W. L. Driver) acknowledges that his loaded outfit provokes considerable comment wherever he goes. I am not surprised! The illustration shows nine up (I have had them counted carefully), but his more normal complement of passengers consists of only eight—four adults and four children. Until some other reader caps this feat, I have no hesitation in answering in the affirmative Mr. Driver's query as to whether he has broken records. The long-suffering machine is a 5-6 h.p. W.D. Enfield, the sidecar body of which has been largely constructed by its present owner.

THE fitting of a completely enclosed sidecar body in many cases is undesirable, since, providing an efficient windscreen is fitted, the passenger does not wish to ride "in a box," except when the weather is absolutely impossible. Hoods of the Cape cart variety, although they give protection from wet, do not keep out wind to any great extent. If the permanent canopy is neat in appearance, the Cape hood is the reverse, especially throughout the greater part of its life, *i.e.*, when out of action.

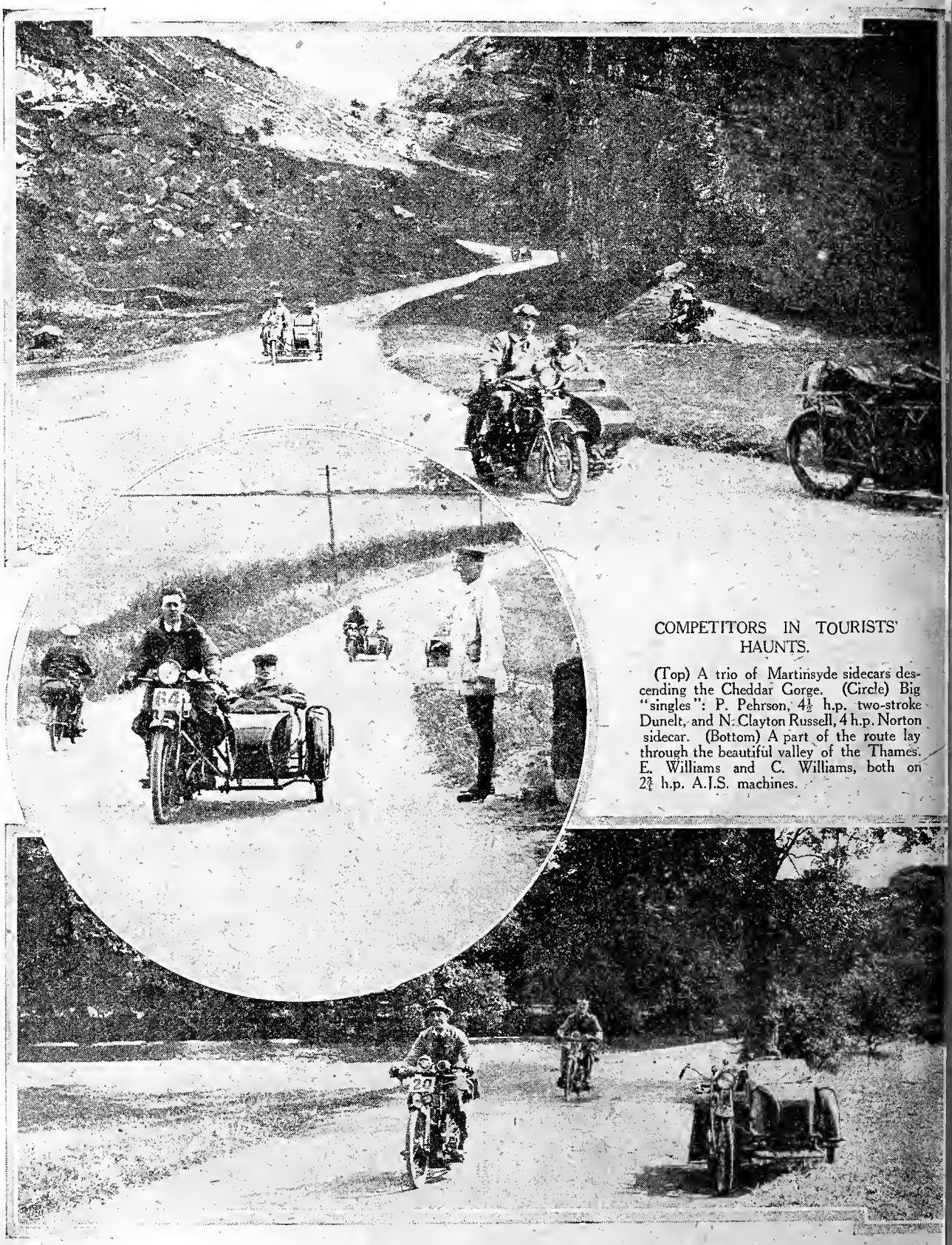
Two thoughtful motor cyclists, Messrs. Brookes and Harris, of 126, Merridale Road, Penn Road, Wolverhampton, have devised and patented a really weatherproof sidecar body on neat and simple lines, giving all the advantage of the permanent coupé top, and having more than the convenience of the folding hood.

The best feature of the arrangement is its delightful simplicity; briefly, with the canopy down, the body appears to be quite normal, except for the broad polished beading round the sides and back of the seat; the windscreen is carried on a hinged dash, which has a water-tight joint, and is self-supporting in the "open" position without the use of hinged stretchers. Adjustable side wings are fitted to the screen. The canopy is a complete shell enclosing the back of the body, and is hinged level with the front of the seat; brought up into position it meets the top of the screen and edges of the screen side wings. Ventilation is afforded either by opening the latter or by means of a hinged cover controlling a gauze-protected slot above the top of the screen. The whole idea is simple, practical, and, as the pictures show, invisible in the "out-of-use" position; moreover it may be applied to run-abouts or two-seater cars, and there does not appear to be any objection to the scheme.



A coupé top which disappears as required. It encloses the back panels of the sidecar body when out of use, swinging up from hinges level with the door. The illustration shows the complete protection afforded, and (inset) its invisibility and neatness when down

HOW long do belts wear on large sidecar outfits with a chain-cum-belt transmission? This question has often been put to a member of *The Motor Cycle* staff who runs an 8 h.p. Rex-Blackburne outfit. At the time of writing this machine has over 10,000 miles to its credit, and the Dunlop 1in. belt is apparently as good as new. Obviously the coating of rubber on the sides is not so thick as originally, but otherwise there are no signs of wear. The pulley centres are rather wide, so that the belt may be run fairly slack.



COMPETITORS IN TOURISTS' HAUNTS.

(Top) A trio of Martinsyde sidecars descending the Cheddar Gorge. (Circle) Big "singles": P. Pehrson, 4½ h.p. two-stroke Dunelt, and N. Clayton Russell, 4 h.p. Norton sidecar. (Bottom) A part of the route lay through the beautiful valley of the Thames. E. Williams and C. Williams, both on 2¾ h.p. A.J.S. machines.

PORLOCK IMPRESSIONS.

G. Featherstonhaugh (3½ Rover) on one of the steep portions of this famous hill, showing the sea shore in the distance. (Circle) J. Ford (7 F.N.) and J. Wallace (3½ Duzmo) appear none too happy on the bend, but both made a clean ascent. (Bottom) G. Strange (3½ James) and H. H. Nicholson (3½ Martinsyde) going well.

THE T.T. IN BELGIUM.

Pleas for the Race in Britain.

STILL more opinions flow in on the change of the venue from the Isle of Man to Belgium for the 1922 Tourist Trophy Races.

One remarkable feature is that the A.C.U. has mentioned that a reason for the change is that the dates which were put forward to the Isle of Man Highways Authority were refused on the grounds that the R.A.C. had already applied for and received permission to hold car races during the same period.

The R.A.C. is the parent body of the A.C.U., and, although the two are supposed to work in conjunction, it would seem that they are very much in the dark as to each other's actions; the above mentioned "explanation" of one of the reasons for the change certainly betrays a lamentable lack of internal organisation on the part of the ruling organisations; it is to be hoped that this sort of thing does not occur on other occasions when the R.A.C. and A.C.U. committees have mutually affected interests.

Letters from individual readers are given below; these, however, are prefaced by an informative communication from a gentleman well-fitted to speak on the holding of the races in Belgium, representing, as he does, the interests in this country of the most prominent Belgian motor cycle factory.

It will be noticed that the holding of a race in this country is still advocated, and truly, however impossible it may be, we must confess much sympathy with those whose desire would lead to the embarking upon what appears to be a forlorn hope. A strong and united ruling body, after selecting a suitable course in England, *might* illuminate the governmental mind with a sufficient idea of the value of a special Act permitting a race of such important value to international trade development, but the idea is far from hopeful.

Some Advantages of the Change.

Sir,—I have been much interested in reading the expression of some of your readers' opinions on the subject of the change of venue of the Tourist Trophy races for 1922. It is quite natural that a considerable number of the opinions expressed are not favourable to the new proposal. Where vested interests are involved, unbiased judgment can scarcely be expected.

Personally, I am exceedingly pleased to see that the A.C.U. have broken away from the Isle of Man tradition, feeling, as I do, that an unbroken sequence of trials over precisely the same course is bound to stereotype motor cycle design in one direction only. That the invitation of the Belgian authorities should have been accepted by the A.C.U. is, of course, gratifying to me, because of my association with the most prominent firm of Belgian motor cycle manufacturers. Nevertheless, I should equally have welcomed the change had the trials been held in France, in Ireland, or in England.

The arguments adduced against the change of ground would seem to run in three general categories:

1. Doubt as to the adequate severity of the course to produce a first-class test.
2. The extra cost and worry to manufacturer and spectator alike involved in holding the race in a foreign country.
3. The undesirability of spending money abroad at this juncture.

May I be permitted to deal briefly with these points:

1. From personal knowledge of the district, which is probably greater than that of the majority of your correspondents, I would say that the course does possess bad corners, long climbs, dangerous descents, awkward hairpins, and good speed stretches, sufficiently calculated to gruel a machine to an even greater extent than the Isle of Man course, and, in particular, possesses a new set of conditions which may prove a handicap to those who have, as a result of many years' racing on the Isle of Man course, produced machines suitable for that course only, and trained riders to obtain the last ounce out of them only on that course. It is evident that there are vested interests here, which naturally will hardly extend a welcome to a proposal which puts one and all on an equal competitive footing.

2. On the question of the extra worry and cost involved, passports and Customs formalities are slight; and, without doubt, special arrangements will be made by the A.C.U. and the Belgian Government, which will render trouble in this direction practically nil. The actual transport of machines and material between England and Belgium is, from my own experience, a far simpler matter than transport of machines and material to the Isle of Man. In contradistinction to the manners of the shipping company, the authorities, and the people of the Island generally, the Belgian people are courteous, helpful, enthusiastic, and good sportsmen; and from my intimate knowledge of conditions in the district where the race is to take place, I can assert that both competitors and spectators alike will be surprised at the desire to be of service and the warmth of the welcome which will be accorded to them.

3. The third aspect would appear to be a jealous fear lest English money should be spent abroad. In this regard, I note from a recent clipping anent the T.T. races, that the *Isle of Man Times* estimates that the T.T. races bring a sum of £50,000 into the Island. When one considers the millions which are spent each year by British tourists abroad, the figure of £50,000 is so infinitesimal that it seems to be straining at a gnat and swallowing a camel to worry about it; but, granting that the small and petty view be taken, to my mind, British motor cycle manufacturers, and the motor cycle movement generally, will receive a very great deal more than £50,000 worth of international advertisement from the fact that the races are held in a country to which the greater number of European nationalities have easy access.

If the British motor cycle industry is to continue to exist, it must very seriously cultivate the export trade, and there is no more potential field for this than the Continent. At the present moment this market is inclining to the American mount.

I have dealt very briefly with the three main points set out above, as space conditions do not permit of my doing so *in extenso*.

In my opinion, there are excellent reasons, quite apart from those of a technical nature, affecting design. In the past, and particularly last year, competitors and visitors alike suffered from the lack of shipping facilities and the general absence of helpfulness on the part of the shipping company. The petty restrictions and taxation imposed by the Isle of Man authorities were of a very annoying pin-pricking character, and, in the opinion of the majority of people, absolutely unnecessary; certainly ill-advised.

By granting permission to the R.A.C. for car races to be held in June, 1922, the month usually reserved for the T.T. races, the Isle of Man authorities have clearly shown how little value they set on the the holding of the A.C.U. T.T. races in the Island; or, on the other hand, they clearly

The T.T. in Belgium.—

indicate by such an action they consider that conditions have granted them a monopoly of the T.T. races on their own terms.

Further, the Isle of Man is exceedingly inaccessible for Continental manufacturers or visitors, or even for visitors from the South of England, and this plays quite an appreciable part in nullifying the international character of the races.

When in the Island last year I heard complaints on all sides as to the profiteering character of charges; it seemed as though the Islanders desired to squeeze everything possible from their visitors.

I am of opinion that in arranging for an entirely new course the A.C.U. has done the only thing which is likely to bring the Islanders to their senses.

A. ERNEST GELDER,
Managing Director, F.N. (England), Ltd.

A Motor Cyclist's Views.

Sir,—As an interested, but non-competitive, member of the racing side of the motor cycle movement, will you allow me to record my protest to the A.C.U.'s somewhat startling proposal to change the T.T. course? It seems to me that this has been done entirely without consulting those primarily responsible for the success of the race, namely, the manufacturers and the riders themselves. This the A.C.U. apparently has left for *The Motor Cycle* to find out.

I am very glad to see so many T.T. riders protesting; it shows a true sportsmanlike spirit to raise objections to a course which they know to be considerably easier than that in the I.O.M. Surely if the race is held under comparatively ideal conditions, it ceases to be a tourist machine race, and becomes merely a test of speed and of good driving and judgment. Such items as acceleration, brakes, gears, transmission, and frames would receive no greater test than may be obtained any day on a Brooklands "blind."

Has the A.C.U. considered the greater majority of motor cyclists, whom it is supposed to represent, who cross over to the Island each year to watch the progress of their pet machines? I fancy they would think twice before going to watch a dissimilar race in a foreign country. Surely a crowded paddock and grandstand consisting of British motor cycle enthusiasts must be no mean advertisement; and do not the manufacturers spend thousands in experimental and research work solely to bring out a machine that will acquit itself admirably under most trying conditions almost entirely with a view to advertisement? But would spectators flock into Belgium in the way in which they flock to the Island? No, I venture to think not, for they would reason that they could see the same type of race at Brooklands for far less money.

We shall probably find that the majority of manufacturers of 3½ h.p. machines will be keener on the change than those of the lightweights, as they will likely be prejudiced by a feeling of jealousy towards the magnificent little 2¾ h.p. machine that won both events this year. F. E. POWELL.

Why Not in England?

Sir,—The T.T. Races strive to bring out all that is best in a machine and to show up the weak points. What the motor cycling public requires is a light machine, in which is incorporated an engine that will stand up to prolonged speed work coupled with violent acceleration and efficient braking. Nothing can develop this machine better than the I.O.M. course, and if manufacturers have come to the conclusion that their machines are too fast for the course they must look to their acceleration powers and brakes.

If there is a really good reason for changing the course, such as all the formalities which have to be gone through by motor cyclists visiting the island and the landing arrangements for machines, let a course be found in the British Isles. When a suitable course is found, then the A.C.U. will have to get the old law about road racing in this country abolished. After all, we are the only nation which does not hold its chief motoring event of the year in its own country.

France holds the Grand Prix in France, America the Indianopolis in the States, and so on. Why should we not hold our T.T. in our own country? PATRIOT.

Birmingham.

Sir,—As "one of the crowd" I would like to register my protest against the proposed change of venue of the T.T. Races. I base my protest on the same facts that prompt certain people to advocate the proposed change. I have not been on either course personally, but have studied the description of them. The I.O.M. course, it is said, does not give the 500 c.c. a chance to show its speed; but I ask you how many people realise the terrific average speed attained on the present course?

I ride a 2¾ h.p. Douglas and can say that few machines can pass me if I like to let out—yet the Douglas did not win this year's T.T. So why take all that money abroad (money which eventually must come out of the motor cyclist's pocket) merely on the pretence of giving the 500 c.c. a chance to do its 60+ m.p.h., a speed which I would suggest only a potential criminal attempts on the high road.

Brooklands is surely the place for pure speed tests. The course we want is one that will give us good brakes and easier control. J. HEASMAN.

A Trip to Belgium Anticipated.

Sir,—Generally, I am pleased. I visited the Island this year, and was only pleased with the practising and the actual races. I was very impressed by the treatment given to us as a class—treatment not only undiplomatic, but, at times, almost insulting. My motor cycle friend and I most heartily agreed to see the French Grand Prix next year on this account; but now we shall go to Spa (since our holiday must include "motor cycles") to see our own T.T. (*if* we save enough). There are three main points for consideration.

FACILITIES.—The journey to Spa will be quite as easy as that to the Isle of Man, and much more pleasant; and riders' and spectators' machines will be handled as machines should be. As a holiday, Spa will be different—a change. There will be, I feel assured, enough Englishmen who can and delightedly will help the non-linguist. (By-the-by, shall we want German, Flemish, or French?) If the holiday proves any dearer than in the Isle of Man, the experience of new countries will be well worth the few extra pence. (Any of your readers been to Belgium? But it is different now, and besides you did not all get to Spa.)

ECONOMICS.—I quite realise the money loss—in hard cash. The English public will not see the use of the T.T. at all. The Isle of Man indigence do not "behave," so it is the United Kingdom's own funeral. But then, the increased market for British machines will *quite* outweigh the hard cash lost.

DEVELOPMENT.—Granted the Isle of Man course ideal for testing capacities of engines 250-350 c.c., but the 500 c.c. does not get a chance. The best trial of all is a combination of Isle of Man T.T., Brooklands 500 miles, French T.T., and Belgian T.T. Then we do know what's what among the placed machines.

No one will expect Scott to like it, because Scotts love corners; or the A.J.S. to like it, because they are *the* Isle of Man experts, etc. Mr. Wells thinks that we shall be welcomed with "open arms." I believe him, and it will be a pleasant change from annoyances and fleecings. I am sorry for the blow it will prove to Manxman enthusiasts; but I am happy to think the race will be international, in which English machines will undoubtedly shine. P. AND M.

Walsall.

Scotland Seriously Suggested.

Sir,—I must confess to surprise on learning that the T.T. was to be transplanted to Belgium. Doubtless the A.C.U. has the very best of reasons for seeking pastures new, but "charity begins at home," and, if the Isle of Man is to be deserted, every available channel should be investigated before this national event is taken to the Continent.

An ideal T.T. course could be found in Lanarkshire, midway between Edinburgh and Glasgow, and were the authorities concerned approached judiciously it is possible that permission might be obtained.

The T.T. brings in its train an expenditure of tens and perhaps even hundreds of thousands of pounds, and this is not the time to even hint at such a sum of money being taken out of the country. In Scotland we have the ground and a sufficiently central location. All that is required is permission, and I would seriously suggest that every effort be made to obtain the last named.

CAMPBELL MCGREGOR,
Secretary, Edinburgh and District Motor Club, Ltd.

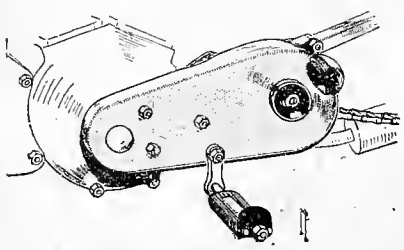
A 500 c.c. V TWIN SOLO MOUNT.

The 3½ h.p. Martinsyde Sports Model—a Machine for High-speed Touring or Competition Work.

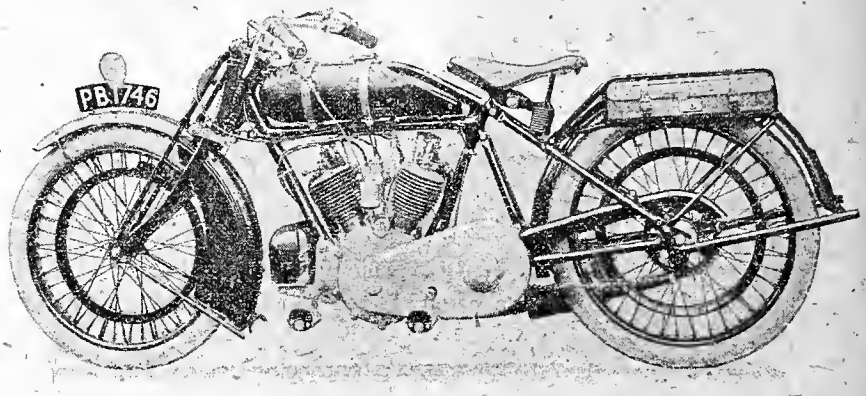
THE first appearance of the 3½ h.p. twin Martinsyde was at the end of last year when it was shown at the Olympia Show by Martinsyde, Ltd., of Maybury Hill, Woking; the machine has undergone considerable alteration and improvement since that date, and it reappeared in an improved form when it competed in the 500 miles race in the able hands of H. H. Bowen. Three of these machines have also been through the Six Days Trials—their first appearance in a long reliability trial.

Some Distinctive Features.

The chief alteration lies in the shape of the frame, which is of symmetrical appearance with a sloping top tube, which latter is brought into line with the back forks. The main Martinsyde features are retained, such as additional stays between the top of the saddle tube and the bottom bracket supporting the gear box; while the engine, which has a bore and stroke of 60×88 mm. respectively (498 c.c.), is a small replica of the larger type utilised in the Martinsyde sidecar outfit, and possesses the well-known features of the overhead exhaust valves, made of stainless steel, with inlet valves below them. Best and Lloyd semi-automatic lubricator, ball bearing crank and camshafts, while roller bearings are still retained for the big ends.



Chain cover of the 3½ h.p. Sports Martinsyde, showing the inspection cap by means of which the clutch spring adjuster is reached.



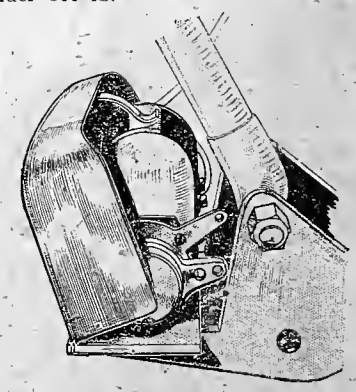
The 3½ h.p. Sports Martinsyde. The performance of this new model in the A.C.U. Six Days Trials was watched with interest.

The front chain is protected by means of a chain cover, in the centre of which is a screw cap, which, when removed, allows access to the clutch spring, so that the latter may be easily adjusted. A light guard protects the top run of the rear chain. Footrests are fitted instead of footboards, and, in connection with this fact, it is worthy of note that the pedal actuating the rear brake lies midway between the front and rear offside footrests, so that it may equally well be applied by the toe when the foot is on the rear footrest as by the heel when the foot is on the front footrest.

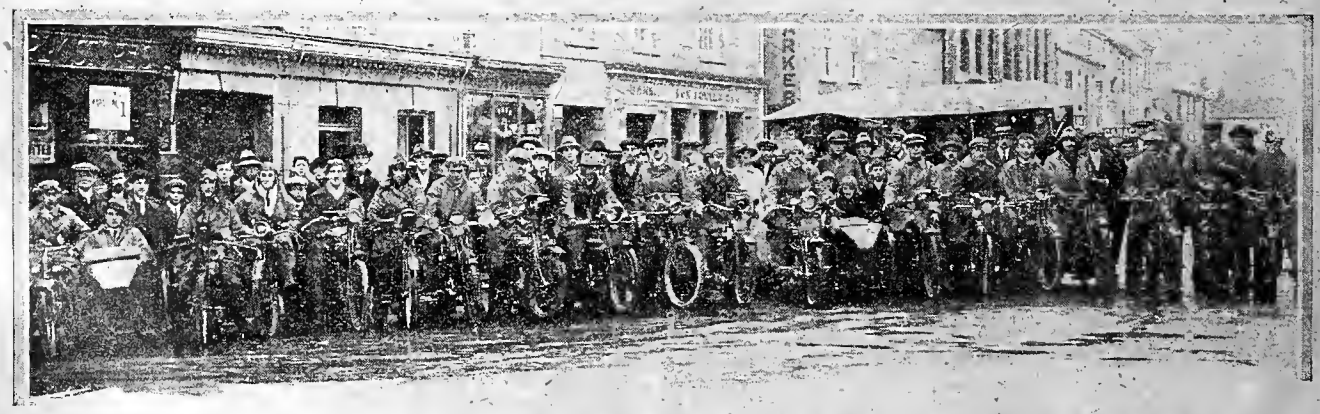
Clip-on Magneto Shield.

Points of convenience have been carefully studied in this machine; and it is interesting to remark that the magneto is protected by a shield kept in position by a light spring, so that it can be swung forward at any time in order that the magneto may be inspected. The three-speed A.J.S. type gear box, though it incorporates a clutch, is not provided with a kick-starter. Particular note should be made of the large toolbags, which extend the whole length of the carrier, and are adequately protected by a metal casing. The oval section tank is secured by straps fastened on to lugs on the secondary tube, and holds one and a half gallons of petrol and three pints of oil.

The top gear is 4½ to 1, and the equipment includes two-lever Amac carburetter, Dunlop 650×65 mm. tyres, and Brooks saddle. The weight is given as under 300 lb.



A hinged magneto shield is fitted Note the spring impinging against the exterior of the magnets holding the cover in place.



The illustration, which depicts a recent meet of the Okehampton M.C.C., denotes that the enthusiasm of the club members has not slackened as the season has progressed—not an unknown happening in some clubs

LETTERS TO THE EDITOR

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

WHICH IS THE MOST SILENT MACHINE?

Sir,—I see in your correspondence columns of the 25th ult., "P. and M." states that, in his opinion, as to which is the most silent machine, "the P. and M. fitted with a 1919 pattern silencer would take some beating." Certainly the P. and M. is more silent than the average machine as regards the exhaust, but get it pulling nicely on an incline and the chatter from the valves and timing gear is really loud. I have owned a 1919 P. and M., and ridden it under all conditions, and the only thing that I did not like was the chatter. At present I own a 1921 semi-sports Sunbeam, and certainly this machine does take some beating as regards silence and everything else. There is no valve chatter, and spring tappets are fitted; and the exhaust fitted with a standard silencer creates at all speeds little more than a deep throb. SUNBEAM.

Harrogate.

Sir,—With reference to the recent letters on silence, long exhaust pipes, etc., by "Fed Up" and others, I notice that the element of "driving" does not appear to figure in their arguments at all. As "Ixion" remarks, it is possible to cause a hot stuff "single" to "purr like a sucking dove." I have seen 3½ h.p. Nortons (even *sans* mufflers) driven with the slight swish of the countershaft chain audible above the exhaust note. The quietest Triumph I know in this town has a direct exhaust pipe, but these machines have been in the hands of men who are motor cyclists in the full sense of the word.

If, therefore, a Norton (or similar machine) owner tries a few accelerating tricks through a town or under the nose of a "man in blue," he deserves all he gets.

There are many so-called motor cyclists in this district, for instance, who fit gorgeous drain-pipes to their machines but only seem to recognise two positions of the throttle, *i.e.*, fully open and shut. One for instance (a Douglas owner) has fitted a beautiful pair of copper exhaust pipes. Very smart! But he is not smart enough to get his front cylinder to fire evenly at much under 30 m.p.h., and I strongly suspect that he rides with his ignition at full retard.

We have a most sporting body of police here; but now that two-strokists are fitting direct exhausts, we must not be surprised if, at some future date, it becomes necessary for tourists to avoid this district in order to escape police "silencer" persecution.

They will know whom to thank! W.R.

Doncaster.

Sir,—I possess a 1919 Levis (all chain drive), and until quite recently I have had a great deal of trouble with the police in the district, mainly through inefficient silencing. Having just about got fed up with this annoyance, I made up my mind to fit something to my "'bus" so that it would run much better.

After much trouble, I fitted a long copper tube from the silencer, right up to the extreme end of the back wheel stand, made a fish-tail end, and bored a number of holes in it, and since doing this I have found that my 'bus runs quite differently—more silently and giving greater miles per gallon.

Why this should be I do not know; but if any of your readers can offer any better suggestion I shall be greatly pleased to try it. LEVIS.

Manchester.

MISUSE OF A VARIABLE GEAR.

Sir,—I have read with great interest the correspondence in your valuable paper for some years, and at last I feel I must write regarding the manner in which probably 65% of the riders of that sporting machine, the 3½ h.p. Rudge-Multi, use this really excellent gear.

On a recent Sunday I happened to be walking up King's Head Hill (I believe this is its name), Chingford, when I

The Six Days Trials route passed through some beautiful and typically English scenery of the pastoral type. W. L. Danskin and F. T. Sibley, on 3½ h.p. Rudge "three-speeders," passing through the characteristic village of Shepham on the first day's run.

heard the hefty exhaust of a Rudge, with the throttle fully open. Judge my surprise when the machine appeared round a bend, two up, travelling quite slowly. When it passed where I was standing, I noticed the gear lever four notches from the top, and the natural result was it konked out, and the pseudo airman "pushed" it to the summit, after unsuccessfully trying to restart on the hill with the gear lever still in the same position. The sight was enough to make one weep—a machine that could simply play with the gradient, pushed up by one of our "so-called speed merchants" simply through ignorance.

This is not the only case by many. The great majority of riders seem to imagine that once under way you simply shove the gear lever right forward. This practice is simply ruinous to belts and engine; and, incidentally, unless, of course, one is really moving, very detrimental to good petrol consumption.

Personally I very seldom get higher than five notches from the top even when exceeding double the legal limit. This engine simply loves revolutions.

I should be pleased if you can find sufficient space to publish this letter, as I do not consider the above treatment fair either to the manufacturers or machine.

CYRIL SINCLAIR.

"EXPERTS BARRED."

Sir,—How very annoying it must be to Mr. S. L. Bailey to find that, after several years of motor cycling, during which time he has built up quite a considerable reputation for skill, he is allowed to enter and win a race from which experts are barred. It adds one more point to his already large total of awards, so that his annoyance is considerably reduced; but what about the irritation caused to other competitors in the race? It must be very disheartening to find that a trade rider is not an expert after many years. What chance of being so classed have they? What is an expert, please? I write these notes after reading the account, on pages 242 and 243 of *The Motor Cycle* of August 25th, about the Western Centre A.C.U. hill-climb.

London, E.C.4. ALSO RAN.

[According to the A.C.U. open competition rules, an "expert" who has failed to win a first or second prize in an open event during any twelve consecutive months may be allowed, on application, to revert to the "general" class. —ED.]

ALT-Y-BADY IN SECOND GEAR.

Sir,—Having just seen a Zenith on a 6¼ to 1 bottom gear make a clean ascent of Alt-y-Bady, and, as I understand this hill is included in the Reliance Cup open trial, I would like to make a suggestion to fellow competitors. My second gear in this event will be 9 to 1. Will a few more, with ratios near this, join me in a second gear attempt in the trial? I am proposing this purely for the sport of the thing, and suggest we each pay a nominal "entry fee" (say, 6d.), the one who gets furthest up on this gear to take the "collection." Perhaps your representative on the hill would be kind enough to act as judge? From what I hear of the course most of us will need cheering up, so this should provide a little amusement. If anybody interested will see me at the start we can settle details there.

J. WESTWOOD WILLS.

SIDECAR BRAKES.

Sir,—In a recent issue of *The Motor Cycle*, just to hand, you invite readers' experiences of brakes fitted to the sidecar wheel.

About seven years ago I fitted an external contracting band brake to the sidecar wheel of my Clyno outfit, operated by hand from the handle-bar. The brake band had at first a copper lining, but was subsequently lined with Ferodo or similar fabric.

My experience during about the two years that I had this brake in use was that it was quite satisfactory, provided the brake was so adjusted that it was impossible to lock the wheel, and that only a moderate retarding effect resulted. If the brake was adjusted so that, when on suddenly applying it the action was too fierce, and when travelling at any fair speed, the machine would swerve to the left, and at practically right angles to the direction of travelling, with obvious results. On the above brake, the action of the copper lining was too fierce, so it was changed for the fabric, which gave very much smoother results.

Where the brake really came in very useful was in taking left-hand corners, when, by slightly applying it, the machine would automatically turn to the left with very little effort on the driver's part.

For countries with wet climates (such as the British Isles), I would suggest a brake of some other design than the external contracting, although, in my opinion, a well-designed brake of the above type can easily hold its own in dry countries.

M.A.C.

Transvaal, South Africa.

Sir,—With regard to the correspondence on sidecar brakes in your columns, an accident which recently happened to me may be of interest. I had just purchased a heavy sidecar outfit (my only previous experience being on a lightweight solo), and after a couple of lessons essayed to drive it from Wimbledon to my residence, some fifty miles distant. I had only proceeded a few miles, slowly and carefully, when the contraption suddenly went mad, swung round to the right on to the footpath and into the ditch, like some scared rabbit seeking its hole. Of course, the ditch was a deep one—it always is on such occasions—and the result to the front springs and mudguard was disastrous. I could only gaze at the mangled remains in a bewilderment of anger and astonishment, for I had done nothing, so far as I knew, to excite the machinery.

It was only when I reached home (by train) and opened my copy of *The Motor Cycle*, just arrived, in which was Mr. Bischof's illuminating article on sidecar brakes, that the cause of my machine running amok dawned upon me, viz., I must have inadvertently trodden on the foot brake. This is explained by the fact that the foot brake on my new purchase is at the rear of the footplate and operated by the heel, while on my former mount it was in front and applied by the toe—a far more sensible arrangement.

Like "Ixion," I am a "weak, timid old man," and therefore am seeking—so far in vain—for someone able and willing to fit a compensated sidecar brake; for although the square yard of bruises I brought away from the fateful ditch has completely faded, the memory of its yawning depths remains.

TWO-STROKE.

London, S.W.

SECRETS OF SATISFACTORY ACETYLENE SERVICE.

Sir,—I notice "Ixion" asks for the secret of keeping acetylene burners alight over bad roads, and I venture to put forward my method, which I find absolutely reliable.

The first requisite is a large generator of reputed make, and this must be cleaned in three places, viz.:

(1.) The carbide chamber. Scraped clean and wiped out with an oily rag each time of refilling.

(2.) The gas vault and delivery pipe. Vault and discs cleaned and polished with an oily rag, and all holes and delivery pipe blown out clean. Felt pads removed.

BROOKLANDS WINNERS AT THE FIFTH CLOSED MEETING OF 1921.

H. F. Brockbank (2¾ Brock-Blackburne), enjoyed more success than he did at Pendine He won the 350 c.c. handicap.

E. Remington (8 Blackburne), was an easy first in the only scratch event.

J W. Tollady (2¼ Velocette) was limit man in the 275 c.c. race, and won easily.

(3.) Water chamber. Emptied and sediment rinsed out, and the grooves in the needle valve polished bright occasionally.

This ensures a copious and continuous supply of gas. The secret then lies in leading it to the burners through *large* bore rubber tubes, which must be anchored their whole length and not allowed to flap about.

The acetylene tubing sold by motor cycle accessory dealers is too small in the bore, and does not maintain *a sufficient head of gas to keep a steady pressure on the underside of the burners*, and therein lies the crux of the whole question, presuming, of course, that the generator is functioning and the burners are clean, *and* there are no leaks at the tube junctions.

My installation, which cost only a few shillings, consists of second-hand W.D. surplus goods, and is rigged out as follows:

Lucas 462 head lamp; combination handle-bar bracket; P. and H. generator 124, Lucas sidecar lamp 454, ditto rear lamp 344.

Burners.—Head lamp, 14 litres; side and tail, 3½ litres.

Tubing.—Best black douche obtainable from any chemist; copper through sidecar nose.

This gives two and a half hours continuous illumination, and is lit up in the following manner.

When lighting up time arrives, the water is turned on to the necessary point predetermined by experiment. After a mile has been covered one match will light the three burners, and the journey can be continued inside one minute.

Later I hope to fit spark gaps across each burner and rig up a switch to short the plug for a few revolutions.

At the present time I am riding backwards and forwards from Tring to London daily on my Quadrant sidecar. This means traversing the Edgware Road, which, as your readers know, is a good test for any lighting installation.

W. E. BAINES.

TWENTY-THREE YEARS AGO.

Sir,—I was much interested in Mr. Percy Richardson's letter entitled as above in your issue of the 4th inst., having had a Werner on similar lines to the one he describes for trial a little later than 1898, by which time electric ignition by battery had become standardised. I remember the battery on the machine supplied to me had run down, and there was some difficulty about getting it recharged.

Not very long afterwards I purchased second-hand a front-driving Raleigh motor bicycle, which gave surprisingly good results. Like the Werner, it had a surface, or, more properly, a wick carburetter. The trouble was that the mixture was upset every time the machine received a jolt. Later I put together a carburetter from tin canisters and a piece of sponge, in which this difficulty was got over by passing all the air to be carburetted through the pool of petrol at the bottom of the carburetter, thereby keeping the liquid in a constant state of agitation.

Col. G. P. Mills, at that time responsible for the Raleigh products, agreed with me as to the surprising efficiency of an engine mounted in front of the head and driving the front wheel, as compared with the ordinary position and transmission. He had found this advantage most marked, and was able to prove it definitely by similar engines used in the two positions. It would therefore seem quite possible that the existing lightweight records are at the mercy of any manufacturer who likes to build up a machine with an efficient engine located *à la* Werner.

Mr. Richardson's testimony to the good balance of the Werner with its highly placed engine and rider will come as a tough nut to our low centre of gravity friends; but I have no doubt he is right, so far as he goes, anyway. His opinion on the Ner-à-car in this connection would be interesting.

DOUGLAS LEECHMAN.

REGARDING THE N.W. CENTRE TEAM TRIAL.

Sir,—The Warrington Club is to be congratulated on still holding the North Western Centre Blake Cup.

I understand it has been decided to cancel this year's team trial, held in June—a very wise decision, and one that indicates that discretion is the better part of valour.

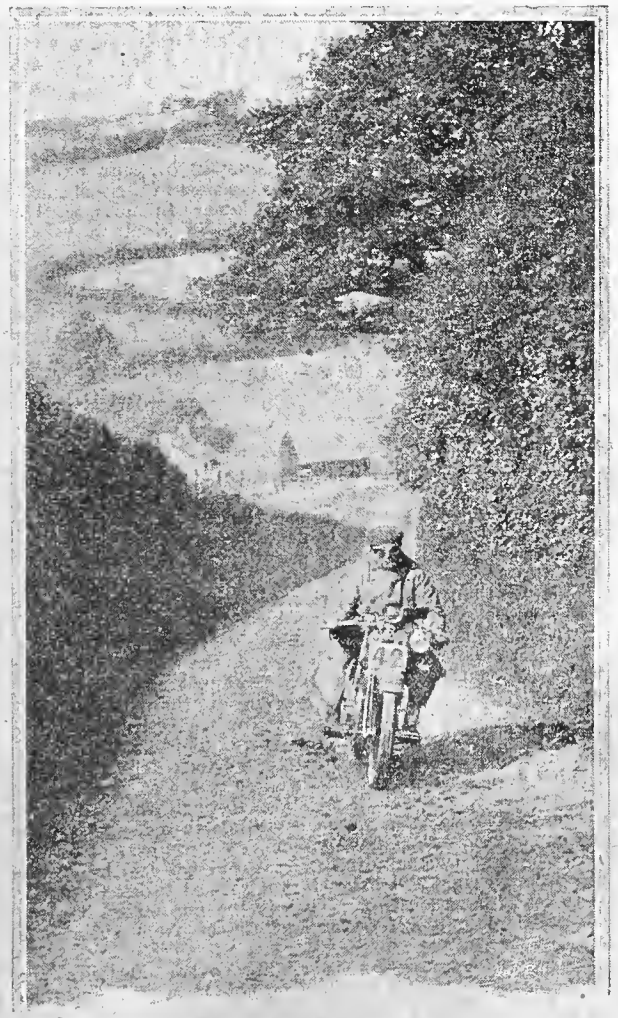
Any of your readers who were present at this year's trial will not readily forget the indescribable confusion at the start, delayed over an hour, where no officials knew their jobs; also the awful fracas at the 18in. deep watersplash, specially prepared for the enjoyment of several chars-à-bancs loads of jeering spectators, who arrived in good time for the day's "sport," together with dozens of motor cyclists, evidently also in the "know."

I do not know the financial position of the North-Western Centre, but suggest that, if possible, an official, preferably one with commonsense, be sent to witness the M.C.C. team trials next year. Then he could bring back first-hand knowledge of how the "job" should be done. WITNESS.

Liverpool.

THE CYCLE CAR OF MODERATE PRICE.

Sir,—Mr. William A. Weaver (who in your issue of August 18th refers to my previous letter on this subject) states that "thousands of sidecar enthusiasts, who, after all, are the people most likely to be interested in cycle car developments, regularly take two adult passengers and a child, and often luggage as well, anywhere with a 4 h.p. engine; and a 6 h.p. machine seems to be well on top of its work, and even with such a load is practically a top gear 'bus anywhere," which no doubt applies to districts where ordinary "give and take" roads are the rule; but, in such a part of the country as, say, Devon and Cornwall, my experience has been that a good single will do it *sometimes*, but at what cost? and that a 6 h.p. twin is anything but a top gear 'bus with full load in the same two counties. The West Country is seeing probably more sidecar and cycle car tourists this year than ever before, and I have noticed a great preponderance of



THE SIX DAYS TRIALS.

A pretty vista near Bidmore. G. W. Ravenhall (3½ Rover) on the hill leading from the village.

higher powered engines among those passing through Tavistock, and all drivers of whom I have asked their opinions say, "high power every time for your hills."

If Mr. Weaver would suggest that his future 5 or 6 h.p. cycle car engines will be as efficient as the present day 8 h.p. engines, then I think they may fill the bill as a true "go anywhere" power unit. If so, may they come soon. I am not competent to enter into a technical argument, but beg to submit my humble views as matters stand to-day. However, our mutual friend "Ixion" knows this district well, I believe, and it would be a matter of interest if, with his great experience, he would give his opinion as to the *present* h.p. required to haul in comfort a driver, passenger, child, and luggage from Exeter to Penzance *via* Moretonhampstead, Tavistock, Gunnislake, and Liskeard. This is not a freak route, but a good main road and picturesque, and is that usually taken going down West from Exeter.

Tavistock. DUMPLING.

MYSTERIOUS LACK OF POWER.

Sir,—I have a De Dion machine (apparently about 1908), which a friend and I have been endeavouring to put in going order and modernise, but after spending hours and hours of faithful work the machine refuses to pull, and we are now dead beat. The cylinder has been reground, new piston and rings fitted (by an expert firm), modern Amac carburetter fitted, timing has been carefully set, all bearings are in good order, excellent spark, and compression splendid. The engine will start easily when run off, but only develops sufficient power to pull the machine on the level, and stops immediately the driver mounts the saddle. On the stand the engine will fire evenly and continuously. Valves have been carefully ground in, and from a theoretical point of view everything appears to be in order. Can any reader say "what's up wi' it"? CONSTANT READER.

Grangetown.

BRITISH MACHINES IN SWITZERLAND.

Sir,—I was very pleased to see a letter in your paper a little while back saying that several makes of British motor cycles could be obtained in Switzerland. In spite of this, however, during the last three months in Montana I have only seen one cycle of British make, and that a Triumph, which had been brought over from England by a couple of fellows touring. It is not that one rarely sees a motor cycle here, for I have seen many, and they have all been either Swiss or American machines. One Sunday I saw three different Indian motor cycles. I must confess it would please me much more to see British machines knocking about. F. L. RHODES.

Montana, Switzerland.

1,000 MILES WITH A SLEEVE VALVE ENGINE.

Sir,—I was very much interested to read in *The Motor Cycle* dated July 21st a description of the new Barr and Stroud single sleeve valve engine. It occurs to me that your readers might be interested to hear how one of these engines has behaved over 1,000 miles running in the hands of a private owner.

Some months ago I was fortunate enough to obtain one of these engines (the first privately owned one in the country), which I had fitted into a light touring machine.

As the writer of your article stated, the first point which strikes one is the entire absence of tappet and mechanical noises: there is the sharp crackle of the exhaust, and nothing else. The second point is the perfectly astounding power and flexibility of the engine. This flexibility was brought home to me by the fact that I took delivery of the machine at Messrs. Barr and Stroud's works at Anniesland, and immediately drove it straight through the centre of Glasgow. The controls were all strange to me, and yet on only one occasion did I have to come off a top gear of 5 to 1.

For the first two hundred miles I did not let the engine out, although right from the start it seemed to keep begging me to let it have a romp. That is the impression it gives one—a desire to travel faster and faster from sheer *joie de vivre*.

My petrol consumption is slightly over 120 miles per gallon. Oil consumption I have not measured quite so carefully, but it is certainly over 2,000 m.p.g., and I have not found any trace of overheating. Maximum speed by Bonniksen speedometer is 52 m.p.h., and the engine will throttle down to 8 m.p.h. on top gear quite comfortably. My Capac carburetter gives very nice running, but it is not set for maximum speed, and I am sure that the figure mentioned above is not by any means the limit of the engine.

The consistent smoothness of the engine is very marked, the absence of "fuss" being delightful, while the pull is so elastic that one hardly realises how fierce is the acceleration.

During the 1,000 miles I have had no trouble of any kind whatsoever, and the only time I have seen the internals of my engine was when Messrs. Barr and Stroud asked me to bring the machine in to them in order that they might fit their new design of piston—a piston which, incidentally, reduces the oil consumption still further. On this occasion I was the amazed witness of my engine being stripped in under fifteen minutes! I do not mean just taking off the cylinder head, but actually and literally that in fifteen minutes from the commencement of operations the piston, connecting rod (including big end bearing), the shaft (including main bearings), also sleeve, sleeve pinion, magneto, and the cylinder head were lying on the bench beside the machine. Fifteen minutes! Before now I have spent nearly eight hours reducing a poppet engine to the same condition. The cylinder barrel and the upper half of the crank case remained in the frame.

I freely admit that this is an enthusiastic letter, but I am an enthusiastic owner. I will never have another poppet engine. I have no connection with Messrs. Barr and Stroud in any way whatsoever, but I do admire their production

G. V. LAWRIE.

SUMMARY OF CORRESPONDENCE.

Having read the account of the Cumberland County M.C.C. trial on Wrynose Pass, Mr. James Beach, of Blackburne, writes that his father made a clean ascent of this hill on an 8 h.p. New Imperial sidecar carrying two passengers.

Mr. R. Dunkley records an improvement in the petrol consumption of his 4 h.p. Triumph from 85 m.p.g. to 120 m.p.g. by fitting a W.S.R. variable jet. His figures were tested over an extended tour.

26 m.p.h. for 166 miles from Lanarkshire to Aberdeenshire, was averaged by Mr. James Rae, a sixteen-year-old rider of a 2¼ h.p. Levis.

Prompted by the article on "The Lure of the Motor Cycle," by "V.H.," in *The Motor Cycle* of August 18th, "Mechanovice" reports on the suitability of his machine, a lightweight with a 2¾ h.p. Union engine, for the beginner to the pastime.

The Tan-Sad Works, Birmingham, write pointing out the need for emphasising the safety of pillion riding when a proper pillion seat is fitted.

Mr. W. E. Jenkins describes his very satisfactory experiences with the Degory No-jet carburetter as fitted to 8 h.p. Enfield sidecars. It gives, he says, greatly improved acceleration and power.

BOOKS AND MAPS FOR MOTOR CYCLISTS.

Issued in conjunction with *The Motor Cycle.*

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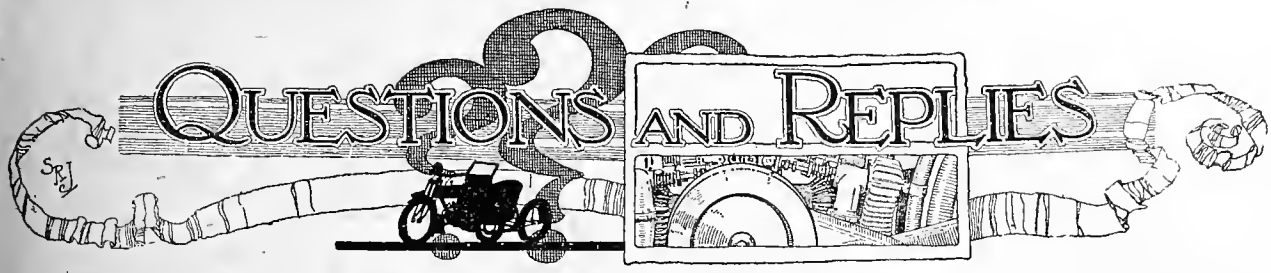


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

OIL FOR HUB GEARS.

? What is the best oil for use in the Armstrong hub gear?—W.J.A.

A thin cycle axle oil is the most suitable lubricant; engine oil should on no account be used.

OIL SLINGING.

? My single-cylinder Zenith-Jap slings oil from the driving side main bearing. I got the bearing rebushed, but it still slings oil to such an extent that I can push the machine along with the belt simply slithering round the pulley without turning the engine at all, yet there is practically no play in the bush. Can you tell me of any device to stop the trouble?—H.T.L.

If the bearing is in good order, the oil slinging in all probability is due to a defective or inefficient crank case release valve. The fitting of a new one, or attention to the existing one, would probably put matters right.

NEITHER POWER NOR SPEED.

? I have had some trouble lately with my 2½ h.p. four-stroke motor cycle, which runs well on the stand, and seems to develop ample power, but on the road it is very slow. I do not think it will do more than 15 m.p.h., and the slightest hill has to be rushed. The engine seems in good order. Compression is good, and the magneto always gives a good spark at the plug. Starting is easy, either when cold or warm, but the throttle lever must be three-quarters open when starting. When I am on the machine with the throttle lever threequarters open and the air lever open fully, I can just do the above speed—15 m.p.h. Should I close the throttle slightly the engine stops firing at once. What is the cause of this? The jet is No. 36.—J.H.

You do not say anything about the timing of your engine; but we should imagine that the ignition is unduly retarded. Make quite sure that the spark occurs when the piston is on top dead centre with the magneto control two-thirds retarded. With a lightweight machine such a large jet as No. 36 should not be needed, and it would appear either that there is a considerable air leak in the induction system, or that the throttle itself is not responding to the movement of the throttle lever. Make sure that the throttle wire is correctly adjusted.

EPICYCLIC GEARING.

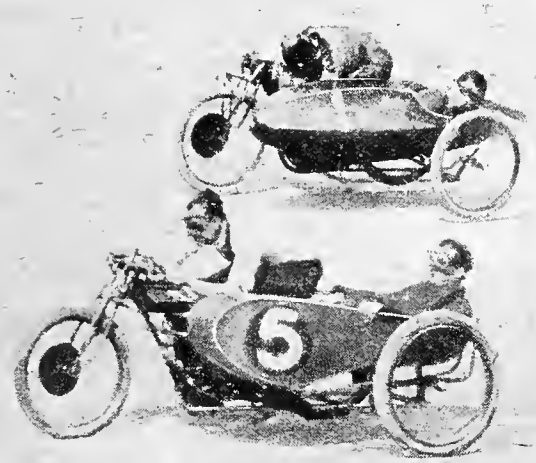
? Can you please inform me where I can obtain a description of the principle of the change speed gear of the N.S.U. German motor cycle? Possibly, quoting from memory, you can say if it consists of a sun and planet wheels with a large internally toothed wheel engaging with the outside of the planet wheels. Can you inform me of similar gear arrangements fitted to motor cycles or cars?—B.S.

The N.S.U. gear consists of an epicyclic train on the common lines wherein a driven internally toothed ring is used. The pulley is connected to a carrier on which planet pinions are mounted, and a central sun wheel is clutched either to the internal ring (for high gear) or to a non-rotating portion of the machine (for low gear). Similar gear arrangements have been so numerous that it is impossible to give the names of all of them, but the Armstrong and Sturmey-Archer three-speed hubs were typical examples. Epicyclic gearing is now seldom used on motor cycles, but it is used on certain motor cars.

COOLING THE EXHAUST CAP.

? I have recently read a great deal about the "hot spot" on air-cooled engines, and should be glad of your criticism of an experiment I propose to carry out with my 4¼ h.p. B.S.A. outfit. The exhaust valve cap is countersunk on the top, about ⅜in. deep and 1in. wide. I propose to screw into this an inverted U tube (the boiler), about 4in. long, and connect flow and return pipes to a small water tank higher up. (1.) Will this "cold spot" tend to distort or crack the cylinder when really hot? (2.) Will ordinary petrol piping be large enough for conducting the circulating water, or could rubber tubing be used.—W.H.M.

(1.) It is very unlikely that the distortion would be so great as to crack the cylinder. (2.) Ordinary petrol piping would be practically useless. You would need connections at least ⅝in. internal diameter. It is doubtful if the experiment would be of any practical value. The best thing you could do would be to fit aluminium or copper radiating fins to the exhaust valve cap.



A FINE PHOTOGRAPHIC IMPRESSION OF BROOKLANDS RACING.

H. Le Vack (7-9 Indian sidecar) the scratch man, overtakes E. Baragwanath (8 Martin M.A.G. sidecar) at the last Brooklands meeting. Le Vack's streamline sidecar is apparently useful!

READERS' REPLIES.

SLIPPED OR STRAINED MAGNETO DRIVE.

Your correspondent "R.F." need not be afraid of taking down his timing on the Bat-Jap. It is quite simple after doing it once or twice. What has happened is that when the gudgeon pin broke, the shock unscrewed the bevel pinions on the timing—either the shaft pinions or half-time or both. The bevels are screwed, and when they have been taken off they should be tapped up tightly with a piece of lead or copper on the teeth. I can re-time my ignition in less than five minutes, even in the dark! (NOTE.—The *correct* way to "advance" is to push the lever down.)—W. H. TALBOT SMITH.

ACTION OF ACETYLENE ON COPPER.

I notice in the issue of *The Motor Cycle* of August 25th that the question of the action of acetylene on copper has arisen once more. Some years ago I made a copper bottom for the water container of a large car generator. The lower surface was, of course, subject to the action of the gas when in use. On recharging the apparatus for the first time, I noticed that the copper was covered by a red deposit, which instantly exploded on being touched with the fingers. The action of acetylene on copper and certain other metals is the most characteristic property of the gas. The latter may be regarded as hydrogen carbide, and the reaction consists simply in the replacement of the hydrogen atoms by metallic atoms to give a metallic carbide:

$$C_2H_2+2Cu=C_2Cu_2+H_2$$

Carbides formed in this way—and for that reason usually called acetylides—differ from calcium carbide in their properties. The latter will stand heat, but decomposes at once when damped; while the former are unaffected by water, but decompose explosively when heated in the dry state. In conclusion, I might remark that the rubber tube sold by chemists for feeding-bottles makes a far more durable flexible gas pipe than the article usually supplied for the purpose. The one objection is its liability to be pinched or to kink, but this can be avoided by slipping inside it a long spiral of fine wire. This can readily be made by winding ordinary flower wire round a $\frac{3}{16}$in. rod, and then pulling the spiral out to the required extent.—JOHN H. HATCH.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"W.J.R." (Rye).—$3\frac{1}{2}$ h.p. Sports Sunbeam, 8 h.p. A.V. Monocar, or $3\frac{1}{2}$ h.p. Zenith-Bradshaw.

"A.R.E." (London, S.E.) — O.K. Junior, Mark IX.

"J.D.T." (Oxford).—Wates acetylene to electric lamp conversion set.

"W.H.W." (Rugeley). — Ner-a-car: Reliability, comfort, ease of handling, etc.

"H.W.G." (Watford).—Comparisons between the all-chain Triumph and Norton machines (with sidecars): Oil and petrol consumption, reliability, and speed.

"A.K." (Nottingham).—Four-cylinder Henderson (Model K): General reliability, economy, and controllability, compared with V twins of 6 or 8 h.p.

"A.I." (Paisley).—$2\frac{3}{4}$ h.p. Wooler: General reliability, workmanship, flexibility, gear efficiency, and effect of rear springing on steering.

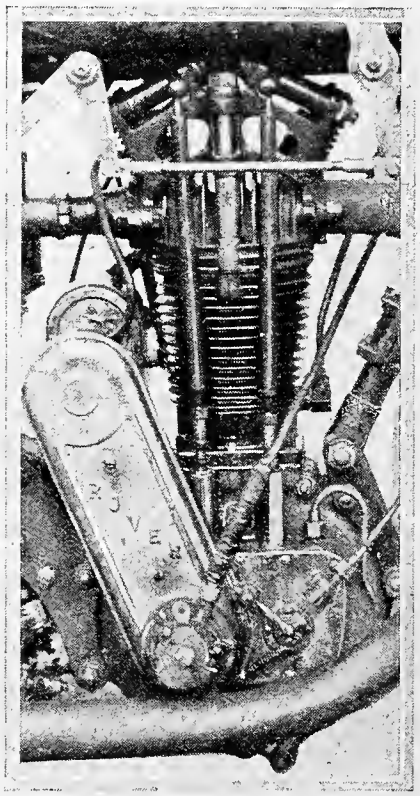
"J.R.D." (Newport, Mon.).—Beardmore-Precision with sidecar: Consumption, speed, spring frame, comfort, power, and general running.

"C.C.L." (Bayswater).—$3\frac{1}{2}$ h.p. o.h.v. Douglas: General running, speed, accessibility, and suitability for reliability trials as well as speed events.

"S.W." (Norwich). — Most suitable plug for 1921 Alldays-Allon.

Important Dates.

- Thurs., Sept. 8th—Norfolk M.C. and L.C.C. Open Speed Trials.
- Sat., Sept. 10th—Liverpool M.C. Open "Reliance Cup" Trial.
- Sat., Sept. 17th—Grand Prix Race for Cycle Cars.
- Sat., Sept. 17th—Midland Centre A.C.U. Open Hill Climb.
- Fri., Sept. 23rd, to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.
- Sat., Sept. 24th—M.C.C. Sporting Trial.
- Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.
- Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.
- Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Motor Show (including motor cycles).



Originally intended for the T.T., this new o.h.v. Rover engine made its first public appearance at the last race meeting at Brooklands.

SPARKLETS

In the Cumberland Open Trial.

An addition to the already published list of awards is the second-class prize earned by W. Wells, who rode a $3\frac{1}{2}$ h.p. Sunbeam.

Found on the Road.

The rider who lost an article of wearing apparel on the finishing straight at Brooklands on August 27th should forward a description to Mr. L. W. A. Lankester, 1, Rectory Place, Guildford.

New Home for a Promising Machine.

Increasing sales of the Massey-Arran Motor Co., Ltd., thanks to a consistent policy of embodying a refinement of finish, in conjunction with a run of competition successes, necessitate the occupation of larger and better equipped premises at 52, Bordesley Street, Birmingham.

A Taxation Concession.

Economic Motors, Ltd., 62, East Castle Street, Oxford Street, London, W.1, who make a lightweight two-stroke attachment for bicycles, which is also suitable for tradesmen's carriers, having approached the Ministry of Transport, have procured a concession which allows these vehicles fitted with mechanical motor attachments to be taxed 30s. instead of £4.

A Midland Traders' Trial.

A social run, combined with a reliability trial, was organised by the proprietors of Redditch Garages, Ltd., of Redditch, amongst their own customers, on August 27th. Some really stiff hills were included, amongst them being Flagstaff Hill and Farlow Bank. The trial finished near Worcester after a sporting run of about eighty miles. No trade or professional riders were eligible, and, as it proved, both first and second prize winners had never previously competed in a trial. The winner was N. F. Cave (6 B.S.A.), who, therefore, holds the challenge cup and receives a gold medal. The second places (silver medals) were gained by car owners, while the following completed the course successfully, but lost marks on time: H. Charman ($3\frac{1}{2}$ Norton), P. J. Howles (5-6 Brough), G. Surman ($4\frac{1}{4}$ B.S.A.), and W. Swiffen ($3\frac{1}{2}$ Norton).

Catalogues Received.

Messrs. Coppen, Allan, and Co., 89, Great Portland Street, London, W.1: An excellently got-up catalogue listing Reading-Standard motor bicycles and the Plus One and M.P. sidecars.

Tryus Cycle and Motor Co., Johnstone Street, Birchfields, Birmingham: Silver Prince lightweight sidecar outfits are described in the folder received from this company. J.A.P. or Villiers units of $2\frac{3}{4}$ h.p. are used, and the other components of the specification are all of first-class make.

Current Chat

Times to Light Lamps.

Sept.	8th	... ...	8.31 p.m.
,,	10th	... ...	8.26 ,,
,,	12th	... ...	8.22 ,,
,,	14th	... ...	8.18 ,,

Inter-club Rally at Hendon.

Club secretaries are reminded entries for the Challenge Shield to be awarded at the North London M.C.C. Inter-club rally at Hendon on the 17th inst. should be in the hands of the Honorary Organiser, "The Nook," Wellington Road, Bush Hill Park, London, N., on or before next Saturday. There are several other prizes; and unattached motor cyclists are specially invited to attend what is believed to be the first big rally in London district.

Insularity Not Confined to Englishmen.

In our French contemporary, *Moto-Revue*, one of its contributors points out with regret that France was not represented in the International Six Days Trials. He infers that the reason was because the cost would be too great. "Always the same story," he writes, and goes on to point out that English competitors did not hesitate to make the necessary sacrifice. "Is it true," he asks, "that it is the Frenchman who always thinks that the boundary of his country is the end of the world?"

The Death of D.O.R.A.

D.O.R.A. is dead.

* * *

Various rulings to which we have become accustomed are automatically rescinded by the official "termination of the state of war."

* * *

Lighting-up time reverts to the "one hour after sunset" rule.

* * *

Latterly, the half-hour after sunset under D.O.R.A. has been acknowledged more in the breach than the observance thereof.

* * *

Pedal cycles are now exempt from rear light carrying.

* * *

The joy of a certain section of the cycle community who object to safeguarding others, and not least themselves, will be short-lived—because new legislation of a permanent nature is contemplated.

* * *

By a curious anomaly, motor bicycles are not bicycles within "the meaning of the Act." Pre-war test cases established this unfortunate truth.

* * *

Solo motor cyclists must carry rear lamps on their machines.

Parking Places for Motor Vehicles.

Huddersfield is, according to an A.A. report, the latest town to allot recognised parking places for motor vehicles belonging to visitors making short calls.

Garages.

Only cheap and efficient garage service is wanted in all our large cities to increase the popularity of motor cycling.

A Royal Motor Cyclist.

It is some time after his death that we learn that the late King Peter of Serbia, always a sportsman, took to a motor cycle in his old age, and enjoyed speeding up to about 35 m.p.h.

Special Features.

SIX DAYS TRIALS DESCRIBED.

PASSENGER MACHINE TOPICS.

THE TOURIST TROPHY DISCUSSION—MORE OPINIONS.

Motor Cycles in Brazil.

Up to the middle of May, 1921, the following is the number of motor cycles licensed in the State of Sao Paulo, Brazil, the machines being classified according to makers' names: Harley-Davidson 58; Indian, 34; Henderson, 6; Excelsior, 4; Terrot, 4; F.N., 3; Motosacoch, 3; Scat, 2; B.S.A., 2; Warwicksbue, 1; A.J.S., 1; Allon, 1; Davidson, 1; Precolio, 1; Carrieres, 1; Matchless, 1; Special Cyclo, 1; Humber, 1; Opel, 1.

THE SIX DAYS TRIALS IN THE WEST.

On part of the Devonshire portion of the route. F. J. Watson (6 Ariel sc.) near South Molton.

Westoe M.C.

Membership of this "young" club now stands at forty. The hon. secretary is Mr. Arnold Joseph, 7, Westoe Crescent, South Shields.

East Midland Centre A.C.U.

Only twelve classes in all will be contested at the hill-climb organised by the North Derbyshire M.C.C. on behalf of the Centre, to be held on Saturday. Entries, which closed on Monday, are confined to resident members of clubs in the E.M.C.

Coatbridge, Airdrie, and District M.C.C.

Formula results are now available of the open hill-climb held on the 20th ult.

350 c.c.—1, G. Kelly (2¾ A.J.S.); 2, J. Calder (2¾ New Imperial); 3, W. Robertson (2¼ Velocette).

600 c.c.—1, J. Calder (2¾ New Imperial); 2, G. Kelly (2¾ A.J.S.); 3, W. Robertson (3 A.B.C.).

OVER 600 c.c.—1, J. Calder (2¾ New Imperial); 2, G. Kelly (2¾ A.J.S.); 3, W. Robertson (3 A.B.C.).

SIDECARS.—1, G. Kelly (2¾ A.J.S. sc.); 2, A. Aitkin (4 Triumph sc.); 3, J. Grant (8 Enfield sc.).

Worcester M.C.C.

Fastest time of the day at the recent closed speed trials at Madresfield Court Drive was made by Reg. Brown (3½ Sunbeam). Results, with times, follow:

1,200 c.c. PASSENGER CLASS.—H. F. S. Morgan (8 Morgan), 31s.; W. B. Gibb (3½ Douglas), 32 7-10s.

250 c.c. SOLO CLASS.—B. Kershaw (2¼ New Imperial), 28⅘s.; K. B. Batchelor (2¼ Diamond), 36s.

350 c.c. SOLO CLASS.—Eric Williams (2¾ A.J.S.), 26½s.; B. Kershaw (2¼ New Imperial), 28⅘s.; F. W. Cotton (2¾ Cotton-B), 31⅕s.

500 c.c. SOLO CLASS.—R. Brown (3½ Sunbeam), 26s.; C. Lewis (3½ Sunbeam), 26⅘s.; Eric Williams (2¾ A.J.S.), 27⅕s.

750 c.c. SOLO CLASS.—R. Brown (3½ Sunbeam), 26⅘s.; W. B. Gibb (3½ Douglas), 27 3-10s.; G. L. Gardner (3½ Sunbeam), 27 3-10s.

UNLIMITED SOLO.—Eric Main (8-10 Zenith), 26 3-10s.; R. Brown (3½ Sunbeam), 26½s.; W. B. Gibb (3½ Douglas), 27⅕s

500 c.c. PASSENGER MACHINES.—W. B. Gibb (3½ Douglas), 33⅘s.; R. Brown (3½ Sunbeam), 34⅕s.

750 c.c. PASSENGER MACHINES.—R. Brown (3½ Sunbeam), 30⅘s.; W. B. Gibb (3½ Douglas), 32⅘s.

SPECIAL CLASS FOR PRIVATE OWNERS.—F. Pardoe (3½ Norton), 27s.; C. Eveson (3½ Norton), 27⅕s.; H. Woodhall (3½ Sunbeam), 28⅘s.

Week-end Club Events.

Sept. 8.—Taunton and District M.C. and L.C.C. Fifty Mile Trial.
Sept. 8.—Worcester and District M.C.C. Paper-chase.
Sept. 8.—Berwick and District M.C. Route Finding Competition.
Sept. 9-10.—Essex M.C. Twenty-four Hour Trial to Bala.
Sept. 10.—East Midland Centre A.C.U. Closed Hill-climb.
Sept. 10.—Southport M.C. Speed Trials on the Sand.
Sept. 10.—Ilkley M.C. and L.C.C. Speed Trials for English Trophy.
Sept. 10.—Ulster M.C.C. Social Run.
Sept. 10.—Surbiton and District M.C.C. Ballards Cup Trial.
Sept. 10.—Newcastle and District M.C. Knock-out Hill-climb.
Sept. 10.—North Wales M.C.C. Sporting Trial.
Sept. 10.—Oxford M.C. Hill-climb.
Sept. 10.—Helensburgh M.C.C. Petrol Consumption Test.
Sept. 10.—Luton and South Beds A.C. Reliability Trial.
Sept. 10.—Surrey M.C.C. Hill-climb.
Sept. 10.—Bristol M.C.C. Run to Wye Valley.
Sept. 10.—York and District M.C. Reliability Trial.
Sept. 10.—Dewsbury and District M.C.C. Picnic.
Sept. 10.—West Kent M.C. Hill-climb.
Sept. 10-11.—Birmingham M.C.C. Week-end Trial to Cheystow.
Sept. 10-11.—Wolverhampton Auto Nomads. Week-end Run to Ludlow.
Sept. 11.—Woolwich, Plumstead, and District M.C. Picnic at Carter's Hill.
Sept. 11.—Stafford and District M.C.C. Run to Matlock.
Sept. 11.—Cambridge and County M.C. Reliability Trial.
Sept. 11.—West Birmingham M.C.C. Social Run to Marchington Cliff.
Sept. 11.—Stamford and District M.C.C. and Peterborough M.C.C. Joint Speed Trials.
Sept. 11.—Harrogate and District M.C.C. Social Run to Bolton.
Sept. 11.—Sheffield M.C.C. Fishing Match at Drakeholes.
Sept. 11.—Northern M.C. Speed Judging Hill-climb.
Sept. 11.—Exeter M.C. and J.C.C. Run to Double Waters, Tavistock.
Sept. 11.—Leeds M.U. Reliability Trial.
Sept. 11.—Wakefield and District M.C.C. Run to Ilkley Moors.
Sept. 11.—Basingstoke and District M.C. and L.C.C. Run to Lee-on-the-Solent.
Sept. 11.—Central London M.C.C. Run to Frensham Ponds.
Sept. 11.—Halifax and District M.C.C. Run to Semer Water.
Sept. 11.—Rochester, Chatham, and District M.C. and L.C.C. Run to Seasalter.
Sept. 11.—Bradford M.C. and L.C.C. Wilson Cup Trial for Passenger Machines.
Sept. 13.—Truro and District M.C. and L.C.C. Evening Run to Gorran.
Sept. 14.—Burton and District M.C.C. Run to Derby.

Gravesend and District M.C.C.

On Wednesday, the 24th ult., a very successful slow hill-climb was held, Matchless, Rover, and Eclipse machines being successful in their respective classes.

Bradbury M.C.C.

On the occasion of a recent rally of Bradbury riders at Alms Hill, it was proposed to form a club, as above, for owners of these machines only. Those interested should communicate with Mr. A. F. Godwin, The Homestead, Belmont Road, Twickenham.

Okehampton M.C.C.

Results have now been announced of the reliability trial to Penzance and back, held in the latter half of last month. There were twenty starters, and the best performance, irrespective of class, was made by F. Tenby (4 Norton sc.). Results:

SOLO (HEAVY).—1, E. J. Hosking (8-10 Excelsior) and J. P. A. Spencer (3½ Triumph), error 0; 2, J. G. Durrant (3½ Norton) and T. Woods (4 Triumph), 30s.; 3, W. Backway (4 Triumph), 2m. 30s.

SOLO (LIGHTWEIGHT).—1, H. Brooking (2¾ Verus), error 1m.; 2, P. Cowling (2¾ Douglas), 3m. 30s.; 3, R. G. Eccles (2¾ Douglas), 11m.

SIDECARS.—1, F. Tenby (4 Norton sc.) and W. H. Newman (8 Enfield sc.), error 30s.

York and District M.C.

Results follow of the very successful hill-climb held on Garrowby Hill on the 27th ult.

275 c.c.—General: 1, R. Wood (2¼ New Imperial), 1m. 5⅘s.; 2, D. Brigham (2¼ Omega), 1m. 7⅕s.; 3, Miss Wilson (2¼ Velocette), 1m. 27⅗s.

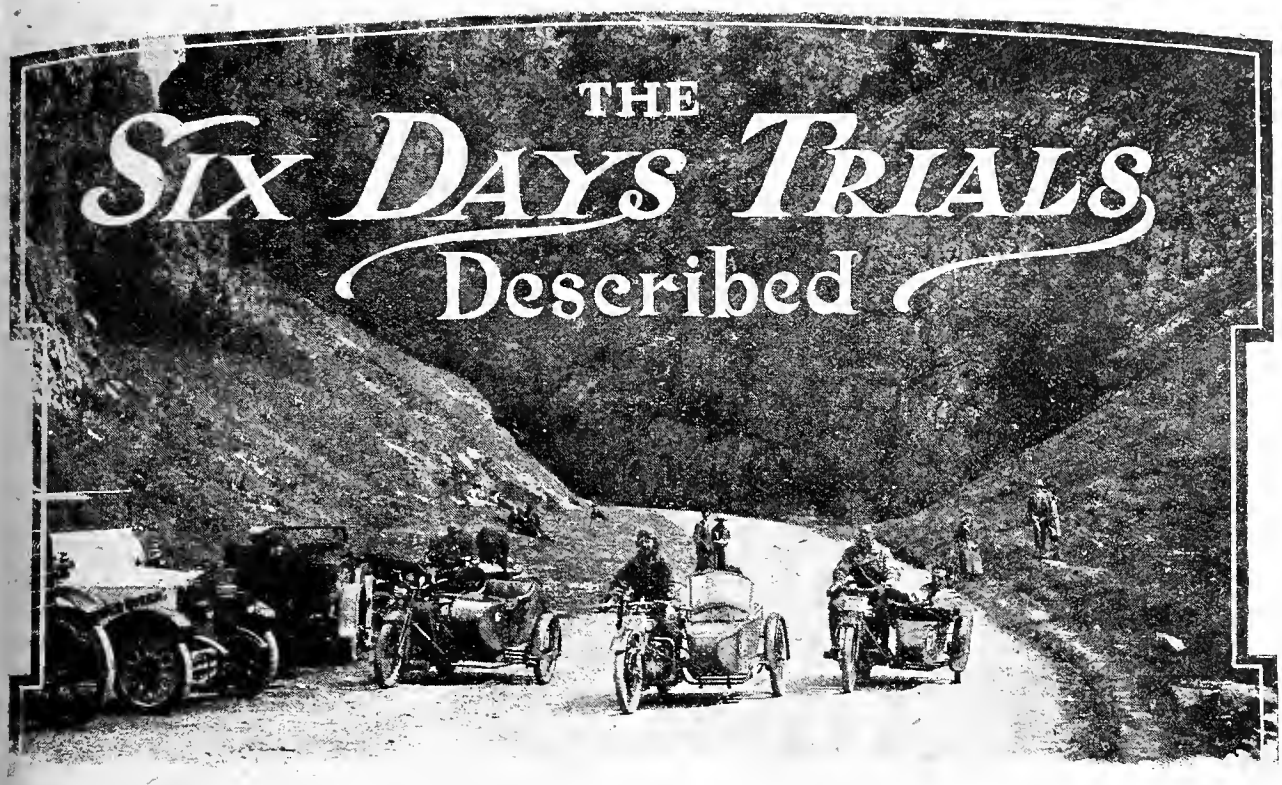
300 c.c.—General: 1, C. S. Russell (2¾ A.J.S.), 1m. 4⅘s.; 2, R. Wood (2¼ New Imperial), 1m. 4⅘s.; 3, G. M. Stevenson (2¾ Sunbeam), 1m. 6⅘s.

560 c.c.—General: 1, R. T. Cawthorne (3½ Norton), 49⅘s.; 2, W. Wells (3½ Sunbeam), 58⅘s.; 3, R. C. Morriss (3¾ Scott), 1m. 5⅘s. Amateurs: 1, W. Wells (3½ Sunbeam), 56⅘s.; 2, G. Bower (3½ Norton), 57⅘s.; 3, W. Wilkinson (3½ Sunbeam), 1m. 7⅘s.

750 c.c.—General: 1, R. T. Cawthorne (3½ Norton), 50⅘s.; 2, W. Wells (3½ Sunbeam), 57s. Amateurs: 1, W. Wells (3½ Sunbeam), 55⅕s.; 2, G. Bower (3½ Norton), 56⅕s.; 3, W. Wilkinson (3½ Sunbeam), 1m. 2⅕s.

UNLIMITED.—General: 1, R. T. Cawthorne (3½ Norton), 49⅘s.; 2, W. Wells (3½ Sunbeam), 55⅘s. Amateurs: 1, W. Wells (3½ Sunbeam), 55⅘s.; 2, G. Bower (3½ Norton), 56⅕s.; 3, W. Wilkinson (3½ Sunbeam), 1m. 2⅘s.

THE SIX DAYS TRIALS Described



Two private owner competitors, A. L. Cranch (5-6 Rover sidecar), and N. Clayton Russell (4 Norton sidecar), passing a "park" of tourists' cars and chars-a-bancs in Cheddar Gorge.

Modern Motor Cycles demonstrate their Reliability under Conditions such as prevail in their use by the Average Owner. 730 Miles over Roads which are traversed by Tourists, and a searching Speed Test on Brooklands. Oil and Petrol Consumption and Silence Important Factors. All Classes of Machines do well.

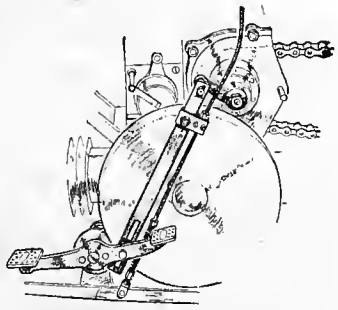
MONDAY'S RUN, 135 Miles.

Route: Brooklands, Chertsey, Staines, Windsor, Maidenhead, Henley-on-Thames, Benson, Oxford, Woodstock, Enstone, Chipping Norton, Northleach, Cirencester, Crudwell, Malmesbury, Chippenham, Box, Bath.

IN last week's issue of *The Motor Cycle* we described the initial stages of the annual Six Days Trials organised by the Auto Cycle Union, together with an account of the first day's run, which is here recapitulated.

Eighty-eight of the ninety-five entrants passed through the brake test on the Brooklands test hill, and eventually started on the easiest day's run ever experienced in a big trial.

Notwithstanding the "go as you please" nature of the first day's trial, it took a somewhat heavy toll, and no fewer than six competitors were missing when the men were timed in at Bath. These were: C. Hanwell (2¼ Cedos), who, through a loose jet, lost so much fuel that he had to break the seals on his filler cap in order to replenish, and automatically retired; L. H. Wells (2¾ Hawker); J. C. Walker (2¾ Edmund); N. Hall (2½ O.K. sc.), gear box; L. Peaty (2¾ Hawker sc.); and R. C. Davis (8 Chater-Lea sc.), indisposed.



Attachment for controlling the clutch pedal from the handle-bar on Harveyson's 4 h.p. Harley-Davidson.

The marks lost were:

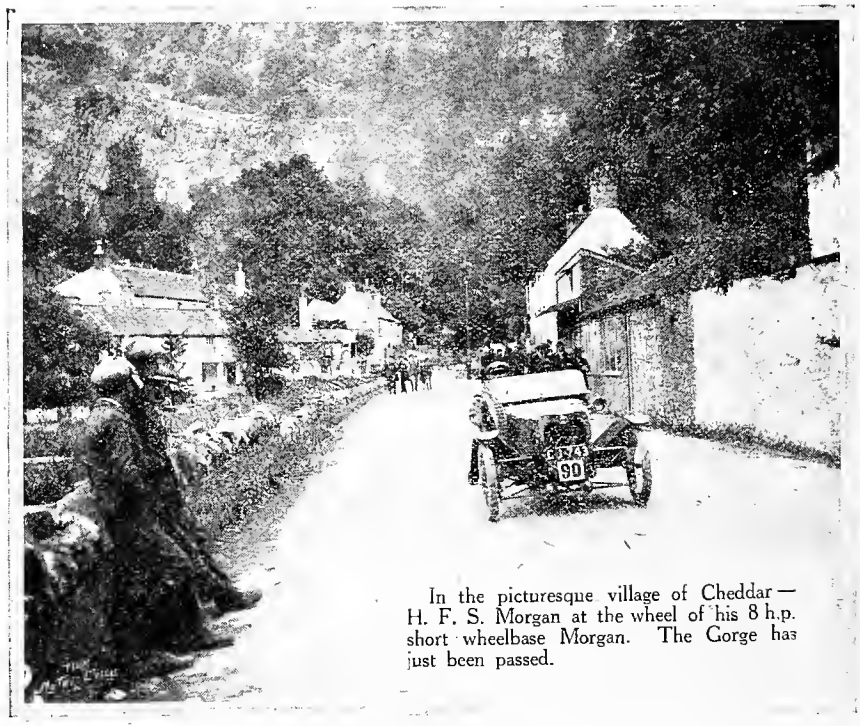
D. Read (2¾ Ready), 5, stopped on Ditteridge Hill.
H. F. Fellowes (4 Coulson), ran out of petrol and broke seals.
A. Eckersley (3½ Duzmo), 6m. late.
T. F. Blumfield (6 Ariel), 6m. late.

A handful of powdered graphite was responsible for the withdrawal of Neville Hall's O.K. sidecar. He inserted it in the gear box, and it choked a vital oilway. H. H. Nicholson (3½ Martinsyde), who ran out of petrol on the first afternoon's run, and was sixteen minutes late in consequence, has been allowed a clean sheet, as he did not take in a sufficient quantity of fuel at Chipping Norton.

TUESDAY, 155½ Miles.

Route: Bath, Weston, Calcot Farm, Dursley, Wooton-under-Edge, Kingswood, Wickwar, Chipping Sodbury, Keynsham, Bishopsworth, Cheddar (lunch), Bleadon, Highbridge, Bridgwater, Spaxton, Kingston, Crowcombe, Wivelscombe, Norton Fitzwarren, Taunton.

The standing proverb about the Six Days is that the silly men drop out on the first day and the unlucky men on the second day. But this trial broke all records in easiness for two days. Tuesday's run consisted of 155½ miles of roads which were sometimes narrow and twisty, occasionally rough, but never difficult. Half a dozen hills or so were officially observed, but their good surfaces and gentle gradient permitted any good 500 c.c. solo to climb on top gear, or, at the worst, on second gear, with the throttle practically shut. The ride would have been actually boring for most of the competitors if the hope of earning bonus marks by phenomenally low petrol and oil consumptions had not kept them busy. Extraordinary efforts are being put forth in this direction, and the week's consumptions are likely to prove illusive to the general public. Many riders free-



In the picturesque village of Cheddar—H. F. S. Morgan at the wheel of his 8 h.p. short wheelbase Morgan. The Gorge has just been passed.

wheeled down every slope, long or short, steep or gentle, and several sizable engines are expected to register 120 m.p.g. of fuel for the week. Similarly, oil was pumped in very gingerly fashion. E. Foster, on the big Raleigh twin, actually averaged 2,400 m.p.g. on the new Shell oil up to Tuesday night, and the smaller Rover engines showed figures of almost equal credit. In fact, Monday and Tuesday were really nothing more or less than a glorified consumption test. Tank replenishment was timed for 8 p.m. on Monday at Bath, and proved a very protracted business. The riders reassembled at the Tramway garage after dinner at their (possibly far distant) billets, and some of them departed towards midnight: but if the tank was filled in the owner's absence, precious fuel might be spilt or mis-measured. By the lunch stop at Cheddar on Tuesday, practice had rendered the staff more expert, and little delay occurred.

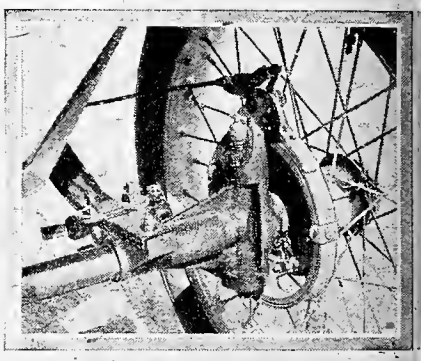
Tuesday's Run in Detail.

Bright sunshine, a rising glass, and a cool, light north-west wind graced Tuesday morning's start. E. Foster obtained leave to fit a new rear cover, as a stone had cut his original cover *en route* to Brooklands last week, but he pulled it off the rim in dodging a traction engine later in the day. Supplies of National benzole were not available for those who had nominated it as their fuel for the week. Wells's Hawker was added to the list of Monday's retirements. Several men discovered that they were not achieving quite as good a petrol mileage as they expected. The route made rings round the east of Bristol before striking south for Cheddar Gorge. Weston Lane, Darley, and Dundry were the morning hills, each of which attracted a fair concourse of spectators. The usual practice was to climb throttled down to about 20-25 m.p.h. on second gear, closing down a little further for the sake of silence if any judges were noticed to be present. The sight of Dr. Low's familiar figure always caused throttles to shut abruptly. Edwards had equipped his Coulson with a new belt at the start, and it stretched fast enough to make him anxious up Weston Lane. On Dundry Hill the Rovers were remarkably quiet; the Dunelts held their 4½ to 1 top gears until near the summit; whilst the A.J.S., Rudge, and Ariel teams all made outstanding performances. Ebblewhite was out trying to trap men ahead of time. In the descent of Cheddar Gorge, Clayton Russell upset his Norton and cut his forehead, but was able to continue. Cheddar was crowded with enthusiastic visitors, some of whom climbed several of the day's test hills with four, five, or even six, passengers on their sidecar outfits. After lunch there were four observed hills—mostly christened by false names in the programme. Cothelstone Hill, on the Quantocks, was the longest, but any self-respecting roadster should roar up it on second, and the majority of the entry could have touched 40 m.p.h. on it if they had dared. The silence regulations restrained them, to say nothing of the oil and petrol economy bonus. Under such conditions it would be sheer idiocy to select any ascent for special praise. In other words, the afternoon run was another gentle tour. Stobart's James sidecar unfortunately collided with a motor van eight miles out of Taunton. The frame was too badly buckled for further participation in the trials. Two cases of broken petrol filler seals had occurred thus early in the week. Hanwell broke his seals as the result of a loose jet, and promptly retired. But Fellowes, after breaking his seals as the result of a tank drained by a flooding carburetter, elected to ride on, and so compelled the judges to discuss the question of disqualification.

The Dureff four-speed chain gear box fitted on N. Clayton Russell's Norton outfit.

Tuesday's retirements included unlucky thirteen, P. R. Dowson, who carried that number on his 2¾ h.p. Hawker. Others to retire on the second day were: E. Mundey (2¼ New Hudson), D. Read (2¾ Ready), and H. F. Fellowes (2¾ Coulson-B).

Very few riders had lost more than a single figure number of marks before Wednesday, but A. G. Wall (2¼ Cedos) and Graham Oates (2¾ Edmund) were exceptions, having each lost thirty.



New front wheel brakes with compensating action are fitted to the T.B. three-wheeler.

WEDNESDAY, 175 Miles.

Route: Taunton, Wivelscombe, Raleigh's Cross, Heath Poult Cross, Timberscombe, Wootton Courtney, Luccombe, Porlock, Lynmouth, Parracombe, South Molton, Rackenford, Tiverton (lunch), Cullompton, Honiton, Sidford, Colyford, Lyme Regis, Morecombelake, Marshwood, Broadwindsor, Winsham, Chard, Combe St. Nicholas, Taunton,

Wednesday morning broke fine and cool, thus robbing the one stiff day of all its terror. A few drops of rain fell as the 350 c.c. men climbed Lynton, but the sky soon cleared. Thanks to the dry weather, Porlock and Lynton hills were firmer and smoother than we had ever seen them. Edwards, on the 2¾ h.p.

The Six Days Trials Described.—

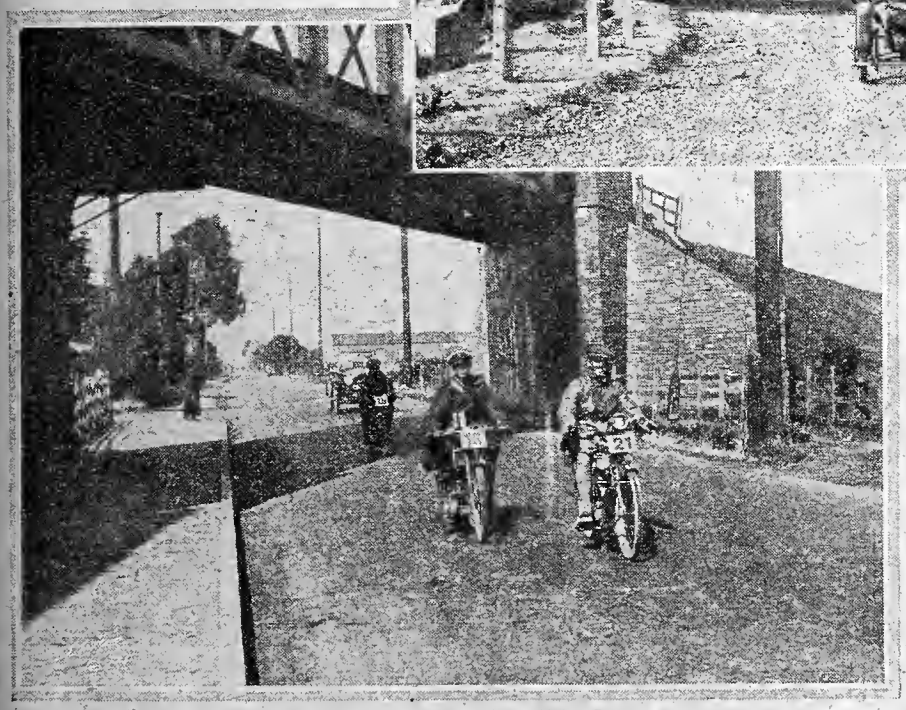
Coulson-B, never required bottom gear except up these two famous hills, and the score sheet indicated that, if the speed and condition tests at Brooklands on the last day failed to impose heavy penalties, an unparalleled percentage of gold medals should be won. Wednesday's route included no fewer than thirteen observed hills, but many riders roared up ten of them on top gear, and very few of the climbs reduced the smaller engines to their bottom ratios. The first ascent after breakfast—Whitefield Rocks leading up on to Brendon Hill—was two miles long, but a modern engine does not mind two miles on second gear. There followed twenty miles of narrow, picturesque lanes into Porlock.

Performances on Porlock.

Porlock was in far better condition on Wednesday than we have ever known it. The surface was hard and dry, and, considering that motor coaches descend it daily, few stones abounded. Spectators, numbering several hundred, assembled at the corners to see the procession of riders. Winn (Douglas) led the way, going well at 9.45 a.m., but after Cathrick ($4\frac{1}{2}$ Duunelt) and Vallings, on a similar mount, had gone up comfortably, Winn descended the hill and announced that his gear box had seized. Searle and Padley, on Sheffield-Hendersons, made no mistake, whilst Symes and Nicholson, on Martinsydes, and Strange (James) formed a trio who toured up within a few yards of one another. Danskin, Ewens, and Sibley (Rudges) demonstrated that they had ample power for hill work, and one noticed that the overhead valve gear has been silenced of late. Sibley was reported stopped higher up the hill, however. Ariels, ridden by Newey and Woodcock, made easy ascents, and when a privately-owned Triumph, with a lady on the carrier, went by, it was clear that Porlock had lost its terrors and was unlikely to trouble any machine in really good fettle. But there were failures, of course; for instance, Eckersley (Duzmo) stopped on the first bend presumably with a slipping clutch, and Singer (Rudge sc.) slowed down suddenly at the same place and repeated the performance. When, however, he traced the trouble to a choked jet, he made a really excellent climb, for which he was duly applauded.

Some men changed up between the two hairpin bends, Morgan, for instance, and Longman (Ariel). The four-cylinder F.N.'s made an excellent impression, climbing steadily and swiftly. The Scotts, too, were admired. Spectators appreciated the fact that the various makes were grouped together in the programme, and the men themselves ran so regularly that on hills the teams went up in a bunch. Foster's Raleigh made a clean ascent, and, incidentally, the engine was one of two only which smoked—the decision to measure oil consumption leading to many competitors operating their oil pumps sparingly. The four-speed P. and M.'s all made steady and sure ascents. North deserves special praise for the handling of his diminutive O.K. sidecar, which never faltered on Porlock. Three Martinsyde sidecars indulged in a little T.T. up the hill as they ascended almost side by side. Of the single-cylinder sidecars, Clayton Russell's four-speed Norton was probably fastest. Matchless, James, and A.J.S. sidecar exponents to a man did well. When the lightweights arrived, Wall (Cedos) proved that the Somersetshire terror is no match for 250 c.c. miniatures, but Lidstone (James) footed and then walked alongside, although he kept his engine running. Kershaw (New Imperial) was quite fast. Mason's Connaught made no mistake, and, in fact, all the miniatures, except Merson (Ready) got up well, the latter footing due to a slipping clutch. The solo A.J.S. men, with such a redoubtable string of jockeys, were a star turn.

After Lynton the road was easy but very bumpy as far as Lnnch at Tiverton. In the afternoon the surface was usually good, but the contours kept undulating, and crowds of spectators were gathered to watch the trial on their local hills. The fast, easy climbing made a great impression, and F. C. North, on the little $2\frac{1}{2}$ h.p. O.K. sidecar, came in for a great deal of applause, for he was the only lightweight sidecarist still running.



(Left) H. R. Davies ($2\frac{3}{4}$ A.J.S.) and a pair of O.K. Junior riders, A. Milner and W. L. Handley entering Bridgwater.

(Right) A scene on Cothlestone Hill. H. Boynton with his 7 h.p. James and sporting sidecar.

The Six Days Trials Described.—

Lynton was thronged with spectators, who were massed so as to obscure the riders' view of the hairpin, so that Cunningham's P. and M. narrowly missed crashing into the wall of rock on the left. The road was perfectly dry, very hard, and comparatively free from loose stones. A rideable track was obtainable across the full width, except where the drag of the coach had torn a rut.

The 500 c.c. class led the procession on Wednesday. Eckersley, on the Duzmos stopped low down in his first ascent. On making a second attempt at much higher speed he rounded the hairpin comfortably, but failed higher up. The two Dunelts, ridden by Vallings and Caltinch, were apparently on middle gear. The whole of the rest of the class toyed with the ascent.

Class D (up to 750 c.c.) probably outshone all the other classes. Harveyson's Harley made a beautifully quiet, steady climb, full of obvious confidence. The Ariels were sound. The Scotts purred up smoothly in a bunch, and the F.N. team were probably quieter than anybody else.

Climbs—Spectacular and Otherwise.

Foster, on the Raleigh, got a special cheer because he tried to take a V turn up towards Lynton, and recovered finely when the crowd roared at him to go straight on. Winn (Douglas) passed very late after his gear box trouble at Porlock.

Finch's G.N. was as fast as any bicycle. Watson's G.N. burst its near back tyre just past the Lyndale Hotel, but the driver slid back, and roared up the hill four minutes later with a spare tube in position. The Morgans remembered their petrol consumption, and went up quietly for once, eschewing fireworks. The T.B. was neat and fast

The 600 c.c. sidecar class had lots of power in hand, and North's tiny O.K. outfit naturally received the ovation of the day. There was something contemptuous in the air with which the 1,100 c.c. combinations swept up—as if a hungry lion should deign to gobble up a mouse.

By this time the non-motoring section of the crowd had become deeply impressed, for only one solitary machine had evinced the least anxiety. Presently the babies began to appear. The New Imperials trotted up nimbly, but Lidstone and Wall were slow, and the former seemed to hop off above the corner. Last of all came the 350 c.c. class, who completed the utter discomfiture of what was once a formidable hill.

There is nothing worth chronicling about the remainder of what was alleged to be *the* strenuous day of the trial. One hundred and seventy-five miles of rough roads, with a liberal sprinkling of hills, would doubtless have been punishing enough in bad weather; but, thanks to ideal weather conditions, few marks were lost.

NOTES.

The Rev. J. W. Fortnum was standing in the main street at Taunton on Tuesday night with the word "Observer" printed in large letters on his armlet. A working man going home to tea sang out, "Got a paper, guv'nor?" "Sold out!" replied the ready parson.

At Lynmouth the local milkman essayed to climb the hill with two enormous churns in the sidecar of his Triumph. He took the hairpin in fine style, and was loudly cheered. Higher up he conked out, and was immediately cheered again.

The apple crop in Somerset and Devon is simply enormous this year. The early codlins have, of course, been picked, but most of the trees are bending and groaning under tremendous loads of the later sorts.

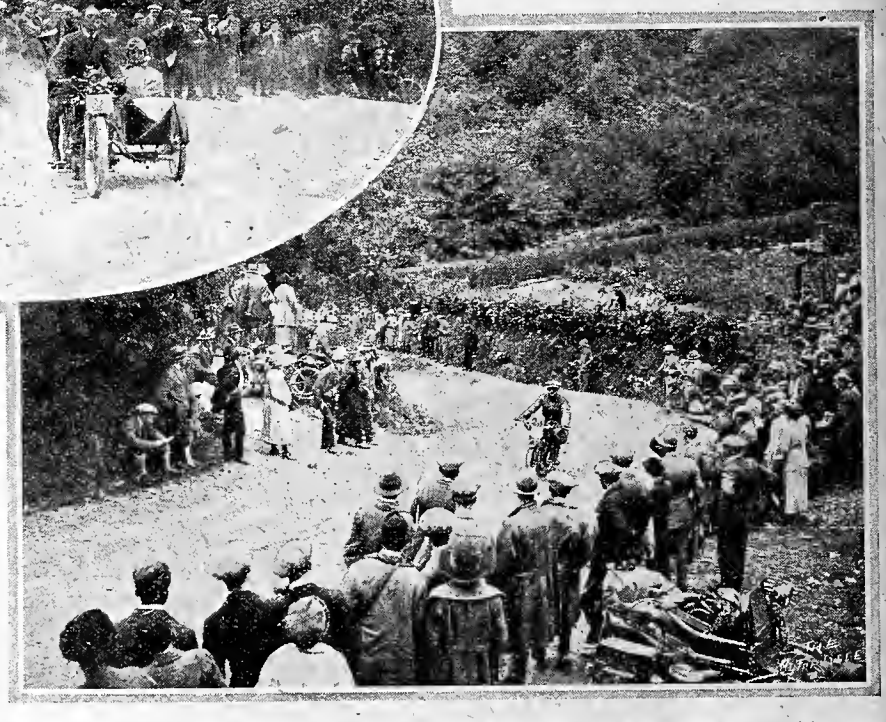
Marians, of P. and M. fame, and "M.C.C." Baddeley made a star climb of Lynton on a Morris car, and Col. Brereton, one of the judges, went up very nicely on his old G.N., to which he is devoted.

The favourite jibe is to ask Mr. Loughborough whether the trials route was planned by the Touring Department or the Competitions Committee.

Why is the A.C.U. so fond of Taunton as a trials centre? Trouble always arises about accommodation. This year many men who had bought official coupons found themselves banished to back street villas over a mile from the official garage. A troop of boy scouts kindly attended to guide the exiles.

Hardee (Matchless sc.) collided with a lorry on Wednesday and damaged his sidecar frame and springs, but he was able to continue.

Nearing Taunton on Wednesday evening some village folk threw apples to the competitors. They got too expert, however, in dropping them in the fleeting sidecars, and a shower on one or two of the passengers startled them not a little.



(Left) F. C. North (2½ O.K. sidecar) on Station Hill, Honiton. Incidentally this 292 c.c. sidecar outfit made a remarkably fine performance on Porlock and Lynton.

(Right) E. Searle taking Porlock with confidence on his 4 h.p. Sheffield-Henderson.

The Six Days Trials Described.—

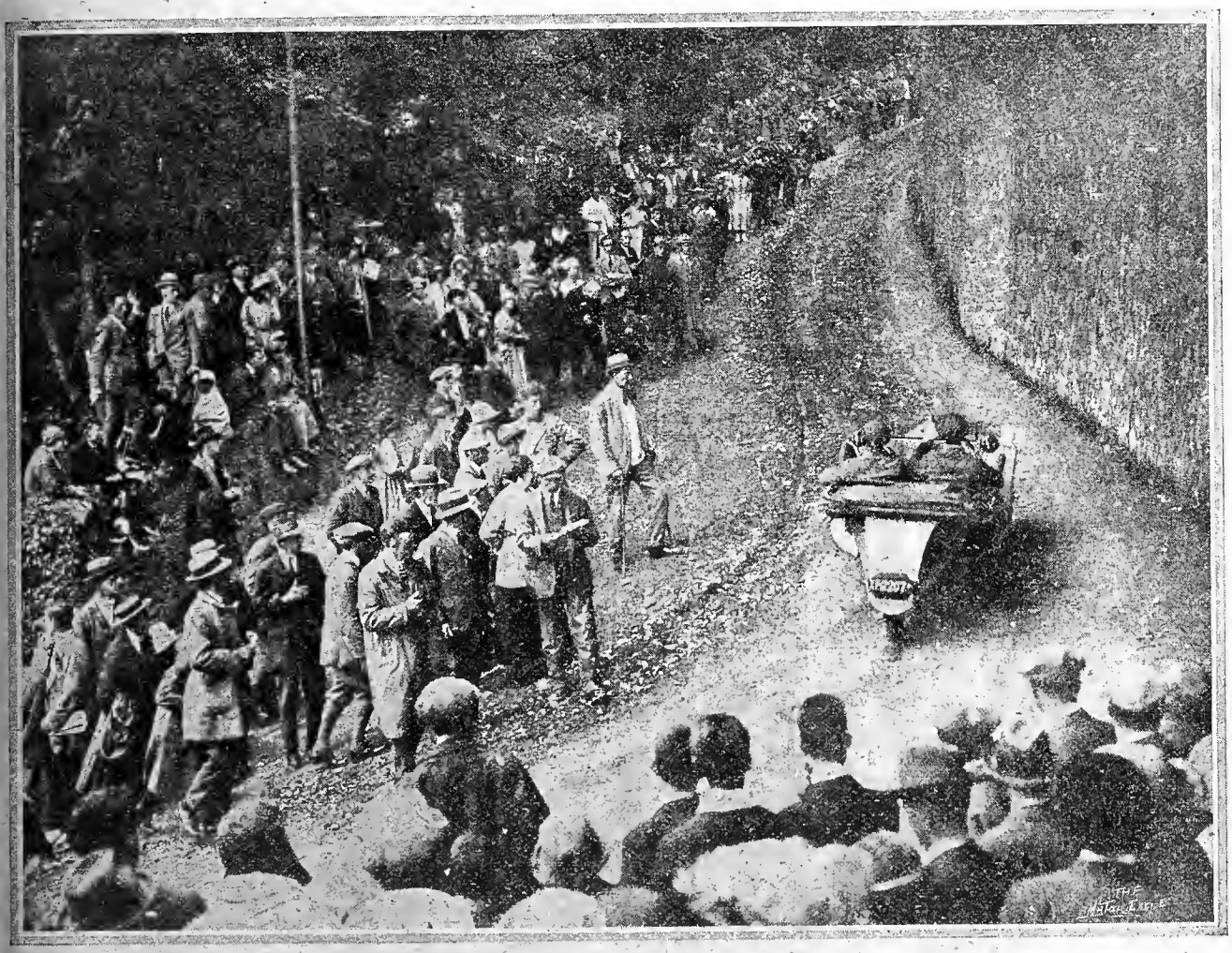
Apart from Wednesday's trip, this year's event must be the easiest "Six Days" event yet.

Constant twists and turns among narrow lanes were the feature of the Devon and Somerset section. But for the magnificent scenery competitors were relieved to be clear of that delightful country.

and M. on Honiton Hill), or failed to get his gear lever well home in the gate (as happened to Buckle's F.N. on Brass Knocker Hill). Thunderstorms oscillated over Somersetshire all the afternoon, and certain sidecars contained enough water by tea-time to put up the petrol consumptions quite appreciably. But the ride was an absolute picnic, and the men devoted their surplus energy to economising petrol. The favourite stunt is to

ing their route cards very intently; so, when they found themselves on the Bath tramlines and saw a finger-post with "Two miles to Bath," they eased up. Actually, they still had to make a long *détour*, including the ascent of Brass Knocker Hill—a top gear climb, commencing with a V corner presenting no great difficulty.

During the morning we kept passing and repassing competitors along undulat-



Lynton always attracts a huge crowd of spectators for any motor cycle event, and this occasion was no exception. Here is seen F. S. Spouse's T.B. making an unostentatious ascent.

THURSDAY, 133½ Miles.

Route: Taunton, Hemyock, Dunkerswell, Axminster, Perry Sheet, Crewkerne, Yeovil (lunch), Sherborne, Durweston, Shaftesbury, Warminster, Frome, Radstock, Bath.

To-day's run proved to be another personally-conducted tour over 133 miles of absurdly easy country. The programme indicated that six hills "might" be officially observed, and, of course, all of them were; but, as none of them were steep enough to fetch a three-speeded baby two-stroke off its middle gear, the officials had a sinecure, except when some unfortunate changed up instead of down by mistake (as Lewis did with his P.

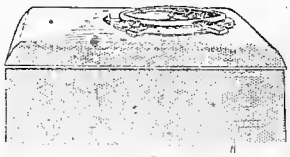
free-wheel down every slope, however insignificant; but a few, knowing that their fuel mileage is satisfactory, eschew such stunts. On arrival at Bath, a good many competitors had an unpleasant surprise. The silence marks were posted up, and twenty-eight men were penalised, of whom twelve had previously claimed clean sheets. The judges were very discreet. Twenty marks were allotted for silence; any man losing more than 10%, *i.e.*, two marks, is disqualified for a gold medal. So twenty-three men lost one silence mark apiece. The three Rudges lost two marks each, and two Martinsyde combinations were mulcted in 1.5 mark apiece. The only other excitement of a very dull day was due to pure carelessness. Some of the men were not watch-

ing roads. They roared past us on the up-grades. Their exhausts were abruptly hushed as they topped the crest. Then they slid noiselessly down the reverse slope. Presently we caught them up again on the flat, as they wobbled their front wheels to balance the machine at a mere crawl. Just before they fell off, they let the engine in again, and shot ahead once more. In all seriousness, petrol consumption provided the sole excitement, apart from Porlock and Lynton, on Wednesday afternoon. The Scott trio were averaging about 100 m.p.g. The P. and M. outfits were fitted with solo tanks, which do not hold enough fuel for a hard half-day, so they had special permits to replenish *en route* with the aid of the official cars.

Most of the teams kept together; L. Newey and W. Woodcock (on 3½ h.p. Ariels) are shown.

Very little trouble occurred during the day. Tom Peck damaged his crank case oil union irretrievably in tightening a nut. Lewis on his P. and M. muffed a gear change on Honiton Hill, and Buckle's gear lever slipped out of its notch on Brass Knocker. F. C. North lost his first time marks in the afternoon through a series of misfortunes, the O.K. sidecar having a spotless record up to that point. A plug sooted up, and North promptly inserted the spare which all good motor cyclists keep ready to hand. Presently the spare plug fused its points, and some time was wasted in unearthing another spare. Within a mile the third plug also failed, and everything had to be unpacked again!

Once more it was fortunate for the A.C.U. that the weather held fine. During lunch at Yeovil the official park and replenishment depot were quite de-



A novel watch mounting on the Cedos machines.

void of cover; and replenishment was a tedious business when every drop of oil and petrol had to be measured by A.C.U. officials and recorded in a book, not to speak of resealing the tanks. Two machines were usually dealt with at a time. There has never been so little "bunching" in a trial, for the system of one minute intervals between riders plus six minute intervals between classes, strings the procession out wonderfully. But, in spite of this, a queue of a dozen machines were usually waiting in the open outside the refilling stations.

Only two machines fell out on Wednesday, which provided a positive ordeal by contrast with the routes of the other four days. It was clear that nearly everybody would earn gold medals unless the speed test at Brooklands proved unexpectedly exacting.

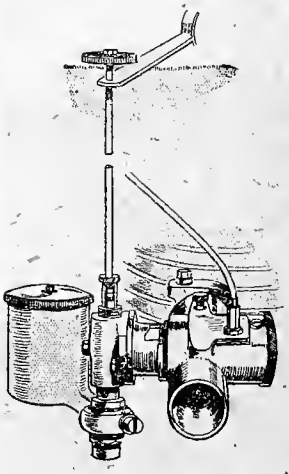
NOTES.

The team work is excellent. The riders of sister machines keep together in clumps, and a stoppage by one member of a team is a signal for the others to stop.

Much of the tank sealing has been very badly done. On many machines it has been possible to unscrew the stoppers without breaking the seals, and on others it was easy to pull the seal off the wire, and replace it. It is a pity that any unscrupulous competitor should be given the chance of stealing a march on others.

Up to Thursday night the two best oil consumption claims were: Solo 2 pints of Shell Triple on a 5·6 h.p. Raleigh (2,400 m.p.g.); and, sidecar, 3½ pints on an 8 h.p. Matchless (1,370 m.p.g.).

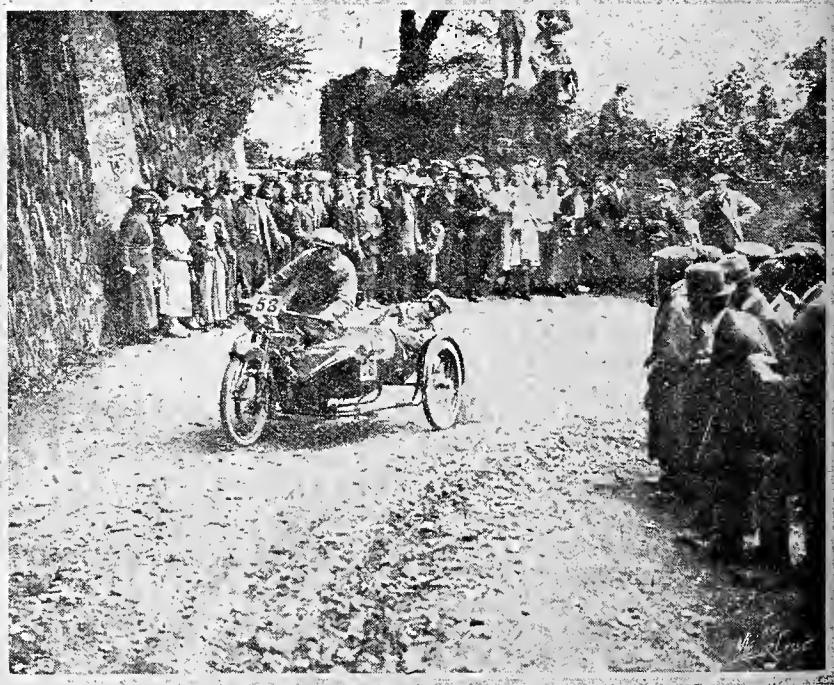
The rainstorms on Thursday afternoon proved that very few licence holders are waterproof.



A useful fitment on the O.K.'s is a jet control located on the tank to regulate the jet size of the Cox carburetter.

North's tiny O.K. was pulling a pukka touring sidecar. By contrast several far bigger machines are fitted with bantamweight sidecars, incapable of carrying an adult passenger in comfort, or of holding a real roadster kit.

At lunch on Monday, Mr. Easting, of windscreen fame, presented each competitor with a neat leather cigarette-case, full of Gold Flakes, designed to buckle over a Bowden wire on the handle-bar.



A well-known 3½ h.p. sidecar outfit now having four speeds instead of two—the P. and M.—on the difficult corner of Lynton. Observe the loose surface.

The Six Days Trials Described.—

Tank filling is a long job. Each ounce of oil and petrol is precious, and the men will not have the funnels withdrawn from their tanks till they are bone dry.

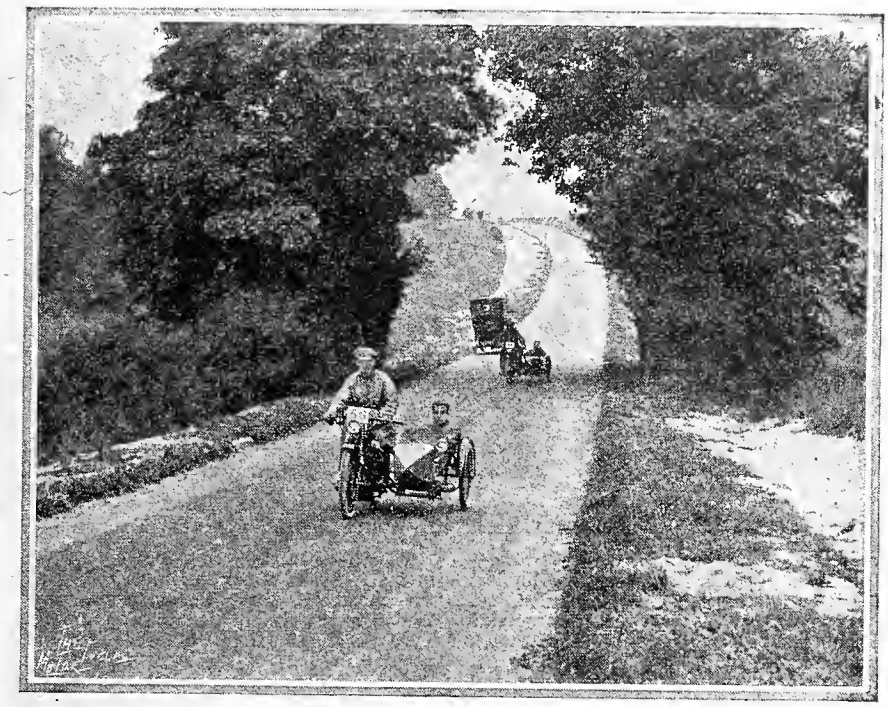
A yarn is going the round to the effect that the officials forgot to drain the sump of one machine last Sunday; and that the rider managed to cover the whole of Monday's route on the contents.

FRIDAY, 131 Miles.

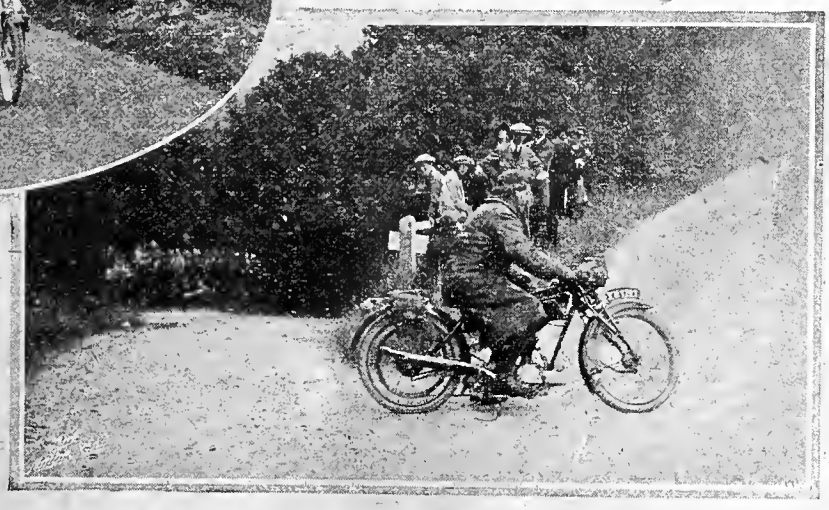
Route: Bath, Trowbridge, Edington, West Lavington, Maddington, Amesbury, Castle Hill, Lopcombe Corner, Stockbridge, Winchester (lunch), Bramdean, Petersfield, East Tisted, Alton, Brinsted, Hogsback, Guildford, Ripley, Brooklands.

The last day's road work seemed likely to be damp, for the sky was grey and lowering. Descending Brass Knocker, a long top gear rise led towards Trowbridge and over the plains past Stonehenge; but hill tests were absent. The riders—or, as some people call them in memory of the war, the "P.B.I."—were despatched by 130 miles of devious roads, containing many loose flints and sandy stretches; but the gods were just, and no appreciable rain fell along the trials route. Everybody had grown quite contemptuous about the observed hills, but, after passing Petersfield, Wheatham Hill caused quite a lot of fun. Its second hairpin is quite violent, and the marshals had cunningly trained the spectators to be impassive. So everybody fancied the hill went straight on until they sighted a nasty little trail of blue doubling backwards. The G.N. cycle cars placidly reversed, and then remembered that the regulations said nothing about reversing. Spouse (on the T.B.) was in the same boat, and the crews of these three machines clustered round Loughborough at the finish, much as the Gaiety beauty chorus clusters round Leslie Henson. Sidecars, of course, can wheel round in their own length, but the surprise caused some of the soloists to commit very ungainly work. Wall took his Cedos right on top of the bank, and came off it again in proper Brooklands fashion. The Morgans always use the roadside for helping them round vicious hairpins, and they "borrowed" nicely, as a golfer would say of his putt. The bigger machines snicked in bottom gear, and managed easily. Of the smaller fry, the New Imperial and Connaught teams, together with the British Standard, were all impressive, as indeed they have been on all the hills. The 2¾ h.p. A.J.S. invariably behave like 500 c.c. machines on a gradient—indeed, we doubt if a 750 c.c. could better their smooth mastery of a bad hill. Gifford's Martinsyde had cruel luck on Wheatham—one of its plugs fused a tiny metal thread across the points.

Quite a lot of trouble occurred during the day. Cranch shed the silencer of his Rover, and, as he was riding in close company with other machines, did not miss it for seven miles. When he recovered it, he left his suit case in the



Well-known riders of P. and M. sidecars and members of a winning team—P. Cunningham and G. M. Townsend—passing under a curious natural archway on Salisbury Plain.



LIGHTWEIGHTS IN THE TRIAL.

(Left) Nearing Salisbury on the last day's journey. D. Prentice ("No. 7") and B. Kershaw (on 2¼ New Imperials), two gold medal winners in the 250 c.c. class.

(Right) H. F. Edwards (2¾ Coulson) makes no mistake on the Wheatham hairpin.

The Junior T.T. winner, Eric Williams (2¾ A.J.S.), makes a neat turn on the Wheatham Hill hairpin.

road, and once more retraced his tracks—this time in vain. As a result, he lost his first reliability marks. Boynton had to change both his plugs just outside Brooklands, after doing all the road work without a misfire. F. C. North had a trying time with the O.K. sidecarette, and lost a number of marks. His packet began with changing a back tyre, and the inevitable blind to catch up lost time naturally provoked other petty derangements. This was miserable luck, for the outfit has performed magnificently throughout. He was eighty-six minutes late at Winchester for lunch.

Readers will notice that this report contains far fewer "bouquets" or "mentions in despatches" than usual. It is quite impossible to single out individual riders or machines when the allotted task is so easy that everybody performs it comfortably, and, in addition, the paralysing petrol economy business prevented the men from attempting any speed work on the hills. The general impression made upon the spectators was that practically every machine was toying with its job.

The three Martinsyde sidecars were the first arrivals at Brooklands. Entering by the members' gate, the machines proceeded to the sheds on the top of the hill. Tyre changes were allowed without penalty in view of the next day's speed test, for which most of the boys had held an impromptu rehearsal on the Portsmouth Road. The 250 c.c. and 350 c.c. classes were due to start early on Saturday morning for their speed tests, so that their oil and petrol tanks had to be measured off over night. Riders in the other classes were released until Saturday

The organisation throughout has been excellent. If some critics complain that the road work has been child's play, it nevertheless approximates very closely to the ordinary riding of the average owner.

NOTES.

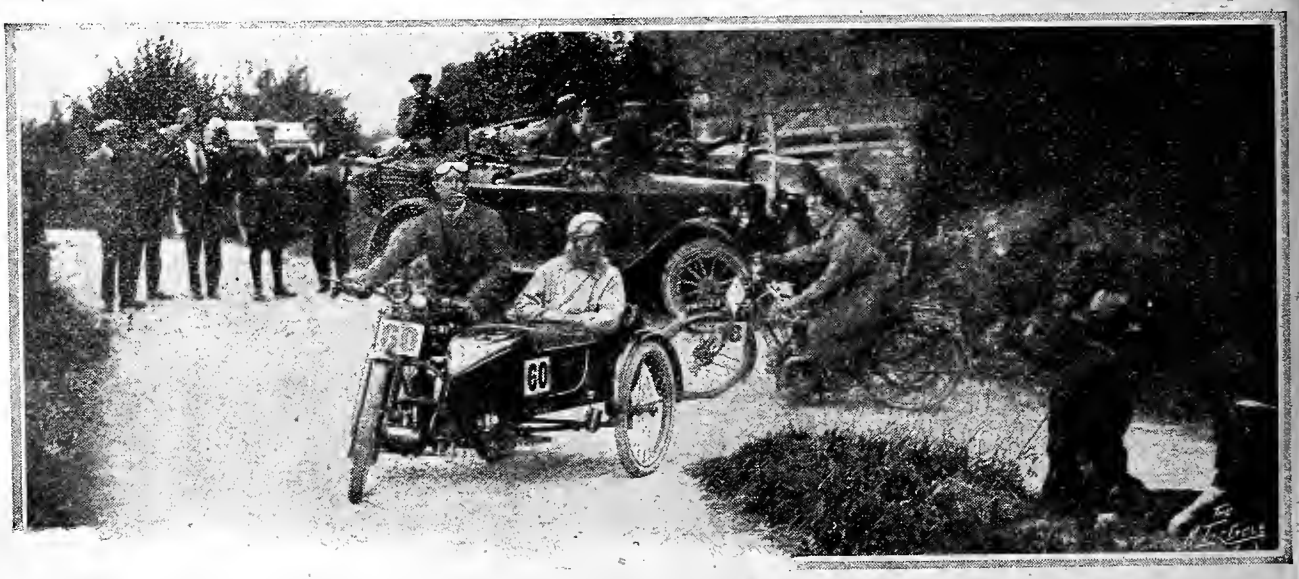
Major Dixon Spain is a good map reader. His track-laying Chevrolet only left the route twice, and then merely for one hundred yards or so. The job is no sinecure, for the car started at 5 a.m. daily, and finished about 8 p.m.

Harveyson (Harley) finished the road trial in a grey bowler hat, and one of the Ariels carried the "720" milestone on his *back*.

According to Loughborough, fewer men were standing for golds on Friday night this year than in the 1920 trial at a similar stage, *i.e.*, immediately before the speed test. This seems incredible; the secret checks must have caught a lot.

Cathrick (on the Dunelt) broke a belt on Wheatham Hill, and afterwards made a clean ascent. Bell (on the F.N.) overran the top hairpin.

On Thursday Pehrson (on the Dunelt) managed to follow the blue track laid for Wednesday, and went miles off the proper route. He caught up his lost time satisfactorily before the secret check, but, of course, nothing could restore his wasted petrol, and his is one of the machines which finds its official ration barely adequate.



F. C. North (2½ O.K. sidecar), deservedly one of the most talked of riders in the trial, followed by Graham Oates (2¾ Edmund), at the top of Wheatham Hill.

The Six Days Trials Described—

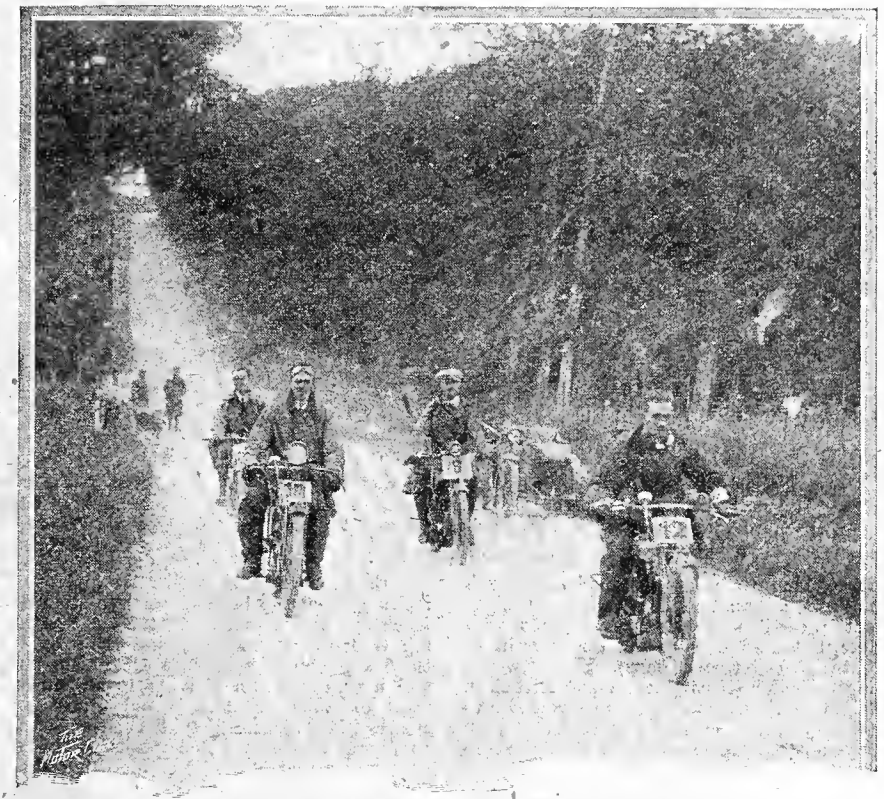
SATURDAY.	Speed Tests at Brooklands.	
250 c.c. solo - -	25 laps at 30	m.p.h.
350 ,, ,, - -	,, 35	,,
500 ,, ,, - -	,, 40	,,
750 ,, ,, - -	,, 42	,,
1000 ,, ,, - -	,, 45	,,
600 c.c. sidecars -	,, 32	,,
1000 ,, ,, -	,, 35	,,
Cycle Cars - - -	,, 36	,,

The officials had a harassing day on Saturday. The 250 c.c. and 350 c.c. machines had their tanks drained to complete the measurements of oil and petrol consumption. At 7.45 a.m. these two classes were started on their twenty-five lap speed test (the tabular results of all these final tests appear elsewhere in this issue). As soon as these two classes took the track, the staff tackled the tanks of the next class and so on. In an hour or so the small machines had completed their speed test, and climbed the test hill before undergoing the final examination for condition. After a chilly dawn, the sun shone out in blistering fashion, and the A.C.U. staff must have been very weary men by nightfall.

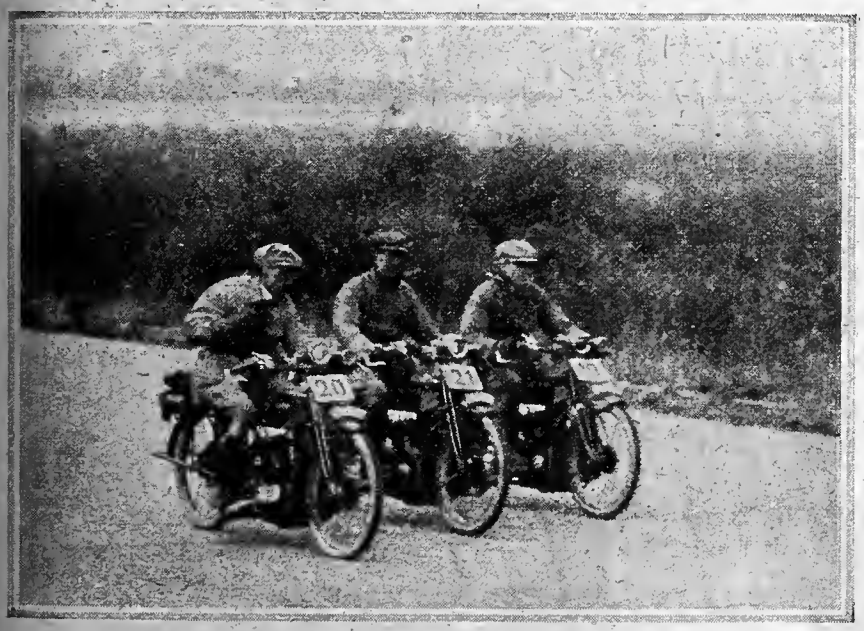
Lightweights Shine in Speed Test.

Fifteen machines survived from the 250 c.c. and 350 c.c. classes to line up at the fork at 7.45 a.m., and all got away to a good start. The A.J.S. trio are said to be capable of a good 55 m.p.h., but there was no sense in taking risks, and they were content to lap in a clump at about 38 m.p.h. Kershaw, on the 250 c.c. New Imperial-Jap, was audacious enough to lap them by the half distance, and maintained his three-mile lead of the entire field to the finish, heading his stable companions by the same distance.

The speed test was, of course, in no sense a race, but members of each team usually put their heads down and tried to outshine one another on the last lap. Anderson had trouble on his second lap, and Handley changed a plug on his fifth round. After the finish, Lidstone (James) failed on the test hill, and Mason (Connaught) struggled to the summit with his petrol turned off. Handley created great excitement by putting his O.K. on its stand right in the centre of the track when a plug needed attention.



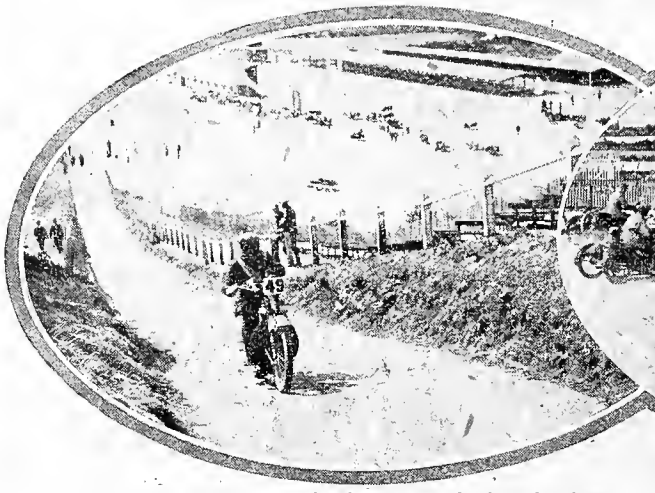
Only 65 miles to the finish. Nos. 9, 10, 11, and 12 are still riding together—testimony to the reliability of the modern 2½ h.p. lightweight. The riders, who are nearing Winchester, are respectively: J. C. Humphries (2½ Arden), and I. F. Anderson, G. F. Mason, and C. L. Sprosen who formed the Connaught lightweight team.



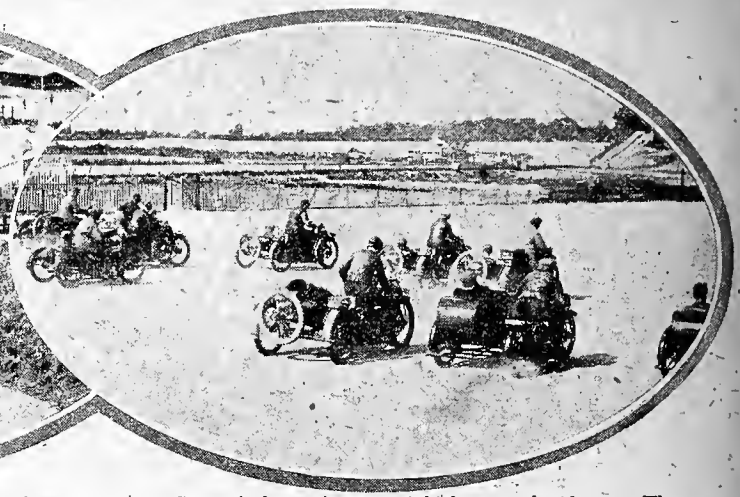
In this close formation, the A.J.S. team—which won the 350 c.c. class team prize—rode throughout the twenty-five laps at Brooklands, at a speed of nearly 43 m.p.h. Reading from the left: Eric Williams, H. R. Davies, and N. F. Harris.

Some Unfortunates.

The 500 c.c. and 750 c.c. classes were next on the track, and as the oil consumption was no longer measured, we saw blue exhausts for the first time in the week. Several serious stops marred the speed of the bigger solo machines. Both the Dunelts burnt out their carbon brush holders, and Cathrick retired for this cause in his seventh lap. Nicholson (3½ Martinsyde) seized his gear box on his eighth lap. Danskin (3½ Rudge) broke a valve on his fifth lap, and the Duzmo retired after a regular packet of assorted troubles. The oil connection of Newey's Ariel broke away, but he tied it up with a handkerchief. Searle (Henderson) ran out of oil, and Strange (James) punctured. The remainder enjoyed smoother experiences. Foster, on the Raleigh, and Symes on the Martinsyde developed notable speed in the early stages, but Ford's F.N. was the first to complete twenty-five laps (passing Foster near the finish), and was loudly cheered, as something of a gate had collected by this time. He was a lap ahead of Symes, who in turn had lapped the next fastest men. The lame dogs of this class trailed on



Having completed twenty-five laps at speed after the five days road test, competitors had to climb Brooklands test hill before the final examination. W. Moore, who gained a gold medal on his Scott.



Start of the track test for high-powered sidecars. There were only two retirements in this section. Quite an impressive spectacle was provided by the start in this class, as the machines almost covered the width of the track.

for a long time, as everybody who was not more than one hour late each night got a certificate. Vallings finished very late, but the following apparently retired: Cathrick (after seven laps), Searle (twenty laps), Padley (twenty-four laps), Nicholson (eight laps), Danskin (twelve laps), Ewens (twenty-four laps), Featherstonhaugh (twenty-four laps), and Eckersley (thirteen laps).

The 600 c.c. sidecars took the track in company with the cycle cars, not to speak of Graham-Oates on the Edmund, this rider having overslept himself and arrived too late for his class. These two classes strung out very quickly. The Edmund was an easy leader after one lap, with Morgan second, Elce third, Watson's G.N. fourth, and the other Morgan fifth. The fastest sidecar was lying no higher than seventh, and the little O.K. sidecarette was naturally half a mile astern, 32 m.p.h. being a formidable pace for such an outfit. Unluckily, North had repeated tyre trouble; otherwise he would just have qualified, for he was lapping (2.717 miles) in about six minutes.

H. F. S. Morgan Miscounts.

Great excitement arose towards the finish, for Morgan miscounted his laps, and calmly parked his machine in the paddock when he had still a lap to go. E. B. Ware got out a Ford and went right round the track to find him. Under the circumstances, it was lucky that Morgan had taken his twenty-four laps in very fast time. In Morgan's absence, the T.B. finished first in its class, running very prettily. Elce's Morgan was not far behind, followed by Boddington.

The big sidecars in Class G occupied the full width of the track when they were lined up, with hubs all but touching, in front of the timekeeper's box, and their start was a magnificent spectacle. Considerable rivalry existed, to which the uncertainties of the team prize added fuel, and the leaders set a cracking pace for several laps until prudence reasserted itself. Four Matchless outfits jumped off with a good lead, and O'Brien drove as if his riding orders were to play the hare, whilst his colleagues played the tortoise. Singer had a long stop on his fifth lap, and Breese needed more oil after fourteen laps; some of the back tyres were stained black by oily exhausts. On the eighteenth lap O'Brien had a stop, and Ellis took the lead, which he held to the finish, he and his passenger contriving to replenish their oil tank as they roared round at speed. It transpired that O'Brien was changing a valve. The positions kept changing in kaleidoscopic fashion, but the stoppages were few and petty, except that Fell-Smith (Brough Superior) broke his back exhaust valve, damaged a cylinder, and had to be towed in.

NOTES.

Rex Mundy made a lightning change of his front exhaust valve immediately before the speed test.

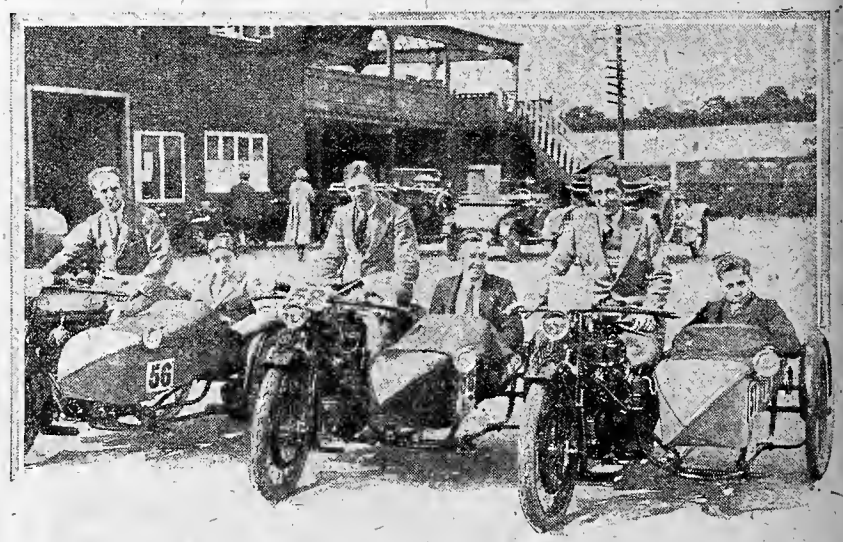
One competitor averaged 2,400 m.p.g. of oil on Monday, Tuesday, Thursday, and Friday. But Wednesday's hills pulled his average down to 1,500 m.p.g.

In the speed test W. F. Scott wore a very neat grey bowler hat, which he had purchased overnight for 1s. 11d. Not to be outdone, Wade and his passenger started their speed test wearing black silk toppers, which they only discarded after eight laps.

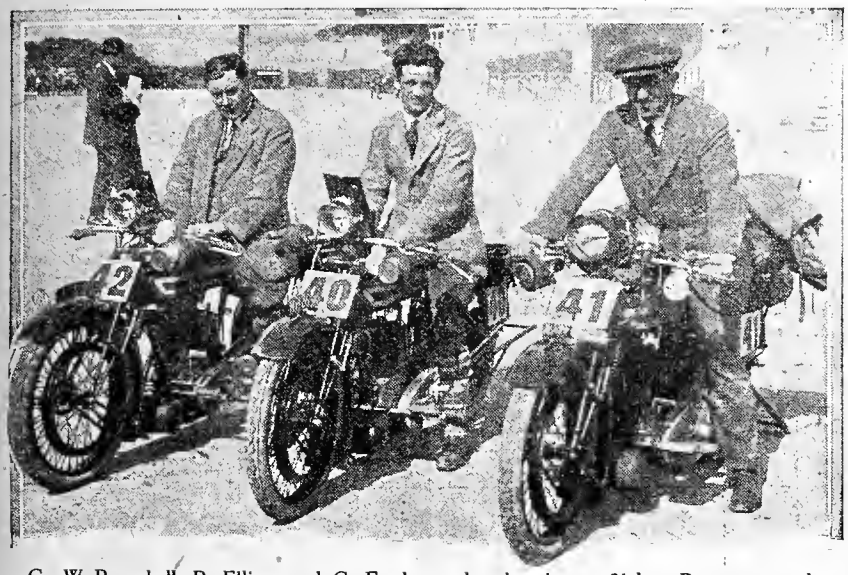
Several of the competitors actually cleaned their machines as they rode along. This practice was specially noticeable towards the final check on each day.

Late in the week the A.C.U. rang up the London Office of *The Motor Cycle* to enquire if we could furnish thirty-six lap scorers for the speed test. The Martinsyde Co. kindly furnished no fewer than twenty-two of the required number.

The trade teams usually "clumped" in the speed test. The P. and M. sidecars and the G.N. cycle cars were never far



The P. and M. sidecar team—P. Cunningham, G. M. Townsend, and R. Lewis, who rode the new 3½ h.p. four-speed models and qualified for the team prize in Class 7 (600 c.c. sidecars).



G. W. Ravenhall, R. Elliott, and G. Featherstonhaugh, who, on 3½ h.p. Rovers, won the team prize in Class C (500 c.c.).

apart. But the palm must be awarded to Howard Davies, Williams, and Harris, whose three A.J.S. machines lapped abreast, as if they had been dressed by a sergeant in the Guards.

Friday morning's secret check was cunningly located behind a little wood at the far end of the long straight near Stonehenge. Ebblewhite apparently secured quite a nice little bag.

One rider stopped for a cigarette at the foot of Cothelstone Hill, and turned off his petrol. He forgot to turn it on again, failed on the hill, and wasted a lot of time taking things to pieces. Finally, he discovered his blunder, descended, climbed the hill, and claimed a clean ascent, which was actually allowed.

Competitor No. 1: "How do you feel about the speed test, old man?"

Competitor No. 2: "Na poo. Something is hitting something in my engine, and I don't know what it is!"

To finish the trial without loss of marks, and to complete over twenty-three laps out of the required twenty-five well within time, and then to be put out of the running by a burnt-out carbon brush holder is a piece of real hard luck. This, however, was the fate of Vallings (Dunelt), whose team mate Cathrick suffered from the same trouble in the earlier laps.

This year the A.C.U. programme was not notable for its customary accuracy, the wrong names of test hills frequently misleading local motor cyclists, who took up positions on the wrong hills. Furthermore, our apologies are due to readers who may have been misled by the list of competitors in our last issue having the wrong numbers indicated in several cases. We can only say that the names as well as the numbers were furnished officially by the A.C.U., and for some unaccountable reason were subsequently amended.

ENGLAND v. HOLLAND.

Trial from Midlands to Brooklands. Attractive Social Programme arranged for Continental Visitors.

ON September 26th (Monday) the team of eighteen riders from Holland will compete with a similar team of British riders in the fourth annual Anglo-Dutch Trial; the course is a secret one, between Worcester and Brooklands.

This event is the second post-war trial between the Anglo-Dutch teams, the last year's run being in Holland, and won by the native team. Owing to the nature of the country, the trial in Holland is usually run to split seconds, as there are no hills or other natural obstacles to speak of.

Anglo-Dutch trials date from 1912, the venue and winners being as follows:

Date.	*Country.*	*Winners.*
1912	Holland	Dutch team
1913	England	British team
1920	Holland	Dutch team

By winning twice, the N.M.U. Cup became the property of the Dutch team.

This year the trial consists, as beforementioned, of a reliability run by an indirect and secret course from Worcester to Brooklands. The schedule speed will be 20 m.p.h., and stops in the non-stop sections will be penalised by five marks.

On arrival at Brooklands, the machines will be subjected to a speed test of twelve laps (32.6 miles), which everyone must complete at the following speeds:

275 c.c. solo and 600 c.c. sidecar... ...	28 m.p.h.
350-500 c.c. solo and 1,100 c.c. sidecar ...	35 m.p.h.

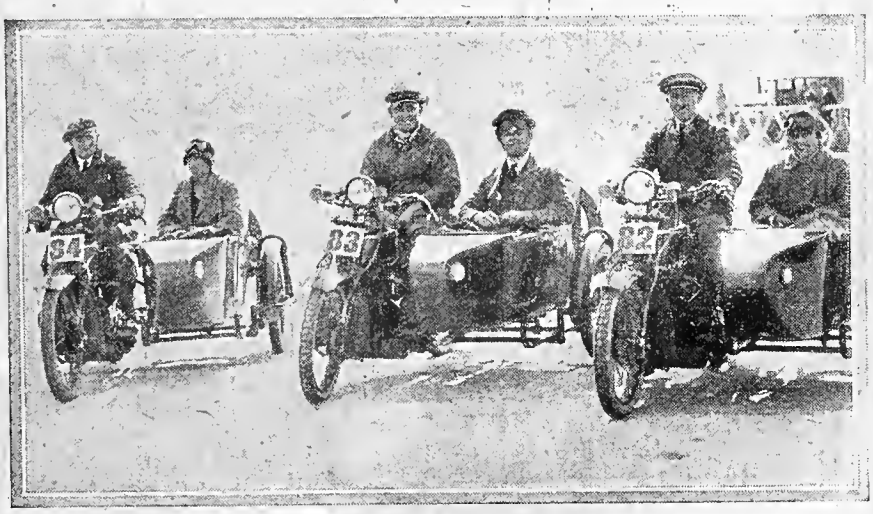
Owing to the popularity of big twin solo machines in Holland, it is possible that the Dutch riders will be allowed to use any type of machine instead of providing a set number of each of the specified capacities.

Dutch riders will be distinguished by orange number plates with black figures; the British colours are white on green.

Entertaining the Guests.

The team from Holland is expected on Saturday, September 24th, and will be met at Harwich by the Essex M.C. They will be piloted to Leamington, where they will be entertained to dinner in the Town Hall by the Midland Centre, A.C.U. On the 25th lunch will be taken at Stratford-on-Avon, and Shakespeare's birthplace and other local sights will be visited before the party move to Worcester, where the Dutch riders become the guests of the Worcester M.C.C.

Monday is the day of the trial, and, after the hardships of the day, the visitors will be cared for by the Surbiton and District M.C. and the A.C.U., a dinner being arranged at Thames Ditton. The last day of the Dutch team's stay will include a visit to the J.A.P. engine works, and lunch at the Epping Forest Hotel on the way to Harwich, where they again embark.



The winning A.J.S. team in Class G (1,000 c.c sidecars). Rex G. Mundy, O. Wade, and F. W. Giles. They all rode consistently, and appeared to find the whole trial a pleasure run.

A.C.U. SIX DAYS TRIALS, 1921.

BROOKLANDS—WEST OF ENGLAND—BROOKLANDS.

PROVISIONAL RESULTS.

89 Starters. 20 Retired. 54 Gold Medals. 6 Silver Medals. 3 Bronze Medals.
5 Certificates. 1 Disqualified.

Basis of Awards: Marks credited at the start, 545, made up as follows—Reliability, 100. Hill-climbing, 100. Braking, 25. Silence, 20. Speed, 100. Petrol consumption, 50. Oil consumption, 50. Condition at finish, 100. Every competitor who has not lost more than 10 per cent. of the marks *allotted* him under *each* of the eight tests is awarded a gold medal; if not more than 20 per cent., a silver medal; if not more than 25 per cent., a bronze medal. Certificates are issued to all who complete the Trial.

Rider and Machine.	No. of Cyl.	C.C.	Weight of Ma'hine	MARKS LOST: Brakes. (25).	General Reliability. (100).	Hill-climbing. (100).	Silence. (20).	Petrol Consumption (50).	Oil Consumption (50).	High Speed Test. (100).	Condition. (100).	Marks. Minus.	Marks. Plus.	Total.	Award.
			lb.												
A. G. Wall (2¼ Cedos)	1	247	197	25	—	5	—	—	6	+ 3	—	—	3	—	Disqualified.
J. Lidstone (2¼ James)	1	239	243	1	25	—	—	+ 2	+ 4	+ 8	—	26	14	533	Bronze med.
C. H. Hanwell (2¼ Cedos)	1	247	237	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
E. Mundey (2½ New Hudson)	1	247	209	—	—	—	—	—	—	—	—	—	—	—	Retired Tues.
D. G. Merson (2¼ Ready)	1	250	227	—	—	20	—	—	—	—	—	—	—	—	Retired Wed.
B. Kershaw (2¼ New Imperial)	1	249	204	—	—	—	1	+ 4	+14	+15	—	1	33	577	Gold medal.
D. Prentice (2¼ New Imperial)	1	249	198	—	—	—	1	+ 9	+ 9	+13	1	2	31	574	Gold medal.
L. Horton (2¼ New Imperial)	1	249	214	—	—	—	—	+13	+ 4	+14	—	—	31	576	Gold medal.
J. C. Humphries (2½ Arden)	1	269	208	1	—	5	1	—	18	+ 2	—	9	2	538	Gold medal.
I. F. Anderson (2½ Connaught)	1	293	207	2	4	10	—	+19	+ 3	14	—	30	39	554	Silver medal.
G. F. Mason (2½ Connaught)	1	293	221	—	5	—	—	+20	—	+ 2	—	5	70	610	Gold medal.
C. L. Sprosen (2½ Connaught)	1	293	223	1	—	—	—	+24	+14	+ 2	—	1	40	584	Gold medal.
P. R. Dowson (2¾ Hawker)	1	292	178	2	—	—	—	—	—	—	—	—	—	—	Retired Tues
L. H. Wells (2¾ Hawker)	1	292	201	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
W. L. Handley (2½ O.K.-Junior)	1	292	205	2	—	—	—	+ 2	+47	+ 2	—	2	51	594	Gold medal.
A. Milner (2½ O.K.-Junior)	1	292	205	—	—	—	—	+ 6	+20	+ 2	—	—	28	573	Gold medal.
J. C. Walker (2¾ Edmund)	1	348	266	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
—. Graham-Oates (2¾ Edmund)	1	348	237	25	16	10	—	+ 5	+20	+12	12	63	37	519	Certificate.
C. Williams (2¾ A.J.S.)	1	349	249	1	—	—	—	+10	+14	+ 8	—	1	32	576	Gold medal.
E. Williams (2¾ A.J.S.)	1	349	246	—	—	—	—	+16	+27	+ 8	—	—	51	596	Gold medal.
H. R. Davies (2¾ A.J.S.)	1	349	248	—	4	—	—	+13	+24	+ 8	—	4	45	586	Gold medal.
D. Read (2¾ Ready)	1	292	240	1	—	—	—	—	—	—	—	—	—	—	Retired Tues.
H. F. Edwards (2¾ Coulson)	1	348	262	—	—	—	1	+17	+ 9	+ 4	—	1	30	574	Gold medal.
R. C. Winn (3½ Douglas)	2	499	294	2	—	—	1	—	—	—	—	—	—	—	Retired Wed.
C. W. Vallings (4½ Dunelt)	1	499	333	—	—	—	—	—	+47	21	1	22	47	570	Bronze med.
B. Cathrick (4½ Dunelt)	1	499	338	1	—	—	—	—	—	—	—	—	—	—	Retired Sat.
E. Searle (4 Sheffield-Henderson)	1	499	259	—	—	—	1	—	—	30	—	31	22	536	Certificate.
L. Padley (4 Sheffield-Henderson)	1	499	280	1	—	—	1	+14	+ 8	10	—	12	22	555	Gold medal.
A. A. Symes (3½ Martinsyde)	2	496	317	1	—	—	1	+ 2	+47	+10	1	3	59	601	Gold medal.
H. H. Nicholson (3½ Martinsyde)	2	496	310	1	16	5	—	—	—	—	—	—	—	—	Retired Sat.
G. Strange (3½ James)	2	496	281	—	—	—	—	+17	+50	+ 4	—	—	71	616	Gold medal.
H. F. Fellowes (4 Coulson-B.)	1	499	255	—	—	—	—	—	—	—	—	—	—	—	Retired Tues.
W. L. Danskin (3½ Rudge)	1	499	302	—	—	—	2	+16	+33	—	—	—	—	—	Retired Sat.
F. T. Sibley (3½ Rudge)	1	499	309	—	—	—	2	+11	+27	+ 9	2	4	42	583	Gold medal.
R. B. Ewens (3½ Rudge)	1	499	305	—	—	—	2	+12	+33	17	1	20	45	570	Silver medal.
F. A. Longman (3½ Ariel)	1	499	300	2	2	—	1	+ 8	+27	+ 3	—	5	38	578	Gold medal.
L. Newey (3½ Ariel)	1	499	306	1	4	—	1	+47	+ 8	+ 3	2	7	28	566	Gold medal.
W. Woodcock (3½ Ariel)	1	499	314	—	—	—	—	+ 5	+47	+ 7	—	—	59	604	Gold medal.
R. Elliott (3½ Rover)	1	499	313	2	26	—	—	+15	+50	+ 4	—	28	69	586	Certificate.
G. Featherstonhaugh (3½ Rover)	1	499	343	2	—	—	—	+15	+47	10	—	12	62	595	Gold medal.
G. W. Ravenhall (3½ Rover)	1	499	315	2	—	—	—	+11	+50	+ 4	1	3	65	607	Gold medal.
A. Eckersley (3½ Duzmo)	1	496	270	—	6	20	—	+16	+50	—	—	—	—	—	Retired Sat.
A. J. Wilkes (3½ Rover)	1	499	306	2	50	5	—	+24	+50	+ 4	2	59	79	565	Certificate.
J. Ford (7 F.N.)	4	650	340	—	12	—	—	+ 7	+50	+10	—	12	67	600	Silver medal.
H. G. Bell (7 F.N.)	4	748	345	—	—	—	—	+12	+50	+ 6	—	—	68	613	Gold medal.
T. W. Buckle (7 F.N.)	4	748	352	—	2	—	—	+12	+ 9	+ 6	—	2	42	585	Gold medal.
W. Leslie Guy (3¾ Scott)	2	532	310	—	—	—	—	+16	+50	+ 4	—	—	70	615	Gold medal.
W. Moore (3¾ Scott)	2	532	276	—	—	—	—	+31	+50	+ 5	—	—	86	631	Gold medal.
W. F. Scott (3¾ Scott)	2	532	258	—	—	—	—	+25	+50	+ 4	—	—	79	624	Gold medal.
E. Foster (6-7 Raleigh)	2	700	364	2	24	—	—	+15	+41	+ 9	—	26	65	584	Bronze med.
A. Rollason (4½ Ariel)	1	665	373	—	—	—	1	+20	+50	+ 3	—	1	73	617	Gold medal.
. Peck (4½ Ariel)	1	665	360	—	6	—	1	—	—	—	—	—	—	—	Ret. Thur.
T. R. Harveyson (4 Harley-D.)	2	584	306	—	2	—	—	+ 7	+31	+ 4	—	2	42	585	Gold medal.
H															

PASSENGER MACHINES.

Rider and Machine.	No. of Cyl.	C.C.	Weight of Ma'hine	Brakes. (25).	General Reliability. (100).	Hill-climbing. (100).	Silence. (20).	Petrol Consumption (50).	Oil Consumption (50).	High Speed Test. (100).	Condition. (100).	Marks. Minus.	Marks. Plus.	Total.	Award.
P. Cunningham (3½ P. and M.)	1	498	428	1	—	—	1	+20	+31	+ 3	—	2	54	597	Gold medal.
R. Lewis (3½ P. and M.)	1	498	425	—	—	5	1	+24	+20	+ 3	—	6	47	586	Gold medal.
G. M. Townsend (3½ P. and M.)	1	498	426	1	4	—	1	+18	+42	+ 2	1	7	63	601	Gold medal.
N. Hall (2½ O.K.-Junior)	1	292	368	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
F. C. North (2½ O.K.-Junior)	1	292	328	—	68	—	—	+37	22	25	4	119	37	463	Certificate.
P. Pehrson (4½ Dunelt)	1	499	484	—	2	—	1	2	+22	10	1	16	22	551	Gold medal.
L. Peaty (2¾ Hawker)	1	292	285	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
J. T. Bashall (6 Martinsyde)	2	678	535	2	—	—	1.5	+14	+43	+ 6	—	3.5	63	604.5	Gold medal.
E. H. Gifford (6 Martinsyde)	2	678	531	2	5	—	1.5	+19	+50	+ 6	12	20.5	75	599.5	Silver medal.
W. H. Bashall (6 Martinsyde)	2	678	557	1	5	—	2	+21	+18	+ 7	—	8	47	584	Gold medal.
F. J. Ellis (8 Matchless)	2	993	669	—	—	—	—	+17	+50	+12	—	—	79	624	Gold medal.
T. J. Ross (7 Matchless)	2	993	675	—	—	—	—	+24	+50	+16	1	17	74	602	Silver medal.
F. O'Brien (7 Matchless)	2	993	657	—	5	—	—	+22	+50	+16	—	21	72	596	Silver medal.
A. L. Cranch (5-6 Rover)	2	680	530	2	5	—	1	+25	+50	+ 4	—	8	79	616	Gold medal.
N. Clayton-Russell (4 Norton)	1	633	458	2	—	—	1	+35	+23	+ 9	—	3	67	609	Gold medal.
G. D. Hardee (7-Matchless)	2	993	652	—	—	—	—	+20	+50	+ 7	—	—	77	622	Gold medal.

PASSENGER MACHINES (*Continued*).

Rider and Machine.	No. of Cyl.	C.C.	Weight of Machine	MARKS LOST Brakes. (25).	General Reliability. (100).	Hill-climbing. (100).	Silence. (20).	Petrol Consumption (50).	Oil Consumption (50).	High Speed Test. (100).	Condition. (100).	Marks. Minus.	Marks. Plus.	Total.	Award.
			lb.												
W. A. Fell-Smith (8 Brough Superior)	2	986	508	—	2	—	—	+13	+50	—	—	2	63	—	Retired Sat.
F. J. Watson (6 Ariel)	2	798	589	2	—	—	—	+ 3	+50	+ 4	—	2	57	600	Gold medal.
R. C. Davis (8 Chater-Lea)	2	976	644	—	—	—	—	—	—	—	—	—	—	—	Retired Mon.
G. E. Stobart (7 James)	2	749	634	—	—	—	—	—	—	—	—	—	—	—	Retired Tues.
G. S. Arter (7 James)	2	749	638	—	—	—	—	+11	+26	+ 9	—	—	46	591	Gold medal.
H. Boynton (7 James)	2	749	616	—	—	—	—	+15	+35	+ 9	—	—	63	608	Gold medal.
W. E. Singer (7-9 Rudge)	2	998	600	2	—	5	1	+ 7	+39	—	—	8	16	—	Retired Sat.
F. W. Giles (7 A.J.S.)	2	800	622	—	—	—	—	+26	+50	+ 9	—	—	85	630	Gold medal.
O. Wade (7 A.J.S.)	2	800	617	—	—	—	—	+26	+47	+ 7	—	—	80	625	Gold medal.
Rex Mundy (7 A.J.S.)	2	800	611	—	—	—	—	+26	+50	+ 7	—	—	83	628	Gold medal.
M. C. Breese (6 B.S.A.)	2	770	538	—	—	—	2	+20	+50	+11	2	4	81	622	Gold medal.
P. W. White (8 Sunbeam)	2	996	633	—	—	—	—	+ 8	+39	+ 6	—	—	53	598	Gold medal.
T. F. Blumfield (6 Ariel)	2	798	—	2	6	—	—	+12	+18	+ 4	2	8	47	584	Gold medal.
R. Croucher (8 Matchless)	2	993	636	1	—	—	—	+30	+50	+ 9	—	1	88	632	Gold medal.
H. F. S. Morgan (8 Morgan)	2	983	814	—	—	—	1	+24	+50	+ 9	—	1	83	627	Gold medal.
F. Boddington (10 Morgan)	2	1090	928	1	2	—	1	+ 6	+47	+ 6	1	5	59	599	Gold medal.
W. H. Beck (10 Morgan)	2	1090	782	—	—	—	—	+11	+50	+ 7	1	1	68	612	Gold medal.
C. Finch (8.7 G.N.)	2	1086	963	—	—	—	1	+10	+27	+ 4	1	2	41	581	Gold medal.
F. Watson (8.7 G.N.)	2	1086	984	—	5	—	1	+16	+19	+ 4	1	7	39	577	Gold medal.
F. S. Spouse (8 T.B.)	2	980	990	—	—	—	—	+ 5	+50	+ 7	—	—	62	607	Gold medal.

TEAM PRIZES.

CLASS A. (250 c.c.).—No award.

CLASS B. (350 c.c.).—(1) A.J.S. riders: N. F. Harris, E. Williams, and H. R. Davies. Total marks, 1,758; (2) Connaught riders: I. F. Anderson, G. F. Mason and C. L. Sprosen. Total marks, 1,668.

CLASS C. (500 c.c.).—(1) Rover riders: R. Elliott, G. Featherstonhaugh, and G. W. Ravenhall. Total marks, 1,788; (2) Ariel riders: F. A. Longman, L. Newey, and W. Woodcock. Total number, 1,748

CLASS F. (600 c.c. Sidecars).—P. & M. riders: P. Cunningham, R. Lewis, and G. M. Townsend. Total marks, 1,781.

CLASS G. (1,000 c.c. Sidecars).—(1) A.J.S. riders: F. W. Giles, O. Wade, and R. G. Mundy. Total marks, 1,833; (2) Matchless riders: F. J. Ellis, G. D. Hardee and R. Croucher. Total marks, 1,878.

THE CLASSES ANALYSED.

	Starters.	Gold.	Silver.	Bronze	Certificates.	Disqualified.	Retir'd.
A. 250 c.c.	8	3	–	–	1	1	3
B. 350 c.c.	15	9	1	1	–	–	4
C. 500 c.c.	20	9	1	1	3	–	6
D. 750 c.c.	10	7	1	1	–	–	1
F. 600 c.c. (sc.)	7	4	–	–	1	–	2
G. 1,000 c.c. (sc.)	23	16	3	–	–	–	4
H. Cycle cars	6	6	–	–	–	–	–
	89	**54**	**6**	**3**	**5**	**1**	**20**

THE DAILY TOLL.

6 retired on Monday.
5 ,, Tuesday.
2 ,, Wednesday.
1 ,, Thursday.
0 ,, Friday.
6 ,, Saturday.

THE BRAKE TEST.

33 lost no marks.
20 ,, 2 ,,
12 ,, 1 mark.
1 ,, 25 marks.

SILENCE.

28 lost no marks.
23 ,, 1 mark.
3 ,, 2 marks.
2 ,, 1.5 ,,

BEST PETROL CONSUMPTION IN EACH CLASS.

	m.p.g.
250 c.c. Solo.—L. Horton (New Imperial)	127
350 c.c. Solo.—C. L. Sprosen (Connaught)	132.5
500 c.c. Solo.—G. Strange (3½ James)	101.6
750 c.c. Solo.—W. Moore (Scott)	98.1
600 c.c. Sidecars.—A. Milner (2¼ O.K.)	87.7
1,000 c.c. Sidecars.—N. C. Russell (Norton)	77.35
Cycle cars.—H. F. S. Morgan (Morgan)	61.1

THE SPEED TEST.

BEST PERFORMANCES IN EACH CLASS IN THE 25-LAP SPEED TEST AT BROOKLANDS.

	m.p.h.
250 c.c. Class—B. Kershaw (New Imperial)	44.63
350 c.c. Class.—N. F. Harris (A.J.S.)	42.95
350 c.c. Class.—E. Williams (A.J.S.)	42.95
350 c.c. Class.—H. R. Davies (A.J.S.)	42.95
500 c.c. Class.—A. A. Symes (Martinsyde)	49.61
750 c.c. Class.—J. Ford (F.N.)	51.12
600 c.c. Sidecars.—P. Cunningham (P. & M.)	34.92
600 c.c. Sidecars.—R. Lewis (P. & M.)	34.92
600 c.c. Sidecars.—G. M. Townsend (P. & M.)	34.92
1,000 c.c. Sidecars.—F. J. Ellis (Matchless)	46.95
Cycle cars.—H. F. S. Morgan (8 Morgan)	44.03

BEST OIL CONSUMPTION FIGURES IN EACH CLASS.

	m.p.g.
250 c.c. Solo.—B. Kershaw (New Imperial)	2,334
350 c.c. Solo.—W. L. Handley (O.K.)	2,920
*500 c.c. Solo.—R. Elliott (Rover)	3,115
750 c.c. Solo.—H. G. Bell (F.N.)	2,920
600 c.c. Sidecars.—G. M. Townsend (P. & M.)	1,015
1,000 c.c. Sidecars.—G. D. Hardee (Matchless)	1,460
Cycle cars.—H. F. S. Morgan (Morgan)	2,596

*NOTE.—The official provisional results credit H. Eckersley with having covered the course on a ½ pint which equals 11,680 m.p.g.

NOTES ON THE PROVISIONAL RESULTS.

B. Kershaw (New Imperial) led his class in both speed and oil economy.

* * *

In most cases where mechanical oil pumps were fitted the machines secured maximum marks on oil consumption.

* * *

One competitor only lost marks under the heading of hill-climbing on Monday, seven on Tuesday, six on Wednesday, four on Thursday, and two on Friday.

* * *

Deviation from schedule. Time errors were made by three riders on Monday, ten on Tuesday, eight on Wednesday, three on Thursday, and three on Friday.

* * *

R. Elliott (Rover) is shown in the above schedule among the certificate awards. This is in accordance with the official list, but it would appear that a loss of marks through running off the course is debited to him. The matter is under consideration. If this penalty is annulled, Elliott will be awarded a gold medal.

Seventy-five competitors arrived at Brooklands. Sixty-nine survived the track test.

* * *

Four competitors who had comparatively clean sheets, and were qualifying for a gold medal prior to the speed test, retired during this strenuous *finale*.

* * *

The leaders on marks in the respective classes are the following:

	Total.
250 c.c. solo.—B. Kershaw (2¼ New Imperial)	577
350 c.c. solo.—G. F. Mason (2½ Connaught)	610
500 c.c. solo.—G. Strange (3½ James)	616
750 c.c. solo.—W. Moore (3¾ Scott)	631
600 c.c. sidecars.—G. M. Townsend (3½ P. and M.)	601
1,000 c.c. sidecars.—R. Croucher (8 Matchless)	632
Cycle cars.—H. F. S. Morgan (8 Morgan)	627

Wednesday, the most difficult day of the trial, was responsible for fewer retirements than any day excepting Thursday.

* * *

H. F. S. Morgan's runabout was as economical, so far as oil was concerned, as the best of the 250 c.c. lightweights.

* * *

The first five, irrespective of class, in the speed test were: 1, J. Ford (F.N.), 51.12 m.p.h.; 2, A. A. Symes (3½ Martinsyde), 49.61 m.p.h.; 3, F. J. Ellis (8 Matchless sc.), 46.95 m.p.h.; 4, B. Kershaw (2¼ New Imperial), 44.63 m.p.h.; 5, H. F. S. Morgan (8 Morgan), 44.03 m.p.h.

* * *

T. F. Blumfield (6-7 Ariel sc.) proved the reliability of a machine which had not been specially prepared for the trial. On arriving at Brooklands for the start, he collided with a car, which placed his machine *hors de combat*. He returned to the Midlands by road, borrowed a friend's machine, and obtained a gold medal.

CURRENT CHAT (Continued from p. 295).

Obituary.

We regret to announce the death on Wednesday of last week of Mr. A. S. Hill, who founded "The Coventry" Chain Co. in 1896, and was latterly managing director of that flourishing concern.

Appealing!

"Drive slow and see our city.
Drive fast and see our gaol."

Thus, according to a correspondent in the *Liverpool Daily Post*, runs a traffic notice in a Western American city.

Coventry Works Team Trial.

Motor cycle clubs of various Coventry factories are organising a team trial on Saturday, the 24th inst., over a short three-circuit course, totalling from eighty to ninety miles, in the neighbourhood of the City. Teams will be made up of three riders, and a total entry of a hundred is confidently expected.

To-day's Important Event.

Sixty entries, including such well-known names as George Dance, H. Le Vack, F. G. Edmond, and C. P. Wood, have been received for to-day's open speed trials of the Norfolk M.C. and L.C.C., which will be held on West Harling Heath, starting at 1 p.m.

Reverses.

There are several sidecar outfits in this country fitted with reverse gears, the utility of which appears to be confined to providing amusement for friends of the owners. The other evening a member of *The Motor Cycle* staff found a reverse distinctly disconcerting. He runs a large two-stroke outfit. On starting the engine, he failed to observe that it was running in a direction reverse to usual, and only discovered this on engaging the gear. Moral: Two-stroke owners should not start their engines with the ignition too far advanced.

Motoring Novices.

Beginners in motoring are often very quaint in their misuse of technical terms. We recently heard (says *The Autocar*) an old gentleman remark to his chauffeur that the car "seemed very fierce in the exhaust." The same old gentleman would insist on calling the brake lever the magneto. No wonder his car often pinked!

Two-stroke Sidecar on a 1 in 2½ Grade.

Hundreds of people assembled on a recent week-end on the slopes of the well-known Shropshire mountain, the Wrekin, which rises to 1,366ft., to see a 2¼ h.p. Velocette three-speed motor cycle, with a Canoelet sidecar and adult passenger, make a non-stop ascent. This was accomplished by G. Denley five times in succession, much to the amazement of many motor cyclists, who had come to see it *not* done, as the gradient in places is 1 in 2½. Several other Velocette riders went over the top, one with "two up."

CLUB NEWS. (Continued from page 296.)

Moorland M.C.

This club, which has headquarters at Penistone, held its first reliability run on Saturday, the 27th ult. The Stocksbridge and District M.C. and L.C.C also joined in the event. The successful competitors were: 1, E. H. Fallas (2¾ Invicta-Jap); 2, E. Hoyland (2¾ Calthorpe-Jap); 3, W. Hoyle (4¼ Precision).

Dartford and District M.C.C.

A motor cycle club is being formed in Dartford, and will probably be known as above. There have already been promises of membership from fifty to sixty motor cyclists. Those interested should apply to Mr. B. J. Poirin, c/o Messrs. J. C. Beadle, Spital Street, Dartford.

Westmorland M.C.C.

Early last week the club held a very successful freak hill-climb on a new "find," Sadghyll, an ascent of two miles, varying from 1 in 3 to 1 in 5. It was climbed three times, competitors returning to the foot by a circuitous course of approximately twenty miles. Results, in order of merit, follow:

1, P. Hoggarth (Norton), lost 18 marks; 2, B. Hill (Velocette), 19; 3, J. Baker (Scott), 23; 4, S. Bewsher (Rover); 5, W. Westwood (Triumph), 34; 6, M. Sedgwick (Sunbeam); 1, T. Chaplow (Ariel), 44; 8, S. J. Atkinson (Velocette), 53; 9, J. L. Hall (Velocette), 60.

Shepley and District M.C.

In connection with this club, a very interesting paper-chase was arranged last Thursday evening. The trail was cleverly laid by F. Hey around the New Mill, Thurstonland, Fulstone, and Kirkburton districts. He was eventually "run to earth" about dusk by the club secretary, F. W. Brook, E. Wortley being the second man to arrive.

The next run is on the 11th inst. to Ilkley; meet at Spring Grove, Kirkburton, at 10.30 a.m.

Ayr M.C.C.

Over fifty competitors took part in the hill-climb on Wednesday of last week. Nearly three hundred motor cycles and cars were parked at the starting point, and the spectators numbered over 4,000, including a good number of the fair sex. Two ladies took part in the competition, but were unfortunate in not being amongst the prize winners. The winners were:

CLASS 1 (Sidecars).—1, J. Downs (8 New Imperial sc.); 2, T. Gilchrist (8 Zenith sc.).
CLASS 2 (Under 300 c.c.).—1, C. Henderson (2½ Excelsior); 2, A. Marr (2 Victoria).
CLASS 3 (Under 350 c.c.).—1, W. Allan; 2, W. R. Neill (2 Wooler).
CLASS 4 (Under 600 c.c.).—1, R. P. Lees (3½ Sunbeam); 2, J. E. Allan (4 Triumph).
CLASS 5 (Unlimited).—1, R. P. Lees (3½ Sunbeam); 2, R. Morrison (3½ Norton).
(Triumph), 68; 11, W. Yates (Sunbeam), 76.

Cambridge and County M.C.

Results of the hill-climb held last Thursday were as follows:

NOT EXCEEDING 600 c.c.—1, G. R. Ludlow (3½ Norton), 20⅕s.; 2, H. Robinson, jun. (3½ Sunbeam), 21⅗s.; 3, H. Robinson (3½ Rover), 21⅗s.
NOT EXCEEDING 600 c.c. (private owners).—1, G. R. Ludlow (3½ Norton), 20s.; 2, H. Robinson, jun. (3½ Sunbeam), 20⅗s.; 3, N. Robinson (4 Triumph), 22⅕s.
UNLIMITED SIDECARS.—1, H. Robinson, jun. (3½ Sunbeam sc.), 24s.; 2, W. G. Turner (7 A.J.S. sc.), 33s.; 3, A. Baldwin Hurry (4¼ B.S.A. sc.), 44⅗s.

The Motor Cycling Club.

It has already been announced on the entry forms for the sporting trial to be held on the 24th inst. that the start would take place at Purley. However, Mr. E. A. Bridgman, who is in charge of the competition, has found another course which will be covered once before lunch and once after, and he has arranged for the start and finish to take place at the Railway Hotel, Caterham, where lunch will be served at midday, and tea at the finish. Members who have not yet received entry forms can obtain them from 366, Euston Road, London, N.W.1.

Central London M.C.C.

All motor cyclists, whether members of the club or not, are invited to a paper-chase, within easy reach of central London, which the club proposes to hold on October 1st.

WHERE DO WE STAND?

OUR laws are built up on a gradually accumulated stock of rulings and provisions, many of which are necessarily out of date.

The war, with its pressing needs, brought into being a number of laws—swift, precise, concrete, and dealing with affairs of the moment. These laws had universal application. They were made known to all in crisper terms than are the laws of the workaday world at peace. Bulked together, they comprised the Defence of the Realm Acts, so irksome, so petty, so grandmotherly, but withal dealing with practical things, and definite to a satisfying degree in what must or must not be done.

With the passing of D.O.R.A., the position of the road-using community, especially as regards the lighting of vehicles, has reverted to its chaotic pre-war state, with some post-war difficulties added.

Thus the law of the land, by no means clear on the points mentioned, may not require rear lights on single track vehicles, may not require forward near-side lights on two-track machines, and does not require lights on *any* vehicle until one hour after sunset.

Meanwhile, post-war legislation demands that registration numbers be illuminated half an hour after sunset, and altogether the position is an anomalous one, for no one can put forward definite interpretations, while numbers of local byelaws completely negative some of the above provisions. No universal applications of the law being safe or possible, we are justified in leaving the matter with the question, "Where do we stand?"

VERUS

SOLO OR SIDECAR COMBINATION

CELEBRATED FOR

SPEED,

COMFORT,

RELIABILITY.

The Machine for everyday use, as well as Racing or Touring.

— THE PRICE IS RIGHT —

Write for Lists of Various Models and names of Agents, to—

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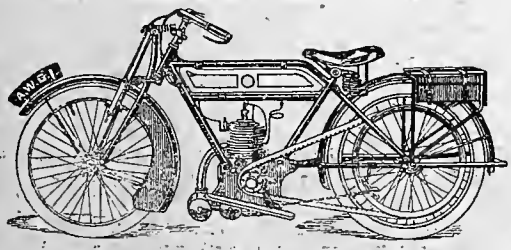
Telegrams: "Verus, Birmingham." Telephones: { Victoria 560 & 561. Central 5814.

GAMAGES

Money Saving Offers to Motor Cyclists.



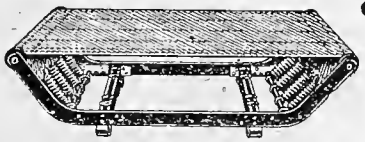
THE "GAMAGE" TWO-STROKE

has earned the praises of experts for reliability, simplicity, and appearance.

Villiers Engine, 2¼ h.p. with fly-wheel ignition. A light, strong, economical machine, ideal for solo work. Dunlop tyres and belt, Amac carburetter, Best and Lloyd's semi-automatic lubrication. Full specification and details sent post free on request.

£49-10-0

Two-speed model, complete with lamp and tools, etc. **£59-10-0**

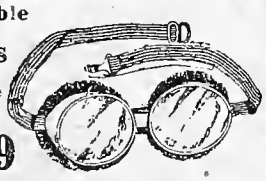


THE "HAMMOCK" PILLION SEAT

Most comfortable and easily adjusted to weight of rider. Strong and well-made. Price Carriage paid **28/6**

Collapsible Side GOGGLES

Dustproof, comfortable and light. Our price Post 3d. **1/9**



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4" bevelled glass. Wonderful value. Price, Post Free **8/6**

"TAN-SAD" Pillion Seats and Accessories.

These pillion seats are the safest and most comfortable. Well sprung.

Pillion seat only **38/-**

Back rest **9/-**

Foot rest **6/-**

Complete as illustration, **53/-**

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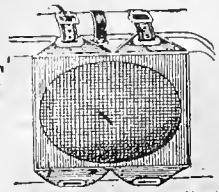
THE "GAMAGE" COMBINATION ELECTRIC LIGHTING OUTFIT

No. 1 Set consists of extra large 7½in. head lamp, torpedo pattern side-lamp, large size 6-volt accumulator in teak case, two way switch & wiring complete. Price **£7 15 0**

No. 2 Set. Same as above but with 5½in head lamp. CARRIAGE FREE. Price **£7 7 0**



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Attachable Air Inflated Rubber Cushion for Motor Cycle Saddles, covered with strong water-proof material. Price, post free **15/6**

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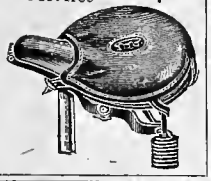
Adjustable to any standard tank. Give added security at high speeds. Per pair Post free **12/6**



GAMAGES, HOLBORN, LONDON, E.C.1

The cure for ignition troubles

E·I·C MAGNETOS

Fully guaranteed. Ask your agent for prices

E·I·C MAGNETOS Ltd
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West of England Service Depot
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140 Victoria St, Bristol

Rust Proof Dope

KEEP HIM OFF!

This little beggar works whilst you're asleep or busy--takes pounds and pride off your "outfit" Stop his activity with "Corrosine" *the* Rust-Preventer & "Derusta" *the* Rust Remover.

In 1/6 and 2/6 sizes, of all enterprising dealers, or direct from

HOWSE'S —*The* Rust Preventer Firm,— Union Works, SMETHWICK.

Any Ignition troubles?

Simms are the people to whom you should send your magneto if it gives trouble. They make the Simms Magneto—Britain's Best—and will undertake to put yours in *perfect* order.

Charges are strictly reasonable.

SIMMS MOTOR UNITS (1920) LTD
PERCY BUILDINGS, GRESSE STREET
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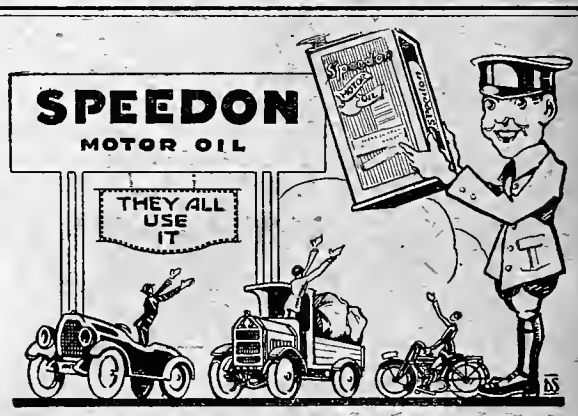

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NORTH'S BRITISH MADE
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SPEEDOMETERS for Motor Cycles.

Model 42 (*as illustrated*) — Black finish. Nickel-plated bezel. Indicates speeds to 60 miles per hour. Total mileage counter to 10,000, and repeats. Quickly reset trip counter.

Price £6 5s. 0d

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Back wheel drive for "Triumph," 5s. extra. Back wheel drive for "Indian or "Harley-Davidson," 10s. extra

Manufactured by
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WE SPECIALISE IN HIGH-CLASS WELDING REPAIRS OF ALL KINDS AND IN ALL METALS.

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SATISFACTION GUARANTEED OR MONEY REFUNDED.

Electric and Oxy-acetylene welding. All work finished and machined.

We are Specialists in the repairing of N.S.U. Gears. Estimates Free.

'Phone: 1550. **OLDHAM WELDING & CENTRAL MOTORS, Ltd.** 'Grams: "Welding," Oldham.

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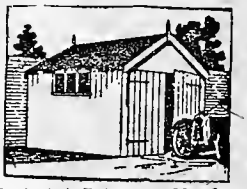
PORTABLE WOOD IRON ASBESTOS **BUILDINGS**

OF EVERY DESCRIPTION.

Horticultural, Rustic, and Poultry Appliances.

MOTOR CYCLE HOUSES FROM **£7 15 0**



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Send for Illustrated Catalogue No. 85, Post Free.

T. BATH & CO., LTD., 18, SAVOY STREET, LONDON, W.C.2.

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Also **LINING** for above in various widths and colourings.

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8 FIRSTS. 9 SECONDS. 5 THIRDS.

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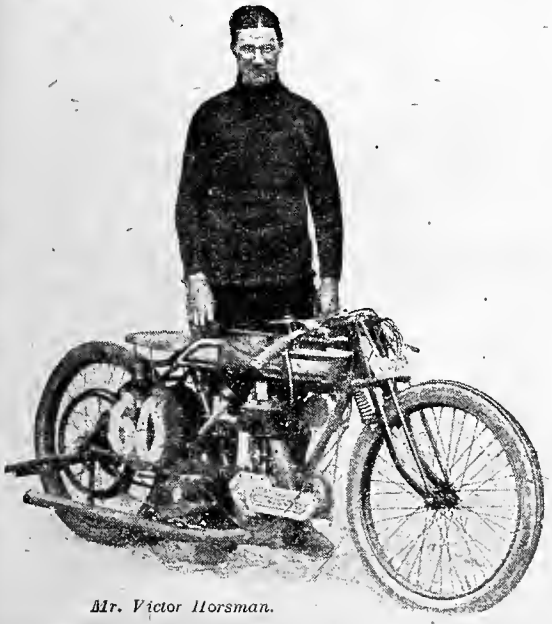
5 GOLD MEDALS. **3** SILVER MEDALS. **2** BRONZE MEDALS



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500 MILES BROOKLANDS RACE.

Mr. Victor Horsman, on a Norton, was FIRST IN CLASS C (500), ***beating the whole field irrespective of class***, except the first three, averaging a speed of SIXTY-TWO MILES PER HOUR on

PALMER CORD TYRES

He also broke the 6, 7, and 8 hour and the 400 and 500 mile records.

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IS ESSENTIAL, RECENT SUCCESSES IN TRIALS AND COMPETITIONS EMPHASISE THE ASSISTANCE DERIVED FROM THE USE OF THIS INSTRUMENT AND USERS (WITH SATISFACTORY MACHINES) ARE PRACTICALLY

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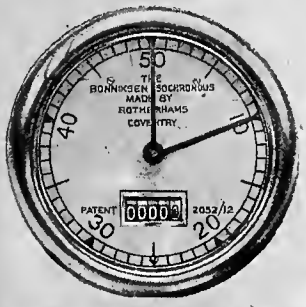

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Perfectly New, absolutely Waterproof, and easy to slip on and off. These boots are of far superior quality, and will give far more service than similar articles, of infinitely inferior materials, which are offered by other stores at slightly lower prices.

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BRITISH ARMY BOOTS 20/-

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Send Postal Order or Cheque, and state size required.

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Government Contractors,
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(Adjoining Bishopgate Street Police Station).

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IN GRADES

are superior in quality to any other high-grade oil and cost less

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	5 gal. drums (per gal).	1 gal. can.	Quart can.
B.M.T. Motor Oil, Light	5/3	7/3	2/9
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" " " Heavy	7/-	9/-	3/1
" Gear Oil, Dark	4/11	6/11	—
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The Specification Table tells you the right grade for *your* motor cycle. Free on request.

COMPARE THE PRICE—THE QUALITY IS INCOMPARABLE.

Obtainable from all dealers, if any difficulty let us know.

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There's nothing like it for SIDECARS, FRAMES and PETROL TANKS.

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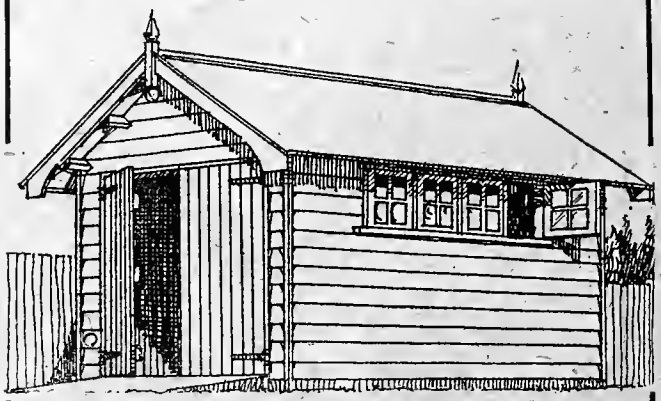
at this, and compare our prices, and quality. Invitation to inspect before purchase.



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12ft. × 8ft.	£17 10 0	18ft. × 10ft.	£33 0 0
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Give your engine the oil it needs—
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Twelve Firsts out of Thirteen Events!

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FIRST IN EVERY EVENT.

ONLY "SPEEDWELL" COULD DO IT!

The British Oil & Turpentine Corporation Ltd.,
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ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable & Co. to ILIFFE & SONS Ltd., and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½ %. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

1921 A.B.C., brand new; £90.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8285

A.B.C., 1920, Magdyno, very fine order, fast, licensed; £97/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8207

THE HIDE & SEEK SERVICE.

WHEN buying a machine, how accessible everybody is. How promptly your letters are answered.

Later on you call or write again about some little trouble or difficulty to find that all interest in you has evaporated—everybody hides when you seek.

Deal with firms who, like GODFREY'S, believe in **continuity of service.** GODFREY'S are at all times accessible, and regard a sale as the beginning and not the end of service.

THE LIST PRINTED BELOW COMPRISES ONLY A SMALL PORTION OF OUR LARGE AND REPRESENTATIVE STOCK. IF YOU CANNOT CALL, WRITE FOR COMPLETE LIST. IT CONTAINS SOME EXCEPTIONAL BARGAINS.

We specialise in B.S.A., INDIAN, LEVIS, and SCOTT SPARES.

NEW 1921 MODELS IN STOCK.

A.J.S.	**HAWKER**
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(Guaranteed for Three Months.)

B.S.A., 1921, 4½ h.p.; chain drive, with B.S.A. Sidecar **£150**
RUDGE, 1920, I.O.M. Model **£75**
DOUGLAS, 1920, 2¾ h.p., 3-speed, speedometer, lamps **£72**
INDIAN SCOUT, 1921, 4 h.p., electric **£132**
RUDGE, 1915, I.O.M. Model **£52**
INDIAN Combination, 7 h.p., 1915 ..... **£105**
INDIAN Combination, 7 h.p., 1916 ..... **£125**
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LEVIS, 1920, 2½ h.p. **£42**
NEW IMPERIAL, 1920, 2¾ h.p., 2-speed, clutch, K.S. **£64**
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All fully licensed.

NEW SHOP-SOILED MODELS.

COVENTRY EAGLE, 3½ h.p., 1920, 3-speed, clutch, K.S. **£92**
INVICTA, 3½ h.p., 1920, 3-speed, clutch, K.S. **£92**
INVICTA, 2½ h.p., 1920, 2-stroke, single-speed **£48**
BLACKBURNE, 1921, 4 h.p., 3-speed, clutch, K.S. **£98**

ANY MACHINE MAY BE PURCHASED BY PAYMENT OF ONE QUARTER DOWN AND THE BALANCE IN 12 EQUAL MONTHLY INSTALMENTS.

Approved modern machines accepted in part payment.

GODFREY'S, Ltd.

208, GT. PORTLAND STREET
LONDON, W.1.

'Phone: Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1921, with Lucas lamps, Cowey, Bonnikssen, not done 250 miles; £100.—Frank Whitworth, Ltd., 139, New St., Birmingham. [X8503

1920 A.B.C., guaranteed in good mechanical order, very fast; any examination or trial; what offers? —5, Station Rd., Edgware, Middlesex. [X8439

A.B.C. Combination, 1920, all accessories, excellent condition; any inspection; £105 — Harvey-Hudsons', South Woodford (next "The George"). [7407

A.B.C. Solo, 4-speed, enamel and plating like new, Lucas lamps, speedometer, tax paid; £90; post exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. [7759

1920 A.B.C. Combination, sporting Cauoelet, well equipped, tax, 1,500 miles, thoroughly overhauled, perfect; £97.—Dixon, 20, Cleveland Rd., S. Woodford, London, E.18. [7475

1921 A.B.C., Lucas equipment, kick start, Cowey horn, speedometer, Clincher tyres and tubes, very fast, owner going abroad; £100.—Moxon, Cawthorne, Barnsley. [7414

1921 A.B.C., delivered a month ago, kick start, T.T. bars, P. and H. lamps, Cowey speedometer, Lucas horn, very fast, does 48 m.p.h. on third, as new; £100.—Derrington, Grafton Rd., New Malden. [8191

A.B.C., June, 1921, as new throughout, Lucas dynamo lighting, Lucas horn, fitted Clincher extra heavy, £5 worth spare parts, also spare set of new Palmers, very fast, tax paid; £98.—Young, 76, Mitcham Lane, Streatham. [8313

A.B.C., No. 2093, September, 1920, special machine, Lucas dynamo lighting, kick starter, Lucas electric and Cowey horns, extra pannier bag, Cowey speedometer, mileage only 1,250, unscratched, faultless mechanically, tyres excellent and unpunctured, good spares, tax paid, ride to buyer; £110, close offer, cost over £190.—Lyons, Monte Bello, New Brighton, Cheshire. [8113

Ace.

ACE Combination, 1921, dynamo lighting, horn, mirror, speedometer, C. and M. de luxe sidecar with disappearing hood and screen, tax paid, cost £320, 800 miles; £205.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6478

Acme.

1921 Acme Combination, 3-seater sidecar, spare wheel, hood, screens, lamps, speedometer, low mileage, tyres unpunctured; best offer, or would exchange.—54, Walkern Rd., Stevenage. [7555

1920 Acme-Jap 8h.p. Combination, hood, screen, lamps, horn, Tan-Sad, spare wheel, licensed, excellent condition; £115.—Edwards, 50, Harrington Rd., South Kensington. [7164

A.J.S.

PREMIER Motor Co. for 1921 A.J.S.

ONLY 4% Extra for Easy Payments.

IMMEDIATE Delivery of Latest 7h.p. Combination, spare wheel, screen, etc., £195; 2¾h.p. 3-speed solo, £95; exchanges arranged.—The Premier Motor Co., Aston Rd., Birmingham. [X8516

A.J.S.—All models reduced.—Merrick's Stores, 174, Listerhills Rd., Bradford. 'Phone: 2439. [7898

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

1920 A.J.S. Combination, complete; any trial; £170.—Palmer, 45, Waterlow Rd., Highgate Hill, N.19. [7514

A.J.S., 1912 sidecar, 2-speed, kick, splendid condition; £60; appointment.—114, Mill Lane, West Hampstead. [7769

BRAND New 1921 A.J.S. Combination, equipped, tax paid; cost £225, accept £150.—Dawe, 216, Portobello Rd., W.11. [8028

1920 A.J.S. 6h.p. Combination, Lucas dynamo, spare wheel, Oct., perfect condition; £155, or nearest. —Carver, West St., Willenhall. [X8561

1916 2¾h.p. A.J.S., 2-speed, C.K.S., equipped, licensed, appearance as new; £47, bargain.—13, New St., Wellington, Salop. [X8548

A.J.S. 1920 6h.p. Combination, dynamo lighting, spare wheel, speedometer, etc., genuine outfit; any trial; £155.—Snow, Laurel St., Dalston, E.8. [7676

A.J.S. 6h.p., 1920, spare wheel, electric lights, special wind screen, tax, insurance, first-class condition; £170.—Forest, Chemist, Oldbury, Birmingham. [7763

1920 A.J.S. Combination, electric lighting, speedometer, etc.; trial London district; tax paid; £150, no offers.—Box 958, c/o *The Motor Cycle.* [X8551

MOTOR CYCLES FOR SALE.

A.J.S.

BRAND New 1921-22 A.J.S. Combination; owner unable to take delivery will sacrifice £20 deposit.—10, Bedford Rd., London, W.4. 'Phone: Chiswick 1747. [8030

A.J.S. 6h.p., 1918, first run March, 1919. Mills-Fulford sidecar, Lucas lamps, Cameo screen, small mileage, perfect; £130.—Pickering, 90, Hopefield Rd., Leicester. [X8427

A.J.S. Combination, 1920, Lucas lamps, Cowey horn and speedometer, hood, etc., also spares, in excellent condition; £160.—White, 61, Hampton Rd., Teddington. [7532

1920 A.J.S. Combination, fully equipped, nearly new, licensed, insured, Dunlop Magnum tyres, Binks carburetter, many spares; £150, or offer.—181, Church St., Edmonton. [7909

1920 A.J.S. Combination, speedometer, Cowey horn, pillion, spare wheel, chain, valves, hood, screen, tax paid; £135.—Cooper, 42, Annandale Rd., East Greenwich, London. [7827

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

A.J.S. 1918 6h.p. Combination, in splendid order, hood, screen, Lucas lamps and horn, Cowey speedometer; a real bargain, £120.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

A.J.S. 1921 7h.p. Combination, new last month, tax paid, unscratched, not done 50 miles, usual price £195; will accept for quick sale £175; secure now for spot cash.—Wilkins, Simpson (opposite Olympia), London. [8128

A.J.S. 1920 6h.p. Combination, hood, screen, spare wheel, electric lighting, low mileage, in magnificent condition and order; any trial; £165.—P., 292, Earl's Court Rd., London. 'Phone: 6781 Western. [8304

A.J.S. Late 1915 6h.p. Combination, perfect throughout, detachable interchangeable wheels, spare wheel complete, speedometer, lamps, luggage carrier, screen, etc., good tyres, tool kit; photo; accept £110.—5, Howard Rd., Bromley, Kent. [7553

A.J.S. for Sale, 1920 (Sept.), 6h.p. combination, excellent condition, hood, side curtains, Triplex screen, spare wheel and new tyre, Klaxon, 3 lamps, 2 generators, tax paid, spares, tools, etc.; £150 cash.—C. Jenkins, 31, Park View, Harrogate. [7328

1920 (May) A.J.S., electric lighting, hood, Triplex wind screen, Cowey speedometer, hand mirror, horn, spare wheel and tyre unused, mileage 3,000, perfect condition, tax and insurance; £160, bargain.—82, Wharfedale Gardens, Norbury, S.W. [7941

1916 A.J.S. 6h.p. Combination de Luxe, has done 5,000 miles, Lucas dynamo lighting and horn, spare wheel, speedometer, clock, hood, screen, pillion, etc., 700×80 tyres, tax paid, appearance and condition perfect; £115 lowest.—Heath, 15, Griffith St., Mardy, Glam. [7574

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

1919 A.J.S. 6h.p., with 1920 sidecar, just been overhauled, rebushed throughout, and in first-class running order, very fast, and equipped with spare wheel, lamps, horn, tools, screen, apron, etc.; any trial given with pleasure; £125; exchange with cash for light car considered.—Morden, Park Lane, Stamford, Lincs. [7910

1920 A.J.S. Combination, spare wheel, P. and H. lamps, Cowey speedometer, hood, side curtains, Klaxon, mirror, Tan-Sad, back and foot rests, petrol tin carrier, tools, spares, etc., excellent condition, tax and insurance paid; £150.—Write, H. M., 141, Merton Hill Rd., Wimbledon, S.W.19. [8246

Alecto.

1921 Alecto, 2-stroke, Model A., 2-speed, kick starter, owner not yet taken delivery; list price £75, take £62.—Nicholson, 26, Budge Row, Cannon St., E.C.4. [8252

Alldays.

ALLON, late 1920, perfect condition, mileage 1,000, tax paid; £45.—195a, Albany St., N.W.1. (After 6.) [7948

ALLDAYS Matchless 3½h.p. Combination, coachbuilt; trial; sacrifice £55.—9, Fallows Rd., Sparkbrook, Birmingham. [X8324

ALLDAYS 2-stroke, 1918, rebushed, tyres good, perfect running, fully equipped, spares; £38, or near.—8, Belgrave Rd., Wanstead. [7628

ALLDAYS-MATCHLESS 3½h.p., 3-speed S.A., clutch, kick start, new tyres, accessories, fine condition; £55.—12, Artillery St., Birmingham. [7573

4h.p. Alldays Matchless, 2 speeds, clutch, lamps, horn, tyres, tubes new condition, perfect; £45, best offer.—Leach, 42, Pave Lane, Newport, Salop. [7578

ALLDAYS Allon, 2¾h.p., 2 speeds, clutch, kick starter; in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8452

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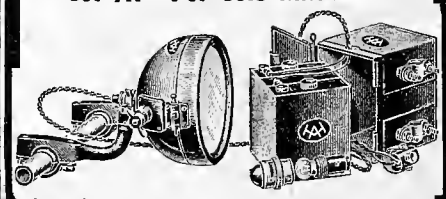

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Fig 875.	6¾in. Head Lamp, Nickel with patent adjustable brackets..	60/-
,, 576.	Rear Lamp (bayonet)	4/9
,, 1150.	H.H. Ebonite 6 volt Accumulator	51/6
,, 378.	Specially strong metal case	10/6
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	Price of Set	127/6

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Flat Twin Cab Tyre Cable, per yard, 1/6 extra.

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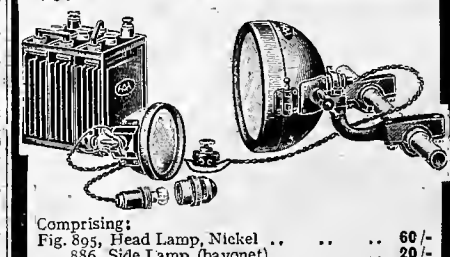

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,, 1182,	6v. 40 amp. Accumulator	48/-
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,, 1160,	4v. 20 amp. Accumulator	24/6
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ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

1921 2¾h.p. Alldays Allon, 2-speed, kick start, H.B.C. clutch, all lamps, speedometer, licence paid; a real bargain, 8 weeks old, £72/10.—Jones' Garage, Muswell Hill. [8314

72 GNS.—1921 Alldays Allon mediumweight combination, Sandum sidecar, fully equipped, licensed, and absolutely as new.—Clapham Motors, High St., Clapham. 'Phone: Latchmere 4290. [8104

BARGAIN.—1918 Allon, 2-speed, countershaft, new Dunlops, lamps, tool bags, horn, band brakes, licensed, splendid condition, absolutely perfect; genuine outfit; £37/10.—89, East Hill, Wandsworth. [8100

American X.

1921 American X., standard or electric, shop-soiled machines at bargain prices.—Harris, 14, Gt. Marlborough St., W.1. [7342

1920 American X. C.B. Combination, 3-speed, dynamo lighting, splendid condition throughout, fast and easy to handle, tax paid; £90.—Pride, 156, Stockwell Rd., Brixton, S.W.9. [8057

AMERICAN X Combination, 7h.p., 1915, all accessories, splendid running order and condition; £95.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [7934

SPECIAL Offer of brand new 1921 American X, 7-9 h.p., 3-speed, Milford De Luxe sidecar, 27×3½ Firestone tyres; list price £217; reduced to £175 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X8517

Ariel.

DAN GUY Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0688

ARIEL 4½h.p. Combination; £150, from stock.—A. J. Young and Co., Ltd., Newmarket. [6627

ARIEL; £18/10; 3½h.p., new tyres, fast and powerful.—Speechley, 86, Churchfield Rd., Acton, W.3. [7965

CYRIL WILLIAMS for immediate delivery of all model Ariel.—Chapel Ash Depot, Wolverhampton. [X3793

ARIEL 6-7h.p. Combination, 3 months old, cost £195; sell £145.—Highstone Garage, Leytonstone. [8193

3½h.p. Ariel, mag., B. and B., mechanical valves, licence paid; £17/10.—Box 6,163, c/o *The Motor Cycle*. [8152

ARIEL 3½h.p., engine No. 8759, 3-speed and K.S., also B.S.A. sidecar, 1919; £80, or offers.—Stone Farm, Bidston, Cheshire. [7597

1921 Ariel Combination, in crate; £135; exchange for Morgan or light car. 'Phone: Wanstead 48.—374, Grove Green Rd., Leytonstone. [7347

1914 3½h.p. Ariel, 3-speed, clutch, complete with lamps, horn, tools, etc., tax paid; a bargain, £30.—Cox, Brunswick Terrace, Cambridge. [7816

ARIELS!—Antoveyors, Ltd., are authorised agents for the Ariel motor cycles; models actually in stock.—Service Depot, 4-12, Palmer St., S.W.1. [0468

ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

MAY, 1921, latest all-chain 6-7h.p. Ariel combination, Camco screen, Lucas horn, Tan-Sad, etc., perfect condition; price £140.—3, Narrow St., Peterborough. [X8533

ARIEL 1919 3½h.p. Coachbuilt Combination, sidecar screen, apron, and luggage carrier, little used and condition as new; £83.—Chinery, 1, Hammersmith Rd., Kensington. [6971

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ARIEL 1920 4h.p. Combination, coachbuilt, 3 speeds, kick start, countershaft, lamps, horn, tools, all spares, perfect condition, tax paid; £90. After 7.30.—Urquhart, 54, Pellatt Grove, Wood Green, N. [7302

ARIEL 3½h.p., late 1919, special sidecar, new, child's seat and wind screen, fully equipped, perfect condition, spares, including tyre; 110 gns., no offers.—Mason, Bankhouse, Sixways, Aston, Birmingham. [7641

1914 Ariel 3½h.p. Coachbuilt Combination, 3-speed, countershaft, kick start, lamps, tax paid, splendid condition and perfectly sound; exchange lightweight and cash, or sell £75.—Southwood, Littlehaven, Horsham. [8068

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Connaught.

2¾h.p. 2-stroke Connaught, disc wheels, all on, perfect condition; £26; after 7.—Barrington, 105, Tynemouth Rd., Tooting Junction, S.W. [7472

CONNAUGHT, 1921, Sturmey-Archer 2-speed, clutch, and kick starter, slightly shop-soiled; first cheque £60.—R. Marshall, High St., Clay Cross. [X8322

Coulson.

1921 2¾h.p. Coulson B, 2-speed, kick start, brand new, unused; £77.—41, Madrid Rd., Barnes. [7165

COULSON, 1921, brand new, just delivered, export model; £80.—Clark, 7, Exhibition Rd., South Kensington. [7848

4h.p. 1920 Sporting Coulson B., adjustable pulley, new condition, complete; £68.—Capt. Moel, School Musketry, Hythe. [7584

COULSON.—All models in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8455

COULSON B 1921 Models in Stock.—Sole Wiltshire Agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5007

COULSON B., 2¾h.p. Blackburne, 2 speeds, spring frame, lamps, and horn; £60.—Sharp, 2, West Cliff Gardens, Folkestone. [7565

2¾h.p. Coulson B, 2-speed, clutch, kick start, in stock; list price, 80 gns.—Edwards, 50, Harrington Rd., South Kensington. [7166

COULSON-B 4h.p., 2-speed, lamps, horn, and licence; 60 gns. only.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8232

COULSON-BLACKBURNE, 1920, 2¾h.p., spring frame, 2-speed, mirror, fully equipped, perfect condition, licence; £65.—9, Craigerne Rd., Blackheath, S.E.3. [7957

COULSON, 1921, 2¾h.p. Blackburne, 3 speeds, kick start, clutch, brand new; list price £117, accept £105; spring frame model; deferred payments.—Below.

COULSON, 1921, 2¾h.p. J.A.P., 2 speeds, clutch, spring frame; list price £94/10, accept £87/10; deferred payment; without a doubt the finest spring frame machine on the road.—Goad, 122, Maida Vale, W.9. Hampstead 1353. [8180

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1920 Coventry Eagle 2¾h.p. J.A.P., recent makers' overhaul, as new, lamps and accessories; bargain, £52; Surrey, Sussex.—Box 6,160, c/o *The Motor Cycle*. [8149

COVENTRY EAGLE 1921 2¾h.p. (Model 22), 2-speed, clutch, kick start, T.T. bars, Lucas lamps and horn, purchased May, mileage 600; £57/10.—Wright, 49, Gresham St., Coventry. [X8403

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1920 Diamond-Villiers, perfect, accessories; £40; unemployed.—81, Gillespie Rd., N.4. (D) [7979

CYRIL WILLIAMS for immediate delivery of all models Diamond.—Chapel Ash Depot, Wolverhampton. [X3817

1921 Diamond, 2¾h.p. J.A.P., 2-speed, excellent condition; £50.—Latham, 114, Junction Rd., Highgate, N. [8041

A FEW Early 1921 Diamond Models E and F, used for demonstration only; bargain.—Apply, Diamond Works, Wolverhampton. [6929

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3½h.p. Sports Model; £135

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DOUGLAS 2¾h.p., tax paid; accept £40.—At 28, Brook St., W.1. [7351

DOUGLAS, 1914, perfect; what offers?—1, Priory Rd., Kew Green. [8296

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DOUGLAS 3½h.p. Sports Model, detachable cylinder heads, overhead valves, all-chain transmission, interchangeable wheels, 3-speed clutch and kick starter, demonstration machine in stock; full particulars and illustrated pamphlets free; in stock; £135.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles.

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1915 Douglas, 2¾h.p., 2-speed, tax paid; £37.—47, Ordell Rd., Bow. [7972

GOURLAY, the great Douglas agent and expert, Fallowfield, Manchester. [6094

DOUGLAS 4h.p., 1917, licensed, insured; £50.—40, Whitworth Rd., S. Norwood. [7733

DOUGLAS 2¾h.p., 1915, ride away; £45; after 6.—315, Scott Ellis Gardens, N.W.8. [7418

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2¾h.p. Douglas, 1917, as new, renovated, perfect; £42.—17, Heaton Rd., Mitcham. [7842

DOUGLAS 1917 2¾h.p., 2 speeds, splendid condition; £37.—63, Solon Rd., Brixton. [8049

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2¾h.p. Douglas, 2-speed, clutch, K.S., fully equipped; £39.—4, Apsley Terrace, Ilfracombe. [8131

SACRIFICE.—1921 4h.p. Douglas, perfect throughout, trial; £85.—3, Gilston Rd., S.W.10. [7075

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DOUGLAS 4h.p. Combination, 1919½, all on, perfect; £100.—173, High Rd., Streatham. [7911

SPORTS Model 3½h.p. Douglas, new, immediate delivery; £135.—Moffat, Yeovil. 'Phone: 50. [5043

£20.—1911 Douglas 2¾h.p., ride away; seen London —Larches, Pinner Rd., Northwood, Middlesex. [7488

1918 2¾h.p. 2-speed Douglas, well equipped, perfect; £42.—24, Balliol Rd., North Kensington. [8002

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2¾h.p. Douglas, 1916, unscratched, plating perfect, new mag., and gear box; £48.—2b, Denmark Rd., Camberwell, S.E.5. [7703

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1921 Indian Scout Combination de Luxe, lamp, Klaxon, speedometer, etc., delivered 3 weeks ago, absolutely new; £130, snip; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8286

ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

1920 7-9h.p. Indian Combination, dynamo lighting, rear drive speedometer, Easting wind screen, new rear Brampton spring chain, all in A1 condition; £145.—Jones' Garage, Muswell Hill.

1914 7-9h.p. Spring Frame Indian, 2-speed and clutch, renovated as new; £47/10.—Jones' Garage, Muswell Hill. [8322

WAR Loan Accepted, or deferred payments from approved purchaser.—1919 Powerplus Indian combination, electric model, excellent order, any trial.—Offers to D.E.R., 60, Hatherley Rd., Winchester. [8075

INDIAN Scout, late 1920, Swan sporting sidecar, 5,000 miles, speedometer, knee-grips, Klaxon, all lamps, new tyres; must sell before delivery of car; £90, or best offer.—Pearson, Highgate Av., Fulwood, Preston. [X8549

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RIDICULOUS Bargain, £50.—1916 T.3 Powerplus Indian combination, sporting slipper sidecar, wants overhauling, but absurd bargain; £50; first deposit secures.—Douglas S. Cox, 6, Lansdowne Hill, West Norwood. [7195

INDIAN Late 1920 Powerplus Combination, Millford De Luxe sidecar, wind screen, etc., electrically equipped, 2 horns, many spares, not done 3,000 miles; £150, or near offer.—26, Cavendish Rd., Chorlton-cum-Hardy, Manchester. [7814

1921 Indian Scout, electric model, speedometer, etc., absolutely perfect, only done 480 miles, engine No. 51S036; £115; the biggest bargain this week's "Motor Cycle," isn't it?—H. F. Brockbank, 58, Lord St., Southport. 'Phone: 1054. [8331

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1914 Indian 7h.p. T.T., condition perfect, new, clutch, chains, sprockets, etc. cost £18, receipts shown, special racing engine 5 to 70 m.p.h., Klaxon, lamps, nickel exhaust, photos.; sacrifice, £50, or near; stored 3 years.—Godolphin, Priory St., Burford, Oxon. [7789

INDIAN Combination, 1919, Powerplus, 7-9h.p., 3-speed, clutch and kick starter, lamps, speedometer, Stewart horn, Easting screen, etc., tax and insurance paid, very nice condition; £110.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [7633

INDIAN Combination, 7-9h.p., spring frame, 3-speed, kick start, disc wheels, screen, speedometer, semi-T.T. bars, English controls, B. and B. carburetter, spares, tools, tax and insurance paid, fast and reliable machine; £90.—23, Alexandra Park Rd., Muswell Hill. [8247

INDIAN 1920 4h.p. Scout Model, with Grosvenor sporting sidecar to match, fully equipped, speedometer, horn, tax paid, indistinguishable from new; £145; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8441

1920 7-9h.p. Indian Combination, dynamo lighting, rear drive speedometer, wind screen, new chain and Goodyear tyres, 6,000 miles only, tax and insurance paid, perfect condition; inspection and trial invited; £150, or near offer.—Gittins, Yorke St. Garage, Mansfield Woodhouse. [7439

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IVY 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

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DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

JAMES 1921 2¼h.p., 2-speed, unscratched; cost £81, sacrifice £55.—17, St. Charles Sq., W.10. [7760

1918 James Lightweight, countershaft gears, accessories, licensed; 29 gns.—Fersfield, Westbury Rd., New Malden. [7787

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JAMES Combination, 5-6h.p., 1919 model, lamps, horn, speedometer, hood, wind screen, spares; £110.—128, Villa Cross, Birmingham. [7656

1916 James 3½h.p. Combination, 3-speed, K.S., Easting, speedometer, tax paid, all accessories; any trial; £70.—G. Taylor, Garrison Office, Tidworth. [7650

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IMMEDIATE Delivery of any James Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0593

JAMES Combination, 1915-16 4¼h.p., 3 speeds, countershaft, clutch, kick starter, Canoelet touring sidecar, chain drive, lamps, licence, booter, spare tyre, splendid condition; £65; exchange.—63, Solon Rd., Brixton. [8051

1921 James 3½h.p. Twin Sports, engine No. Z8553, 3-speed, kick starter, and hand clutch, complete with new lamp set, electric rear lamp, and Klaxon horn, mileage negligible, new in May; accept £95 for quick sale.—Hurst, 33, Holyrood St., Newport, Isle of Wight. [7538

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JUNO, 2-speed 2-stroke Villiers engine, good running order; £30.—A. J. Young and Co., Ltd., New market. [6634

Kerry.

3h.p. Kerry, modernised, mechanical valves, lamps, Stewart horn; 30/- tax paid, perfect; bargain, £18.—27, Flexton Rd., Plumstead. [8031

Kingsbury.

KINGSBURY New 1921 2¾h.p., 2-speed; must realise; £47/10.—365, King St., Hammersmith. [8164

Lea-Francis.

1920 Lea-Francis, luxuriously fitted, as new, mileage 1,500; £85.—Sands, Burnham, Bucks. [7363

BRAND New Lea-Francis 3½h.p. M.A.G.; list price £115; to clear, £90.—Apply, 198, Gt. Portland St., W.1. [4635

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1915 T.T. Rover, in first-class condition, fully equipped, tax paid; 35 gns.; exchange Douglas, or good 2-stroke.—15, Summerhill Rd., Dartford. [7659

1921 Rover Combination, 3½h.p., all-chain countershaft, £20 accessories; any trial; £120, or best offer.—145, Leander Rd., Brixton Hill, S.W.2. [7561

ROVER 5-6h.p. 1920 Combination, electric light, speedometer, wind screen, horn, etc., done 1,500 miles; price £145.—Humphries, 89, High St., Egham. [7556

T.T. Rover, 1920, Lucas lighting, knee grips, long copper exhaust, new belt, tyres as new, machine unscratched, very fast, tax paid; £75, offers.—Pinching, Theale, Berks. [7430

1915 3½h.p. 3-speed Countershaft Rover, Swan sporting sidecar, and numerous accessories, condition good; £70.—Princes Garage, King St., Hammersmith, W.6. [8055

1919 T.T. Rover 3½h.p., Philipson pulley, low, comfortable, fast, splendid condition; bargain £48; seen by appointment.—Leonard, Waverley, Hawthorn Rd., Sutton. [8174

1915-1916 3½h.p. Rover Combination, C.B. sidecar clutch, countershaft, 3-speed, K.S., Easting, speedometer, lamps, horn, pump, tax paid; trial; £70.—W., 33, Fernshaw Rd., Chelsea. [7950

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ROVER Combination 3½h.p., 1915, countershaft, 3-speed, complete with lamps, horn, tax paid, splendid order; £65.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

ROVER 1920 3½h.p. T.T., h.b.c. Philipson, fully equipped, long nickelled exhaust, knee-grips, splendid tyres, Pillion seat, indistinguishable from new, fast sporting 'bus; £64; Douglas and cash considered.—156, Dalmally Rd., Addiscombe, Croydon. [7671

ROVER 1921 T.T. 75 m.p.h. Model, used 400 miles only, and specially prepared for competition, been carefully run in and is better than new, fitted with knee-grips and licensed; £87/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8234

ROVER, T.T., late 1919, 3½h.p., Philipson pulley, new tyres and tube, horn, discs to match tank, overhauled last week, licensed, fast and exceptionally reliable; £60; exchange A.V. or similar; lightweight considered; Camberley.—Box 6,144, c/o *The Motor Cycle*. [7606

1920 5-6h.p. Rover Combination, absolutely perfect condition, lamps, horn, speedometer, Easting, luggage grid, tools, spares, tax, insurance paid, 2 new Dunlop heavy covers; £125; trial by appointment.—Wridgway, The Nook, Lickhill Rd., Stourport, Worcester. [7530

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ROYAL RUBY 1921 3h.p., 2-speed, spring frame, tax paid, condition as new; £75.—Batchelor, Clarence St., Kingston. [8066

ROYAL RUBY 1916, 2-stroke Villiers 2¾h.p., good condition; £28, or exchange higher power.—Martlo, Englefield, Reading. [7429

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ROYAL RUBY 1918 2¾h.p., 2-speed, complete with lamps, horn, all accessories, condition as new; £48.—C. Smith, 134, Western Rd., Lewes. [7495

1920 Royal Ruby Combination, 8h.p., well equipped, hood, screen, original tyres, perfect condition; sacrifice £150; exchanges.—17, St. Charles Sq., W.10. [6824

ROYAL RUBY 1920 3h.p., 2 speeds, kick start, clutch, spring frame, tax; £48/10, bargain.—Mead, 122, Maida Vale, W.9. 'Phone: Hampstead 1653. [8184

ROYAL RUBY 8h.p. Combination, with Plus One sidecar and spare wheel, Lucas Magdyno and all lamps; £232.—Coppen, Allan and Co., 89, Gt. Portland St., W. [6480

Rudge.

1920 T.T. Rudge Multi, engine completely overhauled; £60.—7, South Park Hill Rd., Croydon. [7445

RUDGE Multi 5-6h.p., 1914, in excellent condition; £45, cheap.—35, Freegrove Rd., Holloway, N.7. [7734

1920 Rudge 3½h.p., perfect condition, suit sidecar; £60.—A.E.K., 11, Balfour Mews, Park Lane, W.1. [7765

RUDGE 3½h.p., clutch, lamps, horn, tax paid, overhauled; £36, no offers.—Glover, 37, Parade, Leamington. [X8319

RUDGE Combination, splendid order; sacrifice £48; or take lightweight part.—57, Kenbury St., Camberwell, London. [7812

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1920 **RUDGE** Multi 7-9 h.p. twin Com.
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1920 **LEA-FRANCIS** Com., 3½ h.p. twin J.A.P.
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RUDGE 3½h.p., clutch, fine condition, only wants seeing, ride away; £30, offer.—Ravenstone, Overhill Rd., Dulwich. (P) [7697

RUDGE Multi 3½h.p. C.B. Combination, perfect condition; bargain, £50.—Apply after 6, 23, Wandle Rd., Merton, S.W.19. [7367

£27/10.—Rudge 3½h.p., clutch, new tubes, cover, rings, valves, perfect running order.—11, Alexandra Rd., Sheerness, Kent. [7620

3½h.p. Rudge Multi Combination, in good condition, Sensspray, all accessories, tax paid; £65 for quick sale.—9, Endsleigh Gardens, Surbiton. [7310

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

1919 3½h.p. Rudge Multi Combination, electric lighting, speedometer, etc., perfect order; £85.—Agate, 10, The Gables, Muswell Hill. [8256

1920¾ 3½h.p. Rudge solo £70, or combination £85, perfect condition, little used, electric lighting, licensed, insured.—6, Onseley Rd., Balham. [7338

1920 Rudge Multi 5-6h.p., without sidecar, tax paid, good running condition; £60, or offer.—Cameron, Cranford (near church), South Hayling, Hants. [7321

1919 Rudge Multi 5-6h.p. Combination, all on, tax paid, in splendid running order, Rudge touring sidecar; £88, or offer.—Greatrex, Amersham, Bucks. [7883

RUDGE Multi 3½h.p. Coachbuilt Combination, splendid condition, speedometer, lamps, Klaxon, new tyres, tax and insurance paid; £50.—Seen at 357, High Rd., Ilford. [8255

1921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. and 7-9h.p. Rudge Multi combinations, soiled, £130 and £150.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0707

RUDGE Multi 3½h.p., 1914-15, good condition throughout, overhauled by makers, new piston, cam wheel, etc., new tyres, 55 m.p.h.; £40.—Comyns, Chemist, Carshalton. [7549

RUDGE Multi 3½h.p., coach (1920) sidecar, recently reconditioned throughout at cost of £25, latest colours, new tyres and belt, all on; £62.—T.H.L., 72, Glyndon Rd., Plumstead. [7559

RUDGE Multi, 1919, 3½h.p., engine overhauled by makers, Lucas lamps, horn, and tax paid; £60; also sports Sunbeam, 3 months old.—162, Poplar Av., Edgbaston, Birmingham. [X8531

RUDGE Multi 1921 3½h.p., Isle of Man model, for immediate delivery, brand new; £85.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

RUDGE Multi 1921 7-9h.p. Combination, electric lighting, Cowey speedometer, Terry pillion, full insurance, under 4 months old, full equipment; £120.—36, Hill St., Richmond, Surrey. [7426

1914 3½h.p. Rudge, Mabon variable gear, excellent order, fitted with repainted Canoclet sporting sidecar; bargain, £32.—Apply, Malvern Garage, Malvern Rd., Thornton Heath, Surrey. [8020

1919 3½h.p. Rudge Multi Standard Roadster Combination, all lamps, speedometer, electric lighting; a good machine at bargain price, £87/10.—Jones' Garage, Woodside Parade, N. Finchley. [8326

LATE 1920 5-6h.p. Rudge Multi Combination, in perfect condition, well equipped and spares, tax paid, total mileage only 1,350, indistinguishable from new; cost £175, accept £110.—Parkes, 119, Richmond Rd., Crewe. [X8543

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1920 5-6h.p. Rudge Multi and Rudge touring sidecar, lamps, horn, watch, wind screen, apron, new back and sidecar tyres, full kit tools, spare belt and tube; privately owned; £90.—Arundel, 58, Church Rd., Upper Norwood. 'Phone: 2482 Sydenham. [7700

RUDGE 3½h.p. Combination, 1912-13, 3-speed, Sturmey-Archer gear, clutch and starter, Bosch waterproof magneto, tyres and belt very good, coachbuilt sidecar, a smart outfit, and in very good condition throughout, lamps, horn, etc., any trial given; £35, bargain.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [8073

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£50.—1914 Scott, all on, tax paid; exchange countershaft Triumph.—Driver, Haresfield, Glos. [7977

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (near Hampstead Tube Station). [7614

£24.—3¾h.p. Scott, 2 speeds, clutch, K.S., splendid running order, licensed.—King, Egrove Farm, Oxford. [X8506

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SCOTT Combination, 1914-15, splendid condition, thorough order, all accessories; £60.—220, High St., Stoke Newington, N.16. [7447

1921 Scott Combination and accessories, mileage 500, perfect condition; £155, or near offer.—H. B. Pegg, Nottingham Rd., Long Eaton, Notts. [7387

1919 Scott Combination, Lucas Magdyno, 26×3 Palmer tyres, new sidecar, recently overhauled, tax paid; £120.—Scott, Alice St., Keighley. [7576

SCOTT Canoelet Combination, grand condition, wind screen, discs, lamps, etc.; nearest £80.—Chadwick, Campbill Rd., Broughton Ferry, Dundee. [7915

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; at £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

SCOTT 1920 Sports Model Combination, fully equipped, including licence, not used since Easter, 1921; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8229

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Singer.

SINGER 2¾h.p., 2-speed, countershaft, excellent condition; £23.—17, Heaton Rd., Mitcham. [7843

SINGER 3h.p., Bosch, B. and B., Brooks saddle, clutch; £5.—15, Charles St., Berkhamsted. [7442

DIDO I.—T.T. Sports Singer, 4h.p., Philipson, Bosch, Sensprayy, very fast; nearest £40.—65, West Wycombe Rd., High Wycombe. [7431

Sparkbrook.

6h.p. Sparkbrook-Jap Combination, coachbuilt, Easting, Tan-Sad, P. and H. lamps, splendid condition, go anywhere; £125, or nearest.—389, Hartshill Rd., Stoke-on-Trent. [7527

Star.

38 GNS., Star motor cycles, fitted with Villiers engine; £36 fitted with Wall engine.—Star Motor Co., Westwood Heath, nr. Coventry. [X8603

Sunbeam.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Sunbeam and sidecar, 1915; £90. [4019

1915 3½h.p. Sunbeam, 3-speed, in excellent condition; £85.—Stanley, 1, Milton Rd., Cambridge. [7815

1915 Sunbeam 3½h.p. T.T. Roadster, just renovated by makers; £95.—A. J. Young and Co., Ltd., Newmarket. [6631

3½h.p. Sunbeam, late 1920, perfect running order, with lamps, horn, etc.; £120.—Bryan, West Malling, Kent. [7531

SUNBEAM 1919 3½h.p. Combination, splendid order; will accept £110 for cash.—Write, Bert, 44, Castle St., Southwark Bridge Rd., S.E.1. [8270

WHAT Reasonable Offers?—3½h.p. Sunbeam, 1914, stored since 1917, re-enamelled; evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X8524

8h.p. Sunbeam and Sidecar, shop-soiled, spare wheel and tyre; £215, usual price nearly £250.—Harris, 51, Upton Lane, Forest Gate, London, E.7. [7836

1920 Sunbeam Combination, electric lighting, insurance, licence, mileage machine 500, sidecar new; bargain, £150.—147, Lea Rd., Wolverhampton. [7797

6h.p. Sunbeam Combination, Gloria No. 2 sidecar, all complete; expert examination; mechanically perfect, like new; £150.—6/3rd Row, Newtown, Ebbw Vale, S.W. [X8526

SUNBEAM 1918 3½h.p. Model, with sidecar, complete with all accessories, excellent condition; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8446

1920 (November) 3½h.p. Sunbeam, Montgomery sidecar, very little used, exceptionally smart, condition perfect, insurance, tax, equipped; cost £200, accept 145 gns., genuine bargain.—47, Central Drive, Blackpool. [7457

ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

LATE 1919 3½h.p. Sunbeam, all lamps, not done 1,000 miles, guaranteed as new; £105.—Jones' Garage, Muswell Hill.

1920 3½h.p. Sunbeam and Sidecar, fully equipped, fitted with 1921 Brooks cantilever saddle; a real bargain, £130.—Jones' Garage, Muswell Hill. [8327

A Few Very Special MONEY-SAVERS This Week at ALEXANDER'S

1920, Brand New 4 h.p. **VERUS-BLACKBURNE,** 3-speed. List price, £126 .. .. **£88**

1920, Brand New 3½ h.p. **ALECTO** Combination, 2-sp. List price, £130 .. **£89 10**

1921, 4 h.p. **COULSON-B,** 3-speed List price, £128 10s. Mileage under 100 .. **£110**

1921, Brand New, 2¾ h.p. **NEW IMPERIAL,** 2-sp. with 1920 engine. List price, £91 5s. **£70**

1920, Brand New 3 h.p. **CLEVELAND,** 2-speed. List price, £86 **£56 10**

1920, Brand New 4 h.p. twin **ARMIS,** M.A.G. engine, 2-speed. List price, £135 .. .. **£95**

1921, Brand New 4 h.p. **INDIAN** Scout, slightly soiled. List price, £157 .. .. **£132**

1921, 10 h.p. **A.C.E.,** 4-cylinder, used for a few demonstrations List price, £210 .. **£140**

5 h.p. **F.N.** 4-cylinder. Very special bargain **£35**

A Very Large Number of Bargains, similar to above.

DON'T DELAY—SEND FOR FULL LIST.

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM, latest 3½h.p. touring model, £155/8; 3½h.p. sports model, £152/5; in stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7903

SUNBEAM 3½h.p., 1915-16, overhauled by makers, like new, tuned perfection, complete with Gloria sidecar, licence, all accessories, spare tyre and tube; £125.—Bathard, West Ashton, Trowbridge. [X8564

SUNBEAM Twin, 1915, engine and clutch overhauled makers March, Millford 1919 sidecar, spare wheel, Lucas accessories, all excellent condition; nearest £120.—Jones, 11, Hawkshead St., Southport. [X8528

SUNBEAM Combination, 3½h.p., March, 1921, mileage 3,000, Lucas lamps, horn, speedometer, licensed, excellent condition, owner returning India; £155.—Ross Engineering Co., Ltd., Ross, Herefordshire. 'Phone: 88. [7393

SUNBEAM 1921 3½h.p. Sports Model, supplied 10 days ago, fully equipped, tax paid, absolutely indistinguishable from new; £145; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8447

SUNBEAM Combination, 1919, black and gold, all lamps, Sunbeam sidecar, £87/10; another similar combination, not a Sunbeam sidecar, £82/10.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6748

SUNBEAM Combination, late model, 7-9h.p. M.A.G., 3 speeds, clutch, kick starter, interchangeable wheels, spare wheel, tyre and tube, luggage grid, screen, apron, lamps, speedometer, licence, excellent condition; £130; exchanges.—63, Solon Rd., Brixton. [8052

8h.p. M.A.G. Combination, Lucas dynamo lighting and horn, speedometer, clock, spare wheel, screen, hood, tax paid, perfect condition; £150; owner bought car; may be seen and tried at May and Jacobs, Guildford.—Watson, 44, Southbourne Av., Bournemouth. [7412

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

SUNBEAM 1921 Latest Type 3½h.p. Solos, combinations, and sports models in stock. Exchanges quoted. Second-hand Sunbeams particularly asked for. Balance by extended payments if necessary. Enquiries invited and treated with the utmost courtesy.—The Layton Garages, London Rd., Bicester, nr. Oxford. [8230

SUNBEAM 1920 8h.p. Combination, Magdyno lighting, electric horn, Bonniksen speedometer, mudshields, Ace discs, 760×90 cover on rear wheel, tax paid, indistinguishable from new; this outfit would cost to-day £294, for quick sale £195; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8448

T.D.C.

2¾h.p. T.D.C., fine running order, fast, licensed; £16.—41, Regent St., Wellington, Salop. [X8547

T.D.C. 2¾h.p. Motor Cycle, good running order, tax paid; £18/10.—Scotia Motor Works, 80, Upper Tooting Rd., S.W.17. 'Phone: Streatham 2707. [7935

Triumph.

PREMIER Motor Co. for new Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; type H. 4h.p., 3-speed, £115; type S.D., chain drive, £125; sidecars from £20 to £50. Write for particulars of our easy payment system. You will be satisfied if you buy your machine direct from the Triumph specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

TRIUMPH, 1914, all on, direct drive; £32/10, gift.—7, Newbury Rd., Ilford. [7667

TRIUMPH 1912, good order, lamps, licensed; £28.—Walker, Three Tons, Chesham, Bucks. [7495

1921 4h.p. Triumph, fully equipped, just new; £100, or near offer.—100, Goldcroft, Yeovil. [7318

1918 Triumph, 1920 sidecar, equipped, sound; £72.—33, Tunley Rd., Harlesden, N.W.10. [7878

UNBRIDDEN, unregistered Triumph, fully equipped; bargain, £5.—33, Hackford Rd., Brixton. [8280

2¼h.p. Triumph, May, 1921, perfect, lamps, horn, taxed; £60.—Morford, Brenchley, Kent. [7371

1920 Triumph, Model H, in perfect condition, ready ride away; £80.—17, St. Charles Sq., W.10. [6821

1914 Triumph C.B. Combination, as new, tax paid; price £55.—Broomfield, Hartley Wintney, Hants. [7413

TRIUMPH T.T., 1920, Philipson, equipped, picked engine, as new; £90.—Angell, Clovelly, Melksham. [7890

1919 Junior Triumph, splendid condition, not much used; £45.—Williams, Roomfield, Todmorden. [7520

4h.p. Triumph, 1914, 3-speed, little used, in new condition; bargain, £48.—20, Derby Rd., Worcester. [7821

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH, 1911, good condition, licensed, lamps, etc.; £28.—29, Talbot Rd., Northampton. [7577

1914 Triumph, 4h.p., 3-speed, Tan-Sad seat, new back tyre; £45.—Carter, 1, North Av., Ealing. [8242

TRIUMPH Junior (1919); 42 gns.; lamps, horn, and licence.—R. M. Cornet, 2, St. Mary's, Dumfries. [7438

TRIUMPH 1914, absolutely perfect, splendid condition; best offer.—119, Brecknock Rd., N.19. [7954

SEMI T.T. Clutch Triumph, 1913-14, perfect; combination wanted; offers.—57, Stopford Rd., E.13. [8008

1918 Countershaft Triumph; bargain, £60. 'Phone: Wanstead 48.—374, Grove Green Rd., Leytonstone. [7346

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

£20.—Single-speed Triumph, Bosch mag., good climber, fast, licensed.—King, Egrove Farm, Oxford. [X8507

1920 Junior Triumph, perfect, Klaxon, tax paid; £60.—Wadsworth, Spring Terrace, Rishworth, near Halifax. [7482

TRIUMPH Coachbuilt Combination, 2-speed, kick starter, fully equipped; £34.—17, Heaton Rd., Mitcham. [7840

1920 Triumph Combination, fully equipped, tyres new; bargain.—Spreadbury, 160, New Cross Rd., New Cross. [7437

4h.p. Triumph, perfect order, 3-speed countershaft; £52; after 6 o'clock.—89, Dalling Rd., Hammersmith, W.6. [7543

1920 Triumph Combination, fully equipped, tax paid; £80.—Braemar, 17, St. Quintin's Av., North Kensington. [7817

£75; 1918 Triumph, just renovated by makers, perfect.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7192

A VERY Good Triumph, almost new tyres and belt, single-speed, tax paid; £19/10.—27, Sidmouth St., Devizes. [8082

TRIUMPH (1911), excellent condition, recently fitted with new cylinder and carburetter; £35.—7, Albert Rd., Evesham. [7589

GLORIA Triumph Combination, 1919, splendid condition, screen, lamps, licensed; £105.—39, Warren Rd., Wanstead. [7492

BABY Triumph, 1921, 3 months old, mileage 250, insured, registered, perfect.—Dr. Small, Mental Hospital, Bexley. [7868

TRIUMPH 3½h.p., 1913, clutch, accessories, excellent condition, tax paid; £35.—Davis, Butcher, Tenterden, Kent. [7874

4h.p. Triumph, 1919, 3-speed C.S., and sidecar; £85.—100, High St., East Ham; or 19, Hillcrest Rd., South Woodford. [7949

1913 Triumph 3½h.p., 3-speed gear, in excellent condition; price £40, or offer.—East Grinstead Motor Garage, Ltd. [6622

TRIUMPH 1920 Lightweight Junior Model; 50 gns.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8216

TRIUMPHS.—New Model H, £115; shop-soiled Model F, 3½h.p., T.T., snip, £74.—365, King St., Hammersmith. [8162

1913 Triumph, 2-speed, F.E., reliable, good condition, excellent sidecar machine; £35.—84, Clarence Rd., Hackney. [7679

1912 Triumph 3½h.p., single speed, in good running order; price £28, or offer.—East Grinstead Motor Garage, Ltd. [6623

1920 Triumph Combination, beautiful condition, well equipped, hood, etc.; £100.—17, St. Charles Sq., W.10. [6822

TRIUMPH, overhauled 1917 model, extra good; £60.—R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [7851

1921 4h.p. Countershaft Triumph, brand new, slightly shop-soiled; £100.—Parkers, Station Rd., St. Ives, Hunts. [7832

1918 W.D. Triumph 4h.p., K.S., 3-speed, lamps, generator, tools, fully licensed; £68/10.—Craft, Billingshurst, Sussex. [7730

TRIUMPH 1920 4h.p. with Gloria sidecar; £92; any inspection.—Harvey-Hudsons', South Woodford (next "The George"). [7408

TRIUMPH, unregistered, never been used, and sidecar chassis, complete; £100, no offers.—Humphries, 89, High St., Egham. [7557

1915 Triumph 3-speed Countershaft, clutch and kick start; £58/10.—Rhind and Co., Stone Place, Rusholme, Manchester. [7691

TRIUMPH, new engine, gears, tyres, saddle, all details; £82/10, no offers.—Wilton, White Swan Yard, Upper Norwood. [8299

TRIUMPH, done about 2,000 miles, not W.D., perfect condition, like new; £85.—Grimes, 18, Bruton Place, Bood St., W. [5325

FROM SEPT. 1st.

OUR RE-CONDITIONED

DOUGLAS

MOTOR CYCLES

are reduced to

55 Guineas

In order to clear the remainder of our stock of approximately

50 Machines.

They are the standard W.D. 2¾ h.p. 2-speed machines completely rebuilt.

Practically indistinguishable from new. Over 50% new parts, including new tyres, belt, chain, carburetter, etc. Fully guaranteed for 3 months. Over 500 already supplied to all parts of the country

Supplied with bags, tools, and pump, or completely equipped with lamps and horn, 3 Guineas extra.

Deferred Payments Arranged. Special Terms to Trade.

A FEW EXTRACTS FROM THE MANY GOOD OPINIONS RECEIVED.

"With reference to the renovated Douglas I obtained from you four months ago, I think you will be interested to hear that I have just returned from a tour of some 500 miles, including a return run Birmingham to Ilfracombe. The total mileage covered since the machine has been in my possession now exceeds 4,000 miles, and I have yet to spend money to put right any mechanical trouble. I have used the machine daily, and my weekly average is about 250. I have not yet decarbonised the machine."
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"The machine was run through Hampshire last week and gave the utmost satisfaction, no adjustments of any kind being required, and still running perfectly. It is a credit to your re-assembling."—G.H.T., Borough, S.E.

Later—"The machine is running better than ever."

"The Douglas (2¾ h.p.) I got from you is running AI. It has quite come up to my expectations, so I am quite satisfied with it."—F.A.T., Barnsley.

"I was recommended to you by a man who has at different times purchased three re-built machines from you which are still running as new. As these machines are used for hire work (one of which I am using at present) and ridden by various people, I think there can be little doubt that machines supplied by you are reliable.—W.T., Folkestone."

CRABTREE & SON, LTD.,
Motor Engineers,
WISBECH.

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Combination, 1918, excellent condition, economical running; £95; appointment.—R., 24, Tollington Place, N.4. [8273

3½h.p. Triumph, 3-speed, K.S., lamps, horn, condition and appearance as new; £65.—82, Lincoln Rd. East, Peterborough. [8124

1917 Triumph Model H., renovated 1920, excellent condition, sidecar, lamps, tax; £85, or offer.—108, Meadvale Rd., Ealing. [7534

1920 Triumph 4h.p., C.S., kick start, complete, and in excellent condition; price £70, or offer.—East Grinstead Motor Garage, Ltd. [6621

TRIUMPH, 4h.p., countershaft, in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8467

TRIUMPH, 1911, new parts throughout, B. and B., long nickel exhaust, etc.; must sell; £27.—Newman, 82, Pepys Rd., Wimbledon. [7952

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—Triumph 4h.p., Model H, renovated by Triumph Cycle Co., tax paid, as new; £85. [8189

LATE 1919 Triumph Combination, equipped, splendid condition; nearest £90; appointment inspection.—Shone, 70, Watergate St., Chester. [7304

TRIUMPH and Sidecar, 1920, W.D., countershaft, kick start, full equipment, licensed; £70.—Bunting's Motor Exchange, Wealdstone. [8308

BARGAIN.—1913 3½h.p. Triumph, drop frame, pan saddle, good tyres, perfect order, tax paid; first £26.—Box 951, c/o *The Motor Cycle*. [X8471

1920 T.T. Triumph, hardly used, beautiful condition, fully equipped; best offer over £70.—Glenholme, Park Rd., Shenfield, Essex. [7629

1918 Triumph Combination, new coachbuilt sidecar, 3-speed countershaft, kick start, etc.; £87/10.—J. Rhind and Co., Stone Place, Rusholme, Manchester. [7690

TRIUMPH, 1919, and new Whitley sidecar, all accessories, excellent condition, tax paid; £120; after 6, or by appointment.—Franks, Riverton, Hadley Wood. [7626

4h.p. 1918 Triumph Combination, renovated by makers, cost £135 last year, any trial, guarantee; £85.—Stanley, Keysers Estate, Broxbourne, Herts. [7916

TRIUMPH 3½h.p., B.B. carburetter, M-L mag., lamps, horn, etc., fast and reliable, take 2 anywhere, tax paid; £27.—38, Hermit Rd., Canning Town. [7678

1913 T.T. Triumph, special engine and fittings, perfect condition, little used, stored 5 years, very fast; £38.—Bowen, The Bungalow, Barnshall, Worcester. [X8514

TRIUMPH Combination, 1920, latest Duuhill sidecar, splendid condition, fully equipped, tax paid; £115; extended payments.—33, Hackford Rd., Brixton [8279

TRIUMPH Combination, complete with all accessories, clutch model; bargain, £40; seen any time.—Apply, N. Droley, 34, Askew Rd., Shepherd's Bush. [7402

SPLENDID Value.—1921 Triumph 4h.p., type S.D., new, never been on the road; £117/10 for quick sale.—Louis Smith, Automobile Engineer, Barnard Castle. [7326

1918 Triumph, Montgomery sidecar, lamps, horn, Easting, Tan-Sad, licensed, perfect throughout; £85.—Edwards, 50, Harrington Rd., South Kensington. [8194

TRIUMPH, 1914, 4h.p., electric and acetylene lighting, Cowey, watch, etc., insurance and tax paid; must sell; £55, or offer.—58, Thorulill Rd., London, N.1. [8243

TRIUMPH 1921 4h.p., countershaft, Type H; £115; in stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7901

TRIUMPH, 1914, 3-speed, Canoelet sidecar, new back tyre and belt, engine and gears recently overhauled at works, discs fitted.—112, Gorton Rd., Coventry. [X8568

1920 Triumph 4h.p., countershaft, with sidecar, all accessories, perfect condition; £115; tax paid; seen by appointment.—Leonard, Waverley, Hawthorn Rd., Sutton. [8175

TRIUMPH, 1918, countershaft, lamps, horn, tools, spares, licensed and insured, perfect condition, low mileage, after 5.—Gale, 22, Desenfans Rd., Dulwich, S.E. [7772

TRIUMPH Junior, 1920, not ridden 100 miles, in new condition, Bonniksen speedometer, tax paid; price £65; S.W. district.—Letters, Box 6,072, c/o *The Motor Cycle*. [7299

£95.—4h.p. 1919 Triumph combination, as new, 3 speeds, clutch, kick start, speedometer, etc.—Apply after 6 o'clock, Mr. T. G. Hazell, 20, Hoyle Rd., Tooting, S.W.17. [8054

TRIUMPH Combination, 1919, full equipment, all spares, Easting, licensed, excellent condition; £87, no offers.—Lt. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [7963

1918 Triumph, completely equipped, tax paid, long copper exhaust, spare standard silencer, very fast, condition as new; £65.—Derrington, Grafton Rd., New Malden. [8190

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Junior, late 1919, in perfect running order, complete with lamps, etc.; £50.—Mattock Motor Co., Mattock Lane, Ealing, W.5. [7992

TRIUMPH, 1914, 3-speed hub gear, Millford sidecar, all on, tax paid, overhauled, first-class condition; £60.—Pelling, Redcross St., Brighton. [7317

1921 Triumph H, perfect condition, lamps, horn, speedometer, Tan-Sad, 700 miles; £100.—Apply, Brown, 82, James Lane, Leyton, E.10. [7722

TRIUMPH, 1918, and sidecar, T.T., hot stuff engine, Sturmey, handle-bar, Ferodo clutch, new wheels, Dunlops, wind screen, smart outfit.—Willis, 76, King's Cross Rd., W.C. [7550

1919 Triumph, 4h.p., 3-speed countershaft, excellent condition, any trial, all accessories; owner must sell; offer.—Chambers, 61, Raynton Rd., Enfield Wash, Middlesex. [8241

TRIUMPH, late model, countershaft, enamel, plating, and mechanism splendid condition, lamps, horn tax paid; £65.—30, Crystal Palace Park Rd., Sydenham. [7862

TRIUMPH, 1920, countershaft, splendid condition, all on; sell £80, or exchange late model Harley or Indian.—Apted, Belmont School House, West Green, Tottenham, N.15. [8117

LATE 1920 Triumph-Gloria Combination, lamps, horn, speedometer, screen, etc., as new; any trial; £110; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8287

TRIUMPH Combination, 1921, speedometer, Easting's wind screen, lamps complete, Klaxon horn, tax paid, not done 1,000 miles; price £135.—Apply, 119, Herne Hill, S.E.24. [7381

TRIUMPH 1917 4h.p., 3-speed countershaft, kick start, coachbuilt sidecar, Cameo wind screen, lamps, tax paid; £67/10.—28, Woodford Rd., Forest Gate. Stratford 2598. [7919

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [7348

OCTOBER (1921) Triumph Combination, Lucas lamps and horn, speedometer, hood, screen, etc., luggage grid; cost with extras £190, accept £120, or good solo part.—35, High St., Dartford. [7660

DR.'s Machines, fast and reliable.—C.S. Triumphs, in excellent running condition; £55; limited number only; first come, first served.—Branford, 16, Lydhurst Av., Streatham Hill, S.W. [7687

TRIUMPH Countershaft, 1920, Lucas, Klaxon, mileage under 3,000, tyres as new, insurance, carefully ridden solo, exceptional condition; £98.—Marriott, 32, Drayton Park, Highbury, N.5. [7735

1920 Triumph Gloria Combination, electric light, Cowey, horn, screen, hood, luggage, petrol carrier, nearly new, tax, insurance; £125, offers.—246, Mount Pleasant Rd., Tottenham, N.17. [7719

TRIUMPH 3½h.p., Bosch, B. and B., good tyres and belt, dropped top tube, long exhaust, T.T. bars, very fast, and a real good machine; £18.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [8074

TRIUMPH 1920 4h.p. Countershaft Combination, Gloria sidecar, lamps, tax paid, as new, unscratched; exchanges; £110.—Coad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [8183

1918 Triumph, countershaft, 3-speed, clutch, kick start, speedometer, P. and H. lamp set, pump, tool kit, new tyres, appearance as new, perfect; £70.—100, Riversdale Rd., Highbury, N.5. [8110

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt models.—Jones' Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

TRIUMPH Gloria Spring Wheel Combination, June, 1921, Ace discs to match, complete Lucas lamps and horn, Cowey trip, new condition; £160, or near offer.—Lock, Sturminster Marshall, Dorset. [7544

ALL Second-hand Machines advertised by Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley, are thoroughly overhauled and guaranteed bargains.—'Phone: Hornsey 2917, Finchley 2334.

1921 4h.p. Triumph, chain drive model, not done 300 miles, licence paid, absolutely unscratched; a real bargain, £110.—Below.

LATE 1919 4h.p. Triumph Combination, not done 2,000 miles, guaranteed perfect, all accessories; £115.—Jones' Garage, Muswell Hill. [8328

TRIUMPH Countershaft Combination, late model, new condition, lamps, horn, Easting, luggage grid, spares, tax paid, insured, nice lot; bargain, £85.—41, Geraldine Rd., Wandsworth, S.W.18. [8122

TRIUMPH 1921 Model H, 3-speed, complete with lamps, horn, knee-grips, and licence, very small mileage, appearance as new; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8231

TRIUMPH 1912 3½h.p. T.T. Model, fitted with latest dropped-back frame, brand new tyres, fully equipped, tax paid, fast machine; £35.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8449

TRIUMPH, countershaft, 3-speed, clutch, kick starter, new wheels, tyres, tubes, tax paid, guaranteed condition; £68; exchanges considered.—Miles, 11, Chichester Rd., West Kilburn, N.W.6. [8281

COLMORE DEPOT.

More Bargains !!!

AT OUR BIRMINGHAM DEPOT:

New 1920 3-speed Douglas (less Kick-starter) £85 0 0

New 1921 2¼ h.p. Sporting Rover (fixed gear) slightly soiled £82 10 0

AT OUR LIVERPOOL DEPOT:

New 1921 A.C.E. 10 h.p. 4-cylinder £150 0 0

AT OUR MANCHESTER DEPOT:

New 1920 2¼ h.p. Verus £38 0 0

New 1920 7-9 Harley-Davidson. Electric Model J. £150 0 0

AT OUR LEICESTER DEPOT:

1921 6 h.p. Martinsyde Sidecar Outfit, Soiled only £137 10 0

These are indeed wonderful bargains; don't miss this opportunity. And remember that we have all the latest Models of the leading makes of Motor Cycles in stock, that we can offer you a splendid service in repairs and spares, and that EVERY attention is given to your EVERY need at the House for Motor Cyclists.

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Birmingham: 31, Colmore Row. Liverpool: 24, Paradise St.

Manchester: 200, Deansgate. Leicester: 62, High St.

MOTOR CYCLES FOR SALE.

Triumph.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all models in stock, new chain drives, new chain-cum-belts, solos and combinations; immediate delivery; supplied on easiest of easy terms; trade supplied. [4537

1914 4h.p. Triumph Combination, 3-speed, clutch, new coachbuilt sidecar and wind screen, nearly new Dunlops and tubes, recently overhauled, splendid condition; £60.—Relph, 2, Sedgeford Rd., Shepherd's Bush, W. [7869

IMMEDIATE Delivery of any Triumph Model; cash or deferred payments; book your order now, and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0504

MUST Be Sold.—3½h.p. sporting Triumph, new countershaft, carburetter, Bosch, lamps, licensed, open to expert examination here, private owner, lowest £52/10; also 3-speed Douglas gear box, no controls, 70/-.—Baker, 49, Murray St., York. [8114

TRIUMPH, 1920 (late), 4h.p., and Mills-Fulford Skiff sidecar, P. and H. lamps, horn, Bonniksen speedometer, licence paid, tools, low mileage, very carefully used, new appearance; £125.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7902

1920 Triumph, Gloria combination, all chain drive, 4h.p., 3-speed, clutch, and kick start, lighting set, horn, tools, tax paid, Easting wind screen, cape, etc., condition indistinguishable from new, a bargain; £120, or offer.—Teeth, 769, Romford Rd., Manor Park, London, E. [7785

GET your new 1921 Triumph from the Layton Garages, who can give immediate delivery of any model; exchanges quoted; balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, London Rd., Bicester, near Oxford. [8205

1918 4h.p. 3-speed Countershaft Triumph Combination, recently overhauled, excellent condition, tax paid, disc wheels, fitted with 1921 Elite bulbous sidecar, complete with lamps, tools, Tan-Sad, etc.; £95, or close offer.—Apply, Bedwell, 66, Gt. Percy St., Pentonville, W.1. [8257

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

TRIUMPH, 1914, and Montgomery sidecar, 4h.p., 3-speed, clutch, lamps, speedometer, re-enamelled and overhauled, including new cylinder and piston, by makers this year, perfect order, tax paid, same owner since new; now purchased car; £60.—Owner, Ashton, 32, Portway, Warminster, Wilts. [7572

NOTTINGHAM.—Triumph 4h.p., countershaft, W.D., renovated, light sidecar, coachwork and plating perfect, engine thoroughly overhauled, new Triumph parts, carefully handled, owner engineer, whole outfit excellent condition; trial appointment within 50 miles; £85.—McBryde, 20, Arboretum St., Nottingham. [7727

TRIUMPH Gloria Combination (1919-1920), Model H, 4h.p., countershaft 3-speed, new tyres, spares, aluminium luggage carrier, adjustable wind screen, valve guard and power mudshield; 120 gns.; Myra dynamo lighting, switchbox (7 switches), Klaxon electric horn, and Bonniksen trip speedometer, 20 gns. extra; near offers.—M., 349, Goldhawk Rd., Hammersmith W.6. [8047

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 Type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

Union.

SPORTING Union, 2-stroke, 2¼h.p., 1919, perfect, spring rear frame, copper exhaust, 130 m.p.g.; £40.—Box 6,161, c/o *The Motor Cycle*. [8150

Velocette.

VELOCETTE 2¼h.p., 2-speed, new condition, small mileage; £40.—47, Heathwood Gardens, Charlton, S.E.7. [7339

IMMEDIATE Delivery of any model Velocette on easy payment system at only 4% extra; all models reduced £10; Model D2 £65, D3 £75, DL2 (ladies' open frame) £68. Buy your new machine direct from the Velocette specialists, The Premier Motor Co., Aston Rd., Birmingham. [X8523

GET Your New 1921 Velocette from The Layton Garages, who can give immediate delivery of any model. Exchanges quoted, balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, and London Rd., Bicester. [8206

VELOCETTE, 2-speed, late 1919, large tank and domed mudguards, T.T. bars, electric lighting, oversize cylinder, steel piston, also cast iron spare new sprockets and chains, many spares, including new Palmer covers, very sporting 'bus, hill-climb winner; accept £55 for quick sale.—Worters, Chapel Grove, Addlestone. [751

MOTOR CYCLES FOR SALE.

Velocette.

CYRIL WILLIAMS for immediate delivery of all models Velocette.—Chapel Ash Depot, Wolverhampton. [X3822

Verus.

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 51. [0656

IMMEDIATE Delivery of any Verus Model; cash or deferred payments; book your order now and avoid disappointment later.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417 [0502

VERUS-BLACKBURNE 1920 2¾h.p., 3-speed, special engine with side valve head, and also separate competition overhead valve head and gear, very fine condition; £87/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8228

V.S.

V.S. 5h.p. Twin, needs tuning up, tyres, etc., good; price £20, or offer.—East Grinstead Motor Garage, Ltd. [6625

Wanderer.

WANDERER, 3½h.p., 3-speed, kick start, hand clutch, 650×65 wheels, been stoved black and plated, fine sidecar machine; £35.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6748

Wilkin.

WILKIN.—All models in stock; deferred payments —Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8468

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8450

Wolf.

£25.—2¾h.p. Wolf-Jap, Grado, free; cash wanted.—Parrott, Churchill, Loughton. [X8532

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler.

1920 Wooler, excellent condition, 1921 improvements; £62.—Cole, Ashbrook, Cirencester. [8111

1920 (middle) Wooler, splendid condition throughout, little used, equipped; nearest £62.—239, Porter Rd., Derby. [7995

WOOLER, 1921, Brooklands model, delivered last month, very fast, as new; £70.—30, Greenhill Rd., Harlesden. 'Phone: Ealing 689. [8141

1920 Wooler, new January this year, only ridden 3 months, complete with lamps, tax paid, etc.; cost £102, accept £60.—N., c/o Parkers, Station Rd., St. Ives, Hunts. [7833

Zenith.

1922 Zenith-Bradshaw.

THERE's nothing to touch it; it's it, at £118.

YOU must not miss the chance of being able to buy a 1922 model to-day. Come and see me about it.

RING Regent 205 if you want a Zenith, new, soiled, or second-hand. I have them all, and the prices are right.

CATALOGUES of new machines and list of second-hand models on application.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W. [8005

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

1920 Zenith 5h.p., K.S., clutch, Bonnikseu; best offer.—Stokes, Elstree, Herts. [7494

ZENITH 1921 5h.p. Sporting Model, not done 100 miles, perfect condition; £105.—Tippen, Marden, Kent. [7938

1920 Zenith, sports model, lamps, tools, licensed, fine condition; £78.—Wright, 101, St. George's Rd., Aldershot. [7388

£75; sporting Zenith combination, 5h.p., like new, fully equipped.—Wright, 12, Albert St., Poplar, London. [8198

ZENITH 5h.p., new March, mileage under 1,000, accessories, electric lighting; £90.—24, Bellamy St., S.W.12. [7870

1919 5-6h.p. Zenith Combination, unscratched, well equipped, fast; £75.—24, Balliol Rd., North Kensington. [8003

1921 8h.p. Zenith, clutch and kick starter, slightly shop-soiled; £140.—Morriss and Co., Ltd., 139, Finchley Rd., N.W. [7467

ZENITH 1920 6h.p. Countershaft Combination, all on, tax paid, Easting screen; £120.—Batchelor, Clarence St., Kingston. [8065

ZENITH and Sidecar, 5h.p., 1915, Easting screen, low mileage; £70.—Lankester Engineering Co., 33, Victoria Rd., Surbiton. [7519

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"SERVICE" Belted Suit

(as illustrated), made of stout double twill, interlined rubber, all seams stitched, solutioned and taped giving absolute weather protection.

	Usual Price	Reduced to
Jacket	40/-	30/-
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Jacket D.B., 36 ins. long, wind cuffs and storm collar, seatless trousers, neatly shaped spats, gussets inserted in opening to exclude all wet and mud, patent fasteners.

89 Pairs only. Gauntlet Gloves, backs of gauntlets best quality cashmere mackintosh, double palms and fingers of first grade **tan cape** leather strap wrist fastener. Usual Price 27/6 **Reduced to 15/-**

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Short Fawn	28/6
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State size of calf.

GOOD SPECIAL SALE LIST.
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THE "SERVICE" CHILD'S SEAT FOR SIDECARS.

Plated Fittings **47/6.**

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Carriage Paid.

Sound in idea and construction. Simple to fix—does not necessitate cutting sidecar body or upholstery. Two small plates screw to either side of body inside). One small plate screws to floor, the seat is collapsible and is instantly removed. When in position it is secure and will accommodate children up to 14 years of age. The fittings are either heavily nickel-plated, or enamelled, and are adjustable—so that these seats will fit practically all sidecars. The seat and back are well upholstered and padded. Owing to the special design the space for the adult passenger's feet is not curtailed. Note the low price includes packing and carriage. Sent on approval. The Trade supplied.

The Service Company Ltd. (LONDON)

289-293, High Holborn, London.

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH 1914 3½h.p., in perfect condition, all accessories, for 2¾h.p. Douglas.—Cardo, Edgware House, Edgware, Middlesex. [X8431

1919 (November) Zenith 6h.p. Sporting Combination, discs, all accessories, licensed, perfect; £95.—Blue Anchor Hotel, Staines. [7558

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [X8502

ZENITH 1920 5h.p. Countershaft Model, soiled only; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8224

1921 Zenith 6h.p. Model C., J.A.P., accessories, tools, spares, insurance, good honest 'bus; £86.—30, Cromwell St., Gainsborough. [7305

ZENITH.—All models in stock, solo or sidecar; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8469

1921 5h.p. Sporting Zenith, very fast, demonstrator model, completely equipped; £115.—Johnson's Motor Works, King's Lynn. [7210

3½h.p. Zenith Combination, coachbuilt, perfect condition throughout, accessories; £38, or offer.—94, Glenfarg Rd., Catford, S.E.6. [7914

ZENITH 8h.p., countershaft, under 500 miles, equipped, insured, new condition; £98.—Clark, 7, Exhibition Rd., South Kensington. [7847

ZENITH Sporting Combination, 8h.p., 1920, all accessories, tax and insurance paid, excellent condition; £138.—Lochvoil, Gloucester Rd., New Barnet. [7701

1920 Zenith 8h.p., clutch, Henderson Elite sidecar, as new, only used 800 miles; cost £220, sacrifice £125.—Scott, c/o Lindfield, High St., Crawley, Sussex. [7631

F.O.C.H. have 1920 8h.p. Zenith combination, large Middleton touring sidecar, accessories, tax paid; £128.—5, Heath St., Hampstead (near Hampstead Tube Station). [7609

1920 Zenith 8h.p., clutch, Henderson Elite sidecar, new condition, only ridden 800 miles; sacrifice £125.—Elms, 433, Brixton Rd., S.W. 'Phone: Brixton 704. [7632

ZENITH 1920 8h.p. Sports Model, issued new 1921, licensed, thoroughly recommended and almost equal to new; £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8226

ZENITH 1921 5h.p. Sports Model, accessories, spares, unscratched, practically new; offers quick sale; exchange A.B.C. or other good make.—288, Sangley Rd., Catford, S.E. [7982

1921 Zenith 8h.p. Combination, clutch, kick starter, all Lucas accessories, special sidecar, spare tyre, etc., only used few week-ends, looks like new; £165.—73, Lyndhurst Grove, Peckham, S.E. [7884

ZENITH 1921 5h.p. Sports Model, fully equipped, including speedometer and licence, small mileage; a genuine bargain; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8225

ZENITH, Aug., 1920, 5h.p. sports, P. and H. lamps, Klaxon, Watford (2,500), Binks, 100 m.p.g., all tools, spare valve, faultless, £95; also Douglas.—Hunt, Farm, Leamington Rd., Reddish, Stockport. [X8537

1921 5h.p. Countershaft Zenith, with Gradua gear, the motor cycle for sidecar or solo, been used for demonstration purposes only; list price £131, £125.—Johnson's Motor Works, King's Lynn. [7209

ZENITH, late 1920, 8h.p., and spring wheel 2-seater sidecar, hood, screen, all accessories, insured, excellent condition; £130, or nearest offer.—Ridley (3 knocks), 7, Osborne Rd., N.4 (near Finsbury Park Station). [7651

8h.p. 1920 Sports Zenith, stored from September to June, new Lucas largest head lamp and horn, 2 new belts, knee-grips, discs, licence paid, nearly like new; offers above £100.—Hailyngton, Lawnhead, Eccleshall, Stafford. [X8402

ZENITH 1920 8h.p. Countershaft Combination, splendid condition, electric lighting, all accessories, coachbuilt sidecar, particularly comfortable, luggage grid, top-hole outfit; £150.—Ford, 67, St. John's Rd., Clapham Junction. [7562

ZENITH Combination, 5-6h.p., 1917, C.S., K.S., good tyres and belt, just overhauled and enamelled, D.A. lighting, Tan-Sad, Millford sidecar, hood, screen, luggage and petrol carrier; trial; £100.—Henden, 364, Garratt Lane, Earlsfield, S.W.18. [7404

ZENITH 1915 8h.p. Combination, countershaft clutch model, 700×80 tyres, new back tyre, belt, chain this season, tax and insurance paid, speedometer and all accessories, well kept up outfit; bargain, £85.—Firmin, 17, Milton Rd., Wallington, Surrey. [7427

ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear and sidecar lamps, horn, Cowey speedometer, knee grips, Ace discs, luggage grid, indistinguishable from new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8451

ZENITH 8h.p. Countershaft Late 1920 Model Combination, brand new Swan Sports sidecar, Avro wind screen, speedometer, disc wheels, many spares and accessories, machine just overhauled at Zeniths, guaranteed in perfect condition, tax and insurance paid; £145.—Giles, 18, Old Cavendish St., W.1. [7781

MOTOR CYCLES FOR SALE.

Ladies' Motor Cycles.

VELOCETTE, lady's, perfect as new, lamps, horn, mirror, tools, licence, 2 speeds; £45.—Ironman, 5, Baxter Gate, Loughborough. [7706

LADY'S Douglas, not run 2,000 miles, mechanically perfect, 2-speed, clutch, kick starter, Lucas horn; £46.—Fleetwood Automobile Co., West Byfleet. [7314

LADY'S Douglas, 2¾h.p., 2-speed, just built from new parts, Bosch mag., latest Amac, tyres, tubes, belt new; opportunity to obtain new machine at second-hand price; owner buying combination; £70, or nearest offer.—26, Albert Mansions, Albert Bridge Rd., S.W. [6137

Miscellaneous.

2¾h.p. and 4h.p. Douglas, also Levis; private owners.—Barber, College Rd., Hextable, Kent. [7513

WANDSWORTH Motor Exchange—London's leading Motor Cycle Exchange—for real cheap machines. —Below.

WANDSWORTH.—Easy terms. Easy terms. Immediate delivery given with first deposit.—Below.

WANDSWORTH.—Arno 3½h.p., mag., low built, spring forks; cheap, 23 gns.—Below.

WANDSWORTH.—Humber 3½h.p., mag., good tyres, runs splendidly; 28 gns.—Below.

WANDSWORTH.—Minerva 3½h.p., mag., 2 speeds, mechanical horn, drive away; 25 gns.—Below.

WANDSWORTH.—Humber 3½h.p., mag., 2 speeds, handle start, licensed; only 32 gns.—Below.

WANDSWORTH.—Campion-Jap 3½h.p., mag., good tyres, licensed, runs well; 25 gns.—Below.

WANDSWORTH.—Peugeot 5h.p. twin, mag., F.E. clutch, very low, beauty; cheap.—Below.

WANDSWORTH.—Triumph 3½h.p., mag., good tyres, spring forks, any trial; 26 gns.—Below.

WANDSWORTH.—F.N. 2¾h.p., mag., 2 speeds, spring forks, licensed; only 30 gns.—Below.

WANDSWORTH.—O.K. lightweight, 2¼h.p., mag. 2 speeds, nice little machine; 35 gns.—Below.

WANDSWORTH.—T.D.C. de Luxe, 1920, 2¾h.p., mag., lamps, licensed, runs beautifully; 39 gns. —Below.

WANDSWORTH.—Enfield 2¾h.p. twin, mag., 2 speeds, kick, chain, licensed; 39 gns.—Below.

WANDSWORTH.—Humber coachbuilt combination, 3½h.p., Bosch, 2 speeds, licensed; bargain, 38 gns.—Below.

WANDSWORTH.—Zenith, 4h.p. J.A.P. engine. Gradua gear, clutch, kick start; 49 gns.—Below.

WANDSWORTH.—Matchless, 3½-4h.p. J.A.P. twin engine, 3 speeds, runs splendidly; 49 gns.—Below

WANDSWORTH.—Rex coachbuilt combination, 5 h.p. twin, Bosch, 2 speeds, lamps; 45 gns.—Below.

WANDSWORTH.—Rex 1914 lovely coachbuilt combination, 6 h.p. twin, 2 speeds, licensed; 55 gns. —Below.

WANDSWORTH.—Zenith coachbuilt combination, twin J.A.P., Gradua gear, licensed; only 58 gns. —Below.

WANDSWORTH.—Premier fine coachbuilt combination, 3½h.p., 3 speeds, clutch, licensed; 52 gns.—Below.

WANDSWORTH.—F.N. splendid coachbuilt combination, 5-6h.p., Bosch, 2 speeds, lamps; 59 gns.—Below.

WANDSWORTH.—Indian beautiful red coachbuilt combination, 7-9h.p., 3 speeds; cheap.—Below.

WANDSWORTH.—F.N. 4½h.p., 4 cyls., Bosch, shaft drive, wants attention; 15 gns.—Below.

WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [7775

RICHMOND Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14 ('Phone: Putney 2622), have the following machines for sale or exchange:

R.P.G.—Blackburne 4h.p. combination, 1920, 3 speeds, clutch, and kick starter, all accessories, tax paid; £95.

R.P.G.—Enfield combination, 1917, 6h.p., all accessories, tax paid; £80.

R.P.G.—Douglas combination, 4h.p., 1920, new condition, all accessories, tax paid; £100.

R.P.G.—New Hudson 4h.p. combination, 3-speed countershaft gear box, all accessories, tax paid; £46.

R.P.G.—Enfield 2-stroke, 1921, 2 speeds, all accessories; £42/10.

RICHMOND Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [7780

2-SEATER Humberette; 2-seater water-cooled wheel steering A.C. Sociable, £55; 1918 Triumph combination, 1917 Triumph, £58/10; Bradbury countershaft combination, 1920 Norton Big 4 combination, £125; motor cycles bought, sold, or exchanged.—Rhind and Co., Stone Place, Rusholme. [7696

Exceptional Bargains

SPECIALLY "TUNED"

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MOTOR CYCLES.

All 1921 standard models fully equipped in stock.

2¾ h.p. 2-speed	£85
2¾ h.p. 3-speed kick-starter and clutch	£105
4 h.p. Solo, less equipment ..	£120
4 h.p. Solo, fully equipped ..	£125
4 h.p. Sidecar Outfit, less equipment	£152
4 h.p. Sidecar Outfit, fully equipped	£160

3½ h.p. Sports Model (as used by H.R.H. Prince Henry), **Reduced to £135**

This machine holds the World's Hour Record, 72-87 miles.

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The French super-sporting 2-seater

LIGHT CAR

A perfect miniature Motor Car at the price of a Sidecar Outfit, but with the comfort, accommodation, and weather protection of the car for both passenger and driver. Dynamo lighting, five detachable wire wheels, hood, screen, etc.

£220

Special Competition Model **£180** each. **Great Bargain.**

A. H. LAKEMAN,

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TRADE SUPPLIED.

MOTOR CYCLES FOR SALE.

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½h.p. Ariel, £110; 1921 7h.p. Ariel, £125.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3½h.p. twin Humber, 3-speed, £18/15.—Booths Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6h.p. Chater-Lea, Grado gear, £21/15.—Booths Motories, Halifax.

BARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P. and M., 1914, £39/15.—Booths Motories, Halifax.

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/16; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [3301

TRIUMPH, 1914, £39; 3½h.p. Humber, £35; 2-stroke, £25; L.M.C., 6h.p., £22; wanted, P. and M. or parts.—Carless, 143, Lowe St., Wolverhampton. [7795

ALLBER Garage, Thornsett Rd., Earlsfield, London, opposite Earlsfield Station, L.S.W.R.; 'phone: Latchmere 4388; cash or easy terms; delivery on deposit.

ALLBER.—Douglas 1916 2¾h.p., 2-speeds, mechanical horn, toolbags, good tyres, condition as new, tax paid; £42/10.

ALLBER.—Radco, single speed, 2-stroke, aluminium footboards, new tyre, all lamps, tax paid, splendid little machine; £25/10.

ALLBER.—F.N. 2½h.p., countershaft 2-speed gear box, clutch, shaft drive, good tyres, in splendid running order, tax paid; £23.

ALLBER.—Levis 2½h.p., popular model, 2-speed gear box, lamps, horn, nice machine, in splendid running order, tax paid; £35.

ALLBER.—Levis 2¾h.p., big 2-stroke, late model, Enfield 2-speed gear, all-chain drive, 26in. wheels, good tyres, condition as new, tax paid; £42/10.

ALLBER.—Calcott 2¾h.p., single-speed, all accessories, equal to new, tax paid; £30.

ALLBER.—Rover 3½h.p., 3-speed, clutch, starter, all lamps and horn, splendid condition, running order; £37/10.

ALLBER.—1920 Alldays-Allon, countershaft drive every accessory, tax paid, indistinguishable from new; a bargain, £42/10.

ALLBER.—Triumph 3½h.p., Grado variable gear new belt, good tyres, drop frame, complete with lamps, tax paid, in good order; £25.

ALLBER.—Indian combination, 1919, 7h.p., 3-speed clutch, kick starter, Phoenix sporting sidecar wind screen, in new condition; £87/10.

ALLBER.—New Imperial combination, 1919, 8h.p. J.A.P., countershaft 3-speed, clutch, kick starter enclosed chain drive, Milford sidecar, wind screen complete set of lamps, horn, tax paid, splendid outfit £87/10. [7835

TRIUMPH and S.C., Harley 7-9h.p., Douglas 2¾h.p. all in perfect condition; owner buying light car no reasonable offer refused; sell together or separately. Moore, 103, Cleveland St., Euston Rd., London. [825

IF Wishing to Buy (for cash or easy payments), sell or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [721

REX Twin Combination, 2 speeds, £25; Bradbury N.S.U. gear, £25; Humber and sidecar, 2 speeds £35; ready for any journey, and many lightweights at similar prices.—Bunting's Motor Exchange, Wealdstone. [83

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged. Any new cycle, combination, or car supplied, cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [761

MOTOR Cycles at bargain prices.—Mebes and Mebes, the original light car specialists, have a limited number of 1920 motor cycles, popular makes all brand new, for which they are prepared to accept any reasonable offer. Call and inspect, and make your offer. They are relinquishing this department owing to limited space being required for light cars.—154-66, Portland St., W.1. 'Phone: Langham 2230. [75

MOTOR CYCLES FOR SALE.

Miscellaneous.

HALIFAX Motor Exchange, Horton St., Halifax. 'Phone: 1400.—New and second-hand machines for cash, exchange, or deferred payments.—Below.

HALIFAX.—Morgans, £105, £120; 1920 A.J.S. combination, £165; A.V. Monocar, £79/10; Ariel 1920 3½h.p., £84/10.—Below.

HALIFAX.—Alecto 3½h.p. 1920 combination, £79/10; Brough 1916 3½h.p., 3 speeds, £59/10; 1920 2½h.p. Clyno, £49/10.—Below.

HALIFAX.—Enfield 1915-16 combination, £95; 1920 Edmund, £65; F.N. 3½h.p., £19/10.—Below.

HALIFAX.—1920 Harley electric combination, £160; 1920 4-cyl. Henderson combination, £175.—Below.

HALIFAX.—Norton 1920 3½h.p. sporting, £80; 10h.p. Reading-Standard combination, £110; Rex 6h.p. combination, £52/10.—Below.

HALIFAX.—Royal Ruby 2½h.p., 2-speed, £42; 1921 Scale-Blackburne, 3 speeds, £85; 1920 Scott, £95.—Below.

HALIFAX.—1920 Scott combination, special, £125; Sunbeam 2¾h.p. lightweight, £45; Sunbeam 3h.p. M.A.G. engine combination, £145.—Below.

HALIFAX.—Triumph 1914 combination, £75; Triumph clutch model, £47/10; 7-9h.p. Peugeot, 2-speed, £37/10.—Below.

HALIFAX.—6h.p. Zenith countershaft combination, £85; 1918 Indian 7-9h.p. combination, like new, £105.—Below.

HALIFAX.—Cash, exchange, or deferred payments.—Note address: Halifax Motor Exchange, 25, Horton St., Halifax. 'Phone: 1400. [7602

MOTOR ATTACHMENTS.

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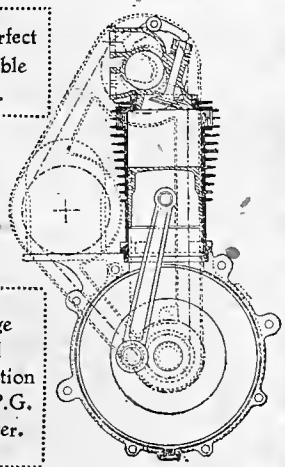

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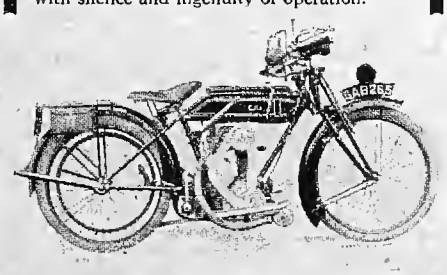

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G.N. Standard Touring, 1920½, done 800 miles only, absolutely as new, oversize tyres; any trial or demonstration; £165, or best offer.—Rodwell, 38, Brook Green, W.6. [7596

1920 De Luxe Morgan, lavishly equipped, aluminium discs, good tyres, exceptionally smart, very fast, any trial; £125.—24, Palliol Rd., North Kensington. [8004

MORGAN De Luxe, 1916, perfect condition, drive away, new tyres, J.A.P. engine, all accessories, tax paid; £95.—Watson, 117, Seaford Rd., Ealing, Middlesex, W.13. [7369

CARDENS.—We are authorised agents. Immediate delivery of standard model, £135, and de luxe model, £175.—Tel.: Museum 6626.—A.S.C., 60, Mortimer St., W.1. [8016

1920 Grand Prix Morgan, M.A.G., water-cooled, complete lamps, tax paid, speedometer, clock, etc., as new; £155.—28, Woodford Rd., Forest Gate, Stratford 2598. [7923

THREE-WHEEL Runabout, W.C., 3-speed and reverse, electric lighting and horn, speedometer; £85; exchange combination.—The Haven, 120, Sutherland Rd., Croydon. [8029

MORGAN 1914 Sporting Model, fully equipped, good condition; any trial; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8442

£35.—8h.p. twin-cyl. Wall tradesman's runabout, Precision engine, 2-speed, roomy box body; any trial run; exchanges entertained.—Speechley, 86, Churchfield Rd., Acton, W.3. [7964

1913 9h.p. Enfield 2-seater, 3-speed, detachable wire wheels, speedometer, lamps, hood, screen, licensed, excellent condition; £75.—Edwards, 50, Harrington Rd., South Kensington. [7174

MORGAN Latest 1921 Models for immediate delivery at latest reduced prices; exchanges or extended terms.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0076

1921 A.V. Bicar, all on, cost £245 last February, accept £135; consider late model combination in exchange, Harley-Davidson preferred.—D. Griffiths, 12, Ashfield Rd., Newbridge, Mon. [7480

1921 Bleriot Whippet, brand new, latest model, spare wheel, lighting set complete; any reasonable trial; £165.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

SPORTING A.V., 1919, discs, aluminium body, electric light, engine overhauled, tyres unpunctured; sell £80 or exchange with cash for Morgan or light 2-seater.—76, Cromwell Rd., Luton. [7784

GRAND PRIX Morgan Runabout, 1917, electric lighting, horn, licence paid, first-class condition; £145.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. 'Phone: 995. Tel.: Bicycles. [7904

1920 Bleriot Whippet, hand starter, unused spare wheel and belt in leather cover, horn, licensed, everything in perfect condition; 120 gns.—Edwards, 50, Harrington Rd., South Kensington. [7170

TAMPLIN 1920 2-seater, like new, licensed, £90; this comfortable economical 2-seater, with car comfort, offered at lower figure than good motor cycle.—Bunting's Motor Exchange, Wealdstone. [8309

TAMPLIN 1921 2-seater, 8h.p. J.A.P., Sturmey 3-speed, full equipment and extras, perfect running order, cost £200, tax paid; £100 for quick sale; after 4 p.m.—27, Shelton Rd., Merton Park, S.W.19. [7598

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COVENTRY PREMIER New 1921 (shop-soiled) 8h.p., 3 speeds, reverse, dynamo lighting, dickey seat; in stock; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8456

1921 10h.p. T.B. Cycle Car, Blackburne engine, lamps, horn, dickey seat, spare wheel, and tax paid, not done 500 miles; cost £266, must sell £230.—Can be seen at Wootten's Garage, 55, High St., Oxford. [7343

MORGAN G.P., 1918, w.c. J.A.P., electric lighting, speedometer, hood, screen, horn, fixed starting handle, Bowden mag. control, excellent running condition, tax paid; £165.—Lloyd, 63, South Rd., Smethwick. [X8041

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VICTOR Cycle Car, 1915, 2-cyl., water-cooled, 2 speeds and reverse, hood, screen, electric lamps, 2 new tyres, in good order; any trial; £95.—Butterworth's Garage, 64, Mill Lane, Brixton Hill, S.W.2. 'Phone: Streatham 2813. [6750

MORGAN, Grand Prix, 1916, water-cooled J.A.P., overhauled, many new parts, repainted red, 3 lamps, speedometer, clock, mechanical horn, hood and screen, tools, tax paid; £139/10; exchanges.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [8014

1921 Castle Three, 4-cyl. water-cooled engine, 2-seater, fitted with dickey, dynamo lighting, spare wheel, absolutely brand new, unregistered; cost £300; must sell, owner going abroad; sacrifice for quick sale £240. —Can be seen at Wootten's Garage, 55, High St., Oxford. [7344

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JEBRON, registered 291298, greatly superior to platinum, for blades, screws, etc., cures misfiring; Jebron screws, fit Bosch mag., 10/6 pair; old screws, any make, Jebronised, 4/9 each, return post.

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CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [8614

MAGNETOS. The real thing, not converted starter magnetos. Genuine Bosch 1914 type, waterproof, anti-clock, ZE1, £3/7/6.—Marble Arch Motor Exchange, 135, Edgware Rd., W. 'Phone: Padd. 789. [4437

MAGNETOS.—Thomson-Bennett, clock or anti-clockwise, 42, 45, 50, 55, 180 degrees, and single-cyl. 4-stroke 50/-, 2-stroke 45/-, variable ignition, new, waterproof, guaranteed; write for particulars. Bosch magnetos, single-cyl., waterproof; £3.—Super Power Co., 81, Northside, Clapham, S.W.4. [8139

U.H. Magneto Repairs.—We specialise in these magnetos and can be relied upon to give you good service. A1, B1, AO, KB1, KB2V, KZ2V type spares stocked; prices moderate; 12 months written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [7623

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2381

MOTOR Cycle Magnetos, brand new ex-Govt. surplus, by Thomson-Bennett, C.A.V., M.L., singles and twins, fitted with leads, variable ignition. Two brand new sparking plugs dispatched free with each magneto; £2/12/6; this includes postage. Magnetos of all degrees in stock. Cash refunded immediately if dissatisfied.—The Central Ignition Works, 14a, Loughborough Rd., Brixton, S.W. [4506

RUNBAKEN Repair Services.—Dynamos, magnetos, and starters. Huge stocks of spare parts and a modern plant enable use to make a thorough and efficient repair to every make and type. Pack in a strong box, enclose instructions, and address to The Runbaken Magneto Co., Ltd., 115, Gt. Portland St., London, W. 'Phone: Mayfair 3586. North of England: Derby St., Cheetham, Manchester. 'Phone: City 8266. [0257

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Euroad, London. [6015

STANDARD Magneto Co., Magneto Repair Specialists.—We undertake the repair of any type of magneto, Bosch, Berling, Eisemann, U.H., Mea, Splitdorf, M.L., E.I.C., etc., 12 months guarantee returned with every magneto. If your magneto is urgent you can depend upon it being on its way back to you in 24 hours for 10% above usual prices, normal time 2-4 days. We have practically every make of spare and reconstructed single and twin magneto in stock, which are guaranteed for 12 months and sent on 7 days' approval. State the nature of your repair, or make of magneto desired, and let us quote you.—The Standard Magneto Co., 55, Churchfield Rd., Acton, London. 'Phone: Chiswick 1518. [6766

IGNITION APPLIANCES.

CLEARANCE of a few odd magneto lines at ridiculous prices: Bosch end plates and ignition levers, sets of 4 aluminium and brass castings; convert your old open magnetos to posh lots, 5/- per set, half cost; contact breakers, 7/6 each, with points; a few magnetos, various makes, want attention, 9/6 each; H.T. brushes, holders, etc., at bargain prices. Great chance for electrical dabblers; jump to it; sprockets, 12T., standard, bored to any pattern and hardened, 5/6, post free; other sizes pro rata.—Wingfield, Stanley Rd., Bromley, Kent. [7739

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos, Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approved A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest sock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [0263

TYRES.

HERBERT ROBINSON, Ltd., Green St., Cambridge.

SPECIAL Manufacturers' Clearance Lines and W.D. Stock, every cover guaranteed and sent on 7 days' approval, post free. We will pay return carriage if you are not more than satisfied.

26×2 Dunlop Inner Tubes, special clearance line, guaranteed, 4/6 each.—Robinson's.

26×2¼ Dunlop heavy, 37/6; Bates special heavy, 45/-; Palmer cord, 36/-; Macintosh, 34/6; Clincher heavy, 35/-; Beldam combination, 36/11; Avon tricar, 33/-; Matchless, 20/-; John Bull extra heavy, 39/-; Cuthbe, 42/-; Pedley, 30/-; tubes, all makes, 6/6.—Robinson's.

26×2⅜ Dunlop Heavy, 37/6; John Bull rib stud, 48/6; Hutchinson T.T., 32/-; Moseley extra heavy, 30/11; Hutchinson passenger, 35/-; Bates special heavy, 50/-; Beldam, 30/11; tubes, all makes, 7/6.—Robinson's.

26×2½ John Bull Heavy, 48/6; Bates special heavy, 50/-; Matchless, 20/-; tubes, all makes, 7/6.—Robinson's.

26×2½, to fit 2¼, John Bull special heavy, 48/6; Bates heavy, 50/-; Cuthbe Cycar, 48/-; tubes, 7/6.—Robinson's.

28×2½ Dunlop extra heavy, for American rims, listed 82/6, our price 55/-; tubes, 7/6.—Robinson's.

28×3, for American rims, Dunlop extra heavy, 52/-; tubes, 7/11.—Robinson's.

28×3 Moseley heavy, 30/11; Cuthbe Cycar, 63/-; Avon extra heavy 3-ribbed, 50/-; tubes, 7/11.—Robinson's.

650×65 Cuthbe Cycar, 56/-; Avon 3-rib extra heavy, 50/-; rubber-studded, 45/-.—Robinson's.

700×80 Cuthbe Cycar, 70/-.—Robinson's.

HERBERT ROBINSON, Ltd., Green St., Cambridge. [7905

MISS DOOLEY.—26×2½ new Macintosh and Spencer-Moulton at 30/- each.—Below.

MISS DOOLEY.—26×2¼ Dunlop, second-hand, 17/6 each.—Below.

MISS DOOLEY.—26×2¼, new, all makes, 25/-.—Below.

MISS DOOLEY.—28×3 new Macintosh, 25/-.—Below.

MISS DOOLEY.—28×3 new tubes at 5/- each.—Below.

MISS DOOLEY.—700×65 new Dunlops at £2 each.—Below.

MISS DOOLEY.—820×135 (oversize for 820×120) Dunlop and other make car tyres, new, and 820×120, £4/5 each; tubes for same, 12/- each; these are not perished.—Below.

MISS DOOLEY.—Bargains: 920×120, 915×105, 875×105, 30×3, and 820×135 tubes. I have a large quantity of the above, which are new in the wrappers, from 55/- each. Approval against cash.—Please apply, Miss E. Dooley, 33, Killyon Rd., Clapham. [8098

DUNLOP Extra Heavy Cover and Tube, 26×3×2½, nearly new, unpunctured; £2/2.—25, Branksome Rd., Merton Park, S.W. [7708

THE Difference between a good retread and a bad one is its mileage; try us; watch results.—Melton Rubber Works, Melton Mowbray. [0636

BRAND New Clincher Rubber-studded Tyres, 26×2¼ 33/6, 26×2½ 39/6.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [7774

SCOTTISH Readers will find it advantageous to purchase their tyres from McArthur, Hill and Co. 47, Carrick St., Glasgow. Lists post free. [7063

A FEW Real Bargains for Scottish Readers, surplus Government, etc., covers and tubes. Write for list.—McArthur-Hill, 47, Carrick St., Glasgow. [7062

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SPECIAL LINE

Goodrich Safety Tread Covers. Extra Heavy.

	List Price.	Our Price.
26 × 2¼	£3 0 6	£1 10 0
26 × 2½ to fit 26 × 2¼	£3 11 0	£1 18 0
26 × 2½	£3 9 0	£1 17 0
650 × 65	£3 7 0	£2 4 0
700 × 80 to fit 650 × 65	£3 16 6	£2 5 0
28 × 3	£5 0 0	£2 11 6

26×1¾ British Made	15/-
24×2 Hutchinson Rubber-studded	22/6
24×2¼ Clincher Heavy	32/6
26×2¼ Hutchinson Brooklands	23/-
" Hutchinson Tourist Trophy	27/9
" Rom Rubber Non-skid, Heavy	32/-
" Rom Combination	42/-
" Macintosh Chain Pattern, Heavy	32/6
" Avon Sunstone	33/-
" Wood-Milne 3-ply	26/9
" Wood-Milne, Extra Heavy	32/6
26×2⅜ Clincher de Luxe, Heavy	34/6
" Hutchinson T.T. Rubber-studded	30/-
" Hutchinson Passenger Rubber-stud.	35/-
26×2¼ for 26×2½ rim: Hutchinson T.T. Rubber-studded	33/-
26×2¼ for 26×2½ rim: Clincher de Luxe, Heavy	35/-
26×2¼ for 26×2½ rim: Michelin Fine-ribbed	21/-
26×2¼ for 26×2½ rim: Hutchinson T.T. Rubber studded	30/-
26×2¼ for 26×2½ rim: Hutchinson Passenger Rub.-stud.	32/-
26×2¼ for 26×2½ rim: Macintosh Chain Pattern	36/-
26×2¼ for 26×2½ rim: Englebert Raised-rib (wired edge)	25/-
26×2¼ for 26×2½ rim: Englebert Rub.-stud. (wired edge)	30/-
" Hutchinson 3-ribbed	45/-
28×3 Hutchinson 3-ribbed	45/-
28×3 Englebert, Hy, Racing Rub. Bars	47/-
28×3 Goodyear All weather Tread	65/-
28×3 Dunlop Extra Heavy	50/-
28×3 to fit 28×2¾ Dunlop Extra Heavy	50/-
700×80 fit 650×65 rim Hutchinson 3-ribbed	50/-

TUBES.

26×2¼ Hutchinson	5/9
26×2¼ Michelin	6/6
28×3 Hutchinson	7/9
" Goodyear (butted)	9/6

The above are sent **carriage paid.**

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¾"	⅞"	1"	1⅛"
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Bowden Front Brakes each	13/4
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6/6 is the cost of repairing your damaged cover, returned carriage paid in 2 days.—Below.

EVERY Job Guaranteed Sound and Reliable before leaving works.—Below.

OLD Covers Retreaded in 3 days, with extra heavy studded treads; satisfaction guaranteed; 26×2, 14/6; 26×2¼, 26×2⅜, 26×2½, 17/6; 660×65, 700×80, 28×3, 20/-.—Below.

LOOK up your old tyres; send by parcel post or rail to be repaired and save money.—Below.

PHŒNIX Tyre Repairing Co., 224, Sherlock St., Birmingham. [X8654

H. EMANUEL and Co.'s for tyre and tube bargains. Surplus Government stock, and clearance manufacturers' stock.

24×2 Wood-Milne special 28/-, Hutchinson rubber-studded 22/6.

24×2¼ Clincher De Luxe heavy, 25/-.

26×2¼ Dunlop heavy 36/6, Macintosh chain 32/6, Avon Sunstone 37/6, Clincher De Luxe extra heavy 35/-, Rom combination 42/-, Avon combination 38/9, Beldam combination 35/-, Palmer heavy cord 36/9, Palmer cord 32/6, Skew rubber non-skids 29/6.

26×2⅜ Palmer Heavy Cord 37/-, Palmer cord 33/-, Dunlop heavy 37/-, Clincher de Luxe extra heavy 34/6, Wood-Milne extra strong 35/-.

26×2¼×2¼ Hutchinson Rubber-studded 33/-, Wood-Milne special 33/-.

26×2½ Rom Combination 45/-, Macintosh chain 36/-, Hutchinson rubber-studded 36/-, Skew heavy ribbed 37/6, Dunlop heavy 45/-.

650×65 Heavy Rubber Non-skid 26/6, Wood-Milne extra strong 43/6, *Michelin steel-studded 52/6, Burnett grooved 41/9, Dunlop steel-studded 55/-.

700×80 (to fit 650×65 rims) Wood-Milne Special 50/-, Wood-Milne extra strong 55/-, *Dunlop steel-studded 70/-.

28×3 (to fit American rims) Skew Rubber Non-skid, Dunlop extra heavy 4-ply 50/-, Dunlop heavy 45/-, Clincher de Luxe extra heavy 45/-, Wood-Milne extra strong 4-ply 35/- (wrapped), Wood-Milne special 3-ply 29/3 (wrapped).

28×3 (to fit 2½ rims) Dunlop extra heavy 50/-, Dunlop heavy.

28×2½ Hutchinson Heavy Rubber-studded 26/9, Hutchinson heavy ribbed 29/6.

NEW Tubes in all sizes 7/- each. Also clearance tubes, with one small vulcanised patch by manufacturers, otherwise quite new, 5/6.

THE Above Lines are sent 7 days on approval, and forward passenger train, carriage paid.

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TRY Us for 3,000 mile retreads. Burst tyres made perfect; tube repairs 24 hours, carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [818

TYRES, 28×2½in. (American rims), extra heavy rubber studded, best make; 45/- each, listed 73/-; approval anywhere.—Alltyres, 81, Dale End, Birmingham. [626

650×65 Clincher De Luxe, extra heavy, unused 42/-, original cost 80/9; 650×65 Oyleum heavy, 38/6, original cost 65/-.—64, Bishopsgate, London. [06

28×3 Tubes, brand new Bates and St. Helens, guaranteed perfect, in original boxes; 4/6 each, postage 1/-.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [44

ECONOMIC Tyre Co.—Special offer of Wood-Milne Keygrip covers, new and in perfect condition, 50% off list prices. All goods carriage paid, on approval against remittance.

ECONOMIC.—Wood-Milne 26×2 heavy, 25/-; extra heavy, 30/-; 26×2¼ heavy, 26/10; extra heavy 34/-; 26×2½×2¼ extra heavy, 35/-.

ECONOMIC.—Wood-Milne 26×2½ O.S., 31/10; extra heavy, 36/-; 28×2½ American extra heavy, 40/-.

ECONOMIC.—Wood-Milne 650×65 heavy, 32/-; 700×80 heavy, 43/6; extra heavy, 46/6.

ECONOMIC.—The following are W.D. clearance new, and in perfect condition.

ECONOMIC.—26×2¼ Bates special heavy, 33/-; Clincher de luxe extra heavy, 33/9.

ECONOMIC.—26×2⅜ Bates special heavy No. 34/6; No. 2, 36/6; Clincher de luxe heavy, 30/-; Hutchinson Passenger, 32/6; Tourist Trophy, 30/-; oversize for 2¼in. rims.

ECONOMIC.—24×2¼ (oversize 2in. rims) Clincher de Luxe heavy, 27/6.

ECONOMIC.—Fully guaranteed Dunlop rubber-stud 24×2 26/3, 24×2¼, 26×2 28/9, 26×2¼ 30/-.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E. 'Phone: New Cross 1393. [50

TYRES.

BURST Motor Cycle Tyres, chafed beads, remoulded, made perfect, tube vulcanising, butt-ends fitted, retreading; send for list.—Melton Mowbray Rubber Works, Melton Mowbray. [0347

BALE and Co.—Special offer of Wood-Milne covers, new and condition perfect, at prices approximately 50% under list; all goods carriage paid against remittance; money refunded if not satisfied.

BALE and Co.—26×2¼ 26/6, extra heavy 32/6; 26×2⅜, extra heavy 33/-; 26×3 (to fit 650×65), 40/-, extra heavy 45/-, 650×65 32/6, 26×3 34/-, extra heavy 42/-, 26×2½ 34/-, extra heavy 36/-.

BALE and Co.—Hutchinson T.T. 26×2¾, 35/-; passenger, 36/-; Clincher de luxe, extra heavy, 34/-; Palmer 26×2¼ and 2⅜, 35/-; Avon rubber studded 26×2¼×2⅜, 32/6; Dunlop heavy rubber studded 26×2¼×2⅜, 37/6.—126, High St., Croydon. 'Phone: 1882 [8380

CENTRAL Garage.—Second-hand covers salved from army machines, mostly nearly new, and good for several thousand miles, 15/6 each; immediately returned if dissatisfied; state size and make preferred; carriage 1/-.—Below.

CENTRAL Garage.—Special line of genuine Goodrich Safety Tread covers, equal to Dunlop extra heavy, oversize for 26×2¼ only, at 30/- each with vulcaniser. Sent on approval against cash.—Below.

CENTRAL Garage, Thornton Heath, Croydon.—Free, with any of our covers, a small compact and efficient vulcanising machine. Not a toy, but a suitable apparatus for repairing small holes in covers and tubes. We guarantee dispatch within an hour of receipt of order, and return cash immediately if goods are returned. Brand new Wood-Milne covers, 26×2¼, 26/6, extra heavy 32/6; 26×2⅜ 27/6, E.H. 33/-; 26×2½×2¼ 30/-, E.H. 35/-; 26×2½ 34/-, E.H. 36/-; 26×3×2½ 32/-, E.H. 40/-; 26×3 34/-; E.H. 42/-; 650×65 32/6, E.H. 37/6; 700×80 or 26×3 (to fit 650×65) 40/-, E.H. 45/-; heavy tubes, 6/6; carriage 1/6.—Below.

CENTRAL Garage.—Special line of 28×3 extra heavy Wood-Milne, 30/- each, listed at 87/-; tubes, 7/6.—Below.

CENTRAL Garage.—Dunlop covers, all sizes, heavy, extra heavy, and combination steel stud. Send cutting of lowest advertised, and we will supply, together with free vulcaniser, on approval.—Below.

CENTRAL Garage.—Bates 3-ribbed covers, 34/6; Palmer, 35/-; Hutchinson, Avon, or Macintosh, 40/-; 26×2¼ or 2⅜; all approval against cash; carriage 1/6. Anyone going elsewhere does not know how to buy.—London Rd., Thornton Heath. [7804

TYRE Repair Specialists.—H.F. process throughout including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [6068

HOMERTON Bargains.—New Avon or Michelin steel-studded covers, W.D., 700×65 35/- each; new Beldam clearance covers, all sizes, 30/- each (except 28×3 and 650×65, 40/- each, 700×80 50/- each).—Homerton Rubber Works, Brooksby's Walk, Homerton, E.9. [0331

LOOK at This.—Covers, 26×2½, to fit 2¼, heavy covers, all brand new, special clearance, only a few hundred left, £1; don't miss a chance of a lifetime.—Light Car and Motor Cycle Engineering Co., 6, Tulse Hill, Brixton (½ minute from Brixton Skating Rink). [8168

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SPECIAL Bargains.—New covers, 24×2 Wood-Milne 21/-, 26×2¼ Dunlop heavy 35/-, 26×2⅜ Palmer cord heavy 35/-, Clincher ditto 32/6, Avon heavy-tread 30/-, 26×2½ Avon Sunstone 37/6, 26×3 Dunlop extra heavy (for 2½ rim) 50/-, combination ditto 50/-, 28×3 Wood-Milne 27/6, Kempshall 30/-, Rom combination 50/-, 700×80 Wood-Milne and Clincher (for 650 rims) 50/-.—Murrays, 37a, Charles St., Hatton Garden, Holborn. [X8475

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A TRIUMPH Tank to hold 2½ gallons supplied at reasonable cost.—Write to Midland Sheet Metal Co., Sherbrooke Rd., Nottingham. [7986

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ARIEL, 3½ h.p., solo	£100	0
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B.S.A., 4½ h.p., H.2, solo	£110	0
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DOUGLAS 4 h.p. Combination, all on	£152	0
DOUGLAS, Sports Model	£135	0
DOUGLAS, 2¾ h.p., 3-speed, clutch, K.S., all on	£105	0
DOUGLAS, 2-speed only, all on	£85	0
ENFIELD Model 180 Combination	£160	0
ENFIELD Model 190 Combination	£182	0
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HARLEY, all models	—	
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LEA-FRANCIS, 2-speed, 3½ h.p.	£115	0
LEA-FRANCIS, 3-speed, 3½ h.p.	£125	0
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MARTINSYDE Combination	£145	0
ROYAL RUBY, Sports Model	£84	0
RALEIGH, 5-6 h.p., solo	140 gns.	
RALEIGH 5-6 h.p. Combination	176 gns	
RUDGE, 3½ h.p., I.O.M.	£85	0
RUDGE, 5-6 h.p.	£100	0
TRIUMPH, Model H.	£115	0
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Mechanical Horns, **12/6**; postage, 1/-. Usual price, 38/-.
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MILLFORD, CANOELET, HENDERSON, SWAN and MONTGOMERY SIDECARS in Stock.

TRADE SUPPLIED.

BELTS.

MISS DOOLEY.—Good second-hand ¾in. belting, all makes, 6ft. 6in. lengths; 6/-.—Apply, E. Dooley, 33, Killyon Rd., Clapham. [8096

CENTRAL Garage.—Brand new Pedley, Clipper, or Dunlop belting; immediate despatch, all approval 1in., 8ft. 6in. length, 17/-; ⅞in., 8ft. 6in., 15/-; 7ft. 6in. 14/-, 6ft. 6in. 12/6; ¾in., 6ft. 6in., 11/-. Cheapest house for regular stock. Write for quotations.—302, London Rd., Thornton Heath, S.E. [7807

LIGHT Car and Motor Cycle Engineering Co.—Belts. Belts. We are still able to offer motor cycle belts, all makes, from ¾in. to 1in., all serviceable, from 3/6 to 7/-, any length; ¾in., brand new, in makers' cases, 6ft. 6in., 12/6.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ minute from Brixton Skating Rink). [8167

BELTS.—Clincher, unused, not W.D., ¾in., 6ft. 6in., 9/6; 7ft. 6in., 10/11; 8ft., 11/9; ⅞in., 7ft. 6in., 12/9; 8ft. 6in., 14/9; 1in., 7ft. 6in., 16/6; 8ft., 18/6; 1⅛in., 7ft., 18/6; 8ft. 21/-; 8ft. 6in., 23/-; Bates, short lengths, ¾in., 5ft., 5/-; 5ft. 6in., 5/6; ⅞in., 4ft. 6in., 5/6; 5ft., 6/3; 5ft. 6in., 7/6; 1in., 4ft. 6in., 6/9; 5ft., 7/3; 5ft. 6in., 8/3; leather belts, ¾in., at 2/6 per ft.; belt fasteners, 9d. and 1/- each. Postage 1/- extra.—Bancroftian Co., 64, Bishopsgate, London. [0617

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TRAVELLERS Required in various parts of the country to sell on commission several good lines.—Collyer, 78, Snell's Park, Edmonton. [7666

SITUATIONS WANTED.

DRAUGHTSMAN (21), motor cycle, cycle, requires situation, anywhere.—85, Coldharbour Rd., Birmingham. [7417

MOTOR Cycle Show.—Salesman, experienced, good address, wants berth on stand at above; only remuneration, expenses; reference given.—Box 6,162, c/o *The Motor Cycle*. [8151

POSITION Trade Rider or salesman-demonstrator, age 21, public school, 6 years' riding, 5 years' trade experience.—Box 6,118, c/o *The Motor Cycle*. [7453

ADVERTISER, age nearly 18, seeks situation in motor business, works, or garage, in any capacity, for living wage; keenly interested in motor engineering, fair theoretical knowledge, good education.—Taylor Church Farm, Hempstead, Saffron Walden, Essex. [7444

PATENT AGENTS.

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [1049

FLETCHER WILSON, of Coventry, Chartered Patent Agent and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

H. N. & W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E. Associate I.E.E., etc.; W. S. Skerrett, A.I.A.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

FINANCIAL.—PARTNERSHIPS.

LONDON Engineer has improved design of 3-wheel cycle car for disposal by way of cash plus allotment of shares.—A.M.I.A.E., 15, Princes Av., Finchley, N.W. [7958

ENGINEER-DESIGNER with valuable protected innovation in cycle design, desires to meet firm preferably in South interested in same.—Box 6,143, c/o *The Motor Cycle*. [7524

AGENCIES.

AGENTS wanted to represent firm; lightweights, motor scooters, etc.; good commission.—Box 6,146, c/o *The Motor Cycle*. [7616

THE Mohawk Cycle Co., Ltd., require sole agents for their celebrated motor cycles in districts where they are not already represented.—Write for lists and terms to Mohawk Cycle Co., Ltd., Alexandra Rd., Hornsey, N.8. [2505

INSURANCE.

FOR Most Advantageous Policies apply Ernest Bass, Insurance Broker, 40, Chancery Lane, W.C.2. [0005

ROYS, Ltd., effect insurances of all kinds. Enquiries invited.—170, Gt. Portland St., London. [0055

CLIFFORD WILSON can place your insurance with any company at lower rates than obtainable elsewhere. Short period. Special risks, etc. Comprehensive policies from 50/-.—177, Westminster Bridge Rd., S.E.1. Immediate cover: Hop 210. [6063

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application. The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

HOTELS AND APARTMENTS.

YOUR Maiden Aunt will be charmed with the Old Barn Teahouse, Stock's Green, Hildenborough, beyond Sevenoaks. [4442

GENERAL TRADE.

TO Those Unable to obtain show space.—Firm with showrooms near Olympia offer exhibition space and offices.—C., Box 6,145, c/o *The Motor Cycle*. [7615

TO the Trade.—Write for our lists of nuts and bolts, split pins, spring washers, and carborundum wheels.—You will save money.—Owen W. Jones, 47 Holt Rd., Liverpool [4430

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

GARAGE, tools, goodwill; for quick sale, £50.—Box 6,169, c/o *The Motor Cycle*. [8158

WOULD join or purchase motor business situated easy access Golders Green; experienced.—Write first, M., 4, Dollis Rd., Finchley, N. [7838

CYCLE and Motor Cycle Business for disposal, old established, main road, Manchester district; £450; stock at valuation.—Box 6,027, c/o *The Motor Cycle*. [7159

LIGHT Car and Motor Cycle Business for sale, garage, workshops, offices, stock includes three cars; South London, good position; £800.—Box 6,158, c/o *The Motor Cycle*. [7702

MOTOR and Cycle Business, London, W., main artery, corner premises, side pull-up, old-established; 26 years lease, small ground rent. Offered great sacrifice owing to age, ill-health. Easiest terms. Principals.—Owner, 16, Christchurch Av., Brondesbury. [7582

WANTED.

GEAR Wanted for N.S.U.—7, Brewery Rd., Bromley Common, Kent. [8067

SOLO or Combination, not earlier 1919.—West, 50, Maldon Rd., Acton, W.3. [8032

TRIUMPH 4h.p. Cylinder, also silencer.—Hurst, 4, Ascroft Rd., Aintree, Liverpool. [7770

WANTED, Triumph parts, 1912 to 1921.—Wilton, White Swan Yard, Upper Norwood. [8300

2¾h.p. Imperial-Jap, any condition; cash, or exchange Triumph.—7, Newbury Rd., Ilford. [7668

DOUGLAS Engine or other parts, cheap for cash.—Hudson, 14, Conway Rd., Plumstead. [7714

WANTED, 1912 Clyno 2-speed gear box or chain sprockets.—39, Priory Rd., Cambridge. [7423

TRIUMPH Cylinder wanted, 3½h.p., 1912.—Wall, 65, Vittoria St., Birmingham. (D) [X8555

WANTED, 2¾h.p. Douglas, 1916, up to £35.—Creed, 66, Umfreville Rd., Harringay, N. [7831

A.J.S. 1915 Wind Screen, spare wheel and fittings.—Price, Betts, Waterloo Rd., Smethwick. [7479

DOUGLAS 2¾h.p., 1918, later.—Write, particulars, price, 11, Kilmartin Av., Norbury, S.W.16. [7672

WANTED, J.A.P. cylinder, 85 bore, side valves.—W. Dickson, Sorbie, Wigtownshire, Scotland. [X8401

F.N., Horstman gears for 1910-11, 4-cyl.—Particulars, price, condition, to Kirk, Rayleigh, Essex. [7705

WANTED, 2-speed gear box for lightweight, Douglas preferred.—King, Egrove Farm, Oxford. [X8508

WANTED, countershaft Triumph, solo or combination.—Bamford, Kay St. Joinery Works, Bolton. [7461

WANTED, Sturmey-Archer hub gear, belt wheels.—27, Buchanan Gardens, Kensal Rise, N.W.10. [6614

WANTED, modern combination or solo, must be cheap.—Particulars to 76, Neate St., Camberwell. [7830

WANTED, 2¾h.p. Douglas, 2-speed, not earlier 1913, not exceeding £30.—King, Egrove Farm, Oxford. [X8509

MOTOR Cycle, 5-8h.p.; full particulars; deposit system; Warwickshire.—Box 955, c/o *The Motor Cycle*. [X8499

WANTED, Triumph countershaft spares, large quantities; good prices paid.—33, Hackford Rd., Brixton. [8279a

WANTED, 4-cyl., F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [3151

WANTED, Armstrong hub gear belt wheels and Mark III. hub shells.—33, Wilton Grove, Merton Park, S.W.19. [6615

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3152

WANTED, fixed back wheel, 1912 Triumph, cheap; also front mudguard for same.—Box 6,142, c/o *The Motor Cycle*. [7523

WANTED, 5h.p. Brough, solo.—Full particulars, where seen, and lowest price to Done, 62, Caunce St., Blackpool. (D) [X8327

WANTED, roomy 1920 combination, Triumph-Gloria preferred.—S., Devonhurst, Somerville Gardens, Leigh-on-Sea. [8265

HOLROYD MOTORS

6, WARWICK ST., REGENT ST., LONDON, W.1.

Telephone: Regent 554.

London County and Export Agents for—

"NEW SCALE" (Blackburn)
"REX," "ACME,"
"MASSEY-ARRAN,"
"BRITISH RADIAL" (3-cyl.)
"EDMUND" (adjustable spring frame) and
"THE NEW COMET" MOTOR CYCLES.

EXTENDED PAYMENTS.

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expeditiously executed by experts at moderate charges.

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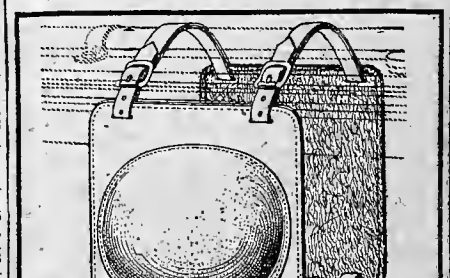
Electric (generating) Lighting Sets easily fitted to any Motor Cycle.

Full particulars on application.

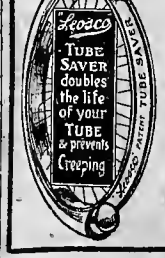


Motor Cycle KNEE GRIPS

500 Mile Trial at Brooklands.
The winner of the 350 c.c. class used "Leosco" Knee Grips.

Made of best English leather, the knee grip is well padded. Each knee grip is lined to prevent the enamel of the machine being damaged, and provides a sure grip to the rider.

Price 12/- per pair. Postage extra.



Leosco

PATENT TUBE SAVERS

Save 50% of your tube bills by protecting them from rusty rims. Write for interesting free booklet.

PRICES:

2, 2½, 2¾in. .. 5/6 each.

Please state size of tyre used when ordering, and name of your agent.

LEO SWAIN & Co., Ltd.
257-9, Deansgate, Manchester.

WANTED.

WANTED, second-hand Morgans, in good condition, not earlier 1920.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [8647

WANTED, P. and M. cylinders and gears, immediately; good price paid.—Inman Garage, Durham Rd., Seaforth, Liverpool. [6302

WANTED, leather flying coat, full length, lined or unlined, good condition; approval.—Romaine, 16, Rodney St., Liverpool. [X8602

WANTED, pulley-side half crank case, Peugeot-Fafnir twin 7h.p.; also magneto to fit, 45°.—Smith, Portobello, Walton-on-Naze. [7403

WANTED, N.S.U. gear, similar; exchange Mabon clutch, Rudge Multi back wheel; sell £2 each.—Collett, Waterstock, Oxon. [7711

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

WANTED, combination or solo.—Call, write, or 'phone, James, c/o Dentist, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [8060

WANTED, Ariel 6-7h.p., 1921, all-chain, second hand, without sidecar.—J.M., c/o Wincycle Co., Ltd., 236, High Holborn, W.C.1. [7341

WANTED, good solo, sports Zenith preferred; exchange 1920 Excelsior, Baby Triumph, and cash; evenings.—67, Fernlea Rd., Balham. [8261

CASH Waiting: solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0804

WANTED, good motor cycles and combinations for cash; also machines accepted for sale on commission.—Ratcliffe Bros., 200, Gt. Portland St., W. [0762

1920-21 Lightweights and Combinations wanted; also Triumphs; cash offer on sight.—Wellington Garage, Wellington Mews, Ledbury Rd., Bayswater, W. Park 3699. [7971

WANTED, A.V. or 4-wheeler, 6-10h.p., or one requiring overhaul or completion; solo 2-stroke part exchange if desired. See New Comet Calvert.—Potter, Henlow, Beds. [7503

WANTED, modern lightweights; cash on sight; good prices for right machine; also good combination.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [818

LATE Triumph, Sunbeam, or Norton, 3-speed, C. and K.S., Binks, W.D. T.T. bars, discs, copper exhaust, pillion, with 4½h.p. Bradbury and cash; stamp particulars.—59, Duthia Terrace, Aberdeen. [733

WANTED, carburetters, small or large quantities; also engines, gear boxes, frames, tanks, chains, lorry and car parts, damaged motor cycles, lorries, cars.—Grove, 18, Fore St., Edmonton, London. [806

W. T. DUNN, Ltd., 326, Euston Rd., N.W.1, require unlimited quantity modern solos, combinations, Morgans, light cars, etc.; top prices paid, cash on sight.—'Phone: Museum 5391, write, or call. [033

WANTED, motor cycles and combinations, any make, new or old, for cash.—Write, call, or 'phone, Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2623. [777

WANTED, new solo Scout, Indian, or 7-9h.p. Rudge in exchange for combination (1921 P. and M. bike) cost recently £155; willing to pay cash adjustment.—Write, Scout, 69, Church Rd., Hendon, N.W. [780

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares; purchased outright. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 105 Royal. [535

TRIUMPHS.—W. T. Dunn, Ltd., are special buyers of these machines, 1915 or later, single machines or quantities; spot cash on sight.—Write, 'phone, or call, W. T. Dunn, Ltd., 326, Euston Rd., N.W.1. 'Phone: Museum 5391. [068

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 48, 493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [031

WANTED, any good motor cycle or combination, part exchange for any make of light car or combination. Best possible price allowed.—Vivian Hart and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., London, W.1. Tel.: Mayfair 665. [071

F.O.C.H. pays highest prices for sound machines. Bring the 'bus along and take the cash away; exchanges arranged.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [76

EXCHANGE.

B.S.A., 1914, excellent condition, and £30 for rede Zenith.—Fison, Sudbury, Suffolk. [73

DOUGLAS, Auto-Wheel, B.S.A. bike, and cash f combination.—68, Burton Rd., S.W.9. [79

ENFIELD 2¾h.p. Twin, for 2-stroke, genuine Medley, 24, Coptfold Rd., Brentwood. [80

1920 Gamage-Villiers, 2-speed, 2¾h.p., and £20 f combination.—83, Danby St., Peckham. [75

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
Telegrams: "Motorcycle," Coventry.
Telephone: 10, Coventry (5 lines).

ADVERTISING AND PUBLISHING OFFICES: 20, Tudor St., London, E.C.4
Telegrams: "Cyclist, Fleet, London."
Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings, Navigation Street, Birmingham.
Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Modernisation.

NEVER before has there been brought to our notice such a number of examples of painstaking modernisation of old machines as during the last six months or so. This is understandable, especially in the case of those owners who possess pre-war mounts, bought at pre-war prices.

But does it pay? It depends upon the viewpoint to which the question refers. Financially, the answer must, all too often, be in the negative; actually and mentally, in the affirmative. For one's very own handiwork, however valueless in a monetary sense, retains a niche in the affections to which the newest and finest purchased article can never reach.

Modernisation of a motor cycle usually presents unforeseen difficulties undreamt of by those who have not attempted the task; but in the conquest of these problems—when and if accomplished—lies the real joy of the work.

Straining the Courtesy of the Road.

RETURNING recently to London from a holiday trip to North Wales, an acquaintance of ours was hailed by two apparently able-bodied and intelligent young men and asked if he would repair a puncture in the rear cover of their lightweight machine; they did not "know much about removing tyres." He complied with the request, but even now, our friend complains, he is not quite sure whether or not he was imposed upon.

This, we are afraid, is not an exceptionally uncommon occurrence on the road nowadays, when the motor cycle is adopted by so many who know little more than the effects of control lever movement. For the motor cycle has passed that stage when it was necessary to have a fairly extensive technical knowledge before venturing far afield. At the same time, punctures, broken belts, and the like are still a source of potential trouble to all; and we do not think it too much to ask that every rider should be equipped for, and capable of effecting, such minor repairs himself, without straining the unequalled fraternity of the road that at present exists between all good motor cyclists.

The Size of Number-plates.

AN anomalous position with regard to the registration and taxation of motor cycles has existed for some time, and occasionally the fact is brought home to some unwitting rider.

The regulations affecting taxation limit the weight of vehicles of the motor cycle type to 8 cwt.; this ruling came into force on January 1st this year, but so far as registration is concerned, a motor cycle is a vehicle which has less than four wheels and does not exceed 3 cwt.

It will be seen by the first regulation that a motor cycle is clearly defined as a vehicle which does not exceed 8 cwt., while the second regulation seems to be a direct contradiction. The authorities, however, take the view that this is not the case, but affirm that a concession has been made in the first regulation, but the second remains as it was when first introduced in 1903.

Since this is so, it is not surprising that the police are taking action against owners of three-wheeled vehicles which weigh more than 3 cwt. for using motor cycle instead of car size number plates, and this is certainly a matter which our motoring organisations might tackle; a wholesale insistence on the strict letter of the law would involve the owners of existing machines in expense and inconvenience, and seems absurd when one considers that light cars may be run under trade numbers of motor cycle size. These "concessions" are apparently impossible unless they involve a mass of inconsistency, which may easily put the average motor cyclist all unwittingly in the wrong.

An Index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

by "IXION"

In the lovely district of Brass Knocker Hill, near Bath. Scott riders in the Six Days Trials.

They Must Come.

THE spring frame is by no means as moribund as some authorities imagine. Here are a few side-lights which shone into the office last week, for example. One of our road staff was prevented by a series of misfortunes from accompanying the Six Days on two wheels, as is the rule. He got lifts on a variety of fully-sprung vehicles from the Scott Sociable upwards; and on his return he reported that he had only once previously completed a Six Days without an ache or a pain in his body, the other exception being a year in which he rode a spring frame. Another of our men encountered Mr. Draper (part designer of the W. and D. motor bicycle) at Brooklands, and found him very busy with a new spring frame, embodying shock absorbers. A third member of the staff struck a small workshop near Bath, where another new frame is under development; the last-named probably came nearer the ideal of sheer lateral rigidity than any previous sample, but, owing to limited funds, the inventor is at present confining his energies to conversion jobs.

The Challenger Self-sealing Tube.

FOR six months or so I have run a Challenger tube in the very thin rear cover of my baby two-stroke over very flinty roads, and the incidence of punctures has been reduced from one per week to none per month. Simultaneously a colleague on *The Autocar* staff has been testing a 710 × 90 mm. pattern in a rear wheel of his fast car, and has never had a tyre stop with the wheel in question, though the tread is down to the canvas. Two friends of mine fitted these tubes to their rear wheels for their annual Alpine tour, and for the first time in their experience returned home without having suffered one puncture in their back wheels. In previous summers they have usually mended a round dozen, for, as the Swiss trials showed, nails are far more prevalent on Continental roads than they are here. Sooner or later one generally strikes some snag in any anti-puncture tube, but I have yet to find a defect in the Challenger, and without committing myself to any rash optimism I intend to specify Challenger tubes on all my 'buses for the present.

A Brake Test.

ACCORDING to the poet, the heart of man is desperately wicked, and I begin to wonder whether we ought not to charter the Big Four from Scotland Yard to assist in running our big trials. A little bird tells me how certain cute spirits managed to emerge from the brake test in the Six Days with every credit. Their rear brakes were all right, but their front brakes were by no means calculated to hold a machine on the test-hill; and their callous employer refused to fit special brakes for the occasion. Ingenuity will always find a way. They adjusted their brakes to the "always on" position. They roughened up the shoes with a tyre rasp. They applied powdered resin in quantities. They chartered kind friends to assist them in the short push to the brow of the test-hill. After the test they restored their brakes to normal; and they wisely refrained from overmuch chaff of those unfortunates who had failed to secure full marks. As an ancient sage remarked, the children of this world are in their generation wiser than the children of light. Nevertheless, the children of this world are occasionally tripped up. One sportsman thought it wise to go through the trial with a fish tail on the tip of his long

Occasional Comments.—

exhaust pipe, and a whole chicken pen of wire netting stuffed into the bore; this was because he did not know Dr. Low by sight, and feared he might not spot him by the roadside in time to shut the throttle. He removed these obstructions prior to the speed test, but, as he drew an inside position at the start, an occupant of the timekeeper's box got ear ache, and vengeance descended.

Why Not Tyre Consumption?

THE A.C.U. turned a sympathetic eye on our riding costs this year when they went to the pains of measuring everybody's oil and fuel consumption through the Six Days. Their neglect of tyre costs is quite illogical. The average rider uses the following value of "consumable stores" in 3,000 miles:

Petrol	£4 10s.
Oil	£1 1s.
Tyres	£5 0s.

It follows that tyre wear interests the ordinary user at least as urgently as his fuel and oil costs. But in the big trials tyres serve the same purpose as the schoolboy's "Please, sir, it wasn't me." If your engine seizes, you wire Mr. Loughborough, "No. 999 retired at Puddleton with tyre trouble." If you are late at a control because your magneto fell off, you roll in with all your spare tubes swathed round your neck, and a few dabs of rubber solution smeared upon your person. Tyres excuse everything, and nobody expects a tyre to go through a Six Days without trouble, though a few of them do. This is all very well for a trade rider, who gets his tyres for nothing, and who must do all he can to endow his machine with a reputation like Mrs. Julius Cæsar—I have forgotten her name. [Calpurnia.—ED.] But if you are a village postman, daily conveying 2 cwt. of mail over twenty miles of rough road on a 3½ h.p. sidecar, and no back tyre will last you longer than 2,000 miles, why! you naturally wonder why the A.C.U. ignores tyre costs. The recording of tyre costs would materially add to the technical data obtained from the trial, and there would be no particular inducement to wangle tyre consumption figures on the part of the drivers.

Makes One Think.

THE usual fleet of cars accompanied the Six Days, ranging from the Dunlop Rolls-Royce down to the humble Chevrolet, which dyed itself with blue woad like the ancient Britons in its efforts to mark the course. To the best of my belief, none of these dozen odd cars were stayed on the road by a puncture. But most of the motor cyclists had punctures—some of them quite a lot. The tiny O.K. sidecarette used two covers, and most of the entry found it judicious to fit a new back tyre for the speed test after a paltry 700 miles on good and easy roads. The moral is obvious. Cars are not undertyred. Their covers are stout enough to defy the insinuating nail and the lacerating flint. But the average motor cycle cover is as vulnerable as my chin would be if I stood up to Georges Carpentier for ten seconds. Obvious remedy—much thicker covers. Obvious difficulty—loss of resilience and general riding discomfort. Obvious solution—the spring frame.

A CHARMING "SIX DAYS" SCENE.

A fine panorama for the top bend of Brass Knocker Hill, which was ascended by competitors on the fourth day. P. W. White (8 Sunbeam sidecar) making light of the hill.

The "6 DAYS"— DEDUCTIONS & IMPRESSIONS

Lessons to be Learned. An Opportunity that Half the Industry Neglected.

MUCH petrol will flow through our carburetters before the keen men have finished discussing the 1921 Six Days. When the village drunkard turns local preacher, no such transformation is recorded as Messrs. Loughborough, Low and Co. have undergone during the last twelve months. In 1920 they staged a regular machine-smasher of a trial. They compounded a prescription in which the Alps and the devastated Somme area were the principal ingredients. They stopped us all on Summer Lodge. They made us sport for gods and men up Park Rash. They caused the sturdy tykes to guffaw by washing out these failures and cutting Rosedale Abbey Bank out of the trial when the procession had nearly reached the foot of that super-gulley. Their final mood of 1920 was enduring, for it dictated the 1921 course, which consisted of four short joy-rides over flattish roads on Monday, Tuesday, Thursday, and Friday; a hilly tour on Wednesday, which might have been Waterloo for many if rain had fallen in sheets, but was actually less arduous than fifteen of my pleasure runs this season; and on Saturday they subjected the survivors to seventy-five miles of two-thirds throttle on Brooklands bumps. By a perfectly comic series of contretemps, many leading firms abstained, and so robbed themselves of the easiest gold medals which the A.C.U. ever awarded. And now discussion is hot and fierce as to what form the 1922 Six Days should assume.

The Pros.

Let us examine the merits of such a trial first. The machines were subjected to just the kind of test to which nine private owners out of ten put their mounts. There were no freak tasks. Nothing was exaggerated. The trial reproduced with considerable accuracy the riding conditions of private ownership—easy roads, short distances, moderate speed, and fair weather. Even the concluding speed burst on Brooklands was not excessive; in a year the average commercial machine does a greater distance at similar speeds, with an inexpert driver up, without special tuning, and often with a far greater load on board (*e.g.*, a pillion flapper, an extra passenger or passengers in the sidecar, a good weight of extra luggage, and over inferior surfaces).

The Propaganda Value.

Secondly, the machines were demonstrated to thousands of potential motor cyclists in the southern counties. They were displayed toying with tasks which are their routine work. The exhibition can have done no harm, and may have done lots of good. All the petty little local hills—mostly top and second gear climbs—were crowded with spectators. Some suppose that these spectators regard their local hills as terrors, and were vastly impressed by the easy climbing. Others hold that the public recognises the real calibre of these hills, and merely selected them as vantage points because nothing better was available. By contrast, the crowds at the 1920 hills consisted chiefly of people who were already motor cyclists, and who came to see acrobatics and obtain thrills; while such non-riders as were present were frightened, or shocked, or disgusted. 1920 was certainly bad propaganda; the quality of the 1921 propaganda is questionable—no sensible man found it impressive.

Thirdly, it is stated with great emphasis that 1921 was the first trial to show the heavy sidecar in its true colours. In most Six Days events, Saturday reveals a shattered battalion in this class. Many of the entries have fallen by the way; and those who survive are alleged to be lashed together with copper wire. This year twenty-three big sidecar outfits

EASY GOING IN THE SIX DAYS.

(Top) F. S. Spouse (8 T.B.) followed by P. Cunningham (3½ P. & M. sidecar) in the village of Stockbridge. Both gained gold medals.

(Centre) W. A. Fell-Smith (8 Brough Superior sidecar) and F. J. Watson (5 Ariel sidecar) on the easy route of the first day's run. The latter gained a gold medal.

(Bottom) R. C. Winn (3½ Douglas) near Bidmore Hut.

were entered. One driver fell sick, another hit a lorry; and twenty-one arrived, intact and resplendent, at Brooklands. According to the enthusiast this is as it ought to be. The man who pays £200 or more for a big sidecar outfit does not bang it at Summer Lodge; he is not such a fool. He treats it as his wife treats her second-best teapot, *i.e.*, he keeps it clean, and uses it with discretion. The sidecar entries were handled after this fashion for the first time in 1921, and they triumphantly showed what they could do; previous trials have only shown what they could not do, and what nobody outside the A.C.U. Competitions Committee ever wanted them to do.

Finally, it is urged, the ordinary buyer spends a lot of hard-earned cash on oil and petrol. Manufacturers are proverbially callous about these two items of expenditure. Therefore the A.C.U. displayed genuine sympathy with the common man in devoting enormous pains to registering the fuel and oil consumption.

The Cons.

Now let us look at the other side of the medal. The biggest blunder behind the outcry against goat tracks in 1920 and behind the novelties of the 1921 policy is that the A.C.U. has suddenly become parochial. It has forgotten the British Empire. What possible value has last week's event to a buyer who resides in Australia or South Africa or Canada? Of course, if we despair of ever supplying our sons abroad with motor

The Six Days Deductions and Impressions.—

cycles designed and built "at home," this criticism falls to the ground. But if we still hope to capture the overseas trade, we must develop motor cycles suitable for overseas conditions; and gentle ambles along the Portsmouth Road and similar highways will never do that.

Too Easy.

Secondly, the 1921 trial fails in its main purpose, which is to separate the sheep from the goats. The allotted task was so easy that almost any old 'bus could, and should, have earned a gold medal.

Most of the arguments put forward in praise of an easy trial are boomerangs, and return to wound the thrower. Grant that the trials reproduced ordinary riding conditions; but was the machine an ordinary machine, and was the rider an ordinary rider? You are dealing with picked riders and specially "readied" machines; you can only cancel these special factors by imposing a stiff task. Propaganda work? You do not demonstrate a razor by sharpening pencils with it. It is an insult to the modern motor cycle to pretend that Monday, Tuesday, Thursday, and Saturday tested its capacity in any real sense.

Perhaps the less said about the consumption tests the better. The idea was sound to the core. Very few roadster machines do a hundred miles on a gallon of petrol; very few do 2,000 miles on a gallon of oil. Both these figures might be standard. The A.C.U. desires to make them so. Let us back it up. But there were too many loopholes for camouflage this year. The officials took an infinity of pains, and subjected the competitors to a lot of fiddling replenishment business; but the resulting data are—I am sorry to say it—of no particular value. The first discount must be made for special tuning; some firms went so far as to jettison their intended carburetters in the interests of low consumption. The second discount must be made for riding methods. We all know how experts ride in a consumption trial; many men rode in that fashion over long patches of the road routes—they free-wheeled down grades at speed, and did not restart their engines until the machines were wobbling ready to fall over. The third discount must be made on the score of insufficient safeguards. Some of the sealing was futile. The seals could be pulled off and replaced after a secret replenishment. In other cases the stoppers could be opened without disturbing the seals at all. On quite a number of machines it was possible to introduce fresh supplies by methods which the official imagination had never foreseen, and did not cope with. If no rider availed himself of any of these facilities, the case is not altered. We cannot trust these records, either in the mass or in detail. Untrustworthy records are of very limited value. I suggest that another year the consumption tests should be incorporated in the track test. A few experiments with stock machines would show that Brooklands speed in each class entails the same consumption as an ordinary road tour at, say, 25 m.p.h. average. Such a method would relieve the officials of much useless labour, free the riders from irritating delays and routine, and whatever results were obtained would be above suspicion.

It will be gathered from the foregoing analysis of facts and arguments that I regard the 1921 Trial as unpardonably easy, and hope that the 1922 event will consist of "six Wednesdays," and that the weather will be uniformly bad. I ought to add that I am very sorry for the A.C.U. This sounds rather like "Do not shoot the pianist, he is doing his best." But nobody is independent in this world, and the A.C.U. is not strong enough to dictate to the trade or even to the professional riders who compose the bulk of a Six Days entry. It can only derive strength from the general mass of motor cyclists, who are actually a somewhat silent and lethargic body. They leave their chosen delegates on the A.C.U. Committee to play a lone hand against powerful vested interests, and the Committee occasionally loses heart. It lost heart this year, and the fine weather was grossly unkind; if Wednesday had been the third of three wet days, instead of the umpteenth of umpteen fine days, the trial would not have been half so soft. Next year the pendulum will swing the other way. The trade are quite cute enough to see that an easy trial, which furnishes our best machines with no more credit than is earned by the Bugmobike, of which only three have ever been constructed, is of little use to anybody. Those obstreperous trade influences which smoothed down the 1921 event will be clamouring for something stiff, yet sane, next year. Public opinion will push in the same direction. The A.C.U. learnt in 1920 that it must not overdo the "colonial" stunt. After its 1921 experience, it will not be likely to underdo it.

Overwhelming Entries Not Desirable.

Taking the policy for granted, the administration of the Trial reflects great credit upon the officials. The event is an enormous business, and its cost runs into thousands of pounds. The only obvious blunders were the inefficiency of the tank sealing and the holding of the brake test on the first day instead of the last. For the rest, everything was beautifully organised. The next time tanks have to be sealed, the staff will be very wide awake; and it was admittedly difficult to squeeze the brake test into a very busy Saturday. Accommodation presented great problems, and some of the men grumbled at having to share beds with strangers in houses which were little more than cottages and situated considerable distances from the official garage. Under the circumstances it is well that the expected entry of 150 did not materialise, owing to the trade opposition.

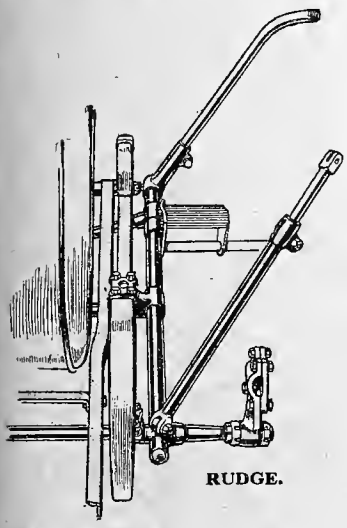
If oil and petrol costs are to enter into a trial, is it logical to ignore tyres, which probably cost the average rider quite as much as his petrol? Any penalisation of tyre repairs and replacements would have instant results. It would induce manufacturers to try out the various puncture-preventives and nail-catchers, as well as to adopt thicker covers, which in turn might lead to better springing of forks and frames.

It is questionable whether the system of having two fixed checks per day (lunch and night stops), and not more than two movable or surprise checks (one in the morning and one in the afternoon), is as effective as the old system of having a timing station at least every twenty miles. The new system gives a rider who meets trouble a better chance of dodging all penalties.

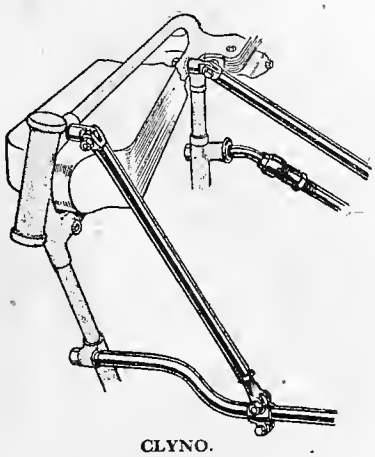
B.H.D.

SIDECAR ATTACHMENTS.

Deductions, Criticisms, and Suggestions drawn from a Review of Current Methods of Securing Sidecar Chassis to Motor Cycles.



RUDGE.



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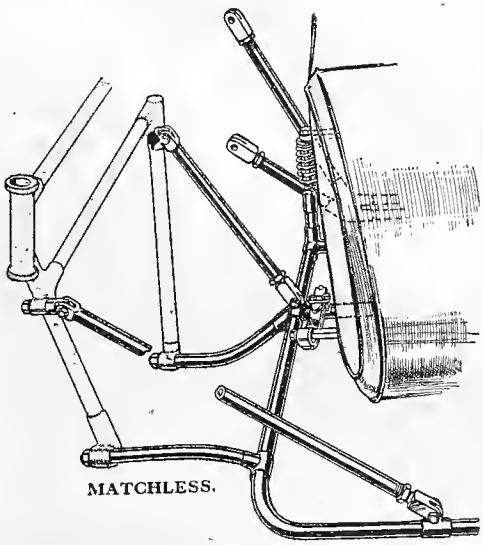
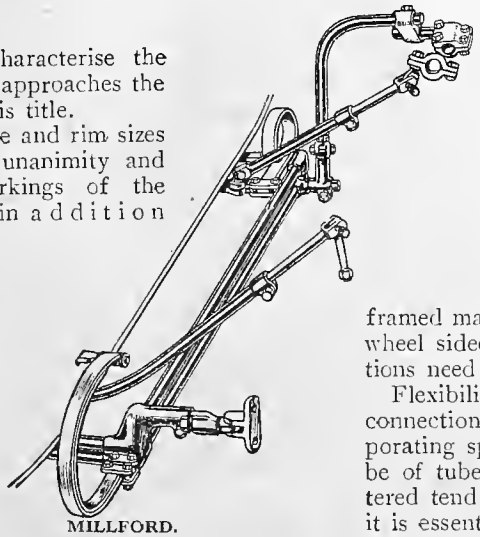


MATCHLESS.

FEAR and trembling characterise the attitude in which one approaches the subject specified in this title.

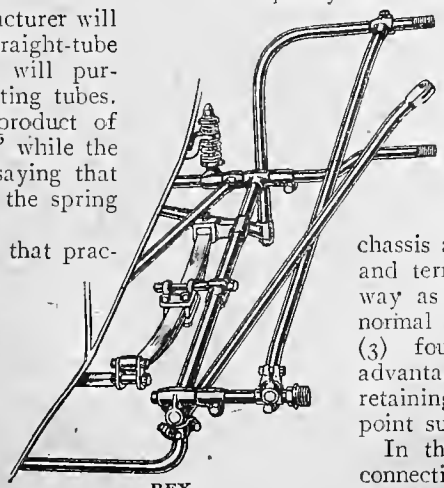
Only in the matter of tyre and rim sizes is there so much lack of unanimity and demonstration of the workings of the illogical mind; and when, in addition to this, we run up against flagrant negations of accepted mechanical practice, the pen is taken up in the spiritless fashion of one who knows the meaning of the phrase regarding the stepping in of fools where the angels fear to tread.



MILLFORD.

Throughout the whole of the sidecar trade there seems to be an entire lack of any definite tendency; one manufacturer will adopt a more or less "ideal" straight-tube triangulated system, while another will purposely bend every one of his connecting tubes. The former looks askance at the product of the latter, dubbing it "unscientific," while the latter justifies his curved tubes by saying that they eliminate breakages, thanks to the spring and "whip" which they permit.

It is just on such everyday points that practice and theory often part company; there are many sidecars connected to machines by what, to the mechanical mind, are masses of contorted tubing applied in an unthinking manner; yet, strange to say, some of these are amongst the most successful on the road, and give a minimum of trouble, and are the cause of no serious frame breakages.



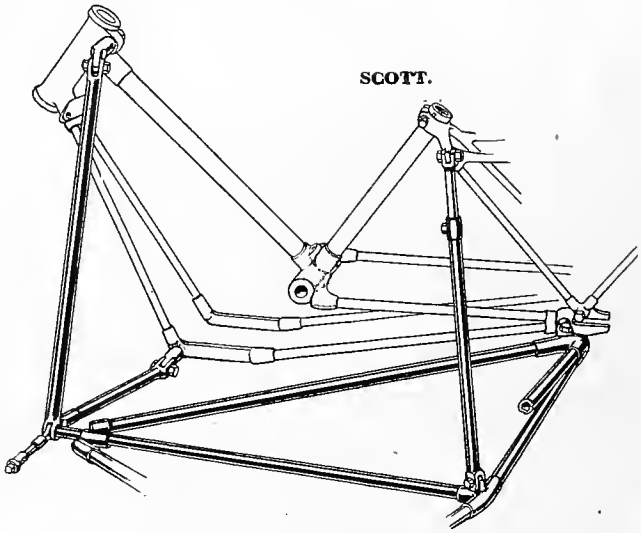
REX.

On the other hand, a rigid chassis, rigidly applied to the machine, may cause frame breakages in the latter, even though the chassis itself may remain in perfect order, and it seems, therefore, that the ideal is reached, so far as rigid-framed machines are concerned, if a certain amount of flexibility is permitted between the cycle frame and the sidecar chassis. Where spring-framed machines are used, however, or where a spring wheel sidecar is fitted on a rigid machine, the connections need to be stiff and strong.

Flexibility may be obtained in a variety of ways; the connections themselves may be of some form incorporating springs, buffers or hinge joints, or they may be of tubes so curved that the usual stresses encountered tend to increase the curvature. In such a case it is essential that the tubing used be of the very best quality with a higher elastic limit than is usually used in frame construction. A further help to the securing of a desirable amount of flexibility is the use of three connections only, thus avoiding torsional stresses on the sidecar chassis and cycle frame as far as possible; where a fourth point of attachment is introduced it should spring from the same point on the chassis as the connection which it supplements and terminate on the cycle frame in such a way as to form a triangle composed of (1) normal attachment; (2) cycle frame tube; and (3) fourth attachment; thus gaining the advantage of "four-point attachment" while retaining the flexibility derived from a three-point support.

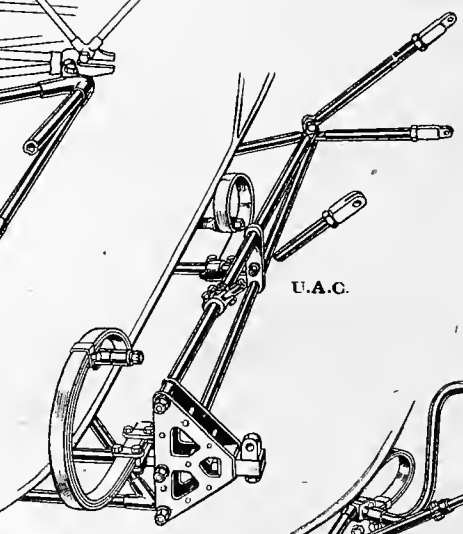
In the matter of diagonal stays (*i.e.*, the connections which pass from sidecar axle to the upper part of cycle frame, locating the

Sidecar Attachments—



SCOTT.

latter in the vertical position) the ideal of a straight tube from the sidecar stub axle to the motor cycle seat post is seldom attained; indeed, actual practice has not shown it to be necessary and dropped axles and underslung bodies make it virtually impossible. Some designers have made efforts to keep as near the ideal as they can by carrying the diagonal stay in a long sweep from axle to seat lug—a deplorable waste of good tubing, since the stay can bend and will probably take a permanent set, resulting in the cycle leaning in. A much better job is made by taking a straight seat post stay from the axle, at a point as near to the body as possible. In this construction the axle tube, or cross member of the chassis (usually duplicated) becomes a beam possessing the characteristics of a cantilever, the loaded and supported ends of which are constantly changing places (except when travelling in a straight line on a practically uncambered road); in conjunction with the axle tube, the diagonal member forms an assembly having no tendency to permanent distortion, while, if the actual construction of the axle portion is of the correct design and material, an inherent flexibility in this portion of the chassis will be by no means an undesirable feature.



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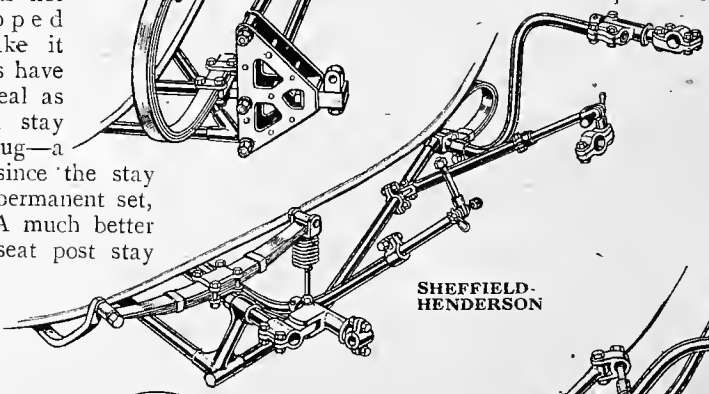
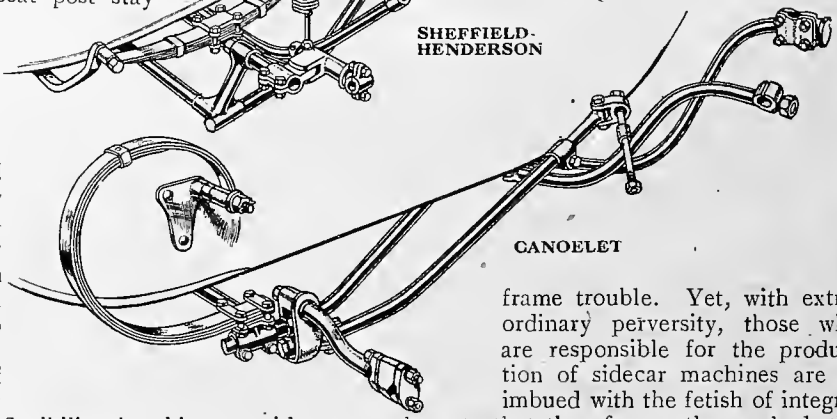


SHEFFIELD-HENDERSON



CANOELET

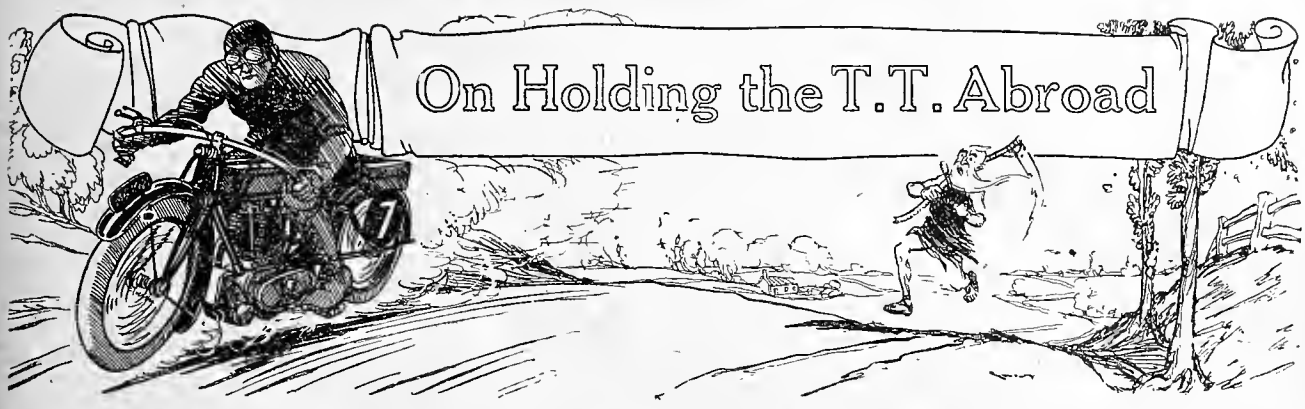
One other detail may be criticised in the light of long experience with all types of sidecars; in many cases considerable pains have been taken to secure a certain amount of flexibility in the couplings, and yet the joint between sidecar axle and cycle fork-end is quite incapable of movement in a vertical plane. Examination of most sidecars will show a slight tendency to movement at this point and a perfectly rigid (vertically) connection here is not wanted; its presence may result in the breakage of the fork-end or chain stay. Where joints of the usual yoke and spigot variety are employed the jaws of the yoke should be arranged to take the spigot vertically and, preferably, should not be locked tightly with the yoke-end bolt. Chain - stay attachments clipped (not too tightly) to a round section tube are infinitely preferable to a rigid connection brazed or screwed horizontally into the cycle fork-end, for the latter is a potential source of frame trouble. Yet, with extraordinary perversity, those who are responsible for the production of sidecar machines are so imbued with the fetish of integral sidecar attachments that they frequently overlook the stresses involved and the most suitable method of mitigating their ill-effect.

WHARFEDALE.

AN EMPIRE, NOT AN ISLAND.

ONE of our contributors criticises the 1921 Six Days on the ground that it was too easy to develop a machine suitable for overseas work. In this connection, a letter just to hand from a tea-planter in India is to the point. He rides a 1913 Douglas, and, during the rains, he has to lay it up altogether. In the fine weather, his daily going is of the Park Rash type, for there is not a made road within thirty miles of his place. A legal limit average is his ideal rather than his attainment, for mud-holes—dry or wet—compel him to dismount quite frequently; and every few hundred yards there is a bridge composed of a bamboo mat laid across poles; the poles settle, the matting sags, and, if the bridge does not go west altogether, the surface resembles a hammock. He is of the opinion that he could come home and earn a gold medal at the first essay in any freak trial over British roads.

IXION.



More Opinions on the Withdrawal of our Classic Races from their Time-honoured Course in the Isle of Man.

NOT only here, in the Isle of Man, and in Belgium is the A.C.U. decision to hold the 1922 T.T. Races at Spa arousing comment. In France, for instance, some followers of the sport ask why that country was not selected, and the opinion of the editor of *Mécano*, one of our French contemporaries, is worthy of comment. To him it is naturally a matter of sincere regret that, after the Auto Cycle Union had decided to abandon the Isle of Man, they did not at once turn to France, which is as accessible as, if not more so than, Belgium, and he gives a good reason as to why they did not do so, namely, that the Belgians were the first to offer their country for the race, and that is why it was chosen. Probably he is right, but he goes on to say: "It is perhaps a feeling of systematic disparagement which had caused preference to be given to Belgium. There has recently been a great tendency for Englishmen to run down French motor cycles and to consider them as bad imitations of their own. The exploits of French machines and the popularity they have enjoyed has proved the contrary to be the case, but people have none the less been only too happy on the other side of the Channel to blaze abroad the English victories at Le Mans and Francorchamps. If the T.T. were to be run in France next year, would it not create and foster competition which is already too keen and should be avoided at all costs? Yesterday it was only the tariffs protecting British industries; to-day there is as well the choice of a Belgian course, which oppose our interests and show the feelings the British cherish towards us. But what does it matter? We can succeed alone, even if they do not wish to bring a foreign event to our shores; and the task falls on the shoulders of the leaders of the French motor cycle industry of proving how much our trade is in a position to do."

Who Selected the New T.T. Course?

We hasten to assure our French critic that no such feelings exist in Great Britain towards the French motor cycle industry, and it is purely owing to the enterprise of the Belgian people that a course was chosen in that country.

The credit (if credit is due!) for the selection of the T.T. course in Belgium can be given entirely to one who has followed the races in the Isle of Man with close personal interest.

According to our Belgian contemporary, *La Motocyclette*, it appears that M. Paul Kelecom, chief designer at the F.N. factory, placed the matter before a recent committee meeting of the Fédération Motocycliste Belge, where it was received with enthusiasm, with the result that M. Kelecom at once communicated the decision of his colleagues to the Auto Cycle Union, and, on the arrival of Mr. Loughborough at Spa on the occasion of the Belgian Grand Prix, M. Kelecom was prepared with a blue print of the course and took him round it on the same afternoon that the race was held.

Below are given a selection from the many letters which we have received from readers; they have been chosen as typical of the various shades of opinion held on the subject.

Pros and Cons aptly put.

Sir,—On learning the decision of the A.C.U. to hold the T.T. races in Belgium, two main factors present themselves before us, viz.:

(a) Suitability of course.
(b) Money laid out and business accruing.

With regard to *(a)*, the Belgian course offers long straight stretches at a high speed. The I.O.M. course does not; but both courses offer sudden acceleration and braking tests. Also, because of the car races, the T.T., if held in the Island, would be at an awkward time. Therefore the Belgian course gains one point. As to accessibility, the Belgian course is undoubtedly more get-at-able to foreigners and Londoners, but for the Midlands and north-country people the Island is easier. Now, seeing that one north-country Britisher equals six foreigners of any nation, this point is halved.

(b.) In these times the amount of money spent out of the country is a strong factor to be taken into consideration. But it is a speculation, and a good one, because we will conquer the foreign markets, and probably bring into the country double the amount spent out. The Belgian course here gains another point.

If one adds up the points, the odds are in favour of Belgium, but there is an extra which also favours the Belgian course, and of which few people have thought. It would be possible to organise in Belgium, where it is impossible in the I.O.M., a big twin race that would give us the opportunity of bringing out the British 1,000 c.c. 'bus.

Nevertheless, in spite of all this, I am going to watch the car races in the I.O.M. next year. It costs less.

New Brighton. MERSEY.

A Well-considered Letter from the I.O.M.

Sir,—The arguments in favour of the change appear to be as follows:

(a) Advantage to the British export trade;
(b) International attention will be attracted;

On Holding the T.T. Abroad.—

(c) The bigger engine will have a chance to exert its speed and power; and

(d) Petty annoyances will be avoided.

I will deal with each of the points in turn.

At the present time three trials at least are held on the Continent which attract world-wide attention, namely, the French Grand Prix, the Belgian Grand Prix, and the International Six Days. One would think that the way to foster and encourage our export trade would be for the English manufacturers to compete in these events, show their worth, and the results will surely follow. The authorities who organise these races are killing "the goose that lays the golden eggs" by removing the venue from the British Isles, for they must bear in mind that they are taking it out of reach of the majority of the British public, and it is the British public to which both the A.C.U. and the trade owe their existence.

The point of International attention I view as mere camouflage, as the races, as held last year and for many previous years, were a topic of universal discussion. When our foreign rivals feel that they can place on the market a machine of the same standard of efficiency as many of the British machines they will give attention to the T.T. held in the British Isles.

Let us now go into the facts relating to the engines. Mr. C. Williams informs us that it is possible to ride the I.O.M. course at 60 m.p.h. The 2¾ h.p. A.J.S. average speed in the last T.T. was 54.49 m.p.h., whilst the average speed of the 3½ h.p. Norton on the Belgian course was 56.91 m.p.h.—precisely 2.42 m.p.h. faster. So we see that the argument as to the greater speed falls to the ground, as the new course, with perhaps only three acute bends, in comparison with the I.O.M. course with its numerous corners and mountain climb, only allows an increase of speed of 2.42 m.p.h. over that attained by the machine with the smaller engine in the I.O.M.

I do not propose to go into the matter of annoyances, as I understand they are being, or will be, dealt with elsewhere in your columns.

T.T. stands for Tourist Trophy, and one would think that the A.C.U., in organising and promoting these races, was endeavouring to produce a machine suitable for the man in the street. The motor cyclist of England to-day not only wants speed, but also reliability. He must have confidence in his gears, transmission, brakes, and frame, and no hill must deter him. To evolve a machine with these qualities it must have a thorough test, and it is only a course similar to that found in the Isle of Man that can provide it. As one of your correspondents observes, "there is no comparison between the courses."

It is to be hoped that when the matter comes before the General Committee of the A.C.U. it will be fully discussed, and the real reasons discovered for this astonishing decision, and published to the members of the A.C.U. and the motoring public, so that they can consider them.

I would urge strongly every motor cycle club in the British Isles to oppose Britain's only road race being removed to a foreign country.

Being a resident in the I.O.M., I have endeavoured to omit reference to the undoubted advantages accruing to the Island, and have only dealt with the subject as a motor cyclist. J. H. L. COWIN.

Taking it as a Holiday.

Sir,—The 1921 T.T. was the first I had ever witnessed, and I am more than enthusiastic about it; so much so, in fact, that I do not intend to miss another if I can help it. You see, therefore, that I am sufficiently keen and interested to make a special journey to see it.

Speaking entirely from my own (rather selfish) point of view, then, I have a fortnight's holiday each year, and in future shall reckon to spend it, or most of it, at the T.T. races. Consequently, I see hardly any other part of the country (metaphorically speaking, of course) except the route to and from the Isle of Man. In 1922, with luck, I am going either to Harwich or to one of the South Coast ports, then across Belgium to Spa—quite a nice little trip—and see the T.T. at the end of it.

On the other hand, if I take my bicycle across, I gather I have to keep to the "wrong" side of the road, obtain passports, pass the Customs officials, etc. But what about the Isle of Man? By the time I had filled in my form (name, number, rank, religion, etc.), paid my 10s., and got the licence stuck in my holder, I was about fed up with it.

Still, the very letters I.O.M. seem to stand for motor cycle racing, and although I only toured round the course on a 2¾ h.p. Douglas, it struck me as being absolutely magnificent (though I certainly thought the surface of the road was too loose in many parts).

Will the Belgian course be like this, only including more fast straight stretches if possible? If so, I am all for it. If *not*, the T.T. will be ruined—I mean it will become the Manx mountain course without Ballig Bridge, Ramsey hairpin, the "Gooseneck," and Hillberry Corner—positively unthinkable.

To finish, I am looking forward more than ever to the 1922 Tourist Trophy races, and shall be more than contented to journey anywhere to see them so long as the course resembles the Isle of Man. DOUGLAS.

King's Lynn.

Private Owners' Race Wanted.

Sir,—As a private owner and visitor to the Isle of Man T.T. races, may I suggest that if Belgium is the site of the 1922 T.T., why not have a secondary edition for the Island—a sporting gallop for private owners? OGWIN LEWIS.

A Common View in the North.

Sir,—From the reports you have published about the new course, it looks as though it will be faster and safer than the Isle of Man, but I do not think the machines will have to undergo the severe braking strains and violent acceleration as the Isle of Man course demands.

Regarding your remarks about easy to reach the new course, I think it is hard for the North of England man. With the T.T. held in the Isle of Man it is possible to go over Monday midnight, see the Junior race, and back again to the mainland Tuesday midnight, and doing a similar journey for the Senior race. If the races are held in Belgium it will mean a week away from business for ten hours racing.

I should favour the Belgian venue on account of the people, for, during the 1920 and 1921 races I ran up against lots of incivility, and also irritating ways such as paying 1s. to cross a field during the race and £5 for a taxi to Craig-na-Baa to see one race. It is this sort of thing that keeps people away from an event. As regards the cost of taking a machine over to the Island, well—once bitten, twice shy.

W. BANCROFT,
Hon. Sec. Accrington and District M.C.C.

Big Twins, Past Records, and Date Discussed.

Sir,—As an interested private owner and possible competitor in the 1922 T.T., I should like to give my opinion on the proposed change to a Belgian course.

We saw this year that the 500 c.c. machine has little or no advantage over the 350 c.c. on the Isle of Man course, while the 1,000 c.c. gets no chance at all.

Apparently, on the Belgian course, the extra power of the 500 c.c. can show its worth, and perhaps it would be possible to let George Brough give the Americans a run for their money in 80 m.p.h. laps.

I have never seen the Belgian course, but I gather it is far from flat and tests the brakes, etc., almost as much as the I.O.M., while the higher speeds obtained will surely put a greater test on reliability than ever.

With regard to the money taken out of England, the matter lies entirely in England's hands, and when it brings the motor laws up to date the A.C.U. will find a course on the mainland of Britain.

In accessibility the two courses are about the same, the passport trouble counteracting better steamer services, etc.

Once on the Continent, however, the courtesy of the police and officials will be a revelation to those who usually take their machines to the Isle of Man, and the Continent gives unlimited scope to the tourist, whereas the Island can be explored in a day or so.

The disadvantage, to my mind, is that all the Isle of Man records are wasted, and it will be a few years before the public realise that a lap of the new course at x or y m.p.h. is equivalent to one in the Isle of Man at 60 m.p.h. or 40 m.p.h.

Lastly, why must the race be run at the end of June? This is just when the University year is ending and the important examinations are on. All students are prevented from competing, and probably from seeing the race.

Fife. UNIVERSITY.

The Anglo-Dutch Trial.

Constitution of the British Team and Details of the Visitors' Programme in England.

As stated in our last issue, the programme for the entertainment of the visitors from Holland, who are coming over in connection with the Anglo-Dutch Trial on September 26th, is complete.

On Saturday, September 24th, the Dutch team will be met at Harwich and entertained to breakfast by the Essex M.C. They will then ride to Leamington, being escorted by club of the Eastern Centre, A.C.U. At Towcester the party will meet representatives of the Midland Centre, who will then act as guides. A dinner in the evening, in the Town Hall, Leamington, will be given by the Midland Centre.

A Full Programme.

The next day will be occupied in a visit to Stratford-on-Avon and a run to Worcester, where entertainment will be provided by the Western Centre.

At eight o'clock on Monday morning the trial from Worcester to Brooklands takes place over a secret route, lunch being taken at Reading. The trial concludes with a speed test on Brooklands.

The British team will consist of the following:

CLASS I.—350 c.c

PRIVATE OWNERS:
- D. A. Atkin (2¼ Hobart).
- E. A. Edwards (2¾ Douglas).
- O. Hayes (2¾ A.J.S.).

TRADE:
- K. Don (2¾ A.J.S.).
- W. B. Gibb (2¾ Douglas).
- H. Gibson (2¾ Raleigh).

RESERVES:
- A. G. Wall (2¼ Cedos).
- A. N. Other (——).
- H. R. Davies (2¾ A.J.S.).
- B. Kershaw (2¼ New Imperial).

CLASS II.—500 c.c.

PRIVATE OWNERS:
- F. Dover (3½ Triumph).
- F. A. Hardy (3½ Zenith-Bradshaw).
- G. Smith (3½ Sunbeam).

TRADE:
- F. A. Applebee (3¼ Scott Squirrel).
- J. Moffat (3½ Douglas).
- L. Newey (3½ Ariel).

RESERVES:
- R. A. Green (3½ Norton).
- J. Whalley (3½ Sunbeam).
- G. Dance (3½ Sunbeam).
- L. L. Sealey (3½ B.S.A.).

CLASS III.—1,000 c.c. Sidecars.

PRIVATE OWNERS:
- R. Charlesworth (8 Zenith sc.).
- J. A. Newman (7 A.J.S. sc.).
- G. Nott (8 Matchless sc.).

TRADE:
- H. Boynton (4 James sc.).
- W. Pratt (8 Matchless sc.).
- E. B. Ware (8 Matchless sc.).

RESERVES:
- F. S. Ellis (8 Matchless sc.).
- W. A. Fell-Smith (8 Brough Superior sc.).
- F. Crosthwaite (3½ Duzmo sc.).
- S. Wright (4½ Humber sc.).

Unfortunately, the constitution of the Dutch team cannot yet be announced, as, owing to the difficulty of finding sufficient riders of 350 c.c. and 500 c.c. solo machines (big twins being the favourite mounts in Holland), the rules have had to be revised. The Dutch team will, therefore, be classified as last year, *i.e.*, six machines under 350 c.c., and the remaining twelve of any capacity. The sub-classes of private and trade riders in the Dutch team have also been eliminated, but only genuine private owners will be eligible for the special prizes.

Routes.

The route to be followed by the Dutch competitors from Harwich is as follows: Harwich, Colchester, Bishop's Stortford, Hertford, St. Albans, Dunstable, Fenny Stratford, Towcester, Daventry, Southam, and Leamington.

On the Sunday the route will be: Leamington, Warwick, Stratford, Alcester, Dunnington, Spetchley, and Worcester.

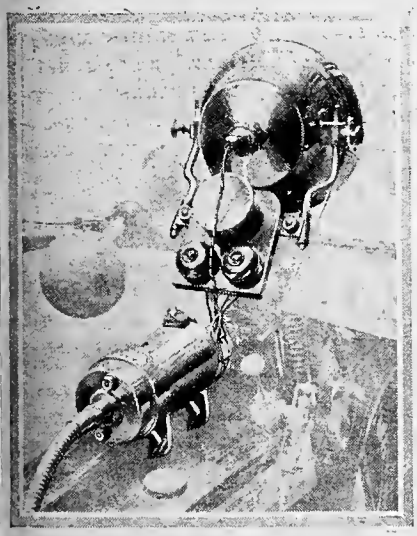
After the trial on Monday (the 26th), the competitors will become the guests of the A.C.U. and the Surbiton M.C.C., a dinner being given at Thames Ditton.

On Tuesday the Dutch team returns from the last-mentioned place, *via* Kingston, Clapham, Kennington, Tottenham, Woodford, Ongar, Chelmsford, Colchester, and Manningtree to Harwich. They will visit the J.A.P. works at Tottenham, and will be entertained to lunch at Chingford by Messrs. J. A. Prestwich, Ltd.

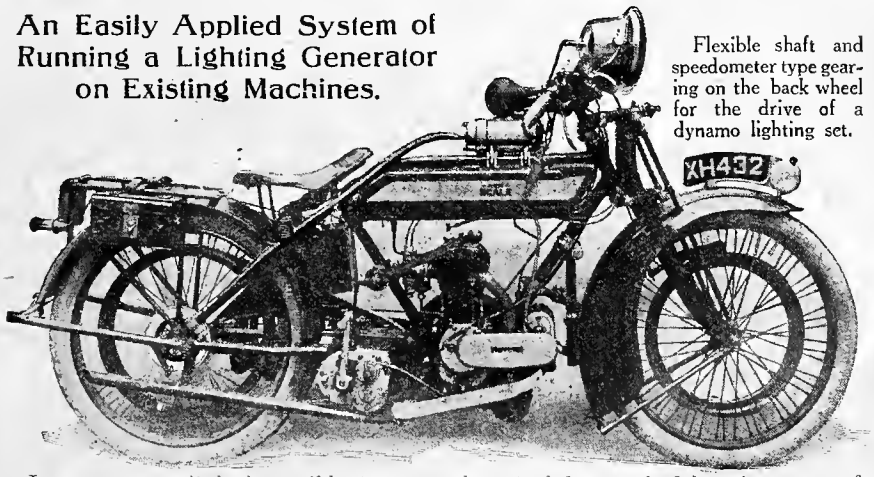
Dynamo Driving from the Road Wheel.

An Easily Applied System of Running a Lighting Generator on Existing Machines.

A DIFFICULTY often experienced in equipping machines with dynamo lighting is the arrangement of a suitable drive to the generator, if such a fitting has not already been provided for in the original layout by the designer of the power unit.



Top tube mounting of the rear wheel-driven Wattalite dynamo; switch gear and charging ammeter are mounted on the handle-bars.



Flexible shaft and speedometer type gearing on the back wheel for the drive of a dynamo lighting set.

In many cases it is impossible to attach a driving pulley or sprocket to any exposed rotating member of engine or transmission units, since all is completely enclosed; and to meet this difficulty the Wattalite dynamo and transmission, by means of flexible shaft and gearing from the back wheel, has been evolved, and it appears to be quite practical.

A gear wheel is attached to the spokes of the rear wheel, while the pinion on the flexible shaft is attached to the offside rear fork of the machine. The wheels are enclosed, so that the drive is adequately protected from mud and grit, and the actual dynamo is driven by means of a speedometer pattern cable having an ample margin of strength. The generator, which is designed to give an output of 16 watts (4 volts 4 amps.), is situated on the top tube.

A switchboard can be fitted to the handle-bar, to the top of the tank, or on the connecting bar between the motor cycle and sidecar, when the latter is fitted.

The Wattalite generator is made by Messrs. Watts, Williams, and Co., Ltd., Leysfield Road Works, Shepherd's Bush, London, W.12.

Scarborough and District M.C.

Speed trials will be held on the Albert Drive on the 24th inst., for which prizes to the value of £100 will be awarded.

Bristol M.C.C.

Starting at midnight to-morrow, the club is holding a twenty-four-hour trial in Wales for the Hutchinson Cup.

Northants M.C. and L.C.C.

This club is holding its annual speed trials in Castle Ashby Park on the 22nd inst. Ten classes are included, starting from 275 c.c. solo to unlimited cars. Entrance fee for each class is 5s., which should be sent to Mr. J. E. Capell, 8, St. George's Avenue, Northampton, not later than Monday next.

Levis Athletic Club (Motor Section).

Regulations and entry forms for the "single gear" trial for the Yardley Cup, to be held on the 24th inst., are now available from the secretary, Mr. W. S. Banner, Levis Works, Stechford, Birmingham. Honorary membership of the club costs 4s., and, as already stated in *The Motor Cycle*, the event is open to any make of direct belt drive machine (variable pulleys must be sealed in one position).

Worcester and District M.C.C.

There will be special classes for purely private owners at the closed hill-climb to be held on the 24th inst., the entrant with a standard machine having every chance to win an award.

Falmouth and District M.C. and L.C.C.

The first hill-climbing test under the auspices of the above organisation was held on Monday of last week. A large number of the general public were present, and keen interest was manifested. The fastest time was achieved by N. J. Easom, riding a 7-9 h.p. Indian, who accomplished his second attempt in 25s. The following are the results:

CLASS 1 (not exceeding 300 c.c.).—1, G. Blight (2¼ O.K.), 49⅘s.; 2, W. G. Easom (2¼ Baby Triumph), 51s.; 3, A. F. McLeod (2½ Sun), 53s.; 4, J. M. Pearce (2½ Bown-Villiers), 53⅘s.; 5, W. Pascoe (2½ Bown-Villiers), 64⅘s.; 6, C. Rooke (2½ Alldays), failed.

CLASS 2 (not exceeding 500 c.c.).—1, E. H. Buckingham (3½ Triumph), 31⅘s.; 2 (dead heat), D. J. Colvin (3½ N.U.T.) and A. J. Ferris (3½ Zenith), 32s.; 3, M. Row (3½ Lea-Francis), 42s.; 4, A. McLeod (3½ Humber), 55s.

CLASS 3 (not exceeding 600 c.c.).—1, H. W. Jane (4 Triumph), 29⅘s.; 2, S. Laity (4 Triumph), 32⅘s.; 3, R. S. Easom (4 Triumph), 33s.; 4, J. S. Kneebone (5 Peugeot), 34s.

CLASS 4 (unlimited solos).—1, N. J. Easom (7-9 Indian), 28s.; 2, F. H. Young (6 Rover), 29⅘s.; L. Peterson (10 Henderson), failed.

UNLIMITED SIDECARS.—1, N. J. Easom (7-9 Indian), 34⅘s.; 2, G. Hamer Hunt (7 Matchless), 36s.; 3, H. Fernan (4¼ James), 47⅘s.

Glasgow M.C.C.

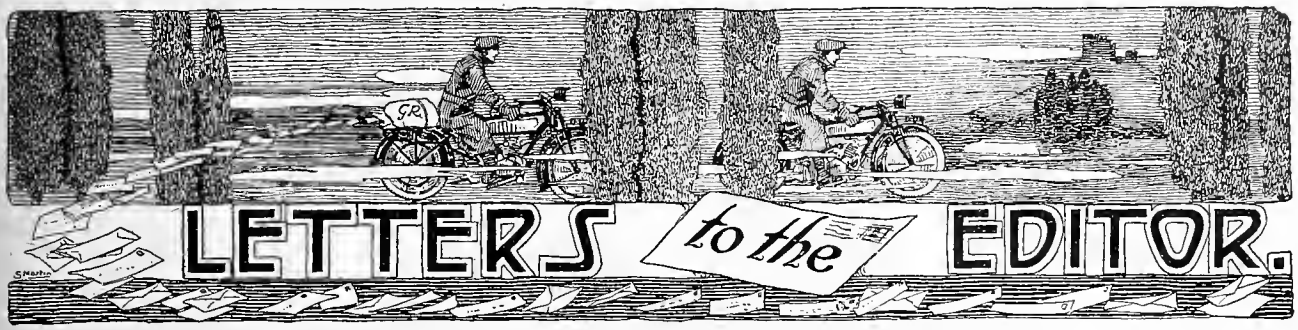
This Scottish club held a successful non-stop reliability trial on Saturday, the 3rd inst., the course being through Lennoxtown, Fintry, Killearn, Blanefield, Cuilt Brae, and Kyber Pass, this thirty-three miles circuit being covered three times to a schedule of 20 m.p.h. The course proved an excellent test, the long ascent after Lennoxtown, the stiff climb of Cuilt Brae, and the bends of the Kyber Pass providing material for many failures. There were twenty-three entries, twenty-one starters, and fourteen finishers. The gold medal winners were as follows:

R. S. Brown (2½ Clyno), H. Goodwin (4 Triumph), D. B. Calder (2¼ New Imperial), R. D. Robertson (8 Matchless sc.), G. Elliott (8 New Imperial sc.), G. C. Proctor (5-6 Ariel sc.), J. C. McFadyen (8 Sunbeam sc.), B. Gold (8 Blackburne sc.), and J. W. Morton (3½ Rover).

Week-end Club Events.

Sept. 15.—Canterbury and District M.C.C. Hill-climb.
Sept. 16-17.—Bristol M.C.C. Twenty-four Hour Welsh Trial.
Sept. 17.—North London M.C.C. Inter-club Rally at Hendon.
Sept. 17.—Ulster M.C.C. Championship of Ulster Race Meeting at Magillan.
Sept. 17.—Taunton and District M.C. and L.C.C. Run to Weston.
Sept. 17.—Bridgwater and District M.C. and L.C.C. Hill-climb on Puriton Hill.
Sept. 17.—Harrogate and District M.C. Team Trials.
Sept. 17.—Wolverhampton M.C.C. Evening Trial.
Sept. 17.—Dewsbury and District M.C.C. Petrol Consumption Test.
Sept. 17.—B.M.C.R.C. Sixth Members' Meeting at Brooklands.
Sept. 17-18.—Northern M.C. Week-end Run to Whitby.
Sept. 17-19.—Edinburgh and District M.C.C. Two-day Open Trial.
Sept. 18.—Ilkley M.C. and L.C.C. Social Run and Gymkhana.
Sept. 18.—Leeds and District M.C. Reliability Trial for the Kirk Rose Bowl, etc.
Sept. 18.—Manchester M.C. Speed Trials.
Sept. 18.—Barrow and District M.C. Hill-climb.
Sept. 18.—Coventry Triangle M.C. Circular Run.
Sept. 18.—Doncaster and District M.C.C. Run to Castle Howard and Kirkham Abbey.
Sept. 18.—Bury and District M.C. Competition.
Sept. 18.—Leeds M.U. Run to Ripon.
Sept. 18.—Sheffield M.C.C. Social Run.
Sept. 18.—Burton and District M.C.C. Run to Woodhouse Eaves.
Sept. 18.—Newcastle and District M.C. Flexibility Hill-climb.
Sept. 18.—Brighton and Hove M.C.C. Gymkhana.
Sept. 18.—Eastbourne and District M.C.C. Harold Day and Kett Competition.
Sept. 18.—Halifax and District M.C.C. Run to Arncliffe.
Sept. 18.—Worcester and District M.C.C. Run to Birdlip Hotel.
Sept. 18.—Rochester, Chatham, and District M.C. and L.C.C. Mart Cup Trial.
Sept. 18.—Central London M.C.C. Reconnaissance Run for Paperchase.
Sept. 18.—Wakefield and District M.C.C. Run to Stynes.
Sept. 18.—Liverpool M.C. Closing Picnic at Delamere Forest.
Sept. 18.—Woolwich, Plumstead, and District M.C. Run to Westcliff.
Sept. 21.—Sutton Coldfield and N. Birmingham A.C. Hill-climb.
Sept. 22.—North Wales M.C.C. Hill-climb.

SUCCESSFUL LIGHTWEIGHTS Among the several amendments in the awards of the Six Days Trials is that of the New Imperial Team, which has now been given the team prize in Class A. The riders—B. Kershaw, D. Prentice, and L. Horton—are shown above with their machines.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

MORE EXTENDED PAYMENTS REQUESTED.

Sir,—Would it not be possible for motor cycle agents to lower the deposit required for the purchase of a motor cycle, and give extended terms of, say, eighteen or twenty months in which to pay the balance?

I am sure there would be hundreds of men, who, like myself, could then enjoy the delights of motor cycling, and, at the same time, increase the trade. OLD READER.

Cockermouth.

BICYCLE OR "PUSH-BIKE"?

Sir,—"Ixion" says that "we cannot do without" the abominable word "push-bike." But we can. Call things by their proper names, and there can be no confusion. The name "bicycle" applies to one machine, and to one machine alone. The other machine with which it is sometimes confused by people who have not the faculty of thinking coherently, or expressing themselves clearly, is a motor bicycle. ANOTHER ANFIELDER.

Birkenhead.

DECARBONISING TOOLS FROM THE L.C.C.!

Sir,—When coming from Watford to London early this summer, I took the short cut from Stanmore to Edgware, in order to avoid the tramlines at Canons Park. When turning into the main road at Edgware, and going quite slowly in low gear, I crossed the tramlines almost at right angles, and when passing the second set of rails the machine skidded violently, nearly unseating both my passenger and myself.

The engine stopped dead. The machine slithered a few yards with the back wheel locked, and stopped dead.

On dismounting, I found, to my amazement, a slither of steel, about 9in. long, with a section of ⅛in., had passed through the tread, emerged near the head, and had jammed firmly in the carrier stays as the wheel revolved, locking both engine and wheel. On examination, the slither of metal proved to be a piece of steel tramline (apparently from the outside rail, which in places stands an inch or two above the road) which had worn thin, and had been detached by my wheel, peeling off much as a wooden splinter might have done. The piece of metal was tough steel, strong, and pliable as a fencing foil. I use it now as a decarbonising tool. The tyre was a Palmer cord and ran for many hundreds of miles after, despite a terrible rip in the fabric.

M. TOWNLEY.

COSTS OF SPARE PARTS AND COMPONENTS.

Sir,—Am I right in assuming that many makers either sell their machines at a loss or profiteer abominably on spares and renewals? It is apparent, in many cases, that if one bought parts piece by piece and erected one's own machine it would cost considerably more than buying the outfit complete, and this notwithstanding that the supplier in the latter instance has to bear the cost of assembling the various parts. It is obvious that every manufacturer must keep a record of the cost of every item that goes to make a complete machine to enable him to arrive at the figure at which he puts his production on the market; but does he supply his customers with spare parts on this basis? In most cases I fear not, judging by the disparity of prices charged by different firms for parts of a similar character. For instance, kick-starter springs for several well-known and popular makes can be bought in London at 6d. each. I have paid, several times, 3s. 6d. each for springs *very little different* from those sold at 6d. Allowing for size or gauge, the difference in price is unwarranted. The same applies to most other components.

I have several friends whose incomes just make it a toss up whether they can go in for the sport, and who hesitate because of the uncertainty and fear of upkeep. There must be hundreds of men who hesitate for the same reason, and much trade must be lost to those who charge unreasonably.

The motor cyclist with a grievance airs his complaints to all and sundry, and takes care to warn them off the firms that fleece him for spares.

Why is the cost of parts when bought separately out of all proportion to the cost of a complete machine? What do other readers say? —POURQUOI.

London, S.E.14.

WHICH IS THE MOST SILENT ENGINE?

Sir,—I desire to express my entire agreement with Mr. P. H. Rogers, in your issue of the 1st inst., regarding the silence and sweet running of the 1921 8 h.p. Enfield sidecar with Vickers engine. I consider it easily the most silent machine now on the road. When in Edinburgh recently I noticed one of these machines, and was interested to see that more than one pedestrian turned for a second to look at an outfit which ran with such freedom from noise. FIFE.

Rosyth.

In the 1921 South African T.T., C. H. Young won both Junior and Intermediate classes on a 3½ h.p. and 4 h.p. Triumph respectively He also won the Intermediate event in 1920. Young's average speed over the 152½ miles course was over 40 m.p.h.

PLUGS FOR EASY STARTING.

Sir,—Seeing an easy starting tip in your "Ideas" page, perhaps it will be of interest to "E.S." and others to know that the M.A.P. plug is the goods for neither sooting nor oiling up. This is mainly owing to the position of the bar being directly over the centre electrode, which allows very easy starting indeed, as oil, etc., cannot get on the back of the bar.

Another item that I am sure has been noticed by other readers of the "Blue 'Un" is the illustrations of the Enfield lightweight. *They even fitted band brakes to both wheels twenty years ago.* The trade must be making great strides nowadays in design. It has taken twenty years to perfect the motor cycle, yet we can see all the old ideas being worked up again and being called *new.* S.T.

Coventry.

"80 M.P.H." BRITISH BIG TWINS.

Sir,—I have followed the correspondence on "British Big Twins" with interest. The letters in your issue dated the 1st September, by "Big Twin" and "Observant," call for a reply from me as the designer and manufacturer of the Brough Superior. Both of your correspondents are labouring under a misapprehension, and they are not as conversant with their subject as they would have us believe. The catalogue published by me distinctly states the object of the design of the Brough Superior; it is a machine made to fill a long-felt want for a big twin capable of the highest speed that road conditions allow, yet fitted up with every convenience for touring purposes. That the Brough Superior fulfils all the claims made for it is proved by the dozens of letters I have received from riders all over the country—and, after all, they are the opinions that matter.

"Observant's" presumption that the Brough Superior engine is the type used by Brooklands racers in 1913 confirms his ignorance of the subject he is writing about.

GEORGE BROUGH.

SUNDAY COMPETITIONS.

Sir,—I was glad to see, in your issue of September 1st, a letter from the honorary secretary of the North-Western Centre of the A.C.U. adversely criticising your comments of August 18th, regarding Sunday competitions. I can endorse all the remarks of your critic, and would add that clubs (in the North) entirely (or nearly so) depend upon Sunday events for their very existence.

Provided that competitions are properly conducted and organised, I cannot for the life of me see where you can draw the line between Sunday touring (which you do not cavil at) and Sunday trials; and a man can be just as good a sportsman on the Sabbath as on the other six week days.

In the North we work five and a half days, and Saturday afternoons are not of sufficient length for big events—especially reliability trials—and what are these, anyway, but "touring"? Motor cyclists, numbered, controlled ,and in order, are far safer on the road than a lot of irresponsible motor cyclists blinding along "on their own."

No self-respecting club, or club member, would wilfully be a nuisance or inconvenience to the public, and I would further say that club riders, as a class, are very law-abiding.

The big Saturday events are well-supported by the "trade"—otherwise the big entry lists would soon dwindle. Your comments have not yet been brought before the Yorkshire Centre Board, but will be at the next meeting, and I have no doubt that your remarks were inspired by the allocation, to the Sheffield and Hallamshire Club, of Sunday, August 7th, for their Centre One Day Trial.

With all due deference to you, we shall, as long as the law permits, continue to hold all our events on Sundays—or other days—to suit the convenience of our members, conducting them with all respect and regard for law and order; and when Sunday competitions are forbidden (!) one "Centre" will be sufficient for all clubs north of the Trent.

This letter expresses my personal opinion, and is not written as honorary secretary of the Yorkshire Centre, but as

W. A. DOVENER.

[Mr. Dovener's views in support of Sunday competitions are at variance with the considered opinion of the governing body of which he is a member. Furthermore, he is wrong in surmising that our remarks were inspired by a Sheffield trial. (Mr. Place, of the North-Western Centre, imagined that our remarks deprecating Sunday contests applied to his centre.) They apply to all organised Sunday competitions, and *The Motor Cycle* has never wavered in its stand against them.—ED.]

ILLEGAL SILENCING ARRANGEMENTS ON STANDARD MACHINES.

Sir,—Your correspondent Mr. V. O. Gretch seems to have replied to my former letter without appreciating the point at issue. As an experienced rider with a practical knowledge of motor cycles, I am fully aware of what can be done in regard to the fitting of a silencer, but my contention is that the Norton machine, *as produced by the makers,* does not comply with present legal requirements.

Has Mr. Gretch ever tried to ride a Norton machine (having no gears) up a steep hill with houses on each side? I have, and this accounts for my being FED UP.

Kenilworth.

WHY BUY A POGO?

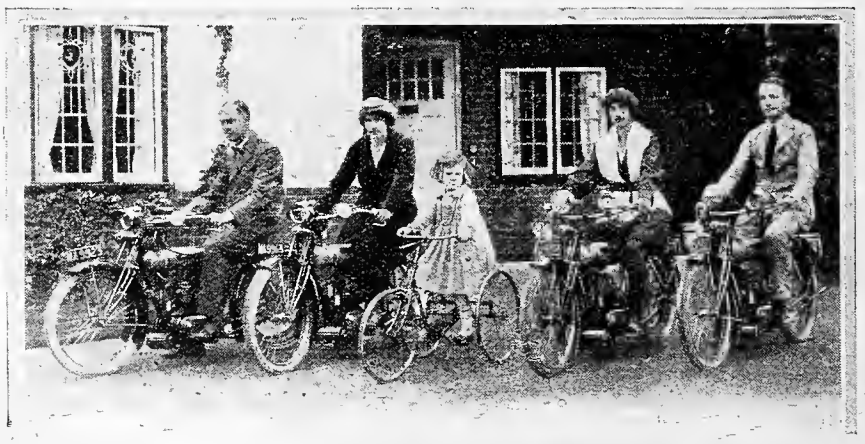
Sir,—I recently rode a motor cycle and sidecar from London to York, *via* Leicester, Derby, Sheffield, and Doncaster. As far as Sheffield, save for a few vile miles outside Leicester and the track between Derby and Sheffield, the road surface was reasonably good; but from Sheffield to Doncaster and Ferrybridge, and thence to Tadcaster, there are large portions which are little short of murderous.

Three months ago parts were under repair; now those parts alone stand out like oases along a real *Via Dolorosa.* Picture papers have just been showing some sort of queer new toy on which you stand and bounce heavenwards. Take a cycle from Doncaster to Tadcaster, and you have learned all there is to know about bouncing. Some of the pot-holes are like young bathing-pools, though here and there a cynical road-man was amusing himself by converting a hole into a mound. In one place for many yards you had to pass over a carpet of raw earth and jagged flints, the road having been riven asunder and left to repent of its sins.

In one or two places there are short stretches of perfect surface. One supposes these are put in as a temptation to the unwary.

Whether the wicked are punished in this world or another is open to discussion, perhaps, but I hope this dream I had comes true: for I beheld the Ultimate Man Concerned stand on trial before a demoniac court, and the judge put on the black cap; amid the shudders of the spectators, he was condemned to ride for all eternity to and fro over the road from Sheffield to York. And, sir, I may tell you that the Wandering Jew and the Flying Dutchman will be kings to that U.M.C.

(MRS.) CONSTANCE H. LINNEY.



Lightweight riders who evidently appreciate the absolute independence that the use of the solo motor cycle affords. Mr. and Mrs. P. Barry, and Mr. and Mrs. G. Heath, of Hove, are all owners of Triumph Juniors, on which they are depicted.

POWER UNIT FOR AN INVALID MOTOR CHAIR.

Sir,—With reference to your correspondent "Workshop's" enquiry for a 3½ h.p. water-cooled engine to fit to his hand-propelled invalid's chair, we think your correspondent is greatly over-estimating the horse-power required even for hilly Wales, and also the capabilities of his chair to stand up to an engine of this size, especially with all the etceteras necessary for water-cooling, and, candidly, we do not know of any chair on the market to which it would be safe or advisable to fit an engine of this horse-power, or that would safely carry an engine of this size with all its necessary supplementary fittings for drive, etc.

We do not know what make of chair your correspondent's friend has, but if it should happen to be one of our make, may we ask him to communicate direct with us in two or three weeks' time, when we shall have a motor fitted and running which has been specially designed for the Argson back axles and could be readily fitted to his chair?

THE ARGSON ENGINEERING CO., LTD.
A. R. GARNETT, Director.

CLEANING A STAINED WATERPROOF.

Sir,—May I write a word in defence of the cleaner, whom our friend "Ixion" appears not to love.

The cleaning price for a heavy trench coat, though varying according to locality, should be no more than 9s. 6d.; less for a singly-lined coat, and still less for an unlined raincoat. Take the maximum 9s. 6d. (one need pay no more), if this is half the price of the new coat, then that coat is certainly not worth cleaning. It pays much better to buy a good coat, as it can then be cleaned repeatedly without injury.

The type of coat which is returned from the cleaner like a rag is rag, unless it is one with an oiled silk or linen inter-lining, when naturally dry cleaning (with spirit) will do it in. A good twill needs no dope to make it turn water, and can therefore be cleaned without injury. An umbrella or a canvas tent does not require a coat of paint, and a raincoat should not require doping, as it will no longer be rainproof when petrol has been spilled upon it.

Moreover, it can be cleaned without petrol—merely with soap and water. I do not advise sending it to the laundry with the weekly wash, but it can be "wet cleaned" by a responsible cleaner, provided it has not been used as an overall during overhauls. CLEANER.

Kingston-on-Thames.

Sir,—Referring to "Ixion's" remarks on "My Coat," it may be interesting to know that I have cleaned and reproofed my coat at a cost of well under a shilling.

The coat is first thoroughly soaked in warm soapy water and then wrung out. It is next laid on a table and scrubbed with soap and warm water, the soap being rubbed on to the brush and not on to the coat. When done the coat is rinsed in a small quantity of warm water and hung up till nearly dry. Any spots of oil, etc., remaining may then be got off by means of a rag soaked in petrol. The coat is then dipped into the water-proofing solution, *i.e.*, it is immersed and thumped for a few minutes in warm alum solution (two ounces to a gallon of warm water). After, it is taken out and hung up to dry. It must not be squeezed but simply let drip. When dry the job is done. A second dipping into the alum will do no harm, but it will be found that it is rather difficult to wet the coat, the solution simply rolling off like water off a duck's back.

There is only one drawback to this process, and that is that the coat assumes a slight whitish shade.

G. D. BARROW.

THE SUCCESS OF THE SIX DAYS.

Sir,—The A.C.U. has been severely criticised; it is only fair that it should be warmly congratulated. Everyone approved the regulations for the Six Days, though some apparently funked them. The only question in the minds of most was whether the A.C.U. might interpret the rules too severely—especially in regard to the "silence" and "final examination" tests. The A.C.U. has been fully justified. No one can possibly accuse the officials of undue severity. The trial has been a splendid demonstration of what the motor cycle and cycle car can accomplish.

This has undoubtedly been the object of the A.C.U. throughout in these trials. If freak hills were included it was not in order to "ride a machine to destruction," but with the object of showing the power of some machines to surmount every obstacle. When freak hills became too freakish they have been dropped. The climbing power of machines had been demonstrated for all practical purposes, and it was useless to prove that a machine might accomplish what no sane rider would attempt. It remained to show (and the proof was not superfluous) that a machine could be driven without excessive noise—a point of the greatest importance in regard to popularity, to prove the extraordinary economy of most machines by a "consumption trial," and their endurance by a severe speed test. This last was not a race and gives no evidence of the speed which could be attained, but it has proved that the best machines can stand the severest possible strain and survive in a fit condition to pass the final "examination test." Possibly a timed hill-climb might have been added, but the objections which were raised (unfairly, I think) to the Lynton-Porlock test in another trial had to be considered.

On another point the A.C.U. is to be congratulated. It has obtained an excellent press. It is astonishing that, as a rule, so little notice is taken of motoring in the general press—apart from sensational reports of motor accidents. This year's Six Days, however, has been fully reported each day in quite a number of papers. For this there are two reasons. In the first place there is no doubt that the novelty of the conditions has aroused an unmistakable public interest. The same thing happened in regard to the "stock car" trial, which was also well reported—it is a pity that both these trials were less warmly supported than they should have been by some of the trade. In the second place the results have been officially published day by day with commendable promptitude. Too often one has to wait days, or even weeks, before the results of a competition are known, and daily newspapers naturally do not report things which happened the day before yesterday, or, it may be the week before last.

May I add a word of praise for the cycle cars? It is true that only three makers ventured to compete, three Morgans, one T.B., and two G.N.'s—the last the only starters of the four-wheelers, which were included for the first time since the war. But all cycle cars which started obtained gold medals. It was unfortunate, perhaps, that no team prize was awarded to this class; had this been offered possibly more entries would have been received. It was, however, a compliment to the cycle cars that they were required to accomplish more than the most powerful sidecars. H. GEORGE MORGAN.

SUMMARY OF CORRESPONDENCE.

"J.B." (Chippenham) wishes to thank H. R. Harveyson for his thoughtfulness in carrying "Finis" on the day of the Six Days Trial, when he was at the tail end of the procession of competitors.

"Dug PH 2534" (Guildford) opines that, although the best British big twins may be slower than the corresponding American machines, they will wear longer and are considerably less complicated.

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Current Chat

Times to Light Lamps.

Sept. 15th	... ...	8.15 p.m.
,, 17th	... ...	8.11 ,,
,, 19th	... ...	8.6 ,,
,, 21st	... ...	8.1 ,,

Ferry Charges Reduced.

The Firth of Forth ferry charges have been reduced by 50% as a result of the activities of the A.A. and the Royal Scottish A.C.

A Speed Limit for Lynmouth?

A speed limit for motor vehicles at Lynmouth is being urged by Lynton Urban District councillors, who state that on August 18th no fewer than 274 cars and motor cycles passed along Watersmeet Road, along which, it is stated, the school children had to pass. Were the schools open on August 18th?

Respite or Reprieve?

There is only one way whereby the solo motor cyclist can find out whether he may or may not dispense with a rear light. He must find out the attitude of the police in each district in which he proposes to ride. Old byelaws still abound; and, until some definite ruling in the way of new legislation is issued, only an optimist will unscrew his rear lamp clips!

The Six Days through Other Eyes.

From a Somerset paper: "In connection with the reliability trials extending over six days, which were arranged by *a London company* . . . . a large number of interested spectators watched them go through the town; but, apart from the competitors' numbers, *there was nothing to attract attention* more than to an ordinary cyclist." Perhaps the reporter expected fancy dress. The italics are ours.

Imports and Exports.

Imports of motor cycles for August show a decline of £8,000 compared with the previous month of July, and a marked decline compared with August of last year, when we imported £65,884 worth of machines and "parts."

Imports.	July, 1921.	Aug., 1921.
Number of motor cycles ..	78	35
Value of machine and parts	£20,707	£12,756

British Exports.

The Board of Trade figures for August do not denote a very rosy state of affairs in the export world. The same low level, however, is maintained that was registered for June and July, there being only a few thousand pounds difference in the figures. The most startling comparison is when last month's figures are compared with August of last year, when well over a quarter of a million pounds worth of machines and parts were exported.

Exports.	July, 1921.	Aug., 1921.
Number of motor cycles ..	646	539
Value of motor cycles only	£54,834	£44,366
Value of parts	£23,904	£30,848
	£78,738	£75,214
Total value ..	£78,738	£75,214

Petrol Imports.

Up to the end of August this year the importation of petrol exceeded last year's figures for the same period by 45,021,064 gallons.

The Swing of the Pendulum.

Seventeen per day was the average number of motor cycles exported last month. Against the eighty-five per day of August, 1920, the number is ominous, but it is to be hoped that it is the zero figure.

Special Features.

THE "SIX DAYS"—DEDUCTIONS AND IMPRESSIONS.
SIDECAR ATTACHMENTS.
THE ANGLO-DUTCH TRIAL.

Appointments.

We are pleased to record that Mr. C. Walter Hyde has quite recovered from his illness, which forced him to resign his appointment with the B.S.A. Co., and has now joined the Dunlop concern.

A well-known Northern motor cyclist and honorary secretary of the Yorkshire Centre A.C.U. and the Bradford M.C. and L.C.C., Mr. W. A. Dovener, has accepted the post of district representative of the Scott Motor Cycle Co. for Yorkshire, Durham, and Northumberland. It will be recalled that Mr. Dovener severed his connection with the firm last Christmas, after having been secretary and cashier for ten years.

From Aosta up the Great St. Bernrad.

Those who competed in the International Six Days Trials and our readers who followed the report of that event in these pages will be able to realise the nature of such a hill-climb as that recently held at Aosta in Italy.

To the top of the Great St. Bernard Pass constituted the course, and the competitors had to ride over a distance of practically twenty miles, ascending 5,580ft. between the starting and finishing points.

The fastest time of the day (35m. 11$\frac{3}{5}$s.) was made on a 7-9 h.p. Harley-Davidson sidecar in the 1,000 c.c. class. This time was only equalled by a 70 h.p. Mercédès car. The 350 c.c. class was won on a Maffeis in 45m. 21$\frac{3}{5}$s., with a Douglas third in 46m. 36$\frac{2}{5}$s. The 500 c.c. class was won on a Ferrera in 37m. 54$\frac{1}{5}$s.

LOOKING TOWARDS AMESBURY—M. C. Breese, a gold medal winner, on his 6 h.p. B.S.A.

90 M.P.H. ON A COUNTRY ROAD.

2¾ h.p. and 3½ h.p. Sunbeams secure Chief Honours at Norfolk Club's Open Speed Trials. Fourteen Firsts for Dance.

One of the official starters was somewhat of a hustler, but Le Vack (Indian) is too old a hand to be caught unprepared at the word "Go."

ALL the essentials of a most successful race meeting—glorious weather, a large and high quality entry, and good organisation—attended last Thursday's open speed trials, held on West Harling Heath by the Norfolk M.C. and L.C.C. Yet the event fell very flat.

This is hardly surprising, for five solid hours of timed speed trials on a safe but very dusty kilometre "straight" is long enough to damp the enthusiasm of most. There were eighteen distinct classes, sixteen of which were sub-divided into members' and open sections, *thus making thirty-four in all*, which is at least twice as many as should be!

George Dance literally swept the board in the open classes, winning fourteen firsts, making fastest time of the day—24⅕s. for the flying kilometre, a speed of over 90 m.p.h.—and provisionally gaining four silver cups. Both his 2¾ h.p. and 3½ h.p. Sunbeams were o.h.v. models.

Le Vack—on his Indian—was obviously off colour, for he only succeeded in getting placed once, and he ran in eight classes.

80 m.p.h. Too Slow to Win!

Although G. W. Walker touched 80 m.p.h. on his Norton with great consistency, he was no match for the o.h.v. Sunbeam; but he was usually just a little too fast for two comparative newcomers to such events—E. Searle (3½ Sheffield Henderson) and C. P. Wood (Scott)—who were both well in the running for places. Searle's mount had an o.h.v. Blackburne engine, while C. P. Wood made his best speed—75 m.p.h.—on the 3½ h.p. Scott Squirrel.

There was little to choose between I. P. Riddoch's 2¾ h.p. Blackburne and H. F. Mase's 2¾ h.p. o.h.v. A.J.S. in the open classes; but in the members' section the latter rider secured 100% honours—six firsts from six attempts.

Two strokes scored in the open 250 c.c classes, R. E. Pugh (2¼ Levis) winning both from a strong field; but in the closed events a local New Imperial beat a local Levis by 3s.

Although he competed in almost as many classes as his triumphantly successful colleague Dance, Bennett did not succeed in running his side-valve Sunbeam into a place.

J. G. Goodenough, R. M. Knowles, and J. G. Handworth on Nortons, C. J. W. Trendall on a Sports Sunbeam, and M. G. Bagshaw (7-9 Harley-Davidson) were others to make far more excellent performances than any of the spectators realised. (No members' placings were posted during the event.)

Below are the full results (which, incidentally, took our representative nearly two hours to dissect and tabulate):

OPEN CLASSES (STANDING START).

250 c.c. SOLO.—1, R. E. Pugh (2¼ Levis), 42⅖s.; 1, J. V. Prestwich (2¼ J.A.P.), 45⅗s.; 3, N. A. Lowe (2¼ Diamond-Jap), 46s.

350 c.c. SOLO.—1, G. Dance (2¾ Sunbeam), 35⅗s.; 2, I. P. Riddoch (2¾ Blackburne), 40⅕s.; 3, H. F. Mase (2¾ A.J.S.), 41⅖s.

500 c.c. SOLO.—1, G. Dance (3½ Sunbeam), 30s.; 2, G. W. Walker (3½ Norton), 33⅖s.; 3, E. Searle (3½ Sheffield-Henderson), 35⅕s.

Nobody bothered to ask who won in the concluding dozen or so classes—the answer was always "Dance." He is shown here winning the 750 c.c. class at nearly 90 m.p.h.

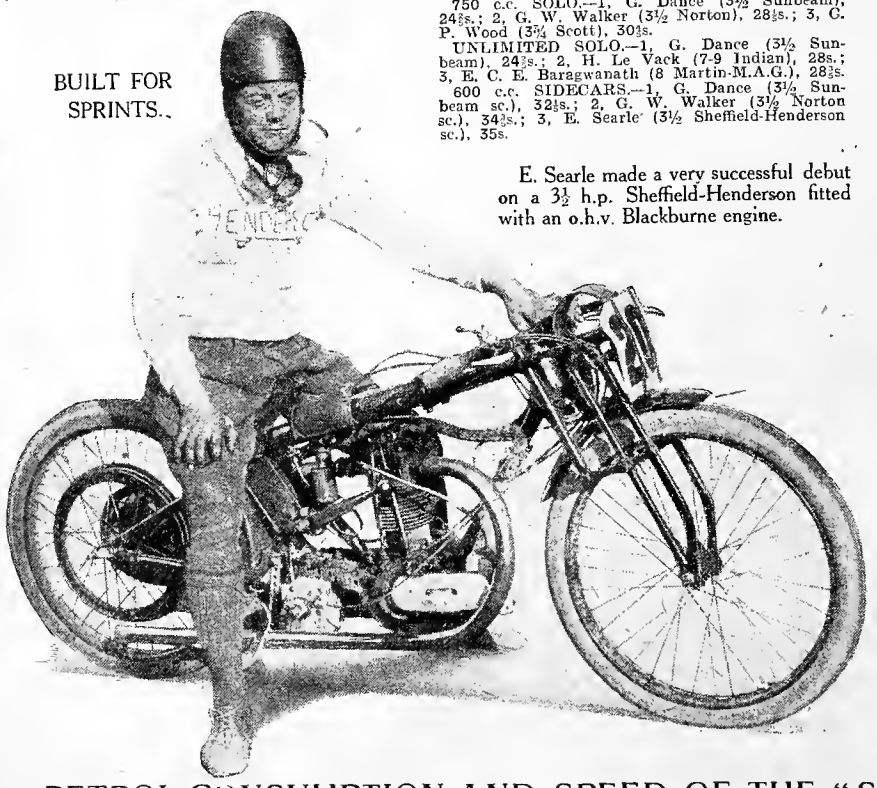
90 m.p.h. on a Country Road.—

750 c.c. SOLO.—1, G. Dance (3½ Sunbeam), 31⅛s.; 2, G. W. Walker (3½ Norton), 34⅝s.; 3, E. Searle (3½ Sheffield-Henderson), 36⅛s.

UNLIMITED SOLO.—1, G. Dance (3½ Sunbeam), 31s.; 2, E. C. E. Baragwanath (8 Martin-M.A.G.), and E. Searle (3½ Sheffield-Henderson) tied, 35⅝s.; 4, G. W. Walker (3½ Norton), 35⅝s.

600 c.c. SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 39s.; 2, G. W. Walker (3½ Norton sc.), 42s.; 3, C. P. Wood (3¾ Scott sc.), 44⅝s.

750 c.c. SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 39⅛s.; 2, G. W. Walker (3½ Norton sc.), 42s.; 3, E. Searle (3½ Sheffield-Henderson sc.), 45s.



BUILT FOR SPRINTS.

E. Searle made a very successful debut on a 3½ h.p. Sheffield-Henderson fitted with an o.h.v. Blackburne engine.

UNLIMITED SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 39⅛s.; 2, E. C. E. Baragwanath (8 Martin-M.A.G. sc.), 40⅛s.; 3, I. P. Riddoch (8 Zenith sc.), 42s.

OPEN CLASSES (FLYING START).

250 c.c. SOLO.—1, R. E. Pugh (2¼ Levis), 35s.; 2, J. V. Prestwich (2¼ J.A.P.), 35⅝s.; 3, N. A. Lowe (2¼ Diamond-Jap), 37s.

350 c.c. SOLO.—1, G. Dance (2¾ Sunbeam), 28⅛s.; 2, H. F. Mase (2¾ A.J.S.), 31⅜s.; 3, I. P. Riddoch (2¾ Blackburne), 31⅜s.

500 c.c. SOLO.—1, G. Dance (3½ Sunbeam), 24⅛s.; 2, G. W. Walker (3½ Norton), 28⅜s.; 3, C. P. Wood (3½ Scott), 29⅝s.

750 c.c. SOLO.—1, G. Dance (3½ Sunbeam), 24⅜s.; 2, G. W. Walker (3½ Norton), 28⅛s.; 3, C. P. Wood (3¾ Scott), 30⅜s.

UNLIMITED SOLO.—1, G. Dance (3½ Sunbeam), 24⅜s.; 2, H. Le Vack (7-9 Indian), 28s.; 3, E. C. E. Baragwanath (8 Martin-M.A.G.), 28⅜s.

600 c.c. SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 32⅛s.; 2, G. W. Walker (3½ Norton sc.), 34⅜s.; 3, E. Searle (3½ Sheffield-Henderson sc.), 35s.

750 c.c. SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 31⅜s.; 2, G. W. Walker (3½ Norton sc.), 34s.; 3, E. Searle (3½ Sheffield-Henderson sc.), 35⅝s.

UNLIMITED SIDECARS.—1, G. Dance (3½ Sunbeam sc.), 31⅜s.; 2, I. P. Riddoch (8 Zenith sc.), 33⅜s.; 3, E. C. E. Baragwanath (8 Martin-M.A.G. sc.), 33⅜s.

MEMBERS' CLASSES (STANDING START).

250 c.c. SOLO.—1, A. H. Bryant (2¼ New Hudson), 49⅜s.; 2, W. Mahoney (2¼ Omega), 49⅝s.; 3, F. T. Ebbage (2¼ New Imperial-Jap), 52⅜s.

350 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 41⅜s.; 2 W. Mahoney (2¼ Omega), 49⅜s.; 3, M. G. Bagshaw (2¼ Levis), 50⅝s.

500 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 37⅜s.; 2, G. J. W. Trendall (3½ Sunbeam), 40⅛s.; 3, R. M. Knowles (3½ Norton), 41⅜s.

750 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 38s.; 2, C. J. W. Trendall (3½ Sunbeam), 40s.; 3, R. M. Knowles (3½ Norton), 40⅜s

UNLIMITED SOLO.—1, M. G. Bagshaw (7-9 Harley-Davidson), 39⅜s.; 2, G. J. W. Trendall (3½ Sunbeam), 40⅛s.; 3, R. A. Daniels (3½ Norton), 43⅜s.

600 c.c. SIDECARS.—1, S. A. Towlson (3½ Norton sc.), 49s.; 2, P. Sherwood (4 Triumph sc.), 52⅛s.; 3, J. G. Goodenough (3½ Norton sc.), 56s.

750 c.c. SIDECARS.—1, H. A. Towlson (4 Norton sc.), 51⅛s.; 2, G. H. Hanworth (4 Norton sc.), 53s.

UNLIMITED SIDECARS.—1, M. G. Bagshaw (7-9 Harley-Davidson sc.), 44s.; 2, E. M. Wood (7-9 Indian sc.), 50s.

MEMBERS' CLASSES (FLYING START).

250 c.c. SOLO.—1, F. T. Ebbage (2¼ New Imperial), 37s.; 2, M. G. Bagshaw (2¼ Levis) and W. Mahoney (2¼ Omega) tied, 40⅜s.

350 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 31⅜s.; 2, M. G. Bagshaw (2¼ Levis), 40⅜s.; 3, W. Mahoney (2¼ Omega), 42s.

500 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 30⅛s.; 2, G. J. W. Trendall (3½ Sunbeam), 33s.; 3, R. M. Knowles (3½ Norton), 33⅜s.

750 c.c. SOLO.—1, H. F. Mase (2¾ A.J.S.), 30⅜s.; 2, G. J. W. Trendall (3½ Sunbeam), 33s.; 3, S. A. Towlson (3½ Norton) and G. H. Hanworth (3½ Norton) tied, 34s.

UNLIMITED SOLO.—1, M. G. Bagshaw (7-9 Harley-Davidson), 32s.; 2, C. J. W. Trendall (3½ Sunbeam), 33s.; 3, R. M. Knowles (3½ Norton), 34s.

600 c.c. SIDECARS.—1, J. G. Goodenough (3½ Norton sc.), 42s.; 2, P. Sherwood (4 Triumph sc.), 44⅜s.; 3, A. G. Bagshaw (4 Triumph sc.), 48⅜s.

750 c.c. SIDECARS.—1, G. H. Hanworth (4 Norton sc.), 41s.; 2, J. G. Goodenough (3½ Norton sc.) and H. A. Towlson (4 Norton sc.) tied, 42⅜s.

UNLIMITED SIDECARS.—1, M. G. Bagshaw (7-9 Harley-Davidson sc.), 35s.; 2, J. G. Goodenough (3½ Norton sc.), 42s.; 3, E. M. Wood (7-9 Indian sc.), 45⅜s.

PETROL CONSUMPTION AND SPEED OF THE "SIX DAYS" MACHINES.

SOME very interesting data are available by the publication of the speeds and fuel consumption figures in the recent Six Days Trials. It should be noted, however, that the speed test was not a race; and, although bonus marks were awarded for times that bettered the class minimums, several competitors did not make any attempt to take advantage of this.

CLASS A.—Up to 250 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
	m.p.h.	m.p.g.	m.p.g.
A. G. Wall (2¼ Cedos)	32.21	98.9	1557
J. Lidstone (2¼ James)	37.63	105.7	1946
B. Kershaw (2¾ New Imperial)	44.63	108.6	2336
D. Prentice (2¼ New Imperial)	42.95	119.8	2123
L. Horton (2¼ New Imperial)	43.79	127	1946

CLASS B.—Up to 350 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
J. C. Humphries (2½ British Standard-Arden)	36.64	90.9	953
I. F. Anderson (2½ Connaught)	30.01	125.3	1591
G. F. Mason (2½ Connaught)	36.92	126.5	1524
C. L. Sprosen (2½ Connaught)	36.72	132.5	1946
W. L. Handley (2½ O.K.)	36.1	95	2920
A. Milner (2½ O.K.)	36.37	102.5	2123
—. Grahame-Oates (2¾ Edmond)	—	99.8	2123
W. C. Harris (2¾ A.J.S.)	42.95	108.4	1946
E. Williams (2¾ A.J.S.)	42.95	120.4	2336
H. R. Davies (2¾ A.J.S.)	42.95	115.1	2224
H. F. Edwards (2¾ Coulson)	38.48	121.7	1796

CLASS C.—Up to 500 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
	m.p.h.	m.p.g.	m.p.g.
C. W. Vallings (4½ Dunelt)	28.83	76.3	1946
L. Padley (4 Sheffi'd-Henderson)	39.38	87.2	1168
A. A. Symes (3½ Martinsyde)	49.61	78.9	1946
G. Strange (3½ James)	43.52	101.6	2596
W. L. Danskin (3½ Rudge)	—	99	1669
F. T. Sibley (3½ Rudge)	43.41	92.7	1557
R. B. Ewens (3½ Rudge)	32.87	94.2	1669
F. A. Longman (3½ Ariel)	42.50	88	1557
L. Newey (3½ Ariel)	42.53	101.6	1168
W. Woodcock (3½ Ariel)	46.14	82.9	1946
R. Elliott (3½ Rover)	43.44	88.8	3115
G. Featherstonhaugh (3½ Rover)	39.97	97.7	1946
G. W. Ravenhall (3½ Rover)	32.14	92	2225
A. Eckersley (3½ Duzmo)	—	99.4	—
A. J. Wilkes (3½ Rover)	44.35	111.2	2596

CLASS D.—Up to 750 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
J. Ford (7 F.N.)	51.12	69.5	1790
H. G. Bell (7 F.N.)	47.77	74.9	2920
T. W. Buckle (7 F.N.)	47.73	74.9	953
W. Leslie Guy (3¾ Scott)	45.63	80	1796
W. Moore (3¾ Scott)	46.63	98.1	2920
W. F. Scott (3¾ Scott)	45.76	90.9	1946
E. Foster (6-7 Raleigh)	50.07	78.9	1460
A. Rollason (4½ Ariel)	44.19	84.6	1669
H. R. Harveyson (4 Harley-D.)	45.63	69.3	1298

CLASS F.—Sidecars up to 600 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
P. Cunningham (3½ P. & M. sc.)	34.92	70.2	898
R. Lewis (3½ P. & M. sc.)	34.92	74.9	778
G. M. Townsend (3½ P. & M. sc.)	34.92	68.7	1015
F. C. North (2½ O.K.-Junior sc.)	16.16	87.7	307
P. Pchrson (4½ Dunelt sc.)	31.52	47.5	792

CLASS G.—Sidecars up to 1,000 c.c.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
	m.p.h.	m.p.g.	m.p.g.
J. T. Bashall (6 Martinsyde sc.)	40.13	57.8	934
E. H. Gifford (6 Martinsyde sc.)	40.94	62.8	1015
W. H. Bashall (6 Martinsyde sc.)	41.04	64.1	687
F. J. Ellis (8 Matchless sc.)	46.95	60.5	1168
T. J. Ross (7 Matchless sc.)	28.37	66.7	1015
F. O'Brien (7 Matchless sc.)	28.86	65.6	1298
A. L. Cranch (5-6 Rover sc.)	38.12	67.9	1374
N. Clayton Russell (4 Norton sc.)	43.95	77.35	730
G. D. Hardee (7 Matchless sc.)	41.07	63.8	1460
W. A. Fell Smith (8 Brough Superior sc.)	—	56.7	1112
F. J. Watson (6 Ariel sc.)	38.19	47.9	1262
G. S. Arter (7 James sc.)	43.19	55.7	765
H. Boynton (7 James sc.)	43.21	58.69	898
W. E. Singer (7-9 Rudge sc.)	—	51.9	898
F. W. Giles (7 A.J.S. sc.)	43.64	68.9	1298
O. Wade (7 A.J.S. sc.)	41.39	68.1	973
Rex Mundy (7 A.J.S. sc.)	41.88	68.7	1038
M. C. Breese (6 B.S.A. sc.)	45.63	63.7	1015
P. W. White (8 Sunbeam sc.)	40.94	52.9	993
T. F. Blumfield (6 Ariel sc.)	38.61	56.3	687
R. Croucher (8 Matchless sc.)	42.06	72.5	1557

CYCLE CARS.

Rider and Machine.	Speed on Brooklands.	Petrol.	Oil.
H. F. S. Morgan (8 Morgan)	44.03	67.1	2596
F. Boddington (10 Morgan)	41.21	51.22	973
S. Hall (10 Morgan)	42.24	55.1	1669
C. Finch (8.7 G.N.)	39.26	54.8	778
F. Watson (8.7 G.N.)	39.26	59.4	697
F. S. Spouse (8.T.B.)	42.24	49.5	1460

CURRENT CHAT

(Continued from p. 326).

Winding-up a Speed Event.

At the conclusion of the open speed trials of the Norfolk M.C. and L.C.C. (described on another page of this issue) a highly successful dinner took place at the Maid's Head Hotel, Norwich. Many of the competitors were present.

Lighting-up Time.

An all-the-year-round "one hour after sunset" lighting-up regulation is by no means ideal. During the summer one and a half hour after would not be too long. In spring and autumn one hour is about right, but in the depths of winter the interval between sunset and lighting-up might well be shorter. It must be remembered that the average speed of vehicles is much greater now than it was when the regulation was first ordained.

Pedestrians' Rule of the Road.

The London Safety First Council has obtained official sanction for a campaign to make familiar to pedestrians the rule that foot passengers shall keep to the left. By so doing, people on the outside edge of the footpaths will be meeting the stream of road traffic, and thus the danger of accidents, due to persons stepping into the road with their backs to oncoming vehicles, will be obviated. In the interests of general safety, motor cyclists should adopt the familiar "rule of the road" when walking, and advise their friends of its obvious advantage.

A.C.U. Six Days Amendments.

We have now received from the Auto Cycle Union a list of amendments to the list of provisional results of the Six Days Trials already published. These are as follows:

R. Elliott (3½ Rover), gold medal with certificate.

A. J. Wilkes (3½ Rover), gold medal with certificate. Both these riders were formerly announced as having been awarded certificates only.

E. H. Gifford (6 Martinsyde sc.), gold medal with certificate, formerly announced as having won a silver medal.

Class A Team Prize (it was announced that no team qualified for this prize).—New Imperial riders: B. Kershaw, D. Prentice, and L. Horton; total marks, 1,727.

OTHER CORRECTIONS.

E. Searle (4 Sheffield-Henderson) completed the speed test at an average speed of 39.38 m.p.h., and was awarded a gold medal.

Best Petrol Consumption in Class C.—A. J. Wilkes (3½ Rover), 111.2 m.p.g.

Best Petrol Consumption in Cycle Car Class.—H. F. S. Morgan (8 Morgan), 67.1 m.p.g.

Best Oil Consumption in Class B.—G. F. Mason (2½ Connaught), 3,114 m.p.g.

Provincial Tour of Trade Commissioner.

Mr. W. G. Wickham, His Majesty's Senior Trade Commissioner in South Africa, is engaged on an official tour of this country for the purpose of discussing with firms the possibilities and conditions of United Kingdom trade with the Union of South Africa. The first part of his tour includes the following towns:

Leicester, on September 19th to 21st.
Nottingham, on September 22nd to 23rd.
Sheffield, on September 28th to 30th.
Leeds, on October 3rd to 5th.
Bradford, on October 6th to 11th.

Firms in these centres desiring to interview Mr. Wickham should communicate immediately with the secretary of their local chamber of commerce.

Arrangements to visit other industrial centres are being made.

To Caterham and Sevenoaks Motorists.

Observers are required for the M.C.C. sporting trial, which will be held over a course in the Caterham and Sevenoaks district on the 24th inst. Local motor cyclists who are willing to help should communicate as soon as possible with Mr. E. A. Bridgman, 366, Euston Road, London, N.W.1, or report to Mr. L. A. Baddeley, the chief observer, at the start of the trial, 9 a.m., at the Railway Hotel, Caterham.

Motor Traffic through Markets.

Following representations by the Automobile Association regarding the congested state, on market days, of main roads adjacent and leading into Aylesbury Market Place, which is crossed by main road traffic, the Chief Constable has kindly arranged to place an additional constable on duty on market days, in order to prevent, as far as possible, obstruction to through traffic. It is hoped that farmers and others attending market, also motorists, will co-operate in this endeavour to avoid inconvenience to vehicle users and pedestrians.

Autumn.

Summer time ceases for this year on October 2nd. Motor cyclists will be well advised to overhaul their lamps.

Next Saturday's Big Midland Climb.

As was expected, the first 1921 open hill-climb of the Midland Centre A.C.U. has attracted a very representative entry. The event, which will be held on Penkridge Bank, commences at twelve noon on Saturday next.

North London Rally.

Although the chief award at the North London M.C.C. rally at Hendon next Saturday is a challenge shield for the best club attendance, there are numerous prizes for which unattached motor cyclists are eligible.

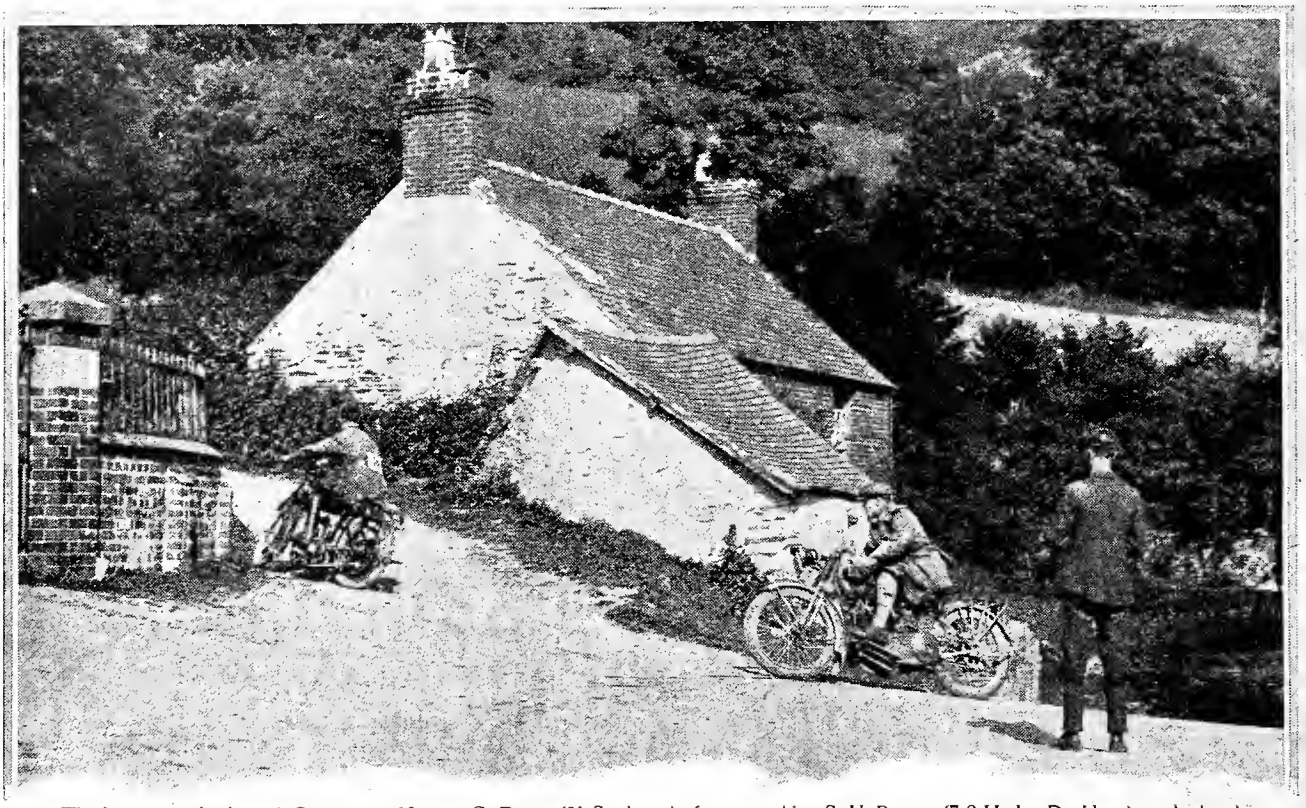
Cause and Effect.

For riding for a distance of from fifty to sixty yards on the footpath, a Southport motor cyclist has been fined 40s. The defendant alleged that the road was so bad that the last time he traversed it, it cost him 17s. 6d. for repairs.

Ffrith Hill, a new terror for trials riders in North Wales. It is a little known gradient near Caergwrle, and is crossed by the picturesque viaduct of the railway between Wrexham and Mold. A Norton rider in last Saturday's Reliance Cup Trial is shown commencing the ascent. (See pages 330-332.)

OFF THE BEATEN TRACK IN NORTH WALES.

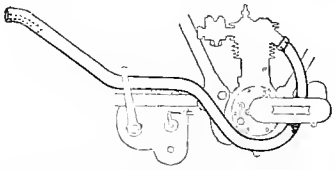
A Day amid Lanes, Watersplashes, and Hills for the Liverpool M.C. Reliance Cup.



The hairpin at the foot of Conquering Hero. G. Dance (3½ Sunbeam) after overtaking S. V. Banner (7-9 Harley-Davidson) on the bend.

THERE are two ways only of describing the Liverpool M.C. Open Trial for the Reliance Cup on Saturday last; it was either an easy difficult trial or a difficult easy one.

Such an apparently contradictory statement may easily be reconciled if we refer a moment to past history. The Reliance Cup event is usually held rather late in the year, when the weather is bad; and the contest has a reputation which it shares with the city of Manchester—"always raining." With such well-known hills as Alt-y-Bady and Conquering Hero, not to mention the new finds at Ffrith (the *soi-disant* Horsman's Ladder) and Bodfari Station, a trial which included seven watersplashes, five other observed hills, one hairpin, and half its mileage over rough lanes of barely sidecar width, would be the height of difficulty. As it was, the sun shone clearly all day, and the rain of the previous night had left no trace; therefore, the difficult became easy—so to speak, and with qualifications—and a high percentage of the fifty-one starters finished to time.

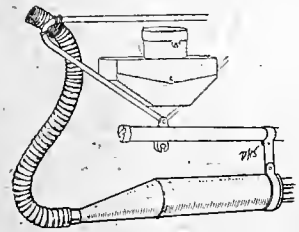


Extended upturned exhaust pipe on Miss Cottle's 4 h.p. Triumph to obviate back pressure in the watersplashes.

Alt-y-Bady, thanks to its dry surface, was easy last Saturday, but the sidecars needed extra weight on the back wheel, as G. W. Shepherd's 8 h.p. Excelsior sidecar here shown.

Off the Beaten Track in North Wales—

At the start (the Hawarden Castle Hotel, Queensferry, near Chester) it was evident that much nervousness existed as to the watersplashes. Magnetos were plastered with grease; indeed, G. W. Shepherd (8 Excelsior sc.) had about 2 lb. of it smeared round the contact breaker and the brush holders, while the Norton contingent favoured sponge bags, and



A flexible extension pipe fitted to W. S. Madon's 8 h.p. Zenith silencer.

quite a number of special silencing arrangements were fitted. W. S. Madon (8 Zenith) had a flexible extension pipe from the silencer outlet to the carrier top, as had S. H. Beard (6 Excelsior sc.), and one or two of the Sunbeam riders. Miss F. Cottle (4 Triumph) not only had a permanent exhaust pipe directed high up behind the machine, but beside the tank had a Stauffer screw-greaser with a pipe down to the flanges of the countershaft pulley. This apparatus was charged with belt dressing, so that the effects of the watersplashes could be counteracted.

As it transpired, all these elaborate precautions were unnecessary, for there was scarcely a splash with enough water in it to wet the rims of the machines.

The first thirty miles involved no special difficulties, Cilcain hill being easy, but the roads (or lanes more properly) were narrow and twisting, and the legal limit average was faster than was absolutely safe; in many places there was only sufficient width for a sidecar, and had one stopped for any reason, the whole trial would have been held up until it had been pushed a mile or more to a wider space.

At Cwmman the fifth and most difficult watersplash was encountered; it was not deep, but the flow of the stream was treacherous, and caused the solo men to flounder about, the most surprising thing being Eric Williams's failure, for his Sunbeam stopped just as he reached the far side.

Where Chain Drive Scored.

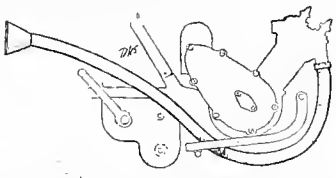
On the steep hill, with an acute S bend immediately following, J. Lee (4¼ B.S.A.) came to a standstill through belt slip, while several footed round the hairpin at the top, where the main road was reached.

A time check was taken at Ffrith; immediately after leaving the village the "new" hill was climbed. It is exceedingly rough and loose, about half a mile long, and only wide enough for a sidecar.

Wheel slip was the passenger drivers' difficulty, while solo men had to go warily to keep a straight path.

V. N. Wilkinson (3½ Sunbeam sc.) found the hill too much for his power, while W. Edwards (4 Powell) likewise came to a standstill.

Most of the lightweights climbed slowly but well, and L. Judge (2¼ Velocette) was the only unsuccessful one. H. Greaves made a wonderfully good ascent on his 2¾ h.p. Beardmore, but his *confrère*, L. A. Bees, was not nearly so fast; his rear mudguard was also approaching a state of decrepitude. S. V. Banner (7-9 Harley-Davidson) fell, and was



W. Edwards's exhaust pipe (4 Powell). A spare plug was also carried in the exhaust valve cap.

pinned down by his machine, and H. Arkley (6 L.M.C.) followed a wobblesome course, but did not stop. For excellent climbs, consult all the names in the list of survivors not mentioned here!

Alt-y-Bady after Lunch.

Fifty of the fifty-five starters reached the lunch check at Llangollen.

One wonders if the committee had any consideration for the fact that Alt-y-Bady was to be climbed almost immediately after lunch, when they selected a temperance establishment for that meal; neither courage nor comfort was to be had, in liquid form at any rate.

Probably Alt-y-Bady has never been in better, or should we say easier, condi-

Solo machines made light work of Alt-y-Bady A. Hewitson (3¼ Scott) making a sure and steady ascent

Off the Beaten Track in North Wales—

tion, and the majority made light work of it. Ovations were earned by Miss Cottle (4 Triumph) and Miss Pickering (4 Powell), who handled their machines in masterly fashion. Westwood Wills (4 Powell), all out to win his "middle gear" sixpenny sweepstake, almost reached the summit before changing down to low.

Bennett (3½ Sunbeam) evidently thought he was still in the Grand Prix, and his stable companion Dance made a similarly fast ascent, of the "rough" order—leaping into the air and righting his machine in a wonderful fashion, entirely calculated to deter the average non-motor cyclist from purchasing such a terrifically dangerous vehicle. In reliability trials' riding it is a pity that makers cannot persuade some of their men, at any rate, to show the public just how docile and gentle an ascent can be made—without heroics, without perspiration. Scott machines have this power, and, despite their limitations of gear ratio, the climbs made by A. Hewitson and C. P. Wood were very convincing. H. S. Barton (3 A.B.C.) also made a pleasing climb; and J. Lee, on a rather ancient chain-cum-belt B.S.A., made quite a steady ascent. Eric Williams (3½ Sunbeam) stripped his rear sprocket. Of the sidecars, all those still running made good ascents, except R. Edwards (4 Triumph sc.) and H. Roberts (4 Dunelt sc.).

Sidecar Ascents.

V. Horsman (4 Norton sc.) was exceptionally fast, and R. Brown (3½ Sunbeam sc.) showed that the hill is not too much for a 500 c.c. sidecar.

G. W. Shepherd's lady passenger sat on the carrier of his 8 h.p. Excelsior sidecar, bumping violently—admittedly almost a necessary thing to do on such a hill, but, again, neither good propaganda nor particularly pleasing to see. A clever piece of driving was shown by J. H. Green (8 Excelsior sc.) in avoiding the wild plunging of C. Fox's 4¼ h.p. B.S.A.; both succeeded.

More and Still More.

Thereafter the story must be summarised. Main roads, mountain roads, by-roads and no roads, and competitors' adjectival roads led northwards, *via* Conquering Hero and a new rough riding track near Bodfari Station, thence to Holywell, where a timed climb up Pen-y-Ball was made; there was some doubt as to the finish of the timed section of this test.

To the finish at Queensferry was main road going, and the under-mentioned survived the course, although many of them suffered stops and loss of time.

On the whole, the trial was a thoroughly sporting one. The weather conditions favoured the competitors to a remarkable degree, and the organisation, except at the lunch stop, was excellent.

Survivors

N. C. Sclater (4 Norton).
J. H. Fox (4 Norton).
G. S. Boston (3½ Sunbeam).
Miss M. Cottle (4 Triumph).
F. A. P. Zacharias (3½ Sunbeam).
S. Ollerhead (3½ Norton).
J. Lee (4¼ B.S.A.).
A. Bennett (3½ Sunbeam).
W. H. Stott (5-6 Indian).
S. V. Banner (7-9 Harley).
A. Hewitson (3¾ Scott).
G. Dance (3½ Sunbeam).
J. H. Davies (3½ Sunbeam).
N. J. Kellett (4 Triumph).
N. E. Hope (3½ Norton).
J. O. Jones (4 Triumph).
O. Wade (2¾ A.J.S.).
F. T. Jones (3½ Sunbeam).
W. Wells (3½ Sunbeam).
L. Judge (2¼ Velocette).
J. Westwood-Wills (4 Powell).
Miss P. Pickering (4 Powell).
W. Edwards (4 Powell).
H. S. E. Barton (3 A.B.C.).
N. S. Madon (8 Zenith).
H. L. Belcher (3½ N.U.T.).
B. Caldwell (3½ Norton).
W. J. Astley (3½ Sunbeam).
H. E. Arkley (6 L.M.C.).
G. Warbrick (3½ Sunbeam).
R. V. Hughes (4 Triumph).
H. V. Jones (4¼ B.S.A.).
J. A. Newman (3½ Douglas).
A. R. Evans (3½ Sunbeam).
L. A. Bees (2¾ Beardmore-Precision).
J. G. Oates (2¾ Edmond).
C. P. Wood (3¾ Scott).
H. M. Hardwick (3½ Sunbeam).
V. Horsman (4 Norton sc.).
J. H. Green (8 Excelsior sc.).
Reg. Brown (3½ Sunbeam sc.).
H. Roberts (4½ Dunelt sc.).
G. W. Shepherd (8 Excelsior sc.).

The watersplash at Cwmman. S. Ollerhead (3½ Norton) crossing the worst splash of the seven in the trial.

A SCOTTISH "TWO DAYS."

FIFTY-TWO motor cycle and sidecar entries have been received, up to the time of writing, for the Scottish Two Days Open Trial, which takes place on Saturday and Monday next.

Described as "a Scottish Six Days in Miniature," this event will be run on exactly the same lines as regards checking, etc., as the popular whole week trial, also organised by the Edinburgh Club.

The route will be as follows:

SATURDAY.—Edinburgh, Broughton, Talla, St. Mary's Loch, Selkirk, Moffat, Thornhill, Moniaive, Dalry, Newton-Stewart, Glenluce, Stranraer: 196¾ miles.

SUNDAY.—At Stranraer.

MONDAY.—Stranraer, Cairn Ryan, Barrhill, Barr, Dalmellington, Sanquhar, Abington, Biggar, Edinburgh: 145⅜ miles.

There will be three observed hills on Saturday (Talla Linns, Auld Brig Road and Chairley's Brae, and Tynron Hill), and three on Monday (Laird's Hill, Pinmore Mains Hill, and Final Hill).

The start takes place at Liberton Car Terminus, Edinburgh, at 7.30 a.m.

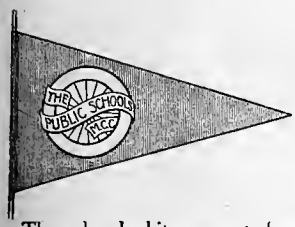
For the convenience of those who wish to observe the competitors at any point on the course, a list of entrants with their official numbers is appended:

A Representative Entry.

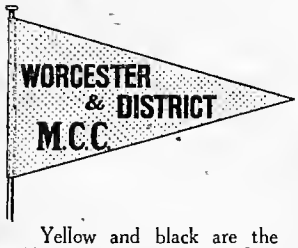
1. J. B. Sanderson (2¾ Hawker).
2. W. B. T. Sanderson (3¾ Scott).
3. J. A. Porter (2¾ Massey-Arran).
4. J. W. Morton (3½ Rover).
5. D. M. Galloway (5 N.U.T.).
6. T. Michie (3½ Norton).
7. A. Brown (3½ Sunbeam).
8. D. S. Milne (3½ Sunbeam).
9. J. F. Dykes (3½ Sunbeam).
10. W. B. Anderson (4 A.J.S.).
11. G. Rae-Arnot (3¾ Scott).
12. D. Wright, jun. (4 Indian Scout).
13. R. Matheson (3½ Norton).
14. J. Hendrie (3½ Sunbeam).
15. D. Ogilvie (2¾ Starley).
16. Neville Hall (2½ O.K. Junior).
17. W. L. Fincher (4 Triumph).
18. R. L. Williamson (3½ Norton)
19. R. Watson (4½ Humber).
20. A. K. James (3½ N.U.T.).
21. T. Laing (3½ Sunbeam).
22. A. L. Downie (5-6 Raleigh).
23. S. B. Waldie (3½ Blackburne).
24. L. P. Waldie (3½ N.U.T.).
25. J. J. A. Dias (3½ Sunbeam).
26. J. W. Burton (3½ Norton).
27. W. T. Tiffen (2¼ Velocette).
28. R. M. Wilson (2¾ Hobart).
29. J. C. M. Guy (4 Triumph).
30. Tom Gillies (3½ Sunbeam).
31. A. W. Welsh (4 Triumph).
32. Jesse Baker (3¾ Scott).
40. R. K. Morrison (7 A.J.S. sc.).
41. J. Shepherd (8 Chater-Lea sc.).
42. D. S. Alexander (8 Matchless sc.).
43. R. S. Macrae (7-9 Harley-Davidson sc.).
44. A. F. Sidford (8 Matchless sc.).
45. Geo. Grinton (7-9 Harley-Davidson sc.).
46. C. R. Logan (6 Campion-Jap sc.).
47. W. G. Donaldson (5 Rover sc.).
48. A. Grant (5 Rover sc.).
49. G. Stokes (5 Rover sc.).
50. K. W. B. Sanderson (8 Brough Superior sc.).
51. J. W. McKeand (8 Blackburne sc.).
52. R. Spence (8 Chater-Lea sc.).
53. J. Oswald Turnbull (7 American X sc.).
54. D. S. Anderson (8 Enfield sc.).
55. A. F. Downie (7 A.J.S. sc.).
56. H. M. Batten (5 Scott Sociable).
57. ——— (5 Scott Sociable).
58. A. Ure, jun. (7-9 Harley-Davidson sc.).
59. H. E. Fairley (2¾ Hawker sc.).

CLUB COLOURS.

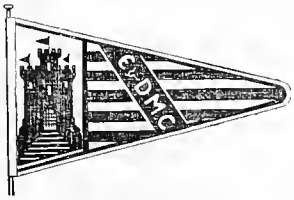
All Yacht Clubs have their Flags—Why not Motor Cycle Clubs?



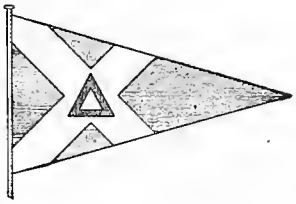
The red and white pennant of the Public Schools M.C.C.



Yellow and black are the Worcester and District M.C.C. colours.



The black and white pennant of the Edinburgh and District M.C.C.



The white cross of St. Andrew on a blue field adopted by the Glasgow M.C.C

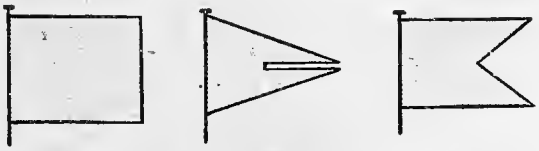
THE motor cycle is the landsman's yacht—a cruising craft or a racer, as the case may be—and it is rather surprising that the adoption of colours, *à la* yacht clubs, has not become universal. Many clubs have adopted a badge for the handle-bar or the front number plate, but that represents something more to clean and to catch the dust. Other clubs—very few, indeed—have their flags. Among these are the Public Schools M.C.C., the Worcester and District M.C.C., the Glasgow M.C.C., and the Edinburgh and District M.C.C.

Yellow. Red. Blue. Green. Purple. Black.

The recognised method of indicating colours used in heraldic or other colour work.

Living nearer yachting water than most of their contemporaries, it is not surprising to find that the two Scottish clubs mentioned have their flags made for them by bunting experts. The Glasgow club went so far as to have a pennant designed by Mr. Graham Johnston, herald painter to the Lyon Court.

As will be seen, the pennant consists of the silver or white cross of St. Andrew on a blue field (the national flag of Scotland and the foundation of the Union Jack of Britain), the white cross being charged with the red triangle. The device may be taken to symbolise Scottish motoring with caution. In the quaint language of heralds, the pennant is blazoned: azure, on a saltire argent a triangle gules voided of the second. Some other Scottish motor cycle clubs may adopt the same flag, but with a different badge in the centre of the white cross. The standard form of the pennant is of silk stencilled in fast colour, and it is usually carried on a pole on the front number plate. Favoured members may have their pennant embroidered by the lady passenger. The president of the club is entitled to display the flag in rectangular form, 4 × 5in., and a method of distinguishing other officials of the club, say, by double-tailed pennons, could be devised.



The president, captain, and secretary of a club may be distinguished by his flag. It is suggested that the first-named displays a rectangular flag, the captain, say, a double-tailed pennant, and the secretary a flag of another distinctive shape.

As the advantages of having a club flag are many, English clubs might consider the question more seriously. A pennant of St. George with a club device in the first quarter or on the red cross would look very well. The nationality and locality of the club would thus be indicated. Welsh and Irish clubs might also adopt club flags; and clubs with a British jurisdiction might have flags based on the three blended crosses of the Union. Yacht clubs have their burgees, and the Caravan Club its pennant; motor cycle clubs should also display their colours. Black and white have been chosen for the pennant of the Edinburgh and District M.C., and English visitors to this very hospitable club may regard the choice as significant! It is of handsome design, and includes a silhouette of Edinburgh Castle.

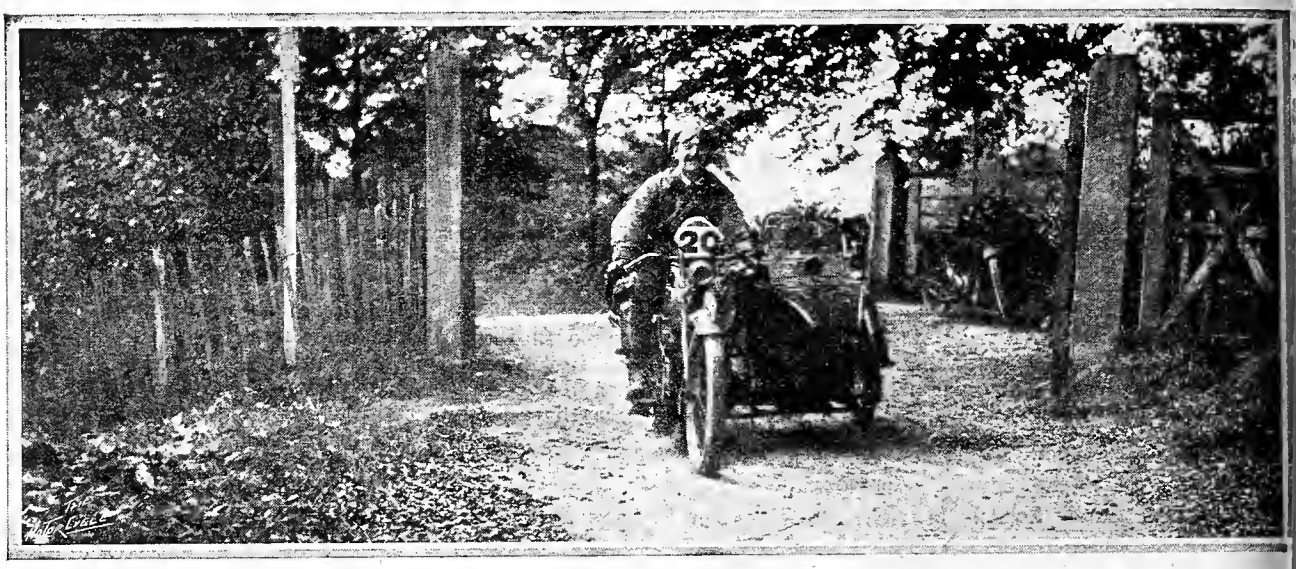
What do clubmen think of a general adoption of the idea? We shall be pleased to illustrate any other club flags.

UNAUTHORISED WARNING SIGNS.

A WRITER in *The Autocar* draws attention to the haughty selfishness with which owners of carriage drives abutting on to public roads attempt to decelerate general traffic and insult motorists by erecting private boards bearing some such legend as "Private Drive—Danger." Most motorists resent such boards for two reasons. The first is that the onus of avoiding collision rests primarily on the people who construct and use such petty side tracks. The second is the implication that motorists fail to see or wholly to ignore gates in the road fences. Within the last month or two these haughty people have begun to change their tune. Some of the boards now exhibit an alternative reading which is intended to deceive strangers to the district—"Concealed Turning." Local authorities ought to see to it that in their areas no unauthorised road signs are erected, but often the elected representatives of the people connive at these signs. In such cases our motoring organisations could find an opportunity to demonstrate their usefulness by making suitable representations to the proper quarters.

A Hundred Miles of Surrey Lanes.

A Sporting Trial arranged by the Surbiton and District M.C.C. for the Ballard Cup.



C. D. Michaelis (7-9 Harley-Davidson) passing through the gate on Leith Hill He was awarded a silver medal after a good performance.

ONE hundred miles of Surrey lanes, favoured with much sunshine and a few spots of rain, a sprinkling of stiff gradients with a fair percentage of loose stones thrown in, all went to form the ingredients of a pleasant trial organised by the Surbiton and District M.C.C. on Saturday last.

The Ballard Cup was the premier award, which attracted an entry of thirty-five riders. The start was promptly made at the Angel Hotel, Thames Ditton, at 10 a.m., and for about ten miles the course led the competitors over the popular tourists' route *via* Ripley and Guildford up to Newlands Corner—a favourite rendezvous.

From the long descent into the sleepy village of Shere, the route lay *via* Coombe Bottom, a moderate climb, and White Downs to Dorking. The Downs section, consisting of a track difficult to negotiate by reason of the loose boulders and gulley ways, formed an excellent brake test for the machines. No one, however, failed to control the rear wheel. A circular route round Dorking then brought the riders to the lunch stop at Ewhurst.

More Difficult Reversed.

The afternoon run was the morning's course taken in the reverse direction. An appreciable difference was witnessed at White Downs, when, this time, the competitors were required to climb the hill.

A sharp hairpin at the beginning of the ascent, rising steeply to a 1 in 6 bend, necessitated very careful handling; yet, with the exception of the big sidecar outfits, speed had to be maintained in order to negotiate the last bend.

Vivian Olsson (3½ Sunbeam), with the accuracy of an expert, rounded the bend at a fair speed. R. C. Charlesworth (8 Zenith and sidecar) also made a splendid climb.

A striking contrast of speed, however, was provided when L. Peaty (2¾ Hawker sc.) arrived. His game little machine behaved well.

R. A. Green (3½ Norton) climbed well as also did R. G. Spikins (3 A.B.C.). W. Julian's Harley-Davidson sidecar sent the loose stones flying in all directions. Well may he fit oversize tyres.

A little 2¾ h.p. two-stroke which showed considerable merit was the Vasco, fitted with an Orbit engine and a Burman gear box. C. E. Taylor handled it well.

L. G. Bachelier (A.J.S. sc.) and H. F. Edwards (Matchless sc.) simply toyed with the gradients.

In all, the trial was well organised, and, though not boasting any freak hills, it was the enjoyable type of run of a distinctly sporting character of the type so popular as local club events. Results:

THE BALLARD CUP AND CLUB GOLD MEDAL.—R. C. Charlesworth (8 Zenith sc.), time error 2m. 25s.

CLUB GOLD MEDAL.—E. L. Showell (6 Martinsyde), time error 2m. 50s.

CLUB SILVER MEDALS.—R. C. Charlesworth (8 Zenith sc.), time error 2m. 25s.; E. L. Showell (6 Martinsyde), 2m. 50s.; R. C. Staunton (4 Triumph), 3m. 15s.; W. Julian (7-9 Harley-Davidson sc.), 3m. 15s.; D. H. Davidson (4 Indian Scout), 3m. 20s.; J. W. Wilson (3½ Sunbeam), 3m. 43s.; C. H. Mocatta (2¾ Coulson), 3m. 45s.; C. E. Taylor (2¾ Vasco), 4m. 4s.; H. W. Steel (8 Zenith sc.), 4m. 47s.; R. B. Clark (2¾ New Imperial), 5m. 1s.; C. D. Michaelis (7-9 Harley-Davidson sc.), 4m. 50s.; and A. O. Gruzelier (3 Zenith-Bradshaw), 5m. 17s.

TEAM PRIZE AND CLUB SILVER MEDAL.—R. C. Charlesworth (8 Zenith sc.), R. C. Staunton (4 Triumph), and C. H. Mocatta (2¾ Coulson

Competitors on Leith Hill during the Surbiton M.C.C. trial for the Ballard Cup. H. F. Edwards (8 Matchless), followed by H. R. Harveyson (4 Harley-Davidson), at the bottom of the hill

LONDON-BALA-DUNSTABLE.

Essex M.C. 24 Hour Trial. Dinas Mawddwy Climbed on the Run.

HELD under ideal weather conditions, with perfect arrangements and excellent organisation, can aptly sum up impressions of the Essex Motor Club's twenty-four hours reliability trial from London to Bala and back, which took place on Friday and Saturday last. The event was open to members only, and included solo and sidecar machines, in addition to cars.

Narrow Time Limits.

In order to qualify for a gold "milestone," competitors were not allowed more than five minutes early or late, and to make non-stop runs over two observed hills *en route*. The event attracted forty-eight entrants, and there were twenty-five motor cycles.

In order to gain one of the premier awards, it was absolutely necessary, not only to have a good machine, but to be an expert driver.

The start took place from Ye Olde Gatehouse, Highgate, the first competitor being sent on his long journey (420 miles) at 7 p.m., followed by the others at one-minute intervals.

The first man to encounter difficulties was J. Wallis (6 Bradbury sc.), who had picked up a large nail in his back tyre near St. Albans. After a hasty repair, he proceeded; and, by the time Dunstable was reached, many of the riders were lighting their lamps, although some of the more fortunate ones carried electric.

Passing Dunstable, A. W. Graham-Martin (8 Zenith) decided to retire owing to belt troubles, having forgotten to carry a "spare." Another competitor collided with a dog, but, fortunately, without any serious results, excepting a bent footrest. J. Wallis (8 Bradbury sc.) stopped in Stony Stratford with a broken throttle wire.

Between High Cross and Tamworth the roads were excellent, but very dusty, and the competitors welcomed the well-prepared supper which awaited their arrival at the Castle Hotel, Tamworth.

It was here that four of the drivers had taken the wrong turning (although the route was excellently arrowed), and checked in late at the control. The two O.K.-Juniors, driven by W. L. Handley and Neville Hall, both appeared to have a good turn of speed, and they ran with the greatest regularity.

Trouble in the Night.

The third check was at Cook's Garage, Welshpool, 175 miles from the start, and shortly afterwards there was a loose patch of metal which proved the undoing of T. V. Davies (2¾ Douglas) and G. A. Lovegrove (2½ Radco), who, in addition to damaging his lamp and front mudguard, lost his gold watch and chain somewhere near the same spot.

Dinas Mawddwy proved no terror to the modern machines, but it gave the dusty drivers food for thought. The following riders made good climbs: W. G. Grabb (4 Triumph), A. C. Rhodes (4 Triumph), J. G. L. Boorer (3½ N.U.T.), S. M. Greening (2¾ Verus-Jap), Noel C. Dear (3½ Sunbeam), and W. L. Handley and Neville Hall, both on O.K.-Juniors. Amongst the higher-powered machines, W. C. Hemy (6 A.J.S. sc.) was the only sidecar driver to make a perfectly clean ascent.

One and a half hours were allowed at Bala before the return journey was commenced. The observed hill on the return run was Rhosgwalian, but it proved no obstacle to the riders.

Leaving the lunch stop at Tamworth, the competitors undertook the last stage of the journey, and were favoured with good roads and machines in excellent fettle to the finishing point, Dunstable, where the following riders were checked in by Mr. A. E. Edwards.

Survivors.

W. G. Crabb (4 Triumph).
H. W. Harrington (2¾ Douglas).
A. C. Rhodes (4 Triumph).
J. G. L. Boorer (5 N.U.T.).
S. M. Greening (2¾ Verus-Jap).
J. McBirnie (7 Indian).
G. A. Lovegrove (2½ Radco).
W. L. Handley (2½ O.K.-Junior).
Neville Hall (2½ O.K.-Junior).
Noel C. Dear (3½ Sunbeam).
G. E. Cuffe (2½ Metro-Tyler).
E. A. Bridgman (7 Indian sc.).
W. Simpson (7 Indian sc.).
J. Wallis (6 Bradbury sc.).
W. C. Hemy (7 A.J.S. sc.).
W. H. Glendinning (8 Rex sc.).
A. W. Daniel (8 Matchless sc.).

THE MANX M.C.C. AND THE T.T.

WE have received from the hon. secretary of the Manx Motor Cycle Club a copy of a letter sent to the secretary of the Auto Cycle Union anent the decision to hold the 1922 Tourist Trophy Races in Belgium:

"'Eastfield,'
"Douglas, Isle of Man,
"31st August, 1921.

"Dear Mr. Loughborough,—At a meeting of the committee of the Manx Motor Cycle Club, held yesterday evening, the following resolutions were unanimously passed, and I was requested to forward them to you, with the hope that you would bring them, as early as possible, to the notice of both the Competitions Committee of the A.C.U. and the General Committee:

"1.—That this club learns with regret the decision of the A.C.U. to hold the T.T. races next year in a foreign country.

"2.—That this club is of the opinion that the holding of this, the greatest British motor cycle road race, in a foreign country, is not in the best interests of the British motor cycle trade.

"3.—That both the Competitions Committee and the General Committee of the A.C.U. be asked to receive at the earliest possible moment a deputation from this club, who would lay the case before them for the retention of the T.T. races, if not in Great Britain, then in the Isle of Man.

"My committee have read certain statements in the press by you, purporting to be the reasons which have moved your committee to make this change. In the issue of *The Motor Cycle* of August 25th, you are reported to have stated, 'We were somewhat bled by the Manxmen.' My committee feel that such a statement as this is a serious charge to make, and would like you to substantiate that charge, giving instances wherein you consider you were bled. You also state, 'We were not our own masters; you know as well as I do the difficulties of transport, and the absence of any concessions by the Isle of Man Steam Packet Co.' We do not know what you mean by the statement, 'We were not our own masters,' and perhaps you will more thoroughly particularise what has induced you to make that statement.

"With regard to the absence of transport facilities and concessions, my committee feel that you should state exactly what you mean, so that, if there are any transport facilities or concessions which you consider should be granted, we would be able to do our utmost to see that you obtain them.

"Thirdly, you refer to the difficulty of the proposed car races. We would be pleased to use whatever influence we have both in this island and with the R.A.C. with the object of arranging dates for both the cycle and car races next year, which would mutually be of advantage to both the A.C.U. and R.A.C. We do not anticipate, at this end at all events, there will be any difficulty.

"My committee feel that the proposed change in the T.T. races is of such importance that you should be asked to specify what other charges or complaints you have to make with regard to your treatment in the Isle of Man, being of opinion that the greater bulk of public opinion within this island would be determined that your complaints would receive fair treatment here, and that you could rest assured of receiving at the hands of the insular authorities every possible advantage and assistance; but it is necessary to specify your complaints, so that they can be enquired into and removed.

"In conclusion, we would point out that motor racing on the Continent, in the future as in the past, must be conducted under greater difficulties than have hitherto existed within this island, and we would instance the treatment meted out to competitors in the recent Grand Prix in France.

"We trust that your committee will give this letter your earnest consideration, and that we will hear from you at an early date fixing the appointment we have asked for. I was further instructed to send a copy of this letter to the members of your committee, the officials of the Association of Motor Manufacturers and Traders, and to the press.

"H. M. ROGERS."

CLUB NEWS.

(Continued from page 322.)

Durham and District M.C.C.

Speed trials, open to members of the North Eastern Centre A.C.U., will be held on Legs Cross Flat (eight miles north-west of Darlington and sixteen south of Durham) on Saturday, September 24th. There will be ten classes.

Coventry and Warwickshire M.C.

On Saturday, October 1st, the fifth annual trial for the Manville Trophy will be held over a stiff secret course, it is expected, in the Cotswolds. Entries, which should be sent to Mr. J. F. Spencer, 27, Priory Street, Coventry, close definitely on Saturday next.

Public Schools M.C.C.

Those successful in completing the 120 miles night trial to time, held on the 3rd inst., were: R. C. Charlesworth (5 Zenith), L. Yeowell (3½ Rudge), H. B. Browning (3¾ Scott), W. E. Bishop (5 Zenith), and C. Keith Robinson (Ner-a-Car).

Evesham M.C.C.

At the recent speed trials in the Cotswolds, fastest time of the day was made by E. Smith (3½ Norton), who covered the 500 yards course in 13⅔s. (approx. 76 m.p.h.). Full results:

LIGHTWEIGHTS UP TO 350 c.c.—R. T. Bent (2¾ Edmund), 23⅔s.; J. Bacon (2¾ Douglas), 26⅔s.

SOLO MACHINES UP TO 600 c.c.—F. G. Byrd (3½ Norton), 18s.; F. P. Andrews (4¼ B.S.A.), 18⅕s.; F. G. Phillips (4 Triumph), 19⅕s.

UNLIMITED SOLO.—E. Smith (3½ Norton), 13⅗s.; F. G. Byrd (3½ Norton), 17⅕s.; P. F. Andrews (4¼ B.S.A.), 18s.

OPEN CLASS FOR SOLO OR SIDECAR MACHINES (on Formula).—F. B. Bent (6 Bat), 17⅗s.; E. Smith (3½ Norton), 14⅗s.; F. Byrd (3½ Norton), 17⅕s.

SIDECARS OR CYCLE CARS NOT EXCEEDING 10 h.p.—S. Bright (8 Enfield sc.), 22⅗s.; J. N. Bacon (6 Enfield sc.), 23⅕s.; E. Chidzoy (4¼ B.S.A. sc.), 24s.

IN THE BALLARD CUP TRIAL.

The lowest powered sidecar in the trial was the 2¾ h.p. Hawker, piloted by L. Peatty.

The start of the recent Hartlepools M.C. reliability trial, which included Boltby Bank on which 30% only of the competitors made clean ascents. O. M. Adlard, who secured second place on his 4 h.p. Indian Scout, waiting the signal "Go."

Hartlepools M.C.

Only about 30% of the entry in the reliability trial on the 4th inst. made clean ascents of Boltby Bank. A. J. Gardener (6 B.S.A.), O. M. Adlard (4 Indian), and R. Raine (4 Douglas) were, in the order given, the leading three, with losses of one, two, and three marks respectively.

Westoe M.C.

G. Heath (3½ N.U.T.) gained first place in the recent reliability trial, winning the President's Cup and a gold medal. Next in order of merit were T. S. Braid (4 Indian Scout) and W. Ellis (3½ Norton).

A dinner will be held on October 21st at the Regent Hotel, Ocean Road, South Shields.

Bristol M.C.C.

Although it had been announced that there would be "no freak hills, colonial sections, or bad roads," the course for the recent Carter Cup trial was as stiff as the most hardened trials rider could desire. Results:

THE CARTER CUP (presented by Mr. W. B. Carter, president of the club).—H. Walker (3½ Norton sc.); second prize, H. Spencer (4 Omega); third prize, E. G. Fery (6 Douglas sc.); fourth prize, F. Burchill (8 Rover); fifth prize (tie), P. Bonnett (8 Matchless sc.) and J. Waycott (4 Harley-Davidson).

SILVER MEDALS.—K. J. Woods (3½ Sunbeam sc.), A. J. Dyer (3 A.B.C. sc.), E. L. Smith (4 Triumph), — Chugg (7 James sc.), F. G. Mann (7-9 Harley-Davidson sc.), and — Austice (3 A.B.C.).

Aberdare and District M.C.C.

Held on Brecon Beacons in somewhat unfavourable weather, the recent speed trials were, nevertheless, very successfully carried out. Results:

250 c.c. (Closed).—1, A. J. Sheen (2½ Levis), 59⅖s.; 2, H. Harris (2½ New Imperial), 62⅘s.

250 c.c. (Open).—1, A. J. Sheen (2½ Levis), 63s.; 2, T. Parry (2¼ New Hudson), 64s.

350 c.c. (Open).—1, Handel Davies (2¾ Coulson B), 61s.; 2, R. J. Brace (2½ Francis-Barnett), 66s.

350 c.c. (Closed).—1, Handel Davies (2¾ Coulson B), 62⅕s.; 2, R. J. Brace (2½ Francis-Barnett), 63⅗s.

600 c.c. (Open).—1, Ivor Thomas (3½ Sunbeam), 47⅕s.; 2, Ienan Parker (3½ Sunbeam), 49s.

UNLIMITED.—1, Ivor Thomas (3½ Sunbeam), 46⅕s. (fastest time); 2, I. Parker (3½ Sunbeam), 48s.

PASSENGER MACHINES (Open).—1, Handel Davies (8 Brough Superior sc.), 59s.; 2, Ivor Thomas (Sunbeam sc.), 61⅗s.

ABERDARE M.C.C. NOVICE CLASS.—1, A. J. Sheen (2¼ Levis); 2, S. Gregor (3½ Norton).

Accrington and District M.C.C.

Successful competitors in the sporting trial held on the 4th inst. were:

SOLO.—H. Smith (3½ Rudge), gold medal.

SIDECARS.—S. Park (8 Enfield sc.), gold medal and cup for best performance.

ENDURANCE PRIZES.—Miss Smith (4 Blackburne sc.) and C. Riley (2¼ Enfield).

Reigate, Redhill, and District M.C.C.

Results of the hill-climb held on the 3rd inst. were as follows:

250 c.c. CLASS.—1, G. Symonds (2¼ Levis).

350 c.c. CLASS.—1, A. Gruzelier (3 Ivy).

600 c.c. CLASS.—1, W. H. Sheraton (3½ Norton); 2, Reg. Green. (3½ Norton).

UNLIMITED CLASS.—1, Reg. Green (3½ Norton)*; 2, A. W. Gruzelier (3 Ivy); 3, W. H. Sheraton (3½ Norton).

* Fastest time of the day.

On Wednesday of last week a freak hill-climb was arranged, A. G. Harris winning the premier award for the best performance, riding a 4 h.p. Douglas sc.

NORTON AND HARLEY-DAVIDSON RECORDS.

TWO consistent record breakers, R. N. Judd and C. F. Temple, were very busy at Brooklands on Monday and Tuesday of last week, and both were successful, the former on a 3½ h.p. Norton breaking two, and the latter on a 7-9 h.p. Harley-Davidson, with and without sidecar, beating eight in all, and, incidentally, raising the British flying mile to 100 m.p.h. (exactly) for the first time.

CLASSES C AND D (500 c.c. AND 750 c.c.).

FLYING FIVE MILES.—R. N. Judd (3½ Norton), 3m. 40.8s., 81.52 m.p.h. (131.19 k.p.h.).

STANDING START TEN MILES.—R. N. Judd (3½ Norton), 7m. 40.2s., 78.23 m.p.h. (125.89 k.p.h.).

CLASS E (1,000 c.c.).

FLYING KILOMETRE.—C. F. Temple (7-9 Harley-Davidson), 22.4s., 99.86 m.p.h. (160.71 k.p.h.).*

FLYING MILE.—C. F. Temple (7-9 Harley-Davidson), 37s., 97.30 m.p.h. (156.57 k.p.h.).*

FLYING MILE (ONE WAY).—C. F. Temple (7-9 Harley-Davidson), 36s., 100 m.p.h. (160.93 k.p.h.).

CLASS G (1,000 c.c., SIDECARS).

FLYING KILOMETRE.—C. F. Temple (7-9 Harley-Davidson sc.), 29s., 77.14 m.p.h. (124.13 k.p.h.).*

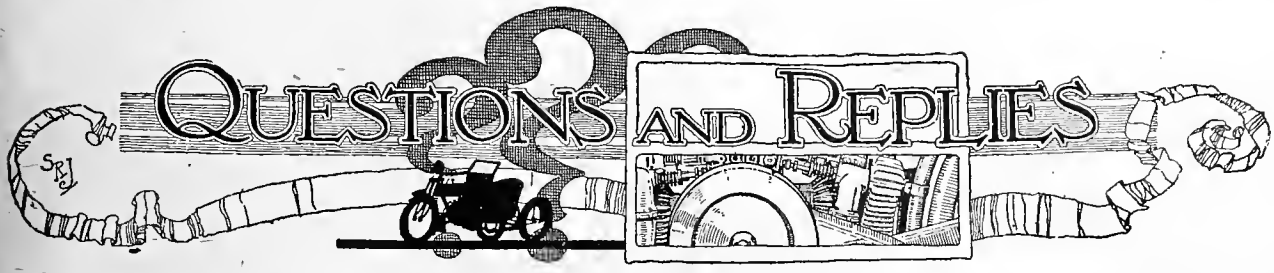
FLYING MILE.—C. F. Temple (7-9 Harley-Davidson sc.), 49.1s., 73.32 m.p.h. (118 k.p.h.).*

FLYING KILOMETRE (ONE WAY).—C. F. Temple (7-9 Harley-Davidson sc.), 27.8s., 80.47 m.p.h. (129.50 k.p.h.).

FLYING MILE (ONE WAY).—C. F. Temple (7-9 Harley-Davidson sc.), 47s., 76.60 m.p.h. (123.26 k.p.h.).

STANDING START, TEN MILES.—C. F. Temple (7-9 Harley-Davidson sc.), 42.8s., 68.86 m.p.h. (110.82 k.p.h.).

* Mean speed records.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

WHERE ARE THE FORECARS?

Is there on the market a three-wheeler on the principle of a bicycle with the car in front, as an alternative to the sidecar? It would seem that two passengers might be carried without making the combination wider than the usual plan. The expense should be little or no greater. This plan would obviate the fault of bad distribution of weight and strain involved in the sidecar construction and provide better mud protection. It is possible, of course, that the steering presents difficulties which I do not understand. The machine would be something on the lines of the common tradesman's pedal tricycle.—W.G.B.

The arrangement you describe was used to a large extent in the early days of the motor cycle movement; but all the original tricycles and tricars have ceased to exist, as they were not very safe at speed and frequently overturned on corners; at the same time, a successful modern design on these lines should be possible.

ERRATIC RUNNING OF A.I.V. TWIN.

I have just bought a 1911 $2\frac{3}{4}$ h.p. Douglas, and have overhauled it, but now find that on starting it fires on one cylinder only for about twenty yards and then on both pretty regularly. This appears to be the fault of the magneto. The points break equally for each cylinder, the cables have been changed, but not the brushes, for they seem to be all right. Can you suggest anything? The spark occurs on top centre, two-thirds retarded. After the throttle has been opened half-way no more power can be obtained. Is this the fault of the jet being too small? What m.p.g. and m.p.h. should this engine attain?—H.Q.

If the machine runs perfectly on both cylinders after covering about twenty yards it would appear that the magneto is in quite good order, and we are inclined to believe that the trouble is due to an air leak in the induction system of the cylinder concerned. Make sure that the induction pipe union is tight. We assume that both inlet valve springs are of equal tension. One stiff spring might cause the trouble. Probably a slightly larger jet would allow the engine to respond to wider throttle openings. 80 to 100 m.p.g. If in ordinarily good condition, the machine should be capable of doing 40 m.p.h.

FITTING AUTOMATIC DRIP FEED

With a Best and Lloyd drip feed, is it necessary to fit a non-return valve on the bottom of the front cylinder where the oil is led in? If not, how is the oil prevented from being blown back into the sight glass?—J.P.B.

It is unnecessary to fit a non-return valve where the oil pipe enters the crank case, as there is a small check valve at the base of the sight feed chamber. When this valve is working correctly there will be no blow-back into the sight feed chamber.

POSITION OF LICENCE HOLDER.

Will it be in order for me to attach the licence holder to the top tube of my motor cycle, over the tank, with the glass facing to the near side? My handle-bars are already crowded, and I have an A.A. badge on the front number plate; and, anyhow, I prefer to be modest about having paid the tax, so would choose an inconspicuous position for the licence, provided it complies with the law.—F.G.H.

There is no objection to you fitting the licence holder on the top tube of your machine, provided that it can be seen readily from the near side of the road. A better position would be on the side of the front forks.

A LIGHTWEIGHT FOR TOURING.

I am proposing to get a motor cycle, and find a difficulty in deciding whether a $2\frac{1}{4}$ h.p. or $2\frac{3}{4}$ h.p. engine would suit my requirements best. I am a lightweight (under 10 st.), and I shall use the machine chiefly for short journeys, but twice a year I shall require the machine to do a journey of 350 miles in three days. I shall not want to go very fast, and shall be quite content to average 20 m.p.h. Is a $2\frac{1}{4}$ h.p. lightweight capable of this, or would I have to get a $2\frac{3}{4}$ h.p. machine? I want reliability, economy of upkeep, only moderate speed (35-40 m.p.h. is the most I should want to go), and simplicity.—P.K.W.

Any modern machine from $2\frac{1}{4}$ h.p. upwards should be capable of doing a 350-mile journey in three days. Incidentally, you will no doubt have to be content with a 20 m.p.h. average with any lightweight machine, as this is quite a reasonable speed, and probably requires a machine capable of a 35 m.p.h. maximum.

OIL SPRAY THROUGH PULLEY.

A few weeks ago I bought a 1912 Rover, which is going very well, except for oil leaking out of a hole in the pulley side of the crankshaft. This hole, I think, is for crank case release; but I am not sure whether it should have a ball valve, or some such fitting. The cylinder bore, piston, and rings are all in good order.—W.J.A.

A ball valve is not fitted in the crankshaft release, and if oil blows through the shaft it would be advisable to fit some shield which would prevent it spraying over the footrests.

TWO-STROKE MATTERS.

(1.) What are the maximum revs. of the 350 c.c. two-stroke Precision engine on a level road geared 5 to 1 and carrying a rider weighing twelve stone? (2.) What are the maximum revs. geared 8 to 1? (3.) When driving, the engine suddenly gives a violent jerk, as though caused by a too early spark; this often occurs when having run only a few minutes. I know, for a fact, the magneto timing is absolutely correct. (4.) When driving, and attempting to drive hard, the engine will not respond to full throttle, even along the level. This may continue for perhaps a mile, when quite suddenly it will pick up and go away with a burst; this occurs with a clean engine. The feeling is that pre-ignition is happening. (5.) What, in your opinion, is the mileage covered before it is necessary to decarbonise? and why should the top piston ring carbonise up very quickly?—S.P.

(1 and 2.) These are questions which should be referred to the makers, as they will supply you with definite figures. We should imagine, however, that the engine should be capable of reaching 3,500 r.p.m. when running on the level under the given load. (3.) This appears to be a case of plug pre-ignition. (4.) This may be due either to temporary stoppage in the oil supply or to the flow of petrol to the carburetter being partly obstructed. (5.) Probably 800 to 1,000 miles. The carbonising of the top piston ring is a very usual trouble with air-cooled two-stroke engines. It may be prevented to some degree by using a ring which is a comparatively loose fit in its groove. We should strongly recommend you to use a plug specially made for two-stroke engines.

LOW PETROL CONSUMPTION.

? Having read the book "Two-stroke Motor Cycles" compiled by the staff of your excellent paper, I gather that 100 m.p.g. is good for a small two-stroke machine, but that one make you know of would do somewhere around 130 m.p.g. I want to know if you can disclose the name of the machine, as petrol consumption is a big thing to watch nowadays.—H.R.H.

Connaught, Levis, and Velocette machines have recorded figures such as those mentioned in various petrol consumption trials; indeed, we believe that the makers of the Levis machines would guarantee from 100 to 120 m.p.g. with their single gear models.

"EARTHING" THE SPARKING PLUG.

? I find I get a much "fatter" spark from the plug placed on top of the engine if I connect up from one of the (Dixie) magneto holding bolts and one of the engine bolts. Can this injure the magneto if run at speed? My magneto is mounted on an aluminium base, and I conclude that the current cannot return to the magneto as readily through the engine and frame as it does when connected up as above.—J.F.H.

The direct "earth" connection between the magneto and plug cannot do harm, as in any case there must be a return circuit, otherwise there would be no spark at the plug.

DYNAMO EXPERIMENTS.

? I have been contemplating converting a spare magneto into a dynamo for accumulator charging for electric lighting, as I understand that this is possible, provided the necessary alterations are made, *i.e.*, rewinding the armature with suitable wire and replacing the slip ring by a commutator; but, in referring to a book on dynamo winding, I learn that the H type armature is unsuitable for accumulator charging, as when it is in a certain position it would short circuit the accumulator. I should therefore be much obliged if you would tell me: (1.) If this is correct? (2.) If it is at all possible to charge an accumulator in this way? (3.) If so, what would be the voltage and amps. required to charge two 4 volt 20 amp. accumulators? (4.) Should they be connected up with the dynamo in a circuit or each be connected direct? (5.) If it would charge quicker and better to have one accumulator of 6 volts 30 amps.?—L.W.

(1.) The H section armature is not the most efficient variety for accumulator charging; but the short circuiting of the batteries can be avoided if there is a sufficient gap between the commutator segments in order to prevent the latter from being bridged at any position by the brushes. (2.) It is certainly possible to charge an accumulator this way. H section armatures for lighting generators are actually used for motor cycle lighting by more than one prominent firm. (3.) The output should be about 3 amps. at 4 volts. (4.) The accumulator and lamps should all be connected in parallel and not in series. (5.) It is very doubtful if you could get a pressure of 6 volts with a generator of this type.

Important Dates.

Sat., Sept. 17th—Grand Prix Race for Cycle Cars.

Sat., Sept. 17th—Midland Centre A.C.U. Open Hill Climb.

Fri., Sept. 23rd. to Tues., Sept. 27th—Anglo-Dutch Reliability Trial.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"T.D." (Durham).—Chain guards instead of standard cases on P. and M.: Do chains wear badly, and is gear affected in any way?

"E. B. McL." (Helensburgh).—3½ h.p. 1921 Rudge Multi: Speed, reliability, efficacy of gear on hills, and consumption compared with previous models.

"J.T.G." (Shipley).—3½ h.p. or 7-9 h.p. Rudge Multi: Reliability, wear on belt, and slip in wet weather.

"B.W." (Birmingham). — Economic power unit: Attachment for cycle, all-weather use, climbing, reliability, etc.

"A.H." (Leicester). — P.V.-Villiers: Reliability, climbing, comfort of spring frame, pillion riding.

"R.B.S." (Keighley).—American-Excelsior and Henderson: Speed, reliability, and petrol consumption.

"F.W.W." (Liverpool).—A.V. Monocar: Climbing, braking, reliability, and oil and petrol consumption.

"K.H.B." (Weybridge).—1921 2¾ h.p. A.J.S.: Reliability, climbing, speed, consumption (oil and petrol), gear box, and transmission.

SPARKLETS

A Programme Amendment.

In the recent Midland Centre hill-climb at Penkridge Bank, already reported in our columns, A. R. Evans, who achieved some remarkably fast times, was mounted on a 2¼ h.p. New Imperial-Jap. His mount was specified in the programme as a 2¼ h.p. J.A.P.

Catalogues Received.

Taw Manufacturing Co., Ltd., Campsbourne Works, High Street, Hornsey, London, N.8: A folder describing several varieties of side lamps suitable for fitting to sidecar wings or lamp-brackets; also three excellent forms of tail lamps and a handsome head light.

Found on the Road.

A motor cyclist, who was recently obliged by a supply of petrol at the roadside near East Grinstead from Mr. C. J. Crawford, left some of his property in the latter's sidecar. The articles are awaiting him at 20, Sportsbank Street, Catford, London, S.E.6.

A sidecar cover off a (?) Royal Enfield machine, driven by a lady, was picked up, on the 4th inst., by Mr. J. W. Britton, of Glenroyde, 71, Holly Lane, Erdington, Birmingham, on the Stratford-Birmingham road.

A Note for Traders.

An attractive showcard illustrating Schrader tyre valve specialities is available, and may be obtained on application to A. Schrader's Son, Inc., Victoria Road, Willesden, London, N.W.10.

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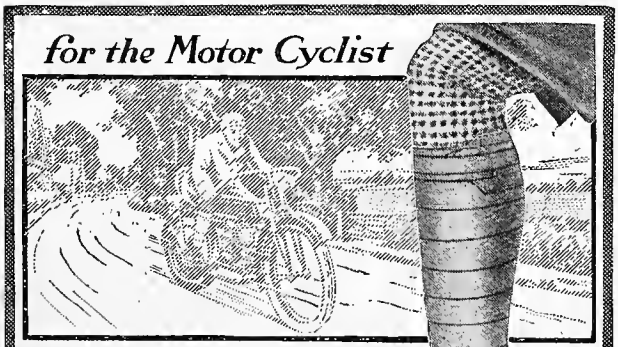

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DOUGLAS, 1916-17, 2¾ h.p., 2-speed, semi-T.T. bars, re-enamelled and plated, all lamps, horn, tools, etc. New condition £57 10
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TRIUMPH, 1919 (late), 4 h.p., 3-speed, clutch and kick-starter, Whiteley Sidecar to match, Easting screen, all lamps, horn, etc., new condition throughout £115 0
RADCO, 1920, 2¾ h.p., 2-speed, Lucas lamps, horn, run under 700 miles £42 10
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take your old machine in part exchange for a new one of any leading make. The value mutually agreed upon to represent the initial deposit on the new model. Balance payable in 12 (twelve) equal monthly instalments. Second-hand machines can be taken now, and full value allowed in part payment for any model with which we deal, to be supplied at once, or at a later date. Below is a selection taken from our list.

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TRIUMPH, 4 h.p., Model H £115 0
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B.S.A. Combination, 6-7 h.p., dynamo £195 15
B.S.A. Combination, 6-7 h.p. twin £175 0
B.S.A. Combination, 4½ h.p., Model K2 ..... £149 0
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A.J.S. Combination, 7 h.p. £195 0
A.J.S. Combination, 7 h.p., dynamo £220 0
MATCHLESS Combination, 8 h.p., standard, spare wheel and tyre £185 0
CALTHORPE Gent's Bicycle £10 10
SUNBEAM, 3½ h.p. £155 8
VELOCETTE, 2¼ h.p., 2-speed, chain drive £65 0
QUADRANT Combination, 4½ h.p. £125 0
QUADRANT, solo, 4½ h.p. £105 0
BRADBURY, 4 h.p. £95 0
BRADBURY, 6 h.p. £125 0
BRADBURY 6 h.p. Combination £160 0
BRADBURY, 2¾ h.p. £85 0
G.N. Cycle Car, touring model £215 0
COVENTRY PREMIER, dynamo £250 0
MATCHLESS, dynamo, with 2-seater Sidecar £216 15
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£45.—4h.p. Bat-Jap engine combination, coachbuilt, wind screen, all in good condition, tax paid; y appointment evenings.—31, Kohat Rd., Wimbledon, .W. [8474

BAT, late 1920, 6h.p. twin sporting model, fully equipped, absolutely as new; £105.—Parker's, radshawgate, Bolton; also 245, Deansgate, Manhester. [X8924

BAT-J.A.P., 3½h.p., 1913, single speed, spring frame, splendid condition, fast and powerful; est offers; roomy cane sidecar body, good, 25/-; .S.U. 2-speed gear, 1920, complete, off 4h.p. J.A.P., 8, nearest.—Farndell, 7, Cator St., Peckham, S.E.15. [9078

Beardmore.

BEARDMORE-PRECISION, spring frame, excellent condition, accessories, licensed; best offer.—pencer Parker, Mildenhall, Suffolk. [8995

1921 Beardmore-Precision, original tyres, unscratched, engine just run in; £59/10; cost 105.—Adams, 34, Tonsley Rd., Wandsworth. [8843

BEARDMORE-PRECISION, June, 1921, spring frame, accessories, spares, licence, perfect; £65. -107, Mortimer Rd., London, N.1. 'Phone: Dalston 8. [8976

Blackburne.

1920 8h.p. Blackburne, Canoelet sidecar, shop-soiled; £175, or nearest.—A. J. Young and Co., Ltd., ewmarket. [6628

h.p. Blackburne, Sturmey-Archer gear box, built this year, lamps, speedometer, tax paid; £80.—14, Brixton Hill, S.W. [8836

1921 Blackburne, 4h.p., fully equipped, cost £137 last month, tax paid, guaranteed faultless; 95.—57, Lamont Rd., Chelsea, S.W. [8413

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BLACKBURNE 1920 8h.p. Combination, Swan sidecar, fully equipped and licensed, very fine outfit; 135.—The Layton Garages, 30, Holywell St., Oxford. Phone: 581. [8208

h.p. Blackburne Combination, June, 1920, lamps, horn, Bluemel screen, apron, 3in. Palmers (uncut), hole machine like new, not done 1,000; price 100 ns.; motor boat also for sale.—Lotusland, Thames itton Island. [8692

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BRADBURY Combination de Luxe, 1919¾, 6h.p., perfect condition; £117, offer.—88, Brookside Rd., .W.11. [8359

TOW'S This; 1920 Bradbury combination, 4h.p., cost over £150; £78.—57, Kenbury St., Camberell, London. [8986

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B.S.A.—All models always in stock; delivered anywhere.

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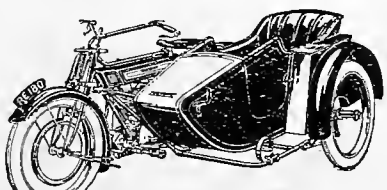

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HARLEY-DAVIDSON, 4-5 h.p. flat twin, speedometer, acetylene lighting	£150	0
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4¼h.p. B.S.A., countershaft 3-speed, lamps, horn, tax paid; £65; exchange, cash either way.—5, Addison Av., Holland Park, W.11. [8775

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6-7h.p. B.S.A. 1921 Combination, shop-soiled only; reduced to £158/10; cash or easy terms.—Wauchope's, 9, Shoe Lane, Fleet St., London. [8766

4¼h.p. B.S.A. Combination, 3 speeds, all-chain drive, clutch, kick start, Easting, lamps, tools, etc., new sidecar; £80.—108, Hainworth Wood Rd., Keighley. [8363

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B.S.A. 4¼h.p., Dec., 1917, perfect, 3-speed, kick starter, Easting, speedometer, electric lighting, all accessories, spares, nice lot; £85.—56, Willow Walk, Bermondsey. [8347

B.S.A. Combinations, all first-class, well equipped, 1918, £79; late 1919, £85; 1920, £98.—B.S.A. agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. Kensington 4096. [9212

B.S.A. 1915-16 H2 Combination, excellent condition, speedometer, new tyres, Tan-Sad, fully equipped, D.A. lighting, insured, tax paid; £85.—58, Tennyson Rd., Kilburn, N.W.6. [9025

B.S.A. Singles and Twins, early deliveries, fitted with any model Sandum sidecars; B.S.A. twin and dual sidecar in stock.—Sandum Sidecars, 336, Gray's Inn Rd., W.C.1. [0541

B.S.A. Late 1919 Combination, all-chain drive, Lucas electric, hood, screen, speedometer, mirror, Binks carburetter, splendid condition; £110.—28, Loddiges Rd., Hackney, E.9. [8777

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B.S.A. 1921 4¼h.p. Combination, Lucas lamps, D.A. lighting, Cowey, Easting, nearly new, £125; 1916 combination, run 5,000 miles only, £80; both tax paid.—114, Brixton Hill, S.W. [8833

B.S.A. 4¼h.p., 1921, Model H2, with B.S.A. No. 3 sidecar, an ideal outfit, just arrived from works, in stock, immediate delivery; £152.—Wilkins, Simpson (opposite Olympia), London. [9233

BRAND New 1921 B.S.A. 6-7h.p. Twin Combination, interchangeable wheels, lavishly equipped, tax and insurance paid; cost £205, sacrifice £145.—Dentist, 216, Portobello Rd., W.11. [8861

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B.S.A

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B.S.A., 1916-17, 4¼h.p., Mills-Fulford sidecar, wind screen, luggage grid, excellent condition, recently overhauled, lamps, horn, licence, etc.; £90, or nearest.—Everill, Kempsey, Worcester. [8998

1920 B.S.A. 4¼h.p. Combination, fully equipped with hood, screen, Tan-Sad, lamps, etc., in perfect condition; £95, or consider exchange with big twin.—18, Kelmore Grove, East Dulwich, S.E.22. [8810

B.S.A., 1920, 4¼h.p., all-chain drive, B.S.A. best sidecar, Lucas Magdyno electric lighting, Easting wind screen, licensed; really first-class outfit; £120.—128, Cooper's Lane, Smethwick, Birmingham. [8902

B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St. (off Blenheim St.) New Bond St., W.1. [0657

B.S.A., 1921, Model H2, 4¼h.p., 3-speed, very fine condition, complete equipment, includiog lamps, speedometer, and 1921 licence; £95.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9262

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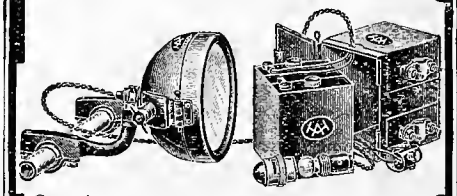

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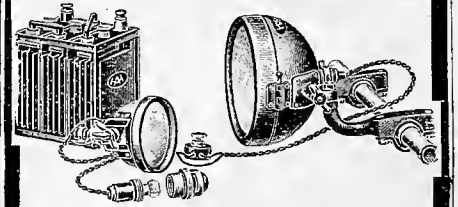

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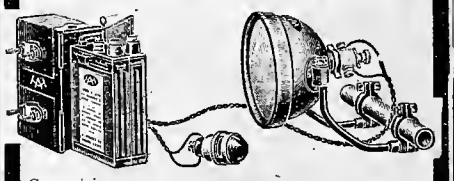

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2¾h.p. Calthorpe-Jap, 1920 model, sloping tank Enfield 2-speed gear, tax paid; 40 gns.—Wauchope's, 9, Shoe Lane, London. [876

Campion.

6h.p. Campion-Jap Combination, 1918 (?), Sturme countershaft 3-speed and K.S., perfect order; ex change good solo and cash or lighter turnout, or sel £80.—29, Pembroke St., Cowley Rd., Oxford. [891

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CEDOS 1921 Lightweight, 2-speed, brand new, ba slightly showroom soiled; £50.—The Layto Garages, 30, Holywell St., Oxford. 'Phone: No. 581 [928

1921 Cedos, 2¼h.p., lamps, horn, speedometer tools, etc., splendid condition, 125 to the gallon £60, or nearest; owner giving up riding owing t health reasons.—Forest Gate Hotel Garage, Tylne Rd., Forest Gate. [908

Coventry Challenge.

1920 Coventry Challenge, 3½h.p. twin J.A.P 3-speed, Sturmey, kick start, M-L, B. and B Lucas lamps, Klaxon, Watford speedometer, spar tube, all tools, excellent condition; £95, or neares offer.—Broughall, Priory House, Belvedere Rd Coventry. [X849

Chater-Lea

3½h.p. Chater-lea, White and Poppe, 2 speeds, ne tyres (unpunctured), lamps, tax paid; £38.—21 Oxford Rd., Harrow. [867

CHATER-LEA Combination, 6h.p. twin, 3-spee countershaft, all-chain, just overhauled, lamps, in surance, tax paid; £58.—62, Albert Rd., Dalston, Lo don. [879

1921 Chater-Lea 8h.p. Combination, unpunctured electric and acetylene lights, Royal Eastin screen, Tan-Sad, mechanical horn, luggage grid and petr carrier, tax and insurance paid; cost £186, accept £15 or offer.—21, Park Hill, Clapham Park, S.W.4. [882

Cleveland.

NEW Cleveland 3h.p., electric light, tax paid, u heatable for comfort; £52; wanted, 1921 com bination.—70, West Hill, Wandsworth. [861

CLEVELAND 3h.p., 2-speed, clutch, K.S., chain driv all accessories, including Tan-Sad, tax paid, h been completely run in, most comfortable lightweig on road, new last April; accept £80; owner boug combination.—Marks and Baron, Ltd., Lancaster Rd Preston. [X88

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CLYNO Lightweight, Sept., 1920, splendid cond tion, tax paid, insured, all on; 38 gns.—96a, Cli ton Hill, London, N.W.8. [834

CLYNO Combination, 3-speed, clutch; no reaso able offer refused.—Green, c/o 129, Larkha Lane, Clapham, London. [891

5-6h.p. Clyno Combination, tax paid, tyres in perfe condition, lamps, Easting wind screen, spare whee £75, or near offer.—H. Ellis, 17, Staines Rd., Sunbur [913

CLYNO 6h.p., Sandum underslung sidecar, new a pearance, spare wheel, accessories, wind scree insured, tax paid; lowest £80.—223, Green St., Fore Gate, E.7. [865

CLYNO 2-stroke, 1915 or 1916, in lovely conditio smart machine, tax paid, and guaranteed; £3 or offer.—Butterworths' Garage, 64, Mill Lane, Brixto Hill. 'Phone: Streatham 2813. [914

1921 Clyno Combination, 8h.p. De Luxe model, pr tically new, electric lighting outfit, sidecar ho and wind screen with side panels, etc.; £180.—Truem Motor Co., Ltd., 54, Trueman St., Liverpool. [85

CLYNO Combination, 1921, 8h.p., condition as ne very low mileage, Lucas head lamp, electric si car and rear, horn, Cowey trip speedometer, license mechanically perfect; any trial; £150.—Littlewood a Co., Sherman Rd., Bromley, Kent. [87

MISS DOOLEY.—1915-16-17 6h.p. Clyno mot cycles, clutch, K.S., renovated and complete fro £55 each; thoroughly overhauled; seen any tim during the day. Also engines and gear boxes for sal new and second-hand.—Please apply to Miss E. Doole 33, Killyon Rd., Clapham, S.W.8. [920

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1921 Coulson-Blackburne, spring frame, 2-spe clutch, K.S., brand new; list price £84, my pri £76.—Below.

1921 2¾h.p. Coulson-Jap, spring frame, sports mod 2-speed clutch, brand new; special reduced pri £70.—Edwards, 50, Harrington Rd., South Kensingto [92

COULSON B 1921 Models in Stock.—Sole Wiltshi Agents, Wessex Motors, Ltd., 60, Catherine S Salisbury. 'Phone: 72. [50

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HARLEY-DAVIDSON 1919-20 7-9h.p. Elite Combination, electric model, excellent condition, as new, 145 gns.; Harley-Davidson, 1917, 7-9h.p., excellent condition, 80 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [9341

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HARLEY-DAVIDSON 1919 Model F, fully equipped, acetylene lighting, speedometer, horn, standard sidecar, oversize tyres on rear, discs, 1920 front forks, carefully ridden, licence to December, 1921; £110.—V.M., 24, Sheffield Terrace, W.8. [X8563

HARLEY-DAVIDSON 7-9h.p., 1918-19 Model, new Sandum 2-seater sidecar, hood, 2 screens, Tan-Sad back and footrests, electric lighting, speedometer, spare tyre, tools, 2 spare chains, fully insured 2 persons and driver and usual risks, tax paid, ideal family outfit; £150; after 6 p.m.—120, Inderwick Rd., Hornsey, N.8. [8757

Hazlewood.

HAZLEWOOD-J.A.P. 4h.p., clutch, 3-speed, C.B. sidecar; £55, or would separate.—Write or call, 105, Knatchbull Rd., Myatts Park, S.E.5. [9243

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FOR Sale, Dec. 1920 Henderson, Henderson Elite Sidecar, aluminium discs, etc., all on, tax paid, hoe for sporty rider; £160; private owner; cost £265.—Box 6,282, c/o *The Motor Cycle.* [8712

HENDERSON, 1921, 3 speeds, reverse model, 4-cyl., dynamo lighting, Elite combination, tax paid, excellent condition; 195 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [9342

Hobart.

HOBART, Villiers, 1920, 2½h.p., 2-speed, good condition; £45; to be seen in London.—Write, Rodd, Scott's Lodge, Knockholt. [8688

1921 Hobart-Jap 2¾h.p., clutch, K.S., 2-speed, all accessories, tax and insurance paid, not done 100 miles; cost £87/10, will accept £70.—130, Thorold Rd., Ilford, Essex. [9199

J.A.P. (Hobart) 4h.p., overhead valve, 90 bore, 2-speed, free engine, 1914 model, in guaranteed order; £38.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9144

1921 (April) Spring Frame Hobart, Villiers engine, Sturmey-Archer 2-speed, clutch and kick starter, electric lighting set, horn, Speedwell leg shields, Stanlock, not used last 2 months, uncratched and perfect; £65.—Warrick, 28, Broadway, Bexleyheath. [8867

Hoskison.

F.O.C.H. have 1920 Hoskison-Blackburne 2¾h.p., kick starter; £55.—5, Heath St., Hampstead (near Hampstead Tube Station). [8637

Humber.

1921 Humber, 4½h.p. flat twin, brand new; list £140; £119, or best offer.—Gray's Garage, Watford. [9155

HUMBER, 2-speed, 1911, and sidecar, tax paid, overhauled Humber (receipts shown); £45.—Victoria Garage, Coventry. [X8923

3½h.p. Humber Coachbuilt Combination, excellent condition, tax paid; bargain, £30.—Fisher, 24, Tremadoc Rd., Clapham, S.W.4. [8786

Indian.

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INDIAN 7-9h.p. Coach Combination, 2-speed, clutch, new tyres; £48.—Surgery, 484a, Fulham Rd., Walham Green. [8624

1919 Indian Powerplus, as new, tax paid; £80; fine 'bus; too fast.—Taylor, Butcher's, Woodside Green, South Norwood. [8801

7-9h.p. Indian, clutch model, good condition; reasonable offer considered; going abroad.—Taylor, Garage, Bearsted, Kent. [7511

3½h.p. Indian and Canoelet Sidecar, 3-speed, lamps, tax, horn; given away, 49 gns.—Ramsdens, Mayfield Av., Blackpool. [8605

INDIAN 7-9h.p., clutch model, tyres as new, splendid condition, electric lamps; bargain, quick sale, £55.—80a, High St., Bexley, Kent. [9302

7-9h.p. Indian Combination, 3-speed, spring frame; £100; full particulars with pleasure.—Cornell, 57, Queen's Rd., Bury St. Edmunds. [9014

1919 Indian 7-9h.p. Powerplus, speedometer, lamps, etc., excellent condition; £75, or nearest offer.—Box 6,292, c/o *The Motor Cycle.* [9239

INDIAN Combination, 1915, sporting sidecar, 7-9h.p., 3-speed, K.S., spring frame, fine condition; £55.—17, Heaton Rd., Mitcham. [8865

INDIAN 7-9h.p. Combination, spring frame, 2-speed, clutch, kick starter, fine condition, tax paid; trial given; £60.—Sims, 22, Cottenham Rd., Holloway, N.19. [9162

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1915-16 Indian 7-9h.p. Combination, spring frame, 3 speeds, clutch, kick start, overhauled, rebushed, lamps, horn; £80, or near offer.—Hashfield, 'Phone North 1341 (10-5). [8807

INDIAN Combination (1919), Millford de Luxe, little used; must sell; owner going abroad; offers; any trial Monday, or by appointment.—Slee, Navasota, Victoria Docks, London. [8542

1920 Indian Electric Combination, horn, speedometer, Easting screen, pillion, tools, overalls, etc., tax, insurance, low mileage, perfect; nearest £110.—Naylor, Retiro House, Wellington St., Matlock. [6947

RIDICULOUS Bargain. £50.—1916 1-3 Powerplus Indian combination, sporting slipper sidecar, wants overhauling, but absurd bargain; £50; first deposit secures.—Douglas S. Cox, 6, Lansdowne Hill, West Norwood. [7195

BARGAIN, 1920 Powerplus Indian Combination, dynamo lighting, speedometer, original tyres (1,900 miles only), storm cover, absolutely unscratched, magnificent outfit, cost £225, any test; £125; exchange Morgan.—89, East Hill, Wandsworth. [8792

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INDIAN 1919 Powerplus Combination, complete with genuine Indian sidecar, dynamo lighting, speedometer, Cameo screen, etc., mechanical condition guaranteed, appearance and tyres good, thoroughly recommended; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9267

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1920 2¾h.p. Invicta-J.A.P., Sturmey 2-speed, clutch, K.S., legshields, Flexekas, tax; £60.—78, Brewery Rd., Plumstead, S.E.18. [9121

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1920½ Sports Ivy, 110 per gallon; £40, offers.—109, St. Andrew's Terrace, Kilmarnock. [8901

IVY.—Actual No. 6 T.T. machine, ridden only in the race; £90.—J. Blake and Co., 22, Rodney St., Liverpool. [8441

IVY 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

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FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [X8501

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DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

JAMES 1921 2¼h.p., 2-speed, unscratched; cost £81, sacrifice £55.—17, St. Charles Sq., W.10. [7760

JAMES 4¼h.p. Combination, 1916, Tan-Sad, lamps, hood, good tyres, perfect; £80.—22, Garden Av., Mitcham. [8667

F.O.C.H. have several James solos and combinations, cheap.—5, Heath St., Hampstead (near Hampstead Tube Station). [8635

SPORTING James 4¼h.p., 2-speed, perfect; £40; exchange clutch Indian or cycle car chassis.—27, Corinne Rd., Tufnell Park. [9329

5-6h.p. James Combination, 1919, in perfect condition, fully equipped; £125; seen by appointment.—Lacey, Norris Rd., Staines. [8345

JAMES 1916 4¼h.p. Combination, dynamo lighting, electric horn, spares; any trial; £100.—Stevens, 2, Tugela St., Catford, S.E.6. [8523

4¼h.p. James Combination, 1915, kick starter, 3-speed, Cancelet sidecar, just overhauled; £60, or nearest offer.—Rose, 26, Martin Rd., Ipswich. [8392

1921 2¼h.p. 2-speed James, slightly shop-soiled; reduced to £60, easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X8518

1919 5-6h.p. James Combination, de luxe sidecar, leg shields, Klaxon, all accessories, tax paid, mileage 1,000, excellent condition; £125.—Dan Guy, Weymouth. [8444

JAMES 5-6h.p. Combination, late 1919, all accessories, electric and gas, wind screen, tax paid and insurance till Dec., guaranteed; £110.—30, Park Hill Rd., Harborne, Birmingham. [X8907

JAMES 5-6h.p. Late 1919 De Luxe Combination, screen, Klaxon, speedometer, electric light, separate dynamo, perfect condition; £145 for quick sale; call after 7.30.—7, Bracken Av., Balham. [8565

JAMES Combination, 6h.p., Sept., 1920, Binks carburetter, Lucas lighting, perfect condition guaranteed, licensed and insured; bought car; £120.—Hatchett, Lloyds Bank, Jamaica Row, Birmingham. [X8961

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KERRY-ABINGDON 1914 4¼h.p., Jones speedometer, Bosch, Grado gear, new Clincher de Luxe; £30.—Thornton, 349, Lordship Lane, Dulwich. [8670

Kingsbury.

KINGSBURY, brand new, 2¾h.p., 2-speed, 2-stroke, Senspray; £40, or offer.—30, Wilson St., E.C. [9108

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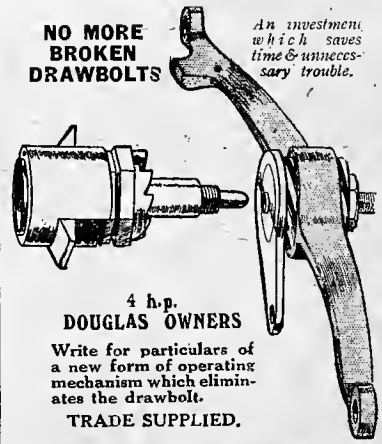

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RUDGE, clutch, perfect condition, good appearance; £30, near offer.—221, High Rd., Kilburn. [8726

£40.—1913 Rudge Multi coachbuilt combination, completely equipped, very reliable.—Peerless, Old Windsor, Berks. [8525

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RUDGE Multi 3½h.p., T.T., with pedal starting, immediate delivery; £85.—Peacock, 219, High Rd., Balham. 'Phone: Streatham 170. [9276

1919 3½h.p. T.T. Rudge Multi, excellent condition accessories; £60, or exchange Triumph.—Pike, 15, Gaskarth Rd., Balham, S.W.12. [8886

3½h.p. Rudge, thoroughly overhauled and enamelled accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

RUDGE Multi 1921 3½h.p., T.T., new June, lamps horn, Tan-Sad, tax Dec., insured; £78; after 6 —Simpkins, 27, Old Town, Clapham, S.W. [857

1921 Rudge Multi, I.O.M., clutch, Klaxon, electrically equipped, licensed, guaranteed; £75; exchange.—Scott, 3, Morpeth Rd., South Hackney. [910

RUDGE, single-speed, T.T., unused 6 years, very fast, mechanically absolutely perfect; bargain £35.—B.A.B. Motor Co., 130, High St., Harlesden. [898

1915 Rudge Multi, lamps, horn, etc., complete, excellent condition and appearance, any trial £55.—13, Victoria Terrace, Queen's Rd., Battersea. [868

£36.—Rudge Multi, 3½h.p., clutch, overhauled makers, new piston, bearings, controls, belt good tyres. — Theodore Dewey, Moretonhampstead Devon. [908

7-9h.p. Rudge Multi Combination, 1921, original tyres, licensed, and in excellent condition £115.—Hamilton, 69a, Ferris Rd., East Dulwich S.E.22. [86

3½h.p. Rudge Combination, C.B. underslung Millo sidecar lamps, horn, disc wheels, new tyre licence paid.—Apply, 59, Eccleston Sq. Mews, S.W. Bargain, £30. [83

RUDGE, 1913-14, 3½h.p., Philipson, semi-T.T large lamps, Klaxon, discs, all in good condition speedy, tax paid; £30, or offer.—Seymour, 251, Woodstock Rd., Oxford. [90

1921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. a 7-9h.p. Rudge Multi combinations, soiled, £1 and £150.—Shepherd, Enfield Highway. Te Waltham Cross 31. [07

RUDGE Multi 3½h.p. Combination, 1916, mechanically sound, lamps, Klaxon, new tyre, tub belt, taxed, etc.; £55.—Morrison, 1a, Paradise R Green Lanes, Highbury, N.5. [84

1920 Rudge 7-9h.p. Combination, beautiful sidec carries large amount of luggage, thoroug overhauled, low mileage, perfect; £130.—21, Sher Rd., West Hampstead. [83

RUDGE Multi Combination, delivered Aug., 19 Easting screen, lamp set, tax paid, under 2,0 £95.—Bruton Mews Garage, 8-25, South Bruton Me Bond St. 'Phone: Mayfair 4282. [8

1920 Rudge 7-9h.p. and sporting sidecar; £105 or £25 down and balance in 11 monthly ins ments.—Lamb's, 151, High St., Walthamstow; 50, H Rd., Wood Green; 387, Euston Rd., London, N. [8

RUDGE Multi 3½h.p. T.T. Touring, new June, 19 Miller lamps, Watford speedometer, spare accessories, tax, insurance paid, run 900 miles; £80 cash.—Earwaker, Ram's Head Hotel, Di Cheshire. [8

RUDGE Multi 1914 3½h.p., tuned, excellent co tion, pedal start, tyres, lamp, belt new, inclu spares, Binks carburetter, Clincher cover new, tax paid; bargain, £38.—Eastell, 113, Cornwall Brixton, S.W.2. [9

RUDGE Multi 5-6h.p., 1920, excellent condit large touring sidecar, hood, screen, Watford 2 spare tyres, insured, licence, splendidly fitted, o bought car; £120, no offers; trial by appointment. Yelvertoft, Greenway, Uxbridge. [8

RUDGE 1921 T.T. Multi, specially finished en 100 m.p.g., complete with electric lights, costing £100 a few weeks ago, machine is unscratc selling for no fault; owner getting Morgan; £ Hovenden, H.M.S. Excellent, Portsmouth. [

RUDGE Multi 1921 3½h.p., Isle of Man, del from stock, with pedal start or footrests; the best value for money on the market; exch or extended terms.—Elce and Co., 15-16, Bishop Av., Camomile St., E.C.3. 'Phone: Avenue 55

MOTOR CYCLES FOR SALE.

Rudge.

1921 Rudge Multi, mileage 500, very fast, overlap cam (plus ordinary one), straight-through exhaust, Sunbeam fish tail, Jaegar speedometer to 80, horn, splendid condition, absolutely as new, full tools; R.S.V.P.; £75.—Box 6,315, c/o *The Motor Cycle*. [9360

GET your new 1921 Rudge Multi from the Layton Garages, who can give immediate delivery of any model from stock; exchanges quoted; balance may be paid out of income if desired. Enquiries invited and treated personally and with every courtesy.—The Layton Garages, London Rd., Bicester, near Oxford. [8223

Scott.

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (near Hampstead Tube Station). [8638

1914 Scott Combination, 2-speed, kick starter, Bosch, Binks, lamps, horn; £60.—Tharter, Seagate, Hunstanton. [8854

SCOTT 3¾h.p., water-cooled, excellent condition; £48; take lightweight part.—57, Kenbury St., Camberwell, London. [8984

SCOTT Combination, 1920, electric lamps, Easting screen, spring carrier, spares, new condition; £115.—167, High St., Lowestoft. [8369

SCOTT Cancelet Combination, excellent order, very fast, Cox Atmos; £75; solo £60; any trial.—Hudson, Brook Rd., Redhill. [8800

1916 Scott, 2 speeds, K.S., new Palmer cords, horn, lamps, tax paid, good condition; £55.—Chandler, Ham, Hungerford, Wilts. [8585

1921 (May) Scott Squirrel, Lucas equipment, economical, absolutely perfect, very fast; forced sale, £85.—16, Ailsa Av., St. Margaret's, Twickenham. [8920

SCOTT with sporting sidecar, discs, speedometer, Pillion, all on, £50 overhaul agents; photograph or trial; £90.—56, Union St., Burton-on-Trent. [8806

1919 Scott and Rally Lightweight Sidecar, engine 3558, recently rebushed by Scotts, Binks, lamps, horn; £90.—Mason, Hosier, Cockermouth. [8851

1920½ Scott Combination, splendid condition, Easting, Bonniksen, Capac, electric lights, Cowey, any trial, examination; £150; offer.—183, Mailsham, Chelmsford. [8675

1920 Scott, hardly used, in perfect running condition, horn, lamps, tools, tax paid; any trial or examination; £80.—Oatlands Garages, Ltd., Leeds Rd., Harrogate. [X8874

1920 Scott Solo, electric lighting, K.S., T.T. handlebars, tax paid, absolutely perfect; any trial or examination; £80.—Oatlands Garages, Ltd., Leeds Rd., Harrogate. [X8903

SCOTT Combination, C.B., 2-speed, kick starter, 3¾ h.p., overhauled Aug. this year, condition as new; £60, bargain.—W. Bourne, 18, Ednaston Rd., Old Linton, Nottingham. [8557

SCOTT Sports Model, 1920, 2-speed gear, slightly shop-soiled, and unused; at £130.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0510

SCOTT 1920 Sports Model Combination, fully equipped, including licence, not used since Easter, 1921; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8229

1920 Scott Combination, as new, electric and acetylene lighting, Cowey speedometer and horn, Palmer cord, numerous accessories; no reasonable offer refused.—Noyes, Bracknell, Berks. [X8761

1921 3¾h.p. Scott Combination, Lucas Magdyno, electric lights and horn, Bluemel wind screen, luggage carrier, semi-T.T. bars, standard set Scott tyres, licensed, not done 150 miles, mechanically perfect, unscratched; cost £225, best offer over £155.—Bedford, Green Lane, Hazel Grove. [9358

GET Your New 1921 Scott from the Layton Garages, who can give immediate delivery of any model. Exchanges quoted, balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, and London Rd., Bicester. [8204

Singer.

SINGER Combination, 2-speed countershaft, all on, tax paid, excellent running order; £45.—Sparkes, 5, Kilmorie Rd., Forest Hill, S.E. [8938

1914 Singer 3½h.p., fast, fine condition, winner reliability competition July; accept £35, lowest; reason selling, accommodation.—Walters, 50, Cobden St., Kidderminster. [8925

Sparkbrook.

SPARKBROOK 2½h.p. Lightweight, new and fully guaranteed, reduced to £50.—M.A.A., Ltd., 89, Regmore St., W. [9346

SPARKBROOK, 1919, good condition, very little used; £42, bargain.—Newman, 29, Sutton Hall Rd., Carr Vale, near Chesterfield. [8905

1920 Sparkbrook 2¾h.p., 2-stroke, 2-speed, lamps, horn, tools, equal new; bargain, £48.—Davidson, Anthorpe Villa, London Colney, Herts. [8878

1921½ Sparkbrook, 2-speed, clutch, kick starter, fully equipped, done 200 miles; reason ill-health: Lincoln; £70, offers.—Box 6,242, c/o *The Motor Cycle*. [8487

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The WORLD'S MASTER Motor Cycle.

READING STANDARD, 8-10 h.p. Solo, including dynamo lighting **£163 0**

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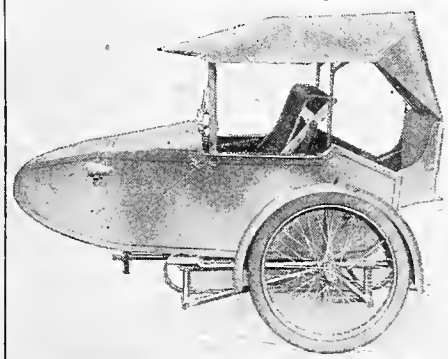

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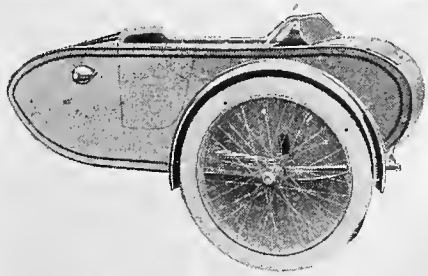

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Star.

38 GNS., Star motor cycles, fitted with Villiers engine; £36 fitted with Wall engine.—Star Motor Co., Westwood Heath, nr. Coventry. [X8603

Sun.

SUN-VITESSE, 2¾h.p., 1921, 2-speed, K.S., clutch; £55; all on.—37, Old Park Rd., Hitchin. [8918

Sunbeam.

1919 4h.p. Sunbeam, Bramble sidecar; £100.—2, Laurel Av., Perth St., Hull. [8469

SUNBEAM Combination, Dec., 1919; £110; good order.—Boulton Bros., Newport Rd., Stafford. [X8845

3½h.p. Sunbeam, 1919, as new, all-chain, tax paid; bargain, £90.—322, Green Lanes, Finsbury Park, N.4. [8797

8h.p. Sunbeam Combination, 1919, perfect condition; £145; exchange Ford van.—32, Westbourne Rd., N.7. [8665

3½h.p. Sunbeam Combination, 1915, lamps, horn, and tax paid; £85.—Wauchope's, 9, Shoe Lane, London. [8765

1915 Sunbeam 3½h.p. T.T. Roadster, just renovated by makers; £95.—A. J. Young and Co., Ltd., Newmarket. [6631

3½h.p. Sunbeam Combination, all accessories; £75; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [9307

1919 3½h.p. Sunbeam, black and gold, Lucas lighting, licensed, practically unscratched; £90.—106, Church St., Chelsea. [9021

1916 Sunbeam 3½h.p., with light Henderson sidecar, all on; any trial; £95, or near offer.—Pragnell, Milford-on-Sea, Hants. [8422

3½h.p. Sunbeam, black and gold, only done 200 miles, lamps, tools, tax; £95.—Fitt, nr. Pike's, 102a, Church St., Chelsea. [9297

1921 Sunbeam, done 90 miles, tax paid, and complete, Lucas lamps, etc.; £10 under list.—Cross, Agent, Rotherham. [X8942

3½h.p. Sunbeam Combination, overhauled and repainted, like new, tax; genuine gift, 89 gns.—Ramsdens, Maybell Av., Blackpool. [8606

SUNBEAM, 3½h.p., 1921, April, perfect condition, done 400 miles, tax, insurance paid; £120.—Bennett, 16, Hinton Rd., Gloucester. [9277

8h.p. Sunbeam and Sidecar, shop-soiled, spare wheel and tyre; £215, usual price nearly £250.—Harris, 51, Upton Lane, Forest Gate, London, E.7. [7836

SUNBEAM 1921 3½h.p. Sporting T.T. Model, Lucas lamps, Bonniksen speedometer, licensed, only run 300 miles, guaranteed perfect; £135.—Moss, Wem. [X8949

SUNBEAM Combination, 3½h.p., 1914, tax and insurance (all risks) paid, lamps, tools, spare tube, etc.; £80.—Capt. Vinson, Great Lines, Chatham. [8820

SUNBEAM 3½h.p., Lucas accessories, Cowey speedometer, very smart, cost £168 at Easter; £130, or exchange for Morgan.—32, Woodside Rd., Kingston. [8969

SUNBEAM 1916 3½h.p., Lucas lamps, horn, thoroughly overhauled, re-enamelled, like new; £95, or offers.—Purchas, 25, Hockliffe St., Leighton Buzzard. [9159

1920-21 3½h.p. Sunbeam, legshields, horn, condition as new; cost £163; accept £107.—Sudbury, 34, Goldhurst Terrace, South Hampstead, London. [8940

SUNBEAM Solo, 1919, lamps and horn, in splendid order, smart machine; £75.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9151

SUNBEAM 2¾h.p., 2-speed, hand clutch, kick start, copper exhaust, lamps, speedometer, etc., new condition; £59, near offer.—8, Croydon Rd., Caterham Valley. [8343

SUNBEAM 1914 3½h.p., 3-speed, clutch, kick start, new tyres, just back from makers, perfect; £70.—Hewie's Garage, Ltd., the Real Service Firm, Taunton. [8649

3½h.p. Sunbeam, late 1919, all accessories, tax, not ridden this year till Aug. 12th, overhauled by makers, perfect order; £100.—York, Llanthony, near Abergavenny. [8502

1921 Sunbeam Combination, 3½h.p., lamps, horn, legshields, screen, etc., perfect condition, little used; cost £221, accept £175; any trial.—14, Morton St., Royston, Herts. [9035

SUNBEAM Combination, black and gold, 1919, lamps and horn, been thoroughly overhauled; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9150

1919 8h.p. Sunbeam Combination, complete with accumulator, electric lighting, speedometer, hood, screen, spare wheel and tyre, in perfect condition; £150.—Lawes, Triangle, Aldershot. [8503

3½h.p. Sunbeam, September, 1920, engine No. 145/10009. Lucas lamps and horn, mileage under 2,500, splendid condition; seen by appointment; £120; light sidecar £10 extra.—26, Foxgrove Rd., Beckenham. [8695

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM Combination, 8h.p., Tan-Sad, screen, grid, lamps, tools, tax paid, insured £200, excellent condition; £150; part exchange solo.—Percival, Golf Club, Highcliffe, Hants. (P) [8848

SUNBEAM, latest 3½h.p. touring model ,£155/8; 3½h.p. sports model, £152/5; in stock.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [7903

SUNBEAM 1918 3½h.p. Model, with sidecar, complete with all accessories, excellent condition; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8931

19 21 (May) Sunbeam 8h.p. Combination, small mileage, Magdyno lighting, spare wheel, luxurious outfit, cost nearly £300; what offers? owner buying car.—Sunbeam, 85, Grenville Rd., Plymouth. [8423

19 21 Sporting Sunbeam, mileage guaranteed under 300, Lucas lamps (unused). Lucas horn, Bonniksen speedometer, Brooks spare tube case, containing new tube, 65 m.p.h.; cost £167/10, offers.—Bowker, 21, Manchester Rd., Burnley. [X8687

SUNBEAM 1921 3½h.p. Sports Model, supplied 10 days ago, fully equipped, tax paid, absolutely indistinguishable from new; £145; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8932

19 20 (July) 3½h.p. Sunbeam Combination, cost £220, interchangeable wheels, Easting screen, Tan-Sad, mirror, watch, Lucas lamps, spare chain, in splendid condition, tax and insurance paid; £140.—Bowen, Fulshaw Av., Wilmslow, Cheshire. [8383

SUNBEAM 1921 (April) 8h.p. Combination, Magdyno lighting, electric horn, Cowey speedometer, mudshields, mirror, spare wheel, luggage grid, screen, hood, excellent condition; what offers? owner buying car.—Godfrey, Annesley, Broadway, Peterborough. [8456

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

£165, or offer; must be sold.—Beautiful 7-9h.p. Sunbeam twin combination, mileage under 1,000, Lucas dynamo lighting, electric horn, spare wheel detachable, insured, tax paid, cost £305; owner will give written guarantee machine in perfect order.—Mr. Knights, 30, Legard Rd., Highbury, London, N.5. [8869

SUNBEAM 1920 8h.p. Combination, Magdyno lighting, electric horn, Bonniksen speedometer, mudshields, Ace discs, 760×90 cover on rear wheel, tax paid, indistinguishable from new; £195; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8933

8h.p. Sunbeam Combination, 1920, excellent condition, new appearance, hood, apron, screen, grid, mudshields, spare wheel, lamps, horn, Klaxon, Cowey trip, Tan-Sad, knee pads, etc., spares, tax, full insurance; trial, inspection Cardiff or Sussex, owner buying car; £190.—S., 180, Newport Rd., Cardiff. [8382

SUNBEAM 1921 Latest Type 3½h.p. Solos, combinations, and sports models in stock. Exchanges quoted. Second-hand Sunbeams particularly asked for. Balance by extended payments if necessary. Enquiries invited and treated with the utmost courtesy.—The Layton Garages, London Rd., Bicester, nr. Oxford. [8230

19 21 Sunbeam 8h.p. Combination, Lucas dynamo lighting, with spare bulbs in metal case, electric horn, speedometer, mirror, hood, adjustable screen, Brooks cantilever saddle, Tan-Sad, with handles, spare wheel, condition excellent, tax paid, also full insurance till June next; accept £240, or near offer. If sold, owner buying car.—Rev. S. P. Kirkley, 16, Ventnor Villas, Hove, Sussex. [8372

4h.p. Sporting Sunbeam Combination, Nov., 1919, complete with 3 Lucas lamps and generators, Lucas horn, oversize tyres (2 unpunctured), spares, etc., with Watsonian R34 sidecar, new 2 months ago, Avro screen, disc wheel, the whole guaranteed new in every respect; nearest £130 secures; also 1914 6h.p. Jap-Sunbeam, 3-speed, kick starter, all on, in excellent condition; £77/10.—Apply, H. Machin, 44, High St., Biddulph, Staffs. [8815

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ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; type H. 4h.p., 3-speed, £115; type S.D., chain drive, £125; sidecars from £20 to £50. Write for particulars of our easy payment system. You will be satisfied if you buy your machine direct from the Triumph specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

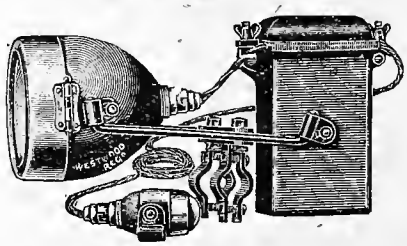
19 14 4h.p. Triumph, 3-speed, clutch; £39.—Hemery, 98, Peckham Rye, S.E. [9095

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X8940

TRIUMPH, 1918, first-class condition, spares; £60.—F., 49, Tonsley Hill, S.W.18. [8437

NEW 1921 4h.p. Triumph in stock; £115.—Bounds' Garage, 223, High Rd., Kilburn. [8661

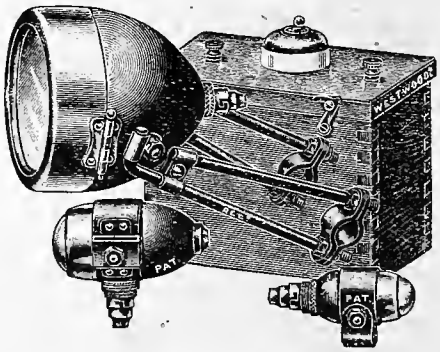
"DAYBEAM" Electric Solo Set



The Headlamp supplied with this set is our 5in. Daybeam, a very powerful light-giver. The brackets are of exceptionally strong and handsome design. They carry the headlamp and also the (die cast) aluminium case. The accumulator is specially made for motor cycle lighting, and will brilliantly illuminate the head and the rear lamp for 20 hours if used intermittently. The tail lamp (our torpedo S.B.C.) is exceptionally strong and well made, and has a very attractive appearance. Each lamp is fitted with a switch, and one lamp may be used independently of the other. The outfit is despatched completely assembled, and 4 volt bulbs are fitted. The finish is ebony black and nickel plate.

Complete Outfit, List No. 30/1, Price £5 5 0
(If tail lamp is not required, deduct 12/6).

'DAYBEAM" Combination Set



The set comprises Daybeam 5in. Headlamp, Ideal Sidecar Lamp, and Torpedo S.B.C Tail Lamp. Each lamp is fitted with an independent switch, and is finished in ebony black with nickel-plated relief. The Accumulator (capacity, 6 volt, 40 amp.) is specially made for motor cycle lighting and will give very satisfactory service in use. Many have now been in use two or three years, and are as efficient as when first purchased. All our Accumulators are specially made to stand vibration. Ordinary accumulators are never satisfactory for motor cycle work. The hard wood case supplied with this set is finished ebony black, and is specially treated to withstand acid. This outfit is despatched completely assembled with bulbs and all necessary wiring, etc.

Complete Outfit, List No. 30/2, £7 7 0.

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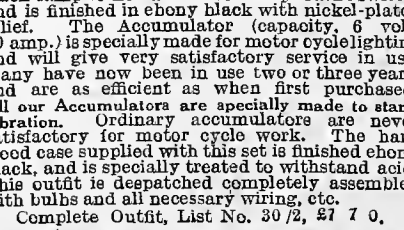

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Triumph.

TRIUMPH W.D.B. 1920 Millford Combination; snip; above £90.—34, Friars Rd., Coventry. [X8813

19 18 Triumph, 1920 sidecar, equipped, sound; £70.—33, Tunley Rd., Harlesden, N.W.10. [8908

19 20 Baby Triumph, perfect; £55, or nearest.—Apply, Richardson, 7, Broughton Rd., N.16. [8494

UNRIDDEN, unregistered Triumph, fully equipped; bargain, £85.—33, Hackford Rd., Brixton. [8280

19 21 Chain-driven Triumph, tax paid, and complete; £105.—Cross, Agent, Rotherham. [X8941

19 14 Triumph, good condition, tax paid; what offers?—66, Hermon Hill, Snaresbrook, E.11. [8894

3½h.p. Triumph, clutch model, very fast, first-class order throughout; £45, or near.—Rowsell, Ascot. [8903

BABY Triumph, 2-speed, perfect order; £29/10.—28, Woodford Rd., Forest Gate. Stratford 2598. [9081

TRIUMPH 1919 4h.p., 3-speed, clutch and K.S., electric light; £85.—Rodd, Scott's Lodge, Knockholt. [8889

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH 4h.p., 1914, 3-speed, etc., magnificent condition; £40; deposit.—24, South St., Newport, I.O.W. [8704

TRIUMPH, 1914, 3-speed, 4h.p., all on; £45; after 5 o'clock.—Battledown, Beckenham Lane, Bromley, Kent. [8380

£75; 1918 Triumph, just renovated by makers, perfect.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [7192

19 20 Triumph Combination, lamps, Easting, excellent throughout, tax paid; £110.—114, Brixton Hill, S.W. [8834

£27.—Triumph 3½h.p., just thoroughly overhauled good condition, good tyres.—Rose's Garage, Uxbridge. [8858

19 18 Triumph, just overhauled and enamelled £65.—J. Haynes, 28, Church St., Greenwich 'Phone: 1330. [8735

TRIUMPH 1920 Lightweight Junior Model; 50 gns.—The Layton Garages, 30, Holywell St., Oxford 'Phone: 581. [8216

3½h.p. Triumph-Minerva, tax paid, take 2 anywhere first £28/10, bargain.—G. G. Fuller, Crowo Hill Oxted, Surrey. [8722

19 19 Junior Triumph, new September, fully equipped, excellent condition; 45 gns.—Rose's Garage, Uxbridge. [8857

TRIUMPH Coachbuilt Combination, 2-speed, C.S. K.S., fine condition, licensed; £34.—17, Heaton Rd., Mitcham. [8865

WANTED, offers for 1917 Triumph combination, all accessories. — Brigg's Garage, Thornton Rd., Thornton Heath. [8429

19 21½ T.T. Triumph, 1,000 miles only, as new £90, or near offer.—Samuel, 7, Pocklington Walk, Leicester. [918

TRIUMPH Model F., 1920, fully equipped, as new £88; D.R. bars, privately owned.—27, Knight Hill, West Norwood. [8662

19 17 4h.p. Triumph, 3-speed, countershaft, full equipped; 50 gns.—28, Woodford Rd., Forest Gate. Stratford 2598. [9080

19 13 Triumph 3½h.p., coachbuilt sidecar, 3-speed hub, new tyres, lamps; £45.—Rhydycrena, Manor Rd., Farnborough, Hants. [861

TRIUMPH 4h.p., 1916, 3-speed C.S., all on, excellent condition; £70.—Seen at Bradford, 2 Boundaries Rd., Balham, S.W. [861

TRIUMPH, 1920, W.D., and cane sidecar, well equipped and in its prime; £85.—Bunting's Motor Exchange, Wealdstone. [920

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TRIUMPH 1914 3-speed Clutch Combination, lamps, horn, wind screen, and spares, good condition £58.—Crayholme, Knoll Rd., Sidcup. [83

TRIUMPH 3½h.p., clutch, perfect condition, lamps, horn, etc., new tyres; £29/10.—Red Cross Cottage, Kidderminster Rd., Bromsgrove. [X88

TRIUMPH, 1921, chain drive, with Jasamine Luxe sidecar, nearly new, complete; £135, bargain.—14, Morton St., Royston, Herts. [85

TRIUMPH 1921 4h.p., all-chain drive, £125, exchange; Triumph 1921 Junior, £70, in stock cash or exchange.—Rose's Garage, Uxbridge. [88

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TRIUMPH, countershaft, 3-speed, clutch, kick start, in perfect condition mechanically and appearance.—C. Brouncher, 2, Inverine Rd., Charlton. [8734

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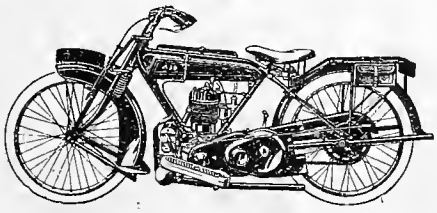

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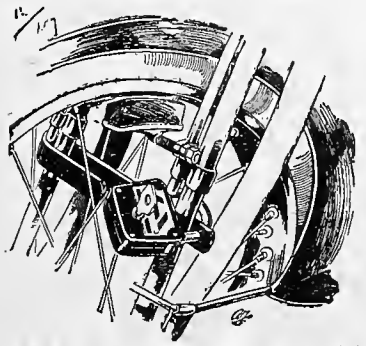

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LADY'S Douglas, not run 2,000 miles, mechanically perfect, 2-speed, clutch, kick starter, Lucas horn; £5.—Byfleet Automobile Co., West Byfleet. [7314

BEST Bargain Ever Offered.—1920 Lady's model 2½ h.p. Calthorpe, 2-speed gear, original tyres, complete lamp set, horn, etc., only used twice this year, tax paid; £35 secures.—Richards, Onslow St., Guildford. [8465

Miscellaneous.

VIN Combination, 2-speed, K. start, clutch, chain-cum-belt; £28.—19, Chaldon Rd., Fulham, S.W.6. [8951

LATE 1920 Enfield Magdyno Combination, perfect; your real chance.—Call, 74, Malpas Rd., S.E.4, view. [9351

3½h.p. Motor Cycle, sidecar machine, 14 gns.; Triumph chassis, £3/3.—12, Cheshire St., Bethnal Green. [8344

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½h.p. Ariel, £110; 1921 7h.p. Ariel, £125.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3h.p. Humber, 3-speed, £18/15.—Booths Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6h.p. Sper-Lee, Grado gear, £21/15.—Booths Motories, Halifax.

BARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P.M., 1914, £39/15.—Booths Motories, Halifax.

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/15; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1919 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [3301

Tel. No.: Museum 3971.

Guaranteed in PERFECT CONDITION

Money willingly refunded if not more than satisfied.

All Goods sent on Seven Days' Approval against Remittance.

SURPLUS MANUFACTURERS' STOCK AND W.D.

Any cover not giving usual satisfaction will be replaced by ourselves.

24×2¼.

Dunlop Heavy	30/-

26×2.

Palmer Cord Heavy	35/-
Wood-Milne Extra Heavy	30/-

26×2¼.

Clincher Extra Heavy	30/-
Dunlop Heavy	36/-
Palmer Cord Heavy	36/-
Wood-Milne Heavy	25/-
Wood-Milne Extra Heavy	32/-
Wood-Milne Combination	45/-
Beldam Combination	35/-
Bates Special Heavy	35/-
Macintosh Chain	30/-

25×2¾.

Dunlop Heavy	36/-
Palmer Cord Heavy	36/-
Clincher Extra Heavy	30/-
Avon Heavy Rubber Studded	30/-
Wood-Milne Extra Heavy	35/-
Moseley Heavy	29/6
Hutchinson T.T.	29/6
Hutchinson Passenger	35/-

26×2¼ for 2¼ Rims.

Avon Rubber Studded	25/-
Avon Extra Heavy	30/-

26×2½ for 2½ Rims.

Wood-Milne Extra Heavy	36/-
Wood-Milne Heavy	32/-

26×3 for 2½ Rims.

Avon Heavy Rubber Studded	50/-
Wood-Milne Extra Heavy	32/-

26×3 for 650×65 Rims.

Wood-Milne Extra Heavy	45/-
Wood-Milne Special Heavy	38/6

650×65.

Dunlop Steel-studded Voiturette	47/6
Wood-Milne Special Heavy	32/-
Burnett Grooved Voiturette	30/-

28×2½ for 2½.

Wood-Milne Extra Heavy	40/-

28×3 for 28×2½ Rims.

Dunlop Extra Heavy	50/-

28×3 for American Rims.

Dunlop Extra Heavy	55/-
Wood-Milne Extra Heavy	30/-
Kempshall Anti-skid	30/-
Macintosh Heavy Chain	30/-

700×80 for 650×65 Rims.

Dunlop Heavy	50/-

700×65 for 650×65 Rims.

Dunlop Heavy	45/-

700×75 for 650×65 Rims.

Hutchinson Extra Heavy Light Car Type	55/-

SPECIAL LINE OF NEW CLIPPER BELTS.

In original boxes.

6ft. 6in. × ¾	11/6	7ft. 6in. × ⅞	14/-
8ft. × ⅞	12/6	8ft. × ⅞	14/6
8ft. 6in. × ⅞	14/-	8ft. 6in. × ⅞	15/-
6ft. 6in. × ⅞	12/6	8ft. 6in. × 1in.	17/6

Tubes, all sizes ..... each. 7/6

Butt-ended, 1/- extra.

When ordering, please write distinctly.

MOTOR CYCLES FOR SALE.

Miscellaneous.

EDMUND Spring Frame Lightweight, 2-speed, splendid order, £45; 2-stroke, good order, £21.—P., 602, King's Rd., Fulham, S.W.6. [8931

HALIFAX Motor Exchange, Horton St., Halifax. 'Phone: 1400.—New and second-hand machines for cash; exchange or deferred payments.—Below.

HALIFAX.—Morgans, £105, £120; A.V. monocar, £79/10; Ariel, 1920, 3½h.p., £84/10.—Below.

HALIFAX.—Alecto 3½h.p. 1920 combination, £79/10; Brough 1916 3½h.p., 3 speeds, £59/10.—Below.

HALIFAX.—Enfield 1915-16 combination, £95; 1920 2¾h.p. spring frame Edmund-Jap, mileage nominal, £65.—Below.

HALIFAX.—1920 Harley electric combination, £160; 1920 4-cyl. Henderson combination, £175.—Below.

HALIFAX.—Norton 1920 3½h.p. sporting, £80; 10h.p. Reading-Standard combination, £110; Rex 6h.p. combination, £52/10.—Below.

HALIFAX.—Royal Ruby 2½h.p., 2-speed, £42; 1921 Scale-Blackburne, 3 speeds, £85; 1920 Scott, £95.—Below.

HALIFAX.—1920 Scott combination, special, £125; Sunbeam 2¾h.p. lightweight, £45; Sunbeam 8h.p. M.A.G. engine combination, £145.—Below.

HALIFAX.—Triumph 1914 combination, £69/10; Triumph clutch model, £47/10; 7-9h.p. Peugeot, 2-speed, £37/10.—Below.

HALIFAX.—6h.p. Zenith countershaft combination, £85; 1918 Indian 7-9h.p. combination, like new, £105.—Below.

HALIFAX.—1918 7-9h.p. Harley, 1920 Henderson Elite sidecar, £115; 1921 G.N., dynamo lighting, £175.—Below.

HALIFAX.—Cash, exchange, or deferred payments.—Note address: Halifax Motor Exchange, 25, Horton St., Halifax. 'Phone: 1400. [X8943

RICHMOND Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14 (Putney 2622), have the following machines for sale or exchange:

R.P.G.—1920 Matchless combination, Model H, M.A.G. engine, all accessories, including hood, screen, rear drive speedometer, and several extras, tax paid; £120.

R.P.G.—Bat combination, large sidecar fitted with child's seat, 8h.p. J.A.P. engine, 3-speed, countershaft gear box, clutch and kick starter, sprung frame, hood, screen, lamps, extra smart, tax paid; £75.

R.P.G.—Indian combination, 7-9h.p., 1915, countershaft gear box, clutch and kick starter, extra nice condition; £55; tax paid.

R.P.G.—Zenith combination, 6h.p. J.A.P., clutch and kick starter, lamps, speedometer; £48; tax paid.

RICHMOND Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [9128

WE have cleared many of our snips advertised last week, but can still offer lightweights and combinations ready for work from £6 to £35.—Bunting's Motor Exchange, Wealdstone. [9210

LEVIS T.T. Model in stock, £65; Zenith 4-5h.p. in stock, £115; Triumph 1921, as new, licence paid, etc., £98; Harley-Davidson, brand new, shop-soiled, £118.—21, Hobson St., Cambridge. [9198

4½h.p. Motor Cycle, G.R.O., Bosch mag., Dunlop tyres, P.H. lamps, bargain, £24; Minerva 4½ h.p., wicker sidecar, powerful accumulator, £12 lot.—Smith, 162a, Liverpool Rd., London, N.1. [9175

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [7219

MOTOR CYCLES FOR HIRE.

DOUGLAS Combination, absolutely reliable; week-end 50/-, week 100/-.—Rodwell, 38, Brook Green, W.6. [6587

LATEST Models Motor Cycles and Combinations for hire, any period.—Fowler and Brigden, 130, Euston Rd. Museum 4827. [0708

FOR Hire, smart Henderson combination, with owner-driver's services, suit traveller or seaside runs; 6d. per mile.—B. Ford, 174, Vicarage Rd., Leyton. [8779

MOTOR ATTACHMENTS.

J.E.S. 1h.p., complete with cycle, perfect condition, £16/10.—38, Graig Terrace, Swansea. [9126

WALL Auto-Wheel, running order, new Dunlop Magnum tyre; £10.—Thompson, Dhoon, Hoghton, Preston. [9100

YOUNG Motor Attachment, very little used, tax paid; what offers?—Nixon, Hollymount Rectory, Co. Mayo. (D) [8462

AUTO-WHEEL, in perfect mechanical order; £7.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9145

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A37

Motor Cycles advertised by private owners are, when desired, marked (P).

SIDECAR ATTACHMENTS.

AUTO-WHEEL, good condition, tax paid; 10 gns.—Wilmot, York Rd., Kettering. [8959

AUTO-WHEEL De Luxe, nearly new; what offers?—Lugge, 16, Carlton Mount, Leeds. [8926

AUTO-WHEEL, genuine B.S.A. built, Wall's patent, Dunlop tyre, complete, little used; £16.—Murray's, 37a, Charles St., Hatton Garden, Holborn. [X8887

LADY'S Bicycle fitted with Young engine attachment, will do 25 m.p.h. on level, 120 miles to gallon, only done 200 miles, licensed and registered; £22/10.—Duff, Onich. [X8848

TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catalogue free.—Rayner, 10-12, George St., Blackpool. [5248

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

MOTOR SCOOTERS.

AUTOPED Scooters, new; £25 each.—Wauchope's, 9, Shoe Lane, London. [8764

KINGSBURY Scooters and Spare Parts.—3, Kendall Mews, George St., W.1. [1442

A.B.C. Skootamota, as new, 1920, lamps, spares, tax paid; a bargain, £25.—151, Hertford Rd., Lower Edmonton, N.9. [8505

MOTORPED, lady's cycle, 1921 model, complete with 2-stroke engine, wicker sidecar attached, as new; take £42.—Mrs. Fanshawe, The Cottage, Brimpton, Berks. [X8812

HOODS, WIND SCREENS, ETC.

CAMBER.—Hoods 50/-, wind screens 27/6.—Bright and Hayles, 78, Church St., Camberwell. [9029

HERCULES Hoods and Aprons. Write for list.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [1109

BENT Hoops, hood fittings, straps, turnbuttons, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [5134

QUALITY with Cheapness.—Sidecar wind screens 20/-, pillions 10/6; trade supplied.—Williamson, 3, Alt St., Liverpool. [X8429

CELLULOID.—Clear transparent, cut to any size, 3/- per sq. ft; carriage paid for cash.—The Essex Accumulator Co., Ltd., 499, Grove Green Rd., Leytonstone, E.11. [0680

RENNOC Co.—We are actual manufacturers of hoods, screens and aprons. Send for list.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [8632

WIND Screens Actually in Stock: Eastings, Baby, Standard, Royal, Bluemels latest, Cameo, Hoods, finest quality, waterproof, with curtains round; £3/5.—64 Bishopsgate, London. [0620

BODIES.

£10.—Chassis and bodies complete from £10; bodies made by mass production.

ROBINI Helen Sports, upholstered red Rexine or choice, bulbous back, painted dark blue, £7/10; covered polished aluminium, £8.—Below.

ROBINI Helen Light Tourist, bulbous back, upholstered red Rexine, painted dark blue, £7; covered polished aluminium, £7/10.—Below.

ROBINI.—Helen de Luxe, with large locker at rear, round back seat, upholstered red Rexine, painted dark blue, £10; covered polished aluminium, £11.—Below.

ROBINI.—Light Sports Bodies, made from aeroplane floats, new upholstery, £4/10; trade supplied. Carriage extra. See Chassis column.—T. Robini, 22, Water Lane, and 1, Tulse Hill, Effra Rd., Brixton, S.W. 'Buses and trams pass the door. [9221

CAMBER.—Coach bodies from £4/17/6.—Bright and Hayles, 78, Church St., Camberwell. [9028

SIDECAR Bodies Reupholstered; reasonable charges.—33, Hackford Rd., Brixton, S.W.9. [9322

SIDECAR Bodies, coachbuilt, best quality, £7/7; original £12/12.—64, Bishopsgate, London. [0614

VENUS.—Singles, tandems, steped, and underslung; cheapest in trade.

VENUS.—Touring, sporting, tradesman's; repairs, repainting; exchanges.

VENUS.—Bodies direct from factory to user; save money; lists ready; write.

VENUS Sidecar Co., 694, Seven Sisters Rd., South Tottenham, N.15. 'Phone: Tottenham 2102. [0519

RENNOC Sidecar Bodies, actual manufacturers; 35 models, also several clearance, cheap to clear.

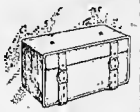
RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [8633

A.B.C. Standard Coachbuilt Body, with wind screen; 13 gns.—Wilkinson, 124, Holland Park Av., W. [8780

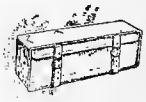
EDWARDES have Quantity Sidecar Bodies, cheap to clear; £4/19/6, fitted free; new chassis, £6/17/6.—277, Camberwell Rd., S.E. [8784

THIS WEEK'S ATTRACTIVE OFFERS

EXTRA LARGE TOOL BAGS,



Metal Armoured, two straps, first quality for 4 h.p. Douglas machines. Usual price, 20/- My price **12/6.**



SMALLER SIZE but SAME QUALITY for 2¾ h.p. Douglas machines. Usual price 11/- My price **9/-** There is room in the large bag for all spares. Guaranteed to fit Douglas Carriers.

AIR - COOLED LODGE PLUGS

suitable for high speed, high compression engines. Every Plug guaranteed. The best Plug for your Touring engine or Sports Model Douglas. Only a limited number. Usual price 8/6. Price now **5/-**

SPECIAL BARREL VALVE SPRINGS

for 2¾ h.p. DOUGLAS, unbreakable, and very flexible, giving increase in power. Touring, **1/6** per pair. Racing or Hill-climbing — much stronger—**2/-** per pair.

1,500 of these SPECIAL VALVE CAPS

have already been sold. Customers write, "They are the goods." Prevent knocking, drying up, and lets your engine retain its power on long hills. The T.T. riders used them, also the Grand Prix winners. They are made for 4 h.p. and 2¾ h.p. DOUGLAS engines and add to the appearance and efficiency. For the sake of a few shillings you should not be without them. Only **4/-** each.

TWIN RINGS.

Do you appreciate the extra power, oil economy, greater compression, longer life and better cylinder surface you get by fitting these rings? They are made under a patented process. Users say "the difference is remarkable."

2¾ h.p. size **1/6** each. 4 h.p. size **1/8** each. In the 4 h.p. engine the power increase is wonderful, and the reduction in oil consumption very pronounced

THE NEW DESIGN SADDLE.

My offer of these wonderful saddles can only last for a short time. They give a natural seat, low riding position, and do not foul the side-car stay on the 4 h.p. Douglas. Made of solid leather, and have adjustable springing. Only **25/-** Compare this price with similar offers.

13/- per Cover and 2/-

per tube saved by buying this wonderful Extra Heavy Passenger Type Super Studded Hutchinson from me. They are new stock and guaranteed—money refunded if not satisfied—only a few left. H.S. writes—"The finest tyre value I have ever had"—NOT W.D. Stock.

1921 Douglas Latest Instruction Books, **1/6**, by return of post.

2¾ h.p. Exhaust Valves made of the finest nickel steel guaranteed. My price only, **3/-**

4 h.p. Valves of nickel steel alloy (not mild steel like most cheap ones on the market). My price **4/-** only.

E. I. C. Magnetos. Service Depot for West of England. Any part for an E.I.C. in stock.

REPAIRS.—If you want repairs executed reasonably, quickly, and efficiently, it will pay you to write me.

SPARES.—Any Douglas Spare part by return of post.

W. G. CORAM,

Official Douglas Agent,

140, Victoria Street, BRISTOL.

TRADE :—Write me about machines, repairs, or accessories ; my discounts are right.

BODIES.

ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

BASTONE'S for coachbuilt bodies (no better or cheaper house), sporting models, bulbous back and step pattern. All at low prices. Call or send your requirements.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [8851

D. and F.—Reduction on all our sidecar bodies. Triumph pattern C.B. body, usual price £12/12, reduced to £11/10; best bulbous back, sprung seat and back, £9/9, now £8/8, suit Douglas; also a lighter model, £7/7, now £6/6. Any design made to order.—DeCort and Flynn, 39, Essex Rd., N.1. [9060

SIDECAR Body Designs for the trade only. working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

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FOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Best value in Olympia Show.

SANDUM Chassis.—Insist on having our enclosed wheel type of chassis for safety.

SANDUM Models.—The Exquisite 23 gns., and Sports 26 gns., are of distinctiove appearance.

SANDUM Elite Sidecar, 27 gns.; the smartest sidecar on the road; highly recommended in "The Motor Cycle."

SANDUM Dual Purpose Sidecar (patented). A single or 2-seater sidecar as required in 5 seconds. Size of body as our single-seater Elite. Luxuriously comfortable seating for 2 adults, with the weight in correct position over rear axle. Finished in colours to suit any make of machine, 42 gns.; bodies only, 21 gns. The latest development of the 2-seater as designed by us, and approved by the recognised experts.

SANDUM Featherweight Streamline Body, smart and racy, weight 18 lb.; price £4/17/6.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. Factories: 162 to 165, Pentonville Rd., N.; and Britannia Works, Britannia St., W.C. [0019

MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeams, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

MIDDLETON'S specialise in frame repairs of all kinds. Twisted motor cycle frames and forks promptly corrected.

SECOND-HANDS of various makes for sale. Your old sidecar taken in part exchange.

MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give ot the Bumps, no bash into them.

MIDDLETON'S, London's oldest established sidecar makers, wholesale, retail, and export, 27 Stroud Green Rd., Finsbury Park (near Tube). 'Phone: Hornsey 1584. [0521

SPORTING Sidecar, off Zenith; £8; after 6.—83 Tremaine Rd., Anerley, S.E. [891

FOLDER.—Have your sidecar converted into Hopley folder, and save garage.—Below.

SIDECAR.—Have a Hopley folding sidecar. Save garage. Attached to motor will go through passage 27in. Tandem and single bodies fitted. Tested 7 years on motors up to 9h.p.—Hopley, Upper Highgate St., Birmingham. [015

SCOTT Sidecar, 1920, Easting screen.—Bagnt, 36 Mellalieu St., Middleton, Lancs. [882

A.B.C. Aluminium Sidecar, electric lamp; £22/10.—Box 978, c/o *The Motor Cycle.* [X896

SIDECAR, light and roomy, off Triumph; £12.—Driscoll, 58, Woodfield Rd., Ealing. [887

TWO Coachbuilt Sidecars; £8 each, absolutely give away.—Ramsdens, Maybell Av., Blackpool. [860

VENUS Coachbuilt Sidecar, suit 3½h.p.; bargain £10.—Fisher, 24, Tremadoc Rd., S.W.4. [878

GLORIA No. 5, new March, 1921, done 2,000 miles £40.—Capt. Kerridge, Bank House, Weymouth. [84

RENNOC Sporting, wind screen, apron, locker, good condition; £15.—Cox, London Hospital, E.1. [88

£8/10.—Dark blue coachbuilt sidecar, splendid condition throughout.—King, Egrove Farm, Oxford. [X89

SIDECAR ATTACHMENTS.

AMBER.—Streamline models, £16/10.—Bright and Hayles, 78, Church St., Camberwell, London.

AMBER.—Lightweight models, £17/10.—Bright and Hayles, 78, Church St., Camberwell, London.

AMBER.—Semi-touring models, £18/10.—Bright and Hayles, 78, Church St., Camberwell.

AMBER.—Tandem models for adult and child, £26.—Bright and Hayles, 78, Church St., Camberwell, London.

AMBER.—Utility models, £25.—Bright and Hayles, 78, Church St., Camberwell, London.

AMBER Sidecars.—Makers, Bright and Hayles, 78, Church St., Camberwell, London. 'Phone: Brixton 2951. [9027

MILLFORD Corvette Sidecar, splendid condition; £18, cost £30.—38, Whitehill Rd., Gravesend. [8907

SIDECARS, P. and M. chassis, £5; underslung chassis, £7.—1, Bellingham Terrace, Catford. [9012

HARLEY Sidecar, in good condition; £10, or nearest.—Davis, 1, Norgrove St., Balham. After p.m. [9001

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph or B.S.A.; £18/15.—Booths Motories, Halifax.

BARGAINS.—Nearly new Henderson sidecar, suit Rudge, £16/15; Millford 27 gn. sidecar, nearly new, £16/10.—Booths Motories, Halifax.

BARGAINS.—New full-size coach body, locker under seat, £6/19/6; cane body, 25/-. — Booths Motories, Halifax. [3302

SIDECAR, 1920, bulbous back, blue underslung chassis; 16 gns.—12, Cornwall Mews, Gloucester Rd., S.W.7. [9340

SIDECAR, coachbuilt, green, on chassis (minus wheel), wind screen; £5.—Russell, 161a, Camberwell Grove, S.E. [8566

GLORIA, shop-soiled only, off Triumph, with all fittings; £34.—Forfield Motors, Forfield Place, Leamington Spa. [X8978

MAGNIFICENT 1921 C. and M. Sidecar; cost 60 gns.; £45.—D. Brown, Somerfield, Thongsbridge, near Huddersfield. [8853

BASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars from £14/18/6.

BASTONE'S.—We have a few soiled sidecars and bodies to clear at low prices.

BASTONE'S.—Distributing agents for the famous Montgomery sidecars. Latest 1921 sporting and other models in stock; trade supplied.

BASTONE'S (Sidecar Dept.), 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6850

MILLFORD Sidecar, as new, for Triumph or P. and M., £16; also Douglas, as new, £16.—33, Milford Rd., Brixton, S.W.9. [9321

SIDECARS, Douglas, new bulbous body, complete, £14; P. and M., £10/10, complete.—Stock, 107, Bingham Rd., Shepherd's Bush. [8871

SIDECAR, Henderson medium weight, excellent condition; £15; trial can be arranged.—Giles, 1, Fairhazel Gardens, Hampstead, N.W.6. [9231

COACHBUILT Sidecar, good tyre and tube, light chassis, new body, painted grey; bargain, £12, or offer.—Darke, 2, Warwick Place, Paddington, W.9. [8434

VAN Torpedo, little used, brand new tyre; seen at Cricklewood any day by appointment; £9/9 quick sale.—Ekins, 60, Grange Drive, Winchmore Hill, N. [9103

GLORIA 1921 Sidecar, practically new, bulbous back, petrol and luggage carriers, 3 lockers, ridden 500 miles, including new Easting wind screen; only £40.—, 25, Vaut Rd., Tooting. [8978

ROBINI.—Douglas chassis complete, enamelled, new tyre and tube, with Helen sports body, dark blue, £—Below.

ROBINI.—Douglas chassis, as above, with new Helen tourist, dark blue, £13/10; with De Luxe model, dark blue, £15/10.—Below.

ROBINI.—Mills-Fulford chassis, complete, new tyre and tube with Helen sports model, £12/10.—Below.

ROBINI.—As above with Helen tourist model; £12; trade supplied.—Below.

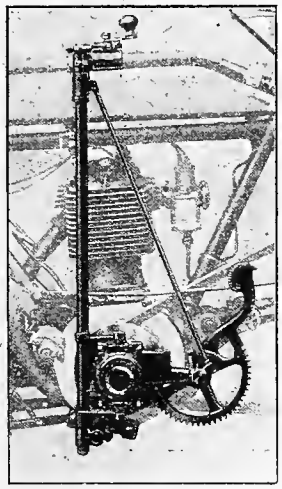
ROBINI.—Chassis and bodies from £10; carriage extra; for full particulars of bodies, see Body Section.—Brixton 1585.—T. Robini, 22, Water Lane and 1, Tulse Hill, Effra Rd., Brixton, S.W. 'Buses and trams pass the door. [9222

DRAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, when folded, combination will pass through a doorway. Call and see it demonstrated.—Winn Co., Ltd., 236, High Holborn, W.C.1. [0388

GRADO, LTD.,

Have opened commodious premises at 26, Cross St., Hatton Garden, LONDON, E.C.1

Tel.: Holborn 464.] [Two minutes from Gamages.



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Variable gear, free engine, kick-start.

Here is our world-famed kick-start Model for all machines from 3 to 10 h.p. Delivery from Stock.

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Variable gear, free engine, handle start. Complete with chain, both sprockets and starter.

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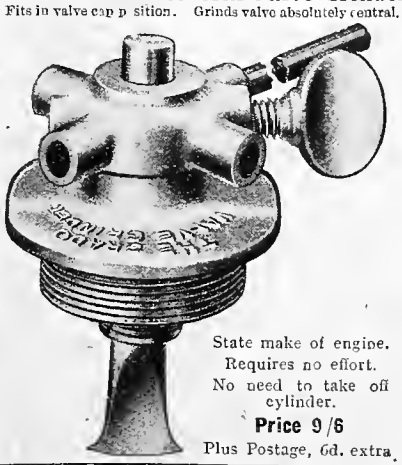

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Requires no effort.
No need to take off cylinder.

Price 9/6

Plus Postage, 6d. extra.

The Grado Stand Spring Return.

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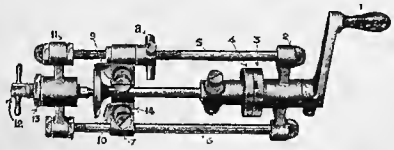

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Price 30/- Plus Postage, 9d. extra.

SIDECAR ATTACHMENTS.

RENNOC Sidecars, bodies, hoods, screens, largest stock in London, actual manufacturers throughout. Send for our 1921 catalogue, 32 pages, 80 illustrations.

PHŒNIX Sidecars.—All spare parts in stock by the Rennoc Sidecar Co.

RENNOC Sidecar Co. specialise in sidecars for Indian motors, with left-hand kick starters, and can deliver.

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RENNOC Co. undertake repairs to any make of sidecar, repainting, and reupholstering a speciality.

RENNOC Co. have in stock sidecars to fit all makes, English and American.

RENNOC Co. again ask you to send for their 1921 catalogue, the most comprehensive issued by any manufacturers.

RENNOC Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. 'Phone: Hornsey 1589. [8631

TWELVE New Chassis, complete fittings, for Harley-Davidson, 28in. wheel, special offer, £12 each.—Sidecar Body Co., 25, Upper Clapton Rd., E.5. 'Phone: 3110. T.A.: Rideezi, Lowclap, London. [6087

ROYAL Leicester Sidecars are made for comfort, attachments for any machine; price 18 gns. upwards; have few cars to clear at reduced prices; repairs, repainting, etc.—The Willowbrook Motor Co., Leicester. [0335

DOUGLAS Sidecar, complete, £12/15; another, coachbuilt body, new, £11/10; another, £10/10; tradesman's box, £2/10; coachbuilt body, heavy, £2/10; sidecar wheel, new, £1.—57, Kenbury St., Camberwell, London. [8989

1921 Grindlay de Luxe Model (spring wheel), finished black, only 200 miles, complete with Easting, electric lamp, waterproof cover; owner gone to sea; cost over £45, accepting £30; left with Meeten's Garage, Dorking, Surrey. (D) [8625

NEW Mills-Fulford Chassis, 26 or 28in. wheel, complete, fit any make, 4-point fixing, bargain, £7 each, makers' price £15/15; also extra fitting and wheels for Mills-Fulford chassis; stamp reply.—Beecher, 472, Archway Rd., London, N.6. [9115

HEPPELTHWAITE and Watkins.—Douglas chassis complete and renovated as new, £4/10, or to suit any make motor cycle to order same price; also new Douglas pattern bodies, Saxe blue, £8/10, or £12/10 with chassis. We have hundreds of testimonials over this chassis, so don't miss a snip.—'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [8772

LIGHT Car and Motor Cycle Engineering Co.—Any body made to your own design. We are doing this every day. Bodies in stock from £5/5 to £10/10. Chassis and bodies, complete with all fittings, including tyre, £11/11 to £17. Call and see our stock.—Light Car and Motor Cycle Engineering Co., 26 Tulse Hill, Brixton. (Half minute from Brixton Skating Rink.) [9065

RUNABOUTS AND CYCLE CARS.

DAN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

G.N. Popular, shop-soiled only; £175.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [8646

TAMPLIN 1921 2-seater, little used, guaranteed order; £115.—Box 6,012, c/o *The Motor Cycle*. [7141

A.V. Monocar, £115, 1921 demonstration model in stock.—Service Motors, Caledonian St., Leeds. [8391

1920 De Luxe Morgan, lavishly equipped, fast; £130.—24, Balliol Rd., North Kensington. [8881

DAN GUY, Weymouth, Morgan agent; reduced price; Grand Prix 10h.p. M.A.G., £197, from stock. [0624

ELECTRIC Monocar, experimental model; £65, cost £200; photograph or trial.—Danesfield, Waldron, Sussex. [7335

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [8645

MORGAN Sports, 1920 model, J.A.P., air-cooled, excellent condition; nearest £145.—Kelly, Langport, Somerset. [7419

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Ct. Portland St., London, W.1. [0350

A.C. 3-wheeler, Bosch, B. and B., lamps, horn, etc., dummy radiator, seats 3; £67, or offer.—34, Cawley Rd., E.9. [8666

MORGAN 1920 de Luxe, lavishly equipped; £145.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [8966

MORGAN, J.A.P. engine, all new tyres; £95, or exchange good combination.—112, Gorton Rd., London Rd., Coventry. [X8951

RUNABOUTS AND CYCLE CARS.

HUMBERETTE, 1915, W.C., 2-3-seater, excellent condition; 125 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [9343

BUCKINGHAM 1914 10h.p., splendid condition; £100, or exchange combination.—Robinson, 6, Camp Rd., South Farnborough. [X8890

ONE Shop-soiled 1921 Morgan de Luxe, water-cooled M.A.G., full equipment; £190.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [8643

FOR Sale, 2-seater Phœnix, twin, Bosch, Zenith, streamline, tax to Dec., good order; trial; £80.—G. Longley, East Grinstead, Sussex. [8626

A.C. 2-seater, new hood, fully equipped, splendid condition, body suitable trade purposes; £85, or near offer.—Box 6,221, c/o *The Motor Cycle*. [8445

MORGAN, Grand Prix, dynamo lighting, tax paid, overhauled, repainted; 160 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [9344

A.V. Monocar, 8h.p., hardly used, appearance new, and unscratched, dynamo lighting set; 96 gns.—Haven, Portsmouth Rd., Esher, Surrey. [9299

A.C. Sociable, perfect condition, hood, screen, lamps, spares, thoroughly reliable machine; £55.—Hemery, 13, Hanover St., Peckham, S.E. [9099

COVENTRY Premier, 1921, dynamo, guaranteed, fast, comfortable, economical, smart; £200, what offers?—39, Kilmorey Gardens, St. Margarets. [8352

MORGAN DE LUXE, 1921, A.C., red, discs, electric light, absolutely as new, small mileage; £195.—Taylor, Hawkhurst, Utley, Keighley. [7863

A.V. 1920 6h.p. Monocar, licensed, guaranteed in perfect condition throughout; any trial; £70.—Littlewood and Co., Sherman Rd., Bromley, Kent. [8749

A.C. Sociables, modern, fully equipped, mechanically sound, good appearance; from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [7947

MORGAN G.P., water-cooled J.A.P., recently overhauled, hood, screen, lamps, horn, speedometer, discs, complete; £125.—51, Windmill Rd., Sunbury. [8842

3-WHEEL Runabout, W.C., 3-speed, reverse, electric lighting, horn, speedometer, 4 new tyres; £85; exchange combination.—120, Sutherland Rd., Croydon. [9225

BRAND New 1921-1922 Grand Prix Morgan, w.c. M.A.G., in stock at latest reduced price.—Walbro Motor Cycle Co., High St., Saffron Walden. 'Phone: 45. [X8881

1921 Morgan de Luxe and Grand Prix Models, for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [8644

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

SOCIABLE P.M.C., almost identical in design to A.C., water-cooled engine, new hood and tyres; any inspection; £60, or near offer.—1, Rayleigh Rd., Basingstoke. [8696

MORGAN Grand Prix, Oct., 1919, Binks carburetter, exceptional engine, new chains, tyres good, one new; £130.—Rev. D. Hodgson, Harpford Vicarage, Ottery St. Mary. [8454

MORGAN 1914 Sporting Model, fully equipped, good condition; any trial; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X8927

T.B., 1921, 10h.p. w.c. Blackburne engine, Lucas dynamo lighting, speedometer, spare wheel, mileage 1,200; £165.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [8987

1913 9h.p. Enfield 2-seater, 3-speed, detachable wire wheels, speedometer, lamps, hood, screen, licensed, excellent condition; £75.—Edwards, 50, Harrington Rd., South Kensington. [7174

A.C. Sociable, 6h.p., thoroughly reliable, waterproof Bosch, B.B., engine, tyres (steel-studded back), paint, upholstery excellent condition; £50. — 2, Bungalows, Lampton, Hounslow. [8672

1920 G.N. Cycle Car, £275 model, in perfect condition, dynamo lighting, oversize tyres, speedometer, 5 detachable disc wheels; £165.—Oatlands Garages, Ltd., Leeds Rd., Harrogate. [X8875

1916 Morgan Grand Prix, 10h.p., o.h.v., painted red, hood, screen, very good order, 2 spare chains, full equipment, licensed and insured; price £125, or close offer.—Hall's Garage, Ltd., Stevenage. [8442

GRAND PRIX Morgan Runabout, 1917, electric lighting, horn, licence paid, first-class condition; £145.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. 'Phone: 995. Tel.: Bicycles. [7904

1921 10h.p. T.B. Cycle Car, Blackburne engine, lamps, horn, dickey seat, spare wheel, and tax paid, not done 500 miles; cost £266, must sell £230.—Can be seen at Wootten's Garage, 55, High St., Oxford. [7343

MORGANS, new and second-hand, always in stock; spares for all models.—Authorised Agents and Trade Distributers: Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

GET YOUR TYRES AT THE TYRE HOUSE

BRAND NEW CLEARANCE COVERS

ALL BARGAINS.

2¼×2	Avon Druid	26/9
2¼×2½	Avon 3-rib Heavy	35/6
26×2	Rodace Ribbed	19/9
26×2¼	Wood-Milne Special	28/6
,,	Avon Sunstone	33/-
,,	Rom Rubber Non-skid	35/-
,,	Pedley Medium 3-rib	39/-
,,	Wood-Milne Extra Heavy	33/-
,,	Hutchinson T.T.	35/-
,,	Hutchinson Passenger	38/-
26×2⅜	Palmer Cord Heavy	35
,,	Bates Special Heavy	34/-
,,	Hutchinson Passenger	36/-
,,	Wood-Milne Extra Heavy	35/-
26×2½×2¼	Englebert Heavy	47/6
,,	Hutchinson Rubber Studded	49/-
,,	Wood-Milne Extra Heavy	49/6

For 26 x 2½ Rims.

26×2½	Heavy Non-skid	35/-
,,	Extra Heavy Non-skid	39/-
,,	Hutchinson T.T.	36/3
,,	Hutchinson Passenger	39/9
	Wood-Milne Combination	55/-
	Ribbed, wired on	25/-
26×3×2½	Hutchinson Passenger	45/-

28 × 2½

28×2½	Clincher Dreadnought	45/6

28 × 3

28×3	Wood-Milne Extra Heavy	32/6
,,	Goodrich Safety Tread	65/-

650 × 65.

Avon, Extra Heavy 3-Rib	47/6
Wood Milne, Extra Heavy Key Grip	46/-
Wood Milne, Heavy Key Grip	41/-
Lightweight, fluted	27/6

700 × 75.
(Oversize for 650 × 65 rims.)

Hutchinson, 3-Rib Heavy	44/-
Hutchinson, 3-Rib Ex. Heavy	49/6

New Tubes.
26×2¼, 26×2⅜, 26×2½.
Endless, 7/-

26×3, 28×3.
Endless, 8/6 Butted, 10/6

New Belts.
8' 6"×1" £1 1s.

PIKE TYRE and RUBBER Co., Ltd.,
The TYRE HOUSE,
83, Theobald's Road,
HOLBORN - W.C.1
'Phone: Museum 1543.

RUNABOUTS AND CYCLE CARS.

MORGAN G.P., lovely condition, electric lighting, discs, Cowey, Klaxon, new spares, insurance £190, about 1917, o.h.v., brand new rear tyre; exchange, or sell £139.—Manager, Old Waverley Hotel, Southport. [8910

BARGAIN.—A.V. Monocar, 8h.p., 1920, just overhauled and improved throughout by makers, condition as new, lamps, horn, speedometer, etc.; £75; can be seen any time by appointment.—Willis, Chorley, Chesham Borough. [9279

CASTLE THREE Runabout, 9.5h.p. 4-cyl. water-cooled, delivered July, done only 400 miles, detachable wheels and spare, electric lighting, absolutely as new; cost £300, accept £235, or near offer.—The Haslemere Motor Co., Ltd., Station Rd., Haslemere. [7400

1921 Castle Three, 4-cyl. water-cooled engine, 2-seater, fitted with dickey, dynamo lighting, spare wheel, absolutely brand new, unregistered; cost £300; must sell, owner going abroad; sacrifice for quick sale £240.—Can be seen at Wootten's Garage, 55, High St., Oxford. [7344

ENFIELD 1915-16 10h.p., 4-cyl., dynamo lighting, 3-seater, 5 interchangeable wheels, speedometer, clock, etc., cream and black, under 10,000, insured £350; nearest £215; take good cycle or combination part; examination here.—Robinson, Shipping Agent, Dalton-in-Furness. [9054

G.N., 1920, recently overhauled by makers, fitted with 1921 clutch, brakes, lubrication system, and cylinder heads, repainted grey, black wings, dynamo lighting, speedometer, FR jet, petrol can carrier, mechanical condition perfect, any trial; £155.—Henry, 22, Grosvenor Rd., Chiswick. Phone: Chiswick 1186. [9125

A.B.C. (July, 1921), carefully driven 550 miles, brand new condition, very sturdy and handsome appearance, C.A.V. lighting, spare wheel, speedometer, hood, screen, mahogany dash, 40 m.p.g., 53 m.p.h., 4 speeds, reverse, differential, etc., climb anything; any trial; cost £346/10, accept £325 quick sale.—Apply, 4, Brick St., Park Lane, W., or 'Phone Mayfair 1874. [8956

LUXURIOUS Cycle Car, 2-seater tandem, polished aluminium body and wheels, 7h.p. flat twin engine, cost over £300 to make, very attractive owing to smartness of design and finish, designed by engineer and made throughout by tradesmen, everything of the best; can be seen and tried by appointment, and reason given for selling; sacrifice for £200, or near offer.—Fountayne Lamp Co., Broad Lane, Tottenham. [8448

CARS FOR SALE.

COX's.—Full printed list fifty cars, £45 to £850, free on application. Call.

DOUGLAS S. COX, the Absolutely Straight Motor Man, 6, Lansdowne Hill, West Norwood, has fifty cars stocked. Call 9-6 (Saturdays 4); no business Sundays. Established 1902. [7194

£50 down and 12 payments of 5 monthly secures reliable landaulet.—Palmer's Garage, Tooting.

£50 down and 12 monthly payments £7/10 secures reliable 2-seater.—Palmer's Garage, Tooting.

£200 Cash secures 1917 Napier chassis, 4 cyls., worm drive, detachable wheels, cantilever springs.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments of £10 secures 12-14h.p. Fiat landaulet, repainted.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments of £12/10 secures 18h.p. Oakland touring car, 7-seater, self-starting.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures Piccard-Pictet ¾ landaulet, dynamo lighting.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £10 secures Sheffield-Simplex ¾ landaulet.—Palmer's Garage, Tooting.

£200 Cash secures 30h.p. Berliet touring car, torpedo, 4 speeds, 6 cyls.—Palmer's Garage, Tooting.

£525 Cash secures nearly new 1920 Rover 4-seater, self-starting, low mileage.—Palmer's Garage, Tooting.

£200 Cash secures 20h.p. Minerva ¾ landaulet, 4 speeds, Bedford cord.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £10 secures 15.9h.p. Benz landaulet, 4 speeds.—Palmer's Garage, Tooting.

£500; brand new 1921 11h.p. Peugeot 4-seater, 4 speeds, dynamo lighting, self-starting.—Palmer's Garage, Tooting.

£600 Cash; brand new 1921 sports Charron 4-seater, dynamo lighting and self-starting, 6 detachable wheels.—Palmer's Garage, Tooting. [8408

PEUGEOT 2-seater, 2-cyl., aeroplane shaped body, running order; £45.—174, Trinity Rd., Wandsworth Common. [8997

A G.N., late model de luxe, C.A.V., very fast and perfect; £165.—Dr. Carr, 94, Branksome Rd., London, S.W.2. [9037

A 1921 2-seater, 10h.p., 4-cyl., C.A.V., all latest improvements, as new; £225.—Miss Patmoor, 106, Acre Lane, Brixton, S.W.2. [9036

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
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Telegrams: "Autopress, Birmingham."
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Cycle Cars and Sidecars.

IT has become a habit in some quarters to regard the high-powered sidecar as doomed, and that in the near future cycle cars will materialise to take its place. For ten years this subject has been discussed, and during the present year there has been evidence that it has interested manufacturers of both cars and sidecars.

Production plans for 1922 are now well forward, and from an intimate knowledge of manufacturers' intentions we can say that the demands of those who await the advent of a small four-wheeler at the price of a sidecar outfit will again remain unfulfilled.

The reason for this is not hard to seek. Despite all that has been said to the contrary, the effort, material, and labour that produces a sidecar outfit will not produce a miniature four-wheeler of the same standard of quality and performance. Therefore, motor cycle manufacturers are not justified in abandoning a proved proposition in order to produce an almost entirely new type of vehicle.

It should be remembered that, even in pre-war days, the cycle car's place in the world of wheels was not as a sidecar substitute, but rather as a bridge between the sidecar and the car. The development of the cycle car is now history, for, as was prophesied by *The Motor Cycle* ten years ago would be the case, only those following accepted car practice with weatherproof transmissions have survived. The *post bellum* costs of these light cars rose to nearly three times the amount for which they could be obtained before the great upheaval. Motor cycles, too, have increased in cost, although not to the same extent, which fact is responsible for the price gap between sidecar and light car being every whit as wide as was the case in 1912 between the sidecars and the large cars. Therefore, the position remains practically the same as it did a decade ago. Obviously there is still a large potential market for a type of runabout between the two types of vehicles now in greatest use, and, to cater for this demand, automobile manufacturers in 1922 are producing miniature cars which will be obtainable at figures ranging from two to three hundred pounds. These vehicles will not be cycle cars, however, even if we interpret the term in its very broadest sense. According to the governing bodies, a cycle car is a vehicle with an engine not exceeding 1,100 c.c. capacity and a maximum weight of 772 lb., and few, indeed, of the new miniatures will come into the latter limit. For another year at least, the sidecar's position as the most economical form of motoring for two or more persons will be unassailed.

Quality of Finish.

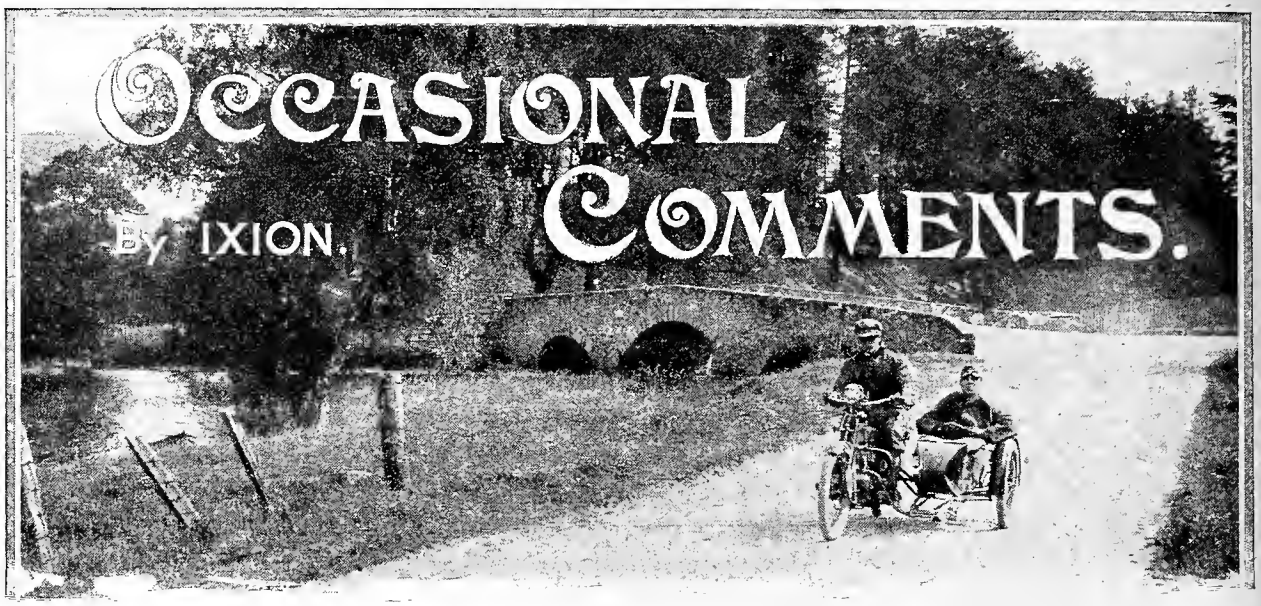
NOW that it becomes increasingly evident that an all-round reduction of the cost of commodities is taking place, we may well ask if the production of motor cycles could be rendered any less expensive.

During the war innumerable machines were produced with "W.D. finish," *i.e.*, no plating, and no decoration; a drab enamel being spread over all parts of the machine. This coating of paint was not particularly pretty, but it served its purpose, giving a reasonably hard wearing and weatherproof finish suited for rough conditions.

Supposing that a maker decided to eliminate expensive finish and, instead, treat his completed machines with an all-over coating of black, grey, or green paint in place of the more usual plated and stoved machine, with its lined and decorated tank, a very considerable saving would be effected, for, apart from the economy of the method itself, a number of expensive labour charges on the machines would be eliminated.

That section of riders which favours the motor cycle as a sporting luxury may well prefer the highly finished type of machine in which pride of ownership may be taken, but the average user of the hack machine might well regard with favour the saving of several pounds of the initial cost represented by the finishing methods suggested.

An index to the advertisements in this issue will be found on the page facing the back cover.



Paternity.

I KNOW now what the lady novelists mean when they describe the ineffable pride with which the young papa surveys his first offspring as the nurse lays it in his timid arms. For have I not actually received a sample prop stand—the first of many in preparation—after years of clamouring for this useful accessory. It weighs 2 lb. 4 oz., and is made by Taylor's Garage, of Forest Road, Southport. Mechanically, it is quite simple—a telescopic leg, horizontally hinged to a split lug, which is bolted to the near side chain stay of the bicycle. A collar on the head of the leg contains three notches, any of which can be locked by a tiny spring pedal. One notch is located so as to hold the leg vertically upwards out of the way; the remaining notches give you a choice of angles in the active position. The only criticism which I can make is that dirt and dust may cause the hinge and the pedal to work stiffly, and that I rather fancy certain alternative designs may weigh less. Meanwhile, I am using the stand with considerable gusto.

A New Sturmey Gear Box.

LOTS of cycle car builders—both amateur and professional—are sitting up on their hind legs begging for early deliveries of a new gear box which the Sturmey-Archer people are bringing towards the production point. It will embody three speeds and a reverse, and should prove invaluable to the motor cycle trade. Cycle car folk naturally have the first claim on it, as it will save them having to carry their tails round when they want to reverse in a narrow lane; sales managers always say that it is child's play to lift a cycle car round, but personally I would as soon drag a fainting woman out of the gallery of a theatre, for most of the grips which a cycle car tail provides are extremely sharp, and liberally smeared with dirt and oil. But I suppose the sidecar people will also be after the new gear box, and that our 1922 motor cycle gymkhanas will list a novelty on the programme—racing backwards on sidecars. Possibly two-wheelerists of the Albert Milner type will even want the new box on their solo mounts. I remember reading years ago—in the *Yorkshire Post*, I think—that some tyke was open to challenge the world at riding a motor bicycle backwards from Ilkley to Keighley. Sooner him than me, as the poets say.

Two Machines for One Tax?

ONE or two readers have lately dipped their nibs in mingled gall and wormwood to complain to me that an unpaternal Government insists on their paying two taxes if they own two machines at the same time, even though anatomical considerations prevent their riding the pair simultaneously. I refuse them any sympathy. We have millions of unemployed, and as a nation we are tolerably insolvent. Ought not a heavy burden of taxation to plunk on those few individuals who can afford to keep more than one 'bus? I trow so. If the complainants had asked me why they should pay double insurance premiums, I should have felt more tenderly towards them. But I presume that insurance societies find it difficult to believe that one of the machines will always rust in its shed, whilst the other takes the road; and possibly they find such instances even more difficult to prove.

That Opprobrious Word, "Pushbike."

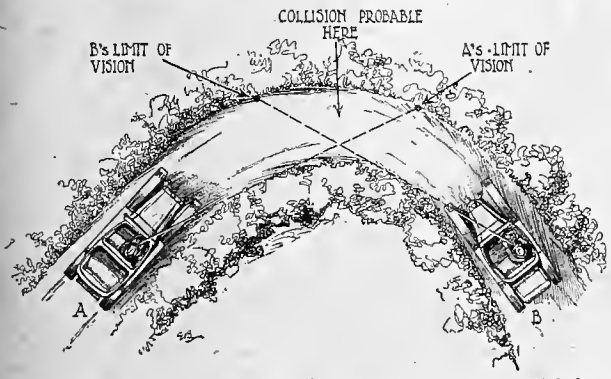
I HAVE received several more letters from pukka cyclists anent their furious objection to the word "pushbike," imploring my aid to keep it out of our columns, and to whittle down its use amongst motor cyclists in general. None of the writers furnish any reasons for this quite irrational prejudice, though I notice it is strongly reflected in the columns of the cycling press. I can only presume that as the pedal cycle preceded the motor cycle, its devotees consider that it has the prior claim to the plain and unadorned name of "bicycle," and that they further consider the term "pushbike" is derisive. Commonsense compels me to deny both implications. No doubt the first and original pudding was compounded of nuts and berries, but this does not put Mrs. Ixion in the wrong when she

Occasional Comments.—

invites me to eat "pudding" on Christmas Day. Moreover, we rightly attach prefixes to the word pudding, now—there are thousands of different sorts of pudding; and why should we not do the same to "bicycle"? That "pushbike" is derisive, I entirely deny. If it has any emotional implications, they are of an admiring character; for it is undoubtedly heftier and more manly to rely on one's muscles than on an engine. There is not an atom of doubt that, when the veteran cyclists have died out, the term "pushbike" will be freed from the false associations with which a few survivors of the early motoring days have invested it; it will be added to the national vocabulary with such terms as stunt, camouflage, garage, chauffeur, and the like, some of which have already changed their meaning ("chauffeur" used to mean a wealthy owner-driver twenty-five years ago). For the present, since I have many cyclist friends, I will try to avoid the word; but I warn cyclists that they may as well try to suspend the action of gravity as to rob the language of such an innocent and handy abbreviation.

With a Silent Hooter.

I HAVE been defying the law of the land in quite a new direction lately, for an item of my electric equipment gave out, and forced me to drive for a day or two with the hooter out of action. I felt extremely uncomfortable at first, but gradually



came to two conclusions, viz, that my normal driving methods are a shade too rash, and that the main utility of a hooter lies in overtaking other traffic. At most blind spots the utility of a hooter is minimised by two obvious factors, first that it is seldom audible to other traffic (being blanketed by walls, drowned by engine noises, etc.), and second that many motorists omit the hoot, so that even if hoots were always audible, silence does not mean that the road is clear.

It is usually stated—even in text books—that the foundation principle of safe driving is to go so slowly that you can pull up within the limits of vision. This is not quite good enough. Consider the sketch in question. If both cars were driven on this plan, the road being too narrow for passing, a mild collision must result. If either car is driven a little faster the collision will be more serious. If both cars are driven on the liberal side a hefty smash may result.

The meditations inspired by my silent hooter have led me to revise the ancient rule. I now drive at a speed which permits me to pull up *within half the distance covered by my vision* at any moment.

Labouring the Obvious.

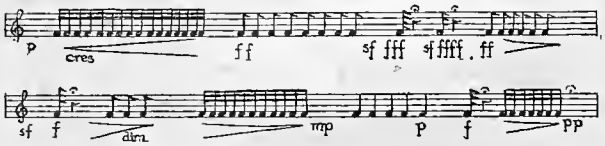
THE fact is that we escape many accidents by sheer luck. For under the circumstances suggested in my last paragraph, everything depends on whether the oncoming traffic be fast or slow. If it takes the form of sheep or a horsed-trap or perhaps even a cyclist we shall have room to stop safely; but if the oncoming traffic be engined, the odds are all in favour of a collision. Now that the number of motors of all kinds is growing so rapidly, the odds in favour of our leaving too small a margin for an emergency pull-up are vastly increased. *The driving methods which spelt safety in 1914 spell danger to-day.* I have increased my safety margins quite appreciably during the past year, and I recommend most of my readers to do likewise.

Overtaking on Corners.

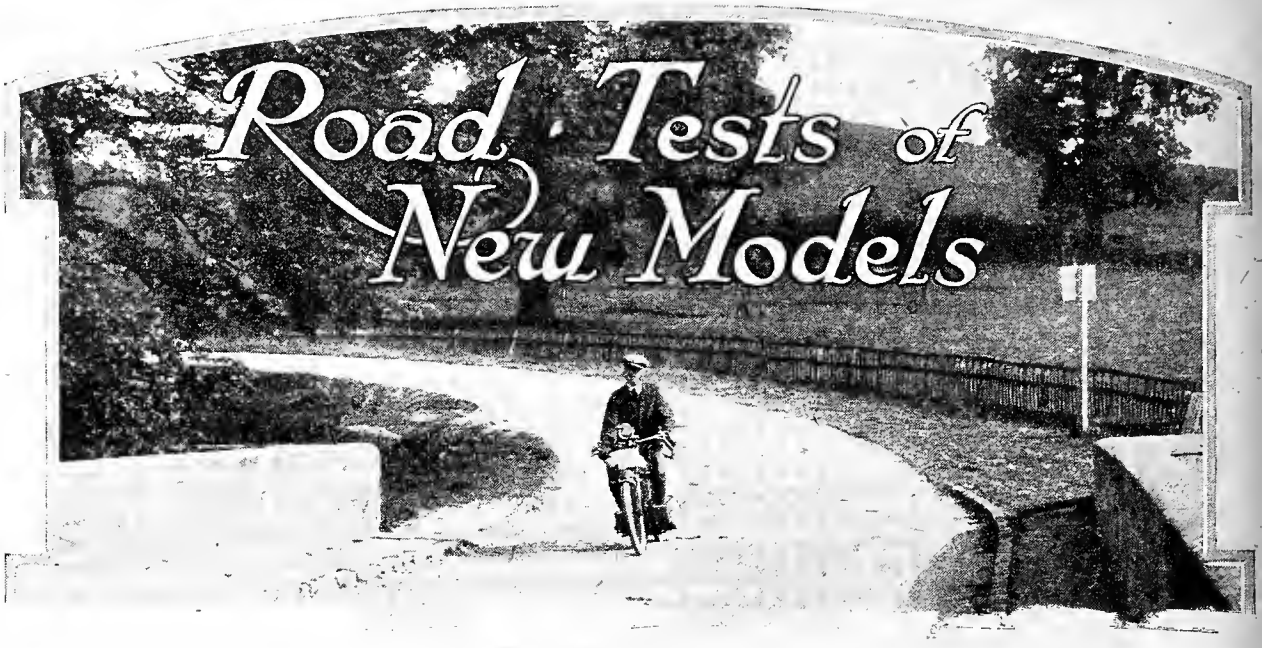
THE worst and the commonest form of bad driving observable on the roads consists of overtaking other traffic on a corner. The A.C.U. since the beginning has included in the Six Days rules a threat to disqualify any rider who commits this crime, but in practice the rule is a dead letter, and I am sorry to say that it is also a dead letter with thousands of the new generation of motorists, and also with the less intelligent people who drive horsed-vehicles. If anti-motorists had more sense they would recognise that this offence is a thousand times more dangerous than express train speeds on the open road. For example, last week I was negotiating an easy bend along a road where there is comfortable space for two cars to pass each other. Luckily I took it very gently. For just when my machine was making a tangent to the arc of the corner, I found the road blocked from hedge to hedge by Madame driving a pony cart, with assorted off-spring riding miniature pedal cycles on either side of her equipage. No doubt had I been travelling too fast I should have made the only reparation in my power by ramming a stone wall in lieu of committing wholesale kidslaughter. As it was, I pulled up with yards to spare. Madame, as you will all guess, scowled at me as if I had been Jack the Ripper; whereas my part in the affair was that of a sane individual, and hers that of a criminally reckless fool.

Music Hath Charms?

A WAGGISH friend of mine has reached the age at which slumber is no longer automatic. He has—perhaps foolishly—purchased a house on a mainish kind of road. It is infested by baby two-strokes. He sends me the following score of the kind of lullaby with which our fraternity annoy him:



Not unnaturally, he thinks that Dr. Low ought to be given the O.M. for inventing the audiometer, and he is quite savage with the trade for criticising the A.C.U. penalties on noisy exhausts in the Six Days. His postscript remarks pettishly that he once had an Indian, which did not decelerate very perceptibly when its cut-out was shut.



THE 2¾ h.p. FRANCIS-BARNETT.

SPECIFICATION.

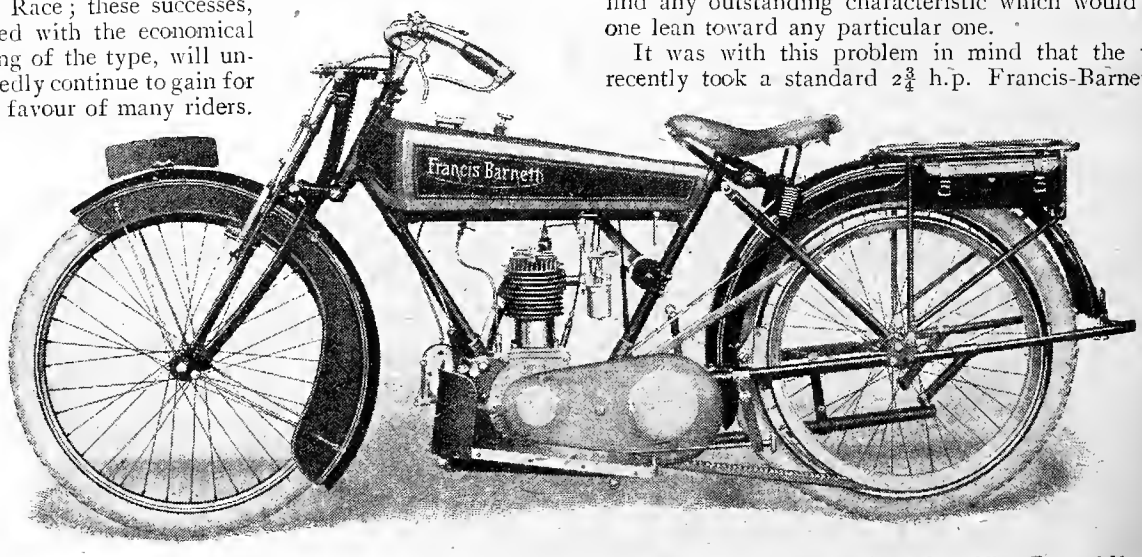
ENGINE: 2¾ h.p. single cylinder J.A.P. (70 × 76 mm. = 292 c.c.).
LUBRICATION: Hand pump.
CARBURETTER: Brown and Barlow.
MAGNETO: C.A.V.
GEAR BOX: Sturmey-Archer two-speed and kick-starter.
TRANSMISSION: Coventry chain and Dunlop belt.
WHEELS: 26 × 2¼ in., Dunlop tyres
FORKS: Brampton Biflex.
FRAME: Rigid.
WEIGHT: 188 lb. Tax 30/-
PRICE: £85.

ALTHOUGH the 3½ h.p. single is still perhaps the most popular type of solo mount in this country, it is being run a close second by the 2¾ h.p. machines.

During the last year or two this type has indeed proved itself to be both speedy and thoroughly reliable, as witness the excellent performance made by the tiny J.A.P. engine in the T.T. and recent 500 Miles Race; these successes, coupled with the economical running of the type, will undoubtedly continue to gain for it the favour of many riders.

Glancing over the features of a dozen well-known lightweights, the similarity of the specification is striking, although to the average eye the machines look quite different. The 2¾ h.p. J.A.P. engine, Sturmey-Archer two-speed gear box, chain-cum-belt drive, wheel sizes, etc., convey the idea that such machines must be exactly similar in performance, and true, it is often difficult, when testing a variety of makes, to find any outstanding characteristic which would make one lean toward any particular one.

It was with this problem in mind that the writer recently took a standard 2¾ h.p. Francis-Barnett for

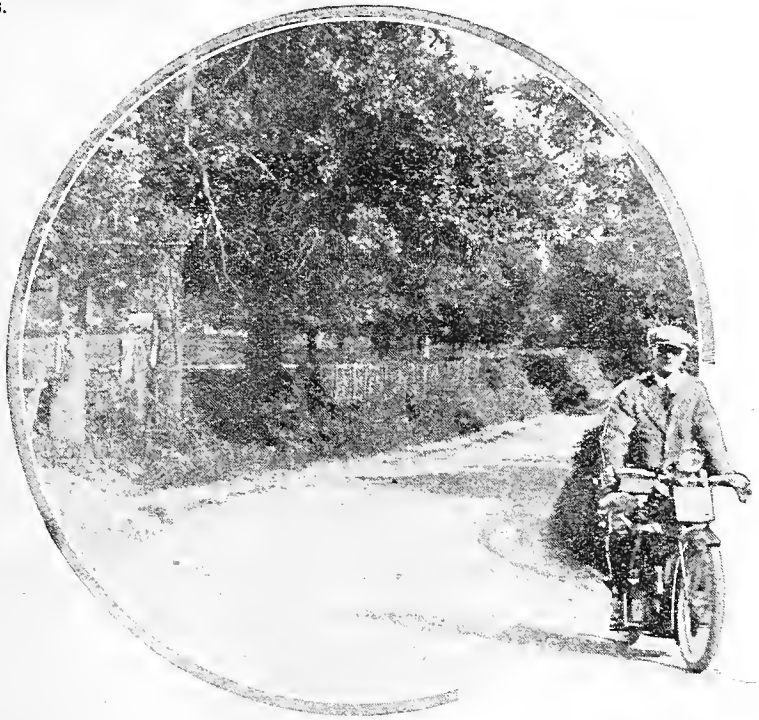


There are several commendable features about the 2¾ h.p. two-speed Francis-Barnett, among them being the saddle tank, a quickly adjustable rear brake, and a particularly neat chain cover.

Road Tests of New Models.

a test run over the Cotswold Hills one very hot Sunday afternoon. This little mount, which is a typical example of the sturdy British lightweight, is familiar to most readers, so that a detailed specification is unnecessary—the chief characteristics being the saddle tank, short leg shields, and easily adjustable rear brake.

Leaving the garage at noon, the main road was followed to Broadway *via* Stratford, prior to trying the machine on the well-known trials hills of Saintbury, Willersey, and Rising Sun. The Francis-Barnett behaved very well, and it was not long before one realised that its real charm lay in its general handiness and controllability—the riding position, distribution of weight, and wheelbase length all combining to give the rider a sense of perfect security and comfort.



The riding position of the Francis-Barnett is particularly comfortable, and one immediately feels at home on the mount.

One becomes accustomed to any type of machine, but there are some mounts upon which one immediately feels "at home." The Francis-Barnett is one of them.

Turning off the main road at the familiar stone cross, we were soon humming up Saintbury, bottom gear being engaged about half-way up, the engine pulling well thereafter with plenty in hand. Willersey, the corresponding descent, provided an excellent opportunity for testing the brakes, and it was found possible to bring the machine to a dead stop on the steepest portion, the rear brake being exceedingly powerful.

On the way to Cheltenham a stop was made to run down the Rising Sun Hill (Gambles Lane), and attempt to reclimb it, back to the main road again, over the steep and loose gradient, a clean ascent being made without any fuss.

In spite of the fine weather very little traffic was encountered between Stratford and Cheltenham on both outward and return journeys, and with a clear road it was found possible to ride mile after mile without touching the bars; this is, of course, possible on other types, but how often does one find when testing the steering that the machine pulls to one side, and in some cases starts to wobble immediately the bars are released. This form of riding should not ordinarily be indulged in for obvious reasons, but it served to prove that the machine in question steers perfectly without the slightest wobble even when passing over a bad section of the road. The wide and smooth tank forms a very comfortable grip for the rider's knees.

It is after using such machines as this, after the heavier type, that one appreciates the vast strides made in lightweights in recent years.

Summing up, the Francis-Barnett is a well-made, speedy, and thoroughly reliable little solo mount, but undoubtedly that which appeals to one most is its perfect controllability, a quality bringing it into the front rank of British lightweights.

GRAPHITE FOR CHAIN LUBRICATION.

MUCH interest is shown from time to time in the correct lubrication of bearings, and there are different types of oil recommended for the various engines, gears, and axle bearings on the market, but very little has been authoritatively put forward for chains, except total enclosure in an oil bath or cleaning with paraffin and soaking in grease.

The former method is, of course, the best, but, having a machine with open chains, I have been led to investigate a few samples of graphite.

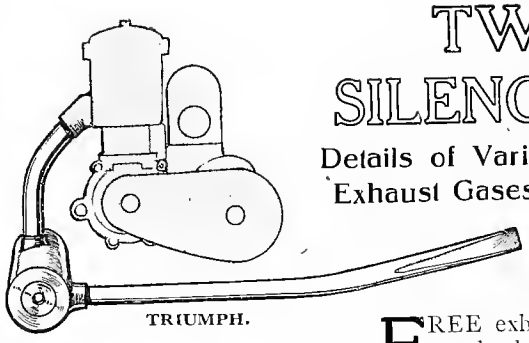
First, I tried ordinary powdered graphite, and on analysis found that it contained no less than 24% of silica or sand. Ordinary domestic blacklead was then tested, and found to have 18% sand; flake graphite, recommended by a local garage, had 4.5% sand in it.

Still unsatisfied, samples of special advertised graphite chain lubricants were obtained. One, a fairly hard substance, contained 74.7% carbon, only 0.14% sand, and 25.1% grease. On the carbon content the percentage of sand is practically 0.2%. The other, a soft paste, was still better. It had only 0.025% sand in it, the grease was about 82.37%, and the carbon or graphite 17.6%.

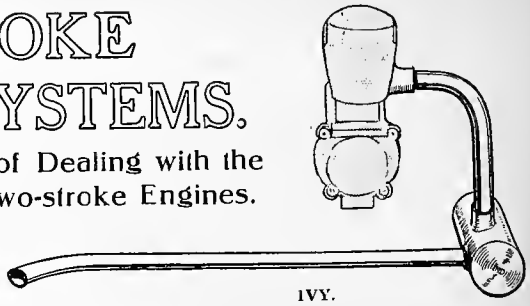
Graphite is a mineral, and those who have seen the old blacklead mines near Keswick will appreciate that it may contain dirt, silica, or quartz; obviously, unless purified, it is far from an ideal lubricant, and our readers are recommended to obtain their supplies from firms of repute who evidently employ scientific control in their factories. G. J. DENBIGH, M.Sc., A.I.C.

TWO-STROKE SILENCING SYSTEMS.

Details of Various Methods of Dealing with the Exhaust Gases on Typical Two-stroke Engines.



TRIUMPH.

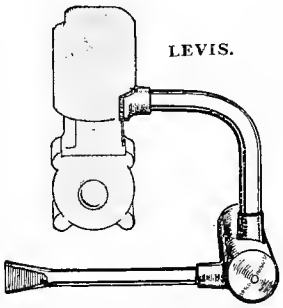


IVY.

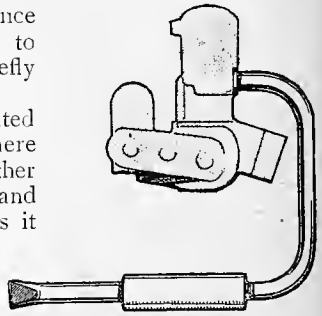
FREE exhaust, with a moderate degree of silence and absence of back pressure, is difficult to obtain on any motor cycle power unit, chiefly on account of space limitations.

On two-stroke engines the problem is complicated by the peculiarities of the type, from the fact that there is no other means of ejecting the burnt gases other than by virtue of their own tendency to expand, and the slight pressure of the incoming charge, makes it very necessary that the exhaust arrangements should be as free as they can be made. Apart from the fact that the three-port type of two-stroke engine, as used on the majority of motor cycles, has no positive scavenging action, the short time available for the expulsion of the expanded charge makes it doubly necessary that the exhaust system should be such that the gases not only have a free outward flow, but that their initial velocity shall be used to advantage in setting up a condition conducive to the complete exhaustion of the cylinder.

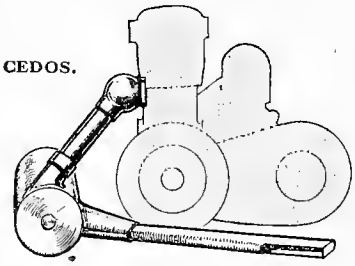
Considerations of frame design frequently impose limitations on the engine design, and an obtrusive front down tube may result either in the exhaust pipe being contorted to avoid it or the employment of a duplicated or branched pipe. It would certainly appear that the latter method is to be preferred; its employment, as evidenced in the accompanying illustrations, is a feature of the Dunelt and R.W. Scout machines, while duplex frame constructions permit a central, forwardly projecting pipe to leave the exhaust port on the Ivy and Scott; while long forked engine bearers allow the same freedom on such machines as the Levis and Radco. In other cases the exhaust port is rather to the side of the cylinder, or the port



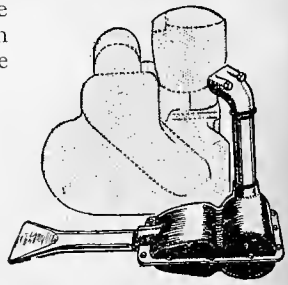
LEVIS.



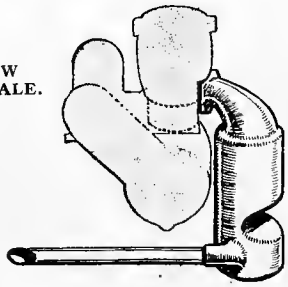
J.E.S.



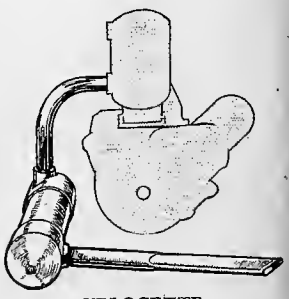
CEDOS.



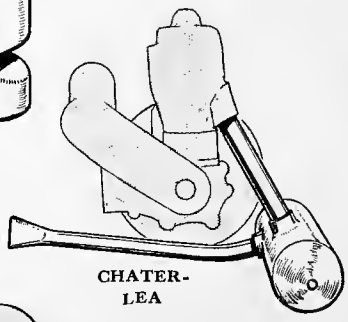
BEARDMORE-PRECISION.



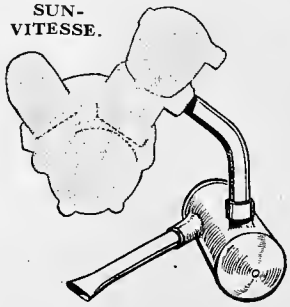
NEW SCALE.



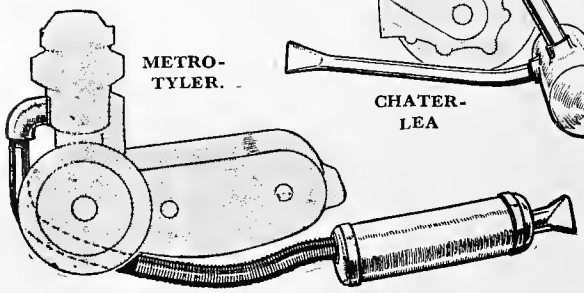
VELOCETTE.



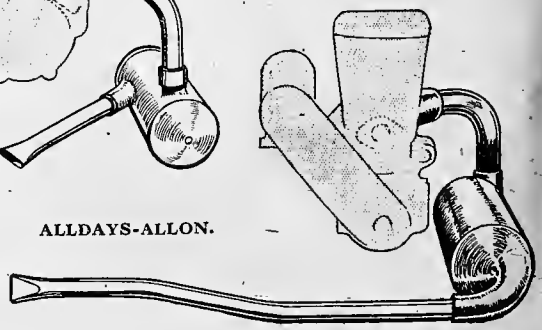
CHATER-LEA



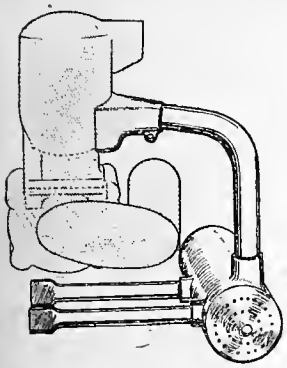
SUN-VITESSE.



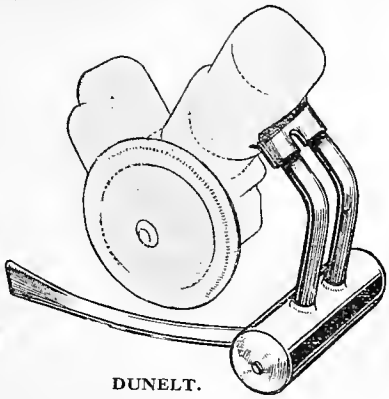
METRO-TYLER.



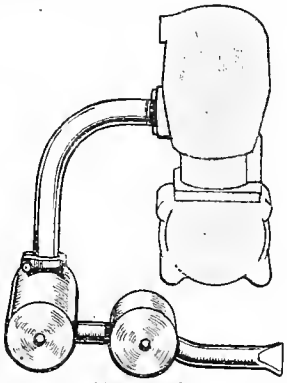
ALLDAYS-ALLON.



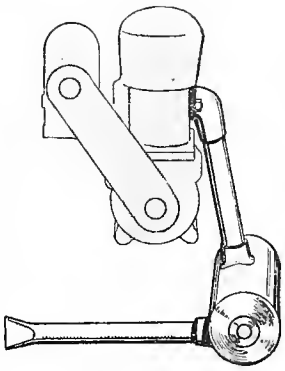
CONNAUGHT.



DUNELT.



VILLIERS.



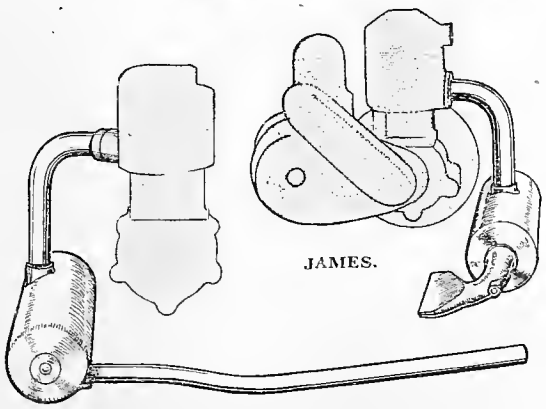
RADCO.

flange is inclined so that the pipe leaves at an angle, thus avoiding the frame tubes; this obtains in one form or the other on the Triumph, Beardmore, Allon, Villiers, and Enfield engines in particular. One unit worthy of note is the Velocette, which has its cylinder well outside the centre line of the frame, a position at once favourable for cooling and for the freedom permitted to its exhaust arrangements.

In some cases a duplex frame permits a central pipe, in others the pipe leaves at an angle. In certain instances the layout of the machine permits a large silencer to be used near the cylinder, while in other cases the expansion chamber is connected up by an appreciable length of tubing.

Whether it is desirable that the expansion chamber should be directly connected to the cylinder or not is rather open to discussion. One or two designers appear to favour a sudden expansion of the gases, either into the silencer proper or into an auxiliary chamber; the New Scale silencer fitted to the Precision unit of the machine bearing that name is an example of the first, while the Cedos, with its bulbous exhaust port cover is in the second category.

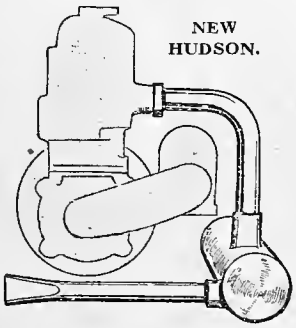
WHARFEDALE.



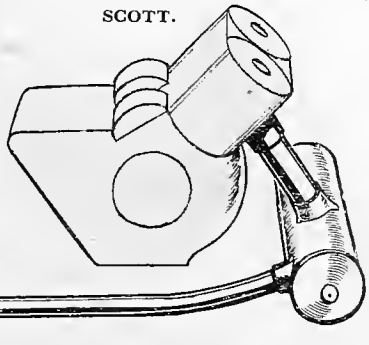
JAMES.

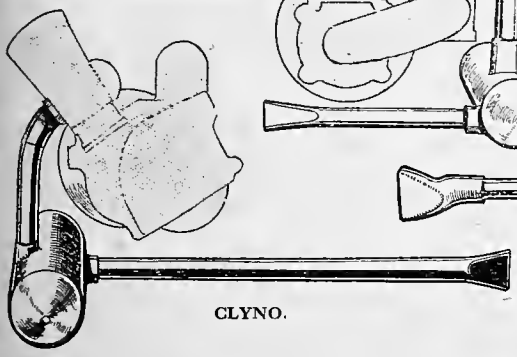
ROYAL ENFIELD.

NEW HUDSON.

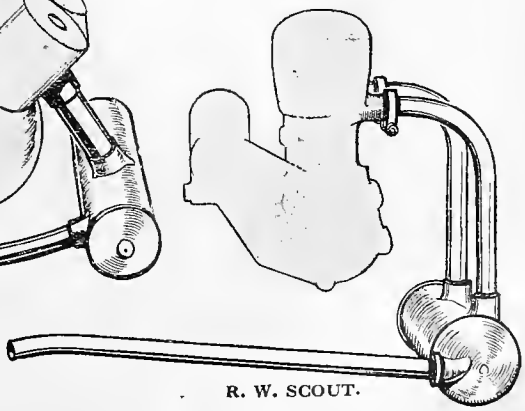


SCOTT.





CLYNO.



R. W. SCOUT.

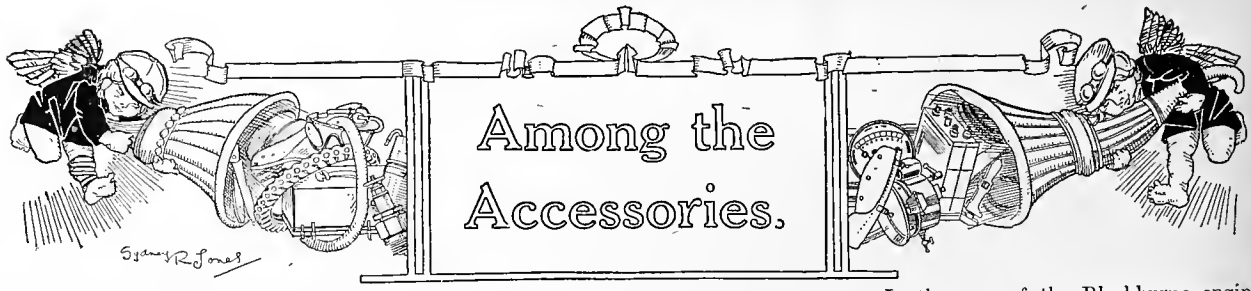
CLUB COLOURS.

IT was suggested by *The Motor Cycle* last week that all motor cycle clubs should have distinctive club colours. The pennants of some of the clubs that have already adopted the idea were illustrated; and from the following letter, from Mr. J. Norman Longfield, chairman of the Yorkshire Centre A.C.U., it is apparent that the idea is shortly to be adopted by many more. Mr. Longfield writes:

"I was very pleased to see your article on 'Club Colours,' and it may interest you to know that at the last Board meeting of the Yorkshire Centre of the Auto-Cycle Union, which was held in Leeds on August 15th, it was unanimously decided that each club affiliated to the Union in Yorkshire should have its own registered club colours.

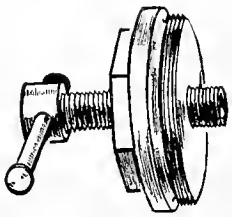
"The club secretaries were instructed to send in to a committee appointed by the Board an application for the colours his club desire.

"The colours allotted to a club may be used in any way that club may desire, but it is considered that the great majority will carry their colours in the form of a small flag or pennant."



An Aid to Clutch Repairs.

TO facilitate dismantling the clutch on the 4 h.p. Douglas, the Cromwell Engineering Co., of 327, Putney Bridge Road, Putney, London, S.W.15, has introduced a special tool consisting of a steel disc suitably threaded and with a hexagon top, and a screw provided with a short tommy bar. To make use of the tool, the clutch release arm is removed, the low gear is engaged, and the ratchet nut, provided with a left-hand thread, is unscrewed from the clutch body. The clutch tool may now be screwed into place by means of a valve cap spanner. The centre screw is then screwed up, releasing the clutch spring pressure on the adjusting ring for the anchor plate, which can then be removed with ease after lifting the locking catch. The anchor plate and clutch plate can now be withdrawn without difficulty. To assemble the clutch the operation is reversed.



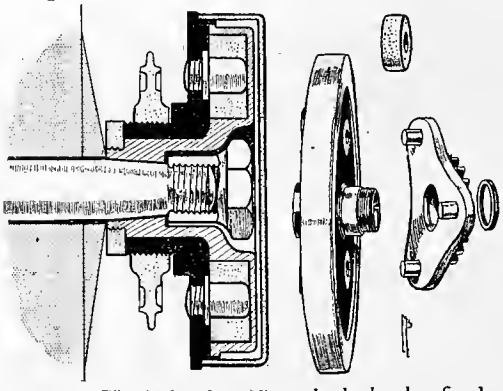
To aid Douglas clutch removal—the Cromwell tool.

An Anti-dazzle Lamp.

IT is claimed that no light is "wasted" in the Morris anti-dazzle head lamp, which, by an arrangement of mirrors, clearly shown in the right-hand drawing, deflects all the rays forward and downwards. Provision is made for focal adjustment and for regulating the angle and length of the beam; and the reflectors hinge away from the body for cleaning purposes. The designer is F. H. Morris, 20, Gladstone Road, Sparkbrook, Birmingham.

Transmission Shock Absorbers.

WHILE the majority of firms embody some means of absorbing engine shocks on the transmission by means of some description of shock absorber, there are still several which rely upon clutch slip. To overcome these defects, Mr. J. Holroyd, of Holroyd Motors, 6, Warwick Street London, W.1, whose name has so long been associated with Blackburne engines, is marketing a transmission shock absorbing device, which is applicable to Blackburne, J.A.P., or Norton engines. His device consists of insulating the engine-shaft from the sprocket by means of rubber buffers. In the case of the Norton device, the sprocket is screwed upon the portion shown in black in the illustration, to which three pegs are screwed. These pegs are embedded in rubber buffers recessed in a disc keyed on to the engine-shaft. The whole is protected by means of a plated dust-cap, which is a push-on fit.

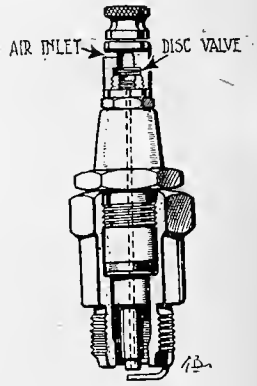


(Left) The Holroyd auxiliary shock absorber fitted to a Norton engine. (Right) A special model for Blackburne engines (drawn on a smaller scale).

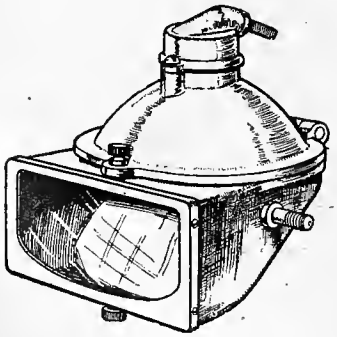
In the case of the Blackburne engine, the sprocket is mounted on a plate possessing three pegs, which engage with rubber buffers recessed in the flywheel.

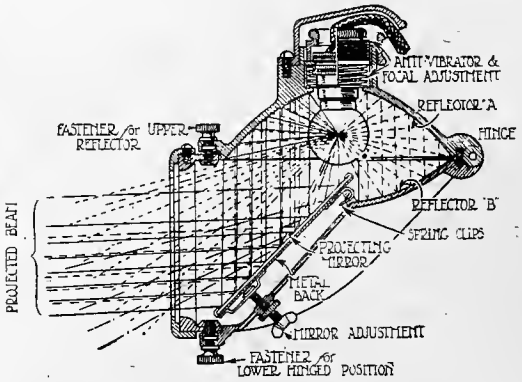
Ventilating the Sparking Plug.

AS its name aptly implies, the special feature of the Northwind sparking plug is that the points are kept cool and clean by from 500 to 1,500 blasts of cold air per minute. This is obtained by means of a disc valve (on the top of a hollow central electrode), which is opened by the suction of each downward stroke of the piston. Big claims are made for this plug, which is sold at 7s. 6d. each by the Northwind Spark Plug Corporation, 25, Victoria Street, Westminster, London, S.W.1. The plug seems to promise certain advantages, especially when used on hot running two-stroke engines.



Part sectional view of the Northwind sparking plug.

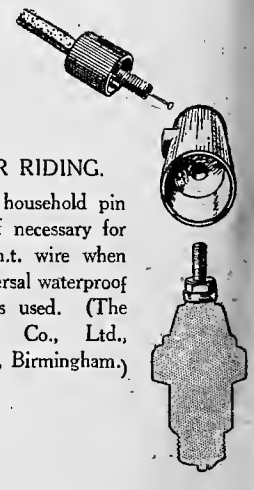


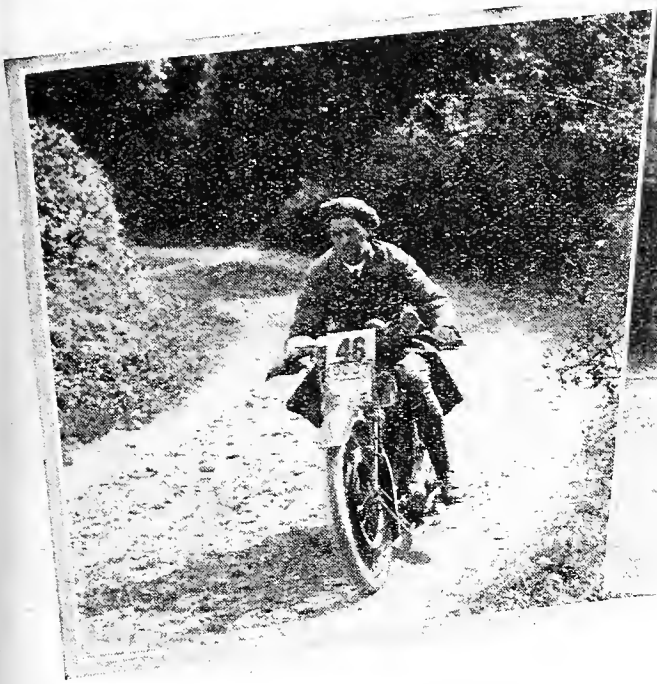


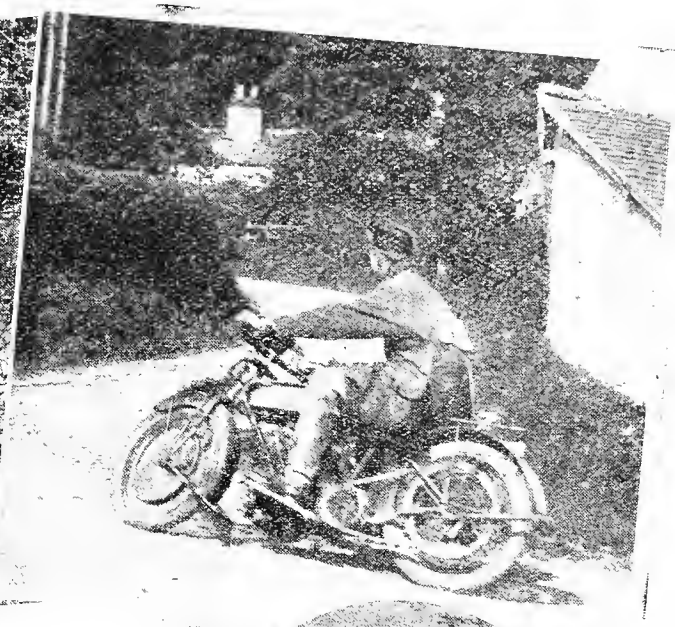
(Left) An exterior view of the Morris lamp. (Right) A sectional drawing, showing the arrangement of reflectors and mirror, and the path taken by the rays of light.

FOR WINTER RIDING.

An ordinary household pin may be used if necessary for extending the h.t. wire when the Sphinx universal waterproof plug terminal is used. (The Sphinx Mnfg. Co., Ltd., Bradford Street, Birmingham.)

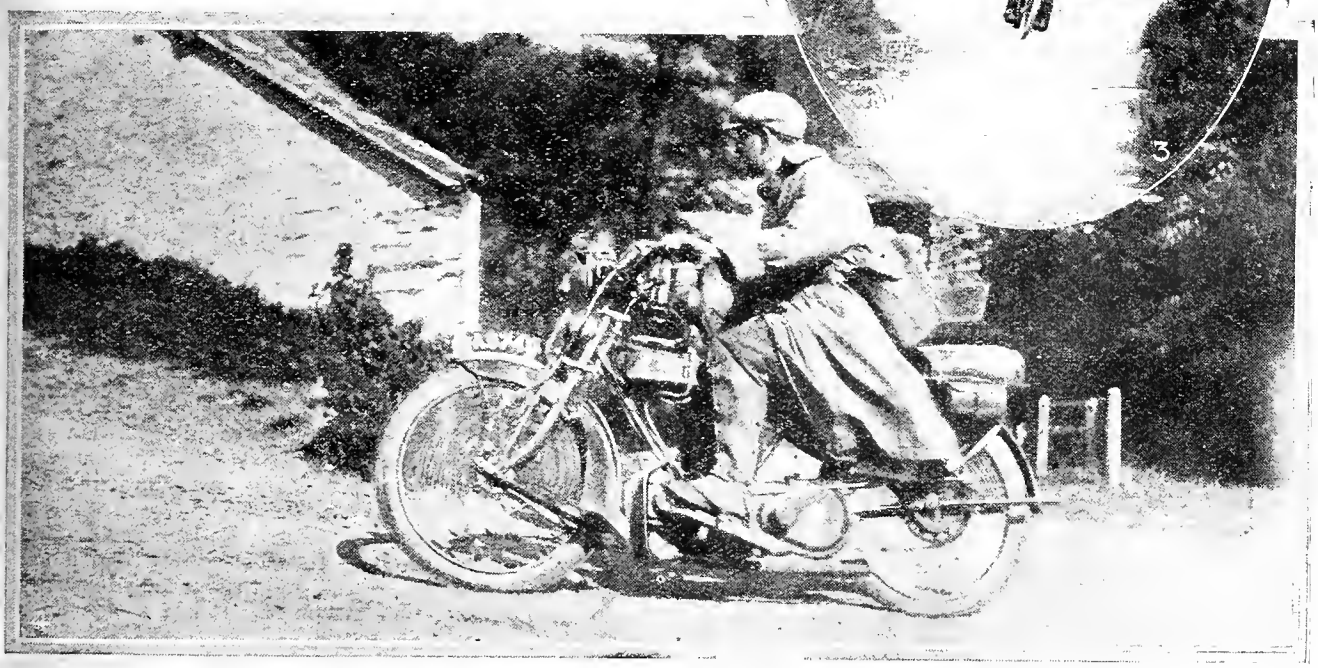




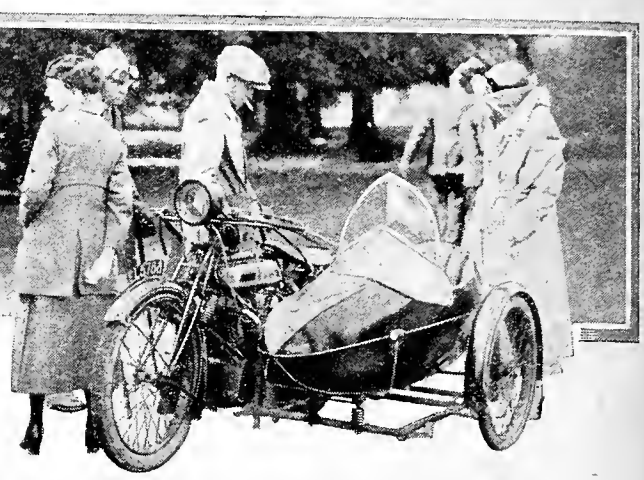


Two Formidable Welsh Hills.

Although taken on two of the worst hills in Wales, each of these pictures (of competitors in the Liverpool M.C. Reliance Cup Trial) gives an impression of fast, easy ascents; had the day been wet the camera might have told a different tale! Nos. 1, 2, and 4 depict W. J. Astley (3½ Sunbeam), J. Lee (4¼ B.S.A.), and O. Wade (2¾ A.J.S.) respectively on Conquering Hero. No. 3 shows H. S. E. Barton (3 A.B.C.) on Alt-y-Bady.



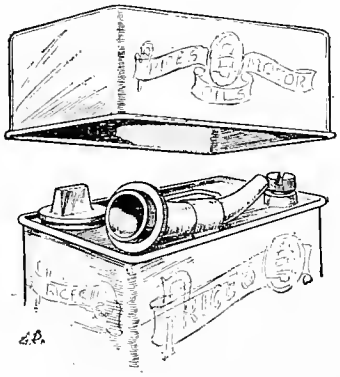
PASSENGER MACHINE TOPICS



Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers.

Collated by "Vedette."

IT is not, perhaps, generally realised that we run grave risks in haphazard buying of lubricating oil. Recently a colleague ruined his bearings by consenting to test a certain oil which enjoys the best of reputations. Now the trouble was caused through not draining the tank and crank case of the oil previously in use. Used separately, both these oils are eminently suitable for the machine in question, but together they quarrelled violently to the detriment of the bearings. Mineral and vegetable oils will not mix, and before refilling with one oil it is very desirable that the other should be cleared out. Another colleague had trouble with his bearings through purchasing "loose oil" of an unknown quality while on the road. It is a long tour that requires more than a tank full of oil plus two quarts; but two-quart tins are usually messy things to have lying about. So Prices Co., Ltd., has introduced a tourist's tin, which, holding half-a-gallon, is fitted with a screw filler and spout. What is more important is the cap, which encloses all parts likely to be greasy. It sells at 4s. 6d.



Prices' "Tourist" oil tin.

AN interesting development of the vacuum flask idea is the Aladdin jar, illustrated on this page. It is sold by Dunhills, Ltd., 359-361, Euston Road, N.W.1, and should appeal to all sidecarists who desire to be independent of hotels and cafés during their week-end jaunts. The jar has a 4in. mouth, holds a gallon of liquid or solid foods, and keeps the contents hot or cold, as required. The price is £5 5s., and a smaller size, with half the capacity, costs £4 4s. Now, we may expect to see some of the London-Exeter competitors providing themselves with a full course breakfast in case of an enforced stop on Salisbury Plain.

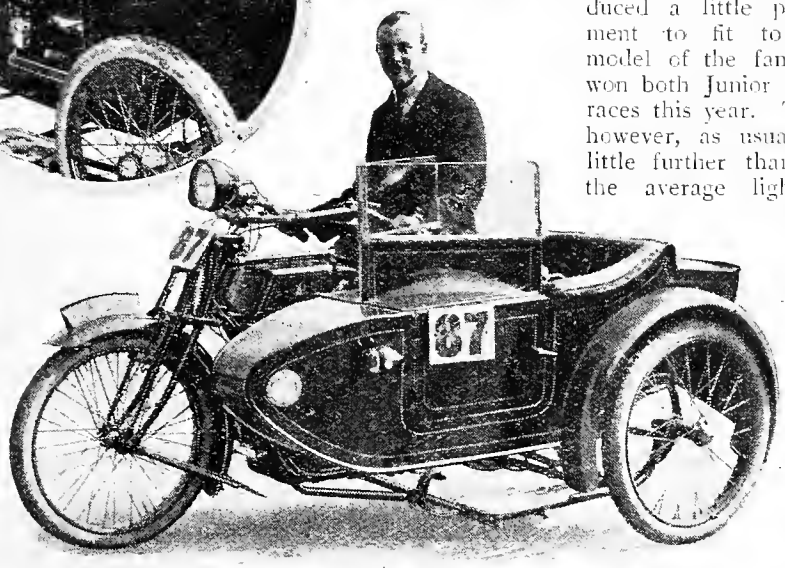
A vacuum flask for either liquid or solid food.

F. C. NORTH'S performance in the Six Days Trials with his O.K. miniature sidecar may be said to have dissipated any doubts as to the capabilities of the small two-stroke sidecar outfit. Quite recently I was aboard one of these little machines, and was very favourably impressed with its power and speed. According to the official figures upon which the awards were based, North lost sixty-eight marks on "Deviation from schedule," which means time errors, but lost no marks on hill-climbing. One would have thought that it would have been the other way about. No marks were lost on silence or brakes, but twenty-five were forfeited in his speed test, because he was scheduled to average 32 m.p.h.! He was also "down" a little on oil consumption, but was decidedly "up" on petrol, his consumption being 87.7 m.p.g. Undoubtedly, the diminutive O.K. is a wonder, and its demonstration on Porlock and Lynton was the talk of the day. It will be observed that the sidecar is not one of the eight-slipper type usually fitted to low-powered machines. It has a side door and ample locker space.

F. C. North and his little O.K. sidecar outfit, the capabilities of which he demonstrated so successfully during the Six Days Trials. He made clean ascents of Porlock and Lynton.

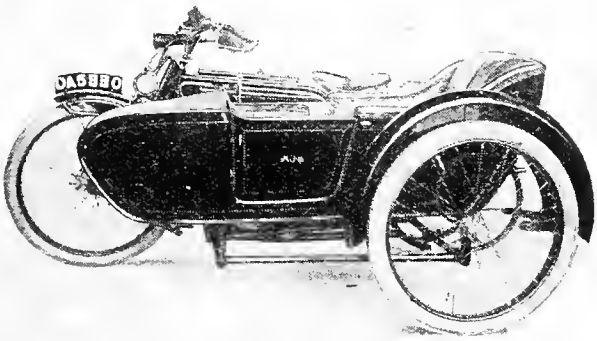
Passenger Machine Topics.—

WITH so many good sidecar performances in the Six Days, one cannot very well instance any outstanding sidecar performance other than that of the little O.K. There was, however, another exception worthy of mention, and it supports a view often advanced by critics of the big trials, *i.e.*, that any experienced motor cyclist, without any special preparation to his machine, could emerge with the same honours as those who had a special machine resplendent with all kinds of gadgets to ensure success. I refer to T. F. Blumfield's demonstration of a privately-owned 6-7 h.p. Ariel outfit, with which he won a gold medal. Blumfield was run into by a car on entering Brooklands, and after obtaining permission to postpone the preliminary examination, he returned to the Midlands, borrowed a friend's Ariel and rode it to Brooklands in time to start and to win a "gold." The most remarkable feature of the episode is that this machine was about to be overhauled. In fact, it started the trial with a broken mudguard. The outfit is illustrated here, and it will be seen that the sidecar is fitted with a new type of windscreen, which is the production of Messrs. A. J. Homer and Sons, of Gooch Street, Birmingham. It is quite a neat affair, effectively screening the passenger and opens with the door, thus obviating the nuisance of having to unscrew butterfly nuts.

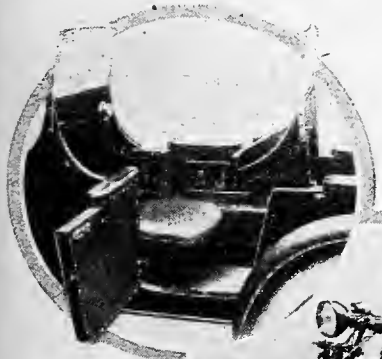


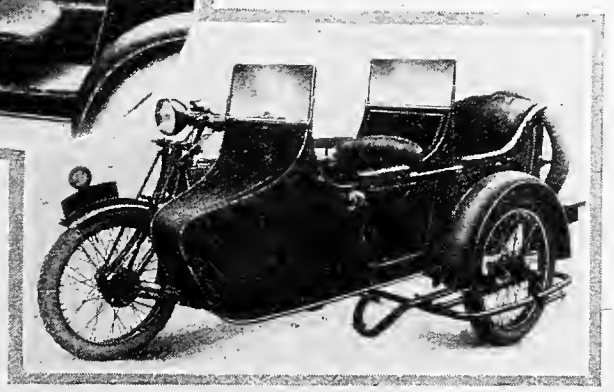
An Ariel sidecar, although awaiting an overhaul, obtained a gold medal in the Six Days Trials. (Inset) A neat V windscreen which opens with the door.

ALMOST every $2\frac{3}{4}$ h.p. machine on the market is capable of light sidecar work. It is, therefore, not surprising that Messrs. A. J. Stevens have introduced a little passenger attachment to fit to their roadster model of the famous mount that won both Junior and Senior T.T. races this year. The A.J.S. firm, however, as usual, have gone a little further than the maker of the average lightweight sidecar outfits. The sidecar is on touring lines, with a side door and high back; in fact, the outfit is in keeping with the high standing of the 7 h.p. machine. This Wolverhampton firm has also introduced a tandem sidecar for the twin machine. It has a length of 6ft. 6in., and is fitted with two hinged dashes complete with screens.



An A.J.S. sidecar of light construction, specially designed for the $2\frac{3}{4}$ h.p. model.



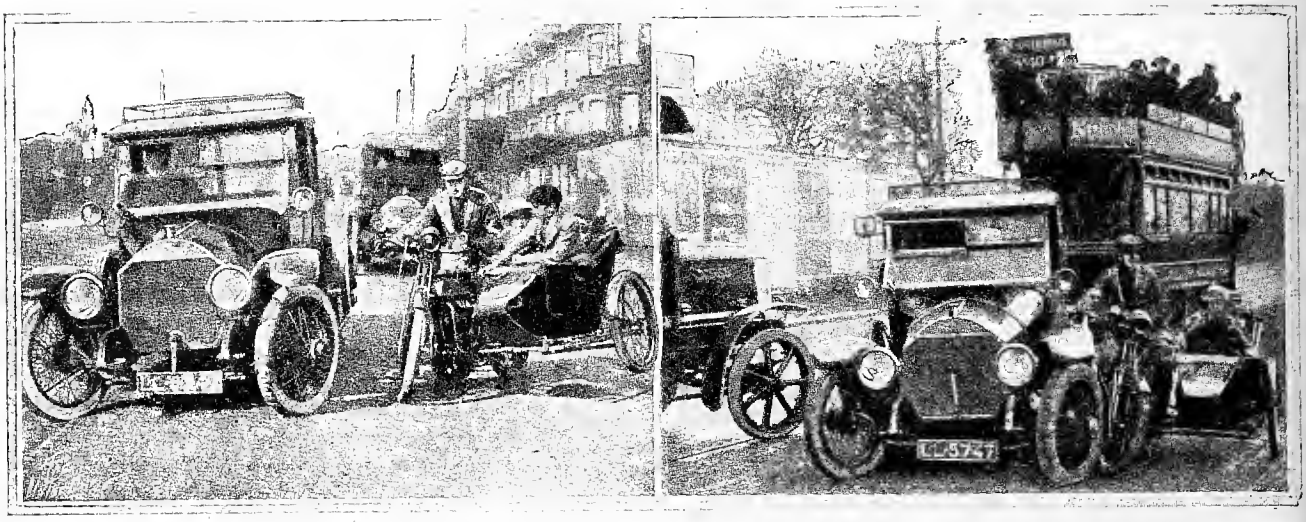


The new A.J.S. tandem sidecar. (Inset) Disposition of additional seat, backrest, and screen.

WHEN I purchase my next year's sidecar, I shall insist that the specification includes a hood cover of some material that can be easily washed down. A hood gets dusty when carried exposed, and it is not an easy job to clean it; further, when travelling without a passenger and with the screen down, wind gets under the folded hood and turns it into a form of parachute. A combined apron and hood cover, such as fitted on Gloria sidecars, will serve my purpose.

"SAFETY FIRST."

Some Hints and Golden Rules for Motor Cyclists issued by the London Safety First Council.



Two illustrations issued by the London Safety First Council, graphically depicting the dangers motor cyclists run if the rules of the road are not strictly followed.
"At cross roads, slow up and give warning." "Don't pass traffic on the near side."

THE work of any body which tends to remind drivers of all classes of vehicles of their obligations must be to the good of motor cyclists; and in this connection the activities of the London Safety First Council are now well known to riders in the Metropolis. For some time the Council has been prominently displaying posters which give hints to all classes of road users, including motor cyclists, to whom a variety of appeals are made. The hints contained in them are intended for London riders and drivers in most cases, but most of the rules apply all over the kingdom.

The "Hints to Motor Cyclists" poster No. 1 contains the following six simple hints, obvious to everyone, but so frequently overlooked:

1.—When overtaking other traffic, pass on the off side. Passing on the near side may be dangerous.

2.—Be on the alert for sideslips on tram rails and greasy roads. A low saddle adjustment is a safe precaution.

3.—When turning corners, reduce speed and take correct sweep.

4.—Slow up and give warning before entering or crossing main roads.

5.—Keep an eye on the vehicle in front.

6.—Keep lamps well trimmed, and beware of obstructions at night, such as:

Meandering market waggons.
Vans delivering coal.
Road excavations.
Broken down vehicles.
Careless pedestrians.
Straying cattle.

Further accident prevention hints are given in the "Hints to Motor Cyclists" poster No. 2. These are:

1.—Before starting out, go over machine with spanner and oilcan. Smashes have resulted from loose brakes and seized bearings.

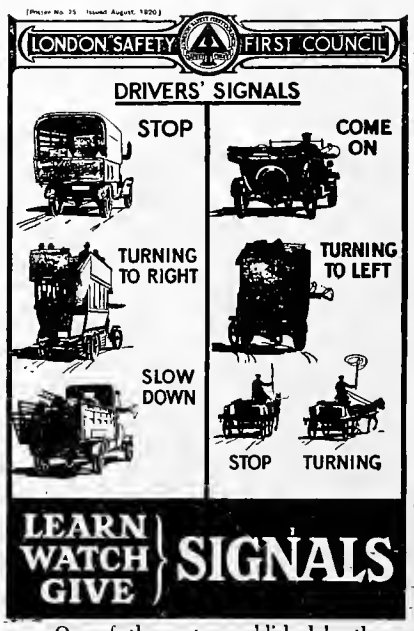
2.—Learn to change speed without looking at your feet or hands.

3.—Do not carry loads which obstruct your view of the roadway. Overloading causes loss of control.

4.—On no account allow "pillion riding" on solo machines.

5.—Be sure your brakes are in order. It is more important to be able to stop than start your machine. Be prepared to stop.

6.—If possible, have all controls mounted on the handle-bar of your motor cycle.



One of the posters published by the London Safety First Council showing drivers' signals.

Very few of our readers will agree with the preceding hint, No. 4; and, as we do not wish to reopen a heated correspondence on the question of pillion riding, we would remind motor cyclists that the hints have been framed with London traffic in mind. Everything considered, however, we think the majority of our readers will agree that pillion riding on solo machines in London traffic, although quite common practice, is rather risky. After all, the London Safety First Council is in existence to discourage risk-taking in all its forms.

Hand Signals and their Observance.

Some of the hints to taxi drivers apply equally to motor cyclists, and among them may be mentioned the following:

Give hand signals and slow down when approaching from side streets into main thoroughfares. To cut corners limits your observation and that of approaching drivers.

Before turning into the roadway, show hand signal, and give traffic following time to slow down.

Another poster, which we reproduce in miniature, deals with drivers' signals. It is most necessary that the novice thoroughly understands these signals, since the drivers of large hooded vehicles, being unable to look backward, rely upon their observance. Such reliance on the observation of following drivers would not be so necessary if the frequent urgings of *The Motor Cycle* and *The Autocar* had been heeded, and reflector mirrors were fitted to heavy transport vehicles.

Appended are a few additional hints derived from experience and observation:

Ascertain whether full steering lock can be easily obtained when the hood of the sidecar is up. Sometimes stiff gauntlets will foul the screen when the arm is being *returned* to normal position.

Safety First."—

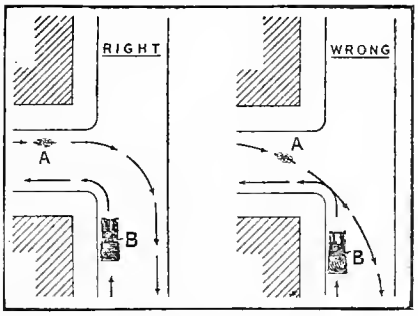
If your hat blows off, do not (1) stand on the brakes, which may cause a skid; or (2) pull up suddenly and turn before ascertaining whether the road is clear. Safety is the first consideration. Never mind the hat for the time being.

If your lamps require attention, (1) pull up under a street lamp; or (2), if in the country, find a convenient spot off the highway.

To mend a puncture, place the machine so that you will be working on the near side of the road. You may become so absorbed in your work that you may not remember the possibility of passing traffic each time you stoop.

Make sure carbide tin lids are secure. Loose carbide lying about in a sidecar may escape notice until a wet ride, when dampness will generate gas, which might be ignited by the passenger lighting a cigarette.

Do not start your engine under the nose of a horse. Think of the likely consequences if it takes fright.



From the "Hints to Motor Cyclists" poster: "When taking corners reduce speed and take the correct sweep."

Keep your eyes open for the unexpected on the part of pedestrians. The pavement rule usually is to keep to the right, which means that pedestrians on the kerb are travelling in the same direction as the traffic, and may step off into the roadway without looking round.

When passing through a roadway in which children are playing, look out for the unexpected. Children at play forget everything else.

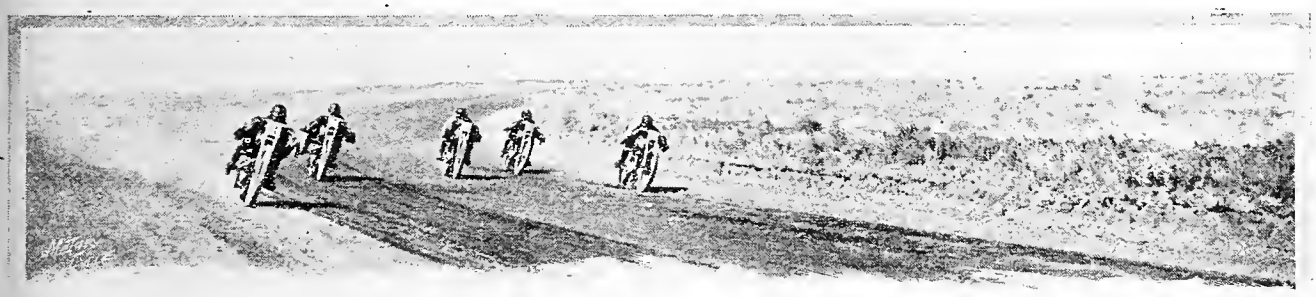
Heed all warning signs. Some of them are futile, but others indicate real danger spots.

A golden rule: Travel cautiously on roads you do not know.

Do not take risks in overtaking slower traffic on the open road, especially with an empty sidecar. Remember that a sudden swerve to the left in front of an overtaken vehicle, to avoid one travelling in the opposite direction, may cause the sidecar wheel to lift.

AMERICA NEEDS A T.T.

American and British Motor Cycle Racing Contrasted, with a Plea for the Adoption of a Road Race for Stock Machines in America, similar to the British T.T.



An American dirt racing track apparently located where ground space is no object. The scene depicts a tussle between five Harley-Davidson motor cycles.

Our correspondent, who holds a responsible position with the makers of Henderson and American X motor cycles, is in close touch with the sporting side of the motor cycle movement in America, and makes a strong plea for genuine road racing events in the U.S.A. His article reveals the great difference between the dirt track racing in America and our own racing at Brooklands, and road contests such as the T.T.

AMERICAN dirt track racing is thrilling and exciting; but, beyond annihilating time and gambling with the undertaker, it means nothing, and is not getting us anywhere. U.S.A. racing machines are of very special design—fragile, delicate, short-lived, and altogether impracticable for ordinary road use. They have been over-developed, compressions have been raised, pre-ignition has been conquered, and the general overall efficiency raised until the machines are capable of speeds far in excess of the limits of safety of the tracks, with the exception of the few two-mile dirt speedways and the board tracks. Indeed, the only similarity between the special racing machines and those sold to the public is the nameplate. It is a case of racing one type of machine and selling another, and racing resolves itself into a battle of nameplates, for the general public does not differentiate between the special racing mounts and the stocks, principally because we have never seriously featured stock machine competition. The nett result of the present scheme of dirt track racing is to put a premium on recklessness, for the winner is usually the rider who has least use for the magneto cut-out.

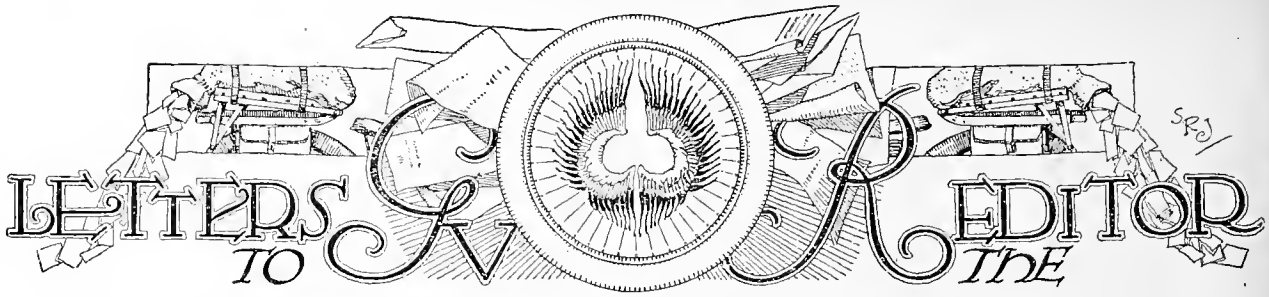
American factories spend a lot of money supporting race meetings. Machines are being speeded up from year to year, while the dirt tracks are deteriorating. Really, we are exploiting hazards and risks, and have already sacrificed many valuable lives in the quest of speed. On August 14th, Albert "Shrimp" Burns met an untimely end in a race meeting on a mile dirt track at Toledo, Ohio.

Burns was the mainstay of the Indian racing team, and just three weeks before he had met on a mile dirt track at Kenosha, Wisconsin, the cream of the Harley-Davidson racing men on eight-valve machines, and, single-handed, he outrode and vanquished them in three events.

The long list of victims in American track racing bears out the statement that we are paying an awful price for our sport (?), and getting nowhere.

The effect of this latest fatality in American racing will be far-reaching, for Burns was known and liked by all. There is a strong agitation now for a race patterned after the British T.T.—a road race for strictly stock machines which will be a real index of the performance capabilities of the kind of machines the riders buy, under actual road conditions. Such a contest would also emphasise the skill of the rider, rather than the chances he is willing to take. And it would teach us a lot of things which could be built into our stock machines. It is a fact that our dirt track racing teaches us practically nothing which can be utilised in improving machines for the public. A T.T. race would really "improve the breed," and would attract the attention of the public, because it would be a true sporting event, and it would attract many private owners, who are barred from track racing because of the danger, and because they cannot afford special racing machines, which are altogether unsuitable for anything but these events.

WESLEY G. PAULSON.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

MYSTERIOUS LACK OF POWER.

Sir,—Referring to the letter headed as above, I take it that the engine is fitted with an automatic inlet valve. The fitting of a very weak spring on it will cause "Constant Reader's" trouble to cease. Hoping to hear the result,

G. J. McCANN.

Sir,—If "Constant Reader," who complains of a lack of power in his De Dion machine, is quite sure that the timing of the machine, etc., is correct, the only possible cause would seem to be lack of a sufficient petrol supply.

Let him examine the fine wire gauze at the bottom of the Amac float chamber by unscrewing the coupling nut between it and the supply pipe from the tank. The gauze is probably choked up with fluff and dust filtered out of the petrol. If this gauze gets clogged, the petrol only filters slowly into the float chamber, and as soon as the machine has run a few yards it pulls up through lack of fuel. By the time the rider has dismounted and had a look round the float chamber has filled again, and the machine will start off again for another few yards.

L.V.A.

Liverpool.

WEIGHTS—CATALOGUE AND RUNNING.

Sir,—Would someone please explain to a novice the glaring discrepancies in the weight of similar machines in your A.C.U. report? In one 2¼ h.p. model the highest and lowest vary by 40 lb.; in a 2¾ h.p. model, by 31 lb.; in a 3½ h.p. model, by 37 lb; and in a 3¾ h.p. model, by 52 lb.

My new machine will have to be dragged up two awkward steps to get home; hence a lively interest in the dead weight—the *real* weight. It is clear that a very substantial addition has to be made to the catalogue estimate.

G.L.D.

SUNDAY COMPETITIONS.

Sir,—As one of that vast body of men who come under the heading of "Public Opinion" or "The Man in the Street," will you accept my hearty thanks for your spirited reply upon the above subject? When one has been away from home on business all the week, the return to home and loved ones is valuable indeed. I may be unfortunate in residing upon the main road from York to Harrogate, but I can say that my Sabbath is disturbed by the pleasure-going fraternity *via* char-à-banc, motor car, motor cycle, etc. Whatever men and women may think about it nowadays, it is still true that "a Sabbath well spent brings a week of content."

F. RAYNER.

NEXT YEAR'S T.T.

Sir,—With regard to the many and varied pros and cons raised on this question, may I, as an ordinary John Citizen, interested, it is true, in the pastime, briefly as possible put forward my opinion of the change.

I am entirely in agreement with Mr. Gelder's remarks on the desirability of changing the course of the T.T., provided that the main objects of the races are not lost to view in so doing, which, as I understand them, are the evolution of a reliable machine, with really efficient control and design, plus, of course, a certain degree of sheer speed, and, of course, stamina, though it is only natural, as an Englishman, to prefer the race to be held in our own borders.

May I ask if it is intended to make the change to Belgium a permanent one, and so displace the Island as a course? This I should strongly deprecate. Generally speaking, I should like to see the race held one year in Belgium, another in England, another in Scotland, as this would effectually prevent any stereotyping of a machine for a special course.

Surely it is not impossible for the A.C.U., well backed by the motoring and motor cycling public, to get the required permission to hold the race in England and Scotland, especially as it only entails the closing of a very small portion of the public highways for a comparatively short period.

The matter of spending so much money in a foreign country is indisputably worth the vast advertisement it will give to the British motor manufacturers, when foreign trade is to them becoming more and more a *sine qua non* (provided, of course, that they are prepared to manufacture their goods at a price that will not be prohibitive to the foreign market).

The transport formalities, etc., to Belgium, will most probably be found to be less worrying than those to the Island, which is in favour of deciding the change.

Whether the welcome and the absence of irritating restrictions and fabulous prices, etc., will be all that is claimed for them remains to be seen.

It is to be hoped that the loss of profit from the races will induce the thoughtless Manxmen to remove those several causes of friction mentioned here and elsewhere in your columns, and so permit the races to be held there again from time to time in the future.

JOHN CITIZEN.

Staines.

Sir,—I have read with much interest the various points of view from which the motor cyclists of Great Britain regard the proposed venue for next year's T.T. races. I say Great Britain advisedly, as Ireland does not seem to be considered at all, and although many people regard Ireland as a mere nonentity, yet from whatever aspect we view her, she must be reckoned with, and cannot be overlooked. I would like to give you at least one Irishman's unprejudiced views on the 1922 Tourist Trophy races.

Belgium is in many respects an admirable ground for the races, inasmuch as, from what one can hear, the transport facilities, the enthusiasm displayed by both the Belgian authorities and people, and the legal requirements are all that could

SERVICE, A.D. 1921.

A smart and up-to-date messenger boy who, using a Kingsbury commercial scooter, ran errands for Six Days Trials competitors at Taunton.

reasonably be desired, and the roads on the whole are admittedly fine and fairly wide and straight. So much can be said in favour of the Competitions Committee decision.

I will now look at the other side of the question, and speak as one who has personal experience of Belgium. If the T.T. is promoted purely as a speed contest, then there is no better place to hold it than Belgium; but, if it is promoted as a contest combining speed with efficiency and reliability in other directions, as seen from the tourists' point of view, then the new venue is of little or no service. I cannot remember having seen a mountain road in Belgium which could even remotely approach the gruelling ascent of Snaefell—in fact, as we regard mountains, the country has practically none. There are no descents which are severe enough to test braking efficiency thoroughly; and, with the exception of slowing for a corner, brakes would be of very little value. This would mean that in a year or two our braking systems would be matters of secondary consideration. This state of affairs would hardly please the tourist, and yet the race is supposed to be run in his interests.

Again, it has been urged that the race is an international one, and to have such a race in Belgium would stimulate our overseas trade. Now this is a very plausible argument; but the majority of us know how weak a one it is in reality. We often ask our friends in other countries why they do not ride British machines, and almost invariably they tell us that machines of British manufacture are too dear, while American machines are sold at a fairly reasonable price—in fact, the average British solo mount of 3½-4 h.p. is nearly as dear as a high-powered American sidecar. If such is the case, changing the racecourse to Belgium will not assist us in the least, as long as British prices are what they are to-day. The race has always been essentially our own, and should it be turned into a Continental one 50% of this country's active interest in it would die.

It is of no use talking of the distance between London and the Spa *v.* London and the Isle of Man. London is not, and never was, and never will be the centre of the British motor cycle industry. Wolverhampton, Coventry, and Birmingham are where we must start, and not London. To take London as a centre means that those Scottish cyclists north of the Tweed, not to speak of Irish cyclists, would have a long and expensive journey to Belgium.

And now I come to my suggestion, which, if considered, might assist us out of the mess we have got into. If the Isle of Man authorities are putting obstacles in the way, and if the question of Belgium raises new difficulties with the British motor cyclists, why not make at least an effort to hold it in Ireland, not in the disturbed areas of the South and West, but in Ulster? If it cannot be held in 1922, it may perhaps be held the next year. With wise and careful handling, this may be done. Here we have a new Parliament, new laws in respect of Ulster will be made, and a new era is opening up for the North of Ireland. The steamers from Liverpool, Fleetwood, Heysham, Glasgow, and Ardrossan run every night to Belfast in conjunction with the English and Scottish trains, so there should be plenty of transport facilities. The A.C.U. has the whole raw material in its hands, if it only uses it wisely.

On the 3rd inst. we had a twenty-five miles road race near Belfast over a triangular course. The utmost enthusiasm was shown by both motorists and the ordinary public. As far as the eye could see the grass banks on the roadside were crowded with spectators. I was at one of the corners, and at this point alone there were about three or four hundred people. Not too bad for one of the first displays of its kind in Ireland! The police, assisted by the stewards of the club, kept the roads clear, and everything seemed well organised. We had three riders taking part who were entered for this year's T.T., and I heard one who rode for his trade team in June say that he never saw the roads kept clearer even in the Isle of Man. Surely this should act as a spur to the Northern Cabinet on a matter of such importance to our A.C.U. to send a deputation to meet the members of the British motor cycling public. SPORTSMAN.

Belfast.

WHICH IS THE FASTEST NORTON MODEL?

Sir.—As an intending purchaser of a Model 16H Norton, the following information would be of interest, provided, of course, it is not prying into manufacturers' secrets too much.

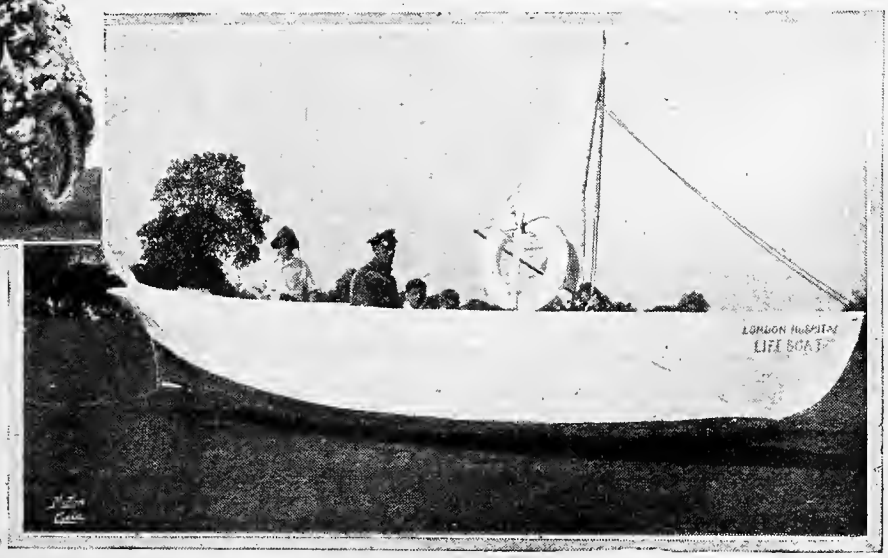
In all speed contests, races, etc.—to mention only two outstanding events: Mr. Horsman's remarkable ride when he finished first in his class and fourth irrespective of class in the five hundred mile race at Brooklands, and Mr. Hassell's well-deserved win in the Belgian Grand Prix—the machine used is a standard Model 16H.

Perhaps I am rather "splitting hairs," but what I should like to know is what type of engine is used: the B.S., B.R.S., or the ordinary 16H catalogued at £132 and expertly tuned for the event, and which appears to be the same thing, judging by a recent advertisement in *The Motor Cycle*, wherein a well-known rider and agent in the North offers to tune up a T.T. three-speed model to 75 m.p.h.—the speed guaranteed by the B.S. alone.

This seems strange to my lay mind, and I wonder why pay the extra for the B.S. INQUISITIVE.

Forest Gate.

THE MOTOR CYCLE IN CARNIVAL DRESS.



A B.S.A. enthusiast's highly decorated sidecar, which took part in the Gampaha Floral Pageant at Colombo, Ceylon. The letters B.S.A. were picked out in flowers and fastened on the front of the machine.

(Right) A clever decoration of a sidecar by Mr. H. Scott, of Winchmore Hill, N., used at a charity fête in aid of the London Hospital. Query: What make is the sidecar?

PLAYING WITH FIRE?

Sir,—In his letter to *The Motor Cycle* of September 8th, Mr. C. E. Baines says that he hopes to get a spark gap across each burner of his acetylene lamps. I presume his intention is to light up without stopping by means of a switch and water control worked from the saddle. Surely when the water is turned on with the lamp glass closed there is considerable danger of an explosive mixture being formed in the lamp? The result when the spark gap is brought into action may be amusing to all except the owner.

A. S. LYNNE WILLIAMS.

COLLECTING FRICTIONAL ELECTRICITY!

Sir,—I believe that I voice the opinion of a large number of the motor cycling fraternity when I say that it is about time that we had a definite opinion from some "No. 8 hat" in the electrical world as to the validity of the claims of the makers of spark intensifiers, which consist of extra spark gaps to be connected in series with the plug points.

The makers of these devices naturally make great claims for them, but the retailers of one of these devices actually stated (amongst other things) that the device collected the "frictional electricity" (inverted commas are mine) generated by the engine, and supplied it to the plug, thus augmenting the sparking current from the magneto.

I ask you, all ye legions of motor cyclists, why not scrap your magneto and fit a spark intensifier?

I have had quite extensive experience in various kinds of electrical work, and am not at sea on the theory; but I must confess that all the theory and practice of electricity which has come my way fails to account for any benefit to be obtained by fitting an extra spark gap.

Perhaps some expert will pass an opinion.

L. W. E. HARTLEY.

COMMENT OR CRITICISM?

Sir,—I have much debated the advisability of daring to reply to "Ixion," knowing full well his skill and also much respecting his writings, which I have happily followed for very many years.

It is, I seriously suggest, a fact that the A.C.U. has not criticised design, although when a large number of machines go wrong on one particular point the markings are deducted for failure of that part. It is the markings that have not been deducted for design, but in commenting upon loss of marks for a particular cause it is impossible to avoid indicating that the design would appear to be *responsible!*

I have in mind the case of front wheel brakes, which, I think everyone will admit, have been improved by the trials of the A.C.U.

"Ixion" says that the judges came near to advising the trade to scrap air-cooling. The only comment on this matter that I can trace is a remark by the judges that many air-cooled engines, after long climbs on low gear, as regards smell, noise, heat, and liability to knock, are not impressive. Anyone who saw performances in 1919 on such hills as Bwlch-y-groes would agree that this remark was justified.

There is no need for air-cooled engines in the ordinary way to suffer from overheating.

A. M. LOW, D.Sc., A.G.C.I.

"NEVER SAID IT."

Sir,—Under the above heading, "Ixion," in a very condescending style, pats the small two-strokes on the head, saying that he always tries to keep one for pottering about, but that it would have no value for him unless he had a larger cycle for general use. I have had extensive motor experience for the past eighteen years. Two months ago I bought a 2¼ h.p. New Hudson. Recently I took a trip of 650 miles round the Midlands on it, and never experienced the lack of speed that "Ixion" refers to. Forty miles per hour is quite quick enough, and a faster pace only gathers up enemies for motor cyclists generally. These little motors take all ordinary hills on top gear, and as for rough roads I have yet to find a motor car or cycle which does not jolt one in passing over them.

The light machines give little trouble as regards punctures, and I never experienced one on the little tour I have referred to, whereas on a heavier machine I should probably have had two or three, especially on the worst roads.

Although I am not possessed of money to throw away, still, impecuniosity did not force me to the purchase of a lightweight, but commonsense will make me retain it.

R. Y. THOMAS.

"SKILFUL DRIVING" THAT SHOULD HAVE BEEN UNNECESSARY.

Sir,—A letter headed "Skilful Driving by an Unknown Rider," and signed "Novice," appeared in your issue of September 1st.

According to the writer, he was giving his wife instructions how to drive a sidecar on, of all places, the Snake Hill, above Glossop. During the lesson, with the turnout apparently across the road, a solo rider flashes round a turn, and finds himself with a second or two in which to decide whether to collide with the sidecar or take off the road up a grass bank strewn with boulders. This latter course he elects to follow, thereby avoiding the sidecar turnout and owner, and, according to "Novice," by marvellous judgment and magnificent driving, he negotiates the boulders safely, and vanishes out of sight as rapidly as he appeared.

"Novice" concludes by paying a tribute to the unknown rider, whose iron nerve, if emulated by other riders, would go far to rendering the roads generally safer for amateurs, beginners, etc. The moral from this episode is very clear. "Novice" should have known better than to choose a stiff hill on a main road as a suitable place to teach a lady how to drive a sidecar.

If the "unknown rider" had failed to negotiate the grass bank and boulders and had crashed he would have received a reminder as to the recklessness of coming down a steep hill at high speed, and rounding a turn without being able to know whether the road beyond was obstructed.

It is motorists like "Novice" and "unknown rider" that I hope to keep clear of.

R. G. LINDSAY.

SUMMARY OF CORRESPONDENCE.

Mr. S. J. Caswell warns motor cyclists, who are in the habit of going through the ford in Kenilworth, that there are at present a number of large boulders, bricks, and broken bottles in the bed of the stream.

Mr. R. G. Knight considers that a word of thanks is due to Mr. Durant, who gave demonstrations of the L.A.D. cycle car on Crooksbury Hill during the recent Six Days Trials. Mr. Durant was the means of preventing several competitors from completely losing their way.

Recently, when driving his 6-7 h.p. Ariel sidecar near Hartford Bridge Flat, Mr. James Burr fainted, and was found unconscious by passers-by. He writes to thank those who helped him, particularly an A.A. patrol, although Mr. Burr is not a member of that organisation.

The riders of a sidecar, XD 902, are thanked by Mr. G. T. Davies for their help on a recent Sunday morning on the Sevenoaks-Farnborough road.

A Swedish correspondent complains that he very often receives replies from advertisers in *The Motor Cycle* that are insufficiently stamped.

Referring to "Ixion's" recent "Comment," headed "My Coat," the Sumtache Co., 2, Cross Street, St. Albans, call attention to their special preparation for "dry-cleaning" all kinds of clothing.

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Club News

Essex County and Southend A.C.

Commencing at 2.30 p.m., a gymkhana will be held next Saturday in the meadow opposite Solbys, Hadleigh.

Barnsley and District M.C.C.

As a result of the recent well-supported and successful gymkhana, the St. Dunstan's Home benefited to the extent of £32 10s.

South-eastern Centre A.C.U.

Next Saturday the Brighton and Hove M.C.C., on behalf of the Centre, will hold a hill-climb on the by-road from the main Dyke Road to Saddlescombe, about three miles from Brighton. The start is at 2 p.m.

Essex M.C.

An extraordinarily small percentage of "golds" went to the motor cyclist competitors in the recent London-Bala-Dunstable run, described in *The Motor Cycle* last week. Results:

GOLD MEDALS.—W. L. Handley (2½ O.K. Junior), N. Hall (2¼ O.K. Junior), and W. C. Henry (7 A.J.S. sc.).

SILVER MEDALS.—W. G. Crabb (4 Triumph), A. C. Rhodes (4 Triumph), J. G. L. Boorer (5 N.U.T.), S. M. Greening (2¾ Verus-Jap), Noel C. Dear (3½ Sunbeam), E. A. Bridgman (7 Indian sc.), and F. L. Wraight (6·9 Carden).

BRONZE MEDALS.—H. W. Harrington (2¾ Douglas), J. McBirnie (7 Indian), G. A. Lovegrove (2½ Radco), G. E. Cuffe (2½ Metro-Tyler), W. Simpson (7 Indian sc.), J. Wallis (6 Bradbury sc.), W. H. Glendinning (8 Rex sc.), A. W. Daniel (8 Matchless sc.), and G. C. Formilli (6·9 Carden).

Kilmore Sports Club (Motor Section).

At a hill-climb, open to solo machines of any capacity, held under the auspices of the Kilmore Sports Committee, the Hobson Cup was carried off by R. Hughes (3½ Rudge). The fastest times were: R. Hughes (3½ Rudge) and W. Weir (4 Triumph), 18s., tied; M. Walker (4 Triumph), 18⅕s.; W. J. Hughes (3½ Rudge), 18⅖s. The tie was decided by another race, in which the winner put up the same time as in the previous case.

Falmouth and District M.C. and L.C.C.

Fastest time of the day at the hill-climb at Waterhill, Bissoe Valley, was made by A. Richards on a 4 h.p. Triumph, his time, over the course of approximately half a mile, being 33⅗s. Full results follow:

NOT EXCEEDING 300 c.c.—1, W. L. Thomas (2¼ New Imperial-Jap), 35⅘s.; equal 2, W. Pascoe (2½ Bown-Villiers) and W. Williams (2½ Omega), 62s.

NOT EXCEEDING 500 c.c.—1, R. Johns (3½ P. and M.), 42s.; 2, G. Ensom (3½ Triumph), 45⅘s.; 3, E. Buckingham (3½ Triumph), 45⅗s.

NOT EXCEEDING 600 c.c.—1, A. Richards (4 Triumph), 35s.; 2, P. A. Bishop (4 Triumph), 36⅘s.; 3, H. W. Jane (4 Triumph), 38s.

UNLIMITED SOLO.—1, A. Richards (4 Triumph), 33⅘s.; 2, W. L. Thomas (2¼ New Imperial-Jap), 36s.; equal 3, H. W. Jane (4 Triumph) and P. A. Bishop (4 Triumph), 38⅘s.

UNLIMITED SIDECARS.—1, J. Fry (8 Enfield), 39⅘s.; 2, H. Richards (6 James), 47⅘s.; 3, E. Toms (6 Enfield), 55s.

SIDECARS NOT EXCEEDING 650 c.c.—1, P. Pryor (3¾ Scott), 61s.; 2, H. Fernan (4 James), 65⅘s.; 3, W. O. Pearce (3¾ Scott), 71⅘s.

Week-end Club Events.

Sept. 22.—Doncaster and District M.C.C. Quarterly Rally.
Sept. 24.—Taunton and District M.C. and L.C.C. Traders' Cup Trial.
Sept. 24.—Liverpool M.C. Colwyn Bay Speed Trials.
Sept. 24.—Triumph M.C.C. and Standard M.C.C. (Coventry). Inter-team Trial.
Sept. 24.—Ulster M.C.C. Hill-climb.
Sept. 24.—North Lindsay A.C. Hill-climb.
Sept. 24.—Leeds and District M.C. Speed Trials at North Camp, Ripon.
Sept. 24.—Leeds Athletic Club (Motor Section). Single Gear Trial.
Sept. 24.—Scarborough and District M.C. Speed Trials on the Albert Drive.
Sept. 24.—South Eastern Centre A.C.U. Hill-climb (Brighton District).
Sept. 24.—Worcester and District M.C.C. Hill-climb.
Sept. 24.—Essex County and Southend A.C. Gymkhana.
Sept. 24.—Luton and S. Beds. A.C. Speed Trials.
Sept. 24.—North-west London M.C.C. Gymkhana.
Sept. 24.—West Birmingham M.C.C. Speed Trials.
Sept. 24.—Wolverhampton Auto Nomads. Paper-chase.
Sept. 24.—Oxford M.C. Social Run to Brooklands.
Sept. 24.—Kidderminster M.C.C. Hill-climb.
Sept. 24.—Dewsbury and District M.C.C. Picnic.
Sept. 24.—Surrey M.C.C. Team Trial.
Sept. 24-25.—Exeter M.C. and J.C.C. Trial to Newquay.
Sept. 25.—Stafford and District M.C.C. Picnic at Gailey.
Sept. 25.—Leeds M.U. Run to Nun Monkton.
Sept. 25.—Cantebury and District M.C.C. All Day Run.
Sept. 25.—Stamford and District M.C.C. Hill-climb.
Sept. 25.—Burton and District M.C. Run to Abbots Bromley.
Sept. 25.—Sheffield M.C.C. Blackberrying Social Run.
Sept. 25.—Cambridge and County M.C. Run to Hunstanton.
Sept. 25.—Halifax and District M.C.C. Run to Almscliffe Crags.
Sept. 25.—Loughborough and District M.C.C. Bates Trophy Trial.
Sept. 25.—Rochester, Chatham and District M.C. and L.C.C. Run to Perry Wood.
Sept. 25.—Central London M.C.C. Reconnaissance Run for Paperchase.
Sept. 25.—Basingstoke and District M.C. and L.C.C. Run to New Forest.
Sept. 25.—Wakefield and District M.C.C. Run to Knaresborough.
Sept. 25.—Wallington and District M.C.C. Social Run.
Sept. 25.—Woolwich, Plumstead and District M.C. Run to Knockholt.
Sept. 26.—Western M.C.C. (Glasgow). Open Hill-climb.
Sept. 27.—Berwick and District M.C. Gymkhana.
Sept. 28.—York and District M.C.C. Novices' Trial.
Sept. 29.—Taunton M.C. and L.C.C. Gymkhana.
Sept. 29.—North Wales M.C.C. Fault-finding Competition.

North-western Centre A.C.U.

The first event of its kind in Blackpool, a very successful motor cycle gymkhana, was held recently by the local club on behalf of the Centre.

Ilkley M.C. and L.C.C.

With a route of about 140 miles divided into four circuits, the trial organised by the above club on September 11th, for the trophy presented by Capt. S. S. English, proved to be a complete success. At the beginning of each circuit, each competitor was given a card bearing the name of a destination, and telling him that he had to reach it by passing through one place and returning by another. There were some trying hills introduced, especially along the moorland trip through East Morton, which threw most of the competitors late at the checks; but W. Moore (on a 3¾ Scott) lost only three marks throughout the trip, thus capturing the trophy. W. Scott (3¾ Scott) came in second with a loss of 16½ marks, and A. Sutcliffe (4¼ B.S.A.) was third with a loss of 30¼ marks.

Western M.C.C. (Glasgow).

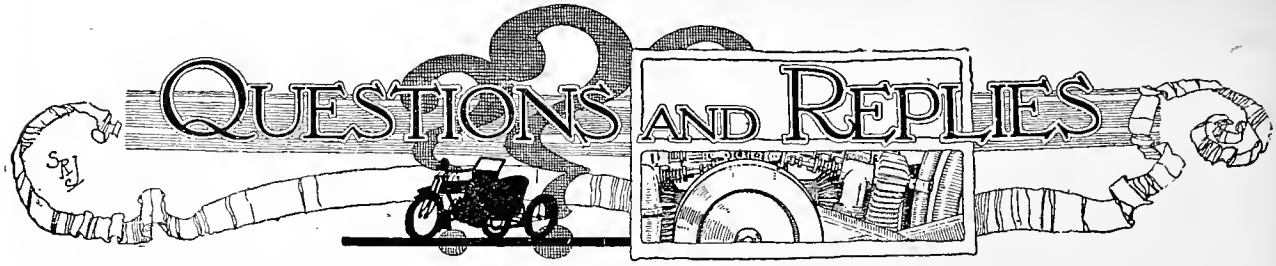
There were thirty-two starters for the closed team trial at Strathblane on the 10th inst. With only two checks, well arrowed and marked off at intervals of a mile, the course was just sufficiently difficult to find a winning team and provide an enjoyable, as well as sporting, afternoon for the competitors.

M. Fraser (7 A.J.S. sc.) burst his sidecar tyre when sixteen miles from the start, and rode the remaining fifty-one miles on the wheel rim, finishing with less than one minute time error and not a loose spoke in his wheel. Results:

FIRST TEAM.—J. Johnstone (6 A.J.S. sc.), time error 2m. 10⅕s.; A. B. Robertson (6 Enfield sc.), 34s.; J. M. Cowan (3½ Rover), 5s. Total error, 2m. 49⅕s.

SECOND TEAM.—R. Brown (7 A.J.S. sc.), time error 1m. 27s.; A. C. Harrington (2¼ Levis), 14⅕s.; P. S. Wright (3½ Rudge), 3m. 2⅗s. Total error, 4m. 43⅗s.

SPECIAL PRIZE FOR COMPETITOR OUTSIDE WINNING TEAM.—F. H. Manning (6 A.J.S. sc.), time error 3⅗s



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

SELLING A STOLEN MACHINE.

Please let me know if I am compelled by law to return the sum paid to me for a sidecar outfit which was stolen before being sold to me. The thief has since been caught and convicted, but I cannot claim from him, as he is in prison.—F.H.

If the machine was stolen before it was sold to you, you would not be able to pass a good title to it, and would have to return the sum received from a sub-purchaser. There is an implied condition on the part of the seller that he has a right to sell the goods.

INCREASING SPARKING RANGE.

In my ignition control the breaker box rotates about 20° for advancing or retarding. If I filed a longer slot giving a revolution of, say, 25° or 30°, should I be able to advance or retard further, or is the aperture made to advance the spark as far as practicable? In other words, is the aperture in a fixed relative position with the poles of the magnet?—G.H.D.

You would do no harm to the magneto by filing out the aperture in the contact breaker casing in order to get a wider degree of advance and retard. The makers design the magneto so that the spark occurs in relation to the most effective position of the armature.

FITTING A LARGER CYLINDER.

Would it be possible to increase the power of a 3½ h.p. motor cycle engine by increasing the size of the cylinder, combustion chamber, and the size of the piston? My reason for asking this is that I have a motor of above-mentioned power, the cylinder of which is cracked, and before going to the cost of having it welded, or ordering a new one of similar size, I thought I would like your opinion.—J.M.H.

The only way in which you can increase the power of the machine is by obtaining a cylinder of a greater bore and a corresponding piston to fit. If, however, the new piston is heavier than the old one it will be necessary to rebalance the engine. It is quite likely that the expense involved in the alteration will be greater than the corresponding increase in engine power would warrant, and we think it would be the better plan to obtain another cylinder the same size as the old one.

REWINDING A DYNAMO.

I have a Westinghouse dynamo giving three amps. at 115 volts. I wish to rewind it to give five amps. at 68 volts, or ten amps. at 34 volts. Will you please say what gauge and quantity of wire will be required, or how to make the alteration if rewiring is not necessary? It is a shunt wound, two pole circular body.—C.W.

It would be much better to sell the dynamo and get one of suitable size for the altered requirements, as you would scarcely be able to do the rewinding of the armature yourself. It would have to be almost entirely rebuilt.

Important Dates.

Sat., Sept. 24th—M.C.C. Sporting Trial.

Mon., Sept. 26th—Anglo-Dutch Reliability Trial.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Wed., Oct. 5th, to Sun., Oct. 16th—Paris Show.

Sat., Oct. 8th—B.M.C.R.C. Championship Meeting, Brooklands.

Sat., Oct. 8th—The "Scott" Trial in Yorkshire.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

TRANSMISSION AND LUBRICATION QUERIES.

(1.) Would it be possible to run my 1911 2¾ h.p. A.J.S. machine with single chain from the engine to the back wheel? (2.) Would oiling be satisfactory on a four-stroke with a plain sight drip feed without pump, and would a non-return valve be necessary?—E.P.

(1.) It would not be satisfactory to run the machine with a single chain from engine to back wheel, as there would be considerable whip in such a long drive. (2.) A non-return valve would be needed between the crank case and the sight feed drip, and a release valve would be needed in the crank case if one is not already fitted. It would probably be better to have a hand-operated oil pump.

LOOSE CYLINDER STUDS.

The cylinder of my two-stroke engine moves from side to side on the top of the crank case, owing to the pins coming out of the case. Do you think they could be properly fixed again?—B.E.N.

The only way to secure the cylinder would be to have the holes in the crank case tapped out in order to take studs of slightly larger diameter. Any good mechanic should put matters right fairly easily.

LAPPING-IN PISTON RINGS.

A 1920 2½ h.p. two-stroke which suffered lately from lack of compression would permit me to stand on the kick-starter indefinitely when it was new, so I decarbonised it, at the same time fitting new piston rings. The rings were not from the works, but were of a well-known make, and I fitted them as they were sent out (except for filing the slots), and was told afterwards that they should have been faced up. For the first seventy miles the machine went very well in spite of bad compression. I then took it down again, and found that the gas had been blowing past the rings in places, so I refitted the original rings. However, compression is no better, therefore, I conclude that the cylinder is scored or scratched. Do you think the rings will "run in" in time, or would it be better to lap the rings into the cylinder with emery? Will you kindly explain in detail this process?—H.A.B.

If the rings were of the correct outside size they should be "run in" after about 100 to 150 miles. If you wish to lap-in the rings, however, remove the connecting rod and piston from the crankshaft and fit a piece of wood in the big end of the rod as a temporary handle. Secure the cylinder on the bench or in a vice. Now coat the piston and rings with a thin film of the finest grinding paste mixed with oil, and work the piston up and down in the cylinder, taking care to give it a partial rotation every few strokes. Make quite sure that the piston cannot go too far into the cylinder head, so allowing the rings to expand into the combustion space and thus locking the piston in the cylinder. A block of wood in the head will prevent this happening. Altogether, we think it would be better for you to run the new rings in on the road rather than to attempt lapping them in.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"C.A.S." (West Hampstead).—A.B.C. sidecar outfit: Speed, reliability, petrol and oil consumption, and power; also petrol and oil consumption of the 7 h.p. A.J.S. sidecar outfit.

"W.H.C." (Leigh).—5 h.p. Stanger two-stroke for sidecar work: Consumption, comfort, reliability, and top gear climbing.

"F.W.W." (Sutton Coldfield).—Ner-a-Car: General experiences.

"E.B." (Easingwold). — Ner-a-Car: Efficiency and practical value.

"J.L.H." (Worthing).—3½ h.p. Rudge-Multi: Reliability, comfort, climbing speed, and flexibility.

"A.C.M." (West Bromwich).—3 h.p. Royal Enfield, 1916-19: Speed, climbing, and reliability.

"W.A." (Findochty).—5-6 h.p. Raleigh, solo: Reliability, ease of handling, saddle position, speed, and comfort.

"A.C." (Chelmsford).—Road conditions, etc., in Gambia. Suitability of 4 h.p. Triumph there.

"B.G." (Dublin).—3½ h.p. N.U.T., 1920: Consumption, speed capabilities, general reliability, and steering.

"J.A.C." (Oxford).—Scott for sidecar work (combined weight of passengers 20 stones): Petrol and oil consumption; is it necessary to keep in tune?

Miss H. B. T. (Pembroke).—Unibus: Comparisons with scooters, climbing (long, steep hills), and overheating.

"F.S." (Wick).—3½ h.p. T.T. Rudge Multi: Device to stop valve chatter, general reliability, gear inefficiency, W.S.R. variable jet, and lubrication.

READERS' REPLIES.

A KNOCK AT SPEED.

Under the above heading "A.R.H.B." seeks advice in your issue of September 1st. My two-stroke machine behaves in exactly the same manner. Moreover, it is in perfect condition and no signs of wear at all. I have conducted several experiments and am fairly confident as to the cause of the trouble. Like "A.R.H.B.," I found excess of oil temporarily cured the knock. This, however, is purely due to the cooling effect of the oil. In my case, it is not plug pre-ignition, and the engine will stand a long climb at a speed just under that required to produce a knock without a sign of pre-ignition. Again, the sound is quite different in tone from the metallic "pinking" of pre-ignition. It is a dull rattle, and, presumably, is the same as what is sometimes called "two-stroke rattle." I have proved that variation in the richness of the mixture has no marked effect, and if the engine is given sufficient oil to make it four-stroke no knock appears at speed. This is due to the cooling effect of extra oil and reduced number of explosions. Now the trouble in my engine (and "A.R.H.B.'s" case seems the same) is this: When the speed is increased, although the cylinder does not become much hotter (owing to amount of cool air increasing), the small and light piston, not being proportionately cooled, gradually gets very hot and swells up in the cylinder, the greater heat breaking down the reduced film of oil. The rattle is then produced by the up and down friction of piston and cylinder, both being comparatively dry. This condition is, I believe, what is termed "drying up," and is next door to "seizing." If the machine is slowed down, although the "rattle" disappears, there is still a slight noise, but this is made inaudible by the exhaust and the wind passing the ears. The cause of this effect might be owing to the piston, or cylinder, having become slightly distorted, and possibly conditions will improve with wear. If at any time "A.R.H.B." should true up or fit a new piston or cylinder the results would be interesting if published. Is it because of this possibility of "drying up" that aluminium pistons are favoured for racing two-strokes?—Gudgeon Pin.

Apropos of "A.R.H.B.'s" letter in your issue of September 1st, my own Triumph Junior developed an alarming metallic knock in precisely similar conditions. This I traced to the presence of a layer of carbon under the lowest piston ring, which had not been moved previously. It was somewhat deceptive, as the ring looked all right, and was quite free in its groove. The difference is astonishing, the machine covering about 200 miles in one day whilst riding from Cornwall to Portsmouth.—H.H.C.A.

I should like to state that I also own a Junior Triumph, which a few weeks ago developed a knock, with precisely the same characteristics as stated by "A.R.H.B." It began as soon as the engine became warm, and got worse and worse if speed were increased, but was not audible at slow speed or in second gear. On being taken down, I found there was a slight end play in the main shaft. I have since had it put right, and there is not the faintest trace of the noise. It occurred to me that this might be the cause of "A.R.H.B.'s" trouble.—G.H.B.

SPARKLETS

Sidecar Windscreens.

Coupé windscreens, described in *The Motor Cycle* of August 4th, are now being manufactured by Coupé Windscreens, 28, Middle Street, Portsmouth.

Magnetos in the Six Days Trials.

Twenty-three gold medals, four silver medals, and one bronze medal were awarded to riders whose machines were equipped with the British-made M-L magnetos.

In South Africa.

The gold medal awarded in the Durban T.T. race for the most meritorious performance in the event was gained by A. R. Morcom (2¼ Cedos); 142½ miles were covered, and the machine finished in perfect condition.

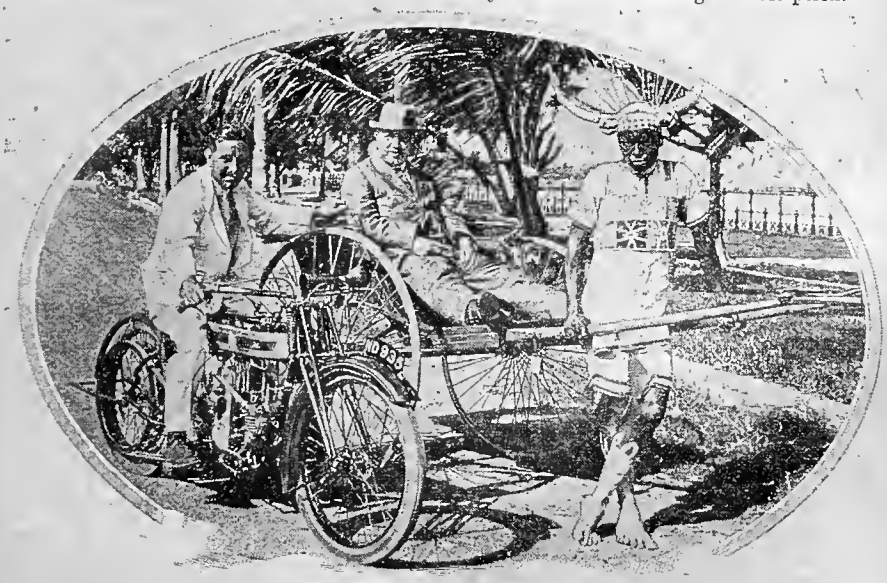
Found on the Road.

On Saturday, September 10th, a P. and M. rider dropped an article from his toolkit in Charlton Road, Blackheath, and it was recovered by Mr. F. J. Tilbury, of 63, St. John's Road, Blackheath, S.E.3.

Mr. C. S. Bailey, of New House, Egerton Street, Stockton Heath, Warrington, reports finding articles of motor cycle equipment between Lichfield and Stafford on August 16th and 23rd.

A Scott rider who dropped a pump near Bodfari on September 7th may obtain it from Mr. R. F. Ellis, Penne Park, Rnabon, North Wales.

Between Dunster and Minehead on August 31st, Mr. C. W. F. Simpson, of 15 and 16, Elgin Street, Hereford, found a motor cycle toolkit, which the owner may have on forwarding a description.



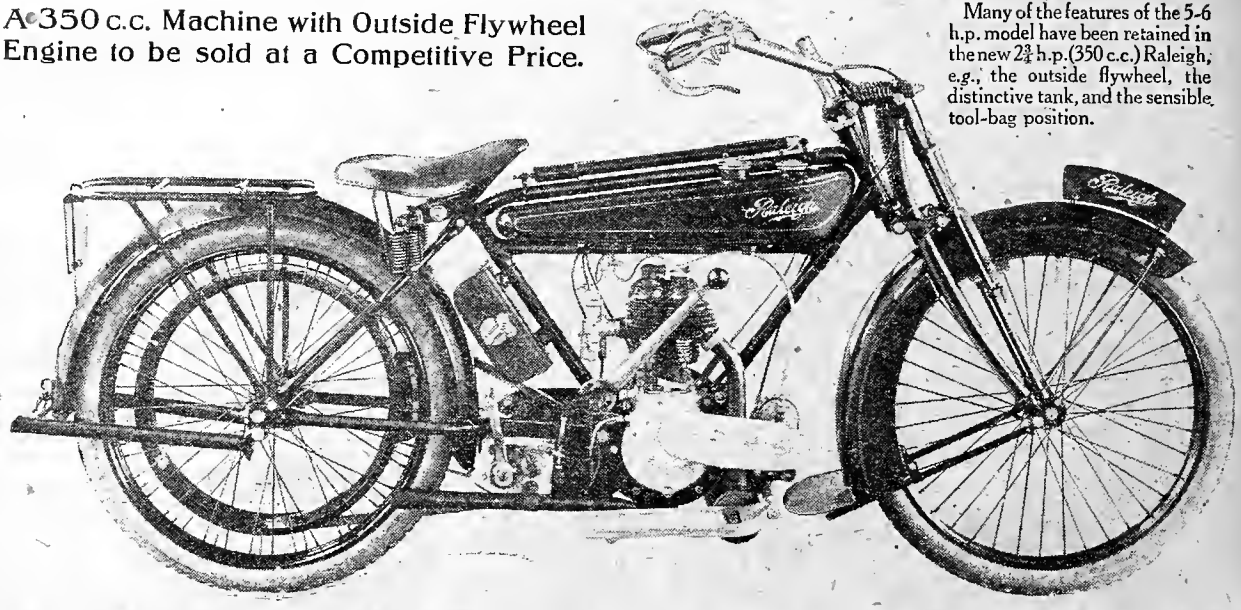
CONTRASTS IN TRAVEL.

A scene in Durban where the rickshaw and the "boy" in war paint are a common sight, and where the lightweight British motor cycle is rapidly gaining popularity. The Douglas rider is F. A. R. Zurcher, winner of many long distance road races in South Africa.

A NEW RALEIGH SINGLE.

A 350 c.c. Machine with Outside Flywheel Engine to be sold at a Competitive Price.

Many of the features of the 5-6 h.p. model have been retained in the new 2¾ h.p. (350 c.c.) Raleigh, e.g., the outside flywheel, the distinctive tank, and the sensible tool-bag position.



IN its post-war re-entry into the motor cycle field, the Raleigh Cycle Co., Ltd., of Nottingham, in offering the now well-known flat twin spring frame machine, made a special appeal to those who prefer the luxury type of mount.

The large resources of this concern are now being directed to that market which demands the utility machine, and at this year's Olympia Show will be staged several examples of new single-cylinder Raleighs of 2¾ h.p. and 3 h.p.

Superb quality, sound design, excellent finish, and a truly competitive price will be features of the new machine, and after an inspection of the preliminary model we can state that these features are no mere talking points.

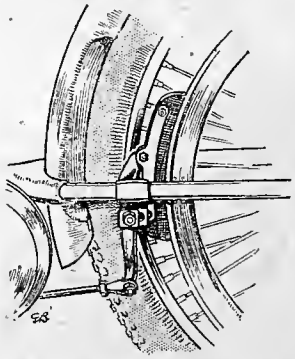
A Workmanlike Power Unit.

A particularly compact and sturdy appearance characterises the engine, which has an exceedingly neat and clean exterior, an ideal not always attained when an outside flywheel is used; no doubt this admirable quality is the result of mounting the flywheel close up to the crank case and taking the drive from the outside, in which location it is much easier to employ chain cases.

Plain bearings are used throughout the engine, there being nothing experimental or untried in the construction. The cylinder is an extremely heavy casting, having very large fins in the neighbourhood of the exhaust port; the exhaust valve cap also is formed with radiating fins. Standard lines are also followed in the timing gear, which has external cams and adjustable tappets operated by rockers. The exhaust valve lifter is of the external type, and is carried on a plate which locks the tappet guides.

Transmission.

Standard models will be equipped with the Sturmey-Archer two-speed gear with clutch and kick-starter and chain and belt drive. The primary chain is of ½in. pitch × ¼in. width, and is enclosed, as before-wide. As an extra, a new type of Sturmey three-speed gear box may be had



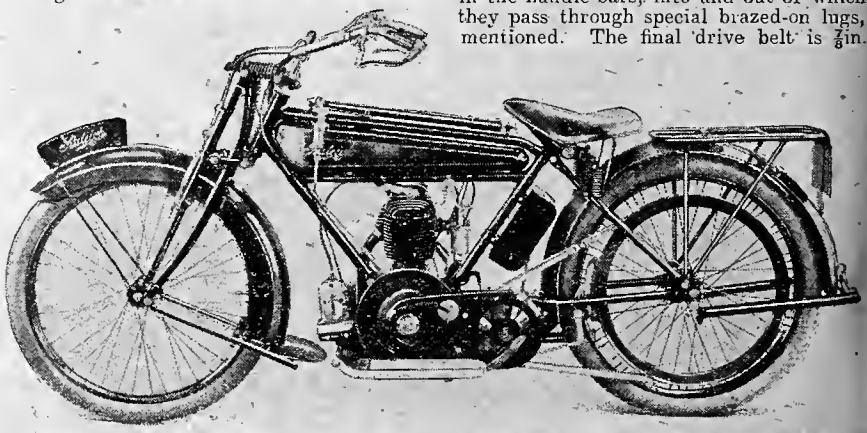
Rear brake details, illustrating the very simple method of adjusting the pad.

in lieu of the two-speeder. One point making for neatness is the mounting of the gear lever bracket on an extension of the off side engine plate instead of clipping it to the saddle tube, as is usually done.

The specification of the rest of the machine may be dealt with briefly. The wheels, which carry 26 × 2¼in. tyres, run on large hubs, which are built up from tubing and pressed flanges. The mudguards are wide, and have ample clearance, so that oversize tyres may be fitted if desired. Brampton Biflex forks, made under licence by the Raleigh Co., are used; and the frame, which is of extremely stout construction, has round tubes throughout, and gives a low saddle position, owing to the fact that the top tube slopes directly towards the saddle, and has a downward curve as it approaches the saddle lug.

Cleanliness of Outline.

The detail work throughout the machine is excellent, and the design is very symmetrical. Cleanliness of outline is obtained by concealing the control wires in the handle-bars, into and out of which they pass through special brazed-on lugs, mentioned. The final drive belt is ⅞in.



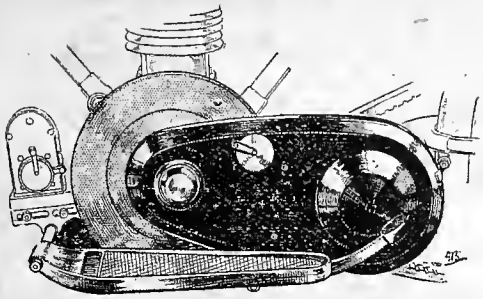
Although the Raleigh lightweight is quite at the other end of the scale from the luxurious 5-6 h.p. twin which has hitherto represented the name in the motor cycle world, it bears obvious evidence of refinements not always common on this type of machine. The pleasing near-side view.

A New Raleigh Single.—

and also by fitting a large tool case on the saddle tube instead of using the more conventional pannier bags on the carrier.

One detail worthy of note is the slight downward slope of the magneto platform. This is not accidental, as might be supposed, but is done in order to allow any of the popular combined ignition and lighting units, such as the Maglita, to be fitted.

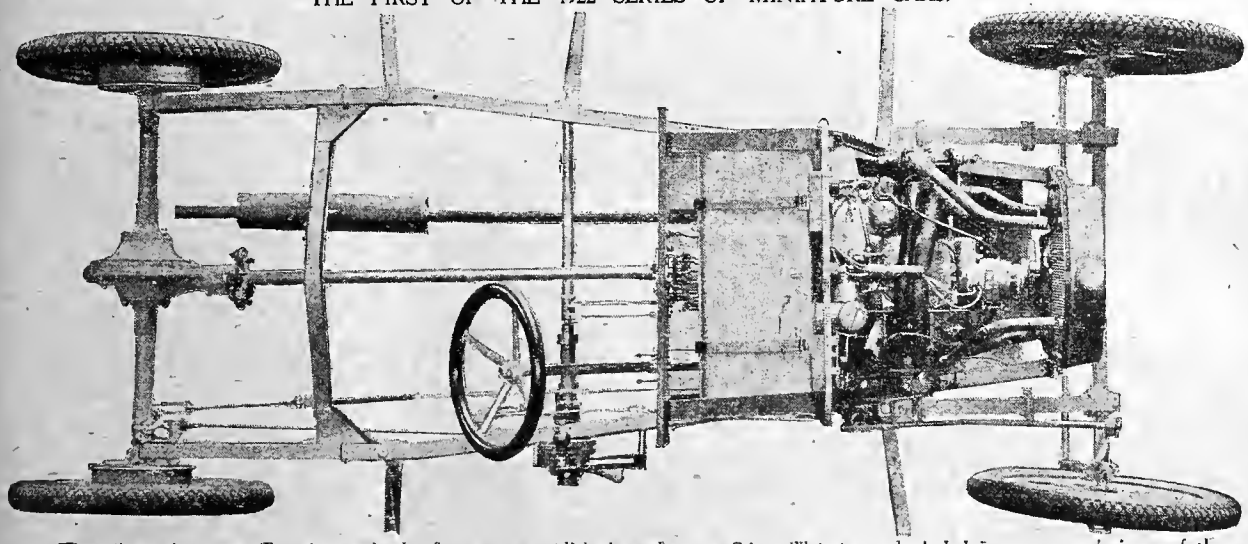
In addition to the standard model equipped with upturned handle-bars and aluminium footplates, there will be offered also a sports model with semi-T.T. bars and footrests. Both models come within the 200 lb. taxation limit. Features common to both are the 1¾ gallon petrol tank, finished in the usual Raleigh colours (black with red and gold lining), and the heel-operated brake working in the V of the belt drum. A handle-bar-operated rim brake is used on the front wheel, but this will be substituted eventually for one of the dummy belt rim type.



Chain cover (showing inspection door), footrests, and conveniently placed brake lever on the new lightweight.

Although mainly intended as a serviceable solo machine, the 71×88 mm. engine (350 c.c.) would no doubt pull a double load with ease, and it is more than probable that a further model, having a larger bore and capacity of about 400 c.c., will be staged at Olympia with a light sidecar.

THE FIRST OF THE 1922 SERIES OF MINIATURE CARS.



This illustration from *The Autocar* is the first to be published of the new 7 h.p. Wolseley. Included in to-morrow's issue of the journal named is a fully illustrated description of this interesting development. The engine is a water-cooled flat twin of less than 1,000 c.c., with three-speed gear and shaft drive, and the complete car weighs under 10 cwt. Our parent journal, *The Autocar*, announces that it will describe a number of similar miniature cars before the forthcoming Olympia Show, their advent promising to be one of the features of the 1922 programme of the automobile industry. So far their prices are considerably in excess of the high-powered sidecar outfit.

HALF-A-CROWN A GALLON: WHAT IT MEANS.

HALF-A-CROWN does not buy much pleasure now-a-days. An hour on the river—but not on all rivers; an indifferent seat at a good theatre; a good seat at an indifferent theatre; one second quality golf ball; two ounces of tobacco; fifty "gaspers"—any of these items leave little change from 2s. 6d. But to the motor cyclist, this small sum now represents fuel for a hundred miles on the road, or to the sidecarist for a seventy-mile trip.

When petrol was 4s. 3½d. per gallon thousands of motor cyclists still considered the joys of the open road cheap at the price; now that No. 1 quality spirit is only 2s. 5½d., the motor cycle must certainly be the finest value-for-money investment of all.

Not only is petrol much cheaper than it was twelve months ago; most brands of lubricating oil have recently been substantially reduced in price, and if the reduction is not immediately appreciated by the average owner, full realisation will come to him when he totals his season's motoring accounts.

A sixpence rise in the price of fuel, naturally, causes much grumbling: but an equivalent fall passes almost unnoticed. Those who are already owners, whether of big sidecar outfits that just reach the hundredth milestone on a two-gallon tin or of 2¼ h.p. lightweights that go considerably further on a gallon, will, sooner or later, themselves appreciate the present downward tendency of the cost of motoring.

Perhaps this can best be done by comparison. In September of last year the running expenses of a 400-mile holiday tour on a good 3½-4 h.p. single would have panned out as follows:

	£	s.	d.
Petrol—4 gallons at 4s. 5½d.		17	10
Oil—1½ quarts at 3s. 6d.		5	3
Total	£1	3	1

To-day the same run on the same machine would only cost:

	s.	d.
Petrol—4 gallons at 2s. 5½d.	9	10
Oil—1½ quarts at 3s.	4	6
Total	14	4

At 23s. 1d. it would not be excessive; at 14s. 4d. it is remarkably cheap.

Times to Light Lamps.

Sept. 22nd	...	...	7.59 p.m.
,, 24th	...	...	7.54 ,,
,, 26th	...	...	7.50 ,,
,, 28th	...	...	7.46 ,,

Safety First!

One of our staff, who is not noted for his punctuality nor his early-rising abilities, has read with considerable satisfaction the London Safety First Council's admonition to "go over machine with spanner and oilcan before starting out." (He rides to the office daily.)

Well-supported Works Trial.

Entries are coming in very satisfactorily for the big Coventry inter-works team trial to be held next Saturday afternoon, and it is anticipated that about one hundred competitors will start. The event is being organised by the Standard and Triumph Motor Cycle Clubs.

Appropriate.

When Mr. S. H. Baker, of Jennings and Co., motor agents in Glasgow, got married last week, the staff sent the following appropriate telegram of congratulations:

"May your life be full of *Sunbeams* and everything *O.K.*, with *Bradburys* unlimited to attain the *Acme* of happiness in *Triumph* through the *Kelvins* and *Humbers* of life.—*Excelsior*."

An Echo of the T.T.

Recently those responsible for the production of New Imperial motor cycles were entertained at Holt Fleet, when Mr. Norman Downes, the managing director, presented Mr. Douglas Prentice—as winner of the 250 c.c. class in the Junior T.T. race—with *The Motor Cycle* Cup (an exact replica of which he has had made for the New Imperial works). A silver cigarette case was also added as a personal gift from Mr. Downes. A similar cigarette case was also presented to Mr. Bert Kershaw in appreciation of his great ride at Brooklands on July 2nd, when he accomplished 500 miles at an average of 50 m.p.h., and also made the fastest lap in the 250 c.c. class, in addition to breaking fourteen records. Silver cigarette cases were also presented to Mr. Leonard Horton and Mr. Fred Bolton, both T.T. riders.

Mr. Downes, in speaking, mentioned that since January 1st of this year New Imperials had gained 102 gold medals and firsts in speed events, and sixty-seven other awards, besides being the winners of the Class A team prize in the A.C.U. Six Days Trials.

Miniature Cars.

In this issue will be found an illustration of the 7 h.p. Wolseley miniature car. It is nearly ten years ago since *The Motor Cycle* gave to the public first descriptions of most of the little cars which have since made history. Among these were the Stellite-Wolseley, Singer, and Morris-Oxford.

Closing Speed Event of 1921.

On Saturday, October 1st, the Doncaster and District M.C.C. will hold the last open speed event of the year. Valuable prizes are offered, including *The Motor Cycle* Challenge Trophy and several special cups; and a big entry is expected. Only flying start classes will be run, thus limiting the trials to a reasonable size. Further particulars and entry forms may be obtained from Mr. L. Callender, 247, St. Sepulchre Gate, Doncaster.

Special Features.

TWO-STROKE SILENCERS.
PASSENGER MACHINE TOPICS.
SAFETY FIRST!

Price Reductions.

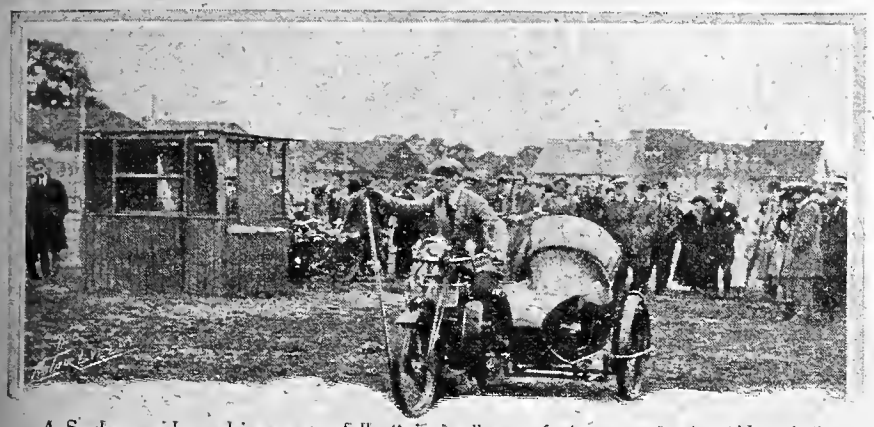
The latest price reduction of importance is that of the Norton range, announced this week. The 3½ h.p. single-geared model is now £80, and three-speed £115; while the "Big Four" is £120.

"The Motor Cycle" Photographs.

The great majority of photographs reproduced in *The Motor Cycle* are the work of our own staff of photographers, and those readers desiring to obtain copies may do so at the following charges: Half-plate 2s., whole-plate 2s. 6d., 10×12in. enlargement 5s., unmounted. Mounted prints are 3s., 3s. 9d., and 7s 6d. respectively.

UP LITTON SLACK ON A 2¾ H.P. SIDECAR.

Geo. Denley demonstrating, as a result of a challenge, his little Velocette's hill-climbing capacity. He succeeded in climbing this notorious Derbyshire hill with his passenger standing up in the sidecar, proving that no weight was put on the rear wheel.



A Sunbeam sidecar driver successfully "ringing" one of the posts in the "Houp-la" competition at the North London M.C.C.'s Rally at Hendon last Saturday

Some Prices Going Up!

The price of the 1921 6 h.p. Martinsyde has been increased to £155. The 1922 3½ h.p. model will be sold at £120.

A Two-stroke Cycle Car.

An addition to the Metro-Tyler range of motor cycles for 1922 will be a miniature four-wheeler, employing two of the M.T. 2¾ h.p. two-stroke engines coupled together. The transmission is by chain and belt through a three-speed gear box. The price is to be £145 all on.

Cycle Car Grand Prix.

Last Saturday the French Cycle Car Grand Prix at Le Mans was won with ease by Lombard on a Salmson four-wheeler, a car of French origin. E. B. Ware, the well-known Brooklands driver, piloted his racing Morgan, but experienced a lot of trouble, which was unfortunate, as he was much fancied to win. The race was run over 18 circuits of a 10¾-mile course, the first four to finish and times being:

		h.	m.	s.
1.	Lombard (Salmson)	3	32	9⅘
2.	Violet (Mourre)	3	50	55½
3.	Chabreiron (E.H.P.)	3	51	28⅗
4.	Sabipa (Weler)	3	52	3⅘

Championship Meeting at Brooklands.

On Saturday, October 8th, the British Motor Cycle Racing Club will hold its championship meeting at Brooklands, which will include seven scratch races—one each for 250, 350, 500, and 1,000 c.c. solo, and 600 and 1,000 c.c. sidecars and cycle cars. The last-mentioned event will be for machines conforming to the F.I.C.M. definition, *i.e.*, maximum engine capacity 1,100 c.c., maximum weight 772 lb. All races will be five laps in length. Entries close at noon on Wednesday next.

Lady Motor Cyclist Climbs Rising Sun.

Members of the Birmingham M.C.C. are rather anxious to learn if a lady motor cyclist has ever previously climbed Rising Sun Hill (Gambles Lane), near Cheltenham. In the club's recent trial to Chepstow, Miss Hammond, on a 2½ h.p. Connaught, made a clean ascent.

Demonstration by Wind Waggon.

A wind waggon which recently had trouble in Ludgate Circus demonstrated three things, says *The Autocar:* (1) That the propeller stream effectually swept the road and sent the sweepings into people's eyes; (2) that the body was almost blurred with vibration; (3) that it is not so easy as it looks to pilot a car of this type in traffic.

The Late A. V. Baxter.

It is with sincere regret that we have to record the death in South America of Mr. A. V. Baxter, old time motor cyclist and one time a prominent member of the Coventry and Warwickshire M.C. Mr. Baxter, who held a responsible position with the Erasmic Co., of Warrington, left England last month on a business trip to Rio de Janeiro, where he was operated upon for appendicitis, and died on the 5th inst.

Two A.C.U. Lieutenant-Colonels.

Lt.-Col. D. F. Nicholl, D.S.O., besides being one of the most energetic of A.C.U. officials, is an enthusiastic cycle carist. He followed the recent Six Days Trials on his G.N., and so gained a first-hand impression of the performances of the riders and the conditions under which they rode. In one of our references to Lt.-Col. Nicholl's ubiquitous G.N., Lt.-Col. Brereton's name was mentioned when Lt.-Col. Nicholl's name was obviously intended.

TEAM TRIAL AT HARROGATE.

Five Teams in Harrogate and District M.C.C. Annual Event.

IN somewhat dull weather on Saturday last the Harrogate and District M.C.C. held its annual team trial, which was of the non-stop variety. Several observed hills were included, chief of which were Wilsill Raikes, Brownstay Ridge (long and of good gradient), and Hebden Wood. Five teams competed.

All the competitors did well, except A. Hill (4 Triumph), who had one stop with clutch trouble, and R. E. Eastwood (6 Zenith sc.), who failed on two hills. The following retired: F. J. Leak (2¾ Douglas), H. Robinson (8 Zenith sc.), and W. R. Hill (2¼ Velocette).

Only two complete teams finished, and, owing to two riders of one of the teams deviating from the course, it is doubtful whether they will be entitled to an award.

Provisionally, the winning team is:

H. James (2¼ Excelsior), J. H. Holmes (3¾ Scott), and T. W. Monkhouse (4 Triumph sc.).

Individual prizes:

UNDER 350 c.c.—H. James (2¼ Excelsior).
OVER 350 c.c. (Solo).—J. H. Holmes (3¾ Scott) and G. Hill (3¾ Scott) tied.
PASSENGER MACHINES.—C. R. Waddington (10 Morgan-M.A.G.).
CONSOLATION PRIZE.—R. E. Eastwood (6 Zenith sc.).

HARROGATE AND DISTRICT M.C.C. TEAM TRIAL.
A. Baines (3½ Zenith-Bradshaw) making a neat ascent of Hebden Bank.

The SCOTTISH "TWO DAYS"

Although the weather was fine, the lonely officials on Talla Linn were glad when the leading competitors hove in sight. "No. 1" is J. B. Sanderson (2¾ Hawker) and "No. 2" W. B. T. Sanderson (3¾ Scott).

Successful Second Annual Week-end Event of the Edinburgh and District M.C.

THE success of last year's Scottish "Two Days" left no doubt in the minds of the organisers as to the wisdom of following it up as an annual event, and at any rate, in so far as entries are concerned, this year has surpassed the expectations of its promoters.

With L. B. C. Cunningham as organiser and Campbell McGregor as secretary, there was no question of the administration falling short, and as onlookers we have been impressed by the smooth working of the trial.

Last week we published a list of entries, to which there are many late additions. The Rover light car team, consisting of Alan Hill, D. J. Cullen, and J. O'Connor, came in at the last moment, as did other light car entries, including two Galloways, one driven by Miss Pullinger, the only lady competitor, a Carden, driven by Capt. Carden, and a Rhode in the hands of Norman Macmillan. There were eighty-four entries, of which only seven failed to start. Of these, thirty-seven were solo machines, twenty-two sidecars, and twenty-three four-wheelers. The two Scott Sociables around which some interest is centred, as this is their first important event, were recognised in the sidecar class, contrary to A.C.U. ruling.

Twelve Teams.

There were eight agents' teams and four club teams, the former representing Edinburgh Pioneers, Ltd., Moir and Baxter, Alexander and Co., Rossleigh, Duthie and Sons (Montrose), W. D. Donaldson (Grantown-on-Spey), Andrew Downie, Ltd. (Edinburgh), and D. R. Engineering Co., Ltd. (Dunfermline); while the club teams were Kelso and District M.C.C., Grantown-on-Spey M.C.C., West Fife M.C.C., and Edinburgh and District M.C.

The route was from Liberton, which the first solo rider left at 7.30, and followed a more or less direct course *via* an easy check at Broughton to the now famous test hill of Talla Linn, which is situated amidst grand scenery.

Having made a circuit of Selkirk, the competitors proceeded by little known and tortuous ways to Moffat (lunch), and on through the beautiful "Southern uplands" *via* Thornhill, Dalry, New-Galloway, and Newton Stewart to Stranraer, 197 miles, for the week-end.

The return trip, no less beautiful though perhaps less trying, was 145 miles.

J. Shepherd (8 Chater-Lea sidecar) among the Lowland hills.

Scottish Two Days—

On Saturday there were three hills—Talla Linn, Selkirk, and the bewildering Tynron. On Monday the official crags were Prinmore (of which ugly rumours were afoot), Burnfoot, and an almost perpendicular climb in one of the Edinburgh parks—Last Straw Hill.

Talla Linn Hill has a thin shingle surface, is about threequarters of a mile in length, and has a persistent gradient of 1 in 4 to 1 in 5. It is succeeded by an atrocious mountain track, including water-splashes, after seven miles of which came the check—a short check of the knockout variety. There were few failures on Talla Linn. Capt. Carden had to shed his passenger, who pushed nobly. Roger Macrae (7-9 Harley-Davidson sc.) put up by far the star ascent, climbing at quite terrifying speed. Grinton (on a sister machine) also did well. The Scott Sociables had abundant power, though their gears were standard, but on this and the subsequent hills their drivers sat on the bodywork, and the passengers occupied the wheel seat to obtain wheel grip. D. M. Galloway, who was sporting enough to enter a 3½ h.p. racing N.U.T. with fixed gear, naturally failed. When we saw his machine at Moffat, it looked distinctly the worse for wear. J. W. Morton (3½ Rover), R. Watson (4½ Humber), A. L. Downie (5-6 Raleigh), and J. M. Philipps (3½ Sunbeam), all put up sensational climbs. T. Michie (3½ Norton) had evidently failed before Talla Linn, and A. F. Sidford (8 Matchless) had something wrong with his engine, as throughout the day he had a mysterious lack of power on the hills.

R. S. Macrae (7-9 Harley-Davidson sidecar) on the shingle of Talla Linn. This severe incline was negotiated with comparative ease by the majority of competitors.

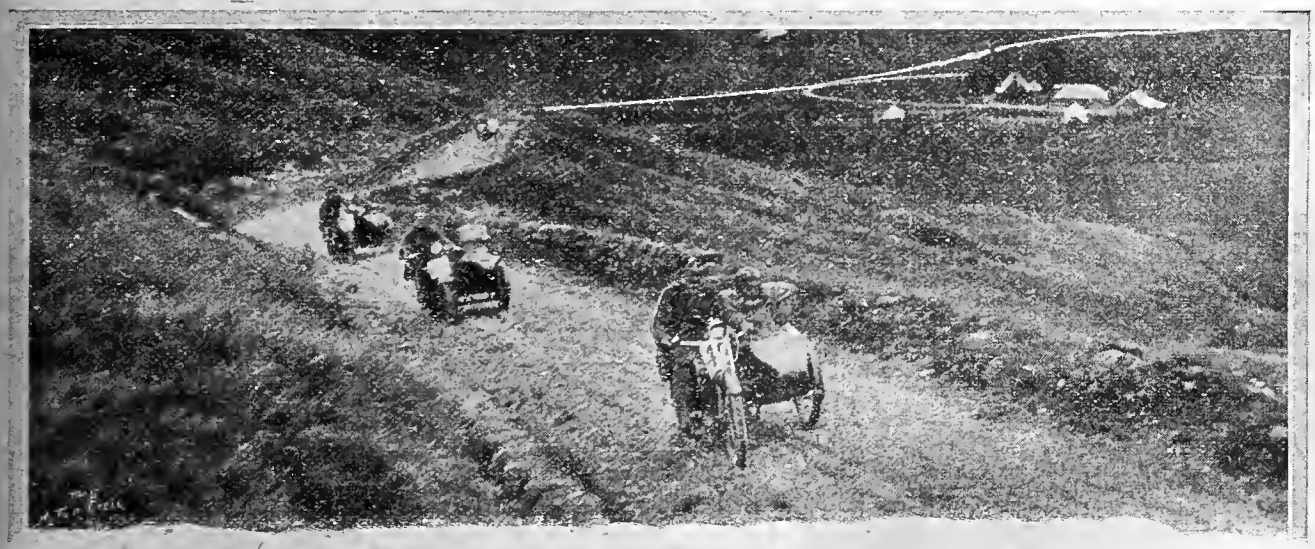
Mountaineering in Selkirk.

Reaching Selkirk, the route was somewhat bewildering, and competitors seemed to be riding in all directions. Shooting through back streets, they suddenly found themselves precipitated at the foot of a steep but short hill crowded with spectators and with numerous police mounting guard. Having climbed or succumbed, the competitors were hurtled round further right-angle bends amidst mad cheers from the populace, till, many, hatless and perspiring, doubled back from the main road at a giddy angle, ascended an almost vertical stretch between high stone walls for twenty paces, skidded round a hideous hairpin, hit a gulley, and proceeded crabwise up a river bed of 1 in 2½. Here the riders found themselves serenely on the high road again, with the check within hailing distance.

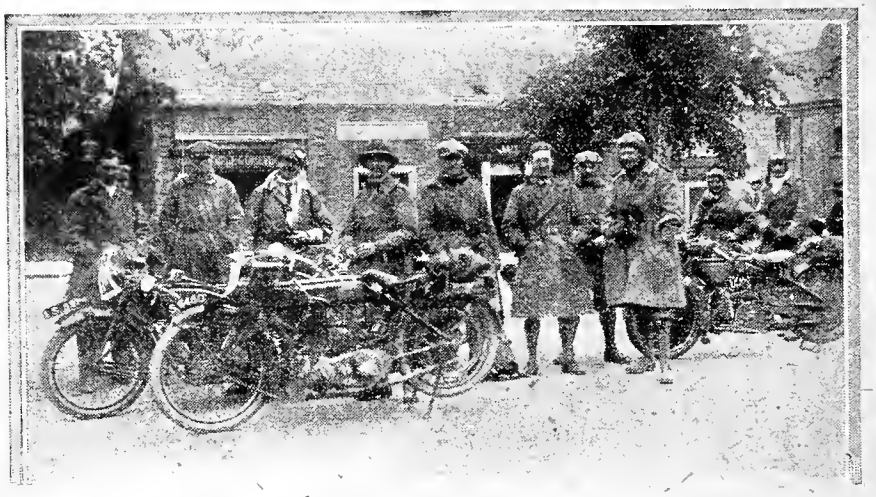
Looking back, it was all a dim dream of jolts, corners, loose stones, and the mad cheers; more a test of driving than anything else.

There were comparatively few failures. Sanderson (3¾ Scott) stopped as though his petrol were turned off. The youngest Fairley on a 2¾ h.p. Hawker had to push here, as on Talla Linn, as he had forgotten to mix oil with his petrol. McKeand (8 Blackburne sc.) collided with the wall, and subsequently retired.

An examination of the machines at the Moffat lunch stop revealed that one or two showed signs of wear. Capt. Carden had transferred his buckled back wheel to the front. A. Ure (Harley-Davidson sc.) failed to turn up; he had tried to climb on a flat tyre. Galloway's N.U.T.



On Talla Linn, included also in last year's Scottish "Two Days." G. Stokes (5-6 Rover sidecar) leads A. F. Downie (7 A.J.S. sidecar) and A. Ure (7-9 Harley-Davidson sidecar).



At the Moffat check—a welcomed opportunity for competitors to exchange experiences. The group includes D. Wright (4 Indian Scout), J. Hendrie (3½ Sunbeam), and A. K. James (4 Harley-Davidson).

dangled its silencer, and H. E. Fairley's 2¾ h.p. Hawker sidecar, which was performing marvellously, had its wheels two or three inches out of track.

Tynron Hill, the tit-bit of the whole day, was steep, the corners were difficult, and the surface slippery. Only four of the sidecars succeeded, and of these two had chain non-skids.

The solo machines on the whole did wonderfully well, but the lightweights were outstanding. The Velocette ridden by W. T. Tiffen ran off the road, but bumped back and continued to climb, amidst cheers from the huge crowd. W. R. Bruce (5 Monopole) fell, but kept his engine going, and, jumping on again, continued as though nothing had happened. One rider smote a tree and mounted the trunk about 18in.

Grinton and Macrae, both on Harley-Davidson sidecars, made splendid performances, but the palm goes to H. E. Fairley, who piloted his little 2¾ h.p. Hawker sidecar safely through. Much credit is also due to Neville Hall, who similarly put up a wonderful performance on a 2½ h.p. O.K. sidecar. The Scott Sociables, which had run all day as though roped together, here reluctantly parted. Batten got on to the grease, and his rear wheel began to bury itself. Rhodes, in the sister machine, continued to climb steadily.

The first day finished with forty-two entrants still in the running for premier awards. Five had retired. The arrowing throughout Saturday's run was faultless; and though such a large entry took the little town of Stranraer rather by storm, everybody was comfortably billeted for the night.

MONDAY'S RUN.

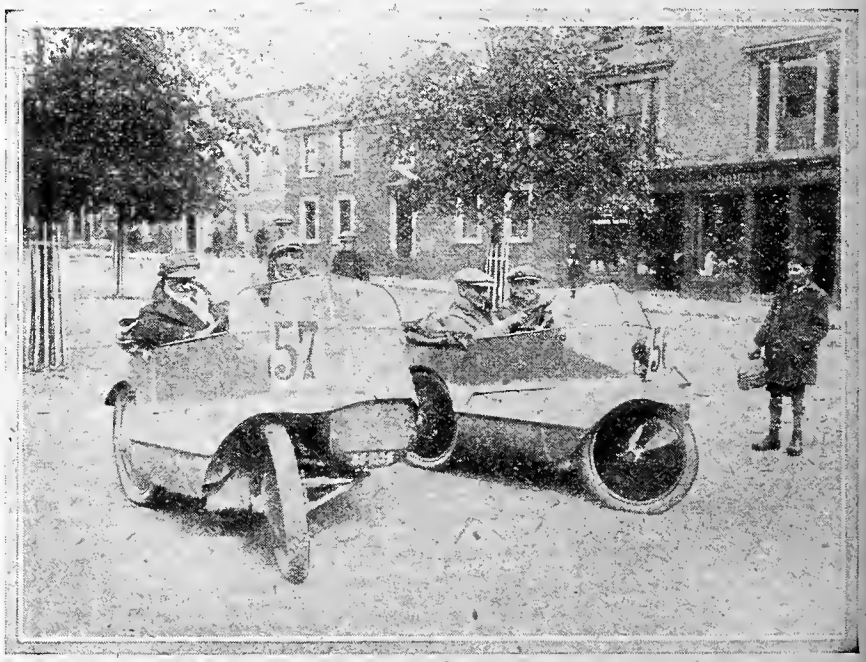
Ideal weather conditions prevailed for the second half of the trial, and a most interesting run through fine scenery and over fairly good roads was enjoyed on Monday. Competitors passed through Ballantrae to Pinmore, where the first hill in the day's run was tackled. Short, and with one bend, this hill presented few difficulties, yet there were five failures as follows: L. P. Waldie (3½ single-geared N.U.T.), D. Cairns (3½ Douglas), D. S. Anderson (8 Enfield sc.), R. Spence (8 Chater-Lea sc.), and G. H. Moir (G.N.).

A very twisty, narrow road led over the hill to Patna and Burnfoot Hill, a fairly long gradient, but with an atrocious surface. Large boulders and rock were sticking well up.

Under the circumstances the number of failures was very low. L. P. Waldie (N.U.T.) made a very good climb, as did Morton (3½ Rover), Watson (4½ Humber), S. B. Waldie (4 Blackburne), and Tiffen (Velocette). Wright (Indian) made a fast climb, but failed at the top. Other failures were Whyte (Sunbeam) and Anderson (8 Enfield sc.). The Carden made a very clean ascent, while Rover light cars put up splendid performances. Fairley (Hawker sc.) broke his belt when going well. After repairing it he made a good ascent.

There was only one more test hill after Burnfoot, and this was the steep ascent of Blackford Hill, a mile or so from the finish.

In to-morrow's issue of *The Autocar* particulars are given of the performances of the twenty-two light cars in the trial.



The *debut* of the Scott Sociable in a severe trial. J. Rhodes and H. M. Batten were the drivers.

INTER-CLUB RALLY AT HENDON.

ALTHOUGH somewhat marred by stormy weather, the first annual inter-club rally of the North London M.C.C., held at Hendon on Saturday, was a decided success.

The chief award, the challenge shield presented by Mr. A. J. F. Beaurain, was gained by the Connaught M.C.C., which attained the highest figure of merit (*i.e.*, percentage of members present multiplied by mileage from club headquarters).

A strong wind, unfortunately, nullified the facilities afforded to those present for flights at a reduced rate, and although several flights were enjoyed, chief interest centred on the minor competitions.

Mrs. Uhde, of the Surbiton and District M.C.C., gained the special prize (a Vici carburetter) for having ridden the greatest distance to the meet, whilst Walter Scott's expenditure of energy in polishing his

Inter-club Rally at Hendon—
machine was awarded by the gift of an Elite motor cycle cover. Both of these prizes were presented by the manufacturers.

Two "gymkhana" events had for their awards copies of "Motor Cycles and How to Manage Them" and "Tracing Troubles" (presented by this journal); but on consideration it would seem that the former prize was almost too cruelly appropriate!

E. W. Cholcroft's A.J.S. sidecar won the prize of a Service motor cycle watch for having the most ingenious "gadget." His machine was fitted with several detail modifications, particularly to the lubricating system, and to the air intake of the carburetter.

There is little doubt that this rally will become a most popular annual event, and we should expect an even more representative assembly next year when the event is repeated.

General view of some of the machines at the North London M.C.C.'s Rally, parked in Hendon aerodrome.

BROOKLANDS RACING IN THE RAIN.

Keen Races, but Adverse Weather Conditions at Sixth B.M.C.R.C. Members' Meeting.

SOME quite good sport was seen at the Sixth Members' Meeting of the B.M.C.R.C. at Brooklands last Saturday, but the advent of chilly rain halfway through the afternoon made conditions for competitors and spectators none too pleasant. Several records were broken during the afternoon.

J. W Tollady (3½ Scott Squirrel) who won the 500 c.c. handicap.

The programme commenced at noon with the Junior One Hour Sidecar Handicap, which was won by O'Donovan on a "Big 4" Norton at 56.58 m.p.h., with G. H. Tucker (3½ Norton sc.) and Le Vack (3½ Indian sc.) second and third respectively. These three competitors each succeeded in breaking the one hour sidecar record for machines up to 600 c.c. R. C. Chawner (Sunbeam) retired in his seventh lap through a faulty valve cap, and two other competitors retired with minor troubles. Also ran: C. G. Pullin (3½ Douglas), J. Wallace (3½ Duzmo), R. C. Chawner (3½ Sunbeam), and R. Deguin (3½ Rover).

In the second event, the Senior One Hour Sidecar Race, things resolved themselves into a duel between Temple (7-9 Harley-Davidson sc.) and Harveyson (7-9 Indian sc.), Le Vack, the star Indian performer, stopping no fewer than three times, one of the causes being a blown out cylinder plug. Temple won the event at 65.43 m.p.h., with Harveyson close up behind. S. E. Longman (8 Zenith sc.) was third. Le Vack broke the five-mile record despite his misfortune.

Solo Handicap.

The Three Lap Handicap for solo machines not exceeding 350 c.c. provided no undue excitement, J. V. Prestwich, on a 2¼ h.p. Diamond-Jap, winning at 61-84 m.p.h., with J. W. Tollady (2¼ Velocette) a near second, and K. Don (2¾ Massey-Arran) third.

In Event 4, the Three Lap Handicap for solo machines not exceeding 500 c.c., an excellent win was achieved by J. W. Tollady, on a Scott-Squirrel, at 63.5 m.p.h. against a fairly large field. Tollady maintained his lead throughout the race, with R. G. Spikins (3 A.B.C.) and R. E. Dicker (3½ Norton) as second and third.

A win for a flat twin Harley-Davidson formed the feature of Event No. 5, a

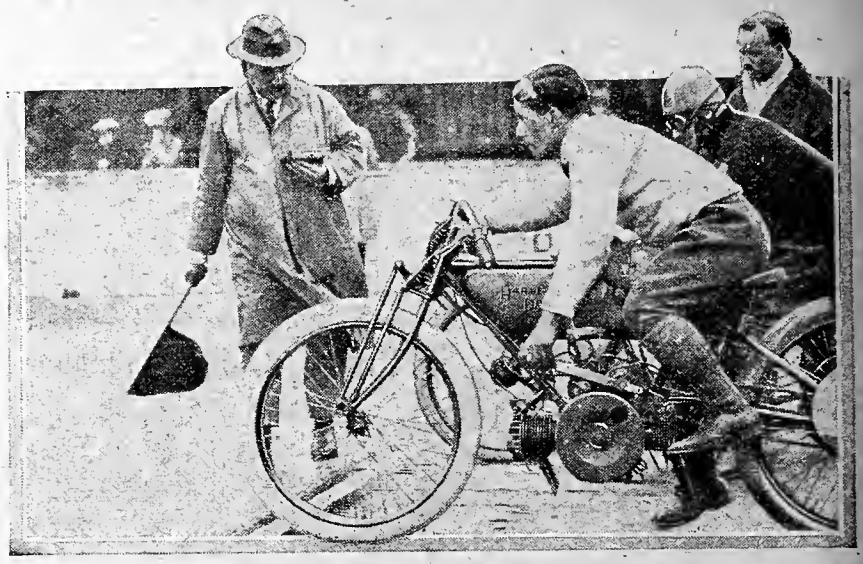
Winner of two events—R. E. Dicker (3½ Norton).

Brooklands Racing in the Rain.—
Three Lap Handicap for solo machines up to 1,000 c.c., this machine, which had two carburetters, being ridden by T. R. Allchin at 68.9 m.p.h. One of the competing machines, an 8 h.p. Sunbeam-Jap (G. Packman), simply heaved its front wheel off the ground on getting away, presumably due to the clutch taking up too quickly. C. F. Temple, the scratch man, on his big Harley-Davidson, dropped out of the race shortly after the start, and did not restart.

		m. s.
1.	T. R. Allchin (6 Harley-Davidson)	1 54
2.	A. G. Miller (7-9 Indian) ...	0 51
3.	E. H. Gifford (6 Martinsyde) ...	1 9

The last race, the "Winners' Handicap," open to the first four riders in Events 3, 4, and 5 (rehandicapped on their performance) was won by R. E. Dicker (3½ Norton) at 68.32 m.p.h., the handicapping of the machines being well carried out, with the competitors finishing in a fairly close knot. The rain by this time had made the track very wet, and it was well that the meeting had been smartly run off.

		m. s.
1.	R. E. Dicker (3½ Norton) ...	1 12
2.	R. N. Stewart (3½ Trump-Jap)	1 25
3.	E. H. Gifford (6 Martinsyde) ...	0 32



Awaiting the word to start in the "Winners' Handicap"—T. R. Allchin, on a stripped Sports Harley, is in the foreground.

RESULTS OF THE RELIANCE CUP TRIAL.

PROVISIONAL results have now been announced of the Liverpool M.C. Reliance Cup trial, which was described in *The Motor Cycle* last week. There was a tie for the chief award between Reg. Brown (3½ Sunbeam sc.) and G. W. Shepherd (8 Excelsior sc.). The full award list is as follows:

RELIANCE OPEN CHALLENGE TROPHY.—Reg. Brown (3½ Sunbeam sc.) and G. W. Shepherd (8 Excelsior sc.), tie.

RELIANCE AMATEUR TROPHY.—N. C. Sclater (4 Norton).

BUTTERWORTH CHALLENGE TROPHY.—J. H. Green (8 Excelsior sc.).

MACHINE TEAM PRIZE.—No award. No teams succeeded in obtaining three gold medals.

CLUB TEAM PRIZE.—Liverpool No. 1. N. C. Sclater (4 Norton), J. H. Fox (4 Norton), and J. H. Green (8 Excelsior sc.). Club spoons and gold medals.

GOLD MEDALS.—J. H. Green (8 Excelsior sc.), Reg. Brown (3½ Sunbeam sc.), G. W. Shepherd (8 Excelsior sc.), N. C. Sclater (4 Norton), J. H. Fox (4 Norton), G. S. Boston (3½ Sunbeam), G. Dance (3½ Sunbeam), J. H. Davies (3½ Sunbeam), W. Wills (3½ Sunbeam), W. J. Astley (3½ Sunbeam), H. E. Astley (6 L.M.C.), R. O. Jones (3¾ B.S.A.), J. A. Newman (3½ Triumph), A. E. Evans (3½ Sunbeam), O. P. Wood (3¾ Scott), and H. M. Ardwick (——).

SILVER MEDALS.—V. Horsman (4 Norton sc.), F. A. P. Zacharias (3½ Sunbeam), W. E. Pope (3½ Triumph), Miss B. Pickering (4 Powell), and W. J. Kellitt (4 Triumph).

BRONZE MEDALS.—A. Bennett (3½ Sunbeam), J. O. Jones (4 Triumph), O. Wade (2¾ A.J.S.), J. T. Jones (3½ Sunbeam), J. W. Wills (4 Powell), W. Edwards (4 Powell), H. S. Barton (3 A.B.C.), H. O. Powells (3½ N.U.T.), C. Warbrick (3½ Sunbeam), R. O. Hughes (4 Triumph), L. A. Bees (2¾ Beardmore-Precision), and J. C. Oates (2¾ Edmund).

NEXT MONDAY'S ANGLO-DUTCH TRIAL.

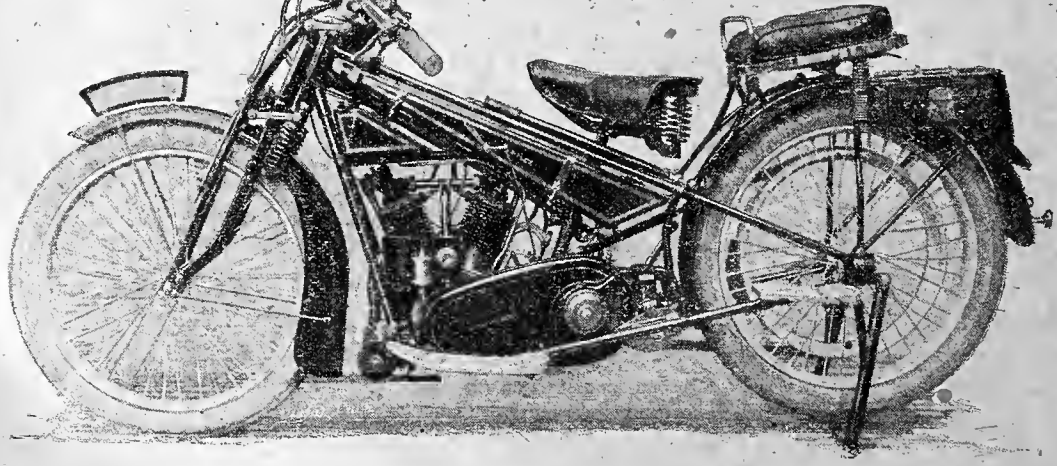
THE organisation is now complete for the entertainment of the riders who will represent Holland in the Inter-England on Monday next. On Saturday the visitors will be the guests of the Midland Centre A.C.U. at Leamington. On Sunday the Western Centre A.C.U. are the hosts at a dinner in the Guildhall, Worcester, communications regarding which should be addressed to Mr. E. Featherstone, Tregantle, Leckhampton, Cheltenham.

At the conclusion of the trial the competitors will be entertained by the A.C.U. and the Surbiton M.C.C.

Major Dixon Spain, the organising secretary of the trial, has issued the following final instructions:

HOTEL ACCOMMODATION.—Hotel accommodation has been arranged for competitors at Worcester for the night of Sunday, the 25th inst., and at Thames Ditton for the night of Monday, the 26th inst. Lunch has also been arranged for at Newbury on the day of the trial. Competitors will be required to settle their own accounts at these places, as no coupon system will be provided.

ASSEMBLING.—All competing drivers with their motor cycles must report to the Chief Marshal at the Hopmarket Hotel, Worcester, between the hours of 4 and 6 p.m. on Sunday, September 25th, 1921. Motor cycles must be presented ready to start, filled with oil and fuel, and with their number plates securely fixed. These number plates will be supplied at the above headquarters and must be securely fixed on either side of the rear wheel. In the case of sidecars the near side number plate must be fixed securely to the sidecar wheel.

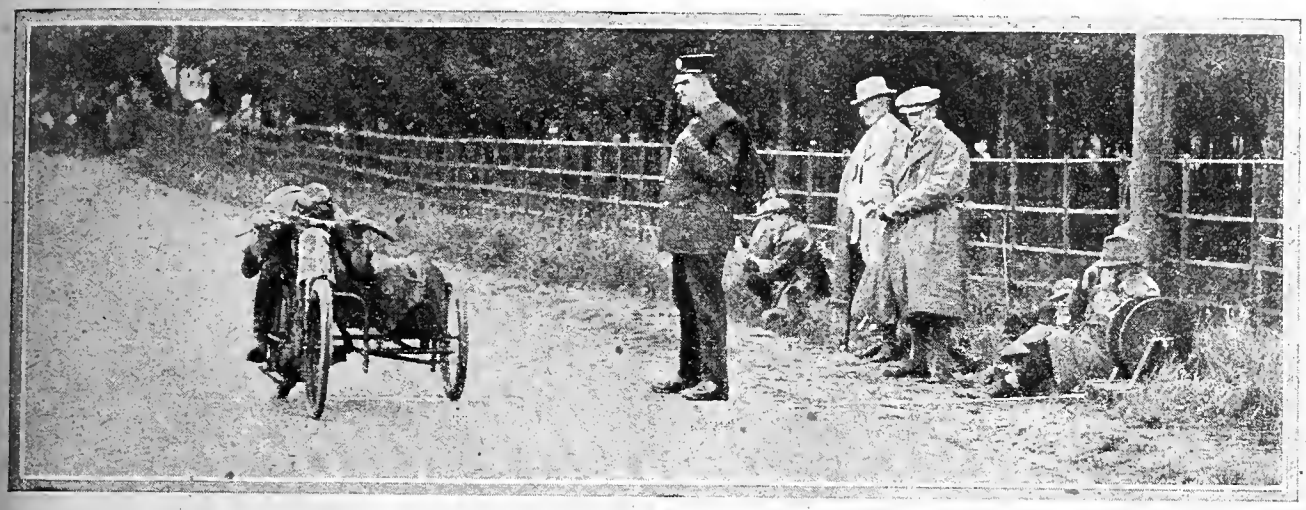


THE LATEST MODEL OF A REPRESENTATIVE DUTCH MOTOR CYCLE.

The twin-cylinder Simplex which embodies several well-known British components, including Druid forks, Amac carburetter, and Terry spring saddle. The engine is a M.A.G. of 600 c.c. capacity. Observe the pillion seat constructed as part of the machine, and complete with footrests. 28×3in. tyres are fitted

PENKRIDGE RECORDS BROKEN.

Successful Open Hill-climb organised by the Midland Centre A.C.U.



G. S. Boston (2¾ A.J.S.) made fastest time in the 350 c.c. solo and sidecar classes, which were both very hotly contested He is shown crossing the starting line in the sidecar event.

DESPITE the peculiar partitioning of the twenty-eight classes on the programme, last Saturday's open hill-climb of the Midland Centre A.C.U. at Penkridge Bank was not at all an uninteresting affair.

Apparently the aim of the promoters was to give everybody a chance. Because the 350 c.c. two-strokes promised to be no faster than the 250 c.c. four-strokes, there was a *251-350 c.c. two-stroke class;* because the best "3½'s" would most assuredly be faster than the big twins, there were classes from *501 c.c. upward;* and so on. Curiously enough, there were only two twins in the event.

Incidentally, it was thus impossible for Dance to win 90% of the open classes, as he has been doing lately; for his 2¾ h.p. and 3½ h.p. o.h.v. Sunbeams were only eligible for five capacity classes. He won four of these with considerable ease, but was not placed in the fifth, the 350 c.c. solo class, which was won by G. S. Boston (2¾ A.J.S.), and in which only ⅜s. separated the first three men. Later it transpired that the Sunbeam rider had claimed a baulk, which was allowed; but a puncture prevented him from attempting a re-run.

80 m.p.h. Uphill!

Fastest time of the day—27⅘s. for the flying kilometre, made by Dance in the handicap event—equals the amazing speed of 80.47 m.p.h. (The steepest portion of Penkridge is about 1 in 15, and there is a slight bend, which several of the riders dared not take at 50 m.p.h. without cutting out! There was, however, a following wind.)

G. S. Boston (2¾ A.J.S.) and C. Greenwood (both on a 2¾ h.p. o.h.v. Sunbeam, which had only been assembled into a standard frame on the previous day, and on his old 4-5 h.p. Sunbeam) shared honours for the second best performance generally.

H. W. Hassall (3½ Norton) and H. R. Davis (2¾ A.J.S.) had to be content with places, although they both ascended at nearly 70 m.p.h.

Making his *début* on a T.T. o.h.v. Triumph, G. L. White did well to secure two seconds and a third from only two runs; whilst A. L. Tompkins's (3½ Norton) winning time in the 500 c.c. expert barred class was also very creditable.

Two-stroke versus Four-stroke.

Thrush, on a Levis, was just too fast for Kershaw's New Imperial in the class where two-strokes and four-strokes were permitted to fight it out together; but Kershaw won the "four-strokes only" class comfortably.

Although beaten in its class by both E. A. Barnett (2¼ Francis-Barnett) and D. Atkins (2¼ Hobart), the new sporting model o.h.v. Coventry-Eagle, in the hands of J. W. Moxon, made a most promising first appearance. These three riders and several others would probably have made considerably better times had they known beforehand that the removal of mudguards, carriers, etc., was to be permitted. The Coventry-Eagle had 5in. guards front and rear.

Close Handicapping.

Had A. R. Evans (3½ Sunbeam) not taken 6⅕s. off his first time, the handicapping of Mr. P. W. Bischoff would have been extraordinarily close. Fourteen qualified for this class, with the following result:

That do or die spirit An amusing picture of A. W. Thrush (3½ Sunbeam), handing over the tally in the relay race to A. R. Evans (3½ Sunbeam), taken just 1⅗s. before he fell over amongst the tensely expectant crowd on the left.

Penkridge Records Broken—

SOLO HANDICAP.

		Net time.	H'cap time.
1.	A. R. Evans (3½ Sunbeam) ..	39⅘s. ..	26⅗s.
2.	C. Greenwood (4-5 Sunbeam) ..	30⅘s. ..	27⅗s.
	F. J. Price (2¼ Diamond) ..	41⅗s. ..	27⅗s.
4.	G. Dance (3½ Sunbeam) ..	27⅗s. ..	27⅗s.

Only four teams competed in the inter-team relay race, which was chiefly remarkable for the spectacular pull-up of A. W. Thrush, who succeeded in upsetting a couple of spectators, but not seriously.

INTER-TEAM RELAY RACE.—1, G. Dance (3½ Sunbeam) and C. Greenwood (4-5 Sunbeam), 52s.; 2, H. W. Hassall (3½ Norton) and A. L. Tompkins (3½ Norton), 56⅕s.

The organisation throughout was good, and a large crowd of spectators appeared thoroughly to enjoy the event. Results:

350 c.c. SIDECARS (Open).—1, G. S. Boston (2¾ A.J.S. sc.), 37⅗s.; 2, H. R. Davies (2¾ A.J.S. 38⅗s.

351-600 c.c. SIDECARS (Open).—1, G. Dance (3½ Sunbeam sc.), 37⅗s.; 2, H. R. Davies (2¾ A.J.S. sc.), 40⅗s.

351-600 c.c. SIDECARS (Experts barred).—1, C. Greenwood (4-5 Sunbeam sc.), 38⅕s. (walk-over).

UNLIMITED SIDECARS (Open).—1, G. Dance (3½ Sunbeam sc.), 34⅕s.; 2, G. S. Boston (2¾ A.JS. sc.), 38⅕s.; 3, H. R. Davies (2¾ A.J.S. sc.), 39⅕s.

UNLIMITED SIDECARS (Expert barred).—1, C. Greenwood (4-5 Sunbeam sc.), 39⅕s.; 2, G. J. Read (6 Enfield sc.), 44s.

250 c.c. TWO-STROKES (Open).—1, F. C. R. Ingram (2¼ Villiers), 37⅗s.; 2, A. W. Thrush (2¼ Levis), 40⅕s.

250 c.c. TWO-STROKES (Expert barred).—Same as preceding class.

250 c.c. FOUR-STROKES (Open).—1, B. Kershaw (2¼ New Imperial), 41⅕s.; 2, E. A. Barnett (2¼ Francis-Barnett), 45⅗s.; 3, D. A. Atkin (2¼ Hobart), 45⅗s.

250 c.c. FOUR-STROKES (Experts barred).—1, E. A. Barnett (2¼ Francis-Barnett), 45⅗s.; 2, D. A. Atkin (2¼ Hobart), 45⅗s.; 3, J. W. Moxon (2¼ Coventry Eagle), 47s.

250 c.c. CLASS (Any machine, open).—1, A. W. Thrush (2¼ Levis), 40⅗s.; 2, B. Kershaw (2¼ New Imperial), 41⅕s.; 3, F. J. Price (2¼ Diamond), 41⅗s.

250 c.c. CLASS (Any machine, experts barred).—Same as preceding class.

251-350 c.c. TWO-STROKES (Open).—1, H. Greathead (3 Ivy), 49⅗s.; 2, F. Whitworth, Jun. (3 Ivy), 50s.; 3, N. Sayage (2½ Villiers), 50⅗s.

251-350 c.c. TWO-STROKES (Experts barred).—Same as preceding class.

251-350 c.c. FOUR-STROKES (Open).—1, G. S. Boston (2¾ A.J.S.), 32⅕s.; 2, C. Greenwood (2¾ Sunbeam), 33⅕s.; 3, H. R. Davis (2¾ A.J.S.), 33⅗s.

251-350 c.c. FOUR-STROKES (Experts barred).—1, C. Greenwood (2¾ Sunbeam), 33⅕s.; 2, G. E. Rowley (2¾ A.J.S.), 46s.; 3, —. Linforth (2¾ Armis), 48⅗s.

351-500 c.c. CLASS (Open).—1, G. Dance (3½ Sunbeam), 28⅗s.; 2, A. L. Tompkins (3½ Norton), 34⅗s.; 3, G. L. White (3½ Triumph), 35⅕s.

361-500 c.c. CLASS (Experts barred).—1, A. L. Tompkins (3½ Norton), 34⅗s.; 2, G. L. White (3½ Triumph), 35⅗s.; 3, B. Fidgeon (3½ Norton), 37⅕s.

501-1,000 c.c. CLASS (Open).—1, C. Greenwood (4-5 Sunbeam), 30⅕s.

501-1,000 c.c. CLASS (Experts barred).—Same as preceding class.

UNLIMITED CLASS (Open).—1, G. Dance (3½ Sunbeam), 28s.; 2, H. W. Hassell (3½ Norton), 31⅗s.; 3, G. S. Boston (2¾ A.J.S.), 32⅗s.

UNLIMITED CLASS (Experts barred).—1, C. Greenwood (4-5 Sunbeam), 31s.; 2, G. L. White (3½ Triumph), 34⅗s.; 3, B. Fidgeon (3½ Norton), 36⅕s.

CYCLE CARS (Open).—1, W. A. Carr (8 Morgan), 46⅕s.

CYCLE CARS (Experts barred).—Same as preceding class.

CLUB NEWS. (Continued from page 355.)

Redditch and District M.C.C.

Open to all members of the Midland Centre A.C.U., a one-day reliability trial will be held on Saturday, October 8th. Three valuable trophies are included in the award list, and further particulars may be obtained from the honorary secretary, Mr. P. C. English, Easemore Road, Redditch.

Berwick and District M.C.

Yetholm—well known in the North as being the home of that famous tribe of gipsies who have roamed the Borderland for hundreds of years—was the destination of the club's recent reliability trial and the scene of a timed hill-climb included therein. Results:

RELIABILITY RUN.—W. Hogg (3½ P. and M.) and W. H. Dodds (4 Triumph) tied for first place.

HILL-CLIMB.—Solo Class: G. Gore (3½ James). Sidecar Class: J. I. Elder (7 A.J.S. sc.).

Luton and South Beds. A.C.

Lady Ludlow has again given the use of the track in Luton Hoo Park for the club's annual speed trials, which are to be held there on Saturday afternoon. Entries to be made by Friday to the trials secretary, Mr. J. Simpson, 440, Hitchin Road, Luton. Members joining for this event will be regarded as full 1922 members.

Birmingham M.C.C.

Results of the Birmingham-Chepstow, Chepstow-Birmingham trial have been announced as under:

CLASS A.—Gold medals: W. E. Bayliss (2¼ New Hudson) and Miss E. Hammond (2½ Connaught). Silver medals: E. J. Bastock (2¼ Levis), A. W. Thrush (2½ Levis), and G. F. Mason (2½ Connaught).

CLASS B.—Gold medal: J. L. Shaw (2¾ A.J.S.). Silver medals: S. Hall (3½ Sunbeam), A. H. Stubbs (2¾ Marloe), W. R. Urwin (2¾ Wilkin), C. M. Lindsey (2¾ Wilkin), J. G. Orford (4 Blackburne), and R. W. Duke (4 Triumph).

CLASSES D AND E.—Gold medal: H. V. Collins (3½ Norton sc.). Silver medal: B. Bourke (4 New Hudson sc.). Bronze medal: A. H. Haden (2½ New Comet sc.).

CLASS F.—Gold medal: A. Woodfield (7 James sc.). Silver medals: L. H. Perry (10 Morgan), F. L. Bolderston (6 A.J.S. sc.), R. W. Vaughan (Massey-Arran sc.), and R. E. Newcombe (6-7 Ariel sc.).

On October 1st a half-day sporting trial will be held in the neighbourhood of Birmingham. Non-members of the club are particularly invited to join and enter at special fees. Further particulars may be obtained from the trials secretary, Mr. L. Clark, 43, Leyton Road, Handsworth.

Worcester and District M.C.C.

Next Saturday, the week-end the Anglo-Dutch Trial starts from Worcester, the club will hold its second annual hill-climb, which will be open to any clubs in the Western Centre A.C.U. Several well-known riders will compete.

Bradford M.C. and L.C.C.

Of the seventeen starters in last week's reliability trial for the Wilson cup there were three non-finishers. Results:

WILSON CUP (to be held for one year) and STANDARD GOLD MEDAL.—S. E. Wood (Harley).

SPECIAL GOLD MEDAL.—G. Townsend (P. and M.).

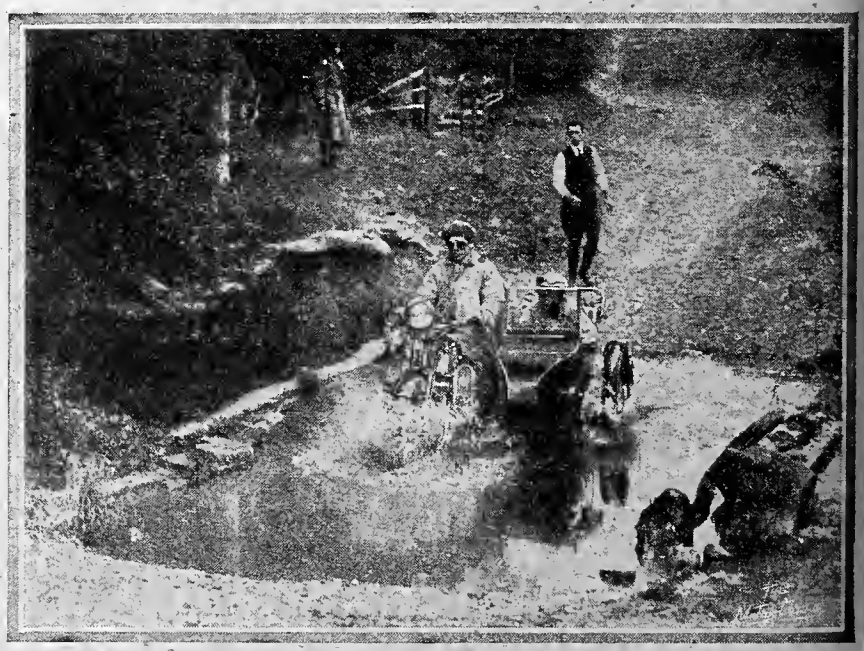
SPECIAL GOLD MEDAL.—J. Snowden (Matchless).

Only these three competitors made a clean climb of the hill, and the result was found by seconds error in the secret check.

Manchester M.C.

The third and last of the series of short evening trials for the Taylor bowl was run off on Wednesday of last week, when about fifteen competitors set off from Bucklow Hill on a twenty miles paper-chase through Cheshire lanes and by-ways. Results: 1, H. Clayton (2¾ Dot); 2, O. E. Carter (3 A.B.C. sc.). The winner of the Taylor bowl has not yet been decided.

The club will hold speed trials (twelve classes) at Bills-o'-Jacks, near Greenfield, on September 25th. Event No. 12 will be special, open to any motor cycle, sidecar outfit, three-wheeler, or car competing in any previous class on handicap, for the Woodward Cup. Classes 1 to 8 are for machines "as per makers' list, complete with touring equipment."

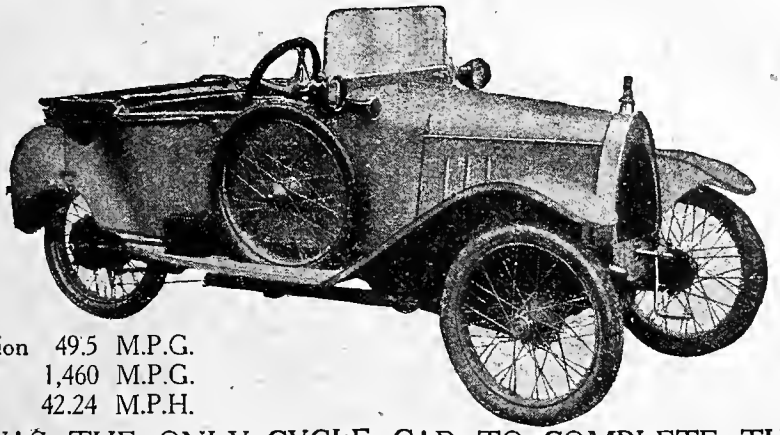


"SPORTING RUNS." Many clubs have this year selected particularly sporting routes for their trials, among them being the Ipswich and District M.C.C. The illustration depicts E. C. Lunnis (8 Sunbeam sidecar) in the Noah's Ark watersplash, which was included in a thirty mile non-stop event held recently.

T.B. THREE-WHEELER. FROM SUCCESS TO SUCCESS. THE 1922 T.B. MAKES ITS DEBUT IN THE A.C.U. 6 DAYS TRIAL, AND GAINS

GOLD MEDAL.

ONE CAR ENTERED



ONE CAR FINISHED

Petrol consumption 49.5 M.P.G.
Oil ,, 1,460 M.P.G.
SPEED 42.24 M.P.H.

THE T.B. WAS THE ONLY CYCLE CAR TO COMPLETE THE COURSE WITHOUT THE LOSS OF A SINGLE MARK, THUS AGAIN CONFIRMING ITS WONDERFUL EFFICIENCY.

NAILSWORTH LADDER, SEPT. 4TH. 2 T.B.'s (one straight from the 6 Days Trial) MADE CLEAN ASCENTS.

Write for particulars. DELIVERIES, OCTOBER.

THOMPSON BROS., Bradley, BILSTON, Staffs.

Any Ignition troubles?

Simms are the people to whom you should send your magneto if it gives trouble. They make the Simms Magneto—Britain's Best—and will undertake to put yours in *perfect* order. *Charges are strictly reasonable.*

SIMMS MOTOR UNITS (1920) L
PERCY BUILDINGS, GRESSE STREET
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INFLATE THE LIGHTLY.

'FLOAT-ON-AIR' SADDLE CUSHION

FOR PERFECT SADDLE COMFORT

AN IDEAL AIR CUSHION!

It gives a flat yielding surface, soft and comfortable on the roughest roads, and doubling the PLEASUSE OF MOTOR CYCLING.

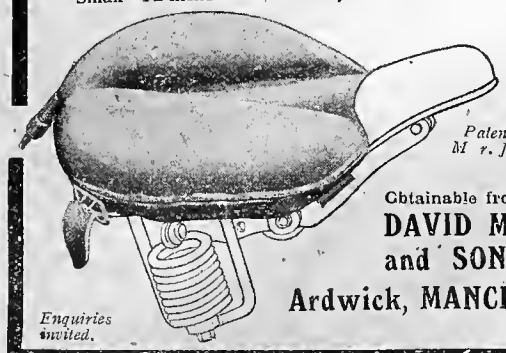
Two Sizes:
Large—14 inches wide.
Small—12 inches wide.

PATENT APPLIED FOR.

NO LEAKING! NO HEATING! NO Vibration!

Mr. Starr writes: "The cushion is a *boon*. Just what is wanted at a reasonable cost."

Mr. W. J. Darnell writes: "Gives a surer and firmer seat—minimises the discomfort of long hours in the saddle."



PRICE 15/-

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Obtainable from—
DAVID MOSELEY and SONS, LTD.,
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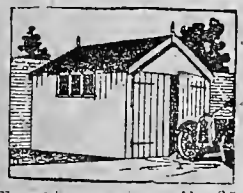
Enquiries invited.

PORTABLE WOOD IRON ASBESTOS BUILDINGS
OF EVERY DESCRIPTION.
Horticultural, Rustic, and Poultry Appliances.

MOTOR CYCLE HOUSES FROM £7 15 0



MOTOR CAR HOUSES FROM £10 2 6

Send for Illustrated Catalogue No. 85, Post Free.

T. BATH & CO., LTD., 18, SAVOY STREET, LONDON, W.C.2
OUR NEW SHOWROOMS ARE NOW OPEN.

OFFICERS' ARMY TRENCH COATS

AT 75/- EACH

ABOUT ONE-FOURTH OF WAR-TIME PRICE

and quite 50% below present-day values. These goods can never be duplicated at this price.

Brand New, check lining, oilskin interlining, and with detachable fleece lining.

These coats are direct from the Liquidation and Disposal Commission and are guaranteed to be as described above. They are impervious to weather. Worn with the fleece lining, they combine the warmth & comfort of an ulster with the rain resisting qualities of a stout mackintosh. With this lining detached they are a light, elegant raincoat. Thousands of officers and ex-officers testify to their worth. They will last for years—even war conditions could not wear them out.

They are specially suitable for Motorists.

When ordering, state height and chest measurement over waistcoat. Chest sizes:—34, 36, 38, 40, 42, 44 inches.
Delivery is made in from 7 to 14 days. Prepaid mail orders only are accepted, and if the coat does not give complete satisfaction, money will be at once refunded without question, provided garment is returned undamaged within 7 days.

SEND YOUR ORDER TO-DAY.

GEORGE WESTON & Co.

(Dept. M.C.),

Offices: 2, Bath Road,
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Bankers: Barclay's Bank Ltd.,
HOUNSLOW, Middlesex.

BENETFINKS

STUDY THIS COLUMN

A few examples of Benetfink Value.

All Post Free.

Johnson's Decarbonizer	6/-
Liquid Packing for Joints	1/6
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Patchquick Outfits	3/-
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Vulcanizers:	
Marvulc	7/6
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Brass Turnbuttons for Sidecars, per doz. sets	3/-
Spots (more miles to the gal.)	1/6, 2/6, 4/-
Sheet Celluloid for Windscreens, per square foot	3/-
Aluminium for Footboards, per square foot	3/3
Pan Seat Saddles	21/-, 27/6, 37/6
Pannier Tool Bags (armoured)	5/-, 6/9, 7/6
Sparking Plugs:	
Lodge	8/-
Bosch	3/9
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Cameo	60/-
Bluemels	88/-
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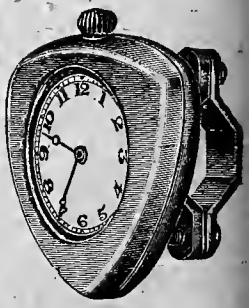
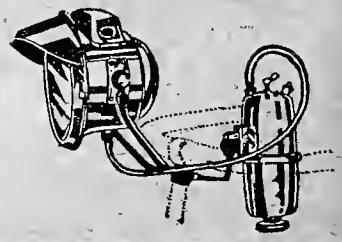
MECHANICAL HORNS

Model D.M. Very penetrating note. Black and nickel finish.
Post free. Price **8/6**



Special Offer of WATCHES

30-hour. Inventic movement. Heart-shape aluminium case to fit any handle-bar.
Post free. Price.... **12/6**



MOTOR CYCLE LAMP SETS

Solid brass, heavily nickelled, large size generator, mirror reflector, complete with brackets, as illustration.
Post free. Price..... **37/6**

TYRE VALUES

A few examples. For more, write now for our SPECIAL LIST of W.D. and CLEARANCE TYRES (post free on request). Ex-Government stock. All in perfect condition.

		Our Price.	List Price.
26 × 2¼	WOOD-MILNE, 3 ply ..	26/10	53/8
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26 × 2⅜	WOOD-MILNE 4 ply ..	30/-	63/-
26 × 2½ × 2¼	" " 4 ply ex. strong	32/9	67/6
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W.D. Stock in perfect condition. Best Makes:

Endless,	26 × 2⅜ .. 4/9	Endless,	28 × 3 .. 7/6
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ADVERTISEMENTS in these columns –First 12 words 3/–, and 3d. for every ad– itional word. Paragraphs of under 8 words r3 charged double rate. Each paragraph is harged separately. Name and address must e counted. Series discounts, conditions, and pecial terms to regular trade advertisers will e quoted on application.

Postal Orders and Cheques sent in payment for dvertisements should be made payable ILIFFE & SONS Ltd., and crossed & Co. reasury Notes, being untraceable if lost in ransit, should not be sent as remittances.

All advertisements in this section should be ccompanied with remittance, and be addressed the offices of "The Motor Cycle," 20, Tudor treet, London, E.C.4, or 19, Hertford Street. oventry. To ensure insertion letters should e posted in time to reach the offices of "The Motor Cycle," by the first post on Friday orning previous to the day of issue. Adver- sements that arrive too late for a particular sue or that are crowded out will automatically e inserted in the following issue unless accom- anied by instructions to the contrary.

All letters relating to advertisements should ote the number which is printed at the end of ch advertisement, and the date of the issue which it appeared.

The proprietors are not responsible for clerical printers' errors, although every care is taken avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be dressed to numbers at "The Motor Cycle" Office. hen this is desired, the sum of 6d. to defray the cost of gistration and to cover postage on replies must be added the advertisement charge, which must include the rds Box ono, c/o "The Motor Cycle." Only the number ll appear in the advertisement. All replies should be dressed No. 000, c/o "Motor Cycle," 20, Tudor Street. C.4. *Readers who reply to Box No. advertisements are rned against sending remittance through the post except in- gistered envelopes; in all such cases the use of the Deposit stem is recommended, and the envelope should be clearly rked "Deposit Department."*

n the case of motor cycles offered for sale under a box mber, as it is unusual for these to be sold without first ng inspected by the intending purchaser, advertisers will ilitate business by embodying in their advertisements ne mention of the district in which the machine ered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons y deal in perfect safety by availing themselves of our posit System. If the money be deposited with "The tor Cycle," both parties are advised of this receipt. The time allowed for a decision after receipt of the ods is three days, and if a sale is effected we remit the ount to the seller, but, if not, we return the amount the depositor, and each party to the transaction pays riage one way. For all transactions up to £10, a posit fee of 1/- is charged; on transactions over £10 d under £50, the fee is 2/6; over £50 and under £75, 5/-; er £75 and under £100, 7/6; and on all transactions er £100, ½%. All deposit matters are dealt with at Tudor Street, London, E.C.4, and cheques and money lers should be made payable to Iliffe & Sons Limited. The letter "D" at the end of an advertisement is an ication that the advertiser is willing to avail himself of Deposit System. Other advertisers may be equally irous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no swer to their enquiries are requested to regard the nce as an indication that the goods advertised have ead/ been disposed of. Advertisers often receive so ny enquiries that it is quite impossible to reply to h one by post.

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A.B.C. 1920 Combination, dynamo model, with Swan sporting sidecar, completely equipped, in- luding speedometer and 1921 licence; a genuine ayton type bargain, £115.—The Layton Garages, 30, olywell St., Oxford. 'Phone: No. 581. [9260

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WE HAVE AN EXCELLENT SELECTION OF

Shop-Soiled 1921 Models

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Second-hand Machines

and shall be pleased to send upon request

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'Phone: 490 East Ham. 'Grams: Egaraco, L'don.

MOTOR CYCLES FOR SALE.

A.B.C.

1920 A.B.C. Combination, in perfect order, all ac- cessories; offers.—Evans, Overcliff Hotel, West- cliff-on-Sea. [9498

A.B.C. Combination de-Luxe, 1920½, dynamo light- ing, many spares; £115, or offer.—224, London Rd., Sheffield. [9428

A.B.C. 1920 Dynamo Model, Cowey speedometer, tax paid, insurance, fast and in good condition; £100. —Clarke, Lynn Rd., Ely, Cambs. [8451

A.B.C., late 1920, perfect condition, exceptionally fast, lamps, horn, Tan-Sad, owner bought car; £85.—Clegg, Tetney, Bath Rd., Slough. [9812

A.B.C., 1920, lamps, horn, speedometer, Tan-Sad, spare racing exhaust pipes, tax paid; nearest £85.—Dimmick, Sarisbury Green, Southampton. [1079

A.B.C., guaranteed in perfect condition by makers, any trial; £84; no exchanges; 6 hours free ser- vice given with this machine.—Derrington, Grafton Rd., New Malden. [1421

A.B.C., 1920, perfect condition, speedometer, lamps, horn, mileage 3,500, overhauled last month, done 58 m.p.h., tax paid, insured till Aug. next; £100; seen at Cheam, Surrey.—'Phone Mr. Porter, Avenue 3679. [9803

Acme.

1920 8h.p. Acme-Jap Combination, hood, screen, Tan-Sad, spare wheel, excellent condition; £115; deferred payments or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1338

A.J.S.

PREMIER Motor Co. for 1921 A.J.S.

ONLY 4% Extra for Easy Payments.

IMMEDIATE Delivery of Latest 7h.p. Combination, spare wheel, screen, etc., £195; 2¾h.p. 3-speed solo, £95; exchanges arranged.—The Premier Motor Co., Aston Rd., Birmingham. [X9328

A.J.S.—All models reduced.—Merrick's Stores, 174, Listerhills Rd., Bradford. 'Phone: 2439. [7898

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combina- tion, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

1916 4h.p. A.J.S. Combination, Lucas electric light- ing, good condition; £75.—Warwick, Hinckley Rd., Leicester. [X9233

A.J.S. 2¾h.p., 2-speed, clutch, all chain, excellent condition, tax paid; £45; after 6.—10, Mont- pelier Rd., Peckham. [9805

6h.p. T.T. A.J.S., specially built for competition, ap- pearance as new, hot stuff; gift, 45 gns.—Rams- dens, May Bell Av., Blackpool. [9656

1920 6h.p. A.J.S. Combination, Lucas dynamo set, spare wheel, small mileage, perfect condition; £145.—Carver, West St., Willenhall. [X9297

A.J.S., the victorious 2¾h.p., £95; touring and sport- ing models in stock; 7h.p., the super combination, £195.—Marston, 31, Bridge St., Chester. [9980

1921 A.J.S. 7h.p. Combination, condition as new, Lucas lamps, horn; cost £225, bargain, £170; any trial.—Webber, 4, Queen's Terrace, Morecambe, Lancs. [9686

BRAND New 1921-22 A.J.S. Combination; owner unable to take delivery will sacrifice £20 deposit. —10, Bedford Rd., London, W.4. 'Phone: Chiswick 1747. [8030

1914 A.J.S. 6h.p. Combination, speedometer, lamps, horn, wind screen, well cared for, and in ex- cellent mechanical order; £95.—Bowman, Beaconsfield Rd., Widnes. [X9237

1918 5-6h.p. A.J.S. Combination, splendid turnout, complete with spare wheel, etc.; first cheque £98 secures; real bargain.—P. Wheatley, 34, St. Barnabas Rd., Cambridge. [9375

A.J.S., late 1919, perfect condition, new tyres this season, hood, screens, Bosch mag., speedometer, lighting, spare wheel; £135.—Tillott, 37, Marsham St., Westminster, S.W. [1170

1920 6h.p. A.J.S. Combination, electric horn and lights, hood, discs, leg shields, many spares, mileage 2,000, as new; offers.—19, Hawcliffe Rd., Mountsorrel, Loughborough. [1125

A.J.S. 1921 7h.p. Combination, new this month, tax paid, unscratched, not done 50 miles; usual price £195; will accept for quick sale £169/10.—Wilkins, Simpson, opposite Olympia, London. [9685

A.J.S. 1921 Combination, as new, with Royal Enfield and Standard screens, horn, speedometer, lamps, 2 A.L. gas cylinders, licensed, and fully insured to May, 1922; owner obliged to give up motor cycling; £200.— Burnell, Albion St., Rugeley. [9395

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

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A.J.S. 6h.p. (new 28/11/20), spare wheel, equipped hood, best Lucas lamps, tax paid, fully insured, perfect condition, unpunctured; £165, no offers; owner bought car.—Bert Andrews, Carmarthen. [9445

A.J.S. 1919 6h.p. Combination, spare wheel, hood, screen, Lucas lamps and horn, full accessories, and all in splendid condition; £135, with insurance and tax paid.—Perry, 66, Vittoria St., Birmingham. [X9379

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

1920 (June) A.J.S. Combination, hood and screen, tyres never punctured, spare wheel, unused, Lucas dynamo lighting and electric horn, speedometer, nearly new, tax and insurance paid; £170.—Write W.R., 38, Emmanuel Rd., Balham, S.W.12. [1162

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

A.J.S. 1921 7h.p. Combination, the very latest model with new sidecar connections, just arrived, £195; also the 2¾h.p. sports model, £95, in stock; your present machine can be taken on liberal terms as part payment.—Authorised agents, Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

A.J.S. (late 1915) 6h.p. Combination, perfect throughout, detachable interchangeable wheels, Dunlop tyres (unpunctured), speedometer, Lucas lamps, mirror, horn, luggage carrier, enamel and plating practically unscratched, tax and insurance included; £100; no offers entertained; seen evenings after 6.30.—1, Caroline Place, Moscow Rd., Bayswater. [9820

A.J.S. 7h.p. Combination (April, 1921), Brooks cantilever saddle, spare wheel and tyre (unscratched), Cowey trip, mirror, Lucas and Klaxon, Low car generator, F.R.S. Major head, side, and rear lamps, Tynesider complete pillion, special side screen, hood, storm apron, mat, full equipment, tools, and spares; a most complete all-weather go-anywhere outfit; 3,000 miles careful running owner-driven, two punctures; unquestionable condition; licensed, insured; cost over £250; seen by appointment; £190, or near offer.—68, Bushwood, Leytonstone, E.11. [1451

Alldays.

1919 Alldays Allon, 2-speed, clutch, Klaxon, lamps, re-enamelled, new piston, rebushed, perfect; £42.—Parritt, 14, Stanhope Gardens, Highgate. [9795

American X.

1920 American X C.B. Combination, 3-speed, dynamo lighting, perfect condition, smart appearance; £85.—Oakdene, Anerley Park, London, S.E.20. [1235

AMERICAN X Combination, only shop-soiled; £155 cash, or £31 down and 11 payments of £12/2/4.—Lamb's, 50, High Rd., Wood Green; 387, Euston Rd., N.W.; 151, High St., Walthamstow. [9743

ASTOUNDING Reduction.—Brand new 1921 American X 7-9h.p., 3-speed, Milford de luxe sidecar, 27×3½in. tyres, £165; with Lucas electric lighting equipment, £175; easy payments only 4% extra; 3 machines only at this price.—The Premier Motor Co., Aston Rd., Birmingham. [X9329

Antoine.

ANTOINE 3½h.p., £27, Zenith carburetter, Bosch mag., tyres revulcanised, good condition.—Hopwood, 8, Rucklidge Av., Harlesden, N.W.10. [9423

Ariel.

DAN GUY Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0688

ARIEL Combination, 5-6h.p., splendid condition; cheap.—12, Parma Crescent, Clapham Junction. [9421

£16.—Ariel, 3½h.p., Bosch, B. and B., Druids, footboards, etc.—Fisher, 24, Tremadoc Rd., Clapham, S.W.4. [9840

ARIEL 1920 Combination, K.S., lamps, tools, good condition; £85.—Johnson, 35, Cambridge Parade, Twickenham. [9564

SHOP-SOILED Ariel, 3½h.p. model; £90, for quick sale.—Autoveyors, Ltd., 84, Victoria St., S.W.1. 'Phone: Vic. 309. [0468

6-7h.p. Ariel Combination, late 1919, perfect, and as new, very little used; offers wanted.—Bertram, Gorebridge, Scotland. [X9266

ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 1921 3½h.p. 3-speed Solo Model, list price £100, slightly showroom soiled; offered for cash at £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9261

ARIEL Service Depot.—Orders now booking for the new all-chain models, which are the Rolls-Royce of motor cycles. All spares stocked. Prompt attention.—F. Speakman, Ariel Expert, 7, Rochdale Rd., Harpurhey, Manchester. Tel.: 325 Cheetham Hill. [5999

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TAYLORS

Sole London and District Agents for A.J.S. and British Excelsior Motor Cycles

REAL BARGAINS

which cannot be repeated

New Shop-soiled Mounts

Make.	Date	h.p.	Description.	Price.
Enfield	1921	8	Com., with Colonial Sc. Cost price, £160	£150 0
P. & M.	1921	3½	Com. Cost price, £155	£138 10
Zenith	1921	8	Com., clutch model, Cost price, £177	£165 0
Triumph	1921	4	Com., all-chain. Cost price, £175	£162 0
British Excelsior	1921	8	Com., Blackburne engine, dynamo lighting, etc. Cost price, £238	£206 10
O.K.	1921	2½	Junior, 2-speed. Cost price, £60	£54 0
O.K.	1921	2½	Siogle-speed	£39 18
Excelsior	1921	2¾	Blackburne engine. Cost price, £96	£80 0
Excelsior	1921	2½	2-speed, 2-stroke. Cost price, £67	£57 0
Enfield	1921	2¼	2-speed. Cost price, £65	£60 0
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Ariel	1919	6-7	Com., smart turnout	£115 0
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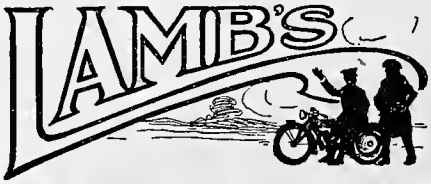

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151, High St., Walthamstow, London, N.E.
'Phone: Walthamstow 169 (2 lines).
(CLOSED THURSDAYS 1 O'CLOCK.)

MOTOR CYCLES FOR SALE.

Douglas

1918 Douglas 4h.p. Combination, 3-speed, clutch kick start, perfect order, tax paid, all accessories, Eastings; bargain, £65.—3, Norwood Rd Herne Hill, S.E.24. [124

DOUGLAS 1920 2¾h.p., 3-speed, footboards, full equipped, tax paid; £75; deferred payments desired.—Parker's, Bradshawgate, Bolton; also 245 Deansgate, Manchester. [958

£38.—Douglas 2¾h.p., 1916, thoroughly overhaule and renovated, store enamelled makers' colour new tyres, numerous new parts.—Pride, 156, Stockwe Rd., Brixton, S.W.9. [123

ELI CLARK can give you good service both in ne machines and spares ; try me. I may be usefu to you.—The Pioneer Agent for Douglas Motors, 19 Cheltenham Rd., Bristol. [001

DOUGLAS Combination, 4h.p., 1918-19, all lamp new Miller head, new Easting, smart appearanc perfect order throughout, licensed; £87.—Ralph, Bu hurst Mews, Paddington. W. [943

DOUGLAS, 2¾h.p., all on, tyres good, very nic mechanical condition, £35; also 4h.p. Dougl sidecar, splendid condition, £12.—T. C. Buckingha Underriver, Sevenoaks, Kent. (P) [99

1920 4h.p. Douglas Combination, as new, sma mileage, lamps, speedometer, mirror, spa tyre, belt, etc.; inspection and trial; 115 gns. Whiter, Rosefield, Cecil Rd., Cheam. [97

1916 Douglas 4h.p. Combination; any examinatio seen by appointment only (London district price 58 gns. for quick sale; good reason for d posal.—Box 6,244, c/o *The Motor Cycle*. [84

1920 4h.p. Douglas Combination, licensed, insure good condition, lamps, wind screen, leashiel variable jet, good tyres; seen by appointment.—Co brook, Home Farm, Puttenham, Guildford. [94

4h.p. Douglas, May, 1921, with disc wheels, Sw sporting sidecar, cost £155; sell for £130, or go offer, or would exchange for new Indian Scout solo Pope, Elm Bank, Carlton Rd., Putney, S.W.15. [11

DOUGLAS 1919 4h.p. Combination, engine 6550, two large brass P. and H. head lamps, hr generator, bulb horn, splendid condition; any trial Coppen, Allan and Co., 89, Gt. Portland St., W.1. [9

1920 4h.p. Douglas Combination, elaborat equipped, Cameo double screen, speedome D.A. lighting, tyres as new, mechanically perfe spares; £96.—Ward, 51, Upper Richmond Rd., Putn [1

REALLY Handsome Fast 2¾h.p. 1919 Doug looks like new, specially built with large tank long nickel exhausts, Tan-Sad, lamps, tools, tax p and any trial; £60.—9, Pope's Grove, Twickenh S.W. [1

DOUGLAS, 2¾h.p., 2-speed, late 1919, low mile electric lighting, speedometer, Klaxon, sp belt and chain, all tools, tax paid; a bargain, £5 Phillips, 104, Brandon St., York St., Walworth London. [1

1920 Douglas, 2¾h.p., 3-speed, clutch, star mileage only 500, Klaxon, tools, etc., a lutely uncratched, indistinguishable from new; bargain, £69/10 lowest.—37, Canterbury Rd., ston, N.1. [1

4h.p. Douglas Combination, 1919, fully equipped lamps, mirror, speedometer (trip), Klaxon, bags, etc., sidecar well upholstered in dark red, whole in splendid order; price £82.—'Phone: sington 7050. [1

DOUGLAS 1920 Combination, lamps, horn, C speedometer, tools, Easting screen, alumi discs, cost over £200 last September, done 3,300, dition and appearance as new; £120.—B., 52, Tan Rd., Lee, S.E. [

1915 Douglas, 2-speed, not W.D., complete electric lamps, footboards, leg and m shields, disc wheels, and long exhaust, condition appearance like new; sacrifice, £35.—Parker, Hallswelle Rd., Colder's Green, N.W.4. [

SPORTY 2¾h.p. Douglas, 1915-16, not W.D., bars, knee-grips, long exhaust, spares, lamps, discs, fast, lovely appearance, 120 m.p.g., recently hauled, new cylinders, rings, bearings, etc.; genuine gain, £45.—147, Ancona Rd., Plumstead. [

DOUGLAS, 1921, latest 2¾h.p., 2-speed, al models in stock; £85; your present machine be taken as part payment; extended payment ter Authorised Agents, Elce and Co., 15-16, Bisbop Av., Camomile St., E.C.3. 'Phone: 5548. [

Dunelt.

DUNELT, 1921, demonstration model, hardly s dynamo lighting, hood, screen, speedometer, spare wheel, registered; £150.—Coppen, Allan, Co., 89, Gt. Portland St., W.

Edmund.

GOURLAY, the spring frame Edmund agent, F field, Manchester.

EDMUND 2¾h.p., spring frame, J.A.P. engine, model; reduced price £75.—Marston, 31, I St., Chester.

1920 Edmund, spring frame, copper ex original tyres, all on trial any time; £5 offers.—Spink, Easingwold, York.

MOTOR CYCLES FOR SALE.

Henderson.

921 Henderson, Model K, guaranteed new condition; £200, or near.—Postmaster, Banchory. [1217

HENDERSON Combination, 1920, condition as new; any trial whatsoever; £125.—13, Victoria Rd., Sheffield. [9703

HENDERSON 1920½ Combination, dynamo, hood, screen, done 4,000; cost £250; £140, or near.—Owner, Fairholme, Dunbar Av., Norbury. [9870

HENDERSON, 4-cyl., fast, sporty, 3in. long plated exhaust, little used; seen in London by appointment; reasonable offer.—Stevens, Cowley, Middlesex. [1401

921 Henderson, P. and H. dynamo lighting set, reverse gear, 27×3½ tyres, cost £245 recently, small mileage; accept £175.—Dove, Wragby, Lincolnshire. [9941

920 Henderson, Lucas lamps and horn, Watford speedometer, h.b.c. clutch and mag. switch, long upper exhaust, mileage 3,200, condition perfect, licensed 1921 (sidecar); £130.—Hall, Victoria Hotel, Eckmansworth. [9503

HENDERSON 1920 10h.p., 4-cyl., 3 speeds, hand and foot brakes, 2-seater sidecar, apron, Sandum screen, Sterling legshields, 3 electric lamps, Cowey horn, Smiley speedometer, spare chain, etc., tax paid; £129/10. Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [9859

Hobart.

A.P. (Hobart) 4h.p., overhead valve, 90 bore, 2-speed, free engine, 1914 model, in guaranteed order; £38.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9144

Humber.

1h.p. Humber, coachbuilt sidecar, good condition; any offer accepted.—Kenbar, 17, Lonsdale Rd., Kilburn. [9722

913 3½h.p. Humber Coachbuilt Combination, 2-speed, all on, licensed; £34, bargain.—17, Redcliffe Rd., N.W.10. [9610

3h.p. Twin Humber, T.T. model, 3-speed, fast, new tubes and front cover, overhauled; £30.—Bown Bros., Coundon Station, Bishop Auckland. [X9116

1h.p. Humber, fast and sporty, frame altered to take S.A. gear box, any trial, £38; Roc wheel, complete, 50/-; also ⅞in. Sensspray, 30/-.—Fox, 301, Jersey Rd., Holloway, N. [1424

HUMBER Combination, 3½h.p., 2-speed, handle start, particularly good engine, spare tubes, running order, inspection by appointment; £38; first offer secures. — Ludford, Fern Lea, Four Oaks, Birmingham. [9945

HUMBER 4h.p. Coachbuilt Combination, 1915, 3-speeds, free engine, underslung Canoelet sidecar, splendid order and condition, Dunlop new belt, good tyres, B. and B. carburetter, lamps, tools, tax paid, sell any time; bargain, £55.—Stepney Garages, 77, Simons Lane, Commercial Rd., Stepney. [9367

Indian.

65.—1919 Indian, 3-speed, clutch, perfect condition.—Shore, Aldbury, Tring, Herts. [9645

INDIAN, 5-6h.p., fixed gear, fine order and condition; £30.—151, High Rd., Willesden. [9938

INDIAN 7-9h.p., lamps, etc., tax paid; £33; excellent order.—68, Gloucester Rd., Camden Town, N.W. [1017

9h.p. Indian Combination, 3-speed, K.S., spring frame, licensed; £55.—17, Heaton Rd., Mitcham. [1114

915 Indian 5h.p., sidecar; £50, or exchange lightweight.—Jackson, 77, Gladstone Rd., Watford, Herts. [1264

5.—Indian, clutch model, overhauled, re-enamelled and plated, very fast.—Ranger, c/o 194, Ballam Rd., S.W. [9857

INDIAN 1916 6h.p., perfect; £79; exchange for A.B.C. or Douglas and cash.—Taylor, 24, Midland Place, Willesden. [9660

9h.p. Indian, clutch model, good condition; reasonable offer considered; going abroad.—Taylor, Cottage, Bearsted, Kent. [7511

INDIAN Combination, late 1915, 7-9h.p., 3 speeds, K.S., all on, splendid condition, tax paid; £88.—Caledonian Rd., N.7. [1159

INDIAN T.T. Powerplus Combination, disc wheels, speedometer, etc.; £70; exchange.—C.S., 14, Bow Rd., Bow, E.3. Tel.: E. 3155. [1127

919 Powerplus Indian Sporting Combination, handsome and unique outfit, with accessories, guaranteed perfect; £98.—91, Spa Hill, Norwood. [8538

919 7-9h.p. Indian Powerplus, unscratched, for combination not earlier than 1916; Enfield preferred, or sell.—5, Glendower St., Monmouth. [9110

INDIAN Motor Cycle, 7-9h.p., tax paid, open to any examination, privately owned; any reasonable offer accepted.—To be seen at 28, Brook St., W.1. [9688

920 Indian Powerplus 7-9h.p. Combination, dynamo lighting, completely fitted, excellent condition, 1,000 miles, tax paid; £130, or exchange with cash adjustment for light car.—Stevenson, Old Sarum, Salisbury. [9830

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Indian.

INDIAN 7-9h.p., 1914, 2-speed, clutch, lamps, Klaxon, tools, tax, etc., recently overhauled, new tyre, excellent condition; £65.—Warwick, Aerodrome, Andover, Hants. [9739

7-9h.p. Indian Combination, late 1920, dynamo lighting and horn, mileage about 1,000 miles, in splendid condition; accept £130.—Shelley, 24, Fernie Rd., Leicester. [1285

915 7-9h.p. Indian Combination, 3-speed, kick start, sporting Phœnix coachbuilt sidecar; first cheque £55 secures, bargain.—P. Wheatley, 34, St. Barnabas Rd., Cambridge. [9374

920 7-9h.p. Powerplus-Indian Combination, Swan sporting sidecar, dynamo lighting set, run very little; £135; exchange lower power considered.—Taylor, Brookfield Brickworks, Tonge, Bolton. [1174

915 T.T. Indian, 7-9h.p., clutch model, lamps, horn, speedometer, licence paid, been thoroughly overhauled and re-enamelled; trial; nearest £35.—E. Talbot, Minshall Hall, Middlewich, Cheshire. [9780

921 4h.p. Indian Scout Combination, Watsonian sidecar, P. and H. lamps, bulb horn, tools, mileage 2,000; owner abroad; condition perfect; £115, or near offer.—Westend Garage, Hereford. [1296

916 5-6h.p. Indian Combination, 3-speed (H. and F.), clutch, Tan-Sad, lamps and spares complete, splendid appearance and running order; £78.—Matthews, R.A.S.C. Officers' Mess, Aldershot. [9733

INDIAN Powerplus Combination, 7-9h.p., 3 speeds, clutch, and kick starter, lamps, etc., tax and insurance paid, splendid condition; £95, or offer.—Grocer, 25, Frederick's Rd., Custom House, E.16. [9715

920 Indian Electric Combination, horn, speedometer, Easting screen, pillion, tools, overalls, etc., tax, insurance, low mileage, perfect; nearest £110.—Naylor, Retiro House, Wellington St., Matlock. [9916

INDIAN 1919 Powerplus Combination, Indian sidecar, dynamo lighting, rear drive speedometer, ammeter, electric horn, Cameo screen, good condition; £110.—Dixon, 172, Brownhill Rd., Catford, S.E. [1225

920 Indian Combination, 7-9h.p., in perfect condition, Easting, speedometer, fully equipped; smart and reliable; any trial; 100 gns.; would consider lightweight part.—Oakleigh, Charlestown, Weymouth. [1172

BARGAINS!—1916 Powerplus Indian sporting combination, wants overhauling, absurd, £50; another Indian combination, £85; wicker sidecar, £3/10.—Call, Douglas S. Cox, 6, Lansdowne Hill, West Norwood. [1278

£118.—Late 1920 7-9h.p. Indian combination, big valve model, dynamo lighting, speedometer, Easting, fully equipped, ready for road anywhere; cost £240; must sell, buying pram; after 5 p.m.—20, Treen Av., Hoggers Corner, Barnes. [1192

INDIAN 1921 7-9h.p. Powerplus Combination, electrically equipped, electric horn, speedometer, absolutely indistinguishable from new, tax paid; £175; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9589

INDIAN 1920 4h.p. Scout Model, Grosvenor sporting sidecar to match, fully equipped, speedometer, horn, tax paid, indistinguishable from new; £145; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9588

919 Indian Powerplus Combination, 7-9h.p., spring frame, 3-speed, clutch, and kick starter, splendid condition, new sidecar, tyres, lamps (3 in No.), horn, and luggage carrier, tax and insurance paid; £100, or near offer.—30, Alexandra Rd., Sheerness. [9728

INDIAN Scout, 1920 I.O.M., aluminium pistons, close ratio box, speedometer, accumulator lighting, tools, spare sprockets, etc., horn, kick starter, only done 1,000 miles, delivered May, medal winner, excellent for touring or competition; £115.—Labin, 7, Horbury Mews, Notting Hill Gate. [9659

WANTED, purchasers for any model of new 1921 Indian motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0650

920 Indian Powerplus Combination, big valve engine, splendid appearance and condition, Easting screen, luggage grid, and many extras, special electric lighting arrangements; an ideal machine for 24 hour trials; only £135, or near offer.—Macdonald, Cotterstock, Peterborough. [9949

7-9h.p. Indian Powerplus Combination, ex-works August 25th, 1920, a 1921 model, just decarbonised, and in splendid condition, new Easting Royal screen, ammeter, voltmeter, spare cover and tube, and ready for 5,000 miles tour, privately owned; price £135.—Apply, A. Dalton, Shenfield, Brentwood, or 'Phone Regent 4224. [9441

INDIAN Combination, 7-9h.p., Easter, 1920, in perfect condition, special sidecar, large luggage grid, hood, Orto Triplex screen, dynamo, new Lucas horn and accumulators, F.R.S. lamps, mileage 6,000, numerous spares, overhauled and re-enamelled; £180, or nearest offer; any reasonable trial and examination; write appointment—130, Oakleigh Park Drive, Leigh-on-Sea; or 'phone Chancery 7739. [9669

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MOTOR CYCLES FOR SALE.

Indian.

INDIAN 1919 Powerplus Combination, complete with genuine Indian sidecar, dynamo lighting, speedometer, Cameo screen, etc., mechanical condition guaranteed, appearance and tyres good, thoroughly recommended; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9267

INDIAN 1919 7-9h.p., spring frame, 3 speeds, kick starter, new engine, Goodyear tyres (excellent condition), T.T. handle-bars, carrier, large head light, tail lamp, Prest-O-Lite cylinder, large metal toolbox, tools and pump, tax paid, £79/10; 1917 model, tax paid, £69/10.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [9860

Invicta.

INVICTA-VILLIERS, 1920; £35; splendid machine; appointment. — 11, Homesdale Rd., Bromley, Kent. [1396

Ivy.

IVY 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

BARGAIN.—1921 Ivy 2¼h.p., 2-speed, clutch, K.S., Lucas fittings, practically new, tax paid, suit lady or gent; 45 gns.; cost £69.—18, St. Mary's Rd., Peckham. [1417

James.

1920 James 2-stroke, 2-speed, as new; £45, bargain. —Hellier, Honiton. [9471

DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

1921 James 2-stroke, 2-speed, equipped, tax; 39 gns.— —Ramsdens, May Bell Av., Blackpool. [9654

JAMES 1920 3½h.p. Twin, Lucas lamps, horn, speedometer; £85.—Chidlow, Holmwood, Bromsgrove Rd., Redditch. [X9245

1921 James 2-stroke, 2-speed, all accessories, scarcely soiled; £50.—17, St. Charles Sq., N. Kensington, W.10. [1008

F.O.C.H. have several James solos and combinations, cheap.—5, Heath St., Hampstead (near Hampstead Tube Station). [9671

JAMES 1920 3½h.p., all-chain, complete with all accessories, licence paid; £85, as new.—Marston, 31, Bridge St., Chester. [9982

JAMES 1920 2¼h.p., 2-speed, lamps, horn, tax paid, splendid condition; £58; after 7 evenings.—11, Endive St., Limehouse, E. [9726

1916 3½h.p. Twin James Combination, new condition, only wants seeing; £75, or near offer.—Rippon, High St., Brentwood [9708

JAMES, late 1919, 5-6h.p., dynamo lighting, combination, little used; £125.—J. Daniels, Jun., 8, Crowhurst Rd., Brixton, S.W.9. [1230

1917 James 3½h.p. Twin, 3-speed, C.S., kick start, clutch, electric lighting, Klaxon, as new; £55.—Davidson, 11, Lyndhurst Rd., Hampstead. [9933

JAMES Combination, 4¼h.p., 1915-16, 3-speed countershaft, clutch, kick starter, lamps, licence, hooter, spare tyre; £60.—63, Solon Rd., Brixton. [1319

5-6h.p. James De Luxe Combination, new 1920, little used, fully equipped, speedometer, legshields, tax paid.—Fitt, near Pikes, 102a, Church St., Chelsea. [1455

JAMES 4¼h.p. Combination, oversize tyres, electric lighting, perfect condition throughout; £75.—180, Finchley Rd., N.W.3. 'Phone: 2161 Hampstead. [1290

1919 5-6h.p. James Combination, de luxe sidecar, leg shields, Klaxon, all accessories, tax paid, mileage 1,000, excellent condition; £125.—Dan Guy, Weymouth. [8444

ASTOUNDING Bargain.—New 1921 2½h.p. 2-speed James lightweight, £60; easy payments only 4% extra; slightly shop-soiled.—The Premier Motor Co., Aston Rd., Birmingham. [X9332

JAMES Motor Cycle Combination Carrier for sale, 1916, very little used, in excellent order, 4¼h.p. —May be viewed on application to Transport Manager, Lipton, Ltd., City Rd., E.C. [9437

1920 5-6h.p. James Combination, 3-speed, clutch, kick start, good condition, small mileage, C.B. sidecar, lamps, horn, and Klaxon, Binks; £125.—Chaplin, Woolpack Inn, Kettering. [X9315

JAMES Combination, 5-6h.p., Jan., 1920, 3-speed, splendid condition, recently overhauled, coachbuilt bulbous sidecar, Easting, Klaxon, licence paid for year; £105.—W.A., 5, Roman Camp Rd., Market Harborough. [9402

1920 3½h.p. James, 3-speed, clutch, kick start, fully equipped, used week-ends, not used since May, condition as new; any severe trial here; economical, 120 m.p.g.; £80, cost £142.—Watkins, 8, Brynheulog, Aberbeeg, Monmouthshire. [9536

JAMES 4¼h.p. Combination, 3-speed, kick start, overhauled by Messrs. James at cost of £30, new gears, new Binks, new Dunlop tyres and tubes, speedometer, lamps, etc., tax paid, any trial given; £70.—64, Brunswick Rd., Upper Holloway, London, N. [1431

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The BURLINGTON Reconditioned DOUGLASES

are as reliable as any *new* machine and more so than most reconditioned machines—it is sound workmanship, and specialised experience which has built up the reputation of the Burlington Douglases.

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2¾ h.p. 2-speed **£65**
4 h.p. 3-speed kick-start, solo **£85**
4 h.p. 3-speed, kick-start, combination with Brand New Burlington Sidecars **£110**

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THE DOUGLAS CLUTCH CONVERSION SET

will prevent all trouble with broken drawbolts in 1915-1918 Douglas 4 h.p. models. Write for full particulars.

YOUR TRIUMPH

will be easier to control if you convert it into a hand and foot operative clutch model. A neat easily fitted pedal does this. Price 4/-. Postage 4d.

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'Phone: Brix'on 2417. Wires: Burlington Motors, Clapham.

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MOTOR CYCLES FOR SALE.

J.A.P.

SPECIAL 1921 350 c.c. J.A.P. Twin, o.h.v., Sturmey 2-speed; £50 or exchange; seen London.—Box 6,433, c/o *The Motor Cycle.* [9772

J.A.P. 8h.p., Mabon variable gear, Binks carburetter, speedometer, etc., very fast, small mileage £80, or offer; Darlington.—Box 6,395, c/o *The Motor Cycle.* [9529

J.E.S.

J.E.S. 1¼h.p., lamps, horn, carrier, spare tyres etc.; £32.—Wattleworth, Brausty, Whitehaven. [9886

J.E.S. (genuine) Lightweight, 180-200 m.p.g., practically new, guarantee, fully equipped; £24 private.—Box 6,437, c/o *The Motor Cycle.* [1220

Lea-Francis.

LEA-FRANCIS, 3½h.p., shop-soiled; 90 gns.—Ratcliffe Bros., 200, Gt. Portland St., W. [X9303

LEA-FRANCIS, 1918, 1921 sidecar, tax paid lamps, etc., trial; £58.—Miller, 48, Gresham Rd., Brixton. [1429

3½h.p. Lea-Francis, 1920, M.A.G., lamps, horn, etc. splendid condition, private owner, tax paid; £80 no offers.—19, Cann Hall Rd., Leytonstone, E.11. [9419

1920 Lea-Francis 3½h.p., M.A.G. engine, £75 1920 3½h.p., J.A.P. engine, £70; both licence paid, perfect condition.—The Premier Motor Co., Aston Rd., Birmingham. [X9335

1920 (new 1921) 3½h.p. M.A.G. Lea-Francis, 800 miles, like new, well equipped, full trial; buying combination; £75, no offers; appointment.—96, Richmond Rd., Cardiff. [9111

1920 Lea-Francis Combination, 3½h.p. M.A.G. engine, 2 speeds, clutch, and kick starter lamps, horn, tools, and speedometer, Easting wind screen; £85.—John C. Beadle, Ltd., Dartford. [8440

LEA-FRANCIS and Montgomery Sidecar, 1920, 3½ h.p. twin M.A.G. engine, 2-speed, hand and foot clutch, kick start, tax paid, horn, accessories, etc., chain drive throughout, indistinguishable from brand new bargain, £92, or offer.—Dental, 769, Romford Rd., Manor Park, London, E. [9609

Levis.

DAN GUY, Weymouth.—Levis 1921 models in stock £60. [0557

1921 2-speed Levis, as new; £55.—132, High Rd., East Finchley. [9386

1919 Levis, Model E, 2-speed; £40.—Lake, 7, Ellington Rd., Ramsgate. [9555

LEVIS 2¼h.p. 2-stroke, tax paid; £28.—Speechley, 86, Churchfield Rd., Acton, W.3. [1070

LEVIS Popular, 1921, lamps, licence, perfect; £47 2, Chudleigh Rd., Ladywell, S.E. [9785

1920 Levis, splendid condition throughout, accessories, licensed; 35 gns.—Fersfield, Westbury Rd., New Malden. [1110

LEVIS 2¼h.p., 1920, 2 speeds, Dunlops, P. and H. mech. horn, splendid condition; £48.—Brannan, 14, King's Rd., Cardiff. [X9275

LEVIS 2¾h.p., 2-speed, fully equipped, spares, tax paid, excellent condition; £47 cash.—Glanville, Cranbill Rd., Street, Somerset. [1095

LATE 1919 Levis 2¼h.p., lamps, etc., splendid condition, expert examination invited; £42.—Pullen, 23, Euston Av., Watford. [9361

1921 Levis, complete, £10 accessories, insurance, condition perfect; £50; Triumph wanted.—Edwards, 33, Montpellier Villas, Cheltenham. [9620

LEVIS, 1920, splendid condition, fully equipped electric lighting; £42.—Peacock, Park House, Brabscombe Gardens, Winchmore Hill, N. [9800

2¼h.p. Levis Popular Model, just been thoroughly overhauled and new tyre fitted, lamp, horn, and licence paid; £40.—Rugeley Garage, Rugeley. [9375

LEVIS 1919 2¼h.p., guaranteed in perfect condition throughout, tyres unpunctured, tax, fully equipped; photo; £33.—128, London Rd., King's Lynn. [1010

LEVIS New 247 c.c. Sports Model, guaranteed speed 50 m.p.h., one of the very few in England; in stock to-day; £65.—Julian, 84, Broad St., Reading. 'Phone: 1024. [13

LEVIS, 1915, perfect order, many improvements tyres and belt excellent, T.T. bars, complete with lamps, horn, licensed; offers or exchanges.—Bush View, Hampton Wick. [93

LEVIS 1921 and accessories, tax paid; £45 cash, £9 down and 11 payments of £3/10/4.—Lamb 50, High Rd., Wood Green; 387, Euston Rd., N.W. 151, High St., Walthamstow. [97

ANNOUNCEMENT of a New Levis Model.—We are now supply the Model S, 2-speed with kick starter, at £70; easy payments 4% extra; immediate delivery.—The Premier Motor Co., Aston Rd., Birmingham. [X9

1921 Levis, supplied on deferred payments at 4% extra; all models in stock for immediate delivery. 2¼h.p. touring or sports models, £60; Model S, 2¼h.p., 2-speed, handle-bar controlled clutch, £6. Buy your machine direct from the Levis specialists. The Premier Motor Co., Aston Rd., Birmingham. [X9

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MOTOR CYCLES FOR SALE.

L.M.C.

1h.p. L.M.C., Bosch, lamps, horn, licensed, perfect; £14/10.—17, Heaton Rd., Mitcham. [1115

Marloe.

MARLOE, 1921, 2¾h.p. Blackburne, 2-speed, clutch, kick start, brand new, list 98 gns.; accept 68/10, or £14 down, 12 monthly payments of £5 ch.—Goad, 122, Maida Vale. 'Phone: Hampstead 353. [1457

Martinsyde.

MARTINSYDE New 1921 Combinations; catalogue price.—Bunting's Motor Exchange, Wealdstone. [1258

921 Martinsyde Combination, done under 1,000 miles, unscratched, as new; £130.—Clarke, Queen ., Leuth. [9643

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GENT, T. J. Ross, 86, High Rd., Lee, S.E. 'Phone: Lee Green 744.

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19 Matchless, Victory model, spare wheel, lamps, and horn, exceptionally good 8h.p. J.A.P. ine; £90.—Tassell, 1a, Bloomfield Rd., Plumstead, 18. [8723

21 Matchless, Easting Royal screen, Magdyno, Lucas electric horn, trip speedometer, legshields, new; £187.—Ward, 51, Upper Richmond Rd.,ney. [1402

MATCHLESS 1920 Model H Combination, with Lucas dynamo lighting; £145.—Newnham Motor 223, Hammersmith Rd., W.6. 'Phone: Hammerth 80. [9974

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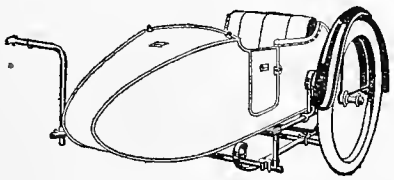

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MATCHLESS Combinaiton, 1920, M.A.G. 8h.p., hood, wind screen, speedometer, lamps, spare wheel complete, all on; £145.—Letter only, 40, Deacon Rd., Kingston-on-Thames. [X9307

MATCHLESS 8h.p. J.A.P. Combination, 1914 model, excellent condition, tax paid.—Can be seen at Wheeler's Garage, Church St., Chelsea.—Number of spares and accessories. Offer wanted. [1410

1920 Matchless, Model H, Lucas Magdyno, hood, speedometer, and all accessories, just overhauled, in perfect condition, any trial; £135.—J. Tassell, 1a, Bloomfield Rd., Plumstead. [1393

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WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

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Metro.

METRO-TYLER 2¾h.p., 2 speeds; no reasonable offer refused; must be sold.—72, Fiobisher Rd., Hornsey. [1136

METRO-TYLER, 1921, brand new, 2-speed, all enclosed, never been ridden.—317, King St., Hammersmith. [9713

METRO-TYLER, Dec., 1920, enclosed type, all accessories, little used, perfect; £60, or exchange 4h.p. —Fernbank, Boston Rd., Brentford. [9364

1920 (June) Metro-Tyler 2-stroke, 2-speed, discs, electrically equipped, very sporty and smart, cost £73; accept £40; guaranteed.—Wagstaff, Barnhurst Farm, Wolverhampton. [1067

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5-6h.p. Minerva, mag., all accessories, tax paid; ride away; £20, or nearest offer.—H. G. Hills, 24, Graham Rd., Wealdstone, Harrow. [9416

MINERVA 2¾h.p., C.A.V. mag., new tyres, belt, good running order, low machine; £10.—68, Gloucester Rd., Camden Town, N.W. [1019

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MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

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MOTOSACOCHE, little used, fine condition, new Dunlops, licensed, spares; £20, or exchange higher power.—Butt, 4, Young's Rd., Alton, Hants. [9516

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NEW COMET, as new, 2-stroke, for sale, 2-speed, clutch, kick starter, faultless, done 200 miles only, just run in; owner bought car; price £60; seen any time.—Merryfield, 245, Gray's Inn Rd., W.C.1. [0697

New Hudson.

1920 2¼h.p. New Hudson, 2-speed, under 2,000, as new, any trial; £49.—Moon, Harewood Grove, Darlington. [1323

NEW HUDSON, 2-speed, 2-stroke, cost all on £80 June last; first £55 secures.—Butler, 11, Havelock Rd., Hastings. [9495

NEW HUDSON 2¼h.p., Model de Luxe, Oct., 1920, superlative condition, equipped, licensed; offers.—McDougall, Coopersale, Epping. [1285

NEW HUDSON 1919 4h.p. Combination, 3-speed countershaft, kick starter, complete with electric lamps, Klaxon, and accessories, in perfect running order; any trial; cheap; what offers?—Clay, Manorcroft, Dewsbury. [X9211

NEW HUDSON Lightweights, all models, on view: Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Deferred payments arranged. Catalogues.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [3936

New Imperial.

1919 New Imperial 2¾h.p., oversize tyres; £35.—Bond, Dental Offices, Newbury. [9462

NEW IMPERIAL 2¾h.p., latest 1921 model; £70.—Marston, 31, Bridge St., Chester. [9983

NEW IMPERIAL, 2¾h.p., Aug., 1919, 2 speeds; £48.—104, Lillington St., Victoria. [1240

2¾h.p. New Imperial, clutch, all spares, fine order; £45.—Judd, St. Margaret's, Sunbury. [9646

1920 New Imperial 2¾h.p., 2-speed, splendid condition; £38.—45, Pelham Rd., Wimbledon. [1104

1920 8h.p. New Imperial Combination, new condition; £95; exchanges.—9, Church Rd., Willesden. [9897

NEW IMPERIAL-J.A.P. 2¾h.p., 1915, 2-speed, excellent condition; £33.—Booth, 37, Hightown, Crewe. [X9291

1917 2¾h.p. New Imperial-Jap, clutch, kick starter, 2-speed gear, recently overhauled; £42, or nearest.—Bloodworth, 13, Church St., Stamford. [9488

NEW IMPERIAL, 1920, 2¾h.p. J.A.P., 2 speeds, clutch, kick start, lamps; £52/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [1460

1916 New Imperial-J.A.P. 2¾h.p., 2-speed, new tyres, perfect condition, little used; £33.—Morling, 9, Blatchington Rd., Seaford, Sussex. [9846

NEW IMPERIAL (1917), 2¾h.p. J.A.P., 2-speed, lamps, horn, tax; £40, or exchange 2-stroke equal value.—Aitken, Wickliffe, Milesmark, Dunfermline. [9778

NEW IMPERIAL 1919 2¾h.p., 2-speed, lamps, horn, new tyres, spare belt and chain, tax, insured; owner going abroad; £42/10.—49, Osbaldeston Rd., N.16. [9662

1920 New Imperial 8h.p. Combination, Klaxon, lamps, splendid outfit; £85.—C/o Bradmore's, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [8059

NEW IMPERIAL 2¾h.p., 1919, 2-speed, new tyres, overhauled, perfect condition; £50, or offer.—Write appointment, J. Sewell, Jun., 22, Springfield Rd., Wimbledon. [9636

NEW IMPERIAL 1919 8h.p. Combination, excellent condition throughout, lamps, horn, speedometer, wind screen, tax, etc.; £115; reasonable trial.—Hora, Rainsford Rd., Chelmsford. [9550

NEW IMPERIAL 1919 8h.p., complete with M.P. cantilever sidecar, lamps, tools, etc., in tip-top order; £100; another bargain.—Coppen, Allan and Co., 89, Gt. Portland St., W.1. [9759

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LATE 1919 New Imperial Millford Combination, electric lighting, luggage grid, overhauled, registered and insured for 1921, bon condition; any test; £120.—Percy R. Buckingham, Marine Garage, Worthing. [9415

1920 2¾h.p. New Imperial, 2-speed, clutch, kick start, fully equipped, licensed, excellent condition; £50; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1342

NEW IMPERIAL-J.A.P. 1920 8h.p., P. and H. lamp set, Klaxon horn and Mills-Fulford Corvette sidecar, Cameo wind screen, hood, excellent condition throughout, low mileage and very carefully used; £120; insured.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1330

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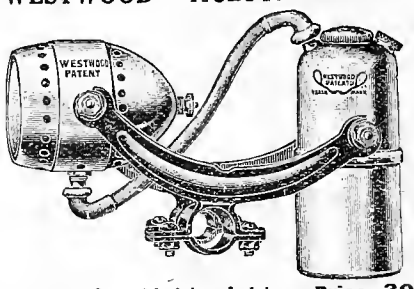

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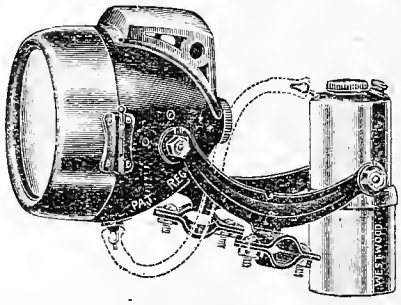

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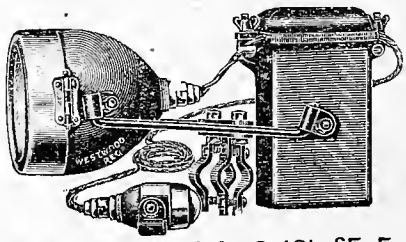

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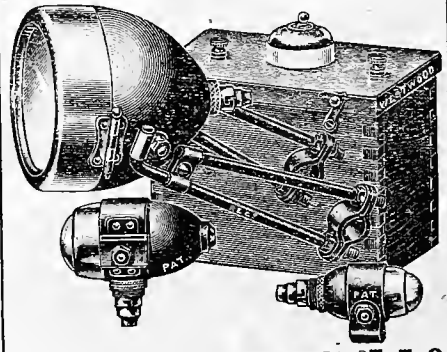

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ALL Models for Immediate Delivery at new reduced prices

BIG Four, chain drive, £120; Model 16H, 3½h.p., 3-speed, T.T., chain drive, £115. Write for revised price list; easy payments only 4% extra. Buy you machine direct from the Norton specialists, The Premier Motor Co., Aston Rd., Birmingham. [0625

NORTONS are down. Order from Julians, of Reading. [1333

DAN GUY, Weymouth.—Norton Big 4 combination, £177; sports model. £132; from stock. [0696

NORTON Motor Cycles.—Can deliver anywhere; early dates.—Kelly, Bachelor's Walk, Dublin. [3973

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [5006

3½h.p. Sports Norton, Model 168, brand new; list price £132; sacrifice £120 to clear.—Ames, Lynn Rd., Wisbech, Cambs. [1027

1921 T.T. Norton, fully equipped, comfortably exceeds 60, Mabon clutch to fit; £85.—Landless, 48, Leigh Rd., Hale, Cheshire. [9854

NORTON T.T., late 1920, lamps, horn, etc., specially tuned and guaranteed perfect; offers, or exchange.—Reg. Green, 32, High St., Reigate. [1001

NORTON 3½h.p., Brooklands, N.S.U., 2-speed and free engine, lamps, horn, Cowey, tax paid; £75.—14, Fairlawn Rd., Montpelier, Bristol. [9464

NORTON 1921 3½h.p., Isle of Man model, 3-speed, exceptionally fast, perfect condition; real bargain £115; cash wanted.—68, Corporation St., Stafford. [9873

T.T. Norton, 1920, Philipson, lamps, Klaxon, spare new belt, licensed and insured, good condition, fast; £95.—A. E. Wickham, The Limes, Devizes, Wilts. [9560

1921 Big Four Norton, licensed, many spares, mileage 200, indistinguishable from new; 87 gns.; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1343

NORTON Big Four, used 196 miles, complete with Cowey speedometer, Lucas lamps, Lucas horn, licence paid, indistinguishable from new; £120; bargain.—Marston, 31, Bridge St., Chester. [9977

1921 Big 4 Norton Combination, Henderson Elite sidecar, Easting, Lucas accessories, Bonniksen speedometer, Brooks cantilever spring saddle, perfect condition; £148.—Pencil Works, Stapleford, Notts. [X9250

1921 Big Four Norton Combination, yellow sporting sidecar, all lamps, D.A. outfit, Bonniksen speedometer, 700×80 tyres, a fast and sporting outfit, in very good condition throughout; £130.—Bryan Jefferys, Castle Green, Kendal. [X8767

NORTON 1921 3½h.p. 3-speed Sports Model, very fine condition, and complete with lamps, horn and licence; £107/10, cash only; approval anywhere.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9269

£40 under cost.—July, 1921, Norton Big 4, De Luxe sidecar, dynamo lighting, Easting screen, speedometer, leg shields, oversize tyres, Brooks B600, cantilever saddle, insurance and tax, absolutely as new; £195.—R. Hay-Will, Buckhurst Garage, Bexhill-on-Sea. [882

WANTED, purchasers for any model of new 192 Norton motor cycles and combinations, for immediate delivery. Your present machine taken part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0640

NORTON 1921 3½h.p., I.O.M. type, large head lamp, extra wide tank, yellow sporting sidecar, horn, speedometer, tax paid, absolutely indistinguishable from new, mileage 500; £155; deferred payments desired.—Parker's, Bradsbawgate, Bolton; also 24, Deansgate, Manchester. [9511

1920 Big Four Norton Combination, Henderson sidecar, fully equipped, Cowey horn, speedometer, large P. and H., electric rear and sidecar, Cameo wind screen and cover, small mileage, privately owned, as new, in perfect condition; any trial; £115.—Box 6,43, c/o *The Motor Cycle*. (D) [9710

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N.S.U. 3h.p., overhead inlet, long exhaust, tax paid; £20.—L. Sharp, 32, Mason's Hill, Bromley, Kent. [94

N.S.U. Lightweight, splendid running order; £2 take push cycle part.—57, Kenbury St., Camberwell, London. [99

N.S.U. 3½h.p., 2-speed, Bosch, Senspray, Triumph pattern tank, nearly new tyre, lamps, horn £18/10.—Knight, Church St., Reigate. [12

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39 GNS.—1921 N.U.T., Lucas Magdyno lighting, all on, as new; any trial.—4, Elm Gardens, Hammersmith. [9856

N.U.T.-J.A.P. 3½h.p., o.h.v., Amac, 1921, just overhauled, lamps, tax paid; £38 or near.—3, Albert Rd., Peckham. [9446

N.U.T.-J.A.P., Lucas dynamo lighting, brand new, for immediate delivery, shop-soiled only; £125.—Pollard, Broomfield Rd., Chelmsford. [X9269

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, as new; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9591

N.U.T. 1920 3½h.p. Twin, Lucas Magdyno, in splendid order, tax paid; £90.—Elce and Co., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

3-6h.p. N.U.T., 3-speeds, clutch, kick start, as new, will exchange Triumph or any good make up to 4h.p., or sell £82 cash; any day from 4 to 8.—Austin, 5, High St., Harlesden, N.W.10. [1446

921 3½h.p. N.U.T., Magdyno, horn, Tan-Sad, watch, licensed, mileage 100, absolutely unscratched; £110; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1344

O.K.

921 O.K. Junior, licensed; bargain, £32/10; perfect.—373, Katherine Rd., Forest Gate. [9816

O.K. 2¾h.p., 2-speed, lamps, tools, tax paid, new condition; £35.—13, Crook Log, Bexleyheath, S.E. [9792

O.K. 1917 2-stroke, good little 'bus, in top-hole order; £23; snip.—33, West End Lane, Kilburn. [1449

O.K.-VILLIERS, completely equipped, mileage under 800; £34.—Sleight, 26, Granville Rd., Grangetown, Yorkshire. [9779

O.K., 1920, 2-speed, accessories, excellent condition, trial; exchanges; £45, offers.—Elmwood, Corringham Rd., Stanford-le-Hope, Essex. [1218

O.K. Junior 1920 2½h.p., 2-speed, 2-stroke, condition perfect, tax, insurance, accessories; £39/10, bargain.—288, Sangley Rd., Catford, S.E.6. [1308

Omega.

3h.p. Omega-Jap, 2-speed, going order; £30; N.W. district. — Letters, Box 6,434, c/o *The Motor Cycle.* [9773

OMEGA-J.A.P. 1920 2¾h.p., 2-speed, long exhaust, all accessories.—Evans, Chemical Hall, St. Clears, Carmarthenshire. [9682

P. and M.

P. and M., 1917, as new, kick start, all accessories; £50.—61, Commercial Rd., Lambeth. [9824

1918 Phelon and Moore, tax paid and insurance; £50.—Fox, 12, Conduit St., Lichfield. [X9322

4h.p. P. and M., 1912, 2-speed, overhauled, ride away; £18.—302, London Rd., Croydon. [1160

1918 P. and M., 2-speed clutch, kick start, perfect order; £47.—56, Park Lane, Kidderminster. [1221

PHELON and Moore 3½h.p., 2-speed, new tyre, good condition, licensed; £35.—Rogerson, Newtown, Wigan. [X9255

P. and M., 1918, guaranteed as new; £47/10; dealers invited.—Scott, 59, Murrey Rd., South Ealing. [9710

P. and M., 1918, with 1921 sidecar, lamps, licence, good condition; £69.—Warnes, 46, Churchfield Rd., Acton. [1297

P. and M. Cycle for sale, 1916, 3¼h.p., very little used.—Apply, Transport Manager, Lipton, Ltd., Cecil Rd., E.C. [9436

P. and M. 3½h.p., late G.K. model, overhauled and enamelled, lovely condition, all on; £42.—38, Prince St., Deptford, S.E.8. [9849

1921 P. and M., absolutely as new, mileage under 500; very great bargain, 90 gns.—Julian, 84, Bath St., Reading. 'Phone: 1024. [1334

1918 P. and M. Combination, just overhauled and re-enamelled, perfect; £65, or near.—J.B., 141, Constantine Rd., Hampstead, N.W.3. [9696

P. and M. (Sept., 1920), mileage 2,400, licensed; £75 sold, or, with sidecar and electric lighting, £80.—The Layton Garages, London Rd., Bicester. [1391

1920 3½h.p. P. and M. Combination, in really sound condition, speedometer, all lamps and accessories; £140, or near offer.—Linington, 54, Commercial Rd., Portsmouth. [1066

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P. and M. (Nov., 1919) and Sidecar, privately owned, lamps, horn, speedometer, wind shields, recently overhauled, tax paid and insured; £87.—Mucklow, 14, Peckwick Park Rd., Harrow. [9852

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PEUGEOT V.S. 5-6h.p. Twin, single gear, B. and B., Bosch; £20.—151, High Rd., Willesden. [9936

6h.p. Peugeot C.B. Combination, hood, screen, lamps, speedometer, splendid condition, just overhauled; £40; bargain; tax paid; trial by appointment.—135, Leighton Rd., West Ealing, London, W.13. [1023

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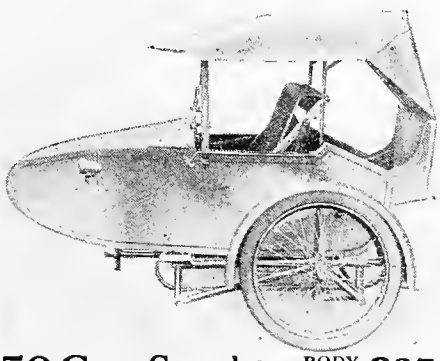

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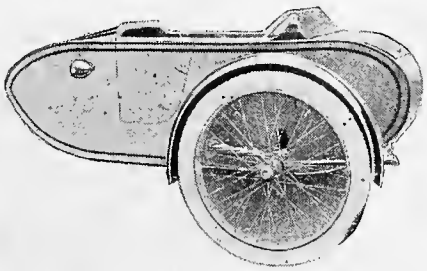

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Sidecar body and chassis (finished in any one of the six standard colours). Coverall apron, complete with turn buttons. Adjustable lamp bracket. Aluminium step plate. Self-locking sidecar wheel stand. 26in. or 28in. wheel tyre. Four point suspension, complete with steel sidecar lugs for attachment to READING STANDARD, SUNBEAM, 3½ & 8 h.p. ZENITH, ENFIELD HARLEY-DAVIDSON, TRIUMPH, DOUGLAS. 4 h.p. BLACKBURNE. 8 H.P. B.S.A., 4 & 6-7 H.P. RUDGE, 6 H.P. HENDERSON, EXCELSIOR *(American)*, BRITISH EXCELSIOR, INDIAN, ACE, MATCHLESS, ARIEL ROVER, A.J.S., JAMES, and D.T. Painted in any one of six colours, Blue, Green, Red, Black, Grey, or R.S. Green.

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MOTOR CYCLES FOR SALE.

Scott

19 21 Squirrell Scott, shop-soiled only; £115.—Fox, Central Garage, Lichfield. [X9323

SCOTT, 1920, excellent condition, Binks, tax; £85.—Sixby, 166, Effra Rd., Wimbledon. [9632

F.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (near Hampstead Tube Station). [9673

SCOTT, 1920, T.T., sporting sidecar, lamps, licence, speedometer; £100.—Anderson, Waltham Abbey. [9400

SCOTT Combination, 1915, wind screen, Klaxon, electric light, nice condition; £55.—20, Denison Rd., Ealing. [1077

19 17 3¾h.p. Scott Combination, good as new; £57/10.—28, Woodford Rd., Forest Gate, Stratford 2598. [1097

SCOTT Combination, Cannelet Minor sidecar, Cameo wind screen, splendid condition; £60.—53, Underhill Rd., Dulwich. [9844

SCOTT, No. 3367, 2-speed, K.S., excellent condition; £60, offers; exchange for single and cash.—28, Bourne Rd., Bexley. [1413

19 20 Scott Combination, electric lighting, many spares, excellent condition; £100. — Cockell, Holly Lodge, Dalston, E.8. [1210

19 19 Scott, semi-T.T. combination, Binks, all on, splendid condition, tax paid; £110. Coventry district.—Box 982, c/o *The Motor Cycle.* [X9117

SCOTT, 1920, T.T., stored 1921, mileage 2,000, lamps, horn, speedometer, carefully handled; what offers?—Davis, Albert St., Harrogate. [1326

SCOTT Combination, 1920, splendid condition, recently overhauled, owner buying car; £110, or nearest offer.—Jones, 1,010, Chester Rd., Stretford, Manchester. [9684

19 16 Scott Combination, discs, lamps, fully equipped, smart sporting outfit, reliable; any trial; £65, or close offer.—Borough Arms, Chickeral Rd., Weymouth. [1173

19 20 (late) Scott, mechanically perfect, plating and enamel as new, electric light, all spares; very sound combination for £130.—Capt. Spear, 80, East Sheen Av., East Sheen. [9465

SCOTT 1920 Sports Model Combination, fully equipped, including licence, not used since Easter, 1921; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. [8229

19 20 Scott, and Watsonian sidecar, engine No. 4222, P. and H. lamp, engine just overhauled; £100.—Trial 8.30 to 6 any day at Claygate Motors, Hare Lane, Gt. Claygate, Surrey. [1470

19 21 Scott, Magdyno lighting, electric horn, speedometer, mileage 500, splendid turnout; also 1920 2¾h.p. Douglas, K.S., clutch, wind shields, electric light, mileage 2,000; offers.—Coombes, Grove Park Terrace, Harrogate. [9473

SCOTT Coachbuilt Combination, Sept., 1913, engine 2160, good condition externally and mechanically, lamps, horn, tools, tax paid, new rear Dunlop and main chain, owner moving; cash offers wnated for quick sale.—F. Caiger, Queen Camel, Somerset. (D) [9490

GET Your New 1921 Scott from the Layton Garages, who can give immediate delivery of any model. Exchanges quoted, balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, and London Rd., Bicester. [8204

Singer.

SINGER 4h.p., 2-speed, kick start, good condition; £27.—Rogerson, Newtown, Wigan. [X9256

SINGER, 1914, 3½h.p., 3-speed, clutch, lamps, horn, £4 tax paid; £32/10.—317, King St., Hammersmith. [9712

4¼h.p. Singer and C.B. Sidecar for sale, 2 speed and clutch, requires new cylinder; £23, no offers.—E. Moss, 79, High St., Marylebone, W.1. [9718

4½h.p. Singer Combination, 2 speeds, clutch, Advance pulley, pedal start, electric lighting, good tyres, spare belt, recently overhauled; ride half way to purchaser; must sell cheap, having bought car.—Booth, East View, Trawden Forest. [1013

Sparkbrook.

SPARKBROOK 2½h.p. Lightweight, new and fully guaranteed, reduced to £50.—M.A.A., Ltd., 89, Wigmore St., W. [9346

SPARKBROOK, late 1920 2-stroke, 2-speed, fully equipped, good condition; £55, or offers.—13, Coronation Rd., Bridgwater. [1176

Sun.

£32; Sun-Vitesse 1915 2-stroke, discs, lamps, tax paid.—29, Old Ford Rd., E.2. [1031

SUN-VILLIERS, 1916, newly enamelled black and gold, 2-speed, good tyres; £29.—Derrington, Grafton Rd., New Malden. [1422

19 14 Sun-Villiers 2-stroke, in good running order, new piston and main bearings just fitted, lamps, horn, tax paid; £27.—F. C. Lingley, Woodbridge, Suffolk. [1315

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. B27

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Sunbeam.

1915 3½h.p. 3-speed All-chain Sunbeam and Sidecar, Lucas lamp, perfect condition; £75.—Fox, 12, Conduit St., Lichfield. [X9320

LATE 1920 3½h.p. Sunbeam, Lucas lamps and horn, tax paid, complete, perfect order; £128.—Box 6,444, c/o *The Motor Cycle*. [1229

SUNBEAM 3½h.p. Combination, brand new, for immediate delivery, shop-soiled only; £175.—E. Pollard, Bloomfield Rd., Chelmsford. [X9268

6h.p. Sunbeam Combination, engine rebushed July, splendid condition, all accessories, hood, Low generator; £115.—8, Leeson St., Leicester. [X9317

1919 3½h.p. Sunbeam, just overhauled, re-enamelled, new tyres, all accessories, looks and runs like new; £100.—17, St. Charles Sq., N. Kensington, W.10. [1011

LATE 1919 Sunbeam 3½h.p., guaranteed perfect, appearance as new throughout, and fully equipped; £90.—Sexty, Pool Farm, Tibberton, Glos. [9574

1921 3½h.p. Sunbeam Combination, brand new. Lucas lamps, tax paid, makers' guarantee; 150 gns.—Pike, 102a, Church St., Chelsea. 'Phone: Ken. 137. [1454

SUNBEAM Solo, 1919, lamps and horn, in splendid order, smart machine; £75.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9151

1921 Sunbeam 3½h.p., mileage under 100; grand opportunity for person requiring machine as new; £135.—Julian, 84, Broad St., Reading. 'Phone: 1024. [1337

8h.p. Sunbeam Combination, Easting, M.A.G. engine, excellent tyres, interchangeable wheels, luggage grid, speedometer, tools, etc.—Ribbleton Mills, Ribbleton Lane, Preston. [9991

1920 3½h.p. Sunbeam with Sunbeam sidecar, condition as new, Cowey horn, and trip speedometer, new heavy Dunlop back tyre; £160—69, Blenheim Gardens, Wallington. [9426

SUNBEAM Combination, black and gold, 1919, lamps and horn, been thoroughly overhauled; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9150

SUNBEAM 3½h.p., 1917, and sidecar, 1921 chains and engine parts, accumulator lighting, Easting, heavy Dunlops, tax, perfect condition; nearest £85.—29, Dalberg Rd., Brixton. [1099

1921 Sunbeam 8h.p. Combination, Magdyno lighting, spare wheel, luxurious outfit, splendid condition, cost £297; what offers; owner buying car.—Rev. Kirkley, 16, Ventnor Villas, Hove. [1083

SUNBEAM 1920 8h.p. and Sidecar, Lucas dynamo lighting, legshields, mechanical horn, knee grips, licence paid, used very carefully, small mileage; bargain, £165.—Marston, 31, Bridge St., Chester. [9975

SUNBEAM 1921 3½h.p. Sports Model, fully equipped tax paid, absolutely indistinguishable from new; £145; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9596

SUNBEAM 1918 3½h.p. Model, with sidecar, complete with all accessories, excellent condition; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9595

SUNBEAM Latest 3½h.p. Touring Model, £155/8; 3½h.p. sports model, £152/5; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1332

8h.p. Sunbeam Combination, 1919, dynamo lighting, electric and mechanical horns, spare wheel, hood, screen, luggage grid, Tan-Sad, tools, insurance, licence, perfect; £155.—Bromwich, 1, Princess Rd., Bournemouth. [1164

1921 3½h.p. Sunbeam Combination, as new, delivered May, low mileage, Bonniksen, speedometer, lamps, disc wheels, hood, screen; £200, or offer; owner buying car.—E. H., Oakfields, Asbby-de-la-Zouch. [9716

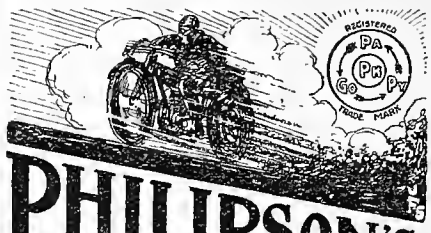
SUNBEAM Combination, late model, 8h.p. M.A.G., 3 speeds, clutch, kick starter, interchangeable wheels, complete spare wheel, luggage grid, lamps, speedometer, licence, hooter, apron, etc.; £115.—63, Solon Rd., Brixton. [1321

SUNBEAM 1920 3½h.p. Sports Model, Caucelet sporting sidecar, fully equipped, Ace discs all round, tax paid, first-class condition throughout; £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9599

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

SUNBEAM, 1921 (April), 3½h.p. combination, mileage under 600, tyres unpunctured, Lucas Magdyno, Cowey horn, Bonniksen trip speedometer, Easting wind screen, insurance to April next; £170.—Self, Santoza, Rickmansworth Rd., Pinner. 'Phone: 2776 Wall. [1365

SUNBEAM 1920 8h.p. Combination, Magdyno lighting, electric horn, Bonniksen speedometer, mud shields, Ace discs, 760×90 cover on rear wheel, tax paid, indistinguishable from new; £195; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9597



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MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 8h.p., 1920, Magdyno, electric horn, mirror, V and usual wind screens, mahogany box and travelling case for luggage grid, Tan-sad, spares, etc., mileage 2,500, insured £281 until June 1922; sell £210; offers, or exchange small car, cash adjustment.—H., 22, Brunel St., Burnley. [1036

SUNBEAM 1921 Latest Type 3½h.p. Solos, combinations, and sports models in stock. Exchanges quoted. Second-hand Sunbeams particularly asked for. Balance by extended payments if necessary. Enquiries invited and treated with the utmost courtesy.—The Layton Garages, London Rd., Bicester, nr. Oxford. [8230

SUNBEAM 1920 8h.p. Model, Lucas dynamo, extra large Henderson Elite sidecar, interchangeable wheels all round, bulb horn, spare wheel and tyre, Bonniksen speedometer, tax paid, first-class condition throughout; £175; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9598

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PREMIER Motor Co. for new Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; type H. 4h.p. 3-speed, £115; type S.D., chain drive, £125; sidecars from £20 to £50. Write for particulars of our easy payment system. You will be satisfied if you buy your machine direct from the Triumph specialists, The Premier Motor Co., Aston Rd., Birmingham. [062

TRIUMPH 1920 4h.p., all accessories; £85.—41, Gateley Rd., Stockwell. [972

TRIUMPH T.T., 1919, horn, tools; £65.—Smith, c/o Dobson, Yarm, Yorks. [X911

TRIUMPH Junior, 1919, perfect order, tax; £48.—Saxby, 166, Effra Rd., Wimbledon. [963

3½h.p. T.T. Triumph, fast and reliable; 22 gns.—Ramsdens, May Bell Av., Blackpool. [965

TRIUMPH Combination, 1917, ride away; £68.—51a, Goldhawk Rd., Shepherd's Bush. [983

£60.—Triumph, 1917, splendid order.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [137

1918 Countershaft Triumph: great bargain, £60.—374, Grove Green Rd., Leytonstone, E.11. [125

TRIUMPH, late 1918, splendid condition; £55; extras.—278, Crystal Palace Rd., E. Dulwich. [962

APRIL Triumph Chain Combination, as new, tax, accessories; £139.—Moss, Beecham's, St. Helens. [999

LATE Countershaft Triumph, excellent appearance, accessories; 55 gns.—40, Aynhol Rd., W.14. [992

£25; Triumph 3½h.p., equipped, licensed, rebushed, perfect.—Newman, 82, Pepys Rd., Wimbledon. [10

3½h.p. Triumph Coachbuilt Combination, 2-speed K.S., licensed; £34.—17, Heaton Rd., Mitcham. [11

TRIUMPH, C.S., fine appearance, discs, all on; £6 after 6.—Preston, 101, Mortimer Rd., Dalston, N.1. [94

TRIUMPH Coachbuilt Combination, recently overhauled; £60.—E. Harris, Ingram House, Stockwell, S.W. [93

TRIUMPH, 4h.p., latest S.A. gears, all on, £6 also sidecar, £70 lot.—25, Ringstead Rd., Catford. [97

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [05

TRIUMPH Combination, excellent condition, all tax paid; £105.—115, Fernhead Rd., Maida Hill, N.W.9. [96

1920 Triumph, new tyres, all accessories, condition as new; £30.—17, St. Charles Sq., N. Kensington, W.10. [10

TRIUMPH (renovated £95), mag., under 500, condition excellent; £65.—Box 6,442, c/o *Motor Cycle*. [12

59 GNS.—1918-19 countershaft Triumph, equipped new Goodyears, perfect.—20, Treen Av., Hogg Corner, Barnes. [11

TRIUMPH Late 1918 Combination, wind screen, speedometer, lamp, tools, spares.—King, 23, North Cross Rd.; Dulwich. [98

1918 W.D. Triumph, 4h.p., K.S., 3-speed, lamps, generator, tools, fully licensed; £68/10.—Cr Billingshurst, Sussex. [98

TRIUMPH 2-stroke, 1921, as new, overhauled and renovated by makers; £52; quick sale.—Bolw 18, Cleveland St., W.1. [10

TRIUMPH 3½h.p., recently overhauled, new m good running order, fast, tax paid; £28.— Burton, Burford, Oxon. [91

1921 Triumph 3-speed, done 500 miles, comp lamps, horn, and licence; £98.—Cox, Eltisley Av., Cambridge. [1

LATE 1918 Triumph, 3-speed, K.S., lamps, b tax paid; any trial, 2 up; £68.—Fox, 20, Inl man Rd., Kentish Town. [1

TRIUMPH 1920 4h.p. Combination, lamps, ex tional condition; £105.—Goad, 122, Maida V 'Phone: Hampstead 1353. [1

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH Combination, 2-speeds, electric lighting, excellent condition, licensed; £27/10.—373, Etherine Rd., Forest Gate. [1437

1h.p. Triumph, 3-speed, Canoelet sidecar, lamps, 2 and licence, excellent condition; £70.—Cox, 8, Eltisley Av., Cambridge. [1275

TRIUMPH 3-speed Countershaft Coachbuilt Combination, lamps, horn, Easting, tax paid; £75.—, Dagmar Rd., Camberwell. [9626

1920 Triumph Combination, fully equipped, tax and insurance, as new; sacrifice £110.—Denby, Oakfield, Valebridge, Burgess Hill. [9864

TRIUMPH 4h.p. Countershaft Combination, 3-speed, kick start, excellent order; £67/10.—Owen, 59, Wholefield Rd., Upper Holloway. [X9372

1h.p. Triumph, 2-speed and sidecar, electric light, 2 new tyres, most reliable; £39; separate.—Adams, Barracks, Knightsbridge. [1042

TRIUMPH, 3½h.p., clutch, Philipson pulley, horn, tax paid, good tyres, runs splendidly; £25.—136, Avensbury Rd., Earlsfield, S.W. [1387

TRIUMPH 4h.p., late 1919 and sidecar: £88; guaranteed sound and in very fine order, licence paid. Marston, 31, Bridge St., Chester. [9978

1h.p. Triumph, perfect running order, just overhauled, any trial; £30, or near offer.—137, Richmond Rd., Kingston, Surrey. [1086

TRIUMPH and Sidecar, 3-speed, H.C. clutch, new tyres, disc wheels, all on; £50; Sunday morning.—36, Snells Park, Edmonton, N. [9887

LATE 1920 Triumph-Gloria Combination, all accessories, as new; £105; exchange.—C.S., 14, Paton Rd., Bow, E.3. Tel.: E. 3155. [1126

1920 Triumph, with 1920 Gloria Triumph sidecar, fully equipped; £89.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1093

TRIUMPH 3½h.p., Combination, 3 speeds, Armstrong gear, just overhauled, tax paid; £70, near offer; after 7.—22a, St. Ann's Terrace, Barnes. [9383

TRIUMPH 1919 Combination, screen, excellent condition; £95.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9961

TRIUMPH Gloria, 1920, front, side screen, grid, electric lighting, legshields, spares, perfect order; £45.—28, Hambledon Rd., Southfields, S.W. [9724

COUNTERSHAFT Triumph, fitted with new engine and S.A. gear box, complete, machine as new, guaranteed; £75.—33, Hackford Rd., Brixton. [1186

TRIUMPH 1911 Clutch, C.B. sidecar, lamps, speedometer, complete, tax paid, good condition, ride only; £40.—Marett, 13, Wellesley Rd., Slough. [9547

TRIUMPH T.T., 1919, splendid condition, fast and reliable, Lucas lamps and horn; seen any time; £.—Four Crosses, Market Drayton, Shropshire. [X8876

1921 Model H Triumph, coachbuilt sidecar, all accessories, spares, carefully driven, cost £169; quick sale £130.—1, Endsleigh Gardens, Ilford. [X9214

TRIUMPH, new 1921 model, shop-soiled, 100 gns.; also perfect 4h.p. combination, fully equipped; 90 gns.—Longman Bros., 17, Bond St., Ealing. [1268

TRIUMPH, 1914, 3-speed, clutch (hub), underslung, new bulbous back, coach, smart lot; £45; exchanges.—Taylor, 637, Seven Sisters Rd., Tottenham. [1082

4h.p. Triumph Combination, 1914, in splendid condition, Easting screen, speedometer, lamps, etc.; £ exchange.—85, Dalberg Rd., Brixton, S.W.2. [1041

1918 Triumph Combination, fully equipped, Klaxon, etc., tax, insurance paid, uncrated 1919, splendid condition; £100.—Holt, Stockwell Orphanage, S.W.9. [9484

1920 Triumph Combination, hood, all accessories, aluminium footboards, speedometer, etc.; £100, offer.—17, St. Charles Sq., N. Kensington, W.10. [1005

1914 3½h.p. Triumph C.B. Combination, 3-speed and clutch, in excellent condition, speedometer, horn, £46; must sell.—F. C. Lingley, Woodbridge, Suffolk. [1314

TRIUMPH, 1916, countershaft, 4h.p., K.S., clutch, 3-speed, specially tuned, tax paid, lamps, horn, watch; bargain, £52.—33, West End Lane, Kilburn. [1450

1920 Triumph 4h.p., De Luxe sidecar, P. and H. lighting set, 3 new tyres, tools, 35/- horn, etc., perfect condition; accept 100 gns.—Stones, Green Lane, Derby. [9409

TRIUMPH 3½h.p., drop frame, wide tank, T.T. bars, new wheels, latest carburetter, tip-top condition, lamps, horn, tax paid; £37/10.—Clinton, Cash's Lane, Coventry. [X9384

TRIUMPH and Sidecar, 3-speed, convert from pedal to kick start, footboards, excellent condition; £ or reasonable offer.—C. Nield, The Ash, Audlem, Cheshire. [9912

1919 Triumph Combination, just overhauled, in perfect order and new condition, Easting, licence, insurance paid July, 1921; £95.—3, Winslade Terrace, Southampton. [9603

1918 Triumph, 3-speed countershaft, Miller's lamps, generator, horn, pump, tools, Dunlop tyres; offers £65.—Chambers, 61, Raynton Rd. Enfield Wash, Middlesex. [9823

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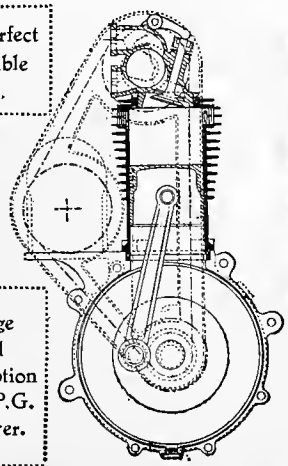

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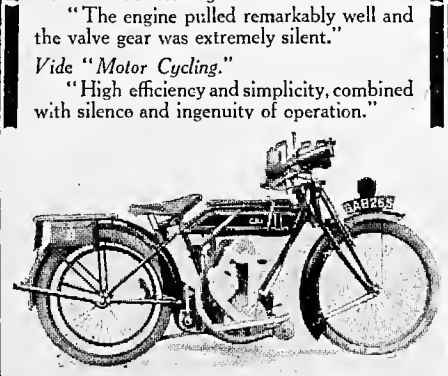

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Triumph.

1918 Triumph Combination, 4h.p., 3-speed, Sturmey-Archer, clutch, kick start, all accessories, good condition; £85; after 6 p.m.—22, Arbuthnot Rd., New Cross, S.E. [9928

1912 3½h.p. Triumph, clutch, licensed, equipped, Mandes overhauled May, excellent condition; by appointment; £38, or near offer.—Nash, 56, Barcombe Av., Streatham. [9533

TRIUMPH, countershaft, 4h.p., 3-speed, enamel, plating, and mechanism, splendid condition, lamps, horn, tax paid; £65.—30, Crystal Palace Park Rd., Sydenham. [1212

4h.p. Triumph Combination, 3 speeds, clutch, all lamps, Klaxon, splendid running order and condition; £50, or near.—246, Cambridge Rd., E.2. (Opposite Hackney Rd.). [9631

TRIUMPH 1921 Combination, excellent condition, lamps, speedometer, Easting, spare belt, etc., tax and insurance paid; £125.—Bray, 13, County Grove, Camberwell, S.E.5. [1021

TRIUMPH Junior 2¼h.p., 2-speed, splendid condition and running order, lamps, tools, new tyres, spare tube, tax paid; £48, or offers.—8, Garden St., Vauxhall Bridge Rd., S.W.1. [9444

TRIUMPH Combination, 1919, excellent condition, fully equipped, legshields, Easting, numerous spares; bargain, £75.—Lt. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [1121

LATE 1917 Countershaft Triumph, fully equipped, spares, perfect; genuine bargain; privately owned; £78.—Woolhead, Stanbridge House, Loughton, Bletchley, Bucks. [9908

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

TRIUMPH, 1919, with Gloria sidecar, Easting, horn, condition almost as new; best offer for cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9960

1920 Triumph Gloria Combination, lamps, Cowey horn, Watford speedometer, luggage and petrol carrier, tax paid; £95.—Hirst and Parsons, 374, Grove Green Rd., Leytonstone. [1363

TRIUMPH 3½h.p., direct drive, T.T. model, brand new, but slightly showroom soiled; £70 cash; approval anywhere.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9269

TRIUMPH Countershaft, 1920, Lucas, Klaxon, mileage under 3,000, tyres as new, insurance, carefully ridden solo, exceptional condition; £92.—Marriott, 32, Drayton Park, Highbury, N.5. [9443

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt models.—Jones' Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

HAVE a C.S. Triumph. 1915-16 models £50. These machines are in splendid condition, and ready to ride away. Also 1917 reconditioned throughout.—Branford, 16, Lydhurst Av., Streatham Hill, S.W. [1294

TRIUMPH 1912 3½h.p. T.T. Model, fitted with latest dropped-back frame, brand new tyres, fully equipped, tax paid, fast machine; £35.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9600

TRIUMPH 1921 4h.p., countershaft, Type H, £115; 4h.p., chain drive, £125; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1331

TRIUMPH 1921 Model H, in excellent condition, original tyres unpunctured, complete with set Lucas lamps, generators, horn, speedometer, mirror, and spares; £100.—Berry, 11, Inglewood Rd., West Hampstead. [9666

GLORIA-TRIUMPH Combination, late 1920, Triumph shields, Lucas King Road lamps, horn, Easting, Bonniksen, condition new, small mileage, owner-driven; reasonable offer. — 14, Harefield Rd., Coventry. [X9310

1914 Special Sporting T.T. Triumph, very fast, certified over 60 m.p.h., winner of numerous speed events, in good condition, fitted Lucas front, electric rear; any trial; £60.—Box 6,431, c/o *The Motor Cycle.* (D) [9769

1920 Triumph, Watsonian sidecar, Show model, enamelled dark green, enamel unscratched, all accessories, Easting wind screen, insured April, 1922, perfect condition; any trial; best offer.—Burt, 16, Princes Sq., W.2. [9832

1920 Countershaft Triumph, guaranteed in perfect condition, Watford rear driven speedometer, large Lucas lamps, Klaxon, aluminium disc wheels, tax paid, insurance fully covered till Feb., 1922; £82, or offer.—49, Well St., Hackney, E.9. [9621

TRIUMPH 1921 4h.p., Type H, 3-speed, completely equipped, including lamps, horn, and 1921 licence, milcage under 900, condition as new; £97/10; approval willingly.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: No. 581. [9270

1914 Triumph 4h.p. and sidecar, 3-speed, clutch, S.A. hub gear, lamps, etc., well looked after, and in perfect order, inspection, and trial by appointment, insured for £70, and tax paid; £65, bargain:—Collins, 85, Gloucester St., Pimlico, S.W.1. [9456

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 3½h.p., Bosch, B. and B., Mabon hand controlled clutch, brand new tyres, large P. and H. lamp set, horn, tax paid for year, perfect condition throughout, enamel and plating almost brand new, very fast; £23/10.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [1203

GET your new 1921 Triumph from the Layton Garages, who can give immediate delivery of any model; exchanges quoted; balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, London Rd., Bicester, near Oxford. [8205

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 Type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X9358

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 Type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Coverall apron, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

1921 Triumph-Gloria Chain Drive Combination, new pattern front mudguard, spring wheel Gloria sidecar with luggage carrier, petrol can carrier, etc., Lucas electric lighting equipment, Bonniksen speedometer, Cameo wind screen, licence paid, only done 2,000 miles with expert driver, cost £221; offered at £170 cash; no exchanges or easy payments on this machine.—The Premier Motor Co., Aston Rd., Birmingham. [X9335

Tyler.

TYLOR-PRECISION, 1914, 2¾h.p. 2-stroke, very low, tax paid; bargain, £17/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9152

Velocette.

IMMEDIATE Delivery of any model Velocette on easy payment system at only 4% extra; all models reduced £100; Model D2 £65, D3 £75; DL2 (ladies' open frame) £68. Buy your new machine direct from the Velocette specialists, The Premier Motor Co., Aston Rd., Birmingham. [X9359

GET Your New 1921 Velocette from The Layton Garages, who can give immediate delivery of any model. Exchanges quoted, balance may be paid out of income if desired. Enquiries treated personally and with every courtesy.—The Layton Garages, 30, Holywell St., Oxford, and London Rd., Bicester. [8206

Verus

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

VERUS-BLACKBURNE 4h.p. Sporting Combination, 1921, show model, used for demonstration only, Canoelet Minor sidecar, perfect condition; £100.—Galloway, Paddock, Higham, Rochester. [1131

VERUS-BLACKBURNE 1920 2¾h.p., 3-speed, special engine with side valve head, and also separate competition overhead valve head and gear, very fine condition; £87/10.—The Layton Garages, 30, Holywell St., Oxford 'Phone: 581. [8228

Villiers.

LATE 1920 Villiers 2¾h.p., 2-speed, drip feed, D.R. bars, fast, sporty machine, absolutely as new; £42, or exchange higher power to value.—Howard, 15, Barnet Grove, Tottenham. [9855

Vindec.

VINDEC Twin 5-6h.p., less belt, lamps, and licence; bargain, £20.—Marchment, Riverside, Radstock, Bath. [1037

VINDEC 6h.p., Amac, spring forks, wants exerting; 8/10.—Saunders, 49, Riverside, Kingston-on-Thames. [X9213

VINDEC 5h.p. Combination, 2-speed, K.S., tax paid, new tyres; any trial; £28.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [1128

Werner.

2¾h.p. Werner, E.I.C. mag., Senspray carburetter, spring forks, drop frame, running order; £18.—A. Aldous, 54a, Green Lane, Hanwell, W.7. [9505

Wilkin.

1920 Wilkin Combination, 4h.p. Blackburne, Sturmey 3-speed gear box, clutch, kick starter, all-chain, Lucas dynamo lighting, equipment; cost £190, sacrifice £95.—63, Solon Rd., Brixton. [1322

WILKIN, shop-soiled only, 1921, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [9601

BANCROFTIAN CO'S. GREAT SALE

in consequence of our Head Depot, 64, Bishopsgate, coming down, and not having sufficient room at 78, Bishopsgate, we have decided to clear our stock, the value of which is about £20,000, regardless of cost. No reasonable offers will be refused for large parcels, as we must clear our stock within short time. Everything for the Motor Cyclist in stock. We are advertisers in the "Motor Cycle" since its first publication. Our Sale is Absolutely Genuine

Tyres. Please note all tyres advertised by us are simply last year's stock. Although they are sold as clearance, they are as good as when they left the factories. **We have no W.D. tyres.** The prices are actually below cost. **Wood-Milne.**—Special clearance line (not W.D.): Extra Heavy 4-ply, 26×2¼, **31/-**; 26×2¾, **35/-**; 26×2½ to fit 2¾, **35/-**; 28×3, **37/6**; 700×80, **45/-**; 650×65, **42/-**; 26×2¼ Combination, **47/6**. All the Wood-Milne are extra heavy, clean, wrapped in the original packing. **Pedley.**—26×2¼ 3-ribbed, **36/6**. **Hutchinson.**—Brooklands, 26×2, **26/6**; Tourist Trophy, 26×2, **32/-**; 26×2½ to fit 2¾, **38/6**; Small Car Extra Heavy, 650×65, **47/6**; Heavy 3-ribbed, 700×75, for Indian, or 700×65, or 750×65, all very heavy for other American machines, **52/6**; 650×65 Steel-studded Car Type, **70/-**; Firestone, 28×2½, **45/-**; 20×2, for Auto-wheel, **27/6**. Tube, **7/6**. **Palmer.**—26×2, Light, **27/6**; 650×65, Cord, **49/6**; 26×2½, Cord, Heavy, **49/6**. **Oylers.**—650×65 Ribbed Square Tread, **35/-**; 26×2½ ditto **35/-**. **Heavy Michelin.**—700×85, **55/-**. **Clincher.**—650×65 very heavy De Luxe, **42/-**, original 80/-; 28×2½, **42/-**; 28×2, **37/6**; de Luxe Non-skid, 24×2, Junior, **19/6**; 26×1¾ Junior, **19/-**; 26×2 Heavy, **30/-**; 26×2½ Junior, **22/6**; 26×2 Extra Heavy, **37/6**. **Dreadnought.**—Passenger, 700×75, **55/-**; 26×2½ Heavy de Luxe, **37/6**; 26×2½ Extra Heavy, **42/-**. We have only three Hutchinson 26×2¼ Wired Covers at **32/6** each.

Belts. **Clincher,** unused, not W.D.: ⅞in., 7ft. 6in. **10/11**. 8ft. **11/9**; ⅞in., 7ft. 6in. **12/9**, 8ft. 6in. **14/9**; 1in., 7ft. 6in. **16/6**, 8ft. **18/6**; 1¼in., 7ft. **18/6**, 8ft. **21/-**, 8ft. 6in. **23/-**. **Bates,** short lengths: ¾in., 5ft. **5/-**, 5ft. 6in. **5/6**; ⅞in., 4ft. 6in. **5/6**, 5ft. **6/3**, 5ft. 6in. **7/6**; 1in., 4ft. 6in. **6/9**, 5ft. **7/3**, 5ft. 6in. **8/3**. Leather Belts, ¾in., at **2/6** per ft. Belt Fasteners, **9d.** and **1/-**. Postage **1/-** extra.

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Magnetos. Dixie, clockwise, twin, unused, perfect, **£2 17s. 6d.** Must sell; **Thomson Bennett,** single, as new, **£3 3s.**

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8h.p. Williamson Water-cooled Combination, full equipped, also luggage grid, spares, and Tan-Sad £90.—25, Tower Rd., Boscombe. [117

WILLIAMSON 8-10h.p. Douglas engine, late clutch model, Bosch, Binks; any trial; big family sidecar, suit private or commercial; worth £100, first £6 secures; money wanted.—303, Christchurch Rd., Boscombe, Hants. [119

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WOLF.—Sole agents for London, South of Thames and district. We are now fixing sub-agencies and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [050

Wooler.

WOOLER, 1920, speedometer, accessories; sell, or change combination.—Fry, 31, Gayton Rd., Hampstead. [990

1920 Wooler Touring, all accessories, excellent condition, just overhauled; £60.—Bint, Kingsto Court, Canterbury. [990

WOOLER, 1920, in tip-top condition, cheap for cash; £55.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [99

1920 Wooler, excellent condition, lamps, 19 improvements; nearest £60; exchange cheap and cash.—Box 6,443, c/o *The Motor Cycle.* [12

Zenith.

ZENITH 2¾h.p. Flat Twin; 69 gns.—Below.

ZENITH 8h.p. Sporting; £108.—Below.

ZENITH 8h.p. Countershaft; £116.

ZENITH 6h.p. Countershaft; £110.

ZENITH 8h.p. Combination, complete with hood and screen; £140. All machines 1920 models, just received from works and fully guaranteed.

M.A.A., Ltd., Zenith Service Depot, 89, Wigmore St., W. Zenith Bradshaw, 1922 models; early deliveries from the authorised Zenith agents, M.A.A. Ltd., 89, Wigmore St., W. 'Phone: Mayfair 55 Spare parts for Zenith machines; all models supplied on shortest notice.—Write, 'phone, or call, M.A.A. Ltd., Zenith Service Depot, 89, Wigmore St. 'Phone: Mayfair 5598. [93

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [050

ZENITH, 8h.p., with sidecar, delivered new 19 £85.—M.A.A., Ltd., 89, Wigmore St., W. [13

1921 Zenith 4-5h.p., brand new; cost £115, accept £105.—Cox, 43, Eltisley Av., Cambridge. [1

ZENITH Combination, 1918, splendid condition, trial; £120.—A. Fellows, Crescent Rd., Darlast [X9

F.O.C.H. for Zeniths, new and secondhand.—5, He St., Hampstead (near Hampstead Tube Statio [9

1919 5-6h.p. Zenith Combination, lavishly equipped, unscratched; £75. — 24, Balliol Rd., No Kensington. [9

ZENITH, C.S., K.S., 6h.p., or exchange lower po hand clutch essential; Triumph preferred.—Feord St., Rochester. [X9

8h.p. Zenith and Sporting Sidecar, powerful engine, well equipped, licensed; 80 gns.—Bunting's M Exchange, Wealdstone. [1

ZENITH 1920 5h.p. Countershaft Model; sc only; £100.—The Layton Garages, 30, Holy St., Oxford. 'Phone: 581. [8

FRANK WHITWORTH, Ltd., 139, New St., mingham, for immediate delivery from stock Zenith-Bradshaw, price £118. [0

ZENITH 6h.p. Sports, sidecar, 1915, new eng 1921; any trial; £60, or near.—Greenfield, Hatch, near Sevenoaks. [9

ZENITH-GRADUA, 4h.p., excellent condition, new tyre, spare belt, pillion, insurance, all £50.—9, Claremont Rd., Highgate. [9

£50, or near offer.—1917 4h.p. Zenith-Gradua, guaranteed perfect, all on, tax paid. Or exchange D las.—139, Lodbroke Grove, W.10. [9

1921 Zenith 8h.p. Combination, complete with lamps, horn, speedometer, the licence paid 1921; £ or offer.—To be seen at Caffyns, 56, Terminus Eastbourne. [9

1921 8h.p. Sports Zenith, perfect condition, trio head lamp, speedometer, watch, spa licensed; £78.—Edwards, 50, Harrington Rd., Sc Kensington. [1

ZENITH Combination, 1914, 6h.p., clutch m lamps, spares, insured 9 months, excellent c tion; £80, or nearest offer.—Marshall, 11, St. And Sq., Surbiton. [1

ZENITH 1920 6h.p. Sporting Combination, L head, rear and sidecar lamps, horn, Cowey sp meter, knee grips, Ace discs, luggage grid, i tinguishable from new; £140; deferred payments desired.—Parker's, Bradshawgate, Bolton; also Deansgate, Manchester. [

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Zenith.

ENITH 1920 8h.p. Sports Combination, Mills-Fulford Corvette sidecar, lamps, horn, practically w; £130.—Ellison, Melbury, Pyrford Rd., West Byfleet. Byfleet 52. [1039

ENITH 1920 8h.p. Sports Model, issued new 1921, licensed, thoroughly recommended and almost al to new; £85.—The Layton Garages, 30, Holywell t, Oxford. 'Phone: 581. [8226

ENITH-GRADUA, 90 bore J.A.P., F.R.S. Major head lamp, accessories, perfect condition and appearance, licensed; trial 2 up; appointment; 48 gns.—5, Ashby Rd., Loughborough. [9535

ENITH-GRADUA 1914 6h.p. Combination, sports model, Canoelet sidecar, tax paid, perfect nning condition, any trial given, willing to meet yer within 50 miles of London; £55.—77, Highly Hill, N.5. [9953

ENITH, 5-6h.p., countershaft, new belt, Dunlop tyres, sidecar Canoelet, wind screen, Lucas head ht, very fast; £95, or exchange Morgan Grand x.—209, Newhampton Rd. West, Wolverhampton. [9693

21 Zenith 8h.p. Combination, clutch and kick starter, special sidecar, whole as new, all as accessories, spares, only used few week-ends; a bargain, £155.—73, Lyndhurst Grove, Peckham, [1266

ENITH 1921 5h.p. Sports Model, complete with lamps, horn, licence, and speedometer, perfect dition in every way; £105; approval willingly where; full particulars with pleasure.—Tollady, ningford, Bicester, Oxon. [9271

ENITH 8h.p. Countershaft Late 1920 Model Combination, brand new Swan Sports sidecar, Avro nd screen, speedometer, disc wheels, many spares and essories, machine just overhauled at Zeniths, guaranteed in perfect condition, tax and insurance paid; 5.—Giles, 18, Old Cavendish St., W.1. [9420

Ladies' Motor Cycles.

ADY'S Ivy, 1921, 2½h.p., 2-speed, clutch, K.S., unscratched, tax paid; cost £69, accept 45 gns. t, St. Mary's Rd., Peckham. [1416

Miscellaneous.

14 J.A.P.-engined 4h.p., fast, silent; £50; fair trial.—Rossett, Harpenden, Hertfordshire. [1076

19 4h.p. Countershaft Combination, fully equipped, tax; 69 gns.—Ramsdens, May Bell Av., Black- [9653

ICHMOND Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. low.

P.G.—Matchless combination, Lucas dynamo lighting, spare wheel, hood, screen, rear drive speedter, etc.; £85.

P.G.—4h.p. Douglas combination, 3 speeds, kick starter, like new, late model; £60, special offer.

P.G.—3½h.p. James combination, 3 speeds, clutch, etc., excellent condition; £32.

P.G.—Indian 7-9h.p. combination, spring frame, electric lighting, splendid order; £42.

P.G.—Brown 3½h.p. approx., mechanical valves, Bosch mag., B. and B. carburetter, good tyres and £12 to clear.

P.G.—Calthorpe-Jap. 2-speed, £28.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, 14. 'Phone: Putney 2622. [1085

RE Opportunity acquire coachbuilt combination; practically gift; stamp.—59, Heidelberg Rd., ushea. [9392

ARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths ories, Halifax.

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ARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3h.p. Humber, 3-speed, £18/15.—Booths Motories, Hali-

ARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6h.p. er-Lea, Grado gear, £21/15.—Booths Motories, fax.

ARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P. M., 1914, £39/15.—Booths Motories, Halifax.

ARGAINS.—4h.p. 1917 3-speed Douglas, £59/15; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, fax.

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WANDSWORTH.—F.N. 2¼h.p., mag., 2 speeds, shaft drive; wants repairing; 16 gns.—Below.

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WANDSWORTH.—Abingdon King Dick, clutch model, 3½h.p., mag., nice machine; 38 gns.—Below.

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WANDSWORTH.—Zenith fine coachbuilt combination, twin J.A.P., Gradua gear, licensed; 58 gns.—Below.

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WANDSWORTH.—1918 P. and M. newly renovated coachbuilt combination, new tyres, lamps; 79 gns.—Below.

WANDSWORTH.—Almost brand new Scott coachbuilt combination, fully equipped, unscratched; 95 gns.—Below.

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WANDSWORTH.—F.N. 5-6h.p., waterproof Bosch, 2 speeds, clutch, runs beautifully; 45 gns.—Below.

WANDSWORTH.—Humber 3½h.p., mag., 2 speeds, licensed, drive away; only 32 gns.—Below.

WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [1350

HALIFAX Motor Exchange, Horton St., Halifax. 'Phone: 1400.—New and second-hand machines for cash; exchange or deferred payments.—Below.

HALIFAX.—Morgans, £105, £120; A.V. monocar, £79/10; Ariel, 1920, 3½h.p., £84/10.—Below.

HALIFAX.—Alecto 3¼h.p. 1920 combination, £79/10; Brough 1916 3½h.p., 3 speeds, £59/10.—Below.

HALIFAX.—Enfield 1915-16 combination, £95; 1920 2¾h.p. spring frame Edmund-Jap, mileage nominal, £65.—Below.

HALIFAX.—1920 Harley electric combination, £160; 1920 4-cyl. Henderson combination, £175.—Below.

HALIFAX.—10h.p. 3-speed Reading-Standard combination, £110; Rex 6h.p. combination, £52/10.—Below.

HALIFAX.—Royal Ruby 2½h.p., 2-speed, £42; 1920 Scott, £95; 1921 spring frame Beardmore-Precision, £69/10.—Below.

HALIFAX.—1920 Scott combination, special, £125; Sunbeam 2¾h.p. lightweight, £45; Sunbeam 8h.p. M.A.G. engine combination, £145.—Below.

HALIFAX.—Triumph 1914 combination, £69/10; Triumph clutch model, £47/10; 7-9h.p. Peugeot, 2-speed, £37/10.—Below.

HALIFAX.—6h.p. Zenith countershaft combination, £85; 1918 Indian 7-9h.p. combination, like new, £105.—Below.

HALIFAX.—1918 7-9h.p. Harley, 1920 Henderson Elite sidecar, £115; 1920 (November) G.N., dynamo lighting, £175; 3½h.p. Premier, 2 speeds, £29/10.—Below.

HALIFAX.—Cash, exchange, or deferred payments.—Note address: Halifax Motor Exchange, 25, Horton St., Halifax. 'Phone: 1400. [9677

MOTOR CYCLES FOR SALE.

Miscellaneous.

A FEW Selections from our stock of guaranteed bargains.—Jones' Garage, Broadway, Muswell Hill. 'Phone: Hornsey 2917.

JONES' Garage.—1919-21 Ariel, 3½h.p., and sidecar, competition machine, specially tuned; £95.

JONES' Garage.—1920 Douglas 4h.p. combination, as new, 500 miles, nicely tuned, climb anything; £135.

JONES' Garage.—1917 Douglas, 2¾h.p., 2-speed, fully equipped; £50.

JONES' Garage.—1919 Harley 7-9h.p. combination, electric model, all accessories; £130.

JONES' Garage.—1920 Henderson 10h.p. combination, 4-cyl., 3-speed, tyres hardly used; £155.

JONES' Garage.—1920 Indian 7-9h.p. Powerplus combination, electric lighting model, Easting wind screen, spring chain, speedometer, etc.; a real bargain, £147 10.

JONES' Garage.—1918 James, 2½h.p., 2-speed, fine order; £40.

JONES' Garage.—1914 Indian, 7-9h.p., 2-speed, as new; £50.

JONES' Garage.—1919 James 6h.p. combination, 3-speed, fully equipped; £90.

JONES' Garage.—1920 O.K.-Villiers, 2½h.p., 2-stroke, 2-speed, all accessories, in fine order and condition; £40.

JONES' Garage.—1920 Quadrant 4h.p. combination, fully equipped, all perfect order and condition; £95.

JONES' Garage.—1919 Rudge Multi, 3½h.p., unscratched, as new; £70.

JONES' Garage.—1919 Sunbeam, 3½h.p., absolutely as new; a snip, £110.

JONES' Garage.—1919 Spur-Villiers, 2-speed, snip, nearly new; £45.

JONES' Garage.—1919 Triumph 4h.p. and sidecar, 3-speed countershaft model, fully equipped; £120.

JONES' Garage.—1920 Sunbeam, 4h.p., fully equipped, fitted with sidecar, all absolutely as new; a real bargain, £130.

JONES' Garage.—Late 1920 Douglas, 2¾h.p., 3-speed, kick start, handle-bar control clutch, absolutely perfect; £80.

JONES' Garage.—1920 Blackburne 4h.p. and coach-built sidecar, fully equipped; £105.

NEW Shop-soiled Machines:

JONES' Garage.—Blackburne and luxurious sidecar, detachable wheels, 8h.p., 3-speed; £155.

JONES' Garage.—B.A.T., 8h.p., 3-speed, spring frame; £125.

JONES' Garage.—Hobart lightweight, single-speed, compact little machine; £45.

JONES' Garage.—Rover 3½h.p. 3-speed combination; £125.

JONES' Garage.—Ariel 6-7h.p. combination, chain drive; £157/10.

JONES' Garage.—Ariel 6-7h.p. combination, model de luxe; £175.

JONES' Garage.—B.S.A., 4¼h.p., Model K2; £100.

JONES' Garage.—B.S.A., 4¼h.p., Model H2; £105.

JONES' Garage.—Enfield 8h.p. Magdyno combination; £175.

JONES' Garage.—Matchless Model H2 standard combination; £175.

JONES' Garage.—Matchless Model H2 sporting combination; £170.

JONES' Garage.—O.K.-Union single-speed; £35.

JONES' Garage.—Radco No. 2; £39.

JONES' Garage.—Rudge Multi, I.O.M. model; £80.

JONES' Garage.—Triumph 4h.p. Model SD; £115.

JONES' Garage.—This, you must agree, is one of the fairest bargain houses in the trade.—Jones' Garage, The Broadway, Muswell Hill. [1034

LATE Enfield Combination, oversize tyres, engine in splendid condition, hood, wind screen, speedometer, pillion, fully insured; 84 gns.—Below.

1920 Excelsior-Baby Triumph, 2-speed, kick start, unscratched; 35 gns.; must sell; evenings.—67, Fernlea Rd., Balham. [1232

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [7219

MOTOR Cycle, 5h.p. twin, Bosch, Amac, new heavy Hutchinson, Chater-Lea frame, also Chater-Lea spring frame, 3-speed gear, clutch; £18 the lot.—Eden House, Edenbridge. [1089

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New Clearance and ex-W.D. Stock. Approval against remittance.

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Goodrich Safety Tread Covers.

Extra Heavy.

	List Price.	Our Price.
26 × 2¼	£3 0 6	£1 10 0
26 × 2½ to fit 26 × 2¼	£3 11 0	£1 18 0
26 × 2½	£3 9 0	£1 17 0
650 × 65	£3 7 0	£2 0 0
26 × 3 to fit 650 × 65	£4 0 0	£2 12 0
28 × 3	£5 0 0	£2 11 0

26×1¾	British Made	15/-
24×2	Hutchinson Rubber-studded	22/6
24×2¼	Clincher Heavy	30/-
26×2¼	Hutchinson Brooklands	23/-
,,	Hutchinson Tourist Trophy	27/9
,,	Goodyear	27/6
,,	Rom Rubber Non-skid, Heavy	32/-
,,	Rom Combination	42/-
,,	Macintosh Chain Pattern, Heavy	32/6
,,	Avon Sunstone	33/-
,,	Wood-Milne 3-ply	26/9
,,	Wood-Milne, Extra Heavy	32/6
26×2⅜	Clincher de Luxe, Heavy	31/-
,,	Clincher de Luxe, Extra Heavy	34/-
,,	Hutchinson T.T. Rubber-studded	30/-
,,	Hutchinson Passenger Rub.-stud.	35/-
26×2½ for 26×2¼ rim	Hutchinson T.T. Rubber-studded	33/-
	Clincher de Luxe, Heavy	34/-
26×2¼ for 26×2½ rim	Michelin Fine-ribbed	21/-
	Hutchinson T.T. Rubber-studded	30/-
	Hutchinson Passenger Rub.-stud.	32/-
	Macintosh Chain Pattern	36/-
	Englebert Raised-rib (wired edge)	25/-
	Englebert Rub.-stud. (wired edge)	30/-
,,	Hutchinson 3-ribbed	45/-
28×3	Hutchinson 3-ribbed	45/-
,,	Englebert, Hy. Racing Rub. Bars	47/-
,,	Wood-Milne Extra Heavy	30/-
,,	Dunlop Extra Heavy	50/-
700×80 fit 650×65 rim	Wood-Milne Extra Heavy	45/-
	Hutchinson 3-ribbed	50/-

TUBES.

26×2¼	Hutchinson	6/6
26×2½	Michelin	6/6
26×2½ × 2¼	Goodrich	7/9
26×3	Goodrich	7/9
700×80	Goodrich	7/9
28×3	Goodrich	7/9
,,	Goodyear Butted	8/9

The above are sent **carriage paid.**

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New John Bull (Deep Drive).

⅜in.	⅞in.	1in.	1½in.
2/5	2/10	3/5	4/- per foot.

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Complete Sidecars from	£14 18 6
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La Grande Pan Saddle	25/-
P. & H. Motor Cycle Lamp and Generator	35/-
P. & H. Tail Lamp	5/-
Bowden Front Brakes each	13/4
Bowden Magneto Controls, complete ,,	15/-

Hours of Business, 9 till 6. Saturdays, 9 till 1.

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Telephone—2481 North.

Telegrams—"Bastones, London."

MOTOR CYCLES FOR SALE.

Miscellaneous

ALLBER Garage, Thornsett Rd., Earlsfield, Lo don, S.W. (opp. Earlsfield Station, L.S.W. Rly. 'Phone: Latchmere 4388. Cash or terms. Deliver on deposit.

ALLBER.—Douglas 1916 2¾h.p., 2 speeds, goo tyres, mechanical horn, toolbags, in splendi condition, tax paid; £42/10.

ALLBER.—Levis 1916 2¼h.p., 2 speeds, all on, i good order, tax paid; £35.

ALLBER.—Triumph 3½h.p., Grade gear, new bel good tyres, complete with lamps and horn, ta paid, splendid order; £25.

ALLBER.—Calcott 2¾h.p., fitted all accessorie new condition, tax paid; £27.

ALLBER.—Alldays Allon 1920 2-stroke, counte shaft drive, legshields, every accessory, equal new, tax paid; £42/10.

ALLBER.—Rudge Multi 1920 3½h.p., all acce sories, tools, tax paid, equal to new every wa bargain, £55.

ALLBER.—B.S.A. 3½h.p., 2-speed, clutch, et good tyres, complete with lamps, tax paid, splendid order; £36.

ALLBER.—F.N. 2¼h.p., 2 speeds, clutch, go tyres, shaft drive, footboards, good machir going order; £23; tax paid.

ALLBER.—Indian combination, 7h.p., 2-spee clutch, kick starter, new tyres, electric lightir sports body, wind screen, all on, tax paid; £48/10

ALLBER.—New Imperial combination, 1919, 8h J.A.P. engine, Burman 3-speed gear box, clut kick starter, chain cases, Milford sidecar, wi screen, all accessories, tax paid, splendid ord £87/10.

ALLBER.—Douglas 2¾h.p. Frame, 1916 mod complete and re-enamelled, £4. [12

REX Twin Combination, 2 speeds, £25; Bradbu N.S.U. gear, £25; Humber and sidecar, 2 spee £35; ready for any journey, and many lightweig from £88.—Bunting's Motor Exchange, Wealdstone [12

MEBES and Mebes, the Original Light Car Spec ists, invite reasonable offers for the follow shop-soiled, but otherwise new motor cycles, as t are relinquishing this part of their business in fav of light cars.—Below.

BEARDMORE-PRECISION 3½h.p.; Wooler 2¾h variable gear; Rover touring model, 3½h.p., speed, clutch; Bat 6h.p. Model 4, clutch, 3-spe L.M.C. 6h.p. suspension-frame model, clutch, 3-spe L.M.C. 6h.p., rigid frame, clutch, 3-speed; L.M 3½h.p., clutch, 3-speed; also 6h.p. L.M.C. co bination, fully equipped, used for demonstration on and one Elite model Henderson sidecar and one spri frame Henderson sidecar, both new, shop-soiled only 144, Gt. Portland St., W.1. 'Phone: Langham 223 [9

A FEW High-grade slightly shop-soiled 1920 1921 models at great reductions; Levis, Nort Raleigh, Triumph, etc. Write for special clearan bargain list; easy payments only 4% extra.—I Premier Motor Co., Aston Rd., Birmingham. [X9

F.O.C.H. for second-hand cycles, combinations, runabouts at bargain prices. Exchanges arran Any new cycle, combination, or car supplied, cash easy payments.—Fair Offer Car House, 5, Heath Hampstead (near Hampstead Tube Station). 'Pho 3752 Hampstead. Hours 9-7, including Saturdays. [9

MOTOR CYCLES FOR HIRE.

LATEST Models Motor Cycles and Combinations hire, any period.—Fowler and Brigden, 130, Eu Rd. Museum 4827. [0

MOTOR ATTACHMENTS.

AUTO-WHEEL for sale, new tyre; £7; view by pointment.—20, Woollaston Rd., Harringay. [9

AUTO-WHEEL, in perfect mechanical order; £ Butterworths' Garage, 64, Mill Lane, Bris Hill. 'Phone: Streatham 2813. [S

CHATER-LEA (Lady), back tandem, with Auto-Wheel, fully equipped, tax paid; £2 Speechley, 86, Churchfield Rd., Acton, W.3. [J

SIMPLEX Power Unit, 1920, complete, B.S.A. frame, extra strong back wheel, or separ reasonable offer for quick sale; little used.—32, bridge Rd., King's Heath, Birmingham. [

TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catal free.—Rayner, 10-12, George St., Blackpool. [S

ARGSON Hand and Motor-propelled Tricycles, invalids and disabled.—Particulars, Argson Co., Ltd., 3, Kendalls Mews, George St., W.1. [

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—3, dall Mews, George St., W.1. [

SKOOTAMOTA, A.B.C., perfect condition; £2 offer.—Turner, Beauchamps Farm, Wickford. [

ABBOTSFORD Scooter, 3 wheels, 2½h.p., new, taxed; £21.—Prott, 7, Middle Lane, E

MOTOR SCOOTERS.

AUTO-WHEEL Scooter, all on, tax paid; £17/10, or exchange Sturmey gear box.—Miller, Wood Rd., Shepperton. [9828

A.B.C. Skootamota, run under 500 miles, perfect order; accept best cash offer.—Riseley Lodge, Maidenhead. [9752

A.B.C. Skootamota, nearly new, good order; £16; cost £55; climbs hills.—68, Gloucester Rd., Camden Town, N.W. [1018

1920 Eveready Autoped Scooter, lamps, horn, tax paid, good running order; £12.—J. W. Whisstock, Quay St., Woodbridge, Suffolk. [1313

KINGSBURY Scooter, with seat, demonstration model; bargain, £18 or offers, to clear.—Purchas, 25, Hockliffe St., Leighton Buzzard. [9158

MARSEEL Motor Scooter, licensed, run about 100 miles, wants slight attention; cost £33, what offers?—R.T., 115, Erskine Park Rd., Rusthall, Kent. [1144

A.B.C. Skootamota, brand new condition, tax paid; £23/10.—18, Bellevue Gardens, Clapham Rd., S.W.9. (2 minutes Stockwell Station). Call after 6 p.m. [9858

1921 Reynolds Scooter de Luxe, 2¾h.p. engine, well sprung, bucket seats, carry 2; photo; guaranteed perfect, 22in. wheels; selling to purchase 3-wheeler.—Elmwood, Moatcroft Rd., Eastbourne. [9529

WHIPPET Motor Scooter, excellent condition, nearly new, scarcely used, tax paid, lamps, horn, complete, best type of scooter, engine correct position, good hill-climber, comfortable seat; price £30.—Benson, Middleton St. George, Co. Durham. [1216

HOODS, WIND SCREENS, ETC.

CAMBER.—Hoods, 50/-; wind screens, 27/6.—Bright and Hayles, 78, Church St., Camberwell. [1046

HERCULES Hoods and Aprons. Write for list.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [1109

BENT Hoops, hood fittings, straps, tornbuttons, twill, etc.—Henry Jones, 778, High Rd., Tottenham, London. [5134

200 AVRO Wind Screens, new; 7/- each.—Hampstead Motor Cycle Depot, 23, Church Walk, Hampstead, N.W. [1443

COUPE Wind Screen, totally encloses passenger, no back draught, ideal for winter, 3 accessories in 1; write for folder.—Below.

BEST Twill, 10/6 yard; celluloid, 2/6 sq. ft.; press fasteners, 1/10 doz.—Coupe Wind Screens, 28, Middle St., Portsmouth. [6656

CELLULOID.—Clear transparent, cut to any size, 3/- per sq. ft.; carriage paid for cash.—The Essex Accumulator Co., Ltd., 499, Grove Green Rd., Leytonstone, E.11. [0680

NEW Condition, Easting wind screen, standard model; first offer £2/15; approval.—Barker, Tarlton Av., Woodhall Spa. [9553

RENNOC Co.—We are actual manufacturers of hoods, screens and aprons. Send for list.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [8632

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VENUS.—Touring, sporting, tradesman's; repairs, repainting; exchanges.

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RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [8633

ROBINI.—£10.—Chassis and bodies complete from £10; bodies made by mass production.—Below.

ROBINI.—Brooklands model, painted dark blue, upholstered red Rexine, bulbous back, complete with locker; £7/10.—Below.

ROBINI.—Helen Sports, upholstered red Rexine or choice, bulbous back, painted dark blue, £7/10; covered polished aluminium, £8/5.—Below.

ROBINI.—Helen Light Tourist, bulbous back, upholstered red Rexine, painted dark blue, £7/10; covered polished aluminium, £8/10.—Below.

ROBINI.—Helen de Luxe, with large locker at rear, round back seat, upholstered red Rexine, painted dark blue, £10; covered polished aluminium, £11.—Below.

ROBINI.—Light Sports Bodies, made from aeroplane floats, new upholstery; £4/10.—Below.

ROBINI.—Helen Special, designed for Mills-Fulford chassis, with bulbous back, painted dark blue, upholstered red Rexine; £7/10; trade supplied; carriage extra; see Chassis column.—Brixton 1585.—T. Robini, 22, Water Lane, and 1, Tulse Hill, Effra Rd., Brixton, S.W. 'Buses and trams pass the door. [1367

NEW Coachbuilt Lightweight Sidecar Body, cheap.—Blake, 4, Park Crescent Mews, Gt. Portland St., W.1. [1241

The RIGHT TYRES At the RIGHT PRICES

24×2	Hutchinson T.T. Rubber-studded	30/-
24×2¼	Hutchinson T.T. Rubber-studded	33/-
26×2	Wood-Milne 3-ply	25/-
,,	Wood-Milne 4-ply	30/-
,,	Wood-Milne Combination	44/-
,,	Dunlop Heavy W.D.	38/-
,,	Hutchinson Brooklands R.S.	26/10
,,	Hutchinson T.T. R.S.	32/6
,,	Hutchinson Passenger R.S.	37/6
26×2¼	Wood-Milne 3-ply	26/10
,,	Wood-Milne 4-ply	34/1
,,	Wood-Milne Combination	46/3
,,	Dunlop Heavy W.D.	35/6
,,	Palmer Cord Heavy W.D.	35/-
,,	Clincher Heavy W.D.	33/6
,,	Macintosh Heavy W.D.	32/6
,,	Hutchinson Brooklands R.S.	28/6
,,	Hutchinson T.T. R.S.	34/6
,,	Hutchinson Passenger R.S.	38/6
26×2⅜	Hutchinson T.T. R.S.	36/-
,,	Hutchinson Passenger R.S.	41/6
,,	Dunlop Heavy W.D.	37/6
,,	Palmer Cord Heavy W.D.	35/6
,,	Clincher Heavy W.D.	35/-
,,	Beldam Heavy W.D.	32/6
26×2½ for 2¼ rims	Hutchinson T.T. Rubber-stud.	39/6
	Hutchinson T.T. 3-rib	39/-
	Hutchinson Passenger 3-rib	45/-
26×2½ for 2½ rims	Wood-Milne 3-ply	31/10
	Wood-Milne 4-ply	36/1
	Wood-Milne Combination	51/6
26×3	Wood-Milne 3-ply	33/4
,,	Englebert Passenger	37/6
,,	Hutchinson Passenger	45/-
26×3 ×2½	Wood-Milne 3-ply	32/-
650×65	Wood-Milne 3-ply	32/4
,,	Dunlop Steel-studded	53/-
,,	Goodrich Safety (guaranteed)	53/-
,,	Hutchinson Light Car 3-rib	42/-
,,	Hutchinson Small Car 3-rib	52/-
700×75 for 650×65	Hutchinson Light Car 3-rib	45/-
	Hutchinson Small Car 3-rib	57/6
28×3	Goodrich (guaranteed), with Tube	60/-
,,	Bates Heavy W.D.	45/-
,,	Clincher Heavy W.D.	45/-
,,	Wood-Milne Heavy W.D.	40/-
,,	Hutchinson Light Car 3-rib	45/-
,,	Hutchinson Small Car 3-rib	63/-
28×2½	Wood-Milne 3-ply	32/4
,,	Wood-Milne 4-ply	40/4
,,	Hutchinson T.T. R.S.	42/6
,,	Hutchinson Passenger R.S.	50/-
BELTS	7in. × 8ft. 6in.	17/-
	⅞in. × 7ft. 6in.	12/-
	¾in. × 6ft. 6in.	10/6

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ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

BASTONE'S for coachbuilt bodies (no better or cheaper house), sporting models, bulbous back and step pattern. All at low prices. Call or send your requirements.—228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6851

D. and F.—Reduction on all our sidecar bodies. Triumph pattern C.B. body, usual price £12/12, reduced to £11/10; best bulbous back, sprung seat and back, £9/9, now £8/8, suit Douglas; also a lighter model, £7/7, now £6/6. Any design made to order.—DeCort and Flynn, 39, Essex Rd., N.1. [9060

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

SIDECAR ATTACHMENTS.

SFOR

SANDHAM, the smartest sidecar specialists.

SANDUM Sidecars.—Best value in Olympia Show.

SANDUM Chassis.—Insist on having our enclosed wheel type of chassis for safety.

SANDUM Models.—The Exquisite 23 gns., and Sports 26 gns., are of distinctive appearance.

SANDUM Elite Sidecar, 27 gns.; the smartest sidecar on the road; highly recommended in "The Motor Cycle."

SANDUM Dual Purpose Sidecar (patented). A single or 2-seater sidecar as required in 5 seconds. Size of body as our single-seater Elite. Luxuriously comfortable seating for 2 adults, with the weight in correct position over rear axle. Finished in colours to suit any make of machine. 42 gns.; bodies only, 21 gns. The latest development of the 2-seater as designed by us, and approved by the recognised experts.

SANDUM Featherweight Streamline Body, smart and racy, weight 18 lb.; price £4/17/6.

SANDHAM Engineering Co., Ltd., 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. Factories: 162 to 165, Pentonville Rd., N.; and Britannia Works, Britannia St., W.C. [0019

SWAN Coachbuilt Sidecar; £7.—64, Church St., Edgware Rd., London. [9825

1920 Ariel Sidecar with coverall, as new; £20.—H. Wright, Arlesey, Beds. [9876

MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeams, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

MIDDLETON'S specialise in frame repairs of all kinds. Twisted motor cycle frames and forks promptly corrected.

SECOND-HANDS of various makes for sale. Your old sidecar taken in part exchange.

MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give ot the bumps, not bash into them.

MIDDLETON'S, London's oldest established sidecar makers, wholesale, retail, and export, 27, Stroud Green Rd., Finsbury Park (near Tube). 'Phone: Hornsey 1584. [0522

DOUGLAS Sidecar, grand condition; 12 gns.—Ramsdens, May Bell Av., Blackpool. [9657

SIDECAR, light Canoelet, wind screen, perfect; £5/10.—13, Crook Log, Bexleyheath, S.E. [9794

FOLDER.—Have your sidecar converted into a Hopley folder, and save garage.—Below.

SIDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passage 27in. Tandem and single bodies fitted. Tested 7 years on motors up to 9h.p.—Hopley, Upper Highgate St., Birmingham. [0152

P. and M. Millford Chassis, good order and tyre.—1, Bellingham Terrace, Catford, S.E.6. [1139

CAMBER.—Streamline models, £16/10.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Lightweight models, £17/10.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Semi-touring models, £18/10.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Tandem models for adult and child, £26.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Utility models, £25.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER Sidecars.—Makers, Bright and Hayles, 78, Church St., Camberwell, London. 'Phone: Brixton 2951. [1045a

SIDECAR ATTACHMENTS.

GLORIA No. 5, new March, 1921, done 2,000 miles £40.—Capt. Kerridge, Bank House, Weymouth. [8415

SIDECAR, fits Scott, roomy, aluminium body, good order; £10.—Stebbings, Attleborough, Norfolk. [1293

SIDECAR, wicker, side door, good condition, complete; £3/15.—37, Leamington Rd. Villas, W.11. [1168

LIGHT Watsonian, dark blue, lamp and apron, good Dunlop; £9.—Sluman, 41, Evelyn Rd., Wimbledon. [1281

SMART Coachbuilt Sidecar, Easting, fittings; bargain, £12.—323, Portland Rd., South Norwood, S.E.25. [9893

GLORIA Sidecar with fittings, in good condition, nearly new tyre and discs; £10.—Rugeley Garage, Rugeley. [9395

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph or B.S.A.; £18/15.—Booths Motories, Halifax.

BARGAINS.—Nearly new Henderson sidecar, suit Rudge, £16/15; Millford 27 gn. sidecar, nearly new, £16/10.—Booths Motories, Halifax.

BARGAINS.—New full-size coach body, locker under seat, £6/19/6; cane body, 25/-. — Booths Motories, Halifax. [3302

ROBINI.—Douglas chassis complete, enamelled, new tyre and tube, with Helen sports body, dark blue, £14.—Below.

ROBINI.—Douglas chassis, as above, with new Helen tourist, dark blue, £15/10; with De Luxe model, dark blue, £15/10.—Below.

ROBINI.—Mills-Fulford chassis, complete, new tyre and tube, with Helen sports model, £12/10.—Below.

ROBINI.—As above with Helen tourist model; £12; trade supplied.—Below.

ROBINI.—Chassis and bodies from £10; carriage extra; for full particulars of bodies, see Body column.—Brixton 1585.—T. Robini, 22, Water Lane and 1, Tulse Hill, Effra Rd., Brixton, S.W. 'Buses and trams pass the door. [1368

BASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars from £14/18/6.

BASTONE'S.—We have a few soiled sidecars and bodies to clear at low prices.

BASTONE'S.—Distributing agents for the famous Montgomery sidecars. Latest 1921 sporting and other models in stock; trade supplied.

BASTONE'S (Sidecar Dept.), 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [6850

COACHBUILT Sidecar, nearly new; to clear, £11/15.—W.J.C. Motor Co., 5, Addison Av., Holland Park, W.11. [1425

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MILLS-FULFORD Sidecar, 1920, Cameo, etc., cost £33/10; sell £18; bargain.—Freeman, 41, Highwood's Rd., Mexborough. [1191

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SIDECAR, off Triumph, bulbous back, roomy, strong chassis, fine condition, £15; sporting canoelet part exchange.—Driscoll, 58, Woodfield Rd., Ealing. [1054

DOUGLAS Sidecar, complete, £12/10; another, almost new, £11/10; another, coachbuilt, £10/10.—57, Kenbury St., Camberwell, London. [9995

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SIDECAR Chassis, complete with wheel, tyre, and fittings, excellent condition, stove enamelled, suitable Triumph; £4/15, carriage paid.—Saunders, 46, Bridge St., Maidenhead. [9576

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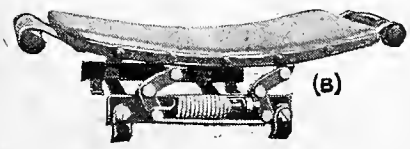

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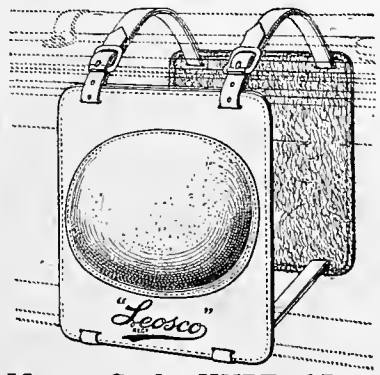

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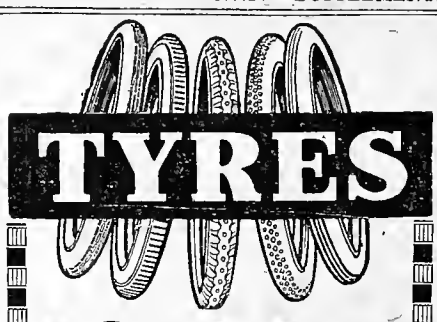

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"	Wood-Milne Special	28/10	53/9
"	Englebert Touring	22/6	49/-
26×2⅜	Palmer Cord Heavy	37/6	62/-
"	Kempshall Anti-skid	34/6	52/6
"	Clincher de Luxe Ex. Heavy	30/-	68/6
"	Hutchinson T.T. Rub-stud.	28/6	59/9
28×2½ / ×2¾	Clincher de Luxe Heavy	32/6	51/3
26×2½	Wood-Milne Combination	50/-	102/-
"	Bates Special Heavy	37/6	68/6
"	Wood-Milne Ex. Heavy	36/1	72/3
"	Clincher de Luxe Heavy	29/6	58/9
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"	Wood-Milne Ex. Heavy	35/-	81/-
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"	Beldam Bulldog	61/-	—

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5-6h.p. N.S.U. Engine, perfect, fitted in frame, tank, and wheels; £10.—Box 998, The Motor Cycle. Advertiser please send addr

2¼h.p. 2-stroke Engine, complete with C.A.V. neto, new, complete and perfect; lette appointment.—Kelowna, Earlsdon Av., Coventry.

YOU Will Never Tire a Broler 3½h.p. 2-strok runs on ball and roller bearings. Unequalle speed and power.—Brooks, Trasler and Cox, Norbor Leicester.

8h.p. Precision Twin Engine, 1921, brand never fired, suit motor cycle or Morgan, £44; offers. — Wilson, 58, Chaucer Drive, Wr Rd., Lincoln.

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J.A.P Engines. J.A.P. Engines. J.A.P. Engi I have the largest stock of J.A.P. engines parts in England; over 30 engines always in sto select from, and the price: 5h.p. twins, £17/10; fitted with new pistons and 1921 cylinders, £20 8h.p. at £18/10. Parts: 8h.p. J.A.P. crank 50/- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam complete, 15/- each; valves complete, 4/- each; guides, 3/6 each; tappet guides, 2/6 each; ex valve and inlet cap, 4/- each; tappets complete, 2/6 cam levers, inlet and exhaust, 4/- each; gudgeon 5/- each; and all parts for J.A.P. engines. Stam reply.—Hawkins, 455, York Rd., Wandsworth.

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NEW Motor Cycle Magnetos.

500 for Immediate Disposal.—Thomson-Bei C.A.V., all degrees, single and twin, and variable ignition, for all machines, £2/12/ cludes postage; Bosch £3, postage extra, 1/6. forward immediately all magnetos on app against cash. Money refunded if dissatisfied. Central Motor and Ignition Works, 14a, L borough Rd., Brixton, London, S.W.9.

COUNTY of London Engineering Works, Ltd.

MAGNETOS. Magnetos. Magnetos.

GOVERNMENT Surplus Unused Magnetos.—H bought the entire stock of the following of magnetos, we are able to offer them at larg counts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bei single or twin, clock or anti, 42, 45, 50, 55, £2/15; C.A.V., single or twin, clock or anti, £ postage on the above magnetos 1/6 extra.—Belc

ALL these magnetos are fitted with variable tion and leads, and are fitted with base ready to be immediately fitted on. Please state of engine when ordering.—Below.

COUNTY of London Engineering Works, Ltd.

PLUGS, high-tension wire, plugs.

GOVERNMENT Surplus; new plugs in boxes.

A.C. (Titan), 1/6; K.L.G. type 7, detachable, high-tension wire, new, unperished, 9 mm per yard, 25 yard coil 8/6; 7 mm., 4d. per yar yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 3 mm., 2d. per yard, 25 yard coil 2/-.

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BRAND New K.L.G. Aero Plugs, standard t 1/6 each, post free.—56, Laurence Hill, Bri

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Uninteresting Speed Trials.

CONSIDERABLE difference of opinion appears to exist as to what constitutes an interesting and successful speed event. It would appear that some clubs measure the success of their big race meetings by the number of hours necessary to run them off, and by the number of times the competitors cross the starting and finishing lines; the longer the time and the greater number of "entries," the greater the success. This is all very well from the club treasurer's viewpoint; but what justification is there for it otherwise?

Do even those spectators to whom speed trials are an entire novelty retain their interest after four or five hours of witnessing the same thirty or forty riders again and again flashing past, one at a time, along a straight and level stretch of road —even if the speeds reached 80 or 90 m.p.h.?

Since spacious, natural speed-ways, such as Pendine sands, unfortunately, are not dotted all over the country, the majority of clubs cannot increase interest by holding their speed events as scratch races instead of timed trials, some other means, therefore, must be found if these competitions are to retain their popularity. Which, in effect, means that the existing type of meeting must be made less uninteresting.

There should not be more than ten distinct classes on the programme; "members'" and "open" entries should run together; two-strokes and four-strokes should not be separated; either a flying or standing start should be decided upon, not both; and if, as often happens, the 750 c.c. class receives no "750 c.c. entries," that class should be omitted instead of giving the 500 c.c. machines an extra run.

Each man's time should immediately be posted at both ends of the course. Too often, at present, results are announced neither promptly, completely, nor accurately.

Variety may be gained by borrowing the Midland Centre's idea of a relay race, and perhaps a handicap event; if the earlier advice regarding limitation of the classes is carried out, there should be plenty of time.

Practically all the foregoing applies equally to the so-called hill-climb.

The Anglo-Dutch Trial.

THE Fourth International Team Trial between Holland and Great Britain is now an event of the past. This year held in England, the event has afforded motor cyclists of this country an opportunity to return to a party of Dutch riders the hospitality extended to the British team in the 1920 trial in Holland. Nothing but good can accrue from such events; would that there were more of them. Not only are friendships made between individuals, but such fraternising helps to cement the friendship of nations. The motor cycles ridden by the British team were exclusively of English manufacture, but the mounts of the visitors represented the productions of Holland, America, Italy, and Great Britain. Thus the trial was of a character in keeping with the spirit that brought the series into being: it was a competition between the chosen riders—and not machines—of two nations which appreciate motor cycling as a sport, as distinct from a pastime and its utilitarian advantages.

In arranging the trial in this country, the organisers displayed the characteristic spirit of British sportsmanship. There are no really severe hills in Holland, and to have included some of even the less difficult test-hills would have considerably enhanced the chances of the home team. To all competitors the route was a secret one, and in every way the conditions were such that the visiting team was at no time under a disadvantage through being in a strange country.

We feel sure that our guests have returned to Holland agreeing that England is a country well worth the visiting, and that British motor cyclists are ready always to extend to them a hearty welcome.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

by 'IXION'

Official!

A CORRESPONDENT informs me that the cyclists who object to the term "push-bike" ought to memorialise the Government instead of bullying me. He says that in Air Ministry and War Office orders such a phrase as "Cycles, Push, Supply of," is by no means unknown. Perhaps I may now be left in peace.

Ugh!

MY enthusiasm for portable hotels, otherwise touring with a tent, is swiftly waning. The storm which broke on Sunday evening, September 11th, caught this poor scribe on rather an exposed bit of ground, where the soil, having been ploughed in 1920, was still rather soft. Readers who are cinema fiends and go to see such serials as "The Hooded Death," or words to that effect, will remember the film hero's expression when the Black Hand collared him unarmed for the "umpteenth" time, and attach him by the ankles and wrists to two express trains moving in opposite directions at high revs. Similarly, convulsed were my lineaments about 4 a.m. on that awful Monday, as the hurricane yowled ferociously round my frail tabernacle. For the future I may prefer something solid, with a bar to it.

Pegs.

NO, No, No! I do not mean what you mean. I am still thinking of my tent. The gentlemen who make tents have still a lot to learn. My tent was designed by a cyclist for cyclists. It folds up into the size of a seafaring man's baccy pouch, and fits into the waistcoat pocket. It is precariously attached to mother earth by a couple of dozen tiny steel skewers about 4in. long. When the storm of September 11th blew itself out, the earth around my tent was perforated by tyre levers, tyre inflators, screwdrivers, cold chisels, brake rods, and other lengths of odd metal ingeniously improvised from the motor bicycle. I recommend readers who take up camping to make their own pegs from something large and strong, such as a second-hand crowbar. A colleague on *The Autocar* staff makes his from flat strip iron, 1in. × ¼in. in 15in. lengths; but then he camps on the foreshore just above high-watermark, where the sand is as friable as the french chalk in a tyre repair outfit. For myself, I am busy with ¼in. round stuff, and a length of 9in. will probably content me.

The Four-wheeler Push.

THIS autumn may see almost as many motor cyclists at the car Olympia as will visit the cycle show; for it is common knowledge that lots of car firms are bringing out four-wheeled cycle cars with engines of motor cycle type. I doubt whether there will be any real immediate competition between cycle cars and sidecars. The price chasm is still fairly wide; to quote famous examples, the 8 h.p. air-cooled Rover carette costs £262 10s., whereas a good twin outfit is listed at no more than £155, and any future price reductions should be proportionate in both lines.

The Force of Example.

MY pal Jones has a machine—we will call it the 8 h.p. Cough-Cough—of which an exact duplicate reposes in my garage. Jones's Cough-Cough has been a bad starter from birth—it has never started from cold since delivery in less than a couple of dozen efforts. My Cough-Cough is a pearl in that respect—dope, give one kick, and it's off. Last week-end Jones arrived on a visit to sample the local golf links. Sooner than wrestle with his Cough-Cough, he used mine exclusively for transport purposes. On Monday evening Jones prepared to depart. Conscience-stricken by the example of the meek behaviour of my machine, Jones's engine started at the first kick. We have sent a sworn affidavit of the circumstances to the Society for Psychical Research.

A Taxation Anomaly.

I HAVE just had brought to my notice one of the most glaring scandals in the taxation laws. An ex-officer, whose damaged legs rendered the use of a motor bicycle practically impossible, bought an A.V. cycle car, which costs £115, weighs about 3 cwt., and is fitted with an 8 h.p. J.A.P. engine. Compare this outfit with a sidecar, and whether you consider its probable effect on the roads, its implications as to its

Occasional Comments.—

owner's income, or any other rational taxation factor, it ought to be rated with the sidecars or below them. But just because it has four wheels the little 'bus is mulcted £9 per annum, which is the same as one or two light sporting cars, listed at £600 or more. Absurd, is it not? The A.C.U., the S.M.M.T., and the Manufacturers' Union ought to get the rates altered. Not only because they are a gross injustice to user and maker, but also because they tend to strangle trade in a type of machine which, for all we know, may some day render the whole nation much more mobile.

Another Prop Stand.

THE deluge has started, and I shall soon be searching in vain for naked bits of tube on my 'bus to which to affix fresh prop stands. The machine absolutely bristles with them, and I can never take another toss, for, whichever way it fell, one of them would support it. The 2 lb. 4 oz. Taylor stand was the first to go on, and proved a great blessing on multi-stop rides. It is not perfect; it weighs too much; it takes two hands—or a toe and a hand—to operate it, but it is far better than the ordinary rear stand. I am now testing a sample which arrived anonymously, with an indecipherable post-mark, and scales no more than 6 ozs., being designed to fit on to a footrest or footboard. Moreover, you just knock it down with your toe, as it is locked up or down by a short coil spring acting on each side of a dead centre like the Rudge rear stand. I fancy everybody will want a prop stand of some kind next year.

A Rapson Tyre on the Road.

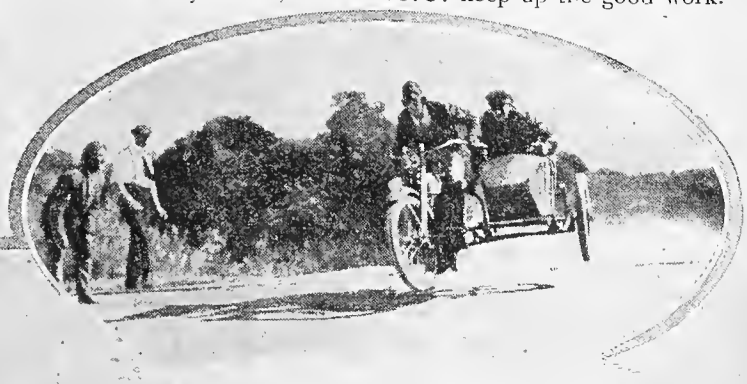
I ONCE alluded to Mr. Rapson as the Napoleon of the tyre industry, since when his side of our correspondence takes the form of a postcard with the legend "Josephine is calling me." However, one of his customers is more communicative. A Morayshire reader tells me that a small but increasing number of Rapson motor cycle tyres are being turned out, and that he has used a 700 × 80 mm. sample for some time past on the rear wheel of his Rudge. His mileage is not enough to be decisive, but he has had no trouble, although he picked up a large piece of broken bottle, causing a gash 3in. long and over ½in. deep. This terrible wound had no effect on the tyre—in fact, he rode 500 miles further before a chance occurred to get the gash vulcanised. My correspondent goes so far as to say that, with the 35 lb. pressure Rapson tyre on his Rudge became as comfortable as any spring frame.

You Won't Equal It!

IF you read in the Judges' Report of the A.C.U. Six Days that the 1⅞ h.p. Potterbus and the 8$\frac{3}{10}$ h.p. Hogbus have registered a petrol consumption of 222 m.p.g. and 131 m.p.g. respectively, order duplicates by all means, but don't expect to equal their economies. I don't say you *couldn't* do it. I say you *won't!* Why not? Because you are not the sort of man to coast down every tuppenny ha'penny slope. Because you wouldn't crouch down for miles in the dust astern of a fast sidecar outfit in order to reduce windage. The riders were rather too clever for the A.C.U. pundits, who possibly made a mistake in offering bonus marks for phenomenal economies. Some riders registered astonishing figures, and so deluded the public. It would have been enough to inflict penalties for all engines which failed to reach a rational standard of economy.

Nevertheless—

OF course, several wee snags have naturally cropped up in the first attempt to carry out a consumption test with ninety machines over 730 miles. It spelt gruelling hard work for the replenishment marshals; bothering delays for all the riders; complications for others, who broke petrol pipes, or suffered from flooding; and there were one or two rumours of dishonesty. The results—as I have hinted above—were partly fallacious. But the test was justified a thousand times over by an incident of the previous week—several riders scrapped a certain carburetter because it was extravagant. *That carburetter will immediately be redesigned:* and so may others, if the A.C.U. keep up the good work.



HILL-CLIMBING IN SOUTH AFRICA.

If a railway crossing were included in the course of a hill-climb in Britain the committee would never "hear the end of it," but members of the Cape Province M.C.C. are evidently no respectors of their machines, for the crossing depicted, showing the competitors in flight, was included in a recent hill-climbing event on Sir Lowry Pass. The rider on the left actually "jumped" thirty feet, and the sidecar, too, has all three wheels off the ground.

A SINGLE TRACK SPRING FRAME RUNABOUT.

Comments on the Autoglider as a Hack Machine.

An Open Frame Miniature with the Power Unit in front.

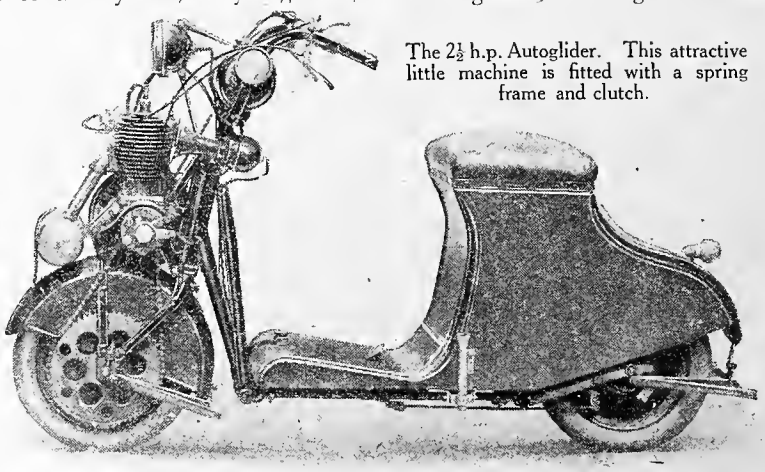
IF a Thames punt were offered to a North Canadian trapper there is no doubt that he would laugh it to scorn, yet a punt has certain advantages over the birch-bark canoe, just as the latter for certain purposes is superior to the punt.

One could go on indefinitely with such examples of special means for special needs, but the one given above suffices to illustrate the point we wish to emphasise in connection with the Autoglider. It is not exactly a motor cycle, yet it belongs to that category; it is not a scooter, although by most people it is regarded as such. It is in one of the sub-divisions, just as the canoe and the punt come into the general category of boats, and, like either of the types of watercraft, it has a place in the world of transportation.

"One Man's Meat—"

For a considerable period during the summer we had one of these machines in use, and at the outset we made a mistake which approximated to offering a punt to a Canadian woodsman—we offered it to a sporting member of the staff, whose ideals cause him to eschew such refinements as spring frames and small two-stroke engines. He laughed at it.

Our next offer was to a very tall, very dignified, and very sensitive member of the staff, who continually complains that all motor cycles are built for dwarfs. It was refused with indignation after a private trial in view of a grinning office boy, who, incidentally, half expected that it would be handed to him. (We more than suspect that he had completely mastered its control during a luncheon hour.)



The 2½ h.p. Autoglider. This attractive little machine is fitted with a spring frame and clutch.

Now it happened that one short-limbed member of the staff had two peculiarities; one was a *penchant* for perfectly-creased trousers, and the other a long-abiding love for a motor cycle with a very dirty engine. He was thus prevented from riding to the office unless in motor cycling attire. He did not wait to be asked if he would use the Autoglider. He put in his claim simultaneously with that of the Editor's lady private secretary, who fell in love with the polished mahogany bodywork at sight.

During the Autoglider's stay in Coventry it was used by every member of the staff and by others. Some rode it once, others perhaps twice—when they were in a hurry and their own machine was not available—and quite a number used it because they really liked it. It was borrowed for week-ends by riders of both sexes; it was used on shopping excursions, it went on a short tour, and one early morning it was the victor in a private match between an Autoglider enthusiast and the owner of another machine of a similar type.

As a Utility Mount.

To summarise the opinions of many riders, we have had to eliminate the views of those who regard the motor cycle purely as an accessory to sport. The Autoglider was designed to meet specific requirements, and these needs are fulfilled.

It is extremely easy to ride; one pushes off, drops the compression release lever, and the engine fires. Then the clutch lever is raised, and the machine comes to a standstill while the rider makes himself or herself (usually the latter) comfortable.

The Autoglider's name has not been derived from the

The Autoglider will rest against the kerb, and it is rarely necessary to use the stand. When required, however, this is rendered easy by the strap handle at the back of the seat.

manner in which the machine glides off on the clutch; the full meaning of its name comes home to the rider when once under way. In the world of wheels there is nothing that gives quite the same sensation as the Autoglider. Its spring frame functions perfectly, while, on a really bad road, a second unique sensation is experienced, and may be likened to a canter on a well-trained horse. At no time does one feel road shocks, and as for the speed—well, if it were not so easy to control, one would almost say it was too fast.

There is no doubt that this seat-type Autoglider is a great improvement on the seatless type. The seat considerably extends its range of action. We once covered forty miles at over 20 m.p.h. on a stand-up model, and found it somewhat fatiguing—in fact, it was only the excellent springing that made the achievement possible at all.

We hesitate before criticising one point which seemed a disadvantage. It did not prove so easy to push about as a motor cycle; but this is a motor cyclist's view. In contradiction to this we ought to mention that a lady who made the same complaint regarding a lightweight motor bicycle found no difficulty in handling the Autoglider, but found a disadvantage in the fact that it could not be wheeled directly over the kerb. This is due to the small wheels and the weight of the engine at the front.

The box under the seat is a very useful item; especially does this appeal when shopping. In this receptacle the tool roll, a spare tube, and repair outfit are always at hand without having to undo a number of straps. A spare can of oil can also be carried—an advantage when it is remembered that on filling up at a garage one cannot always buy a gill of oil to mix with the petrol. There is still room for small parcels.

The price with clutch is £65, while several other models are marketed from £40. The manufacturers are Autoglider, Ltd., Birmingham.

The locker beneath the seat is a much appreciated item in its specification.

As a runabout for the business man or woman the Autoglider fulfils all requirements.

BROKEN VALVES.

IF you read the account of any big trial held this season, you will see that one or more riders broke exhaust valves. In fact, there was a petty epidemic of broken valves in the speed test which concluded the Six Days Trial at Brooklands, even though some of the competitors had fitted new valves for the occasion. A superficial observer would imagine that no unbreakable valves exist. This is a complete blunder. There are firms who will supply any engine builder with valves which they guarantee to be unbreakable; nor are those valves necessarily so hard that they hammer a soft cast iron seating out of shape. One such firm standardised during 1920 three materials for making valves for motor cycle engines. I may give an idea of the respective prices by mentioning three figures—1s. 3d., 1s. 9d., and 6s. The 1s. 3d. valve was not recommended. The 1s. 9d. valve was good enough for any ordinary side valve engine without being pluperfect. The 6s. valve was advisable in designs where a broken valve might cause consequential damage, *e.g.*, to the piston. The firm had many customers. Only one of its clients bought the 6s. valve. Most concerns thought 1s. 3d. quite enough to pay. I have not broken a valve for donkey's years; but I am very careful about the make of machine I ride.

IXION.

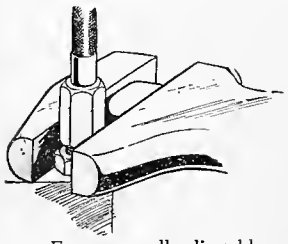
TOOL KITS.

Some Remarks on the Minor Equipment of Present-day Machines.

BY a process of evolution, the modern motor cycle has become a wonderfully perfect piece of mechanism. Faults in engines, transmission, frames, etc., have gradually been eliminated until, in spite of the fact that there are many opportunities for improvement, the motor cycle as a whole is a most reliable and satisfactory means of conveyance.

Now the motor cyclist is usually an enthusiast, and likes to perform his own repairs and adjustments; incidentally, if he is mechanically inclined, he will save much time and money. But how often has the reader desired to carry out an elementary adjustment, and found no tools suitable for the purpose?

It is becoming a practice to supply a set of box spanners, a large adjustable spanner, a pair of pliers, and a perfectly useless screwdriver, neatly rolled up in a canvas cover, and with these implements the unsuspecting are content *until trouble arises.* Those who have tried to adjust a hub bearing or a Bowden cable adjuster with such a kit know that both can be done, but the process is not good for temper or plating.



Even a small adjustable spanner is too wide in the jaws for small adjustments.

It is sad, but true, that the commonest adjustments are those least often provided for. To the two instances above should be added the need for spanners to enable the rider to adjust his tappets and to tighten an oil or petrol union; these tools, particularly the last mentioned, are frequent absentees.

There are Exceptions.

All manufacturers are not to be tarred with the same brush—some few supply excellent kits, but very few supply *all* the necessary tools. For instance, the last machine owned by the writer was turned out with a world-renowned name, and nothing else to assist one in adjusting the tension of the clutch control, an operation which became necessary twice in six months. Of course one can often "manage" with a good adjustable spanner, but this is bad for nuts and too wide in the jaws for general use on motor cycles. I have an old and ever present friend in a "Lucas Girder" with jaws ground down, which has been a constant companion and help for seven years past.

The ideal motor cycle should require only a modest kit, since four nut sizes, exclusive of valve cap and head spanners, are all that are required, but in the case of machines assembled from proprietary units a very complete and rather bulky kit is necessary.

No machine should be sent out from the makers without a spanner to fit every nut, a first-class medium-sized adjustable spanner, a screwdriver with a correctly ground point, a chain rivet extractor or belt punch, or both, and tyre levers.

With regard to the normal kit: unless split pins are used, and they are not common on motor cycles, pliers are unnecessary—and even injurious—since the average rider employs them only for removing nuts, holding bolts by the threads, and other most improper purposes for which special spanners should be supplied. The general run of cheap and nasty screwdrivers as supplied appear to be designed for any purpose rather than driving screws, since they are either too thick to go into the screw slots or else ground at such sharp angles that they immediately force themselves out of the slot when a turning movement is applied. *Good* box spanners are excellent *when there is room to use them,* and ring spanners are even better, though the same qualifications apply. Provided that the necessary set spanners are supplied, there is no necessity for a large adjustable spanner which will only be used as a hammer (for which purpose the correct tool is both lighter and more effective).

Complete with Oil Tin.

Next, a word about oil guns. An extraordinary number of motor cycles are turned out with a cycle oilcan in the tool roll. This is the most wonderful case of optimism of the whole bunch. The life of such an accessory in the average pannier bag is short and noisy, though probably anything but merry; and what is it there for, anyway? If the engine needs injection suitable tank fittings should be included, and no device ever constructed could be less suitable for lubricating motor cycle parts than a narrow-necked tin can.

A screwdriver to be serviceable should have a gently tapering blade. The short steep angle of the usual tool-kit instrument is most undesirable.

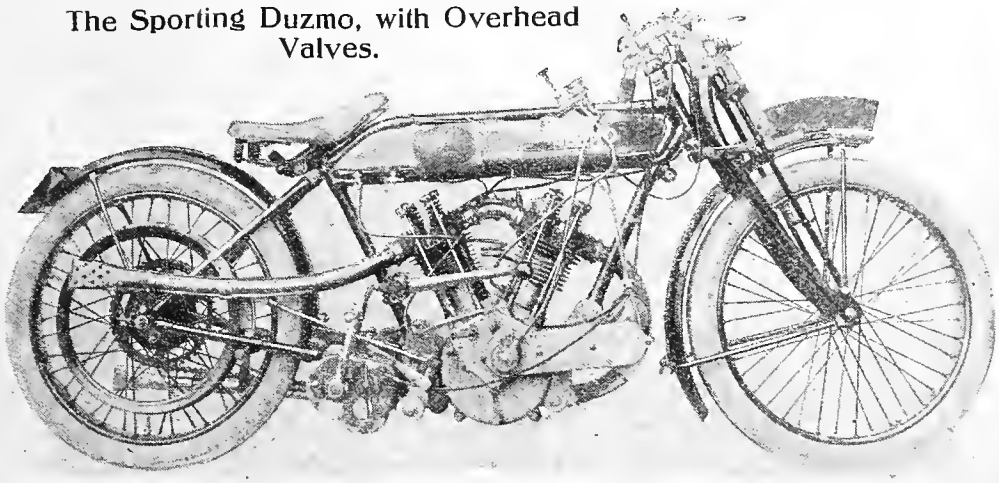
Being a pressman who is accustomed to riding all sorts and conditions of motor cycles, equipped or otherwise, according to manufacturers' specification, I possessed (at one time) a private kit as follows: A set of Terry flat spanners (admittedly a little narrow in the jaw for big nuts, but strong, well-made, and close-fitting), a real screwdriver (home-ground), the Lucas adjustable spanner already mentioned, a tiny King Dick, a pair of parallel jaw pliers, and a Lucas oil gun. Unfortunately, this kit has been thinned down by the ravages of time and unscrupulous motor cycling friends, but parts of it accompany me on all long-distance runs, and I am seldom bothered with badly fitting or missing equipment.

There are so many possible ways of carrying tools that it would take too long to describe them in detail, but it must be obvious that the nearer they are carried to the centre of the machine the less they will be subjected to jolts and jars.

UBIQUE.

A NEW BRITISH BIG TWIN.

The Sporting Duzmo, with Overhead Valves.



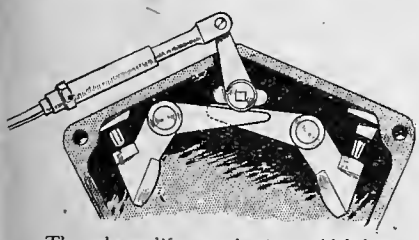
A new sporting model Duzmo, fitted with an 8 h.p. o.h.v. twin engine and Sturmey-Archer three-speed gear.

IN placing the new 1,000 c.c. twin Duzmo on the market, the manufacturers are making a direct appeal to the sporting section of riders to whom power, speed, and flexibility are great attractions. It has often been stated that this section of the public has no wide choice of British machines; thus the new Duzmo will be an attractive addition to the high-powered solo class. The cylinders closely resemble that of the single-cylinder model which competed in the A.C.U. Six Days Trials. Having a bore and stroke of 89×79 mm., the cylinders are set at an inclined angle of 50°.

Detachable Heads.

Detachable heads, held down by long bolts, and machined all over internally, are employed; and the arrangement of the overhead valves is such that there is a total absence of pocketing, the rocker gear being supported from lugs cast integrally with the head. In the case of the forward cylinder, the exhaust pipe curves neatly round, and terminates in a drilled fish-tail extending well beyond the rear spindle on the near side, while the rear exhaust pipe is brought straightaway to the off side of the machine. Lubrication is by means of a Best and Lloyd mechanical pump, and, in addition, an auxiliary hand pump is fitted. There is a separate oil lead to the back of the front cylinder.

A separate camshaft is utilised to operate the valves of each cylinder, and the whole of the exhaust lifting gear is enclosed within the timing cover. An interesting innovation in this respect is an arrangement by which the front exhaust valve is raised before the rear valve, so that the risk of oiling up the rear plug is lessened. Articulated connecting rods are used—a feature which is unconventional as far as motor cycle engines are concerned, although common practice in aircraft.



The exhaust lifter mechanism, which is entirely enclosed.

The rear connecting rod has a large roller bearing big-end, and close above the bearing is a lug and pin to which the forward connecting rod is attached. Floating both in piston bosses and small ends, the gudgeon pins are located by spring split rings, the pistons themselves being of aluminium, and of more or less conventional design.

Precautions against Valve Breakage.

We were informed that no trouble has been experienced with broken valves falling into the cylinder and causing damage to the piston and cylinder head. In this connection the valve gear is so arranged that, unless the fracture occurs close up to the head, the valve cannot drop into the cylinder. Stainless steel is used in the valve construction, and is giving every satisfaction. The finish of the engine is excellent, and the appearance most attractive.

Transmission is by chain throughout, a Sturmey-Archer three-speed gear providing the necessary change of ratios. Rear braking is carried out by means of a shoe operating on a dummy belt rim, and a Webb internal brake is incorporated in the front wheel. Wide petrol tank, straight handle-bars, and narrow mudguards provide a very sporting appearance to the machine; though, in the case of the touring model, ample mudguards are provided, and it has an expansion chamber of generous dimensions.

Brampton forks and a Brooks racing saddle are fitted, and in conjunction with conveniently placed footrests, the riding position and general controllability are distinctly good.

Single Lever Carburetter Standard.

Such excellent results have been obtained from the Cox-Atmos single-lever carburetter on test that this device will be standardised.

Whether the new Duzmo will succeed in attaining a 100 m.p.h. gait on the track or not, its performance in competitions will be watched with interest.

Mr. J. Wallace, the designer, is confident that the new model will cater for a market which undoubtedly exists, and his confidence should be justified. The Duzmo is being manufactured at Cedar Road, Enfield Highway, Middlesex.

Diagram of the articulated connecting rod. A large roller bearing is employed for the rear rod.

THE MOTOR CYCLE CLUB OF FRANCE AND THE INTERNATIONAL TROPHY.

WE read in the official journal of the Motor Cycle Club of France that the club intends to re-establish "the International Trophy, formerly the glory of the M.C.F. in the early days of motor cycling," and will make every effort to regain possession of the trophy in question. In 1906 the trophy was won by Austria, where it is still supposed to be, although it is said to have been lost.

To the best of our knowledge, the matter is one which solely concerns the International Federation of Motor Cycle Clubs. On the occasion of its re-establishment in 1912, an effort was made to regain the trophy. This effort was without success, as it could not be traced. It was further decided at the inaugural meeting on the occasion of the re-establishment of the F.I.C.M., with a view to developing design in motor cycles, that the international competition should take the form of a reliability trial, and not a race; and the British Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., filled the gap by presenting the magnificent silver trophy won this year by Switzerland. It seems, therefore, that our friends the Motor Cycle Club of France are on the wrong track.

A WEEK-END IN SCOTLAND.

Being Impressions of a Competitor in the Scottish Two Days Trials.

A scene on Burnfoot Hill in the Scottish Two Days Trial. J. Shepherd (8 Chater-Lea sidecar) on a portion where the surface resembled the bed of a mountain stream.

A DISTINCTLY successful trial in every sense. This was the unanimous opinion of those riders who competed in this year's Scottish Two Days, which was described in last week's issue of *The Motor Cycle*.

These few notes are penned, as the impressions of a competitor, immediately after the conclusion of the second day's run; and as Sunday had intervened between the run out and the return journey, memories of the first day's run had time to mature, and in the process Talla Linn has become just a hill and the day itself but a pleasurable run under the auspices of the Edinburgh Motor Club.

On Sunday bright sunshine awoke us in our various quarters, palatial or otherwise, to the scent of the marine breeze.

Stranraer has perhaps fewer attractions than Oban of last year, but most of the competitors visited the curious fish pond at Port Logan. This pond is land locked, though fed by the sea, and is stocked with numerous sea fish, which readily take food from the hand.

The King's Arms Hotel, the headquarters at Stranraer, is one of the best we have encountered in Scottish trials. In the evening, Capt. McRobert (the proprietor) and Miss Ford, both of whom have obtained some notoriety in opera, entertained the competitors to a charming concert; but among the competitors themselves there was an appalling lack of talent, only one of them subscribing to to the programme.

On Monday perfect weather conditions again favoured us, and after an enjoyable byroad run Pinmore, the first observed hill, was lightly dismissed by almost everyone. Burnfoot, taken just before lunch, was, however, a very different proposition. It consisted of deep ruts and watercourses running irresponsibly at every conceivable angle, and liberally strewn with boulders of all sizes. Rhodes, whose Scott Sociable had run like a clock throughout, and seemed a certainty for a premier award, made a clean ascent, but at the summit he announced that he had damaged his bevel, and had to retire.

Waterloo—One Mile from the Finish.

The remainder of the trial was by main roads to Edinburgh, interesting and picturesque scenery and splendid surfaces combining to make the run most enjoyable. The last hill, West Mains, is in one of the Edinburgh public parks.

The road is very narrow—a wall on one side, a steep bank on the other. Hundreds of spectators were present to see the show. Most of the solo machines made light work of it; but, since the gradient is 1 in 3.8 for about a hundred yards, the fun began with the passenger vehicles. Many of the sidecars failed utterly, and several golds went west. The star performers were: Grinton (Harley-Davidson sc.), Roger Macrae (Harley-Davidson sc.), Neville Hall (2½ O.K. Junior sc.)—who made a wonderful performance throughout, climbing every hill and being dead on time at every check—Miss D. Pullinger (Galloway light car), Capt. Carden (Carden light car), and two of the Rovers.

The most interesting performance was put up by H. M. Batten, who drove the surviving Scott Sociable. His front wheel refused to remain on the ground, and he bumped the wall. Simultaneously, the rear tyre came off, and the climb was continued on the rim. Harry Fairley experienced exactly the same trouble. Alan Hill, with a clean sheet so far, realised his presentiments; for, at the foot of the hill, one of his connecting rods broke, and, of course, smashed up his engine. Appalling luck, within a mile of the last check!

Official Results.

GOLD MEDALS.

J. B. Sanderson (2¾ Hawker).
A. Brown (3½ Sunbeam).
W. B. Anderson (4 A.J.S.).
J. Hendrie (3½ Sunbeam).
R. L. Williamson (3½ Norton).
R. Watson (4½ Triumph).
A. K. James (4 Harley-Davidson).
A. L. Downie (5-6 Raleigh).
S. B. Waldie (4 Blackburne).
A. E. Paper (4 Triumph).
W. T. Tiffen (2¼ Velocette).
J. C. L. Guy (4 Triumph).
A. W. Welsh (4 Triumph).
R. Stewart (4 Norton).
J. M. Phillipps (3½ Sunbeam).
A. G. Magras (3½ P. and M.).
D. Ogilvie (2¾ Starley).
R. S. Macrae (Harley-Davidson sc.).
Geo. Grinton (Harley-Davidson sc.).
W. G. Donaldson (5 Rover sc.).
G. Stokes (5 Rover sc.).
J. Jarvis (8 Blackburne sc.).
Neville Hall (2½ O.K. sc.).
F. D. M. Baxter (8 G.N.).

SILVER MEDALS.

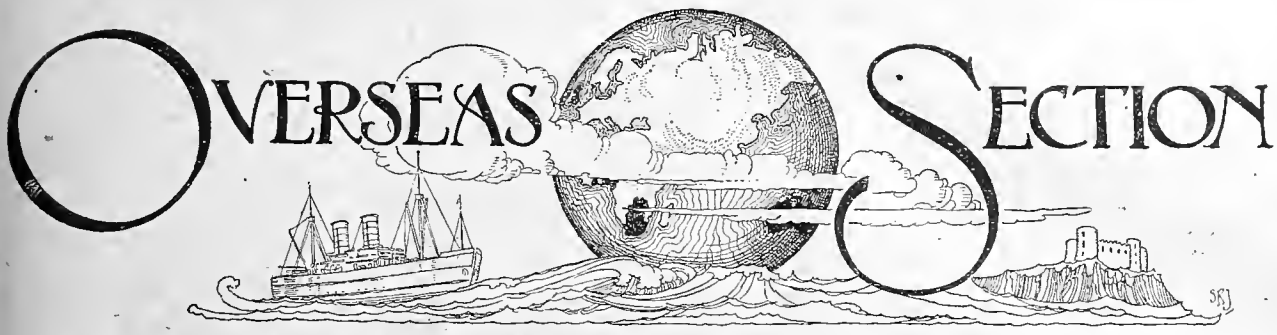
Rider and Machine.	Marks lost.
J. W. Morton (3½ Rover)	4
D. M. Galloway (5 N.U.T.)	1
D. Wright (4 Indian Scout)	1
T. Laing (3 Sunbeam)	1
L. P. Waldie (3½ N.U.T.)	3
J. W. Burton (3½ Norton)	1
R. M. Wilson (2¾ Hobart)	1
A. L. Clark (3½ Sunbeam)	1
D. Whyte (3½ Sunbeam)	1
D. S. Alexander (8 Matchless sc.) ..	1
J. Shepherd (8 Chater-Lea sc.) ..	1
K. W. B. Sanderson (8 Brough Superior sc.)	6
R. Spence (8 Chater-Lea sc.) ..	2
J. Oswald Turnbull (7 American X sc.).	2
A. F. Downie (7 A.J.S. sc.)	1
H. Mortimer Batten (5-6 Scott Sociable)	2
H. G. Fairley (2¾ Hawker sc.) ..	2
W. R. Bruce (5 Monopole sc.) ..	1
Tom Gillies (3½ Sunbeam)	1
G. H. Moir (8 G.N.)	1
Capt. Carden (Carden)	3

BRONZE MEDALS.

A. F. Sidford (8 Matchless sc.) ..	4
D. S. Alexander (8 Enfield sc.) ..	19

GENT'S TEAM PRIZE.—1, Andrew Downie Ltd.; 2, Alexander and Co.

CLUB TEAM PRIZE.—Cumberland M.C.C.



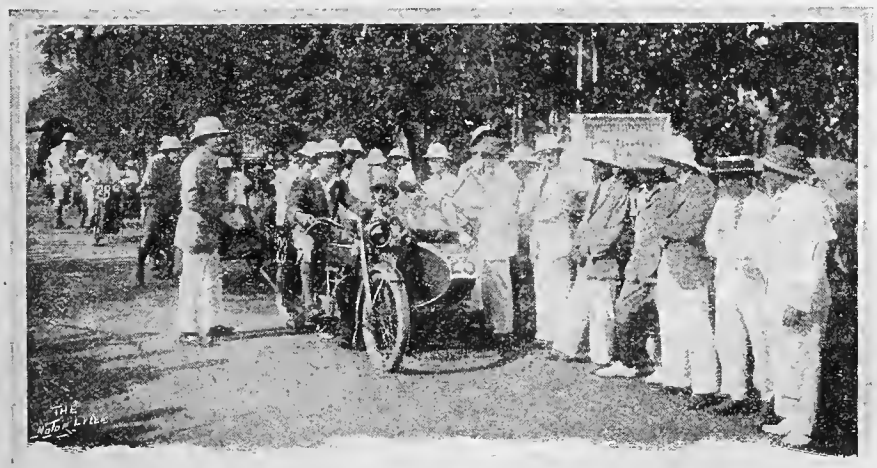
A Commentary based upon Practical Experience and a Study of Overseas Opinions.

Where Four Speeds Score. ALTHOUGH only two makes were so fitted (and in one case "unofficially"), the fact that four-speed gears were used at all in the recent A.C.U. Six Days Trials may well be a reliable indication of future tendencies. If this should prove so, none will be more gratified than certain sidecar users overseas.

We have before us a letter from a resident in the Nilgiri District of South India, who at present uses a very well-known British big twin sidecar outfit, having gear ratios of 4.6, 7.4, and 12.6 to 1. In this mountainous area the gradients are severe; there are few stretches of level road more than half a mile in length, and, as a rule, the range of visibility is considerably less, owing to the incessant turns and twists in the tracks along the hill sides. It is impossible, therefore, to drive a heavy sidecar at the speed usual on English roads, for which the gear ratios on our correspondent's sidecar were obviously designed. The result is that he is compelled to use second speed a great deal oftener than should be necessary in the interests of economy and a cool-running engine.

While we recommend lower ratios all round (gained by fitting a smaller engine sprocket) as a palliative for our reader's troubles, we are inclined to agree with him that a four-speed gear box would effect a complete cure. An 8 h.p. sidecar machine ought to pull a 4.6 to 1 gear often enough even in a mountainous district to make its retention worth while, and an additional ratio of, say, 5¾ or 6 to 1 would seem to be approaching the ideal.

Here is an opportunity for the British manufacturer to cater for the demands of quite a large section of overseas motor cyclists. Next year it is possible there may be several proprietary four-speed gear boxes available.



After a long period of inactivity motor cycle trials in Ceylon have been resumed. The illustration depicts the start at Kalulara of the first post-war motor cycle non-stop reliability trial, showing a Harley-Davidson rider being despatched.

Memo. on Service. "IT does British firms far more harm in the long run to export machines without ensuring that there is an adequate stock of spare parts in the country than if they sent no machines at all"—an extract from the letter of a Shanghai correspondent. These words might well be framed and hung in the office of every British motor cycle manufacturer who wishes to build up an export trade. He would benefit—and so would the overseas motor cyclist.

Expanding Club Life Overseas. IN South Africa there is slackness in the sale of motor cycles (incidentally, even greater in motor cars), and in other overseas markets, yet it is refreshing to note the increasing enthusiasm for competitions and the formation of new motor cycle clubs. The falling off in trade was brought about in the majority of cases by economic causes, of which an unfavourable rate of exchange is usually the chief, but, where club life and activities continue to expand, there need be no fear for the future of the motor cycle.

There are now two prosperous clubs in Cape Town alone; and recent speed trials of the Mashonaland M.C.C. attracted quite an enthusiastic entry.

The colonial clubman (if he will pardon the adjective) is generally an out and out enthusiast, and natural conditions abroad very often cater for the sporting type of trial. Speed trials on the English style are also gaining in popularity, and consequently there is a growing demand for the "sports model"—a type that England makes better than any other country in the world. At one time overseas demand tended towards the big twin for both solo and sidecar work.

A Selection of Letters from Readers scattered all over the World.

Yorkshire or South Africa?

Roads in England and South Africa are compared by "CLOEE," a Port Elizabeth (South Africa) correspondent. He writes:

"When in the Mother Country my home was in Bradford, Yorks., and, as you know, the roads in that part of England, especially in the towns, are nearly all cobbles. During the war those roads began to get extremely 'pot-holey,' the damage being done mostly by big heavy steam and motor lorries, and as there was very little repair work going on, these 'buses' played havoc with the roads. Now, out in this country, the town roads on the whole are 100% better than the Yorkshire town roads, with a few exceptions of course; the little villages up country must not be included.

"The roads are all built up in this town, because what is now town used to be the beach once, so they are composed of chopped stone, well rolled in, and then covered with asphalt, which makes for quite a nice surface. The faults we have to find are when the municipality dig up the roads for drainage, electric cables, etc.; they never level them off properly again, leaving either a little mountain in the road or else a pit.

"Once one gets out of the towns, one never knows what sort of surface one is likely to strike—in fact, they are more like grassgrown tracks. The main roads from big towns to other big towns are a bit better, but as for sand, loose stones, young rocks, and mud, you are lucky if you ever get a stretch a mile long without any of the above appearing in it.

"Of course, the climate out here is infinitely better for the pastime of motor cycling than that at home, especially Yorkshire. As you know, we get very little rain, and although the dust on the roads is sometimes very bad, it is better than the incessant rains and cold at home.

"Motor cycles, on the whole, both English and American, stand up to the conditions very well, and although the latter at one time practically dominated this market, I am glad to say that the former are getting much more popular now, and a lot of lightweights such as the Triumph Junior, Clyno, and O.K. Union are finding their way out here, and, I understand, giving excellent service. Of the heavier machines, Triumphs and B.S.A.'s, with a sprinkling of the Norton and Douglas, are also represented, and of the sidecar twins only the new Matchless and A.J.S. are to be seen about."

Motor Cycles for India.

MR. C. W. BOWLES, State Engineer, Patiala, Punjab, makes the following suggestions:

"For India two classes of machines should be catered for—*(a)* For use in cities and cantonments. *(b)* For district and touring purposes.

"For *(a)* the class of machine required is the simple 3½ h.p. or 4 h.p. single-cylinder, with all its fine feathers on, if it likes, by which I mean, three speeds, gear cases galore, etc.; but the only real necessities are a free engine, a kick-starter, and a direct drive from the engine to the back wheel by a good belt.

"For *(b)* the twin-cylinder of not less than 6 h.p. is desirable, for this, in nine cases out of ten, has to run a sidecar with it, and do fairly long journeys at a stretch, a journey which may mean fifty miles, wherein no possible help, spares, petrol, or oil can be obtained, and to carry a servant, bedding, and a suitcase.

"The roads in India are very fair, but are worn by the bullock carts into ruts, and all wear comes on to the same track. The ordinary cart has its wheels about 4ft. 6in. apart, and the bullocks walk in the same line, so it is necessary to have one's sidecar to conform to the ways of the bullock carts.

"Now as regards the requirements for the users of *(b)*, I recommend the following: Wheels, 28in. × 3in., detachable, disc type, and strong spring front forks, trussed type. Springs to the rear wheel not really necessary, till such time as an ideal springing is ensured. In the meantime a good spring saddle, and, if required, a spring seat-pillar. Brakes to both wheels of V type; three speeds, with kick-starter on the right; magneto ignition; electric lighting set separate from the ignition; clutch to be of cork inserts and plates; enclosed chain cases throughout; efficient splayed mudguards with good clearance between tyres, and side pieces to them; sprung footboards; stand to back and front wheels; cut-out to exhaust; clearance at least 8in.; large tool-cases each side of the machine (not little sandwich boxes as usually fitted), large oil and grease-retaining hubs; and large sized oil and grease cups, not the usual fitment, into which a point of a pin can with difficulty be pushed. The chains, clutch, and cases should be to the right of the machine, also the valves (not between the cycle and sidecar, as one sees so many chains, etc., fitted)."

Sound Sense from Queensland.

MR. R. S. ADAMS, writing from Central Queensland, opens his letter with the statement that "it takes a good deal to drive the out-back Australian into ink." Our overseas postbag hardly bears this out! He continues:

"For a long time we have been reading *The Motor Cycle* here, and have read many letters from Australia appearing in the paper.

"Take the 'Awful Roads' complaint. Australia is the most thinly populated country of any size on the globe. Moreover, it is the 'newest' country from the point of view of civilisation. Any sane being never expects to find in the newer countries roads similar to the European highways, which date from the Roman times in many cases, and beyond that period perhaps. We must accept comparatively poor roads as part of the programme till the population becomes large enough to provide the necessary revenue for road-building. The man who buys a motor cycle in this country should know that he is in for a rough time more or less according to locality.

"Australia has approximately the same area as the United States of America. In a country of so considerable size, all kinds of country are met with. Here, in Central Queensland, most of the hinterland is open black soil downs; it is similar to the Canadian prairie in some ways, and the South African veldt in others; but the 'black soil' is, I think, unique. The 'roads' are like Topsy—they just grow. In the first place, a waggon meanders out to some newly opened up cattle or sheep station, and its tracks are followed by other traffic till the tussocky grass is worn down. One can trace it for miles ahead like a long dark ribbon. Where the traffic is light the grass between the wheel tracks is never worn down, so that you have twin tracks running parallel, and each one about a foot wide. We have months and months without rain sometimes, and these tracks beat down firm and smooth; it takes practice to enable the motor cyclist to keep the narrow track, but once the knack is mastered it is possible to ride for hundreds of miles through the pure, dry air and across glorious country as fast as the old jigger can clip along.

"But, if a storm cloud shows on the horizon, it is just as well to give the engine still more juice. Once rain falls in this country it is the end. Twenty points or more usually mean leaving a motor cycle, though a car, with its wide mudguard clearance, can battle along up to a certain point. The black soil 'picks up,' and goes on doing so till the mud jams between the tyre and mudguards, and both wheels lock tight. In a frantic effort to keep going the rider gouges this stuff out with a stick or screwdriver, but another fifty yards pulls him up again.

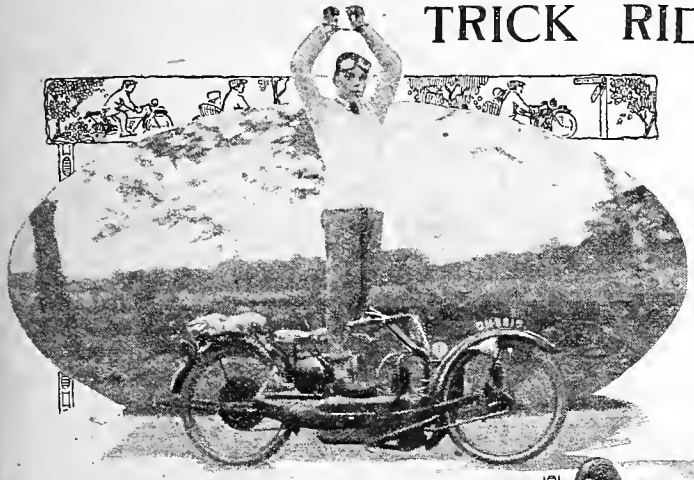
"Sometimes, while the ground is still wet after rain, cattle will wander along the road for miles. In drying it sets hard, and every hoof track is as clearly defined as in a plaster of Paris cast, and it will remain so till the next rain. Under such circumstances, we lay our motor bicycles up here and use horses till conditions are more suitable. Why make a martyr of oneself in these matters? The motor cycle in the out-back has a definite place in the scheme of things; but to ask it to do work that could be done more easily and efficiently on horse back, or in a light buggy, is only going to retard its popularity.

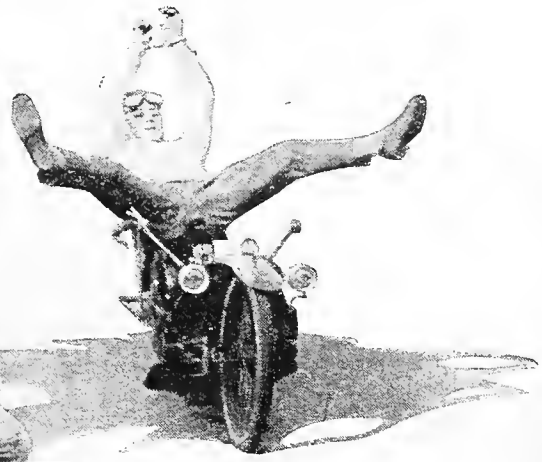
"The monotonous bleat concerning the conservatism of English designers begins to pall, and is mostly born of ignorance. In buying a new machine of English design, my only complaint is that I cannot decide which is, for my needs, 'the best of the best.' I am like the child in the sweet shop with a penny to spend.

"If, after studying the 'Buyers' Guide' in *The Motor Cycle*, the overseas rider is unable to find a machine to meet his needs, I would suggest that he would perhaps be, after all, better served by a caterpillar tractor or a good substantial pair of skis."

TRICK RIDING IN HANDCUFFS.

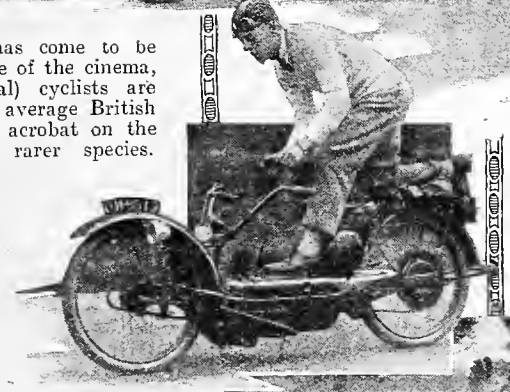
Interesting—but not Recommended!



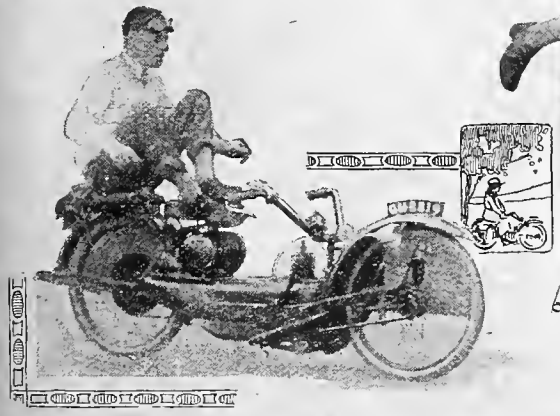


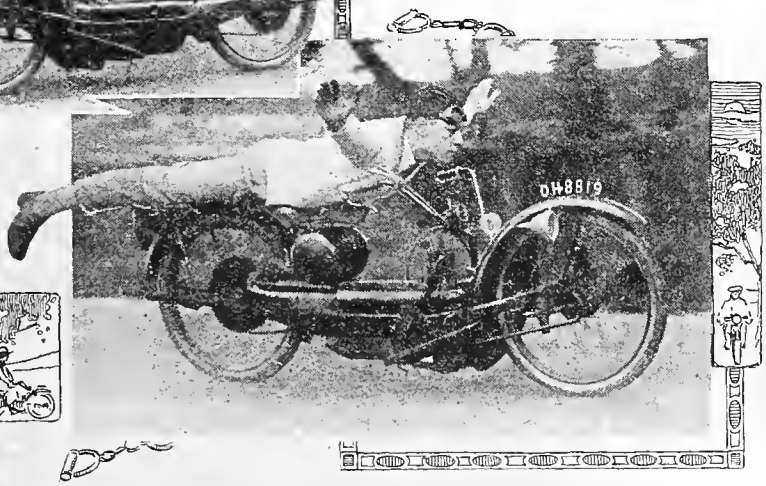
MOTOR cycle trick riding has come to be regarded as the prerogative of the cinema, and although trick (pedal) cyclists are almost as common in the average British music hall as low comedians, the acrobat on the self-propelled two-wheeler is a rarer species. Perhaps, fortunately.

Its very novelty alone makes the spectacle an interesting one; and it was in this frame of mind that we journeyed out the other day to witness Mr. P. Aherne give a selection from his repertoire of "stunts" on a Ner-a Car. As may be gathered from the pictures, we spent quite an entertaining afternoon.



Trick riding that is, perhaps, not so easy as it looks. In some of these pictures, which were *not* done for the cinema, it will be noted that the rider is handcuffed.





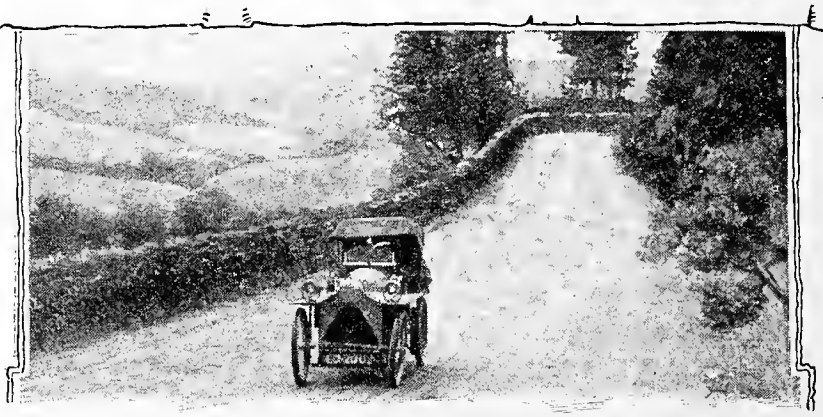
The rider did everything except turn somersaults, and we understand he does this, too, at very special request! Then, "wearing" a pair of regulation handcuffs, he repeated practically all his most difficult feats; and indeed, once going, he seemed to have little use for his hands at all. Had the steering lock of his machine permitted, we are sure that he could have journeyed back and fore with his hands tied behind his back. As it was, he had to "reverse" to turn round. And all the while it appeared childishly easy.

ANTI-DAZZLE HEAD LIGHT TESTS.

OFFICIAL certificates have been published concerning R.A.C. tests of two Salsbury Anti-Dazlo head lights. In the first model the device is mounted in a lamp with a lens mirror behind the electric bulb as the principal reflector, and with a small lens mirror in front of the bulb that throws the light back to the principal reflector. The upper part of the front glass of the lamp has saw-tooth indentations facing outward. With a 44.8 c.p. bulb at 12.6 volts pressure the effective forward illumination was 234ft. within 7½ft. of the centre line of the beam. Side illumination was much damped down, for 15ft. from the centre line of the beam the effective illumination was but 56ft. At eye level no dazzling effect from the lamp was experienced nearer than 82½ft. from the source of light, which must be considered satisfactory.

The second device consisted of a lamp with a parabolic reflector with the bulb placed centrally at the back. The front of the bulb was covered with a patch presenting a silvered surface towards the light and a black surface towards the front glass of the lamp. In this model the front glass had saw-toothed indentations on its inner side and was plain on the outside.

CYCLE CARS *under* TEST



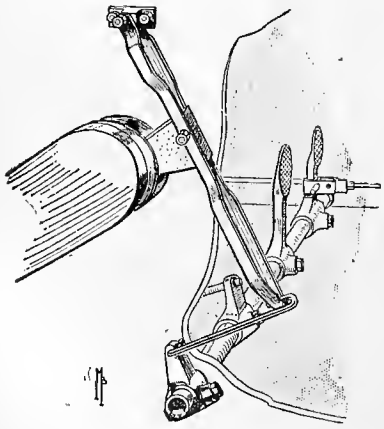
THE 8 h.p. TAMPLIN.

ENGINE: 8 h.p. J.A.P.	*GEAR BOX: Sturmey-Archer three-speed.*
LUBRICATION: Hand pump.	*SPRINGING: (Front) Coil; and (rear) quarter-elliptic.*
TRANSMISSION: Chain and bell.	*PRICE: £145.*

THE 8 h.p. Tamplin cycle car is an extraordinarily interesting vehicle, because it so narrowly misses genuine greatness in what is probably the thorniest sphere of motoring design. The creation of an entirely satisfactory cycle car has never yet been achieved. In the teeth of so many failures the Tamplin designer was ambitious; he aimed at combining motor cycle performance and economy with car comfort. His ambition has overleaped itself; but in overleaping he has landed on his feet.

Economy and Hill-climbing.

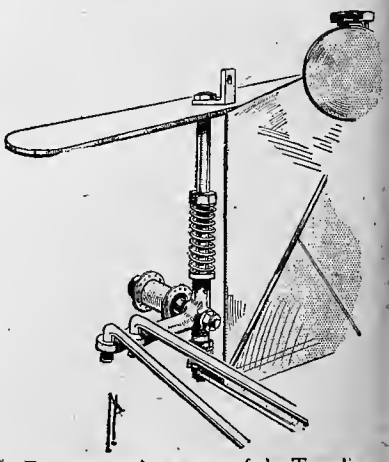
To expound this enigma more precisely, the sidecar outfit gives us economical speed without adequate comfort (remember the exposure of its driver!). Certain cheap and sedate four-wheelers give us economical comfort without speed. The Tamplin essays to provide all three. It runs sixty to seventy miles on a gallon of fuel, and it can touch 55 m.p.h. on the flat. It can climb most hills on top gear. It can scream up our most infamous freak hills on first or second gear at a terrific bat. It can restart from rest anywhere. In all its gaits it resembles a motor bicycle of power and reputation—you plan your trips with that superb disdain of gradient which the motor bicycle inspires. Simultaneously it is sprung on all its wheels. Its occupants sit on cushions, not saddles. They are protected from the weather in front by a glass windscreen; on both flanks by the sides of the body; and overhead by a neat hood covered with black fabric. This catalogue of praises suggests that the threefold ideal of speed, comfort, and economy had been fulfilled. Actually, greatness has been missed by a hair's breadth if we interpret a "great" motor to be one which all the world and his wife will buy.



Inter-connected clutch control and braking system. Observe the block engaging the gear box pulley. The left side pedal operates both the clutch and countershaft brake.

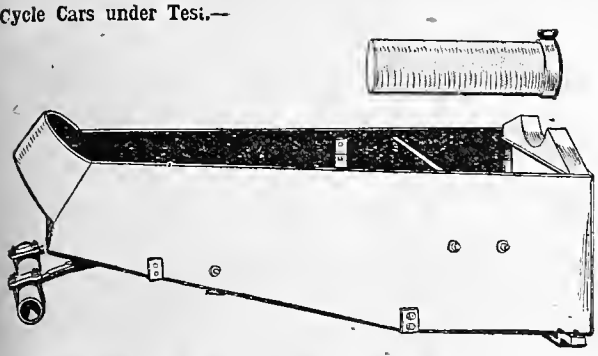
Weight-power Ratio.

This is how it has happened. You can only get a really fast machine which is cheap to run if you establish a high power-to-weight ratio. The Tamplin weighs next to nothing, and its engine is the famous 8 h.p. J.A.P. One imagines that the designer began with a conventional layout, and found that the weight was too high, the speed and climbing less than he desired, and the upkeep a trifle more than he deemed desirable. He ransacked his brain to find some remedy for all these disappointments, and finally tried the experiment of cutting down the track to extremely narrow dimensions. The experiment succeeded. The machine is as fast as a sidecar outfit—that is to say, nothing can pass it uphill, and only the high-powered cars can hoot past it on the flat, whilst the maintenance charges remain low. But a price must be paid for success; and all the narrow-track cycle cars pay the same penalty—instability.



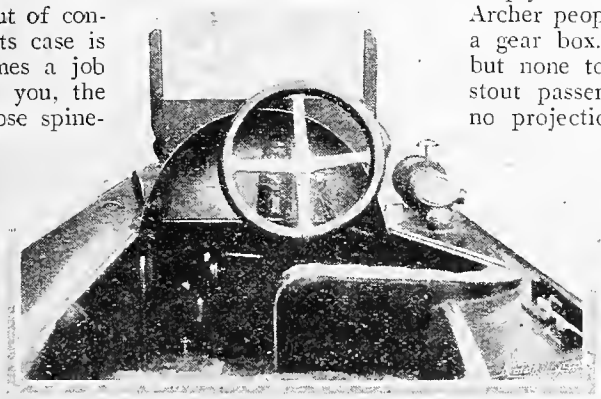
Front suspension system of the Tamplin and steering rods.

Cycle Cars under Test.—



Simplicity is the keynote of the body design, the sides being constructed of fibre.

This penalty must not be overstated. On a good road it dwindles to nothingness. On smooth, wide tar the most jaundiced critic could pick no holes in the conduct of a Tamplin. But put the Tamplin on really bad pot-holes, and you are instantly limited to a very modest speed; a wide throttle opening might put it right out of control. Over really bad ruts its case is even worse. Steering becomes a job for two strong hands. Mind you, the occupants receive none of those spine-jarring jolts which sometimes sicken the rider of a rigid-framed bicycle. The springs act; but they cannot protect a light chassis from the ruthless pits in the macadam—and to-day's roads are not yet in pre-war condition. Cut down the pace, and the machine bobs and floats over the bumps fairly obediently, but just so that the driver relishes a few inches of surplus clearance on each side when he nips between a cart and the hedge.



Cockpit of the Tamplin, as seen by the passenger.

It follows that lurid corner-work is forbidden to the driver of a Tamplin. In a week's testing, corner-work was gradually accelerated to the tune of perhaps 50%, and never made a wheel lift; but my cornering was mild compared to what one dare do on a motor bicycle, a sidecar, or a racing car.

This need for caution on bad going and round corners is, as far as seven days inform me, the only penalty which a Tamplin owner pays for trying to secure speed, comfort, and economy at £145—the price of a sidecar.

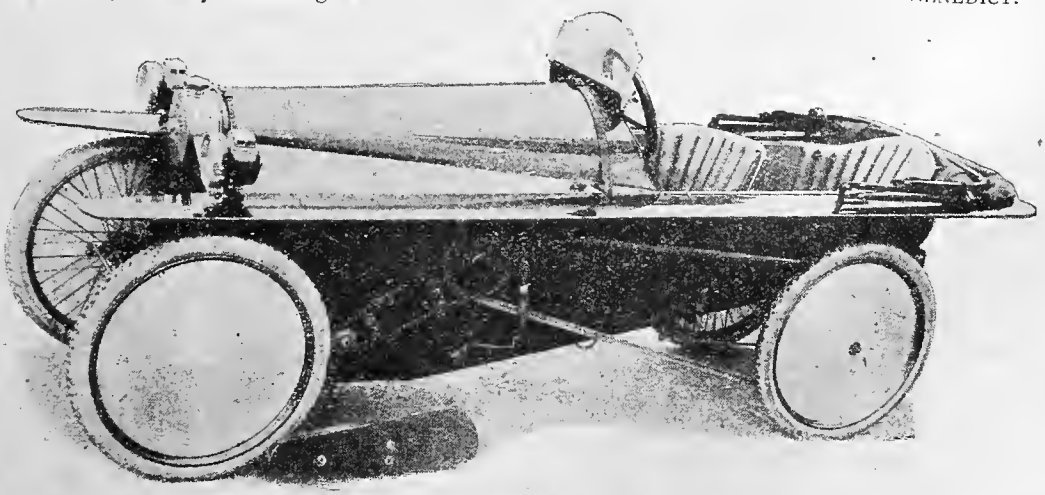
Motor Cycle Specification.

The details of the Tamplin specification are all excellent. It contains nothing to perplex a motor cyclist. Engine, gear box, drive—they all follow motor cycle practice. Gear-changing requires no sleight of hand—the novice's first change is like a knife slicing butter. The countershaft belt pulley is very big, very far from the wheel rim, fully sheltered from wet, and hoisted high off the road. Pouring rain, dripping roads, and a six inch watersplash all failed to induce belt slip. The brakes are probably inferior to none, with the exception of a Grand Prix racing car. The carburetter is automatic when the engine is once started. This last operation is performed by an ordinary kick-starter pedal operated from the driving seat.

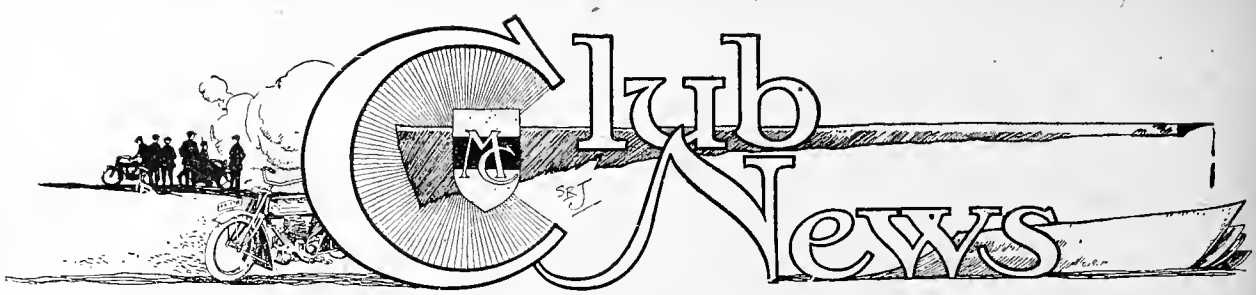
There is little to be said in the way of criticism, apart from the discussion of the above layout. The metal bonnet is secured by two spring tongues and a pair of straps; the latter have to be cast off before the engine can be doped, or the petrol turned off, and easier access would be welcome. No reverse is fitted, simply and solely because the Sturmey-Archer people have not yet marketed such a gear box. The machine is very light, but none too easy to push round with a stout passenger on board, and there are no projections affording a very comfortable grip if one prefers to lift it round. Its length and big steering radius demand plenty of room if it is to be turned round under power *à la* sidecar.

Undoubtedly, the Tamplin is most at home on smooth, wide tar, where its running will evince no flaw. Driven with sense and caution, it is equal to fierce corners and lorry-shattered roads; and a little caution under such conditions is a small price to pay for the privilege of owning a two-seated car as fast as some sports models, as cheap to run as many motor bicycles, and cheaper to buy than many sidecar outfits of smaller power.

BENEDICT.



The 8 h.p. Tamplin, a well thought out design, to seat two passengers.



Portsmouth and District M.C. and L.C.C.

Sixteen started and all finished in the recent reliability trial over a hundred-mile course. There were two observed hills (Henley and Duncton), a brake test, and two secret checks. The winner was H. Harrison (4 Douglas sc.), 20 marks lost; A. Arnold (8 Matchless sc.), 23 marks, second; and V. Coatanche (4 James sc.), 31 marks, third. One lady member, Miss Trowbridge (O.K.-Junior), was awarded a special prize.

Solihull Old Boys M.C.C.

Formed during the early part of the year, the membership of this club is now approaching fifty, and several very successful events, including a miniature T.T., over a half-mile course, have been run off. The secretary, Mr. J. W. V. Wood, Stratford Road, Shirley, Warwickshire, would like to hear from any Solihull old boy who wishes to join.

On October 7th a hill-climb will be held on a bit of unused Roman road, with a grade of 1 in 7 at the top.

Surrey M.C.C.

Provisional results of the members' hill-climb are as follows:

CLASS 1 (up to 350 c.c.).—1, R. P. Robinson (2½ Wolf), 46s. (3.0); 2, C. Heath (2½ Sparkbrook), 65.2s.

CLASSES 2 AND 3 (over 350 c.c.).—1, W. J. Collis (3½ Rudge), 31.4s (1.6); 2, G. H. Williams (3½ Rover), 30s. (4.8); 3, G. Hopkins (6 Matchless), 29.2s. (3.0).

CLASS 4 (any machine).—1, E. Manning (3½ Norton), 25.4s.; 2, G. H. Williams (3½ Rover), 30s.; 3, G. Hopkins (6 Matchless), 29s.

CLASS 5 (passenger machines).—1, J. Potter (8 G.N.), 44s.; 2, F. N. Edney (7 Indian sc.), 36.8s. (2.0); 3, P. W. S. Bulman (8 Zenith sc.), 43.2s.

CLASS 6 (1914 or earlier make).—1, W. J. Collis (3½ Rudge), 33s. (1.6); 2, —. Hopkins (6 Matchless), 29.6s. (3.0); 3, S. L. Manners-Smith (3½ Triumph), 35.2s. (1.4).

CLASS 7 (standing start, stop, and re-start).—1, J. Potter (8 G.N.), 66.4s.; 2, C. Heath (3½ Sparkbrook), 76.4; 3, Lt. W. A. Turner (3½ Rudge), 64.2s. (3.4).

Fastest time of the day—25.4s.—was made by E. Manning (3½ Norton). Penalties for T.T. models shown in brackets.

Truro and District M.C. and L.C.C.

P. Phillips, on a 3½ h.p. Norton, made fastest time of the day at the recent hill-climb at Helston Waterhill, thus winning the Pearson Cup. Results:

300 c.c. OPEN.—1, W. L. Thomas (2¼ New Imperial) 44⅔s.; 2, W. Pasco (2½ Bown-Villiers), 1m. 15⅔s.

350 c.c. OPEN.—1, W. L. Thomas (2¼ New Imperial), 44⅔s.; 2, H. C. J. Cornelius (2¾ Douglas), 50⅔s.

500 c.c. CLUB.—1, A. Assheton-Salton (3½ Brough), 36⅔s.; 2, P. Phillips (3½ Norton), 37s.

500 c.c OPEN.—1, P. Phillips (3½ Norton), 35⅔s.; 2, A. Assheton-Salton, 36⅓s

SPECIAL TRIUMPH CLASS.—1, H. F. Benny, 40⅔s.; 2, A. J. Richards, 44⅓s.

UNLIMITED CLUB.—1, P. Phillips, 34⅔s.; 2, A. Assheton-Salton, 37s.

UNLIMITED OPEN.—1, A. Assheton-Salton (3½ Brough), 35⅓s.; 2, L. Lavanchy (3½ Norton), 40⅔s.

UNLIMITED SIDECARS.—1, J. W. Fry (8 Royal Enfield), 46⅔s.; 2, W. L. Thomas (6 Royal Enfield), 51⅓s.

Week-end Club Events.

Sept. 29.—North Wales M.C.C. Fault Finding Competition.
Sept. 30.—Truro and District M.C. and L.C.C. Afternoon Run to Lostwithiel.
Oct. 1.—Oxford M.C. Hill-climb at Aston Hill.
Oct. 1.—Coventry and Warwickshire M.C. Manville Trophy Trial.
Oct. 1.—Coventry Triangle M.C. Run to Naseby.
Oct. 1.—North Lindsey A.C. Petrol Consumption Test.
Oct. 1.—North-West London M.C.C. Novelty Competition.
Oct. 1.—Edinburgh and District M.C. Hill-climb.
Oct. 1.—Birmingham M.C.C. Sporting Trial.
Oct. 1.—Surbiton and District M.C.C. Pullin Cup Trial.
Oct. 1.—West Kent M.C. Run to Titsey.
Oct. 1.—Dewsbury and District M.C.C. Competition.
Oct. 1.—Surrey M.C.C. Bateman Cup Trial.
Oct. 2.—Bradford M.C. and L.C.C. Merrick Cup Non-stop Trial.
Oct. 2.—Barrow and District M.C. Reliability Trial.
Oct. 2.—Leeds M.U. Run to Barnby Moor.
Oct. 2.—Wolverhampton M.C.C. Run to Wellington Wrekin.
Oct. 2.—Eastbourne and District M.C.C. Country Run.
Oct. 2.—Halifax and District M.C.C. Reliability Trial.
Oct. 2.—Liverpool M.C. Half-day Trial.

Ipswich and District M.C.C.

Results have now been announced of the recent sporting reliability trial:

SOLO CLASS.—1, W. J. Pretty (4 Triumph), gold medal; 2, E. T. Elliot (4 Indian); 3, A. G. Mann (3½ Sunbeam).

SIDECAR CLASS.—1, D. Cornell (8 New Imperial sc.); 2, E. C. Lunnis (8 Sunbeam); 3, Miss L. Sheppard (7-9 Harley-Davidson sc.) and R. Fean (4 Triumph sc.) tied.

North-western Centre A.C.U.

Splendid weather, excepting a strong head wind, favoured the Southport Sands speed trials on the 17th inst. Some very interesting duels were witnessed between T. C. de la Hay, T. Simister, L. Mitchell, and L. W. Hollowell (competitors were despatched in pairs).

CLASS 1A.—1, B. Houlding (2 Matador), 40⅔s.
CLASS 1B.—1, N. Houlding (2 Matador), 43s.
CLASS 2A.—1, J. Cooke (2¾ New Scale), 40s.
CLASS 2B.—1, J. Cooke (2¾ New Scale), 39s.
CLASS 3A.—1, T. C. de la Hay (3½ Sunbeam), 29⅔s.*; 2, L. Mitchell (3½ Norton), 31⅔s.; 3, L. W. Hollowell (3½ Norton), 33⅓s.
CLASS 3B.—1, E. W. Wilkinson (3½ Sunbeam), 33⅔s.; 2, L. W. Hollowell (3½ Norton), 36s.; 3, C. Waterhouse (3½ Sunbeam), 36⅓s.
CLASS 4A.—1, T. C. de la Hay (3½ Sunbeam), 29⅔s.; 2, E. W. Wilkinson (3½ Sunbeam), 31s.; 3, L. Mitchell (3½ Norton), 32⅔s.
CLASS 4B.—1, E. W. Wilkinson (3½ Sunbeam), 31s.; 2, C. Waterhouse (3½ Sunbeam) and L. W. Hollowell (3½ Norton), 34⅓s.
CLASS 5A.—1, T. C. de la Hay (3½ Sunbeam), 30⅓s.; 2, T. Simister (3½ Norton) and L. Mitchell (3½ Norton), 32⅔s.
CLASS 5B.—1, E. W. Wilkinson (3½ Sunbeam), 33⅔s.; 2, P. Baron (7-9 Indian), 35⅓s.; 3, C. Waterhouse (3½ Sunbeam), 35⅔s.
CLASS 7A.—1, T. C. de la Hay (3½ Sunbeam), 36⅔s.
CLASS 7B.—1, C. Bullough (3½ Norton), 41⅔s.
CLASS 8A.—1, T. C. de la Hay (3½ Sunbeam), 39⅔s.
CLASS 8B.—1, C. Bullough (3½ Norton), 42⅔s.
CLASS 9A.—1, T. C. de la Hay (3½ Sunbeam), 37s.; 2, T. Simister (3½ Norton), 39⅔s.
CLASS 9B.—1, P. Baron (7-9 Indian), 43⅔s.

* Fastest time of day.

Coventry and Warwickshire M.C.

Over fifty entries have been received for the Manville Trophy Trial, to be held on Saturday next.

Dublin and District M.C.C.

Awards in connection with the recent twenty-four hours trial have been announced as under:

GOLD MEDALS.—A. Carton (3½ Norton), J. McAllister (4 Triumph), T. Woods (4 B.S.A.), and F. O'Connor (3½ Norton).

SILVER MEDALS.—P. H. Hurse (4¼ B.S.A.), J. Browne (2¾ Douglas), T. Henry (2¼ Velocette), T. E. Greene (2¼ Enfield), H. Bell (2¼ James), and P. S. Doyle (4 Triumph).

BRONZE MEDALS.—J. Murphy (4 Triumph), C. S. Kettle (4 B.S.A.), and J. A. Carville (4 Triumph).

LIGHTWEIGHT PRIZE.—Divided between T. Henry, J. Bell, and T. E. Greene.

Stockport and District M.C.

Entries for the speed trials on Rushup Edge on the 18th inst. totalled two hundred. Results:

275 c.c. SOLO (Standing Start).—1, F. Boulton (2¼ New Imperial), 40s.; 2, N. B. Newton (2¼ New Imperial), 41s.; 3, W. Vines (2¼ Velocette), 46⅔s.

275 c.c. SOLO (Flying Start).—1, F. Boulton (2¼ New Imperial), 35s.; 2, N. B. Newton (2¼ New Imperial), 36⅓s.; 3, W. Vines (2¼ Velocette), 40s.

350 c.c. SOLO (Standing Start).—1, B. Watts (2¾ Dot-Jap), 36⅔s.; 2, E. H. Hunt (2¾ A.J.S.), 37⅔s.; 3, F. Boulton (2¼ New Imperial), 38⅔s.

350 c.c. SOLO (Flying Start).—1, B. Watts (2¾ Dot-Jap), 31⅔s.; 2, E. H. Hunt (2¾ A.J.S.), 32⅔s.; 3, F. Boulton (2¼ New Imperial), 34⅔s.

400 c.c. SOLO (Standing Start).—1, B. Watts (2¾ Dot-Jap), 35⅔s.; 2, E. H. Hunt (2¾ A.J.S.), 37s.; 3, F. Boulton (2¼ New Imperial), 39⅔s.

400 c.c. SOLO (Flying Start).—1, B. Watts (2¾ Dot-Jap), 32s.; 2, F. Boulton (2¼ New Imperial), 34⅔s.; 3, N. B. Newton (2¼ New Imperial), 36⅔s.

550 c.c. SOLO (Standing Start).—1, L. Mitchell (3½ Norton), 31s.; 2, E. W. Wilkinson (3½ Sunbeam), 31⅔s.; 3, T. Simister (3½ Norton), 32⅔s.

550 c.c. SOLO (Flying Start).—1, L. Mitchell (3½ Norton) and T. Simister (3½ Norton) tied, 29s.; 3, F. H. Andrews (3½ Norton), 30⅓s.

750 c.c. SOLO (Standing Start).—1, L. Mitchell (3½ Norton), 32⅔s.; 2, E. W. Wilkinson (3½ Sunbeam), 32⅔s.; 3, T. Simister (3½ Norton), 33⅔s.

750 c.c. SOLO (Flying Start).—1, L. Mitchell (3½ Norton), T. Simister (3½ Norton), and E. W. Wilkinson (3½ Sunbeam) all tied, 29s.

UNLIMITED SOLO (Standing Start).—1, L. Mitchell (3½ Norton) and T. Simister (3½ Norton) tied, 32⅔s.; 3, E. Wilkinson (3½ Sunbeam), 32⅔s.

UNLIMITED SOLO (Flying Start).—1, L. Mitchell (3½ Norton), 27s.; 2, E. W. Wilkinson (3½ Sunbeam), 29s.; 3, T. Simister (3½ Norton), F. H. Andrews (3½ Norton), and J. L. Heodle (8 Royal Ruby) all tied, 29⅔s.

550 c.c SIDECAR (Standing Start).—1, G. Cowley (3½ Norton sc.), 38s.; 2, T. Simister (3½ Norton sc.), 39⅔s.; 3, F. H. Andrews (3½ Norton sc.), 42⅔s.

550 c.c SIDECAR (Flying Start).—1, Geo. Cowley, jun. (3½ Norton sc.), 34⅓s.; 2, C. G. Bullough (3½ Norton sc.), 36⅔s.; 3, F. H. Andrews (3½ Norton sc.), 37s.

750 c.c. SIDECAR (Standing Start).—1, Geo. Cowley, jun. (3½ Norton sc.), 36⅔s.; 2, P. Platt (6 Bradbury sc.), 38⅔s.; 3, T. Simister (3½ Norton sc.), 39⅓s.

750 c.c. SIDECAR (Flying Start).—1, Geo. Cowley, jun. (3½ Norton sc.), 33⅔s.; 2, P. Platt (6 Bradbury sc.), 35s.; 3, T. Simister (3½ Norton sc.), 35⅔s.

UNLIMITED SIDECARS (Standing Start).—1, Geo. Cowley (3½ Norton sc.), 37⅔s.; 2, P. Platt (6 Bradbury sc.), 39s.; 3, T. Simister (3½ Norton sc.), 40⅔s.

UNLIMITED SIDECARS (Flying Start).—1, Geo. Cowley, jun. (3½ Norton sc.), 31⅔s.; 2, T. Simister (3½ Norton sc.), 35⅓s.; 3, F. H. Andrews (3½ Norton sc.), 35⅔s.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

SUNDAY COMPETITIONS.

Sir,—I am so pleased to see the firm stand you take against Sunday competitions. My confidence in your paper is strengthened by this knowledge. L. BLOWERS.

BICYCLE OR "PUSH-BIKE"?

Sir,—In reply to "Another Anfielder's" remarks regarding "Ixion's" observations on the term "push-bike," might I suggest that if your correspondent is so thin-skinned that he cannot take "Ixion's" remarks in the genuine spirit in which they are written, he refrains from showing his ignorance unless he can compile a sound argument?

London, S.E.15. PUSH-BIKE.

PETROL PRICES—HERE AND IN AMERICA.

Sir,—When is petrol going to be the *legitimate* price? We all read in the papers that it is cheaper by 11d., after allowing for transit expenses, in America, and there the matter seems to drop. Have the A.A. and similar protecting bodies all fallen asleep, or are they not powerful enough to do anything in the matter? It seems to me that if *all* motorists would agree to give up motoring for a month, or, in plain words, "go on strike for a little while," we should soon see if the price would come down. F.L.T.

Chelsea.

EASIER EASY PAYMENT SYSTEMS.

Sir,—Why not put the motor cycle within the reach of the average working man? The deposits asked for by the motor cycle agents are too high.

If one could afford to pay £15 down and £3 a month, one could afford to buy right out. If the agents could lower the deposits and extend the payments, say over about twenty months, it would put a motor cycle within the reach of thousands who, like myself, must be content to read about them. H. M. D. HARVEY.

Sir,—I quite agree with "Old Reader" that the deposit and payments required, together with time allowance, are by far too much to expect from the general working class pocket. Why motor cycle agents should base their business upon such terms I fail to see, taking into consideration the value one can now obtain in most lines of business, which carry a period of twenty, twenty-four, and even thirty months' credit.

I know many (myself included) who would be only too willing to take up the sporting pastime if they could secure an easier condition which would assist them to overcome the harshness of the first outlay. ANXIOUS.

London, S.W.19.

Sir,—I should like to endorse the opinion of "Old Reader" as to the desirability of motor cycle agents giving more extended terms for the purchase of a motor cycle or sidecar. There must be many persons who, like myself, are in regular employment, and could afford to pay, say, £5 or £6 per month for eighteen or twenty months, besides an initial small deposit, but to whom the provision of £8 to £10 per month would be difficult or impossible.

In the early part of this season a well-known company's advertisement in *The Motor Cycle* stated that the balance was payable in 21 monthly instalments. "Here," thought I, "is the opportunity I have wanted. Now I shall be able to get a machine this year after all." But, alas, on communicating with the advertisers, I found that due to an error the figures were reversed, and that they were only prepared to accept payment of the balance in the usual twelve monthly instalments. Consequently I had to go without my machine. I hope to be in a better position next year, but anyhow have lost one previous season's riding in the loveliest of summer weather.

After all, a considerable amount of money is necessary to buy a good motor cycle or sidecar nowadays, and any scheme which makes it easier to pay that money ought to lead to increased business.

I hope that some of our leading agents will think this matter over, and give us a real easy payment scheme next year. ROAD LOVER.

London, E.5.

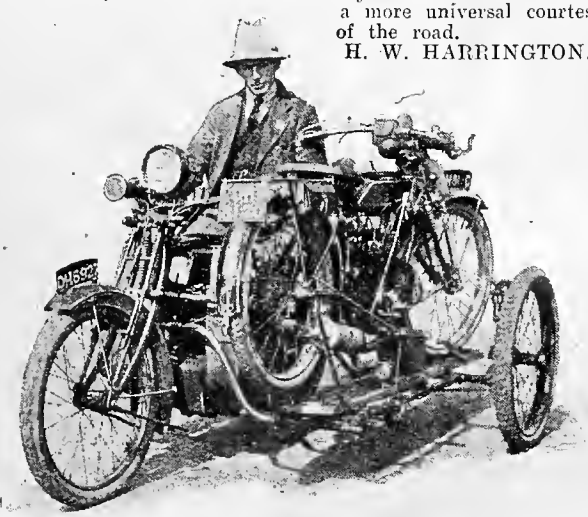
DAZZLING HEAD LAMPS AND THE MOTOR CYCLIST.

Sir,—Would it be possible to issue an appeal to car drivers to lower their brilliant head lights when approaching not only one of their own fraternity, but other users of the road? I have felt inclined to write you before, and am only doing so now as the result of a rather bad crash I had on returning from the Essex Motor Club's run on the 10th inst., which was due to my being dazzled by the lights of an approaching car and running into the kerb. The driver of the car on seeing me fall switched off *all* his lights, but did not stop to enquire if I was hurt. Fortunately I escaped with a few minor grazes and bruises, although my Douglas suffered a good deal. This occurred between Dunstable and St. Albans.

I believe there has been some controversy on this subject in *The Autocar* recently, and one correspondent, who does not agree with the dimming of lights, offers, among others, the excuse that it wears the switches so quickly!

When one considers the little trouble it is for a driver to dim his lights, and the benefit that others accrue from this action, it is rather extraordinary that it has not become a more universal courtesy of the road.

H. W. HARRINGTON.



NURSING A THOROUGHBRED.

Racehorses are never required to travel under their own power to the racecourse; why should motor cycles? This, however, is not Bert. Kershaw's only reason for using the above method of transporting his competitions New Imperial lightweight to the scene of its activities; he is able to take Mrs. Kershaw with him on a Tan-Sad.

"80 M.P.H." BRITISH BIG TWINS.

Sir,—In response to my letter in a previous issue, Mr. George Brough has endeavoured to judge me as an "ignoramus" so far as my statements regarding the engine of the Brough Superior are concerned.

Having assisted technically in the manufacture of this engine, I claim that I am aware of what statements I make. This engine was designed and is solely manufactured by Messrs. J. A. Prestwich and Co., Tottenham, and not by Mr. Brough. At the J.A.P. works this engine is known as the "90 mm. overhead," and has been a product of that firm (J.A.P.) since 1913.

In recent years this engine has had a few modifications, and (I suppose) by that it is now known as a 1921 model. Furthermore, I still adhere to my previous statements that this type of engine has been fitted in other makers' frames, and ridden at Brooklands for speed purposes before these modifications were carried out. Perhaps Mr. Brough has not that knowledge before him. I quite agree with Mr. Brough that the Brough Superior does all he claims it to do. Why not, when we have 3½ h.p. singles doing 90 m.p.h.?

However, the point is, Can the Brough Superior beat the Americans in a 500 miles duel, as our former correspondent thinks it can? It certainly would be a great success for Mr. Brough's and J.A.P.'s production.

London, N.17. OBSERVANT.

COSTS OF SPARES AND COMPONENTS.

Sir,—We have noted the letter from your correspondent "Pourquoi," and would like to offer an explanation as to why a machine built entirely of spare parts is of necessity more expensive than a machine sold from series production. The cost of labour involved in erecting finished parts into a complete machine is a very small item in the general production costs of that machine.

When a manufacturer puts a series of machines into production, he calculates on selling such production within a limited time from the issue of the machines from his works, and, in fixing the price of his machine, he has to allow for the interest, etc., on the money locked up in such machines, between the period of the original purchase of materials, up to the complete sale of the machine and the receipt of the proceeds.

Under ordinary commercial conditions, this period is a comparatively limited one.

When, however, the manufacturer has to turn out the spare and replacement parts for such machine, he does so with the knowledge that the money involved is locked up for an unknown period, and during that period it is unproductive; consequently, a higher rate of interest has to be calculated in order to cover the capital involved, with a consequence that the parts concerned must each bear a higher proportional charge, and the cost of each part is necessarily thereby increased to the purchaser.

Furthermore, as models become obsolescent or obsolete, the quantity of each replacement part put in hand from time to time must of necessity be smaller, with correspondingly increased manufacturing costs. Moreover, it is impossible for a manufacturer to forecast the proportions in which particular parts will be required. He is therefore compelled to manufacture an average over every component in the machine and run the risk of a large number never being wanted. No manufacturer can afford to leave his customers without spare parts for obsolescent (or even obsolete) machines within a reasonable limit, and must therefore take the risk—a very real one, as every manufacturer knows in practice—of being finally left with a quantity of manufactured parts on his hands, for which in course of time there is no demand, and which has practically no scrap value, and yet which represents a heavy original cost in material, labour, capital outlay, and interest on the money involved.

It is such factors as these that entirely govern the extra cost invariably charged by motor manufacturers for spare parts.

The question of competition will always keep a manufacturer's prices for replacement parts to a reasonable level; further, for obvious reasons, no individual manufacturer dare put prices of his replacement parts to other than reasonable figures, otherwise he would run serious risk of prejudicing the sale of his machines.

The spare parts supply side of a branded motor cycle manufacturing business presents, from many aspects, more problems and anxiety than the manufacture of new machines. In point of fact, the manufacture and supply of replacement parts is an actual bugbear to the majority of manufacturers. They would only be too glad, in the larger number of cases, to finish their responsibility with the termination of their guarantee, without the moral obligation, which at present they cheerfully carry out, of assisting the purchaser to keep the machine in running order for a period of years.

F.N. (ENGLAND), LTD.,
A. ERNEST GELDER, Managing Director.

Sir,—In endeavouring to ascertain the reason why the relative costs of spare parts and complete machines are out of all proportion to each other, I fear your correspondent "Pourquoi" is seeking the solution of a problem which I, and doubtless many others, have given up as hopeless.

It is hardly feasible, to my mind, that makers sell their machines at a loss or profiteer on spares and renewals, but I venture to suggest that they get a very handsome profit from both.

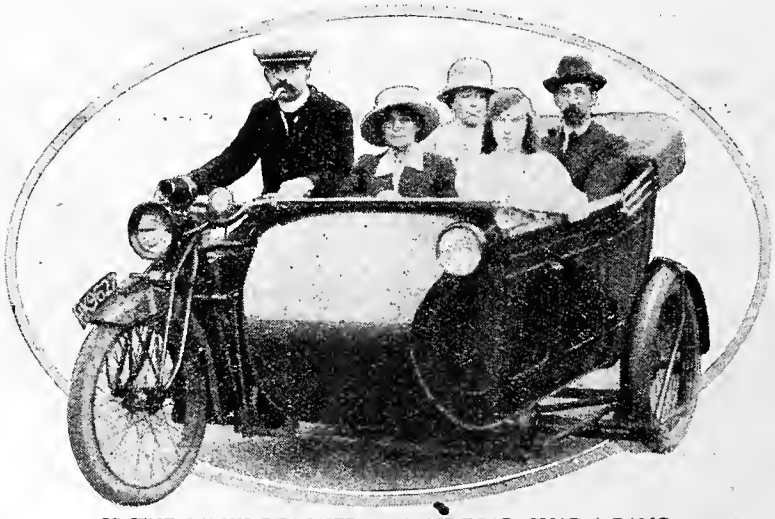
A week or so ago I went to a local garage for an exhaust valve for my 2¾ h.p. machine, for which I was asked 5s., and when the proprietor showed me a valve for a Ford, price 1s., it seemed to me that there was little or no justification for a difference of 4s. AB 9056.

Droitwich.

Sir,—I feel sure that the letter of your correspondent "Pourquoi" will call forth a response from hundreds of motorists throughout the country. Possessing a well-known 4 h.p. single, I had the misfortune to break the portion of the frame known as the back stay, the fracture taking place at what seems to be a weak portion of the frame. Judge of my surprise and disgust when I was informed that the price of a new part would be £3 8s., without the cost of taking down the machine and fitting. And this in days when we hear so much about "mass production." I would issue a note of warning to any young fellow before he goes in for the sport to count well the cost, for buying a machine is by no means the only outlay, and the totally fictitious values placed upon parts make it impossible for the sport to flourish as it otherwise would. A.X.

Abergavenny.

[Both sides of the question are given in the above letters, which are only a small selection of the many that have reached us on the subject.—ED.]



IS THE LIMIT REACHED? A SIDECAR CHAR-A-BANC.

Whatever may be said against gigantic sidecars such as that shown above, it cannot be said that Mr. McDonald, of Ilford—who made it in his spare time—has not considered the comfort of his passengers. The seating arrangement appears to be equal to the average four-seater light car. The motor cycle is a 7-9 h.p. Indian.

LIGHTWEIGHTS FOR AUSTRALIA.

Sir,—We note in a recent issue that "J.H.H.," of New South Wales, while pleading for a greater variety in the export of British lightweights, seems to desire that that greater variety should be amongst four-strokes only.

This rather confirms our opinion that the motor cycle fraternity, both in Australasia and other countries, has not enquired deeply enough into the merits of the two-stroke, and hence does not realise the enormous possibilities of this type.

As pioneers in British lightweight construction, we, in our earliest experience, had, in common with many other manufacturers, a decided leaning towards the four-stroke; but, realising the immense value of simplicity, we also felt that, under a process of correct development, the two-stroke should take the lead in this direction.

Having definitely arrived at this conclusion, we set ourselves out to forward that development, with the result that we have evolved in the O.K.-Junior, with O.K.-Union engine, a two-stroke which is quite as powerful and efficient as the four-stroke, with the added advantage of extreme simplicity and lower cost, both as regards initial purchase and upkeep. HUMPHRIES AND DAWES, LTD.
E. H. HUMPHRIES, Director.

SATISFACTORY SCOOTER SERVICE.

Sir,—I enclose herewith a photograph of myself and fellow worker on our Autogliders. I am sure if more district nurses could get to know of them many would avail them-

"District Nurse" expresses great satisfaction with the Autoglider as a handy means of transport in a hilly district. (See accompanying letter.)

selves of such a delightful method of transit. This is an exceedingly hilly district, but we find no difficulty in managing it with the Autoglider. DISTRICT NURSE.
Cornwall.

IS THE GARAGE PROPRIETOR ALWAYS TO BLAME?

Sir,—There occasionally appears in your most excellent journal, and in the press generally, letters which lead the uninitiated to depict the average garage as a depot for rogues, thieves, hooligans, and general outsiders.

The garage proprietor is, generally speaking, too busy earning his bread (only thinly buttered) to reply to these somewhat one-sided attacks. Perhaps, also, he dare not raise a voice in protest, because he fears to lose customers who may chance to hear of his literary efforts.

May I therefore, through the medium of your columns, raise a solitary voice in protest of the unjust treatment only too often meted out to the garage proprietor.

I have two cases in mind which have occurred to me recently. They are in no way isolated, but form very good examples of the attitude which quite a large percentage of motor cyclists adopt in order to decrease their expenses. The cases in question are as follow:

(1.) A customer has repairs to an Enfield sidecar outfit. The sidecar is removed; the back stays, etc., removed; the frame welded; parts replaced; sidecar fitted and lined up; gears adjusted and new parts fitted; value £3 16s. 10d. He received a bill for £5 19s. 4d. all told. We hear no more. He does not return, but we know him to be a gentleman of good standing. Our money presumably is safe. The account is rendered regularly. After thirteen months he announces that he will not pay for the welding because it went after a few weeks, and encloses a money order for a little over £4. He only does this apparently because we wrote asking for payment.

(2.) A gentleman gives permission for one of our branches to convey his hub-geared sidecar to our works for repair. On the way a bolt comes loose in the rear mudguard, with the result that the tyre is scored. The machine is returned, and we do not notice the scored tyre. The gentleman writes a very strong letter, and pays only a small portion of his account, deducting £3 2s. 6d. for a *new tyre*. Incidentally, the old tyre was very old, and he would have soon had to obtain a new one in any case. The new tyre was not purchased from us, and we would have been glad to apologise and provide him with a good second-hand one free. On writing to him he apparently refuses to take any notice of our letters.

Perhaps despite the large number of letters on the subject, and the fact that undoubtedly there are bad and dishonest garages, there is more reason for the garage to distrust the customer than the customer to distrust a firm who has a reputation to guard. TRADE NUMBERS.
Sunderland.

EXPENSIVE SCRAPS OF PAPER.

Sir,—Can nothing be done to stop the Government still forcing money out of us already overtaxed motorists? Are both the "Unions" still asleep, or will they this time try to help us a little?

Three weeks ago I rode from London to Hunstanton, and had the misfortune to be caught in an extra severe thunderstorm. On completing my journey I found that the rain had penetrated my "water-proof" licence holder, with the result that the ink was washed out. Had Indian ink been used no harm would have been done. When I returned to London I went to the Guildhall for a new licence, but was charged 5s. for a duplicate. How much longer is the Government going to carry on like this? X.Y.Z.
Finchley, N.3.

Sir,—Having occasion to go through Westmorland, I had to travel through a well-known market town, where the corporation had been amusing itself with a most efficient (?) tar sprayer. The road had then been scaled with small stones, which reminded me of currants in war-time tea-cakes—few and far between. To get to the point, on returning over the same road after heavy rain I found, to my horror, that the road was literally swimming with tar water. This beautiful and penetrating mixture alternately bathed myself and the licence holder, eventually entering the holder and staining a portion of the licence. I sent this to the authorities and asked them to *ink* it in again. I received a reply asking for 5s., on receipt of which they would renew it, and stating that my "holder must be faulty," which I naturally resent. I have been many hundreds of miles in *wet* weather, and not found it to leak, but one can hardly expect it to withstand a deluge of such penetrating liquid as tar water.

Is it fair that one should be charged exactly the same for helping the law (by keeping the card clean) as those who lose their licence by neglect? In any case, it is an imposition, as a shilling would amply cover cost of paper, ink, and "time."
Norton-on-Tees. TARRED UP.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—In view of the recent correspondence in *The Autocar* regarding which car is generally acknowledged to be the best in the world, I think it would be interesting to have the opinions of some of your readers as to which solo machine holds the corresponding position among motor cycles. By this I mean the machine which, regardless of price, is considered the best from an all-round point of view, viz., reliability, silence, smoothness of running, excellence of finish, durability, etc. High speed alone counts for nothing. It will be noticed that I say solo machine; this point is important, because though some might consider, say, the 7 h.p. A.J.S. to be the best sidecar machine in the world, it would not be considered the ideal solo mount owing to its weight, size, etc. Though riding a machine of another make, my own idea of the Rolls-Royce of motor cycles is the 3½ h.p. standard Sunbeam. Allow me to add the usual disclaimer.
A. ARNOLD.

A LADY'S EXPERIENCES OF A SIDECAR SUBSTITUTE

Sir,—I have just returned from a few days' tour as a passenger in a Scott Sociable, and thought my opinion as a "middle-class," also middle-aged, woman motorist might interest your readers. The route included the Peak District, with its tortuous hills and varying surfaces—some excellent, some bad—and is one I have taken almost annually for the last twenty-five years. I must say I had the most reliable and luxurious trip on the Sociable I have ever taken, and my vehicles have ranged from the push bicycle, a 5 h.p. Wolseley twenty years ago, to several well-known and high-class sidecars latterly. Among the Sociable's many good points I count most comfortable seating, ample luggage accommodation, ease of driving, reliability, great economy of petrol, excellent finish, and a good average speed, only dropping to low once in the hilly Peak country. My only criticism is the engine is rather noisy on low gear.

I am sure the machine is just the thing for many who require more room than the sidecar affords, but who are not in a position to pay £400 to £500 for a small car.

I enclose my card, from which you will see I am not interested in the machine in any way except as a critical and ease-loving PASSENGER.

Nottingham.

SPECIAL EVENTS FOR SPECIAL MACHINES.

Sir,—I am writing to say that I do not think it exactly "sporting" of a couple of firms which enter club competitions with extra special machines; but I do think it sporting (in a way) for other men to enter these open competitions also when they know all too well beforehand they will be hopelessly beaten.

Again, is it fair that anyone should enter every available class, and win all the prizes, cups, etc., with these special machines, especially as these firms' turn out other models for the public for speed events, which are 20 m.p.h. slower? In my opinion, this kind of thing will eventually give all of us the "pip," and I think it high time that secretaries and committees barred such from competing, except in extra classes set apart for their special, unobtainable-by-the-public machines.

Anyway, I think that, in the event of not being able to work things as above, special classes should be set apart for *guaranteed standard* machines. Again, I would bar all extra special machines, which are not to be placed on the market, from competing in the T.T., or any other open event.

In conclusion, it is very refreshing to myself, and others besides, that there *is* a firm which does sell standard machines which are winning almost everywhere, except where these "specials" are also competing.

J. H. WILKINSON.

SIDECAR ATTACHMENTS.

Sir,—"Wharfedale," in his article on the above subject, is distinctly less happy than usual in the treatment of his subject. To deduce that, because "masses of contorted tubing, applied in an unthinking manner . . . give a minimum of trouble," whereas "a rigid chassis, rigidly applied to the machine, may cause frame breakage in the latter," it is desirable to have the afore-mentioned "masses of," etc., is not quite up to par, "Wharfedale"!

The whole question of methods of sidecar attachment is in its present unsatisfactory state chiefly because, with one or two notable exceptions, no motor cycle manufacturers are manufacturing (as distinct from marketing) their own chassis. If they did, and were capable of learning from ocular inspection of their goods, after many months of use, hopes of improvement might arise. As it is, A makes a motor cycle, B builds a sidecar, and C fits the one to the other. Consequently, with the wide range of adaptability provided in the sliding split lugs of the usual type of chassis, motor cycle manufacturers content themselves with fitting one or two likely lugs to the motor cycle frame, and leave the very momentous question of fitting the two units together to C, who may vary from a man of brains and experience, in a back street garage, to a "fool of the family" (financed into motordom with all the swagger of a main road showroom) and his staff. The most prolific cause of trouble experienced with sidecar chassis connections is undoubtedly due to faulty design and location of the clips used for attachment, which allow malalignment to develop, by reason of the clip's tendency to swivel when slightly slacked off.

It must be obvious that, to make one connection flexible, as suggested by "Wharfedale," and only allow flexibility by means of "whip" to the other connections, would speedily entail trouble, because of the crystallisation of the metal in constant "whip," not to mention the wear of the flexible joint itself. If a rigid chassis, rigidly attached, causes any breakage of the cycle frame, it may be due to faulty alignment, faulty fitting, or faulty frame. Surely "Wharfedale" has seen the usual garage squad of apprentices fit a sidecar, leaving the vertical alignment until all other connections are tightened up (!), then forcibly pulling the machine into vertical alignment, what time one of the crew drops the bolt into the seat lug connection, and the job is done!

How can *they* realise the abnormal stresses set up under such conditions, *even when the machine is at rest?* Imagine, then, what obtains under severe road conditions. Could one blame them if, provided with one forcibly flexible connection, they deduced that all the other connections must be flexible? A study of the Scott system affords an excellent example of a really scientifically triangulated rigid chassis, constructed with anchorages in keeping with the rest of the design, being all situated at strong points of the frame, and not, like most of contemporaneous design, welded (or brazed) in any suitable (?) position, to take the proprietary sidecar marketed by the firms. If a motor cycle frame will not stand up to being used with a rigid sidecar chassis (when properly fitted), then let the remedy be applied to the frame, either by moving the connection lugs to stronger points of the frame, or by strengthening the frame at the weak points.

Thanks are due to "Wharfedale" for opening up such an important subject for discussion. J. WILLEY.

SUMMARY OF CORRESPONDENCE.

Referring to recent convictions of char-à-banc drivers for being drunk, Mr. R. Mawson suggests that it should be made compulsory for them to refrain from taking intoxicating drinks when on duty.

"Motor" (South Shields) suggests while the A.C.U. looks after motor cyclists' interests "and the people of the North," the A.A. "looks more after the South and the big pots' motor cars."

So bad are the roads between Llangollen and Bettws-y-Coed that it took a reader, Mr. J. Sugden, four hours to do forty miles. He warns others.

An unknown "Good Samaritan," who is believed to belong to Thornaby-on-Tees, is thanked by Mr. Reginald Summers for his timely help when the gear lever of the latter's New Hudson sidecar broke.

"S.J." (Hull) reports a very unsatisfactory state as existing in the East Riding of Yorkshire regarding the local authorities' views of present legal lighting requirements on solo motor cycles. Summed up, it would appear that they do not know where they stand.

Very satisfactory experiences on tour with an 8 h.p. New Imperial with double-seated sidecar were enjoyed by "AA 27882" (Leeds).

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A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

CONVERTING ANGLE OF MAGNETO.

Can I convert a 180° magneto into one suitable for a 50° engine? —J.P.B.

The magneto is not suitable for the conversion you suggest.

FITTING A MAGNETO.

(1.) I wish to fit a magneto to a 2½ h.p. Minerva. When the engine revolves forward the cam revolves backward, and I want to know whether I need a clockwise or anti-clockwise magneto? (2.) What size sprockets do I require for this conversion?—S.R.

(1.) If you intend to use chain drive for the magneto, and propose fitting one of the chain wheels on the camshaft, you will require an anti-clockwise magneto. (2.) The two magneto sprockets should be of equal size—that is to say, the magneto should run at the same speed as the cam wheel, which runs at half engine speed.

LUBRICATING A GEAR BOX.

What oil should be used in a plain countershaft two-speed gear box fitted to a two-stroke Hobart with Villiers engine? At present I am using light body engine oil, but it seems too thin, as it leaks out of the bearings on to the chain, and gets thrown all over the machine. Also, is it necessary that the filler plug should be drilled right through, as after the machine has been running a short time the oil oozes out through this hole and runs all over the gear box?—E.F.L.

A thick body engine oil might be used, or one of the heavy semi-liquid greases specially made for gear box lubrication. Probably the filler cap of the gear box is drilled for air release; but it might not interfere with the running in any way if you stopped up the hole. It seems possible that you are injecting much more oil into the box than is necessary.

PRECISION TWO-STROKE OILING.

How far should a sump full of oil last for solo riding on the 3½ h.p. Precision two-stroke engine? I am only getting about twenty miles.—E.J.C.

It is claimed that 300 miles running should be obtained with one filling of oil, and in all probability the adjustment is incorrect. Write to the manufacturers of the engine for instructions on its care and management. After the engine is properly "run in," the oil-adjusting screw should be set at the figure 2.

FLAT TWIN TWO-STROKE.

I am building a flat twin two-stroke, with both connecting rods on one crank pin, and I am in difficulties with the balancing. Will you please answer the following questions: Will I have to balance the crankshaft alone? Will the fact that both pistons move in the same direction upset the usual balance of a flat twin? If any portion of the reciprocating parts require balancing, can you give me the necessary directions?—H.T.

The balance of such an engine is arrived at in the same way as that of a single-cylinder engine, the figures for the bob-weights being approximately equal to the rotating weights, plus .4 of the reciprocating weights. Such an engine, owing to the great mass of the reciprocating parts, will be extremely difficult to balance satisfactorily, and in all probability the vibration would be excessive. A horizontal twin engine is only well balanced without the use of additional balance weights when the pistons move in opposite directions (*i.e.*, the crankshaft must be of the two-throw variety with cranks at an angle of 180°. We are not quite sure as to the type of two-stroke engine you propose to make; but we suppose you are aware that in the layout suggested there is no crank case compression?

ENTERPRISING MUNICIPAL AUTHORITIES.
A fleet of B.S.A. machines used by the staff of the Redditch Gas Company.

POOR COMPRESSION

I have a 1909 3½ h.p. Triumph cycle (bought second-hand), which hardly gives one quarter the power it should normally develop. On the lowest possible gear ratio of the movable pulley it will not climb any gradient steeper than 1 in 12. The cylinder has just been rebored and new piston and rings fitted; all the mechanism is apparently perfect; the magneto gives a splendid spark at all speeds; the carburetter is functioning properly (a No. 32 jet is in use); valve timing is correct, as the pinions are marked; and the valves have just been ground in. The rings appear to be a perfect fit in the cylinder, and no compression is leaking at the valve cap, guides, compression tap, or plug, but the compression appears very low. It is possible to start up by turning the engine over compression by a strong pull on the back wheel by hand. (1.) Can the engine be in proper tune if it is possible to turn the back wheel over the compression by hand without the use of the valve lifter? (2.) If the compression ratio is too low, what is the most practical way of raising it? (3.) In what way is it likely that the compression has been reduced? (4.) Is it possible that the fitting of different valve caps has effected such a great reduction? (5.) Is it likely that a shorter connecting rod has been fitted by a previous owner? (6.) Again, is it possible materially to increase compression by the fitting of special valve caps, compression tap, or have longer connecting rod?—H.S.

(1, 2, and 3.) It is possible that the new piston is not suited to your cylinder. The 1909 Triumph machine as made had a fairly high compression ratio, a dome topped piston being used. The later engines were fitted with flat topped pistons, and the latter do not necessarily suit the earlier engines. There is a difference between low compression and bad compression. Even with a low compression engine it should be difficult to pull the back wheel round by hand. (4, 5, and 6.) It is unlikely that you could make an improvement by fitting differently shaped valve caps. A slightly longer connecting rod might improve matters, assuming that everything else is in order; but we should advise you to take up the matter with the makers, stating the engine number and the type of piston which has just been fitted.

BELT WEAR.

? I have a 5-6 h.p. sidecar machine which has a variable pulley gear that I find very hard on belts. Even when most carefully driven, a rubber belt only lasts a few hundred miles. The last belt I used was a three-ply leather one which lasted about 1,500 miles. I am told that leather, especially leather link, belts are very hard on the pulleys; but I did not find the one I tried too bad in this respect, and do not see why a link belt should be worse. The belt cannot be more than 1in. wide to get the lowest gears, and the pulleys are new and in good order. What do you advise?—R.O.S.

The excessive belt wear on your machine is unusual, and we can only think that it is due to careless manipulation of the gear control. It certainly should not be necessary to use a leather belt on your machine. It will be advisable to get the makers' handbook, which no doubt will contain full instructions regarding the control of your machines. When changing gear either up or down move the control lever slowly, and on no account attempt to drop suddenly from high to low gear. All leather belts are harder on the pulleys than rubber, as they tend to pick up small fragments of grit which become embedded in the surface, and so grind away the metal of the pulley flanges. They give good service, however, if periodically scraped and dressed with oil. A good rubber and canvas belt properly fitted should run for about 3,000 miles before it need be scrapped.

DECARBONISATION NEEDED.

? I have a new Levis motor cycle, and have done about 3,000 miles. The machine runs exceedingly well on the level, but it does not take me up hills in the same manner as previously, and it appears to be losing power. Can you suggest the reason for this? The machine is the same in every respect as when new, and no adjustments have been made.—T.V.

If the machine has run 3,000 miles without requiring any adjustments, we take it that not even the cylinder and piston have been decarbonised; and this will account for the falling off in power. You should remove the cylinder, taking care that the edge of the piston is not broken in the process by allowing it to fall on the connecting rod. We should strongly advise you to consult "Motor Cycles and How to Manage Them" on removing the cylinder and generally overhauling the engine. Having removed the cylinder, carefully scrape the inside of the head and the exhaust port, and remove all accumulation of carbon from the top of the piston and also from the underside of the piston head. Notice whether the top piston ring is free in its groove. If it is not, it must be loosened (and in all probability will be broken in the attempt, so that you should not try this operation unless you have a new one by you!) When reassembling the engine make a stiff brown paper washer for the joint between the cylinder and the crank case, and coat this with seccotine on both sides before fitting. Do not forget to cut an opening for the transfer port when you make the washer.

Important Dates.

Sat., Oct. 1st—Doncaster and District M.C.C. Open Speed Trials.

Wed., Oct. 5th, to Sun., Oct. 16th—Paris Show.

Sat., Oct. 8th—B.M.C.R.C Championship Meeting, Brooklands.

Sat., Oct 8th—The "Scott" Trial in Yorkshire.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. *(See "The Autocar.")*

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"W.D." (Liverpool).—3 h.p. Ivy two-stroke sidecar outfit: General reliability, speed, power on hills, comfort of driver and passenger, consumption, and lubrication.

"J.G.P." (Richmond).—Binks carburetter on 6 h.p. A.J.S.: Miles per gallon, power, andn slow running; also Best mechanical oil pump.

"J.W." (Leicester).—Cleveland two-stroke: Chain, clutch and kick-starter, petrol and oil consumption, and reliability.

LIEUT. J. H. G. (Belfast).—Cox-Atmos carburetter on 3¾ h.p. Scott sidecar: Best adjustment.

"J.D.S." (Aberystwyth). — Paragon patent folding sidecar: General experiences.

"R.N.L." (Horsted Keynes).—Wates electric conversion sets: Reliability and average duration of one charge of the accumulator.

"T.L." (Morpeth).—1921 water-cooled Morgan-M.A.G. or J.A.P., and 1921 G.N.: Running costs, general reliability, and speed.

SPARKLETS

Reliance Cup Trial Amendment.

In the list of awards of the Reliance Cup Trial, J. A. Newman was stated to have gained a gold medal on a Triumph. His mount actually was a 3½ h.p. Sports Douglas, the only one in the trial.

Reason for a Retirement.

Since the car containing A. Graham Martin's personal belongings, and spares for his Zenith, failed to turn up before he was due to start in the recent London-Bala-Dunstable trial, he was compelled to retire from the event through a broken belt.

Dynamo Driving from the Rear Wheel.

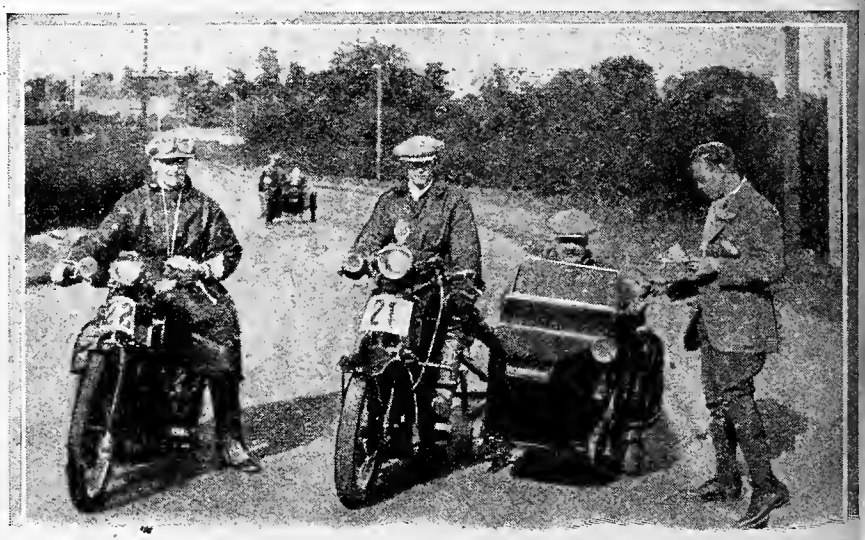
The sole sale concessionnaires for the Wattalite dynamo lighting set, described recently in *The Motor Cycle*, are Holroyd Motors, 6, Warwick Street, Regent Street, London, W.1, to whom all enquiries should be addressed.

Found.

A tool kit picked up by a reader (Mr. W. Hutchinson) in the middle of August on the Charing-Maidstone road now reposes in the Bromley Police Station.

If the Ariel rider who dropped a roll containing maps or charts, near Sidcup, on Sunday, the 11th inst., will apply to Mr. E. K. Nye, 11, Champion Grove, Denmark Hill, London, S.E.5, he will have his property returned.

Although we are always glad to publish details of articles found by our readers, we regret we cannot give publicity to the many letters we receive regarding things lost on the road.



A TOURING TRIAL IN WHICH EVERY STARTER FINISHED.
J. L. Shaw (2¾ A.J.S.) and F. L. Bolderston (6 A.J.S. sidecar) in the check at Terne Bridge during the Birmingham M.C.C. run to Chepstow.

A THREE-SPEED GEAR FOR LIGHTWEIGHTS.

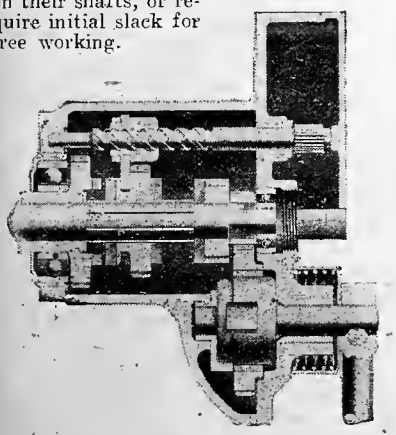
New Moss Gear Box tested in the T.T. and Six Days Trials, now Available in Quantities.

IN such an apparently straightforward piece of mechanism as a proprietary three-speed gear box, it would appear that there could be little scope for invention or departure from conventional methods of design.

The *desiderata* of a good component three-speed gear are that it shall be well made, lasting, quiet in action, easy of operation, and adaptable to any machine; and the qualities of long life, quietness, and ease of control, are largely dependent upon design. Foolproofness and easy changing in a three-speed gear are principally sought by adopting the constant mesh principle; but when this is done, a double system of dog clutches, selectively engaged by some form of cam mechanism, is usually required, and the gear box becomes an expensive production. Some designers have overcome this trouble by having both mainshaft and layshaft middle gear pinions of the sliding variety, so that, although in constant mesh, they serve also as high and low gear dogs, middle ratios being obtained by interrupted splines or dogs on the shafts.

Constant Mesh Sliding Pinions.

The above-described construction, although working fairly well in practice, is apt to result in a design in which the sliding pinions, if internally dogged, are somewhat limited in their bearing areas; consequently they tend to become slack on their shafts, or require initial slack for free working.

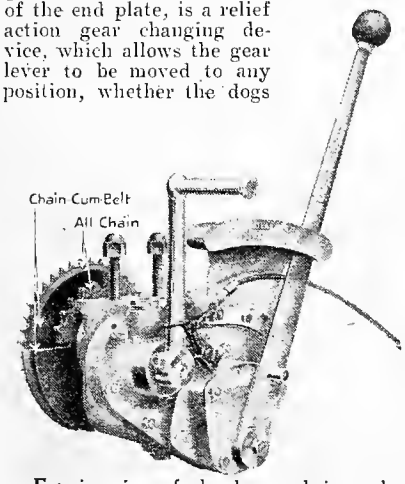


Kick-starter details, mainshaft and quick-threaded gear-operating bar enclosed within the box.

This being so, the sliding pinions frequently run out of pitch, and are noisy in action, and the wear takes place on a weaker part of the tooth than that intended by the designer.

To improve upon existing practice has been the plan of the Moss Gear Co., Ltd., of Aston Cross, Birmingham. Replete with one of the finest gear-cutting plants in the country, this concern has decided to make a special appeal to the motor cycle trade in gear components, as it has already done successfully in the small car world, and the new Moss three-speed motor cycle gear is the result.

A single plate clutch with cork inserts is incorporated, together with the spring plunger kick-starter used in the Moss two-speed gears. Incorporated with the gear box, and enclosed in an extension of the end plate, is a relief action gear changing device, which allows the gear lever to be moved to any position, whether the dogs are opposite and whether the engine is running or not. Also mounted on the gear box is a gate.



Exterior view of the box and integral control mechanism.

The construction is somewhat unusual. On the mainshaft is the sleeve carrying the final drive sprocket or pulley and the large gear pinion and high gear dog. This sleeve runs in a large ball bearing carried in a steel cap pressed into the gear box. On the six-splined portion of the shaft slides the middle pinion with dogs at each side, and on the right of the shaft runs the small pinion.

The layshaft, which also runs on ball bearings, has a small pinion rigidly splined on, meshing with the mainshaft large gear. On the right of the layshaft is a flange, to which is riveted a large pinion of drum-like formation, meshing with the mainshaft small loose pinion. This drum-like pinion has internal dogs at its outer edge with a recess behind them. The layshaft middle gear pinion slides freely, and has a long sleeve extension with peripheral dogs.

The two sliding middle gear pinions are moved together by an operating plate which drops into grooves in each, the plate being moved endways by a quick thread and nut device.

High gear is obtained by sliding both middle pinions to the left, when the dogs upon that on the mainshaft engage with the large gear wheel thereon, and the shaft and sleeve run solid. Middle gear is given when the mainshaft dogs are disengaged, but when the sleeve dogs on the layshaft middle gear have engaged with the internal dogs in the layshaft drum pinion. For low gear the two wheels slide completely to the right, thus dogging the small mainshaft wheel, while the sleeve dogs of the layshaft middle wheel pass into the recess of the drum, and there run idly.

Advantages.

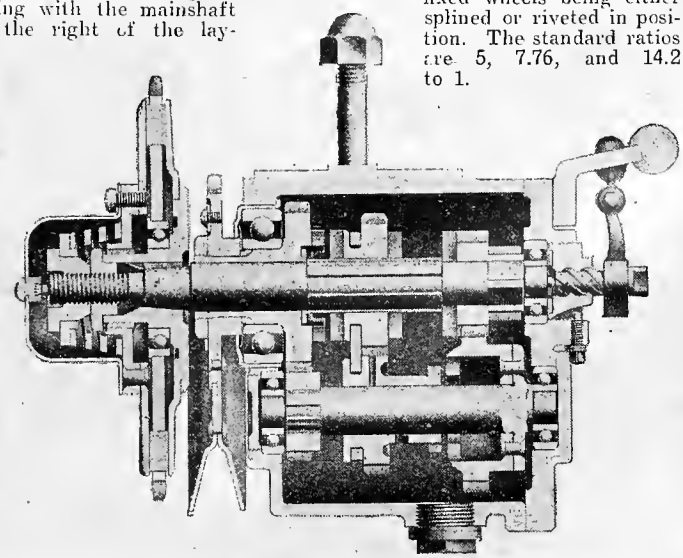
The advantages of this construction are that two sliding wheels, while constantly in mesh, are supported on uninterrupted bearings—that on the mainshaft being broached to a perfect fit on the splines, and that on the layshaft having a plain hole of about 1½in. in length.

Throughout, the box, gears, and shafts are of nickel-chrome steel, heat-treated to 120 tons tensile; and the workmanship, as we have seen, is of the very highest order.

A quadrant and pinion operate the quick thread gear-operating spindle, and all damage to the gears is prevented by the safety relief device incorporated in the mechanism.

The only criticism we can make after a thorough examination of a batch of gears going through production is the bulky appearance due to the housing of the control parts in the end plate extension. The box, however, is light, and the chain and belt lines and bracket fixings are the same as all other standard makes of gear boxes.

Internally, there are no keys, all fixed wheels being either splined or riveted in position. The standard ratios are 5, 7.76, and 14.2 to 1.



Part sectional drawing, showing general layout of the shafts, pinions, bearings, and single cork inset clutch and operating mechanism. Alternative final drives (chain or belt) are depicted.

CURRENT CHAT

SPECIAL FEATURES

ANGLO-DUTCH TRIAL, OVERSEAS COMMENTS.

CYCLE CARS UNDER TEST. TRICK RIDING IN HANDCUFFS.

TIME TO LIGHT LAMPS

Sept.	29th	... ...	7.44 p.m.
Oct.	1st	... ...	7.39 ,,
,,	3rd	... ...	6.34 ,,
,,	5th	... ...	6.34 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

The M.C.C. Annual Dinner.

The fourteenth annual dinner of the Motor Cycling Club will be held at the Wharnecliffe Rooms, Great Central Hotel, on Thursday, December 1st.

Next Saturday's Big Speed Trials.

Although entries had not closed at the time of writing, the Doncaster open speed trials seem likely to attract a positive galaxy of talent among the speed men. *The Motor Cycle* Challenge Cup will be awarded for fastest time in the best represented class of the meeting, and there are several other valuable awards.

A 3½ h.p. o.h.v. Triumph for 1922.

The 500 c.c. overhead valve Triumph which has figured in the classic speed events this year will be marketed in 1922 as a three-speed fast roadster.

Legal Brakes.

Mr. Arnold Butler, J.P., at a Birmingham court last week decided that flywheel brakes on outside flywheel engines are legal; also that two brakes acting on the rear wheel belt rim are legal, provided they are actuated by separate pedals.

Miniature Sidecar Outfits.

Baby two-strokes propelling sidecars now compete on level terms with big twin outfits with success. Early in the year a small Velocette took a sidecar round the course of a difficult Midland trial. In the Scottish Six Days a Hawker sidecar climbed Applecross. In the A.C.U. Six Days an O.K. outfit climbed Lynton and Porlock, and now a sister machine has secured a gold medal in the Scottish Two Days. Congratulations to its driver, Neville Hall, for being the first on a miniature outfit to secure a premier award in a big event.

Kickham Recovering.

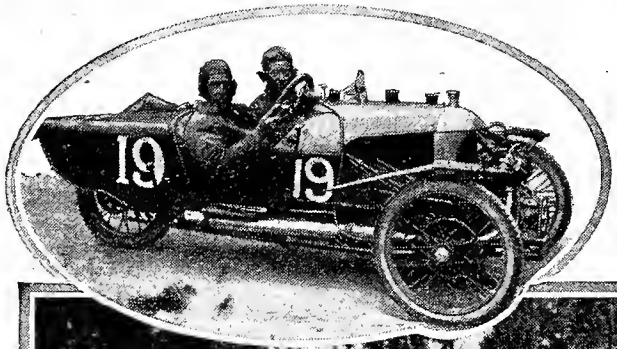
It may be remembered that E. Kickham, the well-known Douglas rider, had a severe accident in the Grand Prix de U.M.F. at Le Mans in July. We learn that he has progressed satisfactorily, and, in fact, much better than was anticipated at first. It will be about a fortnight before Kickham is able to leave Le Mans.

Triumph Prices for 1922.

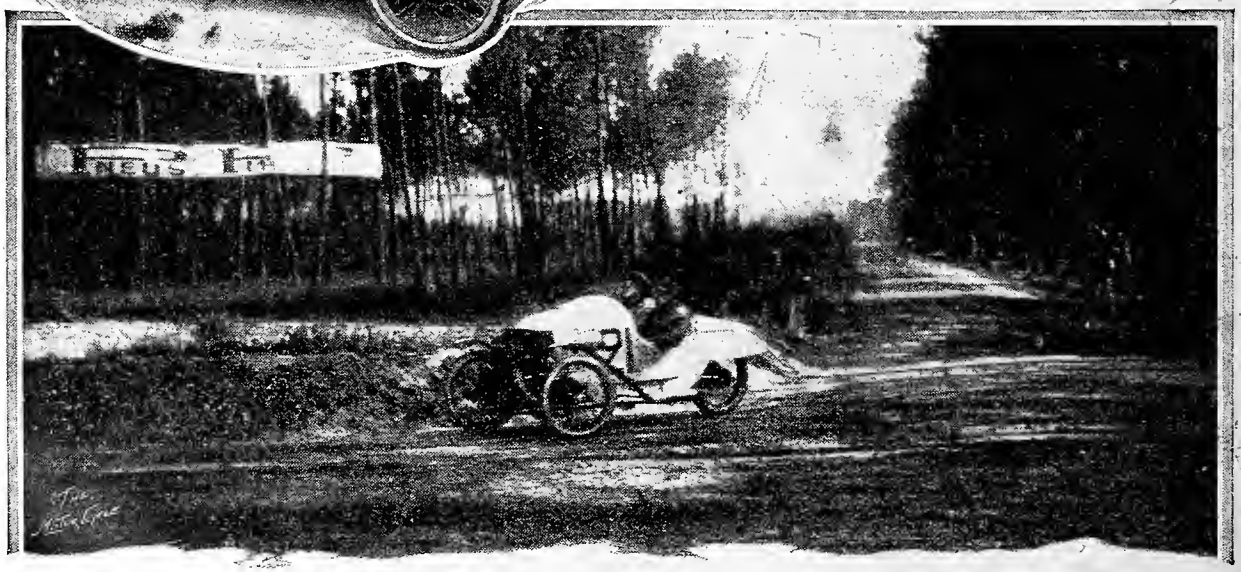
The 1922 prices of Triumph motor cycles have now been decided. They come into force on October 1st, and include free delivery at any of the manufacturers' agents in this country. The prices are as follows: 4 h.p. chain-cum-belt, £105; sidecar, £145; 4 h.p. all chain drive, £115; sidecar, £155; 3½ h.p. o.h.v. fast roadster, three speed, all chain, £120; and 2¼ h.p. lightweight, £65.

A.C.U. General Committee Meeting at Leicester.

The delegates to the General Committee meeting of the A.C.U., to be held at the Bell Hotel, Leicester, on Saturday next, are being entertained to dinner to-morrow evening (Friday) by the Leicester Motor and Loughborough Motor Cycle Clubs. Dinner will be served at 7.30, and all motor cyclists are heartily invited to be present. Tickets may be obtained from the East Midland Centre Secretary, Mr. K. S. Topping, 64, Frederick Street, Loughborough. At 9 p.m. a smoking concert will be held, when it is hoped a large number of Leicestershire motor cyclists will attend. An excellent musical programme has been arranged, and there is no charge for admission.



THE FRENCH CYCLE CAR GRAND PRIX.



One of the French-built Morgans on the famous Le Mans course. The race was won by Lombard on a Salmson four-wheeler. (Inset) E. B. Ware, an English competitor, who was much fancied to win on his neat racing Morgan.

Essex M.C. Annual Dinner.

The annual dinner of the Essex Motor Club will be held at the Holborn Restaurant, London, W.C., on Saturday, January 7th, 1922.

Open Climb on Axe Edge.

An open hill-climb, which promises to be a very well-supported event, will be held on Axe Edge, Buxton, on Saturday, October 15th, by the Stockport and District M.C. The secretary is Mr. E. S. Abram, 226, Manchester Road, Heaton Chapel, Stockport.

Popularity of Trials.

During the past week-end there was a surfeit of competitions—each supported by a large entry. The Scarborough Speed Trials attracted over 200 entries, the M.C.C. Sporting Trial nearly 100, an inter-team trial among employees of Coventry factories nearly 100, the Levis Single-gear Trial over fifty—and there were about twenty other hill-climbs, team trials, reliability trials and gymkhanas, in addition to the annual Anglo-Dutch Trial.

SMALL CARS.

Motor cyclists interested in small cars should read "The Autocar," the parent journal of "The Motor Cycle."

Light, medium, and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interests of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

Every Friday - - Price 4d.

A Sporting Big Twin.

A new British big twin sporting model is described in this issue.

1922 Models Under Test.

In various trials during last week-end we observed several experimental models which may be marketed in 1922. Among these were the M.A.G.-Brough Superior, the V twin two-stroke Stanger, a Barr and Stroud-engined Warne, and a twin Rover with the engine across the frame—a particularly neat machine.

Autumn Trials.

The open reliability trial organised by the Woolwich, Plumstead and District M.C. for the Matchless Cup will be held on Saturday of next week. The trials secretary is Mr. F. J. Ellis, 3, Nightingale Place, Woolwich, S.E.18. Another important autumn event is the M.C. and A.C. one day trial open to members of the Midland Centre. This will take place on October 15th. The organising secretary is Mr. F. J. Urry, Lionel Street, Birmingham, and entries must be received by Wednesday next.

SPORTING INTER-WORKS TRIAL.

Coventry Team Trial attracts Ninety-six Entries.

ALTHOUGH last Saturday's inter-works team trial was confined to the motor cycle clubs of Coventry's various factories, there were as many—if not more—genuine private-owner entrants among the ninety-six competitors as ever graced any event of that size. For several it was their first trial, but (although the severity of the route came as a surprise to some) we do not think it will be their last. The event was admirably organised by a committee of the Standard and Triumph Motor Cycle Clubs, and everybody enjoyed it thoroughly.

Three Watersplashes.

There are no hills of note within easy reach of Coventry, but a twenty-mile circuit, covered three times and starting not five miles from the heart of the city, provided quite a lot of rough going, which, with three perfectly fair watersplashes, ensured that too many teams did not finish with clean sheets. Each rider set his own speed (between 16 m.p.h. and 20 m.p.h.) for the first circuit, and marks were deducted for deviations from schedule on the second and third times round.

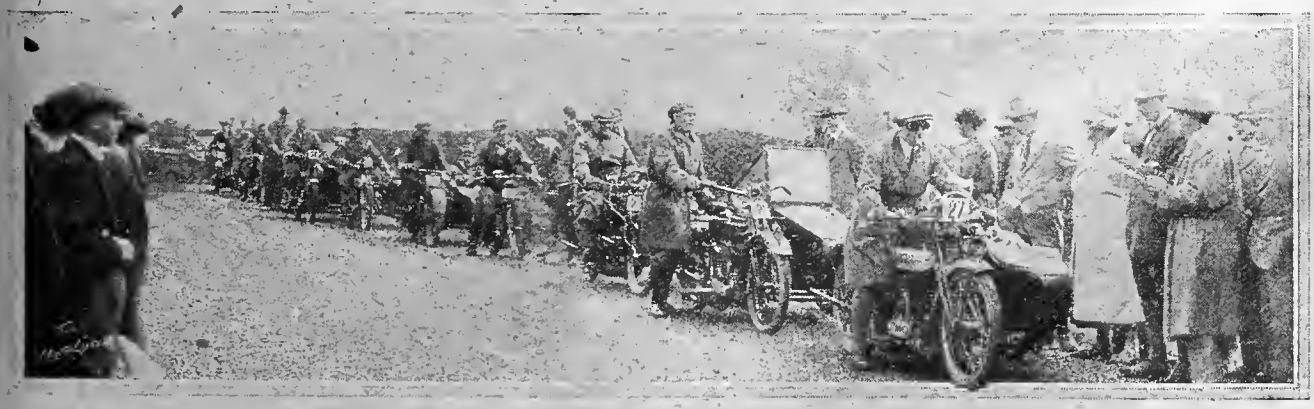
Chief interest centred at the splashes, which came one after another in the neighbourhood of Temple Balsall, Knowle, and Hampton-in-Arden, the first being about five miles from the start (at Pickford Brook, near Allesley). It was approached by a right-hand hairpin, and quite 30% of the competitors blindly rushed it on their first circuit—and failed. One Rover rider would have gone down stream at speed if a fence had not barred his way. This time, however, there was no penalty for failure, and on the next two occasions, which were non-stop, there was less—sometimes involuntary—driving to the gallery.

J. Pountney (5-6 Rover sc.) broke his chain at the second crossing, the cause probably being a small stone thrown up from the bed of the stream. W. E. Fox ($3\frac{1}{2}$ Rudge) lost his non-stop in the water, as did J. Bell on a direct belt-drive $3\frac{1}{2}$ h.p. Triumph. Each time round F. Kirby ($2\frac{3}{4}$ Connaught) came to a standstill, but he did not seem to worry much, and carried on. Very fast crossings were made by A. Brinklow (4 Triumph sc.), L. Hathaway (4 Triumph), and F. W. Ivens ($3\frac{1}{2}$ Norton), but probably the cleverest bit of driving was accomplished by E. Merritt ($4\frac{1}{2}$ Humber), who got into difficulties at the deep end and wormed his way out at about $\frac{1}{2}$ m.p.h. without moving his feet. After two clean circuits, T. Doyle ($3\frac{1}{2}$ Lea-Francis) stopped at his third attempt in a cloud of steam, a feature also of W. Wilday's (4 Triumph) failure.

High Water.

It was at this splash that some mysterious agency caused the water to rise a full three inches in half-an-hour. Fortunately, there was a lull in the stream of competitors when the flood was at its height, but one or two had very stormy passages.

The rises immediately following Nos. 1 and 3 splashes were, in several cases, too much for wet belts; but it was noticeable



AT THE START. Out of the thirty-two teams which competed only seven made non-stop runs.

Sporting Inter-works Trial—

that other drivers on identical machines had no trouble. Of course, some of the more wily sidecarists had instructed their passengers that a sprinkling of dry earth would help matters; others were more primitive still, and simply wiped the offending belts with a piece of rag. A few riders had tried various preparations to give "grip" to their belts.

Only six lost their non-stops in the second ford and four at the third. But, as we have already mentioned, had stops in the first circuit been penalised, there would have been less need to have relied upon the timekeeper to find a winning team.

While the "wet section" of the route was the most interesting to the spectators, the portion north of the Coventry-Birmingham road was extremely rough and called for very careful driving. There were few failures here, although a case was reported of a rider retiring because he had "had enough, without going round twice more"!

Several well-known and experienced competition riders took part; they are not mentioned individually, for, though they rode well and cautiously, they were never conspicuous.

Altogether, it was a most successful trial, providing a thoroughly sporting half-day's 'busman's holiday. The organisation was excellent.

The provisional results are as follow:

Winning Team: Team K, of the Humber Club (riders F. Yates, L. Crisp, and H. Crisp). Second: Team V, of the Triumph Club (G. H. Kirby, M. Powney, and G. Shemans). Seven complete teams finished out of thirty-two which entered. Individual prizes: 1, G. Ingham (Triumph); 2, W. F. Fox (5½ Rudge); 3, E. L. Roberts (4 Triumph).

A Lightweight Single Gear Trial.

Fifty-one Competitors in Sporting Trial organised by the Levis Sports Club.

IN previous years the Levis annual single gear trial has been confined to Levis riders, but this year the popular event was open to riders of all makes of machines. Fifty-one competitors started from the Levis works at Stechford, Birmingham, and those who had change-speed gears had their gear levers locked.

The course was about 100 miles, and at no time were the riders more than twenty-five miles from Birmingham.

The first obstacle was a watersplash. About 50% of the field negotiated this "clean," the other 50% had to foot-slog to help their slipping belts. This watersplash was more difficult on the return journey, as in the reverse direction the crossing was followed by a sharp ascent. As a matter of fact, coming home, only six completed this section without taking their feet off the rests. One man fell into the water, and at the finish was heard anxiously enquiring for the secretary.

Artificial Obstacles.

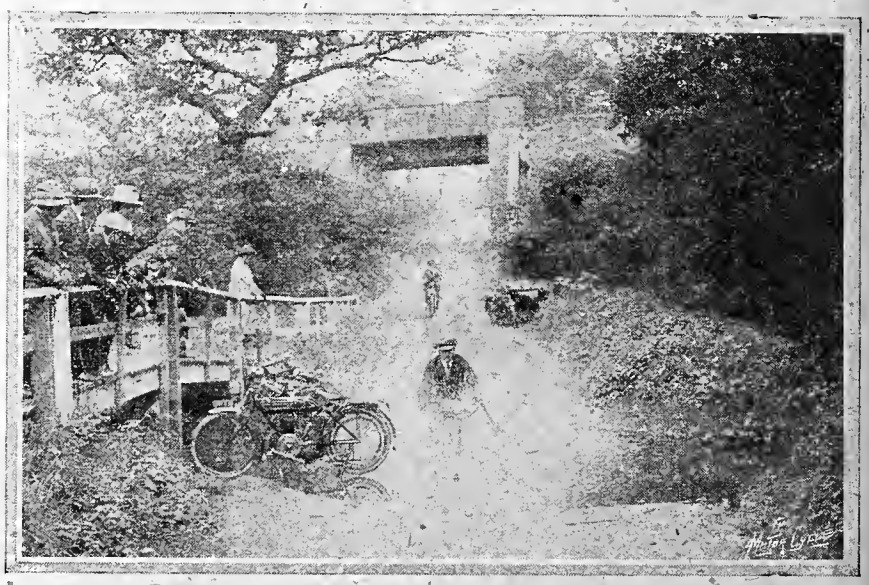
The "Colonial Section" was the next item. The officials thoughtfully placed some branches in the centre of the track to ensure that the riders should tackle the very worst place—thick grass growing in a minor bog. Only seventeen accomplished this section in a manner to satisfy the checkers so far as to be marked down as "clean."

The *pièce de résistance* was Gravel Pit Hill, the surface of which is composed of loose stones, and is approached by a sharp corner, which is also very loose. Only five of the competitors climbed this to the satisfaction of the judges. Without question the best ascent was made by S. Jones on a Levis, the last man of those still competing. W. V. Pickering (Triumph) skidded completely round, and charged the bank. N. D. Pickering, a youth of about fifteen, made a very skilful climb. His Triumph was always on the verge of stopping, but, by clever driving, he jockeyed it safely to the top.

A New Method of Deducting Marks.

The competitors had to average 20 m.p.h., and marks were added and deducted for the various features of the trial. The observed hills were divided into three sections, so that the higher the competitor ascended before paddling the fewer marks he lost. This is quite a good idea, and is worthy of consideration on the part of other trials organisers.

At the time of going to press the winner of the premier prize was not known, but it was believed that the award would go to G. S. Davison (Levis), W. S. Hawcutt (Levis), or S. Jones (Levis).



One of the watersplashes included in the Levis Trial. E. C. Myhill (2¼ Levis) passing through the comparatively shallow ford at Shirley.

SPEED TRIAL AT LUTON HOO.

TWENTY-TWO classes (sixteen for motor cycles and six for sidecars) were included in the programme of the Luton and South Beds. A.C. annual speed trials last Saturday.

In the first two events H. Ruyre (Ruyre-Newsom) and G. Dunham (Velocette) performed conspicuously, while A. E. Marshall, riding a Douglas and afterwards an A.B.C., impressed one, not only with the speed of his two mounts, but also with his neat driving.

Three Duzmos were competing, but were not in their best form, particularly the twin, which suffered severely from misfiring. F. Burley (Sports Sunbeam) rode very consistently, and handled his machine well.

In the 1,000 c.c. class E. Baragwanath appeared fast, and though his engine spluttered badly half way down the course, he gained first place in the ninth event. In the same event Barker (Zenith) broke his belt whilst at speed and wobbled badly. After Event No. 10, in which G. Read (8 Enfield) showed up particularly well, there was an interval for tea, which was served in a marquee. Then followed the sidecar class, in which O. De Lissa (Motosacoche) and H. Saddington (James) figured conspicuously.

The event this year did not attract the large number of spectators usual for an event at Luton Hoo. The large number of events last week-end may have had something to do with this.

The fastest time of the day was made by Read (Enfield), who covered the flying half kilometre in 16⅘s.—68.2 m.p.h.—a very creditable performance. This is the first time the Enfield with Vickers engine has competed in a speed trial.

ENGLAND v HOLLAND

On main roads in the Cotswolds. J. A. Newman (6 o.h.v. Douglas sidecar), H. Boynton (7 James sidecar), and G. J. Hamer (7-9 Indian sidecar), followed by other riders in the competition. The touring Rolls-Royce was *not* competing.

British Team proves Successful in the Fourth International Team Trial between the Two Countries. An Interesting Week-end for Dutch Riders.

First held in Holland in 1912, the Anglo-Dutch Team Trial is quite unique. It has no parallel in any other event in the motor cycle world. A team of 18 Dutch riders, chosen by their fellow motor cyclists, compete in a reliability trial against a similar team of riders representing Great Britain. In the first event, held in Holland in 1912, the Dutch team won. 1913 saw a British victory in this country. The 1914 trial was abandoned owing to the outbreak of the war, and in the 1920 test in Holland, the Dutch riders were the victors and so secured the original trophy. This year's contest is the first of the second series and has been won by the British team.

THE Dutch riders who competed last week-end in the fourth Anglo-Dutch reliability trial are undoubtedly very fast men in a speed burst on average roads; they are also thorough sportsmen, but—they cannot climb hills. There were notable exceptions, of course, but that is the general impression of this highly successful and enjoyable trial, the road (and track) portion of which took place on Monday over an indirect route from Worcester to Brooklands.

Remembering the welcome accorded to the British team last year in Holland (when the Dutch team won), a round of

A few of the visitors from Holland at Leamington Spa on the day preceding the event.

England v. Holland—

festivities was arranged for the visitors, extending from their arrival on Saturday until their departure on Tuesday afternoon. Breakfast as guests of the Essex M.C. was followed by an escorted ride to Leamington, and, the Midland Centre, A.C.U., having taken over the party at Towcester, dinner that night at the Town Hall, Leamington, was provided, right royally, by the latter body. So was luncheon at the Shakespeare Hotel, Stratford-on-Avon, where, on Sunday, the visitors had every opportunity of inspecting one of the show places of England.

In the afternoon a move was made to Worcester, the Western Centre taking official charge of the Dutch team at Alcester, amid the usual scenes of much enthusiasm. That night a dinner was held at the Guildhall, Worcester, when the competitors of both countries were welcomed by the Earl Beauchamp and the Mayor of Worcester.

The trite saying that it would be invidious to mention names is very applicable in reviewing the festivities in connection with the event; everybody worked with a will to give the visitors a good time, and we may safely affirm that they succeeded. In return, the Dutchmen displayed extraordinary keenness.

An American sidecar on an American machine fitted American fashion, but with an Easting screen. W. Van Zyel (7-9 Harley-Davidson sc.) near Cricklade.

Well Matured Machines.

On Sunday evening, when the competitors were rigging up their official number-plates (incidentally, with considerable difficulty) and filling tanks preparatory to the actual trial on the morrow, many of the Dutch team were observed taking down and cleaning out carburetters, testing tyre valves, and effecting all sorts of back-aching precautionary measures. Excepting, perhaps, G. Nott, who changed a tyre on his Matchless outfit, the English team "stood easy."

Between Stratton Station and Cricklade during the morning's run. J. N. Nieuwenhuys (6 Simplex), followed by W. M. Zelle on a sister machine. R. Charlesworth (8 Zenith sidecar) and H. Fels (7-9 Harley-Davidson) in the rear.

It was noticeable that the Dutch machines, most of which were of British or American manufacture, were in few cases 1921 models; some actually were pre-war, while we should imagine that they averaged about three years road service to their credit.

At a late hour after the Guildhall banquet the visitors held a fully attended council of war, when the route card and final regulations were discussed and analysed down to the minutest detail.

Thus each competitor came to the starting point, the Hopmarket Hotel yard, at eight o'clock on Monday morning, with the regulations as thoroughly at his finger-tips as had the officials themselves, and possibly a shade more completely than some of his English contemporaries.

An Easy Starting Test.

Thirty seconds were allowed in which to start up engines from cold, but this proved a generous allowance, and only O. Hayes ($2\frac{3}{4}$ A.J.S.) lost marks on this score; a night in a damp garage had caused a sticky contact breaker. He quickly rectified this and carried on; but he was not the only one to get into difficulties early. Nos. 1 and 2, Jac Brunt ($2\frac{3}{4}$ Douglas) and D. A. Atkin ($2\frac{3}{4}$ Hobart), were misdirected before they had run clear of Worcester, a heavy morning mist nullifying the very complete blue trail of the route markers. They, too, retrieved themselves in time.

For the first ten miles it was a main road run, then a by-road past Malvern Link Station, more good or fair going through Welland to Holly Bush cross roads, and then, for the first time, a narrow track reminiscent of the usual English reliability trial. This led to the first serious hill, a stony rise, about two hundred yards long, with a maximum grade of 1 in 5, and approached by a sharp left-hand corner.

None of the English riders turned a hair; but quite a few of the rival team lost their non-stops. J. R. Donker ($2\frac{3}{4}$ Royal Ruby) came to a stand-still about half-way up, and seemed surprised, and E. Ekker (4 Bianchi), apparently taking his cue from the man in front, did likewise. Both paddled on to the summit, amid a tuneful chorus of "konks." There was a momentary lull, and then three more, C. J. H. Wolff ($2\frac{3}{4}$ Royal Ruby), H. Bieze ($2\frac{3}{4}$ Royal Ruby), and—tell it not to Mr. Norton!—M. van den Jagt ($3\frac{1}{2}$ Norton), simultaneously decided that fifty yards climbing was enough at a time.

One of the trio should be able to claim a baulk—which one, it would be difficult to say, for all three had much trouble in

H. Fels (7-9 Harley-Davidson sc.), captain of the Dutch private owners, ascending Birdlip. Observe the sidecar on the right hand side of the machine.

Two of the English sidecars on Calais Hill, near Cirencester. S. Wright (4½ Humber) and W. Pratt (8 Matchless).

getting going again on the grade, meanwhile baulking H. R. Davies. Indeed, the majority of the Dutch competitors suffered from a lack of previous acquaintance of single-figure gradients, and, therefore, had no true idea of the capabilities of their machines. The Simplex riders were noteworthy exceptions, their machines providing quite the surprise of the trial.

A few miles further on, Wolff was noticed repairing his front tyre, a feat which he accomplished in quick time.

After Gloucester came Birdlip, the test hill of the day, lined with more observers than is usually considered necessary for a purely English trial.

Only W. P. Moffat (3½ Douglas) of the British team failed to make an easy, clean ascent; and he tried to get up on one cylinder, having broken a valve spring. His attempt was unsuccessful, and he lost a valuable hour rectifying matters.

None of the visitors' lightweights distinguished themselves, excepting V. Fonck's 2¾ h.p. Cedos; J. R. Donker and C. J. H. Wolff pushed valiantly—the latter raising such a heavy smoke screen that some of the more successful had great difficulty in passing with safety. The Bianchi "konked" painfully prior to giving up the ghost, but no more than Steensma's 4 h.p. Blackburne. The latter's effort was typical of many: first he almost stopped on top gear, then he very slowly went a little further on second, and again it was touch and go, and, finally, he engaged low—and stopped. T. Kersten (4 Harley-Davidson) varied the procedure; he missed his first gear change, ran back, fell, pulled his machine upright across the road, and then fell over on his other side.

M. van den Jagt (3½ Norton), J. M. Boom (5 Simplex), P. Nieman (5 Simplex), J. F. M. Smits (7-9 Harley-Davidson), and W. M. Zelle (6 Simplex) were amongst the best of the visiting soloists; and Nieuwenhuys, on the forth Simplex, had ample power, but hung on to top too long.

If the secret check was at the top of Birdlip—no one saw it, but so it was rumoured—L. Sealey (3½ B.S.A.) must have been caught well ahead of schedule. He made a good climb, but with Wellensiek's B.S.A. it was touch and go until he changed down! J. W. ten Dam, on a black 7-9 h.p. Harley, was the only big twin soloist to fail, and he got well up before stopping.

Just to show that Birdlip *is* a severe hill, E. B. Ware's Matchless sidecar knocked quite appreciably before second gear was brought into action; and then, to confirm it, J. A. Hanse, on an old 6 h.p. Enfield sidecar, failed in a variety of ways to make a clean climb. His passenger had quite a strenuous time pushing the heavy outfit up. While this was going on, Sam Wright (4½ Humber sc.) passed at speed with a look somewhat akin to amazement on his face.

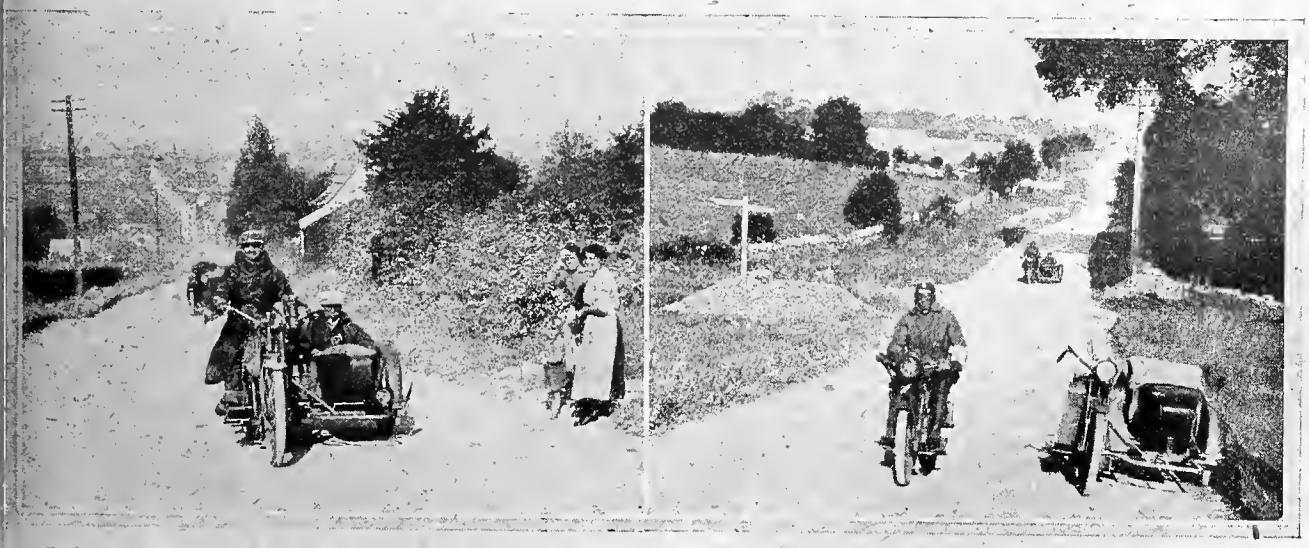
G. J. Hamer (7-9 Indian sc.), C. Witteveen (7 James sc.), and W. van Zyll (7-9 Harley-Davidson sc.) were all good, but L. J. Z. Veekeens (5-6 James sc.) spent at least an hour on the lower reaches of the hill.

The First Control.

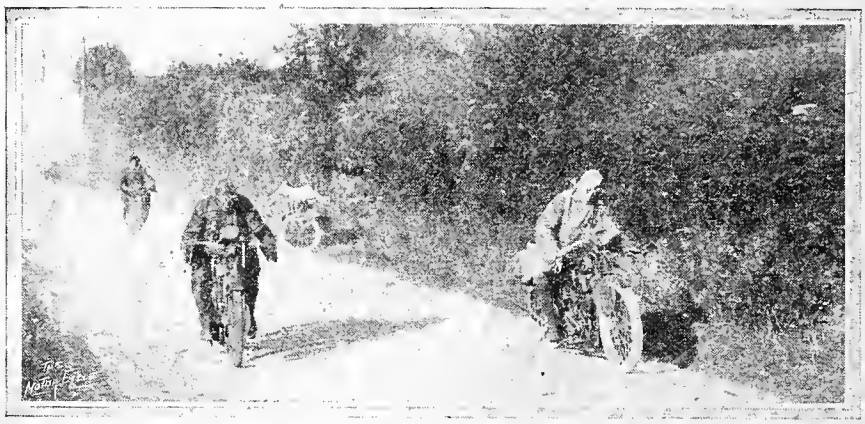
Cirencester was the first control, and a commendably large proportion of both teams were dead on time.

In the next forty odd miles, *via* Cricklade, Baydon, and Wickham, to the lunch stop at Newbury, there was more fine scenery than there were single-figure gradients. Notwithstanding this, some of the visiting 250 c.c. and 350 c.c. machines had to be "slogged."

Only two were missing at the half-way halt—Veekeens, whom we have already mentioned, and who turned up amid general rejoicings about an hour later, and Bieze, who had apparently lost his way.



(Left) Near Wickham. W. Pratt (8 Matchless sidecar), captain of the English trade team. (Right) J. v. d. Werden (7-9 Indian), followed by Geo. Nott (8 Matchless sidecar), at Stratton Station.



Dutch solo riders on Birdlip. J. M. Boom (5 Simplex), who made one of the best performances in the visiting team on this well known main road hill, is on the right, and has just passed H. Bieze (2¾ Royal Ruby), while in the rear are C. L. Sprosen (2½ Connaught) and another of the Dutch team—who found the hill too much for his mount.

It was now obvious that not all who had made clean ascents of the test hill had retained clean sheets. For example, F. J. Visscher's Indian sidecar was now largely held by wire, while the same rider had had trouble with his engine sprocket.

The luncheon arrangements at Newbury were very poor, and must have created a poor impression upon our visitors, which is to be regretted by all who know how well the British team was treated in this respect last year.

After lunch the trial continued over good roads through pretty and typically English scenery. On the whole, the worst was over, but it was not too easy for the competitors, as a few sandy lanes before reaching Brooklands rendered going uncomfortable for the solo riders.

It is curious to relate that, although the course was a secret one, a number of motor cyclists were observed at various points.

Unfortunately, one of the Dutch team —H. Fels (7-9 Harley-Davidson sc.), the private owners' captain—collided with the Indian lorry on arrival at Brooklands and suffered a dislocated collar-bone. His place was taken by one of the reserves.

On arrival at Brooklands, and after filling up with petrol, the competitors proceeded to the fork for the start of the twelve laps (36.2 miles) at speed. The speeds required by the regulations were as follows: 275 c.c. solo and 600 c.c. sidecars, 28 m.p.h.; 350 c.c. and 500 c.c. solo and 1,000 c.c. sidecars, 35 m.p.h.; 1,000 c.c. solo, 40 m.p.h.

On Brooklands Track.

As was to be expected, the track test found weak spots in the competitors' machines. J. R. Donker (2¾ Royal Ruby) and H. ten Velde (6 Bat) were soon in trouble, while W. B. Gibb (2¾ Douglas) was running on one cylinder and with his front stand down. J. A. Hanse's 6 h.p. Royal Enfield sidecar was not running at all well until his sixth lap.

The visiting sidecarists created some interest by riding their machines in a bunch and in close order—not a very safe proceeding.

Donker (Royal Ruby) stopped on his seventh lap for oil, and on the ninth lap A. G. Wall (Cedos) made a halt for the same reason, but found that he could not obtain any fuel. G. Hoogeveen (7-9 Harley-Davidson sc.) ran round the track holding on his filler cap, while W. Pratt (8 Matchless sc.) punctured, and F. A. Hardy (3½ Zenith-Bradshaw), who had run for several miles on one cylinder, had to change a plug before the speed test. J. Whalley (3½ Sunbeam) ran into the paddock during the speed test, but later reappeared; nevertheless, he succeeded in making fastest time, his average speed working out at 48 m.p.h.

Nott's Matchless sidecar averaged 46 m.p.h., while Geoffrey Smith (3½ Sunbeam) was third at 45.68 m.p.h. Excepting the visiting lightweights, the majority of the speeds were over 40 m.p.h.

A Victory for This Country.

After Brooklands, the competitors journeyed to Thames Ditton for the dinner arranged by the A.C.U. and the entertainment provided by the Surbiton M.C.C. at the Vaudeville Club. Here it was announced provisionally that the British team had won with a loss of fifty-two marks as against 256 marks lost by the Dutch team.

Thus the home team again has won the event, and the second Holland-England Cup, presented last year by Mr. A. Citroën, will be in England for the next twelve months. H. Fels, the captain of the Dutch private owners, who met with an accident after having made a non-stop run, will be awarded a gold medal.

At the time of going to press the winners of the special trophies had not been decided.

THE COMPETING TEAMS.

Holland.

CLASS 1 TEAM.—Jac. Brunt (2¾ Douglas), J. R. Donker (2¾ Royal Ruby), E. Ekker, jun. (4 Bianchi), A. Steensma (4 Blackburne), H. Bieze (2¾ Royal Ruby), and C. J. H. Wolff (2¾ Royal Ruby). *Reserves:* M. v/d Jagt (3½ Norton) and V. Fonck, jun. (2¾ Cedos).

CLASS 2 TEAM.—J. M. Boom, jun. (5 Simplex), J. W. ten Dam (7-9 Harley-Davidson), P. Nieman (5 Simplex), J. F. M. Smits (7-9 Harley-Davidson), W. H. Wellensiek (4¼ B.S.A.), and H. ten Velde (6 Bat). *Reserves:* J. H. Nieuwenhuys (6 Simplex), W. M. Zelle (6 Simplex), and T. Kersten (7-9 Harley-Davidson).

CLASS 3 TEAM.—H. Fels (7-9 Harley-Davidson sc.), G. J. Hamer (7-9 Indian sc.), G. Hoogeveen (7-9 Harley-Davidson sc.), F. J. Visscher (7-9 Indian sc.), C. Witteveen (7 James sc.), and W. van Zyll (7-9 Harley-Davidson sc.). *Reserves:* J. A. F. Bolland (7-9 Harley-Davidson sc.), J. A. Hanse (6 Royal Enfield sc.), T. T. Gude (7-9 Harley-Davidson sc.), and L. J. Z. Veekens (5-6 James sc.).

Captain, private owners: H. Fels.
Captain, trade riders: C. Witteveen.

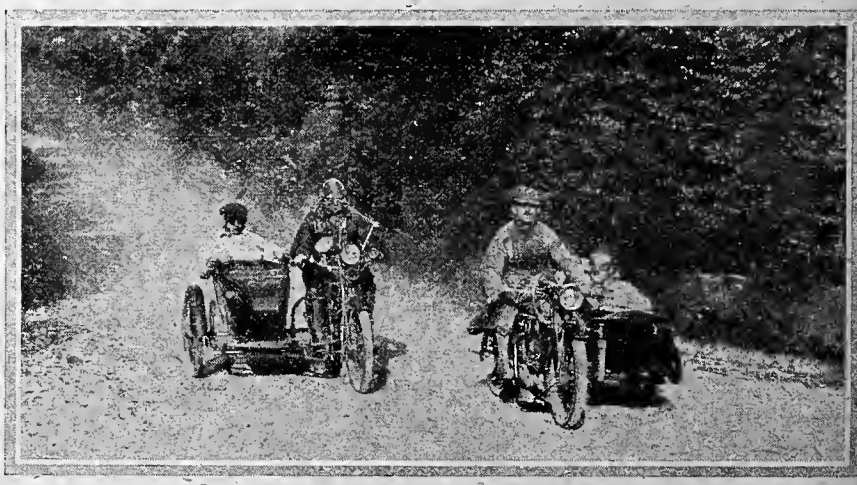
England.

CLASS 1 TEAM.—D. A. Atkin (2¾ Hobart), B. Kershaw (2¾ New Imperial), O. Hayes (2¾ A.J.S.), K. Don (2¾ A.J.S.), W. B. Gibb (2¾ Douglas), and H. R. Davies (2¾ A.J.S.). *Reserves:* A. G. Wall (2¾ Cedos) and C. L. Sprosen (2½ Connaught).

CLASS 2 TEAM.—F. Dover (4 Triumph), F. A. Hardy (3½ Zenith-Bradshaw), G. Smith (3½ Sunbeam), W. P. Moffat (3½ Douglas), L. Newey (3½ Ariel), and L. Sealey (3½ B.S.A.). *Reserves:* R. A. Green (3½ Norton) and J. Whalley (3½ Sunbeam).

CLASS 3 TEAM.—R. Charlesworth (8 Zenith sc.), J. A. Newman (6 Douglas sc.), G. Nott (8 Matchless sc.), H. Boynton (7 James sc.), W. Pratt (8 Matchless sc.), and E. B. Ware (8 Matchless sc.). *Reserves:* C. Croswhaite (3½ Duzmo sc.), S. Wright (4¼ Humber sc.), F. J. Ellis (8 Matchless sc.), and W. A. Fell-Smith (8 Brough Superior sc.).

Captain, private owners: Geoffrey Smith.
Captain, trade riders: W. Pratt.



Big twin sidecars of America and England ascending Calais Hill. On the left is J. A. F. Bolland (7-9 Harley-Davidson), with his sidecar on the right, and W. A. Fell-Smith (8 Brough-Superior).

THE M.C.C. SPORTING TRIAL.

New Models in Well-organised Event for Solo Riders.

A GOOD entry of eighty-four riders and fine but dull weather favoured the M.C.C. 114 miles trial for motor bicycles. It was, as the organisers announced it would be, a sporting trial over a sporting course. The competitors were bound by few regulations, and save that each section had to be covered non-stop, and the men had to keep to schedule, they had little to worry them.

The course was practically the same as that used for the Arbuthnot Trophy, and consisted of winding roads and such well-known hills as Succombes, High Lane, Polesteeple, Cudham, Rookhill-on-Starvecrow, and Chalkpit. On this occasion, the start, luncheon stop, and finish were at the Railway Hotel, Caterham.

Early Casualties.

Succombes Hill was encountered within four minutes of the start, and accounted for several failures at this early stage. One of the best ascents was made by F. Spikins (3 A.B.C.).

The next hill of interest was Sunningdale Avenue, which runs into the Westerham Road by Newbiggin Aerodrome, and within a few yards of the summit of Salthox or Crown Ash, as it is more correctly called. It is approached by a lane, where a few competitors went wrong. Here F. W. Applebee (2¼ Levis) missed his way, and started climbing some steps. He claims to have made a clean ascent, but his prowess was ill-rewarded as he had not only left the course, but a series of inner tube troubles proved his undoing. So far as gradient and difficulty in climbing are concerned, the substitute for Crown Ash proved to be rather poor, but its surface was exceedingly rough and knobbly, and in wet weather it would have caused some trouble. As it was, practically everyone got up. Next to Succombes, Rook Hill was the worst on the course, and being loose, rough, and steep, it accounted for a large number of failures in the morning. Particularly good ascents were made by Spikins (A.B.C.) and R. B. Clark (Coulson-B.)

Two Coulson riders. L. Nicholson and C. F. Alcock on Succombes Hill, which the competitors encountered in the first five minutes of the trial.

Near Caterham the competitors had to take a very awkward hairpin bend before reaching the finishing point.

New Models under Test.

At the luncheon interval we noticed that G. Brough was riding a new model Brough Superior, with a 750 c.c. M.A.G. engine, 72×90 mm., which is to be known as the Mark II. Another new machine was Warne's mount, which was fitted with the new Barr and Stroud sleeve valve engine. This is the first appearance of this engine in competition, and it has made a good start, as Warne qualified for a gold medal, while yet another new and successful competitor was McCarthy's 5 h.p. V twin two-stroke Stranger. The marking of the course was excellent, and competitors had little excuse for losing their way.

The morning's run accounted for many retirements, as only forty-four competitors faced the starter on the second round. Failures were, however, fewer in the

The M.C.C. Sporting Trial took the competitors through picturesque but tortuous lanes. The début in competition of the V twin two-stroke Stanger. S. A. McCarthy is the rider, and he is seen on Rook Hill—the most difficult hill in the trial.

The M.C.C. Sporting Trial.—

afternoon, and only two stops were recorded on Rook Hill.

W. H. Bashall (Martinsyde) retired through tyre trouble, while R. B. Clark (Coulson), who got through, cannoned into *The Motor Cycle* photographer. Neither was seriously hurt.

The following competitors claim to have qualified for a gold medal:

C. T. Slowman (3½ Sunbeam), C. Wilson (4½ Quadrant), G. Packman (8 Matchless), B. H. Brayne (4 Blackburne), L. A. Welch (4¼ B.S.A.), D. H. Davidson (4 Indian Scout), P. Cunningham (3½ P. and M.), P. Street (3½ Sunbeam), R. Pugh (4 Triumph), A. C. Rhodes (4 Triumph), V. Belfield (A.B.C.), L. Nicholson (Coulson-B.), N. C. Dear (3½ Sunbeam), E. Hillary (3½ Rover), J. McBirnie (7 Indian), V. Olsson (3½ Sunbeam), T. Francis (4 Triumph), F. Begley (Indian Scout), S. J. Marks (4 Triumph), S. Dunford (2¾ Verus), M. O'Reilly (5 N.U.T.), F. R. G. Spikins (3 A.B.C.), O. W. Jones (7 Harley-Davidson), C. Bourlet (3½ Ariel), S. A. McCarthy (5 Stanger), W. C. Hemy (2¾ A.J.S.), G. M. Townsend (3½ P. and M.)—he rode 50 miles in the afternoon on the rim—H. G. Bell (7 F.N.), M. A. Newman (5-6 Raleigh), R. B. Clark (2¾ Coulson-B.), H. F. Edwards (4¼ B.S.A.), S. Warne (2¾ Warne's), L. P. Driscoll (3½ Norton), J. A. Hoult and T. J. Ross (3¾ Scotts), and F. A. Longman (3½ Ariel).

Speed Trials on the Scarborough Promenade.

A Successful Motor Cycle Event concludes Carnival Week at Popular Northern Resort.

GLORIOUS weather, splendid sport, a record entry, and nearly perfect organisation, helped to make the concluding event of Scarborough's Carnival Week a huge success.

The gardens rising from the Albert Drive, where the trials were held, made an ideal grandstand, from which thousands witnessed the trials in comfort and safety. Well marshalled and policed, the whole event went off without the slightest accident.

Chief interest centred round F. W. Dixon (Harley-Davidson), R. J. Cawthorne (Norton), and E. Searle (Sheffield-Henderson), who put up some splendid times in the face of a head wind. But the "dark horse" was E. Wilkinson, of Malton, who had secured the 2¾ h.p. A.J.S. with which H. R. Davies won the Senior T.T. His speed only just fell short of 60 m.p.h. from a standing start, which was a splendid performance for an amateur who had only received the machine the day before.

F. W. Dixon (Harley-Davidson), of course, beat him, and secured the honour of fastest time of the day 65.9 m.p.h. R. T. Cawthorne (Norton) also did splendidly.

It will be seen from the results given below that the awards were, as usual, secured by a few riders with exceptionally fast machines. The little New Imperials secured two firsts, three seconds, and two thirds in three classes, while Sunbeams accounted for one second and three thirds; the A.J.S. five firsts, one second, and one third; Nortons four firsts, seven seconds, and one third; Sheffield-Henderson four seconds and two thirds; Harley-Davidson two firsts (including fastest time of the day) and one third; Morgans took two firsts. In addition to the motor cycle events, there were several classes for cars, which, however, failed to equal the speeds of the motor cycles.

F. W. Dixon (7-9 Harley-Davidson sidecar), who made the fastest time of the day. He also won the cup presented by Scarborough motor traders.

Results:

250 c.c. SOLO (Amateurs).—1, G. Bower (2¼ New Imperial); 2, H. Thomas (2¼ New Imperial); 3, W. Marriott (2¼ Velocette).

250 c.c. SOLO (Open).—1, G. Bower (2¼ New Imperial); 2, R. Wood (2¼ New Imperial); 3, H. Thomas (2¼ New Imperial).

350 c.c. SOLO (Amateur).—1, E. Wilkinson (2¾ A.J.S.); 2, G. Bower (2¼ New Imperial); 3, J. T. Jobborn (2¾ Sunbeam).

350 c.c. SOLO (General).—1, E. Wilkinson (2¾ A.J.S.); 2, J. T. Jobborn (2¾ Sunbeam); 3, G. Bower (2¼ New Imperial).

560 c.c. SOLO (Amateur).—1, E. Wilkinson (2¾ A.J.S.); 2, G. Bower (3½ Norton); 3, A. I. Drabble (3½ Norton).

560 c.c. SOLO (General).—1, R. T. Cawthorne (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson); 3, E. Wilkinson (2¾ A.J.S.).

750 c.c. SOLO (Amateur).—1, E. Wilkinson (2¾ A.J.S.); 2, G. Bower (3½ Norton); 3, W. Wilkinson (3½ Sunbeam).

750 c.c. SOLO (General).—1, R. T. Cawthorne (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson); 3, G. Bower (3½ Norton).

UNLIMITED SOLO (Amateur).—1, E. Wilkinson (2¾ A.J.S.); 2, G. Bower (3½ Norton); 3, W. Wilkinson (3½ Sunbeam).

UNLIMITED SOLO (General).—1, F. W. Dixon (7-9 Harley-Davidson); 2, R. T. Cawthorne (3½ Norton); 3, E. Searle (3½ Sheffield-Henderson).

600 c.c. SIDECARS (General).—1, R. T. Cawthorne (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson); 3, C. P. Wood (3¾ Scott).

750 c.c. SIDECARS (Amateur).—1, J. H. Johnson (Rudge); 2, L. Padley (4 Norton).

750 c.c. SIDECARS (General).—1, R. T. Cawthorne (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson); 3, C. P. Wood (3¾ Scott).

UNLIMITED SIDECARS (Amateur).—1, C. N. Sadler (7-9 Indian); 2, L. Padley (4 Norton); 3, G. E. Carnall (7-9 Harley-Davidson).

UNLIMITED SIDECARS (General).—1, F. W. Dixon (7-9 Harley-Davidson); 2, R. T. Cawthorne (3½ Norton); 3, E. Searle (3½ Sheffield-Henderson).

CYCLE CARS (Amateur).—1, R. F. Prichard (Morgan); 2, J. Moorhouse (Whizz-Bang); 3, R. E. H. Hutton (G.N.).

CYCLE CARS (General).—1, R. F. Prichard (Morgan); 2, T. Moore (G.N.); 3, R. E. H. Hutton (G.N.).

Riding the identical 2¾ A.J.S. that won the Senior T.T., E. Wilkinson made some fine performances, twice covering the half mile in 30⅘ secs. = 59.21 m.p.h. He won five firsts two seconds, and the Webster trophy.

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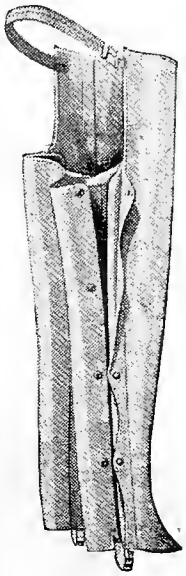

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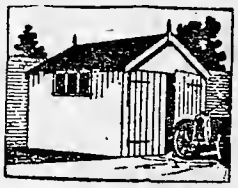

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A.B.C., 1920½, perfect condition; £70; evenings.—Capt. Briggs, 12, Mabledon Place, W.C.1. [1908

1921 A.B.C., kick starter, Klaxon horn, spares, fully licensed, only done 50 miles; £90, or best offer. Box 18, c/o *The Motor Cycle.* [X9776

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All Slightly Soiled.

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£184 2	1921 **ROYAL ENFIELD,** dyno. ltg., spring bars.	£167	0
£168 0	1921 **NEW IMPERIAL,** 8 h.p. & Spt'g. sidecar.	£130	0
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151, High St., Walthamstow, London, N.E.
'Phone: Walthamstow 169 (2 lines).

50, High Road, Wood Green, London, N.
'Phone: Hornsey 1955.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1920 Dynamo Model, Cowey speedometer, tax paid, insurance, fast and in good condition; £100.—Clarke, Lynn Rd., Ely, Cambs. [8451

1921 A.B.C. Combination, practically new, kick starter, Lucas lamps, Klaxon, Triplex screen, apron, speedometer, £5 spares, tool kit, etc.; nearest £130; exchange.—63, Solon Rd., Brixton. [9164

Abingdon.

£19.—3½h.p. Abingdon King Dick, hand clutch, fine running order, equipped.—King, Egrove Farm, Oxford. [X9739

Acme.

1920 Acme-Jap 8h.p. Combination, lamps, horn, licence, etc., in good condition; 100 gns.—Garbutt, 78, De Grey St., Hull. [1500

A.J.S.

1914 A.J.S. Combination; £80.—Wagstaff, 13, Mountfield Gardens, Tunbridge Wells. [1949

A.J.S.—All models reduced.—Merrick's Stores, 174, Listerhills Rd., Bradford. 'Phone: 2439. [7898

1913 5-6h.p. A.J.S. Solo, just overhauled, kick start, 2-speed; offers.—17, High St., Beckenham. [2015

A.J.S. 1920 Combination, mileage 2,000, well equipped; £130.—42, Annandale Rd., Greenwich. [2106

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

1920 A.J.S., almost brand new, complete in every detail, all accessories; £175.—59, High St., Clapham. [2338

2¾h.p. A.J.S. in Stock, £95; 1920 6h.p. combination, complete and tax paid, £158.—Cross, Agent, Rotherham. [X9751

1920 A.J.S. Combination, 2,050 miles only, perfect, speedometer fitted; £180, nearest offer; trial.—Gregson, Woodside, Chilwell, Notts. [2036

1921 A.J.S. 7h.p. Combination, condition as new, Lucas lamps, horn; cost £225, bargain, £170; any trial.—Webber, 4, Queen's Terrace, Morecambe, Lancs. [9686

A.J.S. 1921 7h.p. Combination, hood, electric light, horn; cost £250, very little used; sell £200.—Goodman, 7, Barnsley Rd., Edgbaston, Birmingham. [1990

1921 7h.p. A.J.S. Combination, Lucas electric, side screen, discs, perfect condition, small mileage, tax paid; nearest offer £200 secures.—26, Evington Rd., Leicester. [1779

A.J.S. 6h.p. Combination, M.M., new June, 1919, electric lighting, Klaxon, Bonniksen speedometer, spare tyres and parts; £135.—Mortimer, 42, Freegrove Rd., Holloway. [2245

1920 A.J.S. 6h.p. Combination, Lucas lamps, spare wheel, speedometer, tax and insurance paid, splendid condition; £135; after 6.—McNeill, Sutherland House, Maple Rd., Surbiton. [1998

1920 6h.p. A.J.S. Combination, fully equipped, clutch (hand and foot controlled), excellent condition; £140; after 6.30. — Hudson, 114, Dartmouth Park Hill, Highgate, N.19. [2004

£79; A.J.S. Combination, 1916, detachable wheels, spare, all accessories, Tan-Sad, luggage grid, licensed, smart appearance, excellent condition, any trial.—Bacon, Offington Lane, Worthing. [1958

1920 A.J.S. Combination, fitted, superbly equipped full 2-seater body, excellent condition throughout, mileage under 2,000, acetylene lighting; cost £265, sell £175.—Smith, Selwyn, West St., Bolton. [X9636

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

A.J.S. 7h.p. Combination, 1921, only ridden 800 miles, spare wheel, lamps (acetylene), horn, hood, wind and side screens, licence and insurance paid; price £175, or nearest.—Robinson, 23, Lilycroft Rd., Bradford. [1999

A.J.S. 1921 Combination, as new, with Royal Easting and Standard screens, horn, speedometer, lamps, 2 A.L. gas cylinders, licensed, and fully insured to May, 1922; owner obliged to give up motor cycling; £200.—Burnell, Albion St., Rugeley. [9393

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A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

Alldays.

ALLON 1917 2¾h.p. Combination, all on, tax paid; £45.—2, Moreton Terrace Mews, S.W.1. [2040

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ALLDAYS Allon, 1920, 2¾h.p., insured, registered, perfect, complete; £45.—James, Daventry. [1669

ALLON, 1920 engine, good condition, lamps; nearest £32.—Clifton, Clauville Lodge, near Andover. [2156

3½-4¼h.p. Alldays Matchless, 2-speed, handle start, new Palmer, good condition, licence; £37.—12, Rectory Rd., Barnes, S.W.13. [1548

1920 Alldays Allon 2¾h.p., 2 speeds, clutch, kick start, indistinguishable from new; £49/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2272

1918 Alldays Allon Combination, clutch, kick start, replated and enamelled, engine rebushed, Watsonian sidecar as new, complete with lamps; £65; after 6 p.m.—36, Ranelagh Rd., Ealing. [1982

American X.

1920 American X, Montgomery, 500 miles only, and cost £200; sacrifice for £98.—Dudley, Shear Bank, Latchford Without, Warrington. [2027

AMERICAN X., 1920, Henderson sidecar, original tyres, disc wheels; trial by appointment; price £150.—Box 6,567, c/o *The Motor Cycle*. [2182

7-9h.p. American X., 1916, very fast and powerful, Cox Atmos carburetter, about 75 m.p.g., Rushmore searchlight, etc.; open expert examination; £80—Owner, Stoneley, Curry Rivel, Somerset. [1539

Ariel.

DAN GUY Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0688

ARIEL, 3½h.p., 1915, splendid condition, tax paid; £45.—Withey, 64, Hengist Rd., Erith, Kent. [1688

SHOP-SOILED Ariel 3½h.p.: £90 for quick sale.—Autoveyors, Ltd., Service Depot, 4-12, Palmer St., S.W.1. [0468

2½h.p. Ariel, C.A.V., Druids, tax paid, good running order; nearest £16; stamp.—Chandler, Sutton-on-Sea, Lincs. [1919

1920 3½h.p. Ariel, all accessories, tax paid, £82; also 1914 T.T. model, bargain £36.—Ross, 86, High Rd., Lee. [1694

ARIEL 3½h.p. Combination, 1920, all accessories, Easting, as new, tax paid; £99/19/11¾.—Barney, Grafton, Bromsgrove. [X9694

ABSOLUTE Bargain, 2½h.p. Ariel, splendid condition throughout, licensed; £22/10.—27, Wandle Rd., Wandsworth Common, S.W.17. [2176

1920 Ariel 6-7h.p., lamps, horn, speedometer, scarcely used, as new, spares, tax; bargain, £128.—Collison, Blacksmith, Church St., Burnley. [1481

ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL Late 1920 3½h.p. Combination, 3-speed, easy starting, lamps, luggage grid, etc., excellent condition, very reliable; £95.—16, Morley Rd., Lewisham. [1833

ARIEL 1920 6-7h.p. Combination, speedometer, horn, luggage grid, spare belt, done 2,000 miles, excellent condition; £115.—Monro, Culverlea, Winchester. [2218

1917 Ariel 5-6h.p. Twin Combination, splendid condition, speedometer, Binks, Tan-Sad, Easting, spare bars and back wheel; £85.—Vicar, Boynton, Bridlington. [1991

ARIEL and Sidecar, 6-7h.p., 1919, electric lighting, Klaxon horn, speedometer, new condition; price £90; can be seen any time.—Apply, Staley, Craven House, Kingsway, W.C. [1826

ARIEL (1920, October) 4h.p. Combination, Easting speedometer, Lucas lamps, tax paid, done 1,700, condition as new; cost £165, accept £100.—6, Undercliffe Rd., Boscombe, Bournemouth. [2157

ARIEL Combination, 1914, 3½h.p., with new Grade gear and kick starter, engine recently overhauled, sidecar and chassis as new; owner buying car; price £48.—Apply, 139, Wollaston Rd., Lowestoft. [2084

ARIEL 1921 3½h.p., 3-speed solo model; list price £100; usual makers' guarantee given; imperceptibly soiled; bargain for cash at £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2298

LATE 1919 3½h.p. Ariel Motor Cycle, 3-speed, clutch, kick starter, with new Montgomery sidecar, fully equipped, perfect condition; trial by appointment; £90, or near offer.—Smith, Milsted, Sittingbourne, Kent. [1737

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BAT 6-8h.p., 1920, and Millford sidecar, run 3,000 miles; £125.—Denholm, Woodlyn Stepps, Lanarkshire. [X9632

BAT, late 1920, 6h.p. twin sporting model, fully equipped, absolutely as new; £105.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9647

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2¼ h.p.	**ENFIELD**, 2-speed	£65	0
4 h.p.	**TRIUMPH**, 3-speed, chain-cum-belt	£115	0
4 h.p.	**TRIUMPH**, all chain drive	£125	0
3½ h.p.	**JAMES**, twin, solo	£120	0
3½ h.p.	**ROVER**, 3-speed, chain drive	£115	0
3½ h.p.	**NORTON**, 3-speed	£115	0
2¾ h.p.	**NEW IMPERIAL**, kick-start	£80	17
2¾ h.p.	**MASSEY ARRAN-BLACKBURNE**	95 gns.	
2¾ h.p.	**EDMUND-BLACKBURNE**, 2-sp., kick-start	£98	0
2¾ h.p.	**EDMUND-J.A.P.**, 2-speed	£85	0
2¾ h.p.	**CALTHORPE-J.A.P.**, 2-speed	66 gns.	
2¾ h.p.	**CALTHORPE**, single-speed	43 gns.	
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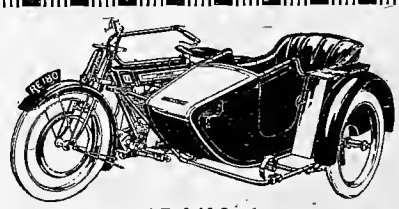
2¼ h.p.	**JAMES**, 2-stroke, 2-speed	£67	10



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8 h.p.	**NEW IMPERIAL** Combination	£168	0
5-6h.p.	**ROVER** Combination	£167	10
4 h.p.	**NORTON** with de luxe Sidecar	£159	0
4 h.p.	**TRIUMPH** Combination	£175	0
4½ h.p.	**JAMES** Combination	£155	0
4¼ h.p.	**B.S.A.**, Model K2, with No. 3 Sidecar	£149	0
3 h.p.	**CALTHORPE** Combination, M-L Maglita	£110	5

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COMPLETE Sets of Gears for Bat motor cycle, 1919-20 models; delivery from stock.—The Motor Gear and Engineering Co., Ltd., High Rd., Seven Kings. [5250

Beardmore.

SHOP-SOILED Beardmore-Precision, spring frame, 3½h.p., unused; except £65, list £85.—Light Motors, Plymouth. [1656

Blackburne.

1920 3½h.p. Blackburne, with accessories, tax paid; £82.—Ross, 86, High Rd., Lee. [1698

BLACKBURNE, 8h.p., slightly used; £110; excellent machine.—Box 6,558, c/o *The Motor Cycle*. [1797

BLACKBURNE 1921 4h.p., just uncrated, brand new, list price £127/10; accept £110; fully guaranteed.—Below.

BLACKBURNE 1921 8h.p., brand new, list price £150; accept £125; deferred payments.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [1456

1919 Blackburne, 4h.p., 3-speed, splendid condition, licensed; great bargain, 60 gns.—Julian's, 84 Broad St., Reading. 'Phone: 1024. [174

BLACKBURNE 4h.p., speedometer, horn, lamps, bargain, nearest £90; unused this year; no registration.—Beattie, 36, Hamilton Drive, Shettleston. [150

1921 4h.p. Blackburne, speedometer, lamps, horn, licence and insurance, demonstration machine, low mileage; £110.—West Sussex Motor Co., 58, Portland Rd., Worthing. [157

BLACKBURNE 1920 8h.p. Combination, Indian de Luxe sidecar, only done 1,850, the lot in perfect condition, fully equipped, insured; accept £170, or near for quick sale; private owner; any trial.—Seen Carr Bros. Garage, Purley. [185

Bradbury.

4h.p. Bradbury and Sidecar, Sturmey-Archer gear, nearly new tyres, tax paid; £28.—2, Boyne Rd., Lewisham. [176

BRADBURY 4h.p. Coachbuilt Combination, tax paid, fully equipped; £45. — Speechley, 8 Churchfield Rd., Acton, W.3. [21

1914 Bradbury 4¼h.p., newly enamelled, rebushed and new rings, lamps, horn; £40, or near offer.—Howard, Ryecroft, Lindfield, Sussex. [15

BRADBURY 4h.p. Combination, coachbuilt sidecar, 2-speed, free engine, ride away; bargain £32.—8, Stevondale Rd., Drayton Park, N.5. [232

GENUINE Bargain.—1913 4¼h.p. Bradbury coachbuilt combination, 2-speed N.S.U., Bosch, splendid running order; first £32 secures.—Clark, Sherwood Terrace, Irchester, Northants, near Wellingboro'. [16

BRADBURY Combination, coachbuilt, Easting windscreen, 3-speed countershaft, kick starter, lamps and accessories; great bargain, £47.—10, Butterworth Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [91

Spare Parts:

BRADBURY Spares and Repairs Agents.—Brigg and Hayles, 78, Church St., Camberwell. [10

Brough Superior.

1921 Brough Superior and Swan sporting sidecar, 8h. overhead valve J.A.P., fastest machine on road, absolutely as new; £190.—Rae, Annickvale, Saltcoats. [11

BRAND New 8h.p. Brough Superior, 1922 model, just delivered, unridden, unregistered, completely equipped as makers' specification, at £175; must have cash immediately, and will sell at a sacrifice.—Box c/o *The Motor Cycle*. [X91

Brown.

2¾h.p. Brown-Precision; £18.—R. Blackwell, Gladesmore Rd., South Tottenham. [2

B.S.A.

B.S.A.—All models always in stock; delivered anywhere.

B.S.A. Replacements by return. Write for replacement catalogue.

B.S.A. Specialists: County Cycle and Motor Broad St. Birmingham. [3

1916 4¼h.p. B.S.A., splendid condition; £6 Ross, 86, High Rd., Lee, S.E. [1

£37/10.—3½h.p. B.S.A. combination, 2-speed, clut trial.—24, Oxford Rd., Upper Norwood. [1

NEW 1921 B.S.A. Combinations in stock; list p —Bonnds' Garage, 223, High Rd., Kilburn. [1

£70.—B.S.A. 1915 combination, 4¼h.p., H.S., overhauled and re-enamelled as new.—Moon, Po Bar [1

1921 B.S.A., 4¼h.p., all-chain drive; £110.—Mo and Co., Ltd., 139, Finchley Rd., Lon N.W.3. [1

BOLTON.—All B.S.A. models in stock. Large B.S.A. parts.—Grosvenor Garage, Bradford Bolton. [X

1921 (June) B.S.A. Combination, Easting's, le tools; £115, close offer.—81, Dundee Rd., Norwood. [1

MOTOR CYCLES FOR SALE.

Douglas

THE Effra Motor Works.

DOUGLAS, Douglas, Douglas.

IF In Doubt, ring up the Effra ('Phone: Brixton 2847).

DOUGLAS Machines are our speciality.

£65.—4h.p. Douglas solo machines, new 1920 Amac carboretter, cables and controls, new Thomson-Bennett mag., new footboards or footrests, brand new Wood-Milne tyres and tubes, wheels rebuilt, fitted with clutch, kick start, and 3-speed gear box, the whole stove-enamelled, tank in makers' colours, and miscellaneous parts replated, mostly 1917-18. Sent on approval against cash.

£78.—The above 4h.p. Douglas machine, with Douglas sidecar, the body finished as new, completely upholstered and repainted.

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MAKE a note of our new address: 59 and 61, High St., Clapham, S.W.4.

NOTE.—All goods sent on approval against cash.

CHEQUES and Money Orders should be made payable to the Effra Motor Works, 59 and 61, High St., Clapham, S.W. 'Phone: Brixton 2847. [2337

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1921 Models in Stock: 4h.p. combination, £170; 4h.p. solo, £130; 2¾h.p. clutch model, £105; ¾h.p. 2-speed model, £85; shop-soiled bargains; extended payments if desired; spare parts stocked; repairs.—Douglas Specialists, Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., London, W.1. 'Phone: Mayfair 6559. [0375

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DOUGLAS 1921 New 2¾h.p., 2-speed, including P. and H. lamps, horn, and licence holder; £85; in stock; exchanges; extended payments.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995.

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DOUGLAS 1921 New 4h.p. Solo, £125; or combination, including P. and H. lamps, horn, licence holder and sidecar, wind screen, £160; exchanges; extended payments.—Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995.

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1919 2¾h.p. Douglas, perfect; £45.—24, Balliol Rd., North Kensington. [1978

DOUGLAS 4h.p., 1917, 3-speed, K.S., hand clutch; £47.—92, Blyth Rd., Leytoo. [1547

1921 Douglas 2¾h.p., unused, and all on; £75.—19, Fleet Rd., Hampstead, N.W.3. [1866

DOUGLAS 2¾h.p., 1911, pillion, good order; £15, bargain.—44, Victoria Rd., Barking, Essex. [1627

DOUGLAS 4h.p. Combination, lamps, horn, etc.; £50.—Mylam, 197, London Rd., Croydon. [2126

SPORTS Model 3½h.p. Douglas, new, immediate delivery; £135.—Moffat, Yeovil. 'Phone: 50. [5043

1921 4h.p. Douglas Combination, all on; £140, or near offer.—Henry, 146, High St., Rochester. [2189

30.—1914 2¾h.p. Douglas, 2-speed, perfect condition, licensed.—King, Egrove Farm, Oxford. [X9740

DOUGLAS 2¾h.p., 1919, speedometer, electric lamps and horn; £60.—St. Olaves, Mulgrave Rd., Sutton. [2066

DOUGLAS 1920 Combination, new condition, equipped; £98.—Clark, 7, Exhibition Rd., S.W.7. [2296

38.—1916 Douglas 2¾h.p., lamps, accessories, Tan-Sad.—Tuck, 69, Boundary Rd., East Ham, E.6. [1482

DOUGLAS 1916 2¾h.p., makers' colours, as new, fully equipped; £55.—59, Tankerville Rd., Streatham. [1994

DOUGLAS, 2¾h.p., 1916, 2-speed, all on, footboards, Tan-Sad; 38 gns.—26, Torrington Park, N.12. [2113

DOUGLAS 2¾h.p., 2-speed, 1914-15, splendid condition; £45; take 2 anywhere.—28, Bourne Rd., Bexley. [2238

DOUGLAS, uncrated 1919, 2¾h.p., lamps, accessories, licence, new condition; £50.—63, Solon Rd., Brixton. [9165

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F.O.C.H. have several Douglas combinations, cheap.—5, Heath St., Hampstead (near Hampstead Tube Station). [9670

DOUGLAS, as new, registered May 21st, fully equipped; £55, or offer.—47, Brightwell Crescent, Tooting, S.W.17. [1836

4 h.p. Douglas Combination, as new, lamps, horn, Easting, licensed, insured; £115.—Norwood, 35, Western Av., Ashford, Kent. [1549

1921 Douglas Combination, 4h.p., 3-speed, etc., fully equipped; bargain, £115.—33, Hackford Rd., Brixton, S.W. [2320

DOUGLAS 2¾h.p., 2-speed, 1921, fully equipped, and licensed, as new; £60.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [X9771

1920 4h.p. Douglas Combination, hood, screen, and fittings complete; trial given; £85, or near offer.—Karn Bros., Leatherhead. [1596

1916 Douglas, 2¾h.p., 3-speed, re-enamelled and overhauled, guaranteed 47 m.p.h., complete.—Carruthers, Halstead, Essex. [1693

FOR Sale, 4h.p. 1918 Douglas combination, Easting wind screen, Tan-Sad seat, lamps, etc.—Chandler, Hampden Park, Eastbourne. [1661

DOUGLAS 2¾h.p., 2-speed, new 1918, good condition, all on; £45, or offer; London, S.W.—Box 6,297, c/o *The Motor Cycle*. [9245

DOUGLAS Combination, 1916, condition guaranteed, any trial and examination; 58 gns.—11L, Kramer Mews, West Brompton, London. [1793

1919 (Sept.) 2¾h.p. 2-speed Fully-equipped Douglas, splendid condition; any trial; £50, or offer.—137, Hartington Rd., South Lambeth. [2317

1919 Douglas 2¾h.p., 2-speed, engine 40007, all lamps, speedometer, condition equal new; £48.—37, Canterbury Rd., Dalston, N.1. [2312

DOUGLAS 1919 4h.p. Combination, dynamo lighting, speedometer, condition and appearance good; £125.—Sharp, Oaken, Wolverhampton. [1913

£36.—2¾h.p. Douglas, 2-speed, lamps, horn, splendid condition throughout, licensed; offers after 6.—27, Wandle Rd., Upper Tooting, S.W.17. [2173

DOUGLAS, 1917, 2¾h.p., enamel, plating, and mechanism splendid condition, equipped; 40 gns.—30, Crystal Palace Park Rd., Sydenham. [1969

DOUGLAS 1921 Combination, all on, small mileage, as new; £135; owner bought car.—31, St. Catherine's Terrace, Southbourne, Bournemouth. [1581

DOUGLAS 2¾h.p., 2-speed, complete lamps, horn, and tools, tax paid, good condition; £32/10.—Cope, 15, Upper Hagley Rd., Birmingham. [2142

DOUGLAS 2¾h.p., 2-speed, fully equipped, good condition, licensed; real bargain, £32/10.—Armstrong, 17, Goldhawk Rd., Shepherd's Bush, London. [1614

1920 Douglas 2¾h.p., 3 speeds, hand clutch, kick start, absolutely unscratched, as new; £68; evenings.—278, Crystal Palace Rd., East Dulwich. [2314

DOUGLAS 4h.p. Combination, 1920, excellent condition; £100.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9966

DOUGLAS, 1916, 2¾h.p., 2-speed, lamps, etc., tax paid, perfect condition; £38.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [0716

1919 Douglas 4h.p. Combination, Saxe blue, 3 lamps, 3-speed, clutch, starter, recently overhauled; £89.—Douglas, Catteshall Grange, Farncombe, Surrey. [9412

DOUGLAS, 4h.p., just been renovated and overhauled, 3 speeds, clutch, kick start, £52/10; sidecar, £10 extra.—Hole, 129, Park Lane, Carshalton. [2013

2¾h.p. Douglas, 2-speed, 1919, new 1920, perfect, fast and sporty, all on, spares; exchange Triumph, or sell £60.—Shearme, Bank, Ampthill. (D) [2143

4 h.p. Douglas Combination, guaranteed perfect, fully equipped, beautiful running and condition; £69/10; exchange lightweight.—73, Windermere Rd., Northfields. [2203

1920 (Aug.) Douglas Combination, wind screen, perfect condition, guaranteed, insured March next; £110. — 18, Castlemain Av., Southbourne, Bournemouth. [2010

2¾h.p. Douglas, T.T., Model V, 50 m.p.h., aluminium chain case, long exhaust, re-enamelled and plated, nearly new tyres; snip, £45.—42, Southsea Av., Watford. [1890

DOUGLAS Sidecar Outfit, fitted with low gear, go anywhere, light combination; 2¾h.p., first-class condition, good tyres; real bargain, £45.—Box 6,583, c/o *The Motor Cycle*. [2346

£15/15.—1914 Douglas 2¾h.p., in nearly new condition, tax paid, lamps, horn, etc., absolutely complete, minus engine only; £15/15.—Dawson, 34, Ampthill Rd., Bedford. [1929

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful to you.—The Pioneer Agent for Douglas Motors, 196, Cheltenham Rd., Bristol. [0016

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DOUGLAS 2¾h.p., specially built, handsome appearance, engine excellent, discs, copper exhaust, spares, all accessories, tax paid; what offers?—30, Spenser Rd., S.E.24. [1935

1921 (May) 2¾h.p. Douglas, speedometer, aluminium disc, long plated exhaust, lamps, tools, tax paid, as new; £78.—6, Dove Mews, Old Brompton Rd., London. Kens. 3932. [1893

1915 2¾h.p. Douglas, recently overhauled, perfect, new belt, new heavy Dunlop, Tan-Sad, fully equipped, long exhaust; £47, or near offer.—Freestone, Barkway Rd., Royston, Herts. [1513

DOUGLAS, 2¾h.p., 1921 models, new but shop-soiled, £80; also clutch models, £97/10 for cash, or easy terms; trade supplied.—Wauchope's, 9, Shoe Lane, Fleet St., London. [1851

4h.p. Douglas Combination, 1920, bought new 1921, hood, screen, Tan-Sad, done less than 1,000, fully insured, quite as new; £125; want Morgan.—Johnson, The Neuk, Freeman Rd., Leicester. [2008

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DOUGLAS 1916 2¾h.p., 2-speed, P. and H. lighting, aluminium discs, long copper exhaust, new tyres, machine as new; £37.—1, Albert Cottages, Marlborough Rd., Old Kent Rd., S.E.1. [2237

1916 2¾h.p. 2-speed Douglas, engine thoroughly overhauled, re-stove-enamelled makers' colours, new tyres and tubes, many new parts fitted; £36.—Pride, 156, Stockwell Rd., Brixton, S.W.9. [2170

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4h.p. Douglas Combinations, renovated at Douglas Works, Bristol, good as new, all guaranteed, new sidecars, £110; 2¾h.p. £60; easy terms arranged.—Parkes, Douglas Specialist, Chorles St., Newport, Mon. [1493

100 GNS.—Douglas combination, practically new and unsoiled (No. 11529), Cowey trip, lamps, screen; ride 50 miles to purchaser; solo in part considered.—22, Buller Rd., Thornton Heath. [2080

1919-20 4h.p. Douglas Combination, coachwork unscratched, Saxe blue, Lucas accessories, electric and acetylene lighting, licensed, exceedingly smart outfit; 75 gns.—Fersfield, Westbury Rd., New Malden. [1902

3½h.p. Sports Douglas, the property of an officer, complete with speedometer, watch, horn, tools, spares, extra inner tube, etc., tax paid, mileage under 100; owner posted to Egypt; £135.—Loke House, West Rd., Cambridge. [X9692

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1920 (Nov.) Douglas Combination, scarcely used, absolutely new, beautifully kept, blue sidecar and cover, pleasure to drive, Klaxon, lamps, spare tyre, tax paid; £120, no offer; garaged West End.—Wapping Rectory, London, E. [1869

1919 Douglas, 2¾h.p., 2-speed, excellent condition, engine perfect, lamps, horn, complete tool kit, Tan-Sad, and foot rests, spare belt and chain, tax paid; £55, no offers.—Sheel, Westella, Osborne Rd., S. Farnboro', Hants. [2111

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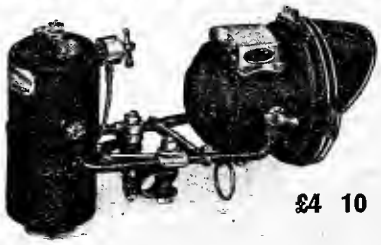

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Edmund.

1921 2¾h.p. Edmund, spring frame, shop-soiled; £90.—Ross, 86, High Rd., Lee. [1697

Enfield.

1917 Enfield 3h.p., all on; £40, or exchange.—17, Heaton Rd., Mitcham. [2072

ENFIELD 3h.p. Twin, 1914, all on; cheap, £32.—44, Junction Rd., Highgate. [2161

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

NEW 1921 Enfield Combination in stock; £160.—Bounds' Garage, 223, High Rd., Kilburn. [1748

ENFIELD Combination, 1915, lamps, wind screen, licence, good condition; £80.—Stevens, 59, Wote St., Basingstoke. [2043

1921 Enfield 2-stroke, 2-speed, only soiled, all accessories; £50. — 17, St. Charles Sq., N. Kensington, W.10. [1007

ENFIELD Combination, 1920, 6h.p., Lucas Magdyno, splendid condition, fully equipped.—Stevenson, Belle Walk, Moseley. [X9529

ENFIELD Combination, 1914, 6h.p., lamps, horn, licensed, splendid condition; £60, or near offer.—Crow Bros., Guildford. [2335

1917 6h.p. Enfield Combination, hood, wind screen, lamps, Klaxon, etc.; £77/10; bargain.—436, Whitehorse Rd., Thornton Heath, S.E. [1924

1921 2¼h.p. Royal Enfield, complete lamps, horn, all tools, licence paid, not ridden 100 miles, absolutely as new; £65.—Longland, Crowland. [1756

ENFIELD 1921 Lightweight, 2-speed, brand new, but slightly soiled; £55.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2300

ENFIELD 6h.p. Combination, 1918 (Dec.), Lucas dynamo lighting, Easting, speedometer, Tan-Sad, spares; £120.—254, Fore St., Edmonton, N.18. [210

ROYAL ENFIELD 8h.p. Combination, lamps, horn, tools, Cameo wind screen; £70, or near.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [193

8h.p. Enfield Combination, 1921, shop-soiled only, reduced to £155; also dynamo model, £177; cash or easy terms.—Wauchope's, 9, Shoe Lane, Fleet St., London. [185

ENFIELD 1913 6h.p. Combination, fully equipped, tax paid, good condition throughout; £60.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X966

LATE 1920 Enfield Combination, as new, Magdyno, splendid equipment; sacrifice £130.—James c/o Bradmore, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [219

ENFIELD 1921 Combination, brand new, slightly shop-soiled; sacrifice, £145.—Elce, Ltd., 15-1 Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [000

ENFIELD 3-h.p. Twin, 1915, been thoroughly overhauled, lamp, and horn, tax paid; £45.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [914

ENFIELD Lightweight, 1921 Cancelet sidecar, T bars, new Dunlops, lamps, horn, etc., in real fine condition; any trial; 60 gns.—26, Thornfield Rd., Shepherd's Bush. [16

ENFIELD 1917 6h.p., Family sidecar, hood, screen, speedometer, lamps, and spares, in splendid condition; trial; £110, or near.—244, Mount Pleasant Rd., Tottenham, N.17. [18

LATE Enfield Combination, oversize tyres, engine splendid condition, hood, wind screen, speedometer, pillion, fully insured, must sell; evenings; gns.—67, Fernlea Rd., Balham. [22

ENFIELD 1921 8h.p. Colonial Model Combination, slightly showroom soiled; list price £160, special cash price £137/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [23

1921 8h.p. Enfield Combination, electric, speedo, large pillion, Easting, speedometer, hood, licensed, driven 1,000, excellent condition; £1 seen appointment.—Walsh, 24, Bingham Rd., Croydon. [19

ROYAL ENFIELD Combination (Oct., 1918), 8h electric lamps, speedometer, etc., tax pa mileage 7,800, carefully used, condition as new; £ —Smith's, 86, Chalk Farm Rd., opposite Chalk Fa Tube Station. [0

ENFIELD 1915 3h.p. Twin, 2 speeds, clutch, chain drive, mechanical lubrication, large Brooks, very good tyres, good condition throughout, smart and fast; £30, bargain.—R. Watson, Victo Rd., Aldeburgh, Suffolk. [1

SPLENDID 1920 Enfield Combination, Magdyno lighting set, Apollo electric horn, Lucas b horn, speedometer, Easting wind screen, Tan-S knee grips, tax paid, insurance; bargain, £125, near.—'Phone: Wanstead 48.—374, Grove Green Leytonstone, E.11. [1

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1921 James 2-stroke, 2-speed, all accessories, scarcely soiled; £50.—17, St. Charles Sq., N. Kensington, W.10. [1008

F.O.C.H. have several James solos and combinations, cheap.—5, Heath St., Hampstead (near Hampstead Tube Station). [9671

JAMES 1920 2-stroke, 2-speed, splendid condition, 700 miles, all on, tax paid; what offers?—6, Dyers Hall Rd., Leytonstone. [1952

JAMES 5-6h.p. Combination de Luxe, late 1919, good condition, extra good engine, equipped; 85 gns.—Day, H. B. Sale, Ltd., Summer Lane, Birmingham. [1487

6h.p. James 1920 Combination, legshields, speedometer, luggage grid, excellent condition; consider exchange T.B.; £125. — L. B., 12, Sylvia Gardens, Wembley Hill. [1814

JAMES 6h.p., late 1919 De Luxe, Binks, Easting, Lucas lamps and horn, D.A. cylinder, perfect condition; bargain, £130; seen after 6 o'clock, or appointment.—Whisson, Glenhurst, Linden Gardens, Leatherhead. [1546

1917½ James 4¼h.p. Combination, standard, countershaft, enclosed chains, Lucas lighting, horn, trip speedometer, mirror, tools, splendid condition throughout; £85.—43, Bolton Gardens, Teddington. [1904

JAMES 1920 6h.p. Twin de Luxe Combination, Lucas Magdyno, Klaxon and bulb horns, Watford speedometer, mileage 3,700, perfect, any time by appointment; £120, or offer; exchange solo.—Emms, 66, Cambridge St., Victoria, S.W. [2058

1919 James de Luxe 5-6h.p. Combination, excellent condition, speedometer, wind screen, pillion, luggage grid, 2 head lights; hand and foot clutch, special Ferodo brake, new tyres, tools, etc., tax paid; £132.—Winney, 39, Chatham Rd., Wandsworth Common, S.W.11. [1714

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1½h.p. J.E.S. Motorcyclette, 3-speed genuine B.S.A., spring forks, very fine climber, licence paid, guaranteed condition; £20.—9, Arcade, Exeter. [2133

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KINGSBURY 1921 2¾h.p. 2-stroke, 2-speed, chain drive, new; £47/10.—365, King St., Hammersmith. [2200

1921 2¾h.p. Kingsbury 2-stroke, 2-speed, chain drive, unridden; cost £65; accept £45, or near.—Lunsbury, 4, Hillside Terrace, West End Lane, Barnet. [1920

£24/10.—1921 Kingsbury brand new lightweight, cost £75 all-chain drive, only wants assembling, all complete, only minus carburetter and few small parts; £24/10.—Dawson, 34, Ampthill Rd., Bedford. [1928

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LEA-FRANCIS 3½h.p., mileage 4,600; offer exchange Douglas.—21, Fordel St., Catford. [1963

LEA-FRANCIS Combination, 3½h.p. twin, 2-speed, kick start, perfect; £50.—5, Farm Av., Streatham, S.W.16. [1498

Levis.

VAN GUY, Weymouth.—Levis 1921 models in stock; £60. [0554

LEVIS 2¼h.p., excellent condition; no reasonable offer refused.—7, Park Rd., S.E.21. [1625

LEVIS 2¾h.p., 2-speed, Lucas lamps, fast, reliable, guaranteed perfect; £50.—26, Howard Rd., Bromley, Kent. [1842

LEVIS, excellent condition, Bosch, fully equipped, licence and insurance; £25.—103, St. Albans Av., Bedford Park, Chiswick. [1840

2¼h.p. Levis Popular Model, just been thoroughly overhauled and new tyre fitted, lamp, horn, and licence paid; £40.—Rugeley Garage, Rugeley. [9394

1916 Levis, all accessories, good tyres, in good working order, tax paid; £23. — Bathurst, Lawrence's Buildings, Stoke Newington, N.16. Tel.: Dalston 2837. [2136

LEVIS, 2¼h.p., 2-speed, enamelled and plated recently, with new Dunlop and head lamp, tax, etc., in perfect condition; accept nearest offer £35.—Spicer, 20, Howland St., Tottenham Court Rd., W.1. [1822

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MARLOE, 1921, 2¾h.p. Blackburne, 2-speed, clutch, kick start, brand new, list 98 gns.; accept £68/10, or £14 down, 12 monthly payments of £5 each.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [1457

Martin.

SPORTING 4h.p. T.T. Martin-Jap, o.h.v., good condition; £44.—J. J. Smith, Barton-under-Needwood, Staffs. [X9706

Martinsyde.

1921 6h.p. Martinsyde Combination; £145.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1789

1921 6h.p. Martinsyde Combination, £155, or with hood, screen, Lucas lamps, Klaxon, etc., complete, £170.—2, Moreton Terrace Mews, S.W.1. [2037

1921 6h.p. Martinsyde Combination, run under 1,000 miles, complete accessories, including Easting wind screen and Tan-Sad pillion seat, fully insured, tax paid; £130.—Bower House, Ightham, Kent. [2140

6h.p. Martinsyde Combination, £145; 3½h.p. Martinsyde sports model, £120; free insurance; exchanges or deferred payments; all spares.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Hop 210. [8146

Matador.

BERT HOULDING'S Racing Matador, 247c.c., o.h.v., all-chain drive, exceptionally fast lightweight, and winner of every open 250 event entered, guaranteed 65 m.p.h.; a machine to make a name on; 90 gns.—43, Balfour Rd., Preston. [X9667

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MATCHLESS-J.A.P. C.B. Combination, lamps, etc., fine order; £80.—44, Chapel St., Marylebone. [1729

£135; 1920 Matchless spring frame combination, as new.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2252

8h.p. Matchless Combination, 2-speed, hood, screen, lamps, horn, tax paid; £65.—2, Moreton Terrace Mews, S.W.1. [2038

1921 New Standard Model H Matchless Combination, M.A.G. engine; end of season bargain, 150 gns.—Ross, 86, High Rd., Lee, S.E. [1708

SHEFFIELD Agent for Matchless. All models in stock; sporting models £180, standard models £185—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS Combination, 1919, just overhauled, well equipped, spare wheel, etc., carefully used.—Bedford, 102, Bromley Rd., Catford, S.E. [2021

MATCHLESS Models for Immediate Delivery; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9959

MATCHLESS 1920, Magdyno, new hood, speedometer, all accessories, excellent condition; bargain, £147; buying car.—14, Gloucester Crescent, Camden Town. [1841

MATCHLESS Combinations; highest prices allowed in exchanges; all models.—Agents: R. B. Clark and Co., 7, Exhibition Rd., S.W.7. Kensington 4096. [2297

MATCHLESS 1920 Model H Combination, with Lucas dynamo lighting; £145.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9974

MATCHLESS Combination, Model H, M.A.G., every fitment, little used, cost nearly £250 with spares, etc., tax and insurance paid; take £180; no offers entertained.—J. Dennis, The White Horse, Richmond, Surrey. [1711

1921 Matchless Combination, Magdyno lighting, fully equipped, hood, screen, speedometer, legshields, mileage 2,200, new condition, tax paid; cost £245, sell £180, genuine bargain.—Gipps, 14, Parkhurst Rd., Bexhill-on-Sea. [1558

MOTOR CYCLES FOR SALE.

Matchless.

1921 Matchless Combination, June, M.A.G. engine, Lucas lamps, extras, as new; bargain, £155; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2270

MATCHLESS 8B., speedometer, electric lighting, pan seat, 2-seater sidecar, wind screen, good tyres, owned by mechanic; only wants seeing; 75 gns.—10, Courcy Rd., Hornsey. [1612

1921 Sports Matchless, Lucas lighting outfit, Easting, speedometer, horn, etc., Six Days Trial machine, done 2,000 miles; £175.—F. O'Brien, 36, Jackson St., Woolwich. [1887

MATCHLESS-M.A.G Combination, 7h.p., 1915 (improved 1920), spring wheel, detachable wheels, spare, Lucas dynamo lighting, beautiful order; £115, bargain.—64, Melrose Av., Mitcham. [1845

MODEL H Matchless Combination, new condition throughout, mileage under 2,000, Lucas lighting, horn, tools, etc.; any trial or examination given; 135 gns.; cash needed.—Apply, Cobbold, Clifton Mount, Summerhill Rd., Dartford. [1775

MATCHLESS, the classic combination. — Sam E. Clapham, the agent, can supply a model to meet your requirements for cash, exchange, or easy terms. Sports, single-seater, or family outfit. Free tuition and delivery anywhere.

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WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MATCHLESS Combination, 1920, spring frame, 7-9h.p. M.A.G. engine, Lucas Magdyno, hood, screen, speedometer, electric horn, spare chain, and all accessories, competition model, appearance and condition excellent; written guarantee given; offers wanted; owner buying car.—44, Richmond Rd., Thornton Heath. [1735

MATCHLESS Combination, not run 1,000 miles, March, 1921, absolutely faultless, family model H2 2-seater car, 2 screens, hood, Magdyno, speedometer, spare wheel, and step; owner getting small car; insurance paid to March, 1922; £195, no offer; or might exchange for good 2-seater modern car.—G. Baker, Wine Merchant, Ashtead, Surrey. [1536

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

1920 Matchless H Combination, new Feb., 1921, Magdyno, separate acetylene, head, tail lamps, generator, Ace aluminium discs to all 4 wheels, Lucas bulb horn, Stewart mechanical horn, Watford rear speedometer, Bowden extra air inlet, single-lever carburetter, mileage 6,000, Easting wind screen, sidecar step, leg shields, Tan-Sad with back rest, spare tube, in first-class running order, privately owned; £160.—Arnold, 35, Aldridge Rd., Balham, London. 'Phone: Latchmere 4487. [2056

Metro.

METRO-TYLER, Dec., 1919, T.T., discs to match, lamps, mechanical horn, tools, rear unpunctured, spare belt, tax paid; trial 2 up (not Saturday); £35 cash.—Sharpe, Hawks Rd., Kingston. [1477

Minerva.

£16.—5h.p. twin Minerva, mag., fine condition, lamps, horn, licensed.—King, Egrove Farm, Oxford. [X9741

2¾h.p. Minerva, overhauled, new tyres, belt pulley, etc., unregistered, guaranteed; £16; exchange 2-stroke.—Greenfield, 16, Temperley Rd., Balham. [1810

£18, Bargain.—6h.p. twin Minerva, Grade gear, free engine, long exhaust, Bosch, new Amac, wide tank, mechanical valves; quick sale.—89, East Hill, Wandsworth. [2232

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MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

Moto-Reve.

MOTO-REVE Lightweight, needs small adjustment, otherwise perfect; sacrifice £12; exchange higher power in same condition.—Lisher, Esq., Minsted, Midhurst. [2057

Neal.

NEAL-DALM 1920 3h.p., 2-speed, lamps, horn, as new; £52.—Webb, Lydbrook, Glos. [X9726

New Comet.

39 GNS.—1921 New Comet, 2¾h.p., 2-speed, clutch, K.S., equipped, mileage 400, cost £69/7 a few weeks ago; must sell.—20, Treen Av., Hoggers Corner, Barnes. [2007

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NEW COMET, as new, 2-stroke, for sale, 2-speed, clutch, kick starter, faultless, done 200 miles only, just run in; owner bought car; price £60; seen any time.—Merryfield, 246, Gray's Inn Rd., W.C.1. [0697

New Hudson.

1913 New Hudson, with C.B. sidecar, tax paid; £40.—Ross, 86, High Rd., Lee. [1702

2¾h.p. New Hudson, 3-speed, clutch, licensed; £22, offers.—17, Heaton Rd., Mitcham. [1073

2¼h.p. New Hudson Popular, shop-soiled, unused; accept £40, list price £52/10.—Light Motors, Plymouth. [1656

1920 2¼h.p. New Hudson, 2-speed, fully equipped, guaranteed perfect; £36.—45, Pelham Rd., Wimbledon. [2052

NEW HUDSON Combination, 4h.p., 3-speed, K.S. countershaft belt, repainted, overhauled, excellent tyres, lamps; £65.—Box 6,543, c/o *The Motor Cycle.* [166

NEW HUDSON 4h.p. C.B. Combination, 3-speed C.S. gear, K.S., every accessory, guaranteed condition; £50.—22, St. James's Rd., Kingston, S.W. [201

1920 New Hudson 2¼h.p., 2-speed, 2-stroke, tourer fully equipped, very economical, small mileage perfect order, beautiful little machine; £45.—Scratton 4, Warwick Av., Maida Hill, London. [184

BIG Six New Hudson Coachbuilt Combination, 1914 just overhauled, and new gears fitted; £50, c nearest; exchange for Douglas, or good lightweight con sidered.—Sharpe, Cannock Rd., Hednesford. [155

2¾h.p. New Hudson, 1914, 3 speeds, clutch, starte just overhauled, gears new, wicker sidecar, ver little used, stored 6 years, general condition as new, in cost £100; offers.—Faulkner, Spion Kop, Cliffe-at-Ho Rochester, Kent. [188

NEW HUDSON Lightweights, all models, on view Popular, 50 gns.; de luxe, 65 gns.; Ace, 76 go Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocke Deferred payments arranged. Catalogues.—New Hu son Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [393

New Imperial.

NEW IMPERIAL 1921, 3-speed, 350 c.c. J.A. engine, scarcely used; £79.—Clark, 7, Exhi tion Rd., S.W7. [22

1917 2¾h.p. New Imperial-Jap, countershaft gea tax paid, excellent condition; £38, bargain.— Walton Rd., Hoddesdon, Herts. [15

1916 2¾h.p. New Imperial, 2 speeds, clutch, ki start, splendid condition, fully equipped, paid; 34 gns.—Maynard, 8, Silver St., Enfield. [20

1920 New Imperial, 2¾h.p. J.A.P., 2 speeds, clut kick start, lamps, tax, good condition; £50 Goad, 122, Maida Vale. 'Phone: Hampstead 1353 [22

NEW IMPERIAL 1919 Combination, 8h.p. Cam sidecar, Easting, Klaxon, lamps, etc.; £105, offer; must realise; trial Wimbledon.—Box 6,564, *The Motor Cycle.* [18

BARGAIN.—1921 2¾h.p. New Imperial-Jap, 2 spe hand clutch, kick-starter, lamps, horn, licen insurance, excellent condition, fast; £63.—40, W ington Rd., N.W.8. [17

2¾h.p. New Imperial-Jap, engine A1329, coun shaft, 2-speed, perfect mechanical order, ta 2 anywhere; bargain, £32, or exchange.—H., 30, A vale Rd., Tooting. [2

NEW IMPERIAL-J.A.P. 1920 8h.p., P. and lamp set, Klaxon horn and Mills-Fulford vette sidecar, Cameo wind screen, hood, excellent dition throughout, low mileage and very caref used; £120; insured.—Herbert Robinson, Ltd., 35, Green St., Cambridge. T.A.: Bicycles. T 995. [1

New Ryder.

1919 2¾h.p. New Ryder-Jap, 2 speeds, equipped, tax paid, excellent order; £3 Maynard, 8, Silver St., Enfield. [2

New Scale.

1920 Scale Combination, 3½h.p., 2-speed, start; £72/10.—Parker, Calow, Chesterfie [2

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BIG Four, chain drive, £120; Model 16H, 3½ 3-speed, T.T., chain drive, £115. Write lo vised price list; easy payments only 4% extra. you machine direct from the Norton specialists. Premier Motor Co., Aston Rd., Birmingham. [

1921 16H Norton, as new; £85.—42, Fox Palmer's Green, N. [

1921 T.T. Norton; £80.—Apply, G. Hawkins, mede, Long Grendon, Bucks. [

T.T. Norton, beautiful condition, fully equipped; exchange.—6, Crystal Palace Station Rd., S.

NORTON 1921 Models.—Sole district agents, W Motors, Ltd., 60, Catherine St., Salis 'Phone: 72. [

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MOTOR CYCLES FOR SALE.

Rudge.

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

3½h.p. Rudge Multi, 1921, Aug., as new, tax paid, lamps, Klaxon, etc.; reasonable offer.—101, Wilmslow Rd., Didsbury, Manchester. [X9755

RUDGE, I.O.M., 1920, Lucas accessories, spare belt and valve, splendid condition; £70. A.B.O. wanted.—40, Fauconberg Rd., Chiswick. [1975

RUDGE Multi, 3½h.p., 1920, splendid condition, all on, tax paid, reliable machine; £68, or near offer.—Ovrington, Holmbury St. Mary, Surrey. [2118

RUDGE Multi 5-6h.p. Combination, new tyres, lamps, belt, tax, insurance, perfect condition; £65.—5, Prince's Mews, Hereford Rd., Bayswater. [2138

59 GNS.—1920-21 3½h.p I.O.M. Rudge Multi, splendid condition, fully equipped; sell, or exchange lightweight.—4, Elm Gardens, Hammersmith. [2034

RUDGE Multi, I.O.M., 1921 (April), Lucas lamp, horn, Cowey trip, tax, insurance; cost £95; mileage 400; £75.—Barlow, 40, Ashbourne Av., Golder's Green. [1471

1921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. and 7-9h.p. Rudge Multi combinations, soiled, £130 and £150.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0707

1914-15 3½h.p. Rudge Multi, clutch, starter, new tyres, belt, etc., full equipment, tax, insurance, 1921 colours, good condition; £45.—266, Friern Rd., Dulwich, S.E.22. [1885

RUDGE Multi Combination, delivered August, 1920, Easting screen, lamp set, tax paid, under 2,000; £90.—Bruton Mews Garage, 8-25, South Bruton Mews, Bond St. 'Phone: Mayfair 4282. [1544

3½h.p. Rudge Multi 1914 Combination, Easting, lamps, fully equipped, tax paid; exchange and £20 for higher power combination, or sell £50; private; Battersea district.—Box 6,560, c/o *The Motor Cycle*. 1799

RUDGE, 2-speed, countershaft, clutch, and starter, Montgomery coachbuilt sidecar, 2 new tyres, lamps, speedometer, spares, etc., excellent condition, ride 50 miles to purchaser; nearest £55.—Vernon, Knutton, Newcastle, Staffs. [X9712

BARGAIN.—Rudge Multi, hand clutch, kick start, licensed, multi gear, good tyres, wide tank, foot oiler (1915 pattern), excellent condition, absolutely reliable, Senspray; nearest £38; exchange entertained; perfectly sound; any trial given.—89, East Hill, Wandsworth. [2230

RUDGE Multi, 5-6h.p., engine 7875, Milford spring wheel C.B. sidecar, Easting, lamps, electric, gas, speedometer, Tan-Sad, discs, mechanical horn, 2 new tyres, re-enamelled, overhauled, spares, tax paid, insured April next, excellent condition; £68.—28, Torbay Rd., Brondesbury. [1923

Scott.

1920 Scott, lamps, horn, mileage 3,000, licensed; £85.—Brown, New Inn, Silverton, Devon. [1518

I.O.C.H. for Scotts, combinations and solos.—5, Heath St., Hampstead (near Hampstead Tube Station). [9673

SCOTT Combination, 1919, lamps and horn; £50, quick sale.—Brookman and Co., 5, St. Albans Rd., Watford. [1565

SCOTT, 1920½, aluminium sidecar, upholstered, Easting screen, disc, lamps, horn, insured £150 sept., tax paid; £120.—Adams, 196, Putney Bridge Rd., S.W.15. [2146

1920 Scott, 4½h.p., kick starter, 2-speed, fully equipped, perfect condition, under 1,000; owner invalided; £90. — Lewis, 47, Broad St., Newtown, Montgomeryshire. [1722

SCOTT 1914, Montgomery sidecar 1920, perfect mechanical condition, thoroughly overhauled by makers, accessories, spare tyre, Klaxon; £75.—Freeman, Pontmorlnes, Merthyr Tydvil. [1520

SCOTT Combination, August, 1920, Easting, lamps, Cowey horn and speedometer, mirror, etc., only months use, perfect; £130, or offer.—White, 91, Southbourne Rd., Southbourne. [1896

SENSATIONAL Special Super-sports Scott Combination, without doubt one of the finest and most expensively equipped outfits on the road; photo postcard sent for stamp, also full particulars; seen by appointment any time; reason for sale owner bought flat car; cash wanted, therefore one of the bargains of the year; 110 gns.; including all accessories, lamps, horn, wind screen, insurance, etc. — 11L, Kramer Mews, West-Brompton, London. [1792

Singer.

SINGER Combination, Bosch, 2-speed, clutch, kick start, new O.B. sidecar, 3 lamps, 2 generators, and accessories; £55.—37, Turnham Green Terrace, London, W.4. [1489

Sparkbrook.

1919 Sparkbrook, 2½h.p. Villiers, 2-speed, licence, splendid condition; bargain, £35.—Brightman, Ist Farleigh, Maidstone, Kent. [1710

Sun.

SUN-V.T.S., 1920, 2-speed, clutch, K.S., electric lamps, horn, insurance, tax, good condition; £45, Ser.—42, Meath Rd., Ilford. [1640

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I have to thank you for the prompt attention and courteous treatment I have received from you in my recent dealings. I received the machine this morning and was very agreeably surprised with it.

You have recently advertised bargains, and I must say my machine is wonderful value indeed. In future, I will do everything in my power to recommend your firm to my friends.

I am,
Yours faithfully,
Sgd. (C.B.G.)

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272-274, Gt. Western Rd., GLASGOW.

MOTOR CYCLES FOR SALE.

Sunbeam.

1921 T.T. Sunbeam, equipped, under 500; 130 gns.—5, Anerley St., Battersea. [1567

NEW 3½h.p. Sunbeam in Stock, shop-soiled only; £140.—Cross, Agent, Rotherham. [X9752

1919 3½h.p. Sunbeam, chain-cum-belt; £95.—Brewster, Sparhawk St., Bury St. Edmund's. [1494

3½h.p. Sunbeam Combination, 1915, lamps, horn, and tax paid; £85.—Wauchope's, 9, Shoe Lane, London. [1854

1921 3½h.p. Sunbeam, just run in, mileage about 500, like brand new; £145.—17, Victoria St., Windsor. [X9671

1916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Clapham, Yorks. [0714

8h.p. Sunbeam Combination, 1919, perfect condition; £145; exchange solo cash or Ford van.—32, Westbourne Rd., Barnsbury, N.7. [2247

SUNBEAM 3½hp. Combination, brand new, for immediate delivery, shop-soiled only; £175.—E. Pollard, Broomfield Rd., Chelmsford. [X9268

SUNBEAM 3½h.p., 1916, recently overhauled by makers, electric lighting, Watford speedometer, Cowey horn; £75.—Deacon, Dinnington, Rotherham. [1605

WELL-KNOWN Sunbeam Combination, Reg. I.T.2, last word in appearance.—Full specification, price, etc., apply K. Clayton, Castle Bromwich. [X9714

1921 3½h.p. Sporting Model Sunbeam, small mileage, delivered late July, excellent condition; £125; London, W.1.—Box 6,557, c/o *The Motor Cycle*. [1796

SUNBEAM Solo, 1919, lamps and horn, in splendid order, smart machine; £75.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9151

1919 (late) 3½h.p. Sunbeam Combination, recently done up, all accessories except wind screen; £110.—Wagstaff, 13, Mountfield Gardens, Tunbridge Wells. [1950

SUNBEAM 3½h.p. (1920, Nov.) Combination, P. and H. lamps, Klaxon, Bluemel wind screen, tax paid, little used; £136.—Job, 54, Chipstead Valley Rd., Coulsdon, Surrey. [2159

SUNBEAM 1920 (July) 3½h.p., better than new, Binks, F.R.S. Major (unused), Lucas back; £100, great bargain, without F.R.S. £95.—Newitt, Eaton Villa, Market Drayton. [1906

SUNBEAM Combination, black and gold, 1919, lamps and horn, been thoroughly overhauled; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9150

8h.p. Sunbeam Combination, 3 lamps, horn, screen, hood, apron, luggage carrier, spare wheel and tyre, tools, spares, used daily; £100.—Apply, Duke, Ash Hill, Lezayre, Isle of Man. [1565

1915 3½h.p. Sunbeam and Coronet Sidecar, hand controlled clutch, K.S., 3-speed, used only summer months, first-class condition; owner buying car; £95, near offer.—Prout, Campden, Glos. [1791

SUNBEAM 1921 3½h.p. Sports Model, fully equipped tax paid, absolutely indistinguishable from new; £135; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9658

1921 3½h.p. Sunbeam, semi sports model, with straight through exhaust, special engine, purchased 7 weeks ago; cost £160; accept £135.—Sudbury, 34, Goldhurst Terace, Hampstead, London. [1922

LATEST 3½h.p. Sunbeam Combination, spare wheel, interchangeable, Easting screen, Lucas lamps and horn, legshields, unpunctured; cost £230, accept £155.—Hallewell, Alexandra Rd., Lytham. [2114

SUNBEAM 1918 3½h.p. Model, with sidecar, complete with all accessories, excellent condition; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester [X9657

SUNBEAM Latest 3½h.p. Touring Model, £155/8; 3½h.p. sports model, £152/5; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1332

1920-21 3½h.p. Sunbeam Combination, tax paid and insured, low mileage, good condition, fitted with all general requirements and spare wheel; cost £240, accept £180, or near offer.—110, Beauchamp Rd., Upper Norwood, S.E.19. [1862

SUNBEAM 1920 3½h.p. Sports Model, Cancelet sporting sidecar, fully equipped, Ace discs all round, tax paid, first-class condition throughout; £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9660

1919 3½h.p. Sunbeam, just overhauled, re-enamelled, new tyres, all accessories, looks and runs like new; £100.—17, St. Charles Sq., N. Kensington, W.10. [1011

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. A33
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1920 8h.p. Model, Lucas Magdyno, extra large Henderson Elite sidecar, interchangeable wheels all round, bulb horn, spare wheel and tyre, Bonniksen speedometer, tax paid, first-class condition throughout; £175; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9659

Triumph.

PREMIER Motor Co. for new Triumphs.

ONLY 4% Extra for Easy Payments.

WE can deliver to your address within 24 hours 2¼h.p. lightweight Triumph, £70; type H. 4h.p., 3-speed, £115; type S.D., chain drive, £125; sidecars from £20 to £50. Write for particulars of our easy payment system. You will be satisfied if you buy your machine direct from the Triumph specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

CROSS, Rotherham, can deliver all model Triumphs from stock, at list prices. [X9750

TRIUMPH Combination, 2-speed, K.S., all on: £40, offers.—17, Heaton Rd., Mitcham [2071

TRIUMPH, T.T., 1912, renovated at Triumphs; £30.—Bradley, 16, King St., Ludlow. [1941

1918 Countershaft Triumph; great bargain, £60.—374, Grove Green Rd., Leytonstone, E.11. [1252

1920 Countershaft Triumph, speedometer, spares: £75, or offer.—Jacobs, Princes Risborough, Bucks. [1651

1921 Chain-driven Triumph, complete, £105; sidecar to suit, £15.—Cross, Agent, Rotherham. [X9753

TRIUMPH, 1914, absolutely perfect, splendid condition; best offer.—119, Brecknock Rd., N.19. [2137

DAN GUY, Weymouth.—1921 Triumph all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

1914 4h.p. Triumph, Grade gear and kick start, good tyres, lamp and horn; £39.—2, Seaview Terrace, Holywell. [1562

£60; 1917 countershaft Triumph, in excellent condition.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2253

1920 Triumph, new tyres, all accessories, condition as new; £80.—17, St. Charles Sq., N. Kensington, W.10. [1006

1919 Triumph Combination, any trial, privately owned; £75.—Covington, The Cottage, Leigham Av., Streatham. [1961

TRIUMPH 3½h.p., just overhauled, Bosch mag., good tyres, lamps, etc.—C. Kilby, 1, The Square, Sawbridgeworth. [2216

£45.—Triumph combination, 3-speed, K.S., lamps, horn, tax paid, good condition.—W.H., 36, Birkbeck Av., Acton. [2187

1920 Triumph, fully equipped, £75; with Canoelet sidecar, £83.—Hart, 3, Summer Hill, Harbledown, Canterbury. [1509

TRIUMPH Combination, Gloria, lamps, Lucas horn, wind screen, etc., carefully used; £85.—365, King St., Hammersmith. [2201

TRIUMPH 4h.p. Gloria Combination, new bulbous body, tax paid, all on; £78/10.—102, Kenyon St., Fulham, S.W.6. [2141

3½h.p. Triumph, clutch model, in very good condition; £50, near offer.—Clayton, Thistleton, near Kirkham, Lancashire. [X9525

TRIUMPH Spares sent per return from stock. Call, writer, or 'phone 4042.—G. H. Tucker, Redcliffe Hill, Bristol. [2291

1918 Triumph Combination, renovated 1921, new bulbous back sidecar, fully equipped; £85.—9, Church Rd., Harlesden. [2153

1921 4h.p. Triumph (April), registered, all on, must sell, splendid condition; any trial; £88.—4, Elm Gardens, Hammersmith. [1864

1921 Renovated Triumph, by makers, fully equipped, tax paid, only used a few times; £77/10.—365, King St., Hammersmith. [2202

1914 Triumph, 3-speed, clutch (hub), good condition, all accessories, tax paid; £40, or offer.—66, Hermon Hill, Snaresbrook. [1989

1916 Triumph, 3-speed, countershaft, good condition, new cover and tube; £55.—Champion, Jocks Lane, Binfield, Berks. [2217

TRIUMPH 1919 Countershaft Combination, Easting, luggage grid, new tyres, splendid condition; £90.—2, Salisbury Rd., Seven Kings. [1828

1918 C.S. Triumph, lamps, Klaxon, pump, knee-grips, tax paid, excellent condition; £75.—Apply, 236, Francis Rd., Leyton, E.10. [1638

3½h.p. Triumph, 1911, engine perfect, new mag., tyres good; trial allowed on security; price £26.—Dickinson, 21, Nelson St., Bury. [1782

1921 Triumph Combination, Dunhill sidecar, fully equipped, done 2,000 miles; sacrifice, £115.—33, Hackford Rd., Brixton, S.W. [2319

TRIUMPH, 1914, 3-speed, 4h.p., lamps, horn, licence, etc., perfect order; £45.—Alfred Holland, 164, Earlsdon Av., Coventry. [X9781

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SPECIAL.

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MOTOR CYCLES FOR SALE.

Triumph.

2¼h.p. Triumph Junior, 1921, second-hand, accessories, tax paid, insured; price £60.—Wauchope's, 9, Shoe Lane, London. [1855

TRIUMPH, 1914, 3½h.p., 3-speed, clutch, unpuncture Dunlops, lamps, Stewart, fine condition; £38.—65, Sophia Rd., Leyton, E.10. [1860

3½h.p. Triumph, clutch, Bosch, Senspray, good running order, tax paid; £25.—Middleton, 35, Millais St., Albany Rd., Camberwell, S.E.5. [2204

1912 3½h.p. Triumph, 3-speed, clutch, complete accessories, recently overhauled by makers; £50.—60, Holmdene Av., Herne Hill. [1827

1914 Triumph, 3-speed, good condition, recently overhauled, tax paid, speedometer, Klaxon; £40.—Haward, Hillcrest, West End Av., Pinner. [1634

TRIUMPH 1918 4h.p., 3-speed, C.B. sidecar, spring wheel, luggage grid, lamps, spares, perfect running order; £88.—M., 46, Clarendon, Putney. [1983

TRIUMPH Countershaft Combination, Easting screen, Bosch mag., acetylene lighting, excellent condition; bargain, £90.—'Phone: Finchley 126. [1873

TRIUMPH Combination, 1919, fully equipped, excellent condition; record bargain, £65.—Lt. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [1910

TRIUMPH Combination, 4h.p., Sturmey 3-speed countershaft, adjustable carburetter; £80, complete.—Hart, 153, Upland Rd., East Dulwich. [2059

COUNTERSHAFT Triumph, fitted with new engine and S.A. gear box, complete, machine as new, guaranteed; £75.—33, Hackford Rd., Brixton. [2232

TRIUMPH, 1918, renovated by Triumph May, 1921; Mills-Fulford 1921 sidecar, Cowey, lamps, horn, accessories; £105.—106, North End Rd., W.14. [2177

TRIUMPH 3½h.p., clutch, lamps, horn, licensed, new piston, cylinder, valves, guaranteed perfect; £35 offers.—W. Hill, 17, Franchise St., Kidderminster. [1567

1920 Triumph Combination, hood, all accessories, aluminium footboards, speedometer, etc.; £100 or offer.—17, St. Charles Sq., N. Kensington, W.10. [100

3½h.p. Triumph, 1912, perfect running order, very fast, economical, Bosch, complete, tax paid £30, or offer.—33, Sea View Rd., Brightlingsea, Essex. [201

1918 Triumph Countershaft Combination, Easting equipped, smart, £85; Swan sporting sidecar separate, £20.—11, Kilmartin Av., Norbury, S.W.16. [187

TRIUMPH 3½h.p., direct drive, T.T. model, showroom soiled; bargain at £70 cash.—The Leyton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [239

3½h.p. Triumph, drop frame and tank, new tyres, cylinders, valves, and rings, also carburetter £35; a real bargain.—46, High Rd., Balham, S.W.1. [182

TRIUMPHS.—1918 at £71 and £73, 1919 C.S. £8 3 months' guarantee given; also 1914 3-speed S.A. hub gear models, £45.—Ross, 86, High Rd., Lee. [17

1917 Countershaft Triumph, engine No. 47,000, full equipped, £4 tax paid, excellent condition; £5 would take lightweight part.—15, Summerhill Rd., Dartford. [17

TRIUMPH-GLORIA Spring Wheel Combination, 3 months old, Royal Easting, Klaxon, Luc lamps; sacrifice, 125 gns.—56, Malyons Rd., Lewisham. [21

TRIUMPH, all chain, 1921, mechanically perfect, frame, tyres likewise, mileage 2,000, accessories, spares; £110.—V.D., 23, Collingham Place, Earl Court. [20

TRIUMPH, late model, 4h.p., countershaft, enamel, plating, and mechanism splendid condition, full equipped; 58 gns.—30, Crystal Palace Park R Sydenham. [19

1920 (Nov.) Triumph Combination, mileage 250, complete outfit, Easting, perfect condition; what offers? Owner going abroad.—4, Hempstead Rd., Walthamstow. [16

TRIUMPH Gloria Combination, 1919, 4h.p., countershaft, K.S., not W.D., all on, perfect, well kept, nearest offer over £95.—68, Stapleton Hall Rd., Stroud Green, N.4. [16

TRIUMPH Gloria Combination, almost new, T Sad, screen, etc., perfect condition; any trial; or exchange light car.—Seen 9, Wellesley Gardens, Ilford, Essex. [16

1921 Triumph Combination, chain drive, Trip screen, luggage carrier, horn, Lucas lamps, only done 700 miles, like new; £125.—14, Morton Royston, Herts. [2

TRIUMPH Late 1914 Combination, splendid condition, kick start, all on, wind screen, hood, g tyres and spares; £65.—Home, Fire Station, Gt. S land Yard, S.W.1. [1

TRIUMPH 3-speed C.B. Combination, 1912, lam horn, tax paid, new tyres, guaranteed perfe £40, no offer.—61, Grand Parade, Harringay, 'Phone: 615 Hornsey. [1

1920 Triumph Gloria Combination, Easting w screen, Brandish footboards, speedometer, chanical horn, lamps, spares, new condition; £13 Ashurst, Fyfield, Ongar. [1

MOTOR CYCLES FOR SALE.

Triumph.

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

TRIUMPH 1914 3½h.p., practically new engine, repainted, nickel-plated, new saddle, tyres, and aluminium footboards; £36.—Mars Motors, Ltd., 78, High St., Hampstead, N.W.3. [2144

TRIUMPH, new 1921 competition engine, new Sturmey C.S., unused, cost £110 last week, owner Service man ordered India; £90 quick sale.—Wilton, White Swan, Upper Norwood. [2318

TRIUMPH Late Countershaft Combination, recently revarnished, overhauled, Easting, beautiful condition, appearance; £80, or near; must sell; bargain.—Box 6,515; c/o *The Motor Cycle.* [1600

1920 Triumph Gloria Combination, lamps, Cowey horn, Watford speedometer, luggage and petrol carrier, tax paid; £95.—Hirst and Parsons, 374, Grove Green Rd., Leytonstone. [1363

TRIUMPH Combination, late 1919, excellent condition, Lucas accessories, Easting, speedometer, tyres good, insured to March, mileage mostly solo; any trial; £100.—44, Stainton Rd., Sheffield. [X9734

TRIUMPH, 1918, mechanically perfect, T.T. bars, countershaft, long copper exhaust, fast, fully equipped and licensed; any trial; £65, no offers.—Derrington, Crafton Rd., New Malden. [2330

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-gum-belt models.—Jones' Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

3½h.p. Triumph, massive lighting set, tax paid, horn, tools, etc., Bosch, B. and B., go anywhere, very fast; any trial or examination; top-hole condition; satisfaction guaranteed; £30.—12, Brook St., Rochdale. [1648

TRIUMPH 1912 3½h.p. T.T. Model, fitted with latest dropped-back frame, brand new tyres, fully equipped, tax paid, fast machine; £35.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9661

TRIUMPH 1921 4h.p., countershaft, Type H, £115; 4h.p., chain drive, £125; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1331

1920 Model H Triumph, Cowey horn, P. and H. lamps, new spare belt, all tools and spares, licensed and fully insured for next year, excellent condition, low mileage; £85.—Warburton, Grosvenor Dene, Market Drayton. [X9738

TRIUMPH Gloria Spring Wheel Combination, late 1920, first used April, 1921, done 1,600 miles only, Easting wind screen, Smith speedometer, electric lighting; £150; absolutely perfect; buying twin.—H., 1, Dagmar Av., Wembley Hill. [1773

TRIUMPH Countershaft Combination, 1919, luxurious Sunbeam sidecar, luggage carrier, Easting, Klaxon, new tyres, insurance and tax paid, last overhauled, excellent condition; £95; after 7.—, Shoot-up-Hill, Cricklewood. [1925

FINEST Triumph on the road, Magdyno, C.S., new 1915 engine purchased last year, fast, auxiliary acetylene lamps, Tan-Sad, coachbuilt sidecar, new tyres, black and gold tank with nickel-plated switchboard; sacrifice, £98; only wants seeing.—Rossi, 1-3, Stephen St., W.1. [2139

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

MAGNIFICENTLY Equipped Triumph, C.S., late 1919, not W.D., condition inside and out perfect, all tools, lamps, licence paid, 2 pistons, 2 carburetters, new chains, valves, new Dunlop cover, very fast, kept in perfect condition by owner; £95.—Harvey Bashall, Manor House, Ripley, Woking, Surrey. [X9536

ASTONISHING Offer of New Triumph Sidecar Combinations.—Brand new 1921 Type H 4h.p. 3-speed Triumph, with new coachbuilt sidecar, Overall hood, 4-point attachments, £135 cash; easy payments only 4% extra, not shop-soiled or renovated machines, but brand new 1921 models direct from makers' works; free delivery to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0667

Spare Parts:

TRIUMPH Countershaft.—All parts brand new or equal new, engine £19, gear box £14; all parts in stock; stamp.—22, Princess Rd., Finsbury Park. [1734

TRIUMPH Parts.—Every part, any year, in stock: new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in face of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Rise, Leamington Spa. [X9763

Tyler.

TYLOR-PRECISION, 1914, 2¾h.p. 2-stroke, very low, tax paid; bargain, £17/10.—Butterworths' Garage, 6 Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9152

Velocette.

VELOCETTE, in good running order; £28.—22, Myrtle Gardens, Harrogate Hill, Darlington. [2028

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Write for full list of suplus Douglas parts.

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LTD.,

Motor Engineers,

WISBECH.

MOTOR CYCLES FOR SALE.

Velocette.

1921 Velocette, open frame, unscratched; £50 or offer; sacrifice.—Day, Manor House, Marylebone Rd., N.W. [2033

VELOCETTE, 2½h.p., 2-speed, 1919-20, electric lighting, mudshields, new tyres at Easter; £47.—Austin, 67, Tiverton Rd., Exeter. (D) [1811

VELOCETTE, 1919, 2-sp., good condition, licensed; bargain at £45.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford.

VELOCETTE, 1921, 3sp., clutch, special model. This machine was produced at a cost of £120 specially for racing purposes, and can attain a speed of over 60 m.p.h., and will lap at Brooklands at 54 m.p.h. Unusual opportunity for competition riders. Offers invited.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford.

Verus.

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

1921 2¾h.p. Verus, Sturmey-Archer 2-speed countershaft, kick start and clutch, low mileage, for quick sale; £48, as new.—91, Dugdale Rd., Radford, Coventry. [X9756

Victory.

VICTORY 1920 2-stroke, 2 speeds, clutch, kick starter, fully equipped as new; £45.—136, Ravensbury Rd., Earlsfield, S.W. [2208

Villiers.

1920 Villiers-Gamage, 2 speeds; bargain, £42/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2274

Vindec.

VINDEC, 2-speed, 2-stroke, perfect order, tools, lamps, and horn; £32.—Rose, 34, Holcroft Rd., Hackney. [1541

Werner.

WERNER, 3h.p., C.A.V., spring forks, low sporting machine; genuine bargain, £12; ride away.—Confectioner, 179, York Rd., Islington. [2087

Wilkin.

WILKIN, shop-soiled only, 1921, 4h.p. Blackburne engine, 3 speeds, clutch, kick starter, finished all black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9662

Williamson.

WILLIAMSON 8-10h.p. a.c. Flat Twin (Douglas) Combination, C.B. sidecar, 2-speed and clutch, kick start, countershaft, chain drive, lamps, speedometer, and spares, tax paid, had little use, condition splendid; any trial; speed 5 to 60 m.p.h. fully loaded; £95.—Wiseman, 1, Little Park, Enfield, Middlesex. [1767

1916 Williamson Combination, 8h.p., w.c. Douglas engine, 3-speed, Binks carburetter, undershield, luxurious sidecar, hood, screen, luggage grid, enamel and upholstery perfect, brand new 700×75 Palmer cord light car tyres, mechanically perfect, accessories; any trial; £75.—Drayton, Kingswood, Wallingham, Surrey. 'Phone: Purley 575. [2151

Wolf.

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

GENUINE Bargain.—2¾h.p. Wolf-Jap, 2 speeds, Klaxon, licensed, electric lighting, good tyres, long exhaust, T.T bars, adjustable tappets, Amac, Thomson-Bennett, 2 brakes; £25.—89, East Hill, Wandsworth. [2228

Wooler.

WOOLER, 1920, in tip-top condition, cheap for cash; £55.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9962

1920 2¾h.p. Wooler, just delivered from makers after complete overhaul, new frame with oil saving device, has exceeded 200 m.p.g. petrol, speedometer, horn, electric lamps, undershield, tax paid; £70.—Bell, 19, Lancaster Gate, London. [X9670

Zedel.

ZEDEL 6-7h.p. Combination, C.B., Bosch, speedometer, tax paid, all on; £56.—52, Albion Rd., Woolwich, S.E. [1763

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

3½h.p. Zenith, single-cyl., 1915, in splendid condition; £35.—Sands, Burnham, Bucks. [1526

BRADSHAW-ZENITH 3½h.p., oil-cooled; in stock; first cheque.—Light Motors, Plymouth. [1657

1919 5-6h.p. Sports Zenith Combination, unscratched, perfect; £75.—24, Balliol Rd., North Kensington. [1979

1920 8h.p. Countershaft Zenith Combination, mileage only 3,000; £120.—53, Brixton Rd., S.W.9. [2243

F.O.C.H. for Zeniths, new and secondhand.—5, Heath St., Hampstead (near Hampstead Tube Station). [9672

MOTOR CYCLES FOR SALE.

Zenith.

£60; 1919 6h.p. Zenith, all accessories, insurance.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2254

ZENITH 8h.p. Countershaft, new May, 1921, equipped, insured, under 600 miles; £98.—Clark, 7, Exhibition Rd., S.W.7. [2295

ZENITH, 4h.p., 1915, fully equipped, good running order and condition; cheap, or exchange.—Maile, Ketton, Stamford. [1744

BRAND New 1921 5h.p. Zenith, equipped; real bargain, £100.—Lt. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [1911

ZENITH 6h.p. Sports, sidecar, 1915, new engine, 1921; any trial; £60, or near.—Greenfield, Ivy Hatch, near Sevenoaks. [9483

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [0711

1921 8h.p. Zenith, clutch and kick starter, shop-soiled only; £135.—Morriss and Co., Ltd., 139, Finchley Rd., London, N.W.3. [1788

1921 Zenith 5h.p. Sports, accessories, Tan-Sad, tax paid, mileage 1,000; £85, or near offer.—29, St Peter's Sq., Hammersmith, W.6. [1620

1921 Zenith 5h.p. Sports, accessories, Tan-Sad, tax paid, mileage 1,000; £90, or near offer.—29, St. Peter's Sq., Hammersmith, W.6. [1619

1920 Zenith Combination, 8h.p., countershaft, all on, several spares, owner going abroad; offer.—Box 6,562, c/o *The Motor Cycle.* (D) [1837

6h.p. Zenith-Gradua Sporting Model, T.T., Bosch mag., B. and B., powerful, fast; £45; write for appointment.—17, Birdhurst Rd., South Croydon. [1831

ZENITH 1920 5h.p. Countershaft Model, slightly showroom soiled; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2302

£55.—Zenith-Gradua coachbuilt combination, 1914, single-cyl., good condition, lamp set and horn; reasonable trial.—152, Queen's Rd., Peckham. [2002

8h.p. Zenith Combination, countershaft, clutch, kick starter, lamps, licence, accessories, luggage grid, apron, brand new condition; £90.—63, Solon Rd., Brixton. [9168

ZENITH 1921 5h.p. Model, brand new (shop-soiled only): £105; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9664

1921 Zenith 8h.p. Combination, complete with lamps, horn, speedometer, the licence paid 1921; £150, or offer.—To be seen at Caffyns, 56, Terminus Rd., Eastbourne. [9474

6h.p. Zenith-Gradua, re-enamelled, overhauled, good tyres, splendid condition throughout; £55 (deposit); sidecar, £5; 2-speed wheel, £3.—Morris, Walker St., Eastwood, Notts. [1676

ZENITH 1914 90 bore competition machine, with racing sidecar, special gear and tank, accessories, spares; £65; separate, or exchange.—Pendennis, Church Circle, Farnborough. [2167

ZENITH 1921 5h.p. Sports Model, complete with lamps, horn, licence, and speedometer; perfect conditon; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford.

ZENITH 1921 5h.p. Sports Model; list price £115; very slightly showroom soiled, usual makers' guarantee given; £97/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2304

ZENITH 1920 8h.p. Sports Model, issued new 1921, licensed, thoroughly recommended, and almost equal to new; 80 gns.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford.

1916 5h.p. Clutch Model Zenith, £58; also 5-6h.p. clutch model, with large aluminium sidecar, electric lamps, tax paid, £70; also 5h.p. sports model, in stock, new, £115.—Ross, 86, High Rd., Lee. [1703

ZENITH Sporting Model, 4-5h.p., 1920, fitted with Cowey speedometer, electric outfit, aluminium disc wheels, indistinguishable from new, has been thoroughly overhauled by Zeniths and just returned, all accessories; price £85, or near offer.—Spears, 115, Elborough St., Southfields. [2209

ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear and sidecar lamps, horn, Cowey speedometer, knee grips, Ace discs, luggage grid, indistinguishable from new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X9663

ZENITH 1917 8h.p. Combination, countershaft, clutch, kick start, fast, powerful, Gloria castor spring wheel sidecar, beautiful condition; seen any time; lamps, mechanical horn, licensed; 97 gns.; consider lightweight or solo part.—Cook, Conway House, Harrington Rd., Preston Park, Brighton. [1492

ZENITH 1921 8h.p. Clutch Combination, 8 v. electric horn and lighting, powerful dual filament head lamp, speedometer with lamp, Easting, luggage grid, specially sprung rear seat, tools, spares, taxed, very fast, tuned by engineer, mileage 350; cash wanted; sacrifice, £160.—252, St. Ann's Rd., Tottenham. [1892

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Zenith.

ZENITH, 1921, 5h.p., sports model, brand ne condition, fully equipped, P. and H. lamp se mechanical horn, all tools and accessories, tax pai for the year; cost over £125; will accept £87/10 to quick sale; guaranteed perfect.—R. Watson, Victori Rd., Aldeburgh, Suffolk. [195

ZENITH 8h.p. Countershaft Late 1920 Model Com bination, brand new Swan Sports sidecar, Avi wind screen, speedometer, disc wheels, many spares an accessories, machine just overhauled at Zeniths, gua anteed in perfect condition, tax and insurance paid £125.—Giles, 18, Old Cavendish St., W.1. [186

Ladies' Motor Cycles.

LADY'S Douglas, perfect condition throughou overhauled by makers at cost of over £30, speed clutch model; £42/10.—Turner, 60, St. Jam Rd., Rounds Green, Oldbury, Worcs. [X972

Miscellaneous.

ROVER 5-6h.p., 1921, Grindlay sidecar, full equi ment, practically new; £135.

JAMES Combination, 5-6h.p., 1920, Magdyno ligh ing, fullest equipment; £115.

DOUGLAS 2¾h.p., 1919, W.D., 2-speed, £5 Humber 3½h.p. and sidecar, 2-speed, £35.

NEW HUDSON 3½h.p., 3-speed, £35; Douglas 2 h.p., 1914, 2-speed, £30.

REX Twin 5-6h.p. and Sidecar, 2-speed, £25; ma lightweights, from £20; all good running co dition.—Bunting's Motor Exchange, Wealdstone. [22

1919 3½h.p. Combination, complete with lamps, —Vincent, Hemsworth Lane Ends, near Wakefie [15

RICHMOND Park Garage, 110, Upper Richmo Rd., East Sheen, S.W.14. 'Phone: Putney 26 —Below.

R.P.O.—4h.p. Douglas combination, 3 speeds, k starter, like new, late model; £60, special offe

R.P.G.—3½h.p. James combination, 3 speeds, clut etc., excellent condition; £32.

R.P.G.—Indian 7-9h.p. combination, spring fra electric lighting, splendid order; £42.

R.P.G.—Brown 3½h.p. approx., mechanical val Bosch mag., B. and B. carburetter, good tyres belt; £12 to clear.

R.P.G.—Calthorpe-Jap. 2-speed, £28.—Richmond P Garage, 110, Upper Richmond Rd., East She S.W.14. 'Phone: Putney 2622. [10

RARE Opportunity acquire coachbuilt combinati practically gift; stamp.—59, Heidelberg Southsea. [9

BARGAINS.—New O.K.'s, Ariels, Harleys, Ome Quadrants; exchanges entertained. — Boo Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and side £125; new 7h.p. Ariel combination.—Boo Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½ Ariel, £110; 1921 7h.p. Ariel, £125.—Boo Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 mi £75/10; J.E.S. motor set, for cycle, £10/5; 3 twin Humber, 3-speed, £18/15.—Booths Motories, H fax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6 Chater-Lea, Grade gear, £21/15.—Booths Moto Halifax.

BARGAINS.—8h.p. Premier and sidecar, £65/ 3½h.p. free engine Triumph, £26/10; 3½h.p. and M., 1914, £39/15.—Booths Motories, Halifa

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/ 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾ Douglas, £37/15; 1917 Douglas, £55.—Booths Moto Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 192 speed Omega, £51/10; 1921 new O.K., £38 1921 2-speed O.K., like new, £52/10; several soiled machines at reduced prices; exchanges e tained, including push cycles. Visit us.—Bo Motories, Portland Place, Halifax. Tel.: 1062.

6h.p. Sports Zenith-Gradua, £50; 3½h.p. Chater all accessories, tax paid, £35; one pair of Do cylinders, 2¾h.p., £1/5.—14, Phœnix St., Euston, N.

2¾h.p. Motor Cycle, 2-stroke, 2-speed, lamps, Kla good Dunlops, licence paid, guaranteed per £35.—V. Cooke, Kinnersley, Severn Stoke, Worces

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Miscellaneous.

HALIFAX Motor Exchange, Horton St., Halifax. 'Phone: 1400.—New and second-hand machines for cash; exchange or deferred payments.—Below.

HALIFAX.—Morgans, £105, £120; 1919 A.V. monocar, £79/10; Ariel 1920 3½h.p., £84/10.—Below.

HALIFAX.—Alecto 3½h.p. 1920 combination, £79/10; 1918 3½h.p. P. and M. combination, £65.—Below.

HALIFAX.—Enfield 1915-16 combination, £95; 1920 2¾h.p. spring frame Edmund-Jap, mileage nominal, £59/10.—Below.

HALIFAX.—1920 Harley electric combination, £155; 1920 4-cyl. Henderson combination, £175.—Below.

HALIFAX.—1917 Harley and sidecar, electrical equipment, hood, screen, £115; Rex 6h.p. combination, £52/10.—Below.

HALIFAX.—Humber 1914 3½h.p. 3-speed combination, £49/10; 1920 Scott, £95; 1921 spring frame Beardmore-Precision, £69/10.—Below.

HALIFAX.—1920 Scott combination, special, £125; Sunbeam 8h.p. M.A.G. engine combination, £145.—Below.

HALIFAX.—Triumph 1914 combination, £69/10; Triumph clutch model, £47/10; 1921 8h.p. Enfield combination, 250 miles, £145.—Below.

HALIFAX.—6h.p. Zenith countershaft combination, £85; 1918 Indian 7-9h.p. combination, like new, £105.—Below.

HALIFAX.—1918 7-9h.p. Harley, 1920 Henderson Elite sidecar, £115; 1920 (November) G.N., dynamo lighting, £175; 3½h.p. Premier, 2 speeds, £29/10.—Below.

HALIFAX.—Cash, exchange, or deferred payments, special terms quoted.—Note address, Halifax Motor Exchange, 25, Horton St., Halifax. 'Phone: 1400. [1723

MORGAN Runabout, De Luxe Model, M.A.G. engine, with hood, water-cooled, £203, new from works; Bradbury, 4h.p., all-chain drive, 1921, shop-soiled, makers' price £95, our price to clear, £90; A.J.S. 6h.p. and Grindlay super sprung sidecar, fitted with hood and wind screen, accumulator lighting, 3 lamps, Dec., 1919, licensed, £130; Douglas 4h.p. combination, Cameo wind screen, 1921, not done 600 miles, in perfect order, licensed, £130; Triumph, renovated 4h.p., and sidecar, complete with lamps and horn, licensed, £80.—Stead and Lockerbie, Motor Engineers, 18, New Elvet, Durham. [X9527

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LATEST Models Motor Cycles and Combinations for hire, any period.—Fowler and Brigden, 130, Euston Rd. Museum 4827. [0708

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LIGHTWEIGHT or Combination wanted, must be modern.—Loman, 1, Othello Rd., Liverpool. [8509

WANTED, 2¾h.p. Douglas or other lightweight, cheap for cash.—Maynard, 8, Silver St., Enfield. [2024

WANTED, 2-stroke, 2-speed. State lowest cash, condition, year.—Balsdon, Blacksmith, Highampton, Devon. [1643

WANTED, 4-cyl., F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [3151

TRIUMPH, 4h.p., countershaft, wanted; cheap for spot cash; will collect.—Snow, 91, Mapledene Rd., Hackney, E.8. [2265

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (two Station). [3152

2-STROKE Lightweight, modern, Levis or Connaught preferred.—Particulars, Clarke, 38, Broad St., Coventry. [X9719

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Clincher Extra Heavy	27/6
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Goodyear Extra Heavy	30/-
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Dunlop Heavy	36/-
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Hutchinson Passenger	35/-
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Wood-Milne Extra Heavy	36/-
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Dunlop Extra Heavy	55/-
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Palmer Heavy Cord, Light Car Type	45/-
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Wood-Milne Extra Heavy	40/-
Dunlop Heavy	42/6
Dunlop Extra Heavy	50/-
28×3 for 2½ Rims.	
Dunlop Extra Heavy	50/-
28×3 for American Rims.	
Wood-Milne Extra Heavy	30/-
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700×75 for 650×65 Rims.	
Hutchinson Extra Heavy, Light Car Type	55/-
650×75 for 650×65 Rims	
Hutchinson Light Car Type	50/-
700×80 for 650×65 Rims	
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Wood-Milne Extra Heavy	45/-

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COMBINATION in exchange for 5h.p. sports Zenith, condition and appearance as new.—54, Riverview Grove, Chiswick, W. [1984

WANTED, 2-speed lightweight; will exchange Autoglider, good as new, and cash.—Watson, Ware Rd., Hailey, Hertford. [2108

WANTED, combination or solo.—Call, write, or 'phone, James, c/o Dentist, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [2199

WANTED, motor cycles and combinations for cash.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1085a

TRIUMPHS.—W. T. Dunn, Ltd., are special buyers of these machines, 1915 or later, single machines or quantities; spot cash on sight.—Write, 'phone, or call, W. T. Dunn, Ltd., 326, Euston Rd., N.W.1. 'Phone: Museum 5391. [0681

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone, Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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WANTED, 3½h.p. or 4h.p. Solo, kick start, 3-speed, gears, clutch, any reliable make, 1918 or later, cash on exchange; Alldays Matchless combination and cash adjustment or sell, £40; also 2½h.p. 1915 Ivy 2-stroke for disposal.—Engineer, 107, Lothair Rd., Leicester. [X9735

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YOUNG Motor Attachment, nearly new; £17; with back wheel complete.—Daniels, Cycle Agent, Midhurst. [1584

WALL Auto-wheel de Luxe, excellent condition, number plates; £9/10.—Playfoot, Wellington Arms, Hawkhurst. [1642

1920 Simplex Attachment, complete with Hobart cycle; £18/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2275

AUTO-WHEEL, in perfect mechanical order; £7.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9146

WALL Auto-Wheel, privately owned, 1920, attached to gent's cycle, perfect condition.—Full particulars from Messrs. Stathers, 146, Wimborne Rd., Winton, Bournemouth. [1569

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INVALIDS' Tricycles and Motor Tricycles; catalogue free.—Rayner, 10-12, George St., Blackpool. [5248

INVALID Tricycle for sale, in good condition, Dunlop tyres; price £10.—Apply, J. Clifford, Newton Purcell, near Buckingham. [1580

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [7354

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KINGSBURY Scooters and Spare Parts.—3, Kendall Mews, George St., W.1. [1442

KINGSBURY Scooter, 2¼h.p., 2-stroke, rapid, reliable; £17.—E., 22, Cedar Rd., Croydon. [1838

UNIBUS Motor Scooter, excellent condition; cost £75; what offers.—Miss Leighton, Sweeny Hall, Oswestry. [1774

A.B.C. Skootamota, Sept., 1920, guaranteed perfect, tax paid; nearest offer £25 secures.—Maurice, Groombridge, Sussex. [1609

£22.—Abbottsford 3-wheel motor scooter, nearly new, 3¼h.p. engine, overhead valves, foot clutch, handle start, perfect running order; a bargain.—Apply, Waite, 2, Church St., Isleworth. [1871

WHIPPET Motor Scooter, 1921, as new, run 30 miles, perfect condition, 125 m.p.g., 20 m.p.h., extra controls; cost £56, take £40, including tax; bargain; seen after 8.—76, Beulah Hill, S.E. [1713

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HERCULES Hoods and Aprons. Write for list.—Hercules Hood Co., 698, Seven Sisters Rd., Tottenham. [1109

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VENUS.—Bodies direct from factory to user; save money; lists ready; write.

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ROBINI.—Brooklands model, painted dark blue, upholstered red Rexine, bulbous back, complete with locker, £7/10. Robini.—Helen sports, upholstered red Rexine or choice, bulbous back, painted dark blue, £7/10; covered polished aluminium, £8/5.

ROBINI.—Helen Light Tourist, bulbous back, upholstered red Rexine, painted dark blue, £7/10; covered polished aluminium, £8/10.—Below.

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RENNOC Sidecar Bodies, actual manufacturers; 35 models, also several clearance, cheap to clear.

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BAMCO Sidecar Bodies, want finishing, coat of paint, well built and roomy, from £2/10 to £3/10.—2, Fortune Gate Rd., Harlesden, N.W. [2307

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CAMBER.—Streamline models, £16/10.—Bright and Hayles, 78, Church St., Camberwell, London.

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CAMBER.—Semi-touring models, £18/10.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Tandem models for adult and child £26.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER.—Utility models, £25.—Bright and Hayles, 78, Church St., Camberwell, London.

CAMBER Sidecars.—Makers, Bright and Hayles, 78, Church St., Camberwell, London. 'Phone: Brixton 2951. [1045a

£8.—Sporting racing sidecar, Watsonian coachbuilt, light, 26in. wheel.—King, Egrove, Oxford. [X9744

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26×2	Wood-Milne 3-ply	25/-
"	Wood-Milne 4-ply	30/-
"	Wood-Milne Combination	44/-
"	Dunlop Heavy W.D.	38/-
"	Hutchinson Brooklands R.S.	26/10
"	Hutchinson T.T. R.S.	32/6
"	Hutchinson Passenger R.S.	37/6
26×2¼	Wood-Milne 3-ply	26/10
"	Wood-Milne 4-ply	34/1
"	Wood-Milne Combination	46/3
"	Dunlop Heavy W.D.	35/6
"	Palmer Cord Heavy W.D.	35/-
"	Clincher Heavy W.D.	33/6
"	Macintosh Heavy W.D.	32/6
"	Hutchinson Brooklands R.S.	28/6
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26×2¾	Hutchinson T.T. R.S.	36/-
"	Hutchinson Passenger R.S.	41/6
"	Dunlop Heavy W.D.	37/6
"	Palmer Cord Heavy W.D.	35/6
"	Clincher Heavy W.D.	35/-
"	Beldam Heavy W.D.	32/6
26×2½ for 2¼ rims	Hutchinson T.T. Rubber-stud.	39/6
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	Hutchinson Passenger 3-rib	45/-
26×2½ for 2½ rims	Wood-Milne 3-ply	31/10
	Wood-Milne 4-ply	36/1
	Wood-Milne Combination	51/6
26×3	Wood-Milne 3-ply	33/4
"	Englebert Passenger	37/6
"	Hutchinson Passenger	45/-
26×3 ×2½	Wood-Milne 3-ply	32/-
650×65	Wood-Milne 3-ply	32/4
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700×75 for 650×65	Hutchinson Light Car 3-rib	45/-
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28×2½	Wood-Milne 3-ply	32/4
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SANDUM Models.—The Exquisite 23 gns., and Sports 26 gns., are of distinctive appearance.

SANDUM Elite Sidecar, 27 gns.; the smartest sidecar on the road; highly recommended in "The Motor Cycle."

SANDUM Dual Purpose Sidecar (patented). A single or 2-seater sidecar as required in 6 seconds. Size of body as our single-seater Elite. Luxuriously comfortable seating for 2 adults, with the weight in correct position over rear axle. Finished in colours to suit any make of machine, 42 gns.; bodies only, 21 gns. The latest development of the 2-seater as designed by us, and approved by the recognised experts.

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MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeams, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

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MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give to the bumps, not bash into them.

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GLORIA Sidecar with fittings, in good condition, nearly new tyre and discs; £10.—Rugeley Garage, Rugeley. [939

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph or B.S.A.; £18/15.—Booths Motories, Halifax.

BARGAINS.—Nearly new Henderson sidecar, suit Rudge, £16/15; Millford 27 gn. sidecar, nearly new, £16/10.—Booths Motories, Halifax.

BARGAINS.—New full-size coach body, locker under seat, £6/19/6; cane body, 25/-. — Booths Motories, Halifax. [33

SMART Sporting Sidecar, as new, screen, electric lamp, £22; another, £10; both complete.—2, Fordel Rd., Catford. [19

BASTONE'S for sidecars and bodies; no better or cheaper house. Kindly inspect our models before purchasing elsewhere.

BASTONE'S.—New 1921 sporting and other models in stock. Bodies from £4/13/6; complete sidecars from £14/18/6.

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TWO Nice Coachbuilt Sidecars, one Montgomery, Triumph, and B.S.A. Smart.—Sherwood, Kelsale, Saxmundham, Suffolk. (D) [1

SIDECAR, coachbuilt, aluminium disc, apron, 4-p attachment, off Triumph; £10; evenings.—1 Pulborough Rd., Southfield, S.W. [1

SIDECAR, light sporty, coachbuilt, £5; King 3½h.p., 1914, 2-speed, £23.—Bambridge, Riverside, Kingston-on-Thames. [X9

HENDERSON Lightweight Sidecar, 4-point, Duc Bluemel wind screen, excellent condition; £1 22, Boscastle Rd., Highgate Rd., N.W.5. [1

2-SEATER Sidecar, 1919 Rennoc, 4 connecti 28×3 wheel, tyre, screen, hood, carrier; £20.—Apply, Diver, Public Offices, Marple. [

TAYLOR'S Coachbuilt Bulbous Back Sidecar, 1 with wind screen; £18, or exchange spor type.—112, Gorton Rd., Coundon Rd., Coventry [X

GLORIA Sidecar, 1921, practically new, bul back, petrol and luggage carriers; £35; any time.—75, Crowborough Rd., Tooting, Londo [

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ONE New Sidecar, unused, underslung double chassis, would cost from manufacturers £35 to £40; bargain, £25.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [1591

ROYAL Leicester Sidecars are made for comfort, attachments for any machine; price 18 gns. upwards; have few cars to clear at reduced prices; repairs, repainting, etc.—The Willowbrook Motor Co., Leicester. [0335

SIDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passage 27in. Tandem and single bodies fitted. Tested 7 years on motors up to 9h.p.—Hopley, Upper Highgate St., Birmingham. [0152

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TEPPELTHWAITE and Watkins, £4/10; Douglas chassis, renovated as new, complete, underslung, also supplied with special fittings for P. and M., Triumph, Rudge, etc. Bring your bike and have one fitted. Don't be nervous of price; approval against cash there! New tyre, 30/- extra; new bodies from £7/10, bulbous backed. Old man Hep., quarter day, latter up. See Parts and Accessories columns.—Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [1819

ROBINI.—Douglas chassis, complete, enamelled, new tyre and tube, with Helen sports body, dark blue, £14. Robini.—Douglas chassis, as above, with new Helen tourist, dark blue, £15/10; with de luxe model, dark blue, £15/10. Robini.—Mills-Fulford chassis complete, new tyre and tube, with Helen sports model, £12/10. Robini.—As above, with Helen tourist model, £12. Trade supplied. Robini.—Chassis and bodies from £10. Carriage extra. For full particulars of bodies see Body column.—Brixton 1585.—T. Robini, 7, Water Lane, and 1, Tulse Hill, Effra Rd., Brixton. (Buses and trams pass the door). [2196

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AN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

LERIOT Whippet, 1920, as new; £120.—Mylam, 197, London Rd., Croydon. [2128

20 A.V. Monocar, electric lights, etc., perfect; £70.—L. Bull, 44, Hills Rd., Cambridge. [1523

AN GUY, Weymouth, Morgan agent: reduced price; Grand Prix 10h.p. M.A.G., £197, from stk. [0624

20 Family Morgan, hood, lamps, etc., good condition; £155; trial.—Vicar, Newton St. Cyres, Exeter. [1556

V. Monocar, £115, complete; demonstrator in stock. —Service Motors, St. Chad's Rd., Headingley, Leeds. [2006

ORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1245

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MORGAN G.P., water-cooled J.A.P., perfect; £125, or part exchange decent solo.—51, Windmill Rd., Sunbury. [2101

1921 T.B. 3-wheeler, water-cooled, dynamo lighting; cost £297, accept £165.—24, Balliol Rd., North Kensington. [1976

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Ct. Portland St., London, W.1. [0350

HUMBERETTE, 1915, water-cooled, Stepney, and all accessories; £100, no offers.—Mylam, 197, London Rd., Croydon. [2129

1916 Grand Prix Morgan, very fast; £150, or exchange for combination with cash adjustment. —Ross, 86, High Rd., Lee. [1704

1920 Morgan de Luxe, water-cooled, lavishly equipped; £145.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [1987

MORGAN, 1921 G.P., 10h.p. M.A.G. engine, every accessory, like new throughout; £195.—Mylam, 197, London Rd., Croydon. [2127

G.N. Late Model de Luxe, dynamo lighting and all improvements, tax paid; £155.—J. Daniels, Jun., 8, Crowhurst Rd., Brixton, S.W.9. [2211

G.N., 1921, new standard touring, received from works August, dynamo lighting; £240.—Telford Garage, 47, Streatham Hill, S.W.2. [1525

MORGAN 8h.p., smart appearance, perfect running; nearest £90; motor cycle part exchange considered. —Young, 24, Albion Rd., Lewisham. [1945

1921 G.N., April, mileage 600, new oversize tyres, many spares, all accessories; a gift at £150.—17, St. Charles Sq., N. Kensington, W.10. [1010

A.V. Monocar, 8h.p., hardly used, appearance new, and unscratched, dynamo lighting set; £95.—Haven, Portsmouth Rd., Esher, Surrey. [2261

MORGAN de Luxe, 10h.p. M.A.G., water-cooled, electric lighting, discs, nearly new; sacrifice; trial. —127, Plains Rd., Mapperley, Nottingham. [X9523

ONE Shop-soiled 1921 Morgan de Luxe, water-cooled M.A.G., full equipment; £190.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1243

4-WHEELED Monocar, 2-speed countershaft, less power unit, good tyres, painted red, splendid condition; sacrifice £30.—56, Lawrence Hill, Bristol. [2079

1918 G.P. Morgan, chassis overhauled, body repainted and reupholstered; sell £135, or exchange combination and cash.—18, Hestercombe Av., Fulham. [2088

HUMBERETTE, a.c., speedometer, Stepney, electric lamps, all accessories, m.p.g 45, tax paid; any trial; £90.—Richardson, 380, Kingsland Rd., E.8. [1486

A.C. Sociables, modern, fully equipped, mechanically sound, good appearance; from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [7947

1920 G.P. Aero Morgan, dynamo lighting, 10h.p. M.A.G. engine, fastest and smartest Morgan running; £150.—24, Balliol Rd., North Kensington. [1980

MORGAN Pattern Runabout, 3-speed and reverse, electric lighting, speedometer; £85; exchange combination.—The Haven, 120, Sutherland Rd., Croydon. [2121

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

1921 Kingsbury Junior Smart de Luxe Light Car, Brolt dynamo set, steel disc wheels, tax paid; £240; part exchange entertained.—76, Marmion Rd., Southsea. [2035

1915 A.C. Runabout (4 wheels), 6h.p., 2-speed and reverse, in good running order; £60, or exchange combination; cash offers invited.—Joy, 5, Park St., Brighouse, Yorks. [X9711

1921 Morgan de Luxe and Grand Prix Models, for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1244

1916 Morgan Grand Prix, J.A.P., hood, screen, first-class condition, full equipment, licensed and insured; price £110, or near offer.—Hall's Garage, Ltd., Stevenage, Herts. [1660

A.V. Monocar, 8h.p., December, 1920, electric and acetylene lighting, horn, tools, etc., small mileage; £85.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [1988

NEW Brooks Light Car, 9h.p., dynamo lighting, sporting body, hood and screen, 5 detachable wheels, unscratched, and never been used; exceptional bargain, £105.—Can be seen at The Colonial Motor Co., 104a, Finchley Rd., N.W.3. [1762

BLERIOT WHIPPET, July, 1921, perfect running order, reverse gear, hand or foot drive, Magdyno (Lucas) lighting, spare wheel and tyre, luggage grid on back, tax paid, insured till next July; best offer.—Mellows, 4, High St., Hornsey, N.8. [1824

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BLERIOT Whippet. December, 1920, electrically equipped, mileage 500; ride 50 miles to purchaser; £125.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [1986

MORGAN Brand New 1922 Modele de Luxe 4-seater, 10h.p. M.A.G. engine, w.c., lamps, horn, etc.; £210.—Stevens, 184, Pentonville Rd., King's Cross. 'Phone: Central 10264. [2205

1919 Merrall-Brown 2-seater, 3-wheeler, 10h.p., water-cooled, 2-speed, reverse, spare wheel, hood, screen, and lamps, etc.; £110, or near offer.—Brown, 71, Twilley St., Wandsworth. [2240

MORGAN, 1914, stored during war, a.c., sporting, retyred all-round, screen, speedometer, repainted and varnished; sacrifice £85; must sell.—23, Kempshott Rd., Streatham, S.W.16. [1932

G.N. 1920 Touring, first-class order throughout, dynamo lighting, ignition switch, adjustable tappets, full equipment, many improvements; £190.—Telford Garage, 47, Streatham Hill, S.W.2. [1524

NEW Scott Sociable in stock for immediate delivery, complete, ready to drive away; car comfort at motor cycle and sidecar cost; licence paid; 260 gns.—Glossop Motor Co., Glossop. 'Phone: 48. [1791

1920 8h.p. A.V. Monocar, as new, perfect throughout, just overhauled and re-enamelled; £85; consider exchange for good 3½h.p. countershaft A.B.C. or Norton.—H. Pentelow, Rothwell, Kettering. [1954

HUMBERETTE, late water-cooled engine, upholstery and body absolute new condition, Palmer tyres, 55 m.p.g., and extraordinary hill-climber, had very little running, and only short journeys, licence paid; £155; accept motor cycle part payment.—C/o 3, Station Approach, Reading. [1554

A SHOWROOM Bargain, at a very special price.—Slightly soiled 8h.p. Morgan de Luxe, painted blue with black upholstery, J.A.P. engine, with lamps, generator, and horn; deferred payments if desired.—Mann, Egerton and Co., Ltd., Norwich and London (379-381, Euston Rd., N.W.1.). [9440

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LAGONDA Coupe, in good condition; price £100.—Houston, 36, Buckingham Gate, S.W.1. [2336

1921 8h.p. Rover Car, slightly used, otherwise as new; £200.—37, Arlington Rd., Surbiton. [2054

G.N., April, touring, No. 1975; £200; wanted, dynamo Morgan, must be good.—10, Elaine Grove, N.W.5. [2067

DE DION 6h.p. 2-seater Car, complete, in first-class order; £65, tax paid; trial.—3, St. James's Rd., Upper Tooting. [1566

SIZAIRE, 15.9h.p. Grand Prix racer and record holder, in perfect order; £250.—Captain Jackson, c/o 77, Acre Lane, Brixton, S.W.9. [2213

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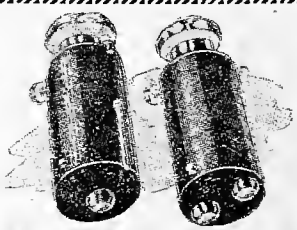

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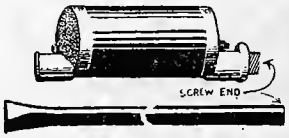

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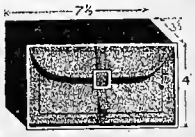

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'Phone:—Western 6177.

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8h.p. Rover 2-seater, hood, screen, lamp, Stepney, 3-speed, reverse; £50, or exchange good motor cycle.—Riley, Elkstone, Buxton, Staffs. [2174

8h.p. Rover Car, late 1921 model, air-cooled, fitted with speedometer, extra air, clock and rubber mat, in excellent condition, mileage 1,700, no punctures, all tools and many spare parts; £250. a bargain.—L. Lea, 6, East Park Parade, Northampton. [1645

FAFNIR 10h.p., 4-cyl., smart 2-seater with dickey seat, Bosch, paintwork, tyres, everything good condition, guaranteed perfect, stylish, lamps, tools, bargain, £130, or exchange combination and cash; trial any time.—Owner, 77, Salmon Lane, Commercial Rd., Stepney, London. [2062

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SIDECAR Taxi Combinations, cash or gradual.—County Cycle and Motor Co., Broad St., Birmingham. [8448

£100 down and twelve monthly payments of £20 secures London taxi cab.—Details, Palmer's Garage, Tooting. [2090

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£100 down and twelve monthly payments of £25 secures a magnificent 3-ton lorry.—Details Palmer's Garage, Tooting. [2091

MARTINSYDE Tradesman's Box Carrier, complete with chassis, absolutely as new; 19 gns.; this is less than half cost.—Frank Whitworth, Ltd., 139, New St., Birmingham. [X963

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MOTOR Cycles, Cars, Lorries, etc., cash or extended terms.—Write Kenneth Beadnall, 130, Northfield Av., Ealing, W.13. [210

NEW and Second-hand Motor Cycles; deferred payments at lowest rates.—Halifax Motor Exchange, Horton St., Halifax. [172

FOR Best Treatment and best terms for light car, cycle cars, or motor cycles of any make, new or second-hand, write Service Co., 292, High Holborn, W.C.1. [067

ENGINES.

2h.p. New Moto-Reve, single, mag. and carburetter, £9.—35, Avenue Rd., Clapton, E.5. [203

DE DION Engine, 2¾h.p., with magneto and carburetter; £6.—Mylam, 197, London Rd., Croydon. [213

60-100h.p. 6-cyl. Berliet Engine, complete, and quite new; £55, cost £800.—77, Acre Lane, S.W.2. [223

7h.p. Twin o.h.i.v. Engine, 45%, complete with mag. and pulley; £9/10; perfect.—18, Key Hill, Birmingham. [X97

J.A.P. Engine, 4h.p., and mag., first-class condition, £12; N.S.U. gear, £5/10.—Farrow, Spains Yard, Gravesend. [20

FOR Sale, 5-6h.p. N.S.U. engine, Bosch, B.B., variable pulley, complete unit; £10.—Burden, Broadmayne, Dorchester. [15

TRIUMPH, 1912, adjustable tappets, powerful, £8/17/6, carriage free.—Forfield Motors, Forfield Place, Leamington Spa. [X97

20h.p. o.h.v. V Twin, complete, ready for chassis, brand new, cost £100 to build; any cash offer or exchange.—40, Wheathill Rd., S.E. [17

DOUGLAS 4h.p. Engine, complete with magneto (C.A.V.), carburetter, oil pipes, and controls, ready for frame; £12/10.—L. F. Brimfield, 96, Meliott Rd., Thornton Heath, Surrey. [20

DOUGLAS 2¾h.p. Engine, complete Bosch mag., carburetter, controls, silencer, splendid condition, excellent running order; £9.—Dawson, Ampthill Rd., Bedford. [19

INDIAN.—A few Powerplus 7-9h.p. engines at remarkably low price of £15/15 each.—Smith, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [1

DOUGLAS Flat Twin, believed 10-12h.p., complete Solex carburetter and mag., seen running; offer accepted, or exchange (cash either way) for 6-8 J.A.P. 1918-21.—Seward, Red Hill Bassett, Southampton. [1

HEPPELTHWAITE'S.—3½h.p. a.i.v. Rex, £3/; 2½h.p. F.N., £2/10; 4-cyl. F.N. complete, £12/10; 5h.p. Stevens, £3/15; 2h.p. Minerva m., £3/10; 3h.p. Minerva a.i.v., £3; a.i.v. P. and, £3/10; 2½h.p. Peugeot, £2/10; Humber w.c. complete, £14/10; Bosch magnetos, enclosed £3, 30/-. See Sidecars column.—'Phone: 1958 Brixton. 19, Wilcox Rd., South Lambeth, London, S.W.8. [1

J.A.P Engines. J.A.P. Engines. J.A.P. Engines. I have the largest stock of J.A.P. engines and parts in England; over 30 engines always in stock to select from, and the price: 5h.p. twins, £17/10; 8 fitted with new pistons and 1921 cylinders, £20; 8h.p. at £18/10. Parts: 8h.p. J.A.P. crank c. 50/- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam wheel complete, 15/- each; valves complete, 4/- each; guides, 3/6 each; tappet guides, 2/6 each; exhaust valve and inlet cap, 4/- each; tappets complete, 2/6 each; cam levers, inlet and exhaust, 4/- each; gudgeon, 5/- each; and all parts for J.A.P. engines. Stamp for reply.—Hawkins, 455, York Rd., Wandsworth. [8

IGNITION APPLIANCES.

MAGNETOS 50% Below Original Cost.

BOSCH W.D. 1-cyl., variable ignition; 63/-, delivered.

THOMSON-BENNETT and M-L's of Coventry, 1-cyl. A.D.S. or P.L.R. types, 40/-, delivered, suitable for stationary engines. Any of the above if variable ignition 10/- extra.

C.A.V., suitable for 2 or 1-cyl. lightweight motor bicycles, height 4¼in., breadth 2⅝in., depth 4½in., variable ignition and short circuiting terminal, guaranteed platinum points, and workmanship of the finest; 1-cyl. fires at 180°. All working parts are interchangeable with C.A.V.'s types KU1 and 2. 52/6, delivered.

THOMSON-BENNETT Types A.M.1 and 2. variable ignition and short circuiting terminal; A.M.2 fires at 180°; 55/-, delivered.

THOMSON-BENNETT 4-cyl., variable ignition; £5/5, delivered.

N.B.—Any of these magnetos supplied clock or anti-clock. When ordering state which when looking at driving end and whether 1, 2, or 4-cyl.

TERMS: Net cash. Satisfaction or cash returned, if requested within 21 days.—Vale Engineering Synd., 11, Brown's Buildings, St. Mary Axe, E.C.3.

C.A.V. 2-cyl. Clockwise Aeroplane Starting Magnetos, platinum points, workmanship of the finest, and all working parts are interchangeable with C.A.V.'s type KU2, perfect for plug testing. One, carriage paid, 27/-; lots of six, rail forward, 22/6 each, of 20 at 22/6, of 100 at 20/-.—Vale Engineering Synd. Terms and address as above. [0698

COUNTY of London Engineering Works, Ltd.

MAGNETOS. Magnetos. Magnetos.

GOVERNMENT Surplus Unused Magnetos.—Having bought the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £1/15; C.A.V., single or twin, clock or anti, £2/10; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

COUNTY of London Engineering Works, Ltd.

PLUGS, high-tension wire, plugs.

GOVERNMENT Surplus; new plugs in boxes.

K.C. (Titan), 1/6; K.L.G. type 7, detachable, 2/6; high-tension wire, new, unperished, 9 mm., 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., 2d. per yard, 25 yard coil 2/-.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d.; (see other goods under Miscellaneous.)—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [5583

MAGNETOS to trade only: 50% below original cost.

BOSCH 1-cyl., as new, 63/-, delivered.

THOMSON-BENNETT and M-L's of Coventry, 1-cyl. A.D.S. or P.L.R. types, 40/-, delivered, suitable for stationary engines. Any of the above if variable ignition 10/- extra.

C.A.V., suitable for 2 or 1-cyl. lightweight motor bicycles, height 4¼in., breadth 2⅝in., depth 4½in., variable ignition and short-circuiting terminal. Guaranteed platinum points, and workmanship of the finest. 1-cyl. fires at 180°.

ALL working parts are interchangeable with C.A.V.'s types KU1 and 2; 52/6, delivered.

THOMSON-BENNETT Types AM1 and 2, variable ignition and short-circuiting terminal; AM2 fires at 180°; 55/-, delivered.

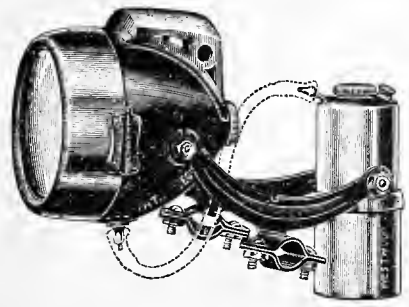
THOMSON-BENNETT 4-cyl., variable ignition, £5/5, delivered.

N.B.—Any of these magnetos supplied clock or anti-clock. When ordering, state which when looking at driving end, and whether 1, 2, or 4-cyl.

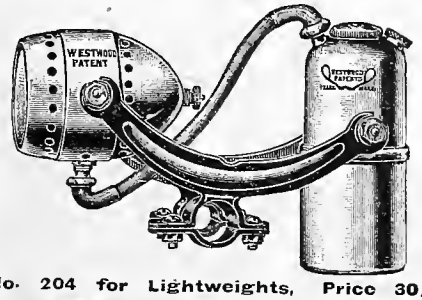
TERMS Net Cash. Satisfaction or cash returned—if requested within 21 days.—Vale Engineering Synd., 11, Brown's Buildings, St. Mary Axe, E.C.3.

C.A.V. 2-cyl. Clockwise Aeroplane Starting Magnetos; platinum points, workmanship of the finest, and all working parts are interchangeable with C.A.V.'s type KU2; perfect for plug testing. One, carriage paid, 27/6; lots of 6, rail forward 25/- each; of 20 at 24/- of 100 at 23/-; and 250 lots 22/- each.—Vale Engineering Synd. Terms and address as above. 'Phone: Central 877. [0698

"WESTWOOD" ACETYLENE SETS.



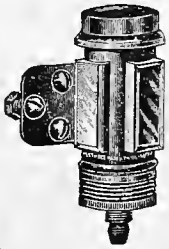
No. 40/1 for Heavyweight Solos, 37/6
No. 40/2 With Large Generator, 45/-

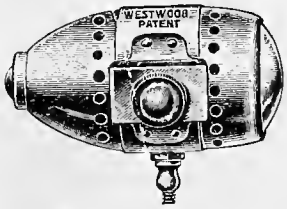


No. 204 for Lightweights, Price 30/-

ROYAL RUBY. *List No.* 19/3. Price 4/- each.

TAIL LAMP *List No.* 19/1. Price 5/6 each.



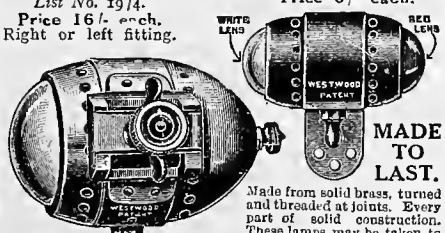


"IDEAL" SIDECAR LAMP.

Similar in construction to 19/4 Lamp, but having 1¾in. diameter lens, and also Ruby Lens in rear. List No. 205. Price **8/6** each. Plated finish.

SIDECAR LAMP. *List No.* 19/2. Price 6/- each.

SIDE LAMP. *List No.* 19/4. Price 16/- each. Right or left fitting.



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Made from solid brass, turned and threaded at joints. Every part of solid construction. These lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on, and are absolutely rustless.

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IGNITION APPLIANCES.

NEW Motor Cycle Magnetos.

500 for Immediate Disposal.—Thomson-Bennett, C.A.V., all degrees, single and twin, leads, and variable ignition, for all machines, £2/12/6, includes postage; Bosch £3, postage extra, 1/6. We forward immediately all magnetos on approval against cash. Money refunded if dissatisfied.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, London, S.W.9. [9809

RELIANCE Magneto Repairing Co. for repairs and new magnetos.—See below.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a written guarantee for 12 months.

RELIANCE test every magneto after repair under all running conditions, and, as we contract for many of the largest concerns, you need have no hesitation in placing your repairs and orders with us.

RELIANCE manufacture and stock spares for Thomson-Bennett, E.I.C., Splitdorf, U.H., Bosch, Dixie, etc.; special line genuine platinum screws for every make, 12/- per pair.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy that we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co., 283, St. John St., E.C.1, for new and second-hand magnetos.—See below.

THOMSON-BENNETT Magnetos, waterproof, variable ignition. These magnetos leave us in perfect condition, and carry our guarantee to either replace or refund cash if found unsatisfactory. Single-cyls., clock or anti, suit any machine, 55/-; 45, 48, 50, 55, 180 deg., for J.A.P., Clyno, Douglas, etc., 55/-.—See below.

C.A.V. Magnetos, brand new, single and twin-cyl., ideal for Douglas, Levis, Calthorpe, O.K., or any lightweight, single or 180° twin, 55/-.

E.I.C. Magnetos, absolutely brand new, not shop-soiled, ready to fit on Triumph, P. and M., B.S.A., Norton, Sunbeam, etc., £4; the above are genuine E.I.C. standard fitting magnetos.

BOSCH D.A.L. Magnetos, soiled only, otherwise as new, 1-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; powerful spark at low speed. All the above magnetos are waterproof, variable ignition, and guaranteed 12 months; postage 1/6.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [1071

P. and M. Magnetos, complete sprocket and chain, ready to go on, guaranteed; £2/7/6.—Below.

MAGNETOS, T.B., clock or anti, for any machine; £2/5.—Below.

500 SPARKING Plugs, new, guaranteed; 2/- each.—Motor Cycle Accessory Co., 868a, Old Kent Rd., S.E. [2349

K.L.G. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 59, Queen St., Wolverhampton. [5031

C.A.V. Magnetos.—180° twin, or single, brand new; 38/6, carriage free.—Langford's, 37, Cricklewood Broadway, N.W.2. [2193

K.L.G. Sparking Plug, perfect condition, 1/- each, 10/6 a dozen.—Apply, Harry Bowser, General Merchant, Driffield, E. Yorks. [1633

350 W.D. K.L.G. Sparking Plugs, detachable mica type, standard thread, to be cleared regardless of cost; 3 for 5/6, 6 for 10/-, post free.—S. Spencer, Potter St., Bishop's Stortford. [1550

BOSCH Magneto Repairs.—We specialise in the repair and overhaul of these magnetos, any type, every repair guaranteed; rapid service.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [2192

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2361

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Euroad, London. [6015

IGNITION APPLIANCES.

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [2284

MAGNETOS, Thomson-Bennett, clock or anti, 42, 45, 50, 55, 180°, and single-cyl. 4-stroke, 50/-, 2-stroke 45/-. Variable ignition, new, waterproof, guaranteed. Write for illustrated particulars.—Below.

BOSCH Magnetos, single-cyl., waterproof: £3.—Super Power Co., 81, North Side, Clapham, S.W.4. [2172

MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [2092

RUNBAKEN Repair Service.—Thorough and efficient repairs to any make of dynamo, starter, or mag. We have the spare parts, plant, and skilled labour turning out guaranteed work only.—Enclose instructions and send by rail to The Runbaken Mageto Co., Ltd., 115, Gt. Portland St., London, W. ('Phone: Mayfair 3586). North of England: Derby St., Cheetham, Manchester ('Phone: City 8266). [0258

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos, Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approved A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [0263

TYRES.

THE Effra Motor Works.

NOT W.D., but clearance.—Goodyear 26×2¼ (large) lovely cushion tyre. Try one on your 2¾ or 4h.p. Douglas; price 27/6; carriage 1/-; on approval against cash.—The Effra Motor Works, 59-63, High St., Clapham. [2339

HERBERT ROBINSON, Ltd., Green St., Cambridge.

SPECIAL Manufacturers' Clearance Lines and W.D. stock, every cover guaranteed and sent on 7 days' approval post free. We will pay return carriage if you are not more than satisfied.

26×2, best make inner tubes; special clearance price, 4/6 each.—Robinson's.

26×2¼, best make, 37/6; Bates special heavy, 45/-; Palmer cord, 36/-; John Bull extra heavy, 39/-; Cuthbe, 42/-; Pedley, 30/-; special bargain in tubes, 4/6.—Robinson's.

26×2⅜, best make, 37/6; John Bull rib stud, 48/6; Moseley extra heavy, 30/11; Clincher extra heavy, 35/-; Bates special heavy, 50/-; tubes, all makes, 7/6.—Robinson's.

26×2½ to fit 2¼, Robinson's rubber-studded, 27/6; Robinson's extra heavy, rubber-studded, 32/6; John Bull special heavy, 48/6; Bates heavy, 50/-; Cuthbe Cycar, 48/-; tubes, 7/6.—Robinson's.

26×2½ John Bull Heavy, 48/6; Bates special heavy, 50/-; Matchless, 20/-; special bargain in tubes, 4/6.—Robinson's.

28×2½, best make, extra heavy, for American rims, listed 82/6; our price 55/-; tubes, 7/6.—Robinson's.

28×3, best make, extra heavy, for American rims, 52/-; tubes, 7/6.—Robinson's.

28×3 Cuthbe Cycar, 63/-; Avon heavy, 3-ribbed, 50/-; tubes, 7/11.—Robinson's.

29×3½ Bates Extra Heavy, list price 90/-; special clearance line, our price 55/-.—Robinson's.

650×65 Cuthbe Cycar, 56/-; Avon 3-rib extra heavy, 50/-; rubber-studded, 45/-.—Robinson's.

700×80 Avon Extra Heavy 3-ribbed, 50/-; Cuthbe Cycar, 70/-; special bargain tubes, 4/6.—Herbert Robinson, Ltd., Green St., Cambridge. [2260

MOTOR Cycle Tyres on Easy Terms, standard makes; list post free.—J. G. Graves, Ltd., Sheffield. [0589

THE Difference between a good retread and a bad one is its mileage; try us; watch results.—Melton Rubber Works, Melton Mowbray. [0636

SCOTTISH Readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 47, Carrick St., Glasgow. Lists post free. [1654

THE MOTOR CYCLE

Insurance Policy

Testimony

THIS space will be occupied each week with copies of letters from Policy holders who have made claims. Original letters may be inspected.

Dear Sirs,

I have to-day received your cheque for ——— in settlement of Account for repair to my car. Please accept my best thanks for your prompt and courteous handling of the matter.

Yours faithfully.

The only Safe Test of Insurance is Claims. We settle Claims promptly.

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Telephone: City 9831 and 9832.

TYRES.

MISS DOOLEY.—New heavy Dunlop, 28×2½, 35 each.—Below.

MISS DOOLEY.—New Kempsball, 28×3, 30/- eac —Below.

MISS DOOLEY.—New Macintosh, 28×3, 25/- eac —Below.

MISS DOOLEY.—New Spencer Moulton, 26×2 25/- each.—Below.

MISS DOOLEY.—New 26×2¼ tyres, various make 25/- each.—Below.

MISS DOOLEY.—New 26×3×2½ new Dunlop heavy, at £2.—Below.

MISS DOOLEY.—New 28×3 Palmer endless or Du lop butt-ended tubes at 5/- each.—Below.

MISS DOOLEY.—New 820×136 (oversize for 820 120) Dunlop and other make car tyres, £4 each; also 820×120 at £4/5 each; tubes for same 1 each, new.—Below.

MISS DOOLEY.—920×120 new Michelin, steel st and plain, £5 each; not W.D. or blemished Below.

MISS DOOLEY.—920×120 new U.S. chain and Fi rubber-studded, £5/10 each.—Below.

MISS DOOLEY.—915×105 Fisk at £4/10 each Below.

MISS DOOLEY.—875×105 U.S. chain and Fi £4/10.—Below.

MISS DOOLEY.—30×3 steel-studded, £3 eac plain 50/-.—Below.

MISS DOOLEY.—820×135 Dunlop and Goody tubes, 12/- each.—Below.

MISS DOOLEY.—36×5 to fit 920×120 Dunlop a Goodrich tubes, 12/- each.—Below.

MISS DOOLEY.—The above car tyres are all n not W.D., and not perished; cheapest on market.—Please apply to Miss E. Dooley, 33, Kill Rd., Clapham, S.W.8. [1

6/6 is the cost of repairing your damaged t returned carriage paid.—Below.

DON'T Buy a new tyre; send your old one to retreaded with rubber studs.—Below.

LIGHT 12/6, medium 15/6, heavy 17/6, ex heavy 20/-.—Below.

NO Extras are charged for small repairs on retread prices: 28×3 and 700×80 covers retreaded, heavy, 25/- extra heavy.—Below.

PHŒNIX Tyre Repairing Co., 224, Sherlock Birmingham. [X9

BASTONE'S for Covers and Tubes; no better cheaper house.—See displayed adverts. [2

H. EMANUEL and Co.'s for tyre and tube barga Surplus Government stock, and clearance manu turers' stock.

24×2 Wood-Milne special 28/-, Hutchinson rub studded 22/6.

24×2¼ Clincher De Luxe heavy; 25/-.

26×2¼ Dunlop heavy 36/6, Macintosh chain 3 Avon Sunstone 37/6, Clincher De Luxe e heavy 35/-, Rom combination 42/-, Avon combina 38/9, Beldam combination 35/-. Palmer heavy cord 3 Palmer cord 32/6, Skew rubber non-skids 29/6.

26×2⅜ Palmer Heavy Cord 37/-, Palmer cord 3 Dunlop heavy 37/-, Clincher de Luxe e heavy 34/6, Wood-Milne extra strong 35/-.

26×2½×2¼ Hutchinson Rubber-studded 33/-, W Milne special 33/-.

26×2½ Rom Combination 45/-, Macintosh c 36/-, Hutchinson rubber-studded 36/-, Skew b ribbed 37/6, Dunlop heavy 45/-.

650×65 Heavy Rubber Non-skid 26/6, W Milne extra strong 43/6, *Michelin - s studded 52/6, Burnett grooved 41/9, Dunlop s studded 55/-.

700×80 (to fit 650×65 rims) Wood-Milne Sp 50/-, Wood-Milne extra strong 55/-, *Do steel-studded 70/-.

28×3 (to fit American rims) Skew Rubber Non- Dunlop extra heavy 4-ply 50/-, Dunlop heavy Clincher de Luxe extra heavy 45/-, Wood-Milne strong 4-ply 35/- (wrapped), Wood-Milne special 29/3 (wrapped).

28×3 (to fit 2½ rims) Dunlop extra heavy Dunlop heavy.

28×2½ Hutchinson Heavy Rubber-studded Hutchinson heavy ribbed 29/6.

NEW Tubes in all sizes 7/- each. Also clear tubes, with one small vulcanised patch by m facturers, otherwise quite new, 5/6.

THE Above Lines are sent 7 days on approval, forward passenger train, carriage paid.

REMEMBER, the reputation and guarantee of Emanuel's is behind all we sell.

H. EMANUEL and Co., Tyre Factors, 27, T grade Rd., Stoke Newington, N.16. Stores: Bolle Pond Rd., Dalston, London, N. Tel.: Dal 3161. [55

TYRES.

FEW Real Bargains for Scottish Readers, surplus Government, etc., covers and tubes. Write for t.—McArthur-Hill, 47, Carrick St., Glasgow. [1653

TRY Us for 3,000 mile retreads. Burst tyres made perfect; tube repairs 24 hours, carriage paid.—uxton Vulcanising Co., Buxton, Derbyshire. [8182

TYRE Bargains.—Rom 700×80, 7/6; Dunlop 700× 80, 7/6; Kempshall 26×2½, 5/-; Palmer 26×3, 6; skew, 26×3, 5/-.—Llanage, 79, Waverley Rd., dland, Bristol. [1808

ECONOMIC Tyre Co.—Special offer of Wood-Milne Keygrip covers, new and in perfect condition, at % off list prices; all goods carriage paid on approval ainst remittance.

ECONOMIC.—Wood-Milne 26×2 heavy, 25/-; extra heavy, 30/-; 26×2¼ heavy, 26/10; extra heavy, /-.

ECONOMIC.—Wood-Milne 26×2½ heavy, 31/10; extra heavy, 36/-; 28×2½ (American), extra avy, 40/4.

ECONOMIC.—Wood-Milne 650×65 heavy, 32/-; 700 ×80 heavy, 43/6; extra heavy, 46/6.

ECONOMIC.—The following are W.D. clearance, new, and in perfect condition.

ECONOMIC.—26×2¼ Bates special heavy, 33/-; Clincher de Luxe, extra heavy, 33/9.

ECONOMIC.—26×2⅜ Bates special heavy No. 1, 34/6; No. 2, 36/6; Clincher de Luxe heavy, 30/-; itchinson passenger, 32/6; Tourist Trophy, 30/-; oversize for 2¼ rims.

ECONOMIC.—26×2½×2¼ Clincher de Luxe heavy, 35/-; listed £2/17/6.

ECONOMIC 24×2¼ (oversize 2in. rims), Clincher de Luxe heavy, 27/6; listed 45/-.

ECONOMIC.—Fully guaranteed Dunlop rubber stud, 24×2, 26/3; 24×2¼, 29/-; 26×2, 28/9; 26×2¼, /-.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [9228

BURST Motor Cycle Tyres, chafed beads, remoulded, made perfect, tube vulcanising, butt-ends fitted. reading; send for list.—Melton Mowbray Rubber orks, Melton Mowbray. [0347

EALE and Co.—Special offer of Wood-Milne covers, new and condition perfect, at prices approximately 50% under list; all goods carriage paid against ittance; money refunded if not satisfied.

EALE and Co.—26×2¼ 26/6, extra heavy 32/6; 26 ×2⅜, extra heavy 33/-; 26×3 (to fit 650×65), /-, extra heavy 45/-, 650×65 32/6, 26×3 34/-, extra vy 42/-, 26×2½ 34/-, extra heavy 36/-.

EALE and Co.—Hutchinson T.T. 26×2¾, 35/-; passenger, 36/-; Clincher de luxe, extra heavy, 34/-, mer 26×2¼ and 2⅜, 35/-; Avon rubber studded ×2¼×2⅜, 32/6; Dunlop heavy rubber studded 26× ×2⅜, 37/6.—126, High St., Croydon. 'Phone: 1882 [8380

YRE Repair Specialists.—H.F. process throughout including retreading burst covers. Every kind of air to tyres and tubes in 24 hours, retreads in 4 s.—The Motor Tyre Co., 66, High St., West Bromh. [6068

CENTRAL Garage.—If you buy tyres and belts elsewhere you are not buying at the right prices. ore ordering be sure and look up our displayed ert. on page xli. With every order for covers we a portable vulcaniser free, or vulcaniser can be chased separately for 5/6.

CENTRAL Garage.—Brand new Palmer covers, 26× 2¼, for 2in. and 2¼in. rims, 32/6, a good hefty . To every purchaser of a cover a tube to fit will sent free. Only a limited number. Order quickly. 2, London Rd., Thornton Heath, S.E. [1377

HOMERTON Bargains.—New Avon or Michelin steel-studded covers, W.D., 700×65 35/- each; new ham clearance covers, all sizes, 30/- each (except 3 and 650×65, 40/- each, 700×80 50/- each).—merton Rubber Works, Brooksby's Walk, Homerton. [0331

26×2½ New Beaded Covers, 24/-; new best quality tubes, 24×2¼, 5/-; 26×2, 6/-; 26×2¼, 6/6; 2½, 7/6; 26×2½×2¼, 8/-; 26×3, 9/-; 700×80, 750×75, 10/-; 28×3, 10/6; new rubber belts, 2in.×1in., 10/6; 15in. inflators, 2/3; sent approcarriage paid required remittance.—Palmer's Gar- Tooting, S.W. [2095

NEW 28×3 Rom Combination, £2/10; 28×3 Kempshall, 30/-; 26×3 Dunlop combination, £2/10; rubber ditto, £2/5; 24×2 Wood-Milne, 21/-; 26× Dunlop, 35/-; Palmer, 35/-; Clincher, 32/6; Avon, ; 26×2½ Avon Sunstone, 37/6; 700×80 Woodie and Clincher, 50/-.—Murray's, 37a, Charles St., ton Garden, Holborn. [X9689

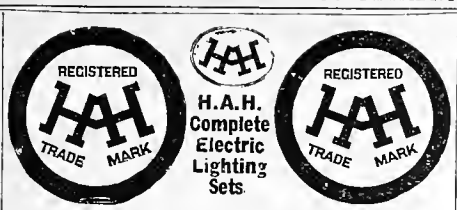
TANKS.

TANKS for B.S.A., new, 45/6; 1911, 1921.—Coventry Tankers, Ltd., Spon End, Coventry. [X8993

TANK for Triumph, new, 45/-; 1911, 1921.—Coventry Tankers, Ltd., Spon End, Coventry. [X8992

B.F. Co., Melbourne Rd., Coventry. 'Phone No. 1965. Petrol tanks of any description made and ired; trade enquiries solicited; work guaranteed. [X9730

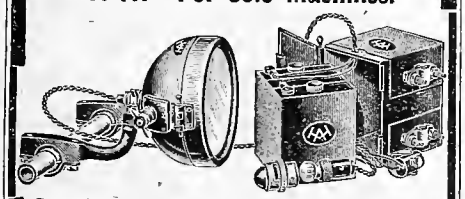
TANKS Re-enamelled to Pattern. High-class work only.—D. Jenkins and Sons, 6, Richard St., At on St Deansgate Manchester Established 25 s [3601



MANUFACTURERS OF ACCESSORIES. PATENTS. SPECIALITIES.

POWERFUL LONG RANGE LAMPS.

Set A1—For Solo Machines.

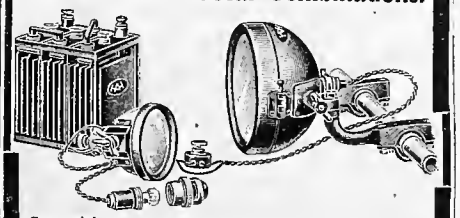


Comprising:

Fig 875. 6¾in. Head Lamp, Nickel with patent adjustable brackets		60/-
,, 576. Rear Lamp (bayonet)		4/9
,, 1150. H.H. Ebonite 6 volt Accumulator		51/6
,, 378. Specially strong metal case		10/6
,, 428. 1-way screw type Switch		2/-
Price of Set		127/6

Bayonet Bulbs up to 1 amp., 2/6 each extra.
Flat Twin Cab Tyre Cable, per yard, 1/6 extra.

Set B1—For Sidecar Combinations.

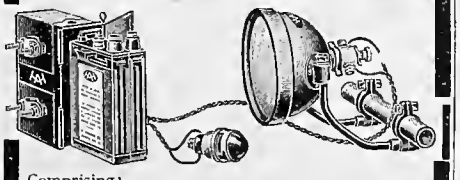


Comprising.

Fig. 895, Head Lamp, Nickel		60/-
,, 886, Side Lamp (bayonet)		20/-
,, 576, Rear Lamp ,,		4/9
,, 1182, 6v. 40 amp. Accumulator		48/-
,, 429, 1 way screw type Switch		2/6
Price of Set		135/-

Bayonet Bulbs up to 1 amp., 2/6 each extra.
Flat Twin Cab Tyre Cable, per yard, 1/6 extra.

Set C1—For Medium Solo Machines.



Comprising:

Fig. 881, 5½" Head Lamp, Nickel		36/-
,, 574, Rear Lamp		5/9
,, 1160, 4v. 20 amp. Accumulator		24/6
,, 377, Strengthened Metal Case		9/6
Price of Set		75/-

Bayonet Bulbs for set C1, 3/- extra.
Twin Cab Tyre Cable, per yard, 1/6 extra.

Postage extra on the above.

A. H. HUNT, LTD.,
H.A.H. WORKS,
Tunstall Road, CROYDON, Eng.

Telephones: Croydon 2225, 2226.
Telegrams: "Keyage, Croydon."

TANKS.

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied, extra capacity.—Hearsall Works, Coventry. [7464

TANKS.—Any pattern made, repaired, re-enamelled, and returned in double quick time; first-class workmanship; trade enquiries invited.—G. Day, 27, St. Luke's Rd., Birmingham. [9644

DOUGLAS 4h.p. Tanks, 1918-21 pattern, brand new, unsoiled, complete with filler cap, unions, and enamelled makers' colours and designs; £3/10.—Park Motors, 1a, Paradise Rd., Green Lanes, Highbury, N.5. [1785

BLUEBIRD Components.—Tanks made to order, complete with filler caps and taps, 32/6; stove enamelling, 10/- and 17/6; top tube tool boxes, enamelled any colour, no screwing required, fit any frame, 12/6.

AUXILIARY Oil Tanks.—The cure for leaky tanks. Fit on saddle tube. Any colour, 12/6. 6in. domed mudguards, steel, beautifully enamelled, 19/6, front or back.

LISTS and Measurement Forms free on application.—H. S. Bowman, 122, Everton Rd., Liverpool. [1805

TANKS Repaired, re-enamelled; partition leakage, drip feeds, burnt and smashed tanks rebuilt, etc.; re-enamelling, makers' colours, designs and transfers guaranteed; prompt return.—Park Works, 1a, Paradise Rd., Green Lanes, Highbury, London, N.5. [1759

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. —Send postage for illustrated price list to A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

BELTS.

MISS DOOLEY.—A large quantity of ¾in. belting (rubber), in 6ft. 6in. lengths, at 6/- per length, 1/- post; also some new lengths of ¾in., 1/6 per foot.—Please apply, Miss E. Dooley, 33, Killyon Rd., Clapham, S.W.8. [1803

BALATA-CHROME Combination V Belts, suitable for variable pulleys and wet weather conditions; 500 more belts offered for trial on the following terms: ⅞in. 1/6, 1in. 1/9, 1⅛in. 2/- per foot, plus 1/- postage; fasteners 9d. each.—Pollin and Son, Hollington, St. Leonard's-on-Sea. [8564

CARBIDE.

CARBIDE, highest quality, 29/6 cwt., 9/6 28 lbs., 5/- 14 lbs., carriage forward; drums free.—Kemp's Garage, Importers, Louth, Lincs. [X9679

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 30/-, ½-cwt. 18/-, 28 lb. 10/6; drums free.—Young, Importer, Misterton, Somerset. [7180

CARBIDE, guaranteed maximum gas yield, British Acetylene Association standard, 25/- cwt., drums free, all meshes; stocks at 22 depots; immediate delivery.—Elloc Cycle Works, Importers, Gedney Drove End, Wisbech. [4651

CARBIDE, 25/6 cwt., drum free, cash with order, free on rail Aberdeen, Bristol, Cardiff, Edinburgh, Glasgow, Gloucester, Grimsby, Hull, Leeds, London, Lowestoft, Newcastle, Preston, Manchester, Port Talbot, Runcorn, Sharpness, Swansea, Yarmouth.—E. C. Maddock, Wareham, Dorset. [1668

CARBIDE.—Immediate delivery of all sizes in 1 lb., 2 lb., and 6 lb. lever lid tins and 2 cwt. drums, labelled or plain for retailers' own labels, quality guaranteed, and all standard sizes supplied by the cheapest firm in the trade.—The Premier Lamp and Engineering Co., Ltd., Moorfield Works, Armley, Leeds. [5312

SITUATIONS VACANT.

WANTED, expert magneto repairer; must be first-class man with sound experience. Good fixed salary and profit participating. Permanent position.—Northern Motor Exchange, Ltd., Marion St., Sunderland. [1728

MOTOR Cycle Manufacturers require road travellers for Scotland, North of England, Midlands, and London; must have extensive connection amongst agents, and be efficient salesmen; excellent opportunity for capable men. Fullest details, age, commencing salary required, etc., must be stated.—Box 6,545, c/o *The Motor Cycle.* [1665

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [9057

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [1049

FLETCHER WILSON, of Coventry, Chartered Patent Agent and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

GENERAL TRADE.

TRADERS Send for list of surplus stock; low prices to clear, or exchange.—Service Co., 289, High Holborn, London, W.C. [9544

MOTOR and Cycle Traders Only.—Trade guide and catalogue, 1,000 selling line, at right trade prices; postage 6d.—Perseus Co., Burton-on-Trent. [1917

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations: Falcon Lane (L. and N.W.R.), Wimbledon (L. and S.W.R. and G.W.R.).—Sole address: Palmer's Garage, Tooting, London. [2098

CONSULTING ENGINEERS.

EXPERT on Works Efficiency, production, costs, development of inventions and experimental work. —W. H. Sumner, A.M.I.Mech.E., M.I.A.E., 28 and 30, Victoria St., Westminster, S.W.1 'Phone: Victoria 7573 and 1702. [9301

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HOUSE and Estate Agency, Auctioneering, etc.—Train by post for this paying profession. Start a business of your own. Prospectus free.—Agricultural Correspondence College (Dept. T.), Ripon. [0389

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ESTABLISHED Motor Company, Newcastle-upon-Tyne, wishes sole agency for anything in motor line.—Box 6,516, c/o *The Motor Cycle.* [1601

THE Mohawk Cycle Co., Ltd., require sole agents for their celebrated motor cycles in districts where they are not already represented.—Write for lists and terms to Mohawk Cycle Co., Ltd., Alexandra Rd., Hornsey, N.8. [2505

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

CYCLE and Motor Cycle Business for disposal, old established, main road. Manchester district; £450; stock at valuation.—Box 6,561, c/o *The Motor Cycle.* [1804

MOTOR Cycle and Light Car Business for sale; offices, workshops, garage, goodwill, etc.; must sell; no reasonable offer refused; S.W. London.—Box 6,563, c/o *The Motor Cycle.* [1846

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MOTOR Cycle Manufacturers, exceptional connection and prospects, desire active salaried partner investing £1,000 upwards.—Box 6,432, c/o *The Motor Cycle.* [9771

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FOR immediate Cover ring up Hop 210. [2258

ROYS, Ltd., effect insurances of all kinds. Enquiries invited.—170, Gt. Portland St., London. [0055

£5/15 Covers "All Risks" for Morgans or similar three-wheeler.—Ernest Bass, 40, Chancery Lane, W.C.2. [0005

CLIFFORD WILSON can place your insurance with any company at lower rates than obtainable elsewhere.—177, Westminster Bridge Rd., S.E.1. [2257

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application. The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

STOLEN.

£20 Reward.—Stolen, on the evening of the 30th of August, from the Boat House, Aylestone, Leicester, a Premier motor cycle, BO2115, engine No. 8231TT, frame No. 10625, kick start, 3½h.p., black enamelled galvanised tank with red panel "Premier" thereon, Dunlop tyres, Bosch mag., Senspray carburetter, with Lucas King of the Road front and rear lamps.

THE above reward will be paid by Powell and Son, Burton Buildings, Parliament St., Nottingham, to the first person giving such information as will lead to the arrest and conviction of the thief and recovery of the property, or pro rata to the value recovered. [1659

HOTELS AND APARTMENTS.

YOUR Maiden Aunt will be charmed with the Old Barn Teahouse, Stock's Green, Hildenborough, beyond Sevenoaks. [4442

WANTED.

ALBION 2-speed, plain or clutch.—23, Winchester St. N., Taunton. [1608

WANTED, A.B.C. sidecar.—Particulars, Bell, Smithy St., South Shields. [1530

WANTED, small 4-cyl. magneto.—Smith, 1, Pewsey Rd., Marlborough, Wilts. [1499

INDIAN Frame, for electric Powerplus, 1916 model.—Lemar, 2, Dover St., Canterbury. [1561

WANTED, good Morgan, T.B., Triumph, or Douglas. 24, Balliol Rd., North Kensington. [1977

H. F. EDWARDS & CO.,

50, Harrington Rd., SOUTH KENSINGTON

Phone: Ken. 3709.

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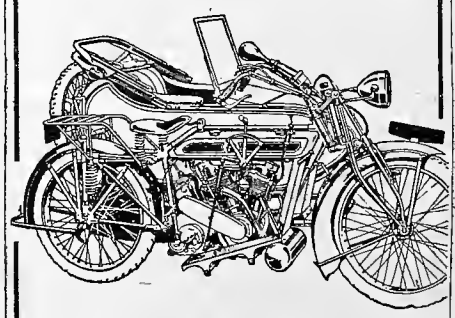

1921 MATCHLESS Comb. .. £160

1921 2-seater MATCHLESS Comb. £165

1921 MATCHLESS Sports Comb. £150
Magdyno extra if wanted. These show a saving of £40 or more under list price, and the machines are only very slightly shop-soiled.

1921 4 h.p. Sports HARLEY-DAVIDSON, speedometer, lamps, etc., brand new £112
£53 under List price.

1921 2¾ h.p. COULSON-JAP. 2-speed Sturmey. List price £95; our price, brand new £68

1921 2¾ h.p. COULSON-BLACKBURNE 2-speed, clutch, k.s., brand new, reduced price.. .. .. £75

1921 & 1920 Used Bargains.

1921 Big 4 NORTON, licensed, spares, indistinguishable from new..87 Gns.

1921 TRIUMPH, all chain, fully equipped, as new £108

1920 2¾ h.p. FRANCIS-BARNETT, 2-speed, kick-start, fully equipped, perfect condition .. ..60 Gns.

1920 2¾ h.p. NEW IMPERIAL, excellent order, fully equipped.. £48

1915 T.T. 7 h.p. INDIAN, speedometer, Tan-Sad, perfect .. ..39 Gns.

1921 4 h.p. WILKIN-BLACKBURNE, 3-speed, electric lights, as new, new July £78

DEFERRED PAYMENTS AND EXCHANGES.

WANTED— SOLOS & COMBS.

WANTED.

N.S.U. Gear, fit Triumph, condition immaterial; cheap.—250, New John St., W. Birmingham. [1540

MORGAN Wanted; must be cheap; cash waiting.—M. R., 58, Malvern Rd., Dalston, London. [2266

SIDECAR for 4h.p. Harley-Davidson; state price, full particulars.—Pitman, Chemist, Bristol. [2044

TRIUMPH Countershaft Spares, good prices paid, new or second-hand.—33, Hackford Rd., Brixton. [2322

WANTED, back hub with sprocket for 1915 American X. motor cycle.—2, Royal Military Av., Shorncliffe. [1671

3½h.p. Minerva Cylinder, recently reground, and piston preferred.—Wright, Hollyhouse, Langmere, Norfolk. [1675

FRAME, new or second-hand, for 1915 clutch model Indian. — 93, Culverley Rd., Catford, S.E.6. [1888

WANTED, cylinder and piston for 1916 T.T. Rover; state condition.—Mackenzie, Cadrae St., Bridgend, Glam. [1583

WANTED, 4-cyl. taxicab, sound, perfect order; exchange 5-6h.p. 3-speed motor cycle.—Box 13, *The Motor Cycle.* [X9717

N.S.U. Gears, any parts, Grades, Phillipson, Bramptons, hubs, countershafts.—Box 6,574, c/o *The Motor Cycle.* [2222

WANTED, Sturmey-Archer gear box, complete with clutch and kick start, cheap.—244, Mitcham Rd., Croydon. [2086

NORTON Frame for 16H Model, also back wheel, full details and price.—Anderson, Brackenboro', Bramhall, Cheshire. [1602

PHILIPSON Pulley, good condition, fit Triumph.—Particulars to G. Straker, 194, Bishopsgate, E.C.2. [1652

WANTED, 3½h.p. Triumph engine, magneto, silencer, good condition, not earlier 1911.—Chalmers, 65, Brandon, Hamilton. [1736

WANTED, sporting sidecar for army Indian with left kick start.—B. Morton, Edgeworth, Hawley Lane, Hale, Cheshire. [1992

WANTED, 1918 Triumph, complete less engine and gear box, condition immaterial if sound.—Beal, Durrington, Wilts. [1747

WANTED, Amac carburetter; exchange B. and B pilot, 1920 model, 1⅛ inlet.—Letters, Engineer University College, Nottingham. [1516

E.I.C. Contact Breakers, other parts (single-cyl.).—Montagnes Motor Mart, 85, London Rd., Manchester. 'Phone 7745 Central. [1761

WANTED, second-hand Morgans, in good condition not earlier 1919.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [124

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [067

PHILIPSON Pulley, Triumph, Villiers clutch wheel Sturmey 3-speed wheel complete, Amac 2-lever.—Brown, Laurels, Stansted, Essex. [150

WANTED, 2 or 3-speed wheel, suit 2½h.p. light weight. Reply, giving diameter wheel, rim, width stays. Cheap.—81, Lion Rd., Bexley Heath. [168

WANTED, w.c. and a.c. single and twin engines gear boxes, spring forks, etc.; cheap. 'Phone 1958 Brixton.—19, Wilcox Rd., London, S.W.8. [448

WANTED, airman's leather coat, cheap and good condition; wanted also 45° Bosch enclosed magneto.—17, Wilcox Rd., South Lambeth, London, S.W.8. [182

W. T. DUNN, Ltd., 326, Euston Rd., N.W.1, require unlimited quantity modern solos, combinations, Morgans, light cars, etc.; top prices paid cash on sight.—'Phone: Museum 5391, write, or call. [033

MORGAN Wanted, Grand Prix or sporting, with cash, for A.V. Monocar, 8h.p., hardly used and new, dynamo lighting set.—Haven, Portsmouth Rd., Esher, Surrey. [226

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares; purchased outright. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 109 Royal. [535

QUANTITIES of Motor Cycle Accessories urgently required, spares, etc. Bankrupt stocks purchased to any amount.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, London, S.W.9. [980

WANTED, in good running order, 2-3h.p. second hand engine, complete with magneto and carburetter.—State make and all particulars, with price, placed f.o.r., to Victory Piano Player Works, Steyning, Sussex. [16

EXCHANGE.

METRO-TYLER, 1921, Baby Triumph, or other lightweight.—Beaghen, Lyghe, Tonbridge. [15

4¼h.p. B.S.A. for Indian, Harley, Scott; cash adjustment.—Bolton, Stover, Newton Abbott. [19

B.S.A. Combination, 1916 Sun-Vitesse, for Dale Villiers.—43, Bushey Grove Rd., Watford. [21

EXCHANGE.

7-9h.p. I.O.M. Rudge Multi Solo; exchange lower power.—20, Latchett Rd., Woodford, Essex. [9821

EXCHANGE Magneto Motor Cycle for Scooter and little cash.—Box 12, c/o *The Motor Cycle*. X9716

INDIAN Powerplus Combination; exchange with cash for Morgan.—26, Lower Park Rd., Peckham. [1878

EXCHANGE 1919 3½h.p. Sunbeam for Ford touring car.—Brewster, Sparhawk St., Bury St. Edmund's. [1495

NEW Stewart Speedometer, or Tan-Sad, for kit bag or suit case.—Dougall, 29, Argyle St., Rothesay. [1488

4h.p. Humber Combination, tax paid, for lightweight and cash.—Stevens, 142, Cornwall Rd., Brixton [1876

1920 2¾h.p. 3-speed Douglas for A.B.C., in good condition.—214, Whitehead Lane, South Norwood. [1813

SPECIAL Sporting 2-seater L.M. Runabout; 1921 Sports Sunbeam, Norton.—37, Eldon Rd., Blackburn. [X9736

EDMUND-LEVIS Spring Frame Lightweight, for good combination.—P., 602, King's Rd., Fulham, S.W.6. [2047

3½h.p. Rudge Multi, 1921, brand new, for lightweight and cash, or cell.—9, Riversley Rd., Nuneaton, Warwickshire. [9607

MOTO-REVE Twin for cycle and cash, or reasonable offer.—Hipkins, 4, Farrance Rd., Chadwell Heath. [2158

VINDEC 2-speed 2-stroke, for C.A.V. electric lighting set and cash.—40, Replingham Rd., Southfields, S.W.18. [1946

MORGAN, a.c., 1915, Binks, fully equipped, for combination; or sell first reasonable offer.—26, York Rd., Woking. [1863

4h.p. Singer, 1914, perfect condition; exchange for 4-cyl. F.N., or 5-6h.p. Rex.—7, Knighton Park, Sydenham, S.E.26. [1679

2¾h.p. Calthorpe-Jap, 1915, 2-speed, lamps, taxed; level for 3½h.p. or 2-stroke.—19, Cholmeley Park, Highgate. [1607

A.C. Tradesman's Carrier, good running order, tax paid; any trial; exchange for M.C., or sell £40.—88, Park Rd., Dulwich. [1479

DOUGLAS 1921 4h.p. Combination, new, unregistered, for solo or combination and cash.—52, Sidbury, Worcester. [2120

1920 8h.p. Countershaft Zenith Combination, excellent condition; £145; exchange G.N.—17, Garden Av., Mitcham. [2244

BEARDMORE-PRECISION, Aug., 1921, as new, for 4h.p. combination, cash adjustment.—Kelham, Nassington, Peterborough. [2124

15-9h.p. Renault 4-seater Touring Car for any make of combination, or sell.—Askins, 24, Upper East Smithfield, Tower Bridge. [1532

EXCHANGE 1920 3½h.p. Ariel, 3-speed, quite faultless, for lighter 1920-21 and cash.—Box 6,569, c/o *The Motor Cycle*. [2184

EXCHANGE practically new Douglas combination (No. 11529) for solo and cash; sell £105.—22, Buller Rd., Thornton Heath. [2081

PREMIER 3¾h.p. o.h.v. Twin, 2-speed, clutch, for cheaper 2¾h.p. Douglas and cash; sell £45.—150, Garratt Lane, Wandsworth. [1909

1918-19 Harley-Davidson and sidecar, electric model, very fast, for good solo and cash adjustment.—36, Lavenham Rd., Southfields. [2248

DOUGLAS, complete, sidecar chassis, renovated, as new, for anything motorish.—17, Wilcox Rd., South Lambeth, London, S.W.8. [8770

1920 P. and M. Combination, in excellent condition, for light car or cycle car, or sell £95.—J. Tooth, King's Head, Bessels Green, Sevenoaks. [1501

1921 5h.p. Sports Zenith, Milford sidecar and Easting, practically new, fast, exchange for Morgan; sell £140.—21, Minto St., Edinburgh. [X9722

4h.p. Countershaft Triumph Combination, 1916, for water-cooled Morgan, with cash adjustment or sell; after 6 p.m.—2, Beulah Rd., Wimbledon. [2315

EXCHANGE for combination, or sell £65, 3½h.p. P. and M., excellent condition, lamps, tools, and spares.—Craven, Laythorne, near Gisburn. [1572

1918 3½h.p. Sunbeam Combination, in splendid condition, like new, for 6h.p. Enfield combination, or sell £95.—G. Webb, 93, Cobbold Rd., E.11. [1709

EXCHANGE Rover 8h.p., brand new, for combination and cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9972

1-TON Karrier Lorry, in perfect order, for motor cycle and cash, or furniture.—Apply, E. Giddens, Illesthorpe, near Lutterworth, Leicestershire. [X9690

EXCHANGE 1919 5-6h.p. Rudge Multi Combination, perfect, for modern countershaft Triumph or Norton.—Harrison, 68, Tremellen St., Accrington. [1757

MATCHLESS-M.A.G. Combination, 3-speed, for lower power solo, cash adjustment, or sell £80. 234, Belsize Rd., N.W. 'Phone: Hampstead 6800. [2147

BASTONES

No Better or Cheaper House.

COVERS.

New Clearance and ex-W.D. Stock. Approval against remittance.

SPECIAL LINE

Goodrich Safety Tread Covers. Extra Heavy.

	List Price.	Our Price.
26 × 2¼	£3 0 6	£1 10 0
26 × 2½ to fit 26 × 2¼	£3 11 0	£1 18 0
26 × 2½	£3 9 0	£1 17 0
650 × 65	£3 7 0	£2 0 0
26 × 3 to fit 650 × 65	£4 0 0	£2 12 0
28 × 3	£5 0 0	£2 11 6

26 × 1¾	British Made	15/-
24 × 2	Hutchinson Rubber-studded	22/6
24 × 2¼	Clincher Heavy	30/-
26 × 2¼	Hutchinson Brooklands	23/-
,,	Hutchinson Tourist Trophy	27/9
,,	Goodyear	27/6
,,	Rom Rubber Non-skid, Heavy	32/-
,,	Rom Combination	42/-
,,	Macintosh Chain Pattern, Heavy	32/6
,,	Avon Sunstone	33/-
,,	Wood-Milne 3-ply	26/9
,,	Wood-Milne, Extra Heavy	32/6
26 × 2⅜	Clincher de Luxe, Heavy	31/-
,,	Clincher de Luxe, Extra Heavy	34/-
,,	Hutchinson T.T. Rubber-studded	30/-
,,	Hutchinson Passenger Rub.-stud.	35/-
26 × 2½ for 26 × 2¼ rim	Hutchinson T.T. Rubber-studded	33/-
	Clincher de Luxe, Heavy	34/-
26 × 2½ for 26 × 2¼ rim	Michelin Fine-ribbed	21/-
	Hutchinson T.T. Rubber-studded	30/-
	Hutchinson Passenger Rub.-stud.	32/-
	Macintosh Chain Pattern	36/-
	Englebert Raised-rib (wired edge)	25/-
	Englebert Rub.-stud. (wired edge)	30/-
,,	Hutchinson 3-ribbed	45/-
28 × 3	Hutchinson 3-ribbed	45/-
,,	Englebert, Hy. Racing Rub. Bars	47/-
,,	Wood-Milne Extra Heavy	30/-
,,	Dunlop Extra Heavy	50/-
700 × 80 fit 650 × 65 rim	Wood-Milne Extra Heavy	45/-
	Hutchinson 3-ribbed	50/-

TUBES.

26 × 2¼	Hutchinson	6/6
26 × 2½	Michelin	6/6
26 × 2½ × 2¼	Goodrich	7/9
26 × 3	Goodrich	7/9
700 × 80	Goodrich	7/9
28 × 3	Goodrich	7/9
,,	Goodyear Butted	8/9

The above are sent **carriage paid.**

BELTS.

New John Bull (Deep Drive).

⅜in.	½in.	⅝in.	¾in.
2/5	2/10	3/5	4/- per foot.

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We have a large stock of complete Sidecars and Bodies. All at low prices. Inspection invited.

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Bowden Front Brakes	each	13/4
Bowden Magneto Controls, complete	,,	15/-

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Telephone—2481 North.
Telegrams—"Bastones, London."

EXCHANGE.

MATCHLESS Combination, M.A.G., 3-speed, K.S., equipped, registered, perfect; exchange Morgan or fast solo; sell £85.—12, Canonbury Place, N.1. [1773

EXCHANGE smart A.C. Sociable, wheel steering, hood, wind screen, perfect order, tax paid, for combination, or offers.—Box 14, c/o *The Motor Cycle*. [X9718

T.T. Triumph 3½h.p., clutch, lamps, Klaxon, Tan-Sad, engine perfect, for 2-stroke or Douglas; sell £38.—Jones, 30, Wigan Rd., Atherton, near Manchester. [1593

HOBART Combination, 4-5h.p. twin., 3-speed, kick start, clutch, fast, powerful; £58; take lightweight part.—57, Kenbury St., Camberwell, London. [1968

1916-17 6h.p. Clyno Combination, lamps and horn; exchange for countershaft Triumph solo or combination.—2, Fortune Gate Rd., Harlesden, N.W. [2308

LATE Sporting Triumph Combination, all on, £75; also sporting Scott combination, £65; offers; exchange light 2-seater.—Iron Bridge, Newport Pagnell, Bucks. [X9695

4h.p. Abingdon, 1914, countershaft, chain and belt, handle-bar clutch, weight 199 lbs., for 2-stroke or Auto-Wheel and cash.—33, Snell's Park, Edmonton, London. [2316

DRUMMOND 3½in. Screw-cutting Lathe, £10 worth extra chucks, tools, new condition, for best motor cycle offered.—Smith, 24, Monson Rd., Willesden, N.W.10. [1974

SPECIAL Racing I.O.M. Rudge Multi, enamelled red, very posh, over 60 m.p.h.; trial; exchanges, A.B.C. or sports combination.—Fairview, Thorkhills Rd., Thames Ditton, Surrey. [1918

SCOTT, engine 1268, plating, enamel like new; exchange Zenith, Rudge; sell £55. Also light 4-point C.B. sidecar, Cameo, £12.—N.S.R., 12, Fairfield St., Lincoln. [1914

EXCHANGE 1920 4h.p. Harley, electric lamps, Klaxon, speedometer, as new, for late solo or combination, cash either way.—30, Crystal Palace Park Rd., Sydenham. [1972

MORGAN, 1919¾, a.c., completely equipped, unscratched; exchange for first-class combination, A.J.S. or Harley preferred; sell £155.—153, Knollys Rd., Streatham. [2089

EXCHANGE Brand New Raleigh Combination for good light car; cash adjustment.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9968

EXCHANGE 1920 8h.p. Zenith, countershaft, K.S., T.T. bars, and sporting Cancelet sidecar, lovely condition, for solo and cash, or sell £130.—93, Windermere Rd., Leigh, Lancs. [1816

EXCHANGE Late 1915 Douglas, 2-speed, lamps, Klaxon, licensed, new tyre, tool bags, not W.D., long exhaust, perfect, and cash for 1920 I.O.M. Rudge.—89, East Hill, Wandsworth. [2231

EXCHANGE 1921 O.K.-Villiers 2-speed Lightweight guaranteed perfect, for 1920-21 3½h.p. or 4h.p., reasonable cash adjustment; Norfolk.—Box 6,570, c/o *The Motor Cycle*. [2185

EXCHANGE Sunbeam 6h.p. Combination, in excellent condition, all on, oversize tyres, for 8h.p. M.A.G. Sunbeam combination. No cash adjustments.—H.G., 11, Chancellor Rd., West Dulwich. [1712

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [9674

5-6h.p. Raleigh Combination, new, under 100 miles since delivery, for Morgan, Premier, 8h.p. Rover, or similar; send full particulars; sell £175.—Sam Scott, 31, Lincoln St., Leicester. [2269

EXCHANGE late 1919 8h.p. Sunbeam combination, spare wheel, wind screen, grid, lamps, hood, for late Triumph, Norton, Blackburne solo, cash adjustment.—Nicholes, Mill Rd., Cambridge. [1613

ALLDAYS Allon 2¾h.p., 2-speed, clutch, lamps, generators, pillion, licensed, insured, splendid appearance and condition; £50, or exchange higher power.—Collins' Hotel, Herne Bay. [2123

3½ 1920 Rudge Multi, excellent condition, speedometer, lamps, etc., cost £120, for good 4h.p. (Triumph, Blackburne, Norton preferred.—Appointment, 40, Crystal Palace Park Rd., Sydenham. [1872

1916 10h.p. Ritz Sporting 2-seater, 4 cyls., dynamo lighting, hood, screen, Stepney, speedometer, spares; £160, or exchange combination and cash.—Lingard, Bridgeholme, Chapel-en-le-Frith. [X9749

16h.p. 4-cyl. Panhard Sporting 3-seater, engine and gears guaranteed perfect, exceptionally fast, reliable; exchange good combination, or solo, cash either way.—Seward, Red Hill, Bassett, Southampton. [2277

GOOD Car Required, suitable for hire work, in exchange for 10h.p. open van and motor cycle combination, both in daily use and good running order.—Snodgrass, 18, Junction Rd., Brentwood, Essex. [1900

SPARKBROOK, nearly new, countershaft model, all on, tax paid, £36, or exchange for T.T. Triumph, Rudge, or similar, about 1914, or later.—Skelton, 11, Havana Rd., Wimbledon Park, London, S.W.19. [X9635

EXCHANGE.

EXCHANGE 4h.p. New Hudson combination, 3-speed, K.S., countershaft belt drive, overhauled, painted, excellent tyres, for ex-army 4-cyl. lighting plant, or 2¾h.p. Douglas.—Box 6,544, c/o *The Motor Cycle*. [1664

ADVERTISER will exchange for 1920-21 motor cycle and cash, 1912 7h.p. Swift 2-seater, exceptionally smart, and mechanism guaranteed, very fully equipped; Middlesex.—Box 6,568, c/o *The Motor Cycle*. [2183

1919 Sunbeam 8h.p. Combination, Lucas dynamo set, detachable wheels and spare, guaranteed in sound order, for 2¾h.p. Douglas or lightweight and cash, or sell; £155.—30, Legard Rd., Highbury, London, N. [1883

WANTED to exchange, Indian 7-9h.p., 2-speed, clutch, with all red Swan sidecar, and little cash, for 1914 Morgan. Full particulars of Indian combination sent on request.—Marsden, 19, Potter St., Worksop. [1616

EXCHANGE Opel Chassis, 12-15h.p., Bosch mag., Zenith, disc wheels, excellent order, just completed £60 overhaul, for good motor cycle, Triumph countershaft or similar, or sell.—50, Bell St., Henley-on-Thames. [2207

HALIFAX.—New Airedale, Calthorpe, Lagonda, and Standard light cars; Norton, Triumph, Enfield, B.S.A., and Douglas motor cycles; quick deliveries; exchanges or deferred payments.—Motor Exchange, 25, Horton St., Halifax. [1725

MILLS-FULFORD Underslung Chassis, complete, £8; sidecar chassis, underslung, £6; P. and M. cylinder, piston, £2; exchange for Tan-Sad, pan saddle, B. and B. carburetter, 650 steel-studded cover; cash adjustment.—19, Ashbourne Grove, East Dulwich. [1812

WHY not place your order for a new machine now and obtain best price for your old mount. We will pay up to deposit and you take delivery as required.—Newnham Motor Co., Exchange Specialists, 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9975

VERUS-BLACKBURNE 4h.p., 1920 and sidecar, Easting, 3-speed, first-class, £120; exchange older and cash or extra cash for light car; also Harvey Frost vulcaniser and tools, Model A, perfect, exchange or cash offers wanted.—1, Grosvenor Rd., Rugby. [X9721

EXCHANGE Late Powerplus Indian Combination, dynamo lighting, all accessories, done 2,000, original tyres, absolutely unscratched, magnificent outfit, cost £225 last year, for late solo and cash; sell £125; genuine bargain offer; exchange.—89, East Hill, Wandsworth. [2229

5-6h.p. 3-speed F.N. Combination, with luxurious coachbuilt sidecar, hood and wind screen, disc wheels, electric lighting, just been renovated, costing over £60; price £75, or exchange for big twin combination or 2-stroke, cash adjustments.—3, Belgrave Rd., Mitcham. [2020

EXCHANGE 1918 Singer 2-seater and dickey, dynamo lighting and starter, thoroughly overhauled and repainted Singer blue, new tyres, for G.N. or combination and cash.—Newnham Motor Co., Exchange Specialists, 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9969

EXCHANGES.—If you wish to exchange your motor cycle or car, you cannot do better than write us. See adverts. in classified columns for some of this week's bargains; exchanges arranged by post.—Newnham Motor Co., Exchange Specialists, 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9967

1917 3½h.p. Sunbeam (mileage 6,000), legshields, speedometer, Klaxon, lamps, Mead and Denkin O.B. sidecar with screen, footrest, and storm apron, splendid condition, end any guarantee; price £110, or exchange good jewellery or furniture with cash adjustment.—Goodwin, Framlingham, Suffolk. 'Phone: 17. [9699

REPAIRERS.

ANY

ARMSTRONG or Sturmey-Archer Gears Repaired promptly and efficiently.—County Engineering Co., Hounslow. [0517

C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from £2.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd. [0003

WHITTALL.—Pistons complete from stock for all leading makes.

WHITTALL.—Pistons with rings and gudgeons, Triumphs all dates, Premier, J.A.P., Bradbury, Douglas, B.S.A., Sunbeam; 14/- to 24/-, on approval; pattern and weight exact.

WHITTALL for Welding.—Aluminium experts; prompt delivery; repairs guaranteed.

WHITTALL.—Cylinders promptly reground and new complete pistons fitted, 48/6, standard makes; perfection guaranteed; rebushing. Pistons to pattern or sketch.—Whittall Machinists' Co., Whittall St., Birmingham. [0017

Armstrong and Sturmey-Archer

— GEARS —

REPAIRED IMMEDIATELY

We make a speciality of *prompt* and *efficient* REPAIRS, and GUARANTEE that when a Gear leaves our works it is in perfect order, so, if in trouble with your Gear, it is to your own interest to send it direct to us. This is the most satisfactory method and quickest, for we submit quotation same day, and repair immediately on receipt of instructions. If quotation not accepted, no charge.

REMEMBER.

We undertake to repair your gear while *you or your messenger waits.*

WHEN SENDING REPAIRS:

1. It is advisable to send complete wheel to Hounslow, L. & S. W. Rly.
2. A letter advising as to date despatch, station sent from, and mark and number of hub should be posted, and, MOST IMPORTANT, two labels bearing sender's name and address on reverse of both should be tied to the wheel.

Station for Callers—Heston-Hounslow, District Rly.

COUNTY ENGINEERING CO.
64, STAINES ROAD, HOUNSLOW, LONDON, W.

Wires: "Threespeed, Hounslow." 'Phone: Hounslow 322

SHOP-SOILED BARGAINS.

We have a number of brand new 1921 Models which we are offering at greatly reduced prices, all fully guaranteed by makers. A selection as follows. Send for full list.

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SECOND-HAND.

1920 HARLEY 7-9 h.p., Comb., electric	...	£125
1921 HENDERSON 10 h.p. Comb. ,,	...	£165
1920 ENFIELD 8 h.p. Comb. ,,	..	£135
1919 ENFIELD 6 h.p. Comb. ...	...	£95
1920 N.U.T. 3½ h.p., dynamo ...	...	£90
1916 A.J.S. 4 h.p. Twin, 3-speed ...	...	£65
1920 ARIEL 3½ h.p., 3-speed... ...	...	£85
1920 G.L. (French) 4 h.p. Comb. ...	...	£105

'Phone: Avenue 5548. 'Grams: Elcemocyca, Stock, London.

15-16, Bishopsgate Avenue, Camomile Street, E.C.3.

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REPAIRERS.

CYLINDERS Rebored, new pistons fitted, from 46/-. Ward's (below).

PISTONS made to requirements in quick time. All Triumph and Sturmey-Archer spares and repairs; satisfaction guaranteed; welding and brazing.—Below.

WARD'S, 51, Upper Richmond Rd., Putney. 'Phone: Putney 2754. [1631

ARMSTRONG and Sturmey-Archer Gear Specialists; practically every part in stock.—Below.

GEAR Repaired and returned within the week; enquiries answered return of post.—Below.

MEDIUM Sun Pinions, 10/-; small planets, 2/6; pawl cages, 7/6; cones, 4/-; clutch caps, 7/6; clutch nuts, 3/-.—Below.

MAIN Drivers, £2/2; axles, 35/-; best material used; price list on application.—A. F. Lewis, Charlestown, Weymouth.

LONDON Agent for the above Armstrong gear parts: White, 437, West Green Rd., Harringay, London, N.15. [6000

BRADBURY Spares and Repairs Agents.—Bright and Hayles, 78, Church St., Camberwell. [1046

SIDECAR Chassis and Bodywork Repaired; estimates free.—Bright and Hayles, 78, Church St., Camberwell. [1061

ARMSTRONG and Sturmey Gears repaired or parts supplied promptly.—Cherry Lane Garage, Lymm, Cheshire. [5194

SHELDON Engineering Co. can convert your motor cycle to a countershaft geared machine.—Below.

SHELDON Engineering Co. can supply conversion sets, gear boxes, or parts to enable you to convert your machine to

COUNTERSHAFT Gear. Latest type chain-cum-belt or all-chain model gear boxes fitted or supplied by

SHELDON Engineering Co., Bayley Lane, Coventry, who are recommended by the leading motor cycle manufacturers for conversions.—'Phone: 634. [7970

CYLINDERS Reground, glass finish, accurate, complete with piston and rings, from 30/-.—Below.

PISTONS, complete with rings, standard or oversize, Douglas 15/-, Triumph, etc., 24/-; no waiting.—Below.

PISTON Rings, high grade, standard 1/6, oversize or step cut 2/-; return post.—Patent Rings, 30, Wigan Rd., Atherton. [9291

ARMSTRONG and Sturmey-Archer gears repaired while you wait.—Tavistock Engineering (below).

ARMSTRONG Gears, all parts from stock; spindles, £1/10, £1/15; cones, 4/-; large suns, 6/6; small suns, 4/6, etc.—Tavistock Engineering (below).

ARMSTRONG Planet Pinions, 2/6; clutch caps 7/6; clutch nuts, 3/6; return of post.—Tavistock (below).

STURMEY-ARCHER Countershaft Gears Overhauled, 10/-; parts at makers' prices.—Tavistock (below).

GEARS.—Any gears made to pattern or drawings. Send all gear repairs to Tavistock Engineering Co., 254a, Portobello Rd., North Kensington, London. 'Phone: Park 643. [4981

WELDING Aluminium Crank Cases, gear boxes by experts; immediate attention; reasonable prices.—Below.

WELDING Broken Cylinders, flanges, combustion experts of 11 years' experience.—Below.

CYLINDER Grinding on latest machinery, installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [476

PISTONS for all engines up to 60 mm. 20/-, 70 mm. 22/6, 80 mm. 25/-, 90 mm. 27/6; complete with rings and pin.—Below.

CYLINDER Grinding on latest machinery, up to 85 mm. 45/-; to 85 mm. 52/6; complete with piston; 3-5 days delivery.—Kellett and Collinson, Ltd., Havelock St., Gt. Horton, Bradford. [98

CYLINDERS Reground, new pistons fitted complete £2/12/6.—Bright and Hayles, 78, Church St., Camberwell, London. [104

FOR Expert Engine Overhauls, cylinder grinding, new pistons, and spares, Hedley and Co., Ford St., Newcastle-on-Tyne. [153

ENGINES Rebushed overhauled, rings fitted, compression guaranteed; singles 35/-, twins 45/-; returned 3 days.—Below.

VALVE Seats Rebuilt from 10/-; valves, valve guides, caps, piston rings, any make to pattern.—Turner Bros., Forest Motor and Engineering Works, Summerseat, near Manchester. [15

NEAR Enough is not Good Enough. Let us quote for your machine work and repairs; accuracy guaranteed.—Below.

OBSOLETE Parts Manufactured, cylinders welded and reground, oversize pistons and rings, any make; competitive prices, 24 hours service.—The Campiam Motor Co., 29, Palmerston Rd., South Acton. 'Phone: Chiswick 343. [2

FRAME, chassis, and tank repairs, enamelling and plating by experts; prompt deliveries.—Langham Co., Fitzroy St., Leicester. [6

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A Manx T.T. After All!

AFTER all the annual Tourist Trophy Races are to be held in the Isle of Man in 1922. This is the decision of the A.C.U. General Committee, which body last Saturday rejected the recommendation of the Competitions Committee to hold next year's race in Belgium. The race may be held towards the end of May or at the beginning of June, but in any case before the two car races already arranged for June 20th and 22nd. Among the A.C.U. committeemen, opinion was clearly divided. The Belgian course had many attractions, the main one being the financial inducement offered to the A.C.U. by the Belgian authorities for a race near Spa. Badly as the A.C.U. needs improved finances, the Committee was clearly not ready to be over-influenced by monetary considerations. The event has gained its recognised importance on British soil, and the present is hardly the time to transfer many thousands of pounds to foreign soil. In view, therefore, of the promises and undertakings of the deputation which arrived from the Isle of Man, the air was cleared, and finally the decision to retain the Manx course was reached by an overwhelming majority.

When, in August last, the announcement was made that the A.C.U. had "decided" upon a Belgian course for the T.T., *The Motor Cycle*, it will be recalled, at once tested the feeling of manufacturers and T.T. riders. Many strongly advocated Belgium, and approximately half equally strongly urged the retention of the Isle of Man course over the Snaefell road. The objections to the Isle of Man were, however, so thoroughly ventilated that enterprising Manxmen at once set to work to cancel out the objections which were advanced. As a result, nearly all the pin-pricks experienced by former visitors have been or will be investigated, and many concessions are promised, including a double daily boat service, a harbour crane for handling motor cycles properly, half an hour later for practising, a shilling registration fee for visitors' motor cycles, and assistance in various other directions. Thus the Manx deputation won the support of the A.C.U. for another year, and the side question as to whether the 500 c.c. machine is too fast for the tortuous Isle of Man course, and therefore cannot show itself to advantage, must be left for further demonstration next summer.

Fewer Open Competitions in 1922.

DUE to the larger number of open motor cycle competitions held ths year, their importance has been considerably minimised. Two and three important contests each week-end have assisted in overshadowing the merit of a first-class award, apart from which the very fact that open trials have become so numerous is leading to a lukewarm feeling on the part of manufacturers. Fewer open trials will mean that each one will gain added importance. Recognising this state of affairs, the Auto-Cycle Union General Committee resolved at its last meeting to limit the number of open permits next year. One open permit only will be granted to each A.C.U. centre (there are fifteen at present), which decision will prevent clashing of dates and possibly induce manufacturers to support such events unanimously. These open trials are in addition to certain recognised A.C.U. trials, such as the Six Days event, the T.T., the Arbuthnot Trophy Trial, and the one-day test for stock machines. All motor cyclists will, we feel, welcome this limitation of open events, for the genuine clubman will now have a better chance, especially in speed trials and hill-climbs, than hitherto when pitted against the leading trade riders on specially prepared machines.

At Olympia a meeting is to be called by the A.C.U. to settle the fixture list for 1922, the idea being to spread the allotted events over the whole twelve months. The centre will in each case decide the form of the trial, viz., whether a speed test, hill-climb, or reliability event.

An index to the advertisements in this issue will be found on the page facing the back cover.

The Challenger Puncture-sealing Tube.

I REPORTED recently that I had found these tubes satisfactory in that they prevented a tyre deflating after penetration by small nails or flints. My comment provoked a letter from another user, whose experience is not so pleasant. He has tested one of the tubes, and in his case its effect is merely to render further progress possible with the aid of occasional pumping up, so that repair may be deferred till the journey is finished; but the layer of plastic material between the two skins of rubber on the tread side of the tube does not in his case—as it has in mine—ever seal the hole *completely;* the sealing is merely partial. He further points out that, in the event of a long nail penetrating both sides of the tube, the inner hole necessarily remains unsealed. To judge from my own experience, I should imagine that the plastic layer in his tube is stiffer and less expansive than mine, which so far has proved quite efficient where small holes are concerned. Perhaps the manufacturers may care to take up the point?

Everlasting Flash Lamps.

I COMPLAINED pettishly the other day that my so-called inexhaustible electric torch "had gone west," that the vendor had shut up shop, and that nobody seemed eager to repair it. As it has lit up many a night job, ranging from burst covers to sooted plugs, I missed its cheery presence, the more so as I had half digested a brainwave for coupling up its lever to the overhead valve tappet, and so setting both my hands free for the jobs in hand. Captain French-Brewster, of 23a, Old Bond Street, is now the British handler of these French lamps, and scenting me as a user of his wares, he played "Aladdin's Uncle," and swopped my old dud for one of his latest pattern, which weighs much less, and is altogether a superior article. I have accepted it with my usual cynicism, and if by next Christmas the article is still sparking gleefully, I will say so in these columns. At present I name him partly because he is obviously a man of bowels, and partly because there may be other unfortunates like myself who have worn out the gears of an early model, and do not know what to do with the wreakage of a fairly expensive article. The same post brought me a sample of a much cheaper dynamo torch, the Magnetolite. This is handled by Mr. F. S. Morris, of Conway Road, Luton. It hangs round your neck like a locket, and when you want a light, you pull a chain which depends from the case of the gadget. Mrs. Ixion has borrowed it, and intends to use it for church going this winter. She is a somewhat pious lady, and by about Easter I hope to report that it has facilitated her orisons. In confidence, dear reader, I admit that my main motive in giving publicity to these two gadgets is to get my own back on the unscrupulous traders who have coaxed me into buying apparently cheap torches, and then bankrupted me by charging high prices for batteries which apparently inspired the author of Hymn 341.

Passengers, Power, and Hills.

"DUMPLING" and others have been discussing the horse-power required for passenger work in such counties as Devon. So far as absolute requisites are concerned, a 4 h.p. engine will take two people anywhere in the British Isles provided that the gearing is suitable, and that the engine is so well designed that it does not distort on long spells of a really low gear. But I quite agree that more power is desirable, and that for two main reasons. The first is that most of us like to keep up a certain average speed, and that fast hillwork is essential to a good speed average. You can only get fast hill-climbing with the aid of plenty of power. The second reason is that a small engine, driven hard, wears faster, and gives more trouble than a big engine of the same quality, which is always running well within itself. So if I lived at Tavistock, my sidecar would certainly boast 6 h.p., and my cycle car would be an 8 h.p., since the latter often embodies far more internal friction than a good sidecar outfit.

Not a Pub.

MY recent remarks on the rapacity of certain hotels have inspired a Cheshire café keeper to complain that, though he lays himself out to cater for motor cyclists, they always pass his place and go on to a pub. I have never fed at his café, but on the date of his letter he provided vegetable soup, roast beef, Yorkshire pudding, potatoes and marrow, rice and fruit, for 2s. at midday, and his "bed and breakfast" terms are 6s. 6d., whilst a hot bath, such as we often need after a day on the road, is only 6d. He is probably shrewd enough to know that the motor cyclist's main problem with

Occasional Comments.—

regard to cafés and restaurants is garage. We never know whether the police will allow the machine to stand in the road or not; and if they are complaisant, we have no protection against thieves; and if we take the 'bus to a regular garage, we may have to walk a considerable distance, or hunt about in a strange town, whilst in any case we shall have to pay—possibly 1s. 6d.—for a sidecar for one hour.

Prop Stands.

DON'T tumble over yourselves, dear readers, to buy up the prop stands of which I have written. Doubtless some of them will be O.K. by show time, but as yet most of them are in the experimental condition. I was adoring one of mine the other day when its leg suddenly wilted, and down came my beloved jigger on its hip bone with an awful crash, to the great glee of the pals whom I had summoned to do poojah to the new accessory. It transpired during the post mortem that the carcase of the beastie was made of brass, to which the steel tube leg was affixed by a small pin; the pin bit through the brass as if it were Cheddar cheese. I am now bolting on two more, after testing them with a file to see if there is any brass about them; but I must admit that I stand near the machine when they are in action, with my arms outstretched like the hero in a film serial when the villain is terrifying the heroine into diving out of a skyscraper fifteenth storey window.

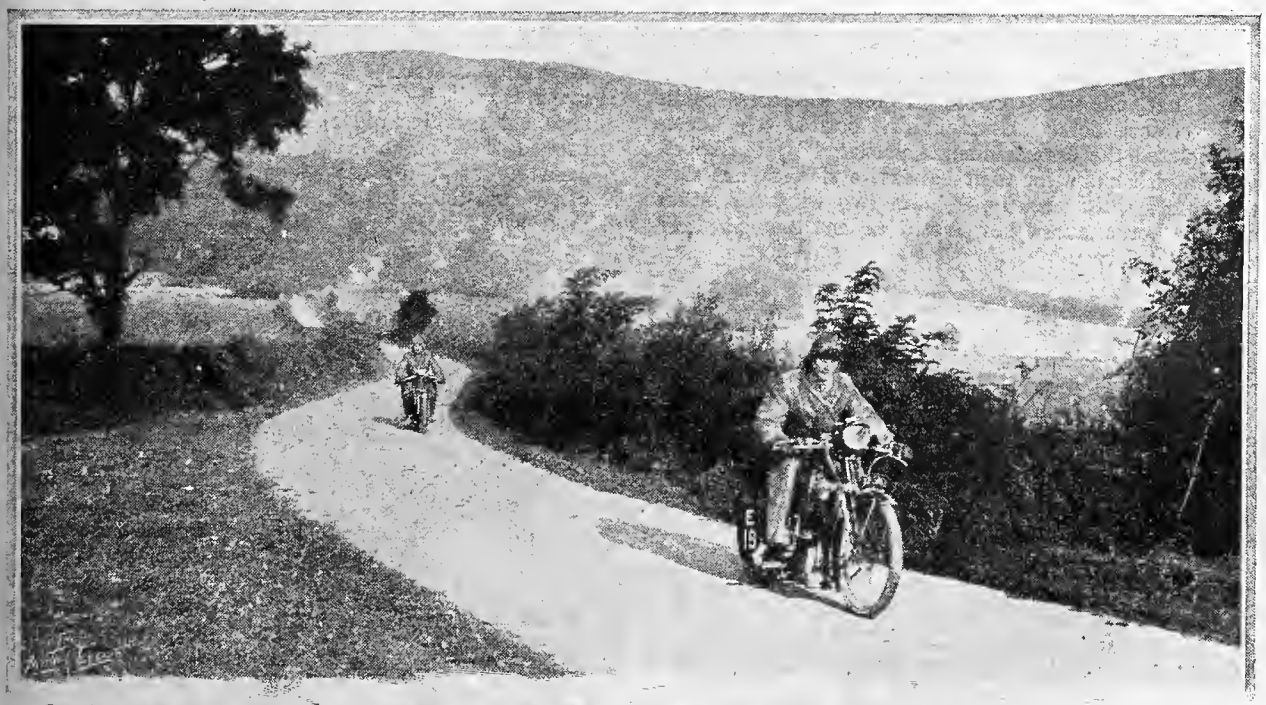
Brass! Ugh!

My Coat Once More.

NUMEROUS readers engaged in the alum-and-water industry wrote and guaranteed to make my poor old motor cycling jacket drencher-proof once more for a consideration. I finally sent it to Harding's dyeworks at Kingston, as their manager is a keen motor cyclist, and offered to stand me a new coat if my old one leaked anywhere after he had finished with it. It doesn't, so the ancient garment must do duty for another summer, unfortunately. It was in a horrid state ere it went to him, and now it is as good as new, except that it has rather a bleachified kind of look. All these various experts assert that it is quite an easy and inexpensive matter to renovate these old jackets. They append two "buts." One is that the colour is bound to suffer a little. The other is that a number of cleaning firms merely dip the coat in alum-and-water to re-proof it, whereas it is impossible to get it really watertight without using rubber in some form. The last time I trusted a coat to an unknown reader it returned with a glutinous surface and a colour resembling a piece of frozen beef after a week in the ashbin.

Otherwise, a "Crash."

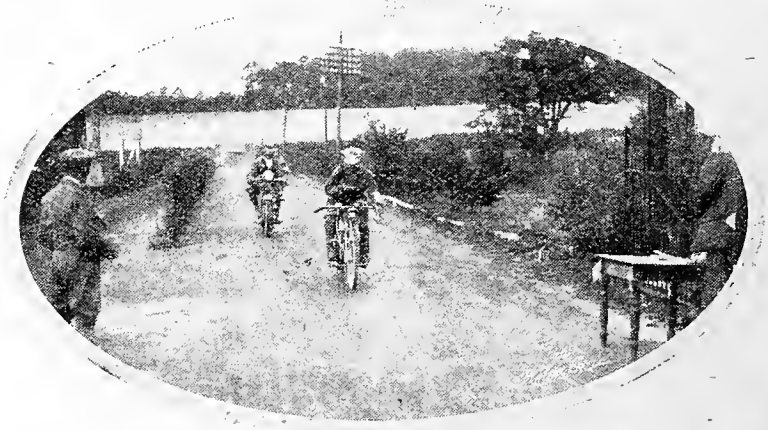
JOURNALISTS are commonly supposed to use ten words where one will do, and this reprehensible habit is accounted for by the fact that the meaner kind of journalist gets his remuneration at space rates. But a breezy letter just to hand from an A.C.U. consul, who also belongs to one of the learned professions, speaks of "a slight difference of opinion in relative kinetics between my Norton and myself." Never again will I be content with the simple Saxon word "crash." In the last two years the said consul has owned three Nortons (B.R.S., I.O.M., and 4 h.p.), a Scott, a Velocette, an A.B.C., a single-cylinder F.N., and a four-cylinder F.N. I wonder if any other reader can match this high-class stud? The I.O.M. Norton's mileage for nineteen months is 26,000, and it is still using its original main and con. rod bearings.



Two Anglo-Dutch trial competitors near Malvern: C. L. Sprosen (Connaught) leading J. M. Boom, jun. (5 Simplex). This event was fully described last week

Before the trial the visitors from Holland were nervous about the Brooklands test; many of them imagined that it was a saucer track requiring special skill in order to traverse it. Here are shown the international competitors a few seconds after the start of the speed test.

THE fourth of the series of Anglo-Dutch international trials proved as great a success as its forerunners. Undoubtedly our Dutch guests appreciated the entertainments provided by the sporting English clubs for their benefit, and were not slow to express their pleasure. With two wins for either country honours are now even, except that Holland won the original trophy in 1920, by which success it has an advantage, England holding the first share in the new "Beker" by reason of its overwhelming success last week. If anything, the Dutch motor cyclists entered this year's contest with greater zest than their British *confrères*. Nothing was left to chance by our overseas visitors, and to see the hive of activity at Worcester on the eve of the trial, when, "just to make sure," the Dutchmen dismantled carburetters, removed sparking plugs, and shortened belts, in itself proved their enthusiasm. Most were suffering from smarting eyes, for they found that our tarred roads cause particles to rise with the dust and affect their eyes.



Three of the earlier competitors arriving at Brooklands. W. B. Gibb (2¾ Douglas), leading, is intently studying his watch, while the Dutch rider just behind, has found a new position for the route card—gripped in his teeth.

Of the trial itself, we recorded clearly last week that hill-climbing is not the Dutchmen's *forte*, yet, appreciating that fact, the course set was not too difficult, and was mostly over main roads. What would have happened if the Old Wyche at Malvern had been included one can only conjecture, in view of the fact that thirteen failed on Birdlip. The Dutch amateur captain, H

THE ANGLO-DUTCH TRIAL. Some Pictorial Reminiscences.

(Top) The visitors leaving Chingford *en route* for the boat at Harwich. Mr. J. A. Prestwich, of J.A.P. fame, wishes our departing guests "good luck."

(Middle) In the garage at the luncheon stop on the day of the trial (fully described last week)

(Bottom) An old English background for a parting portrait group of the Dutch team—Chingford.

Why England Won.—

Fels, thought Birdlip a fine test hill. The Dutch team's mounts were good and workmanlike, for, with mainly British and American machines in the team itself, the trial largely resolved itself into a question of driving skill. On Brooklands, again, the set speeds of 28, 35, and 40 m.p.h. were not extraordinary, but the Britishers showed to advantage in this test. It had been suggested that 40 m.p.h. was too high for the big American solo machines which the Dutchmen brought over, but since several much smaller British mounts considerably exceeded this speed, the criticism falls flat. In short, Birdlip Hill and Brooklands proved the undoing of the Dutch team, and even at the luncheon halt at Newbury the result was already almost a foregone conclusion.

The line up for the speed test on Brooklands. (In circle) G. Hoogeveen (7-9 Harley-Davidson sidecar) near Cirencester.

For the social entertainments provided, the Midland Centre at Leamington and Stratford, the Western Centre at Worcester, and the A.C.U. in conjunction with the Surbiton and District M.C.C. at Thames Ditton are to be heartily congratulated.

Incessant Hospitality.

Not a single participant failed to express appreciation of the fare provided, and our friends from Holland returned as they had started—with an excellent impression, for the Essex M.C. were thoughtful in providing breakfast on the morning of their arrival, whilst on Tuesday, when the Dutch team left for Holland, they had the opportunity of looking over the J.A.P. works at Tottenham, and were subsequently entertained to luncheon by Mr. J. A. Prestwich at the Royal Forest Hotel, Chingford. Here it was that the full provisional results were announced, the International Cup itself having been received by Messrs. Geoffrey Smith and W. Pratt, captains of the British amateur and trade teams respectively, after the dinner at Thames Ditton on Monday.

The Dutchmen were immensely intrigued by Ald. Arthur Carlton's remarks at the Guildhall, Worcester, as well as by the witty rejoinder, a clever spontaneous effort, by the A.C.U. chairman, Col. F. S. Brereton, C.B.E.

There is no doubt that these trials between teams representing different countries do a great deal of good in fostering good feeling among devotees of the pastime. They, too, enable an interesting comparison of experiences, for Dutch motor cyclists have certain preferences which are worth studying. They prefer powerful twins, a cut-out seems to be a *sine qua non*, they wear leather coats almost exclusively (black or brown), they affect racing helmets at all times, they prefer pillion riding astride with a hand-rail for support, their sidecars are mostly on the right-hand side, and the louder the horn the more they like it. Several told us that British mounts are preferred in Holland, to a degree, and the preference which they suggest is their limit was put at 10%. Big American twins, fully equipped, cost £125 in the Netherlands, and no matter how much they may prefer the finish and quality of British products, their pockets will not allow more than a 10%

Why England Won.—

advantage over this figure. Holland is experiencing the effect of the world trade depression, and must accordingly study costs carefully.

Undoubtedly, however, Britain loses many opportunities on the Continent in failing to specialise on first-rate examples of controllable twin-cylinder machines of 6 to 8 h.p. capable of successful use solo and with a sidecar, and this is a point worth studying. On the other hand, several Dutch riders of experience marvelled at the speed of our best single-cylinder touring mounts, and also of their willingness to tick along quietly and smoothly when desired.

Why Heavyweights are Popular in Holland.

In our many conversations with the visitors, we were told that the chief reason why the big twin is favoured in Holland is that the roads in that country are very poor, and that, in their opinion, the heavier machines hold the road much better than the lightweights so popular in this country. These opinions suggest that there is a certain market in Holland for an efficient spring frame motor cycle.

It was clear that England's motor cycling guests were keenly interested in the many different examples of British motor cycles ridden by the members of the English team, and, as several of the Dutch riders were "in the trade," the excellent performances made by the smaller British machines may be regarded as propaganda demonstrations for the British industry in general.

Most Dutch motor cyclists, of course, like the idea of next year's T.T. being held in Belgium, and one may count upon a goodly percentage of spectators from the neighbouring country, if Spa is finally approved.

Complete Results.

Complete results of the fourth international trial—England v. Holland—are now available, and are appended:

The principal award, the HOLLAND-ENGLAND CUP (presented by Mr. A. Citroën) was won by the English team, who lost a total of 52 marks throughout the trial, as against the loss of 256 marks by the Dutch team.

The SURBITON CUP (presented by the Surbiton and District M.C.C. for the best performance by an English trade rider) was won by Kaye Don (2¾ A.J.S.), who only varied fifty seconds from schedule throughout the trial.

The WORCESTER CUP (presented by the Worcester and District M.C.C. for the best performance of a Dutch trade rider) was won by W. van Zyll (7-9 Harley-Davidson sc.), 140s. error.

The Motor Cycle CUP (presented by this journal for the best performance of any amateur rider) was won by R. Charlesworth (8 Zenith sc.); 80s. error.

Gold Medal Winners (Lost no Marks)

DUTCH COMPETITORS.

V. Fonck, jun. (2¾ Cedos).
A. Steensma (4 Blackburne).
J. M. Boom, jun. (5 Simplex).
P. Nieman (5 Simplex).
J. F. N. Smits (7-9 Harley-Davidson).
W. H. Wellensiek (4¼ B.S.A.).
J. H. Nieuwenhuys (6 Simplex).
W. M. Zelle (6 Simplex).
H. Fels (7-9 Harley-Davidson sc.).
W. van Zyll (7-9 Harley-Davidson sc.).
J. A. F. Bolland (7-9 Harley-Davidson sc.).
T. T. Gude (7-9 Harley-Davidson sc.).

ENGLISH COMPETITORS.

D. A. Atkin (2¾ Hobart).
B. Kershaw (2¾ New Imperial).
K. Don (2¾ A.J.S.).
W. B. Gibb (2¾ Douglas).
H. R. Davies (2¾ A.J.S.).
C. L. Sprosen (2½ Connaught).
F. A. Hardy (3½ Zenith-Bradshaw).
G. Smith (3½ Sunbeam).
L. Newey (3½ Ariel).
J. Whalley (3½ Sunbeam).
L. Sealey (3½ B.S.A.).
R. Charlesworth (8 Zenith sc.).
J. A. Newman 6 Douglas sc.).
G. Nott (8 Matchless sc.).
E. B. Ware (8 Matchless sc.).
S. Wright (4½ Humber sc.).
W. A. Fell-Smith 8 Brough Superior sc.).

SILVER MEDALS (DUTCH COMPETITORS).—Jac Brunt (2¾ Douglas), J. R. Donker (2¾ Royal Ruby), E. Ekker, Junr. (4 Bianchi), C. J. H. Wolff (2¾ Royal Ruby), M. v/d Jagt (3½ Norton), J. W. Ten Dam (7-9 Harley-Davidson), J. v/d Weiden (7-9 Indian), G. J. Hamer (7-9 Indian sc.), G. Hoogeveen (7-9 Harley-Davidson sc.), F. J. Visscher (7-9 Indian sc.), and C. Witteveen (7 James sc.).

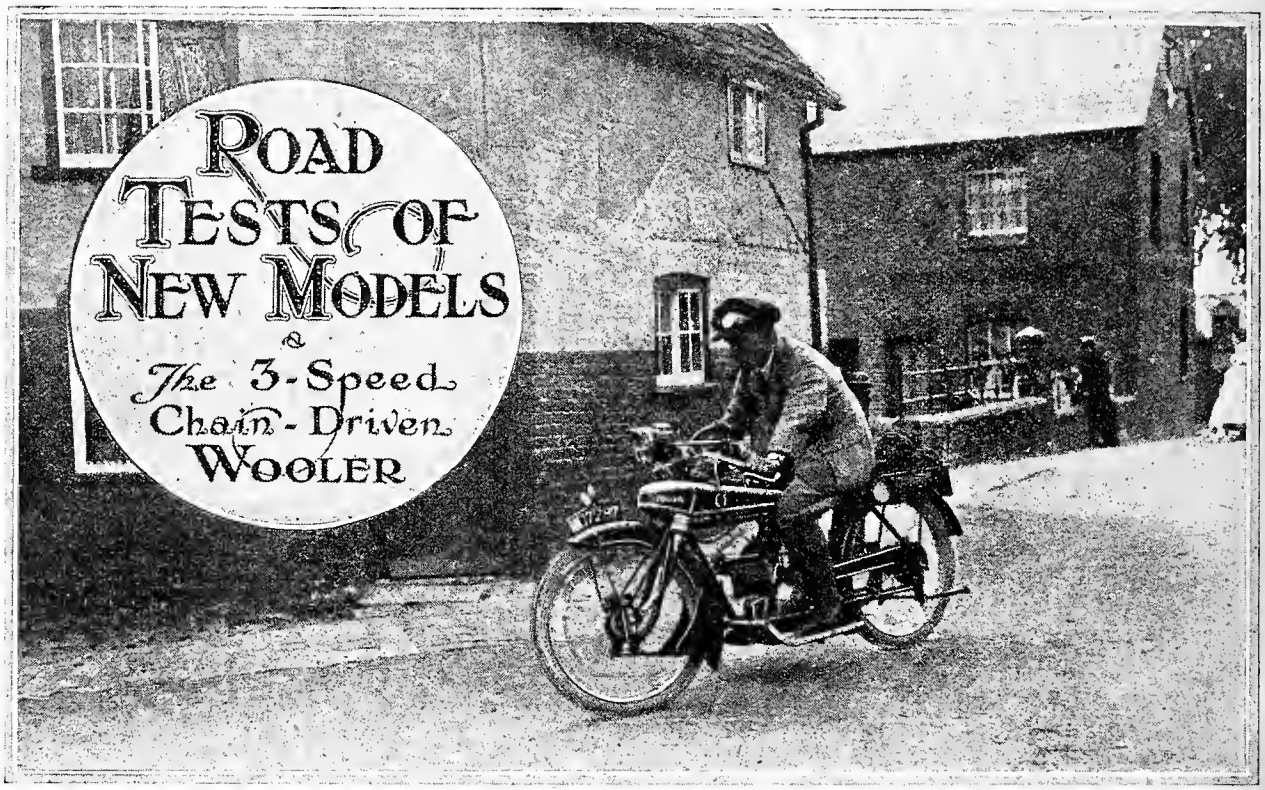
BRONZE MEDALS (DUTCH COMPETITORS).—Nil.

SILVER MEDALS (ENGLISH COMPETITORS).—O. Hayes (2¾ A.J.S.), A. G. Wall (2¾ Cedos), F. Dover (4 Triumph), R. A. Green (3½ Norton), H. Boynton (7 James sc.), W. Pratt (8 Matchless sc.), and F. J. Ellis (8 Matchless).

BRONZE MEDAL (ENGLISH COMPETITOR).—P. W. Moffatt (3½ Douglas).

N.B.—These results are subject to official confirmation.

The Dutch motor cyclists at Stratford-on-Avon.

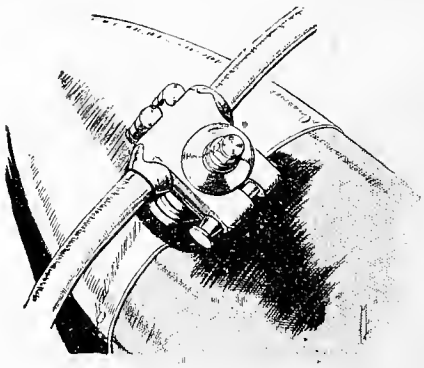


SPECIFICATION

ENGINE: 60.5 mm. × 60 mm., 345 c.c.	*GEAR BOX: Three-speed, integral with engine.*	*FRAME: Sprung.*
LUBRICATION: Crank case pressure.	*TRANSMISSION: Gear and final chain.*	*WEIGHT: 168 lb.*
MAGNETO: C.A.V.	*WHEELS: 26 × 2¼in.*	*PRICE: £112.*
CARBURETTER: B. and B.	*FORKS: Wooler.*	*MAKERS: Wooler Motor Cycle Co., Ltd., Alperton, Middlesex.*

THE new chain-driven Wooler came into our hands a few days prior to this year's T.T., and was used for some time after it had been to, and had returned from, the Isle of Man. One reason for choosing this mount for the journey to the classic races was due to the fact that it is a machine of moderate weight, and yet one which is capable of a very fair average speed on long journeys. Only those who have taken a motor cycle over to the Island know how important the weight factor is when lifting the machine from the steamer to the quay at Douglas.

For the journey from London to Liverpool (*via* Birkenhead) the route through Berkhamsted, Aylesbury, and so on south of Birmingham, was chosen in preference to the main Holyhead Road-Watling Street way, which is very rough in parts, and on the morning we set out a furious north-westerly gale was blowing, thus compelling a head wind to be faced for practically the entire journey.



The handle-bar adjustment on the 2¾ h.p Wooler.

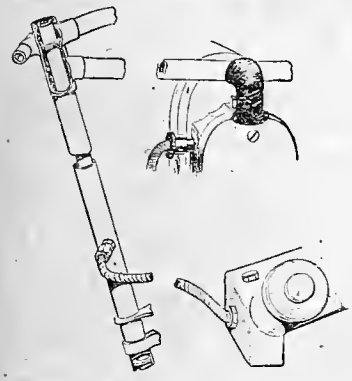
On the whole, the road was exceedingly good, but where rough patches were traversed the springing of the frame was greatly appreciated.

The little machine was heavily laden with a bag containing all that was necessary for a week away from home, but, notwithstanding the weight carried and the fearful wind, quite a good average was made.

After Aylesbury, Akerman Street—that fine old Roman road which passes through the fertile parts of Buckinghamshire and Oxfordshire, so famed for its dairy produce—was followed. Owing to the number of milk-carts passed at different times on this highway, a certain rider of our acquaintance aptly named it "The Milky Way."

Our journey continued through Bicester and Stratford-on-Avon, but, when more hilly parts of the country were encountered, a slight slipping of the clutch was experienced, which could not be cured by external adjustment. However, the clutch held well enough to drive if reasonable

Road Tests of New Models—



The Wooler lubrication system. The oil contained in the air release from the timing gear is forced against a baffle at the top of the saddle tube, and, falling to the lower end of the tube, rises to the level of a pipe, which returns it to the sump.

care were used; this notwithstanding, a very fair average was kept up all the way to Birkenhead, which was reached *via* Droitwich, Kidderminster, Bridgnorth, and Chester.

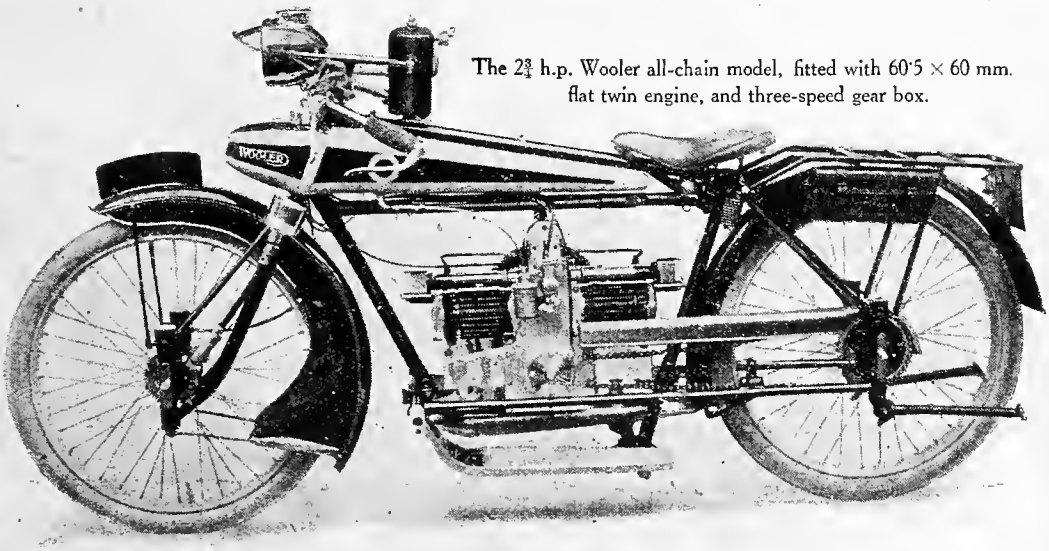
The ferry from Birkenhead to Liverpool is quite excellent from the motor cyclist's point of view, for the service is frequent and the cost only a matter of pence.

During the 190-mile journey the machine had demonstrated that its steering was excellent, and that the riding position was comfortable. It was good at cornering, capable of very nearly 30 m.p.h. average on level roads, and practically vibrationless; like most units of its type, the engine depends upon revolutions for its power, and if there is doubt about climbing a hill on top speed it pays to change early down to second, when up to 25 or even 30 m.p.h. may be attained.

As regards trouble on the road, apart from the clutch slip (which was afterwards found to be due to a bad batch of springs) and a broken plug, there was none: and the journey, including stops for meals, etc., was accomplished easily in ten hours. In the Isle of Man itself the machine gave splendid service. Another test to which the Wooler was put was the Inter-team Trial for *The Motor Cycle* Cup, when it was taken round the course and climbed every hill successfully. This latter excursion was far more trying to the machine than the other 300 miles, and despite the rough roads and steep gradients, it proved itself to be a handy, reliable little mount.

Too Sensitive Carburation.

From the point of view of adverse criticism, the chief objection is against the carburetter, which was reminiscent of earlier days in that it required too much manipulation of the air lever to obtain flexibility and even running. Valve noise was also rather prominent. The lubrication appears to be perfect, and little could be said against the method of changing speed, which is accomplished by the foot, though a stronger spring against the plunger locking the second gear would be desirable. The machine is full of interesting points, and its designer, Mr. Wooler, has embodied many ingenious features. The unit construction of engine and gear box is worthy of favourable comment. Small details have been carefully considered; for example, the position of the speedometer dial on the front forks, so that it is illuminated at night by the air holes at the base of the lamp, is a case in point.



The 2¾ h.p. Wooler all-chain model, fitted with 60·5 × 60 mm. flat twin engine, and three-speed gear box.

ROAD TESTS OF NEW MODELS.

SINCE January, *The Motor Cycle* has published a number of articles dealing with the road behaviour of new models and new machines. To enable readers to refer back to any of these, we append the following table, showing the dates of the issues in which they appeared.

Machine and Model.	Title of Article.	Date of Issue.
7 h.p. Matchless sidecar ...	"Through the 1920 Trials"	Jan. 13
8 h.p. Brough Superior	"Road Tests of New Models"	Jan. 20
5 h.p. Raleigh	"Road Tests of New Models"	Feb. 10
8 h.p. Royal Ruby sidecar..	"Riding to Win"	Feb 17
3½ h.p. Sports Sunbeam	"Road Tests of New Models"	Feb. 17
3½ h.p. P. & M. sidecar	"Winter in the Highlands"	Mar. 3, 10
2¾ h.p. Armis sidecar	"Road Tests of New Models"	Mar. 3
4½ h.p. Quadrant sidecar	"Road Tests of New Models"	Mar. 10
1¼ h.p. Kenilworth Miniature.	"Road Tests of New Models"	Mar. 24
3½ and 7-9 h.p. Rudge sidecars	"Road Tests of New Models"	Mar. 31
8 h.p. Excelsior sidecar taxi.	"Road Tests of New Models"	April 7
2¾ h.p. Diamond-Jap	"Road Tests of New Models"	April 7
5 h.p. Lea-Francis	"Road Tests of New Models"	April 14
6 h.p. B.S.A. sidecar	"Road Tests of New Models"	April 14
6-7h.p. Ariel sidecar	"A Holiday Week-end"	April 21
3 h.p. Ivy	"Lightweights for Hard Service" ..	April 28
8 h.p. Royal Enfield sidecar.	"Road Tests of New Models"	April 28
4 h.p. Triumph	"Nine Months on a Chain-driven Triumph."	May 5
7 h.p. A.J.S. sidecar	"The Performance of a Stock Machine."	May 19
8 h.p. Chater-Lea sidecar ..	"To Edinburgh in a Sidecar"	May 26
3 h.p. Ivy sidecar	"Road Tests of New Models"	June 9
2¾ h.p. O.K. sidecar	"Road Tests of New Models"	June 23
4½ h.p. Humber	"Road Tests of New Models"	July 14
2¾ h.p. Royal Ruby	"The Possibilities of the Lightweight Four-stroke."	Aug. 4
Scott Sociable	"The Scott Sociable on the Road" .	Aug. 11
2¾ h.p. Hobart	"Road Tests of New Models"	Aug. 18
3½ h.p. P. & M. sidecar (1922)	"A Four-speed Single"	Aug. 25
4½ h.p. Dunelt sidecar	"Two on Tour"	Sept. 1
2¾ h.p. Hawker	"Road Tests of New Models"	Sept. 1
2¾ h.p. Francis-Barnett	"Road Tests of New Models"	Sept. 22

WAYSIDE MEMORIALS.

Highway Lighthouses to the Memory of the Fallen.

THERE have recently been unveiled two most unusual roadside war memorials in different parts of the Home Counties which might well be copied in other places. One is at Beaconsfield, and the other at Lingfield, Surrey; and both are lighted at night. It is believed that, with the exception of one in Kent, these are the only two war memorials designed to exhibit lights. That at Beaconsfield stands in the midst of the village, where the London and Oxford and Windsor and Aylesbury roads cross. It is designed to be in harmony with the Gothic architecture of the parish church in the background. The open stone lantern of the memorial is fitted with electric light. Fortunately the roads at this point are very wide: exceptionally so; and the imposing monument is thus not in the way;-and the light secures that it will not be the cause of some nocturnal accident.

The electrically lighted memorial at Beaconsfield.

The war memorial at Lingfield, the stone lantern of which is fitted with gas lighting.

The Lingfield memorial is fitted for gas. It forms an added feature of interest just outside that picturesque village, at its western extremity. This point, the so-called "Gun Pond" at St. Peter's Cross, on the New Chapel and Crawley Road, is a very pretty spot. Here a stone base has been built into the pond, and the tall stone shaft of the memorial raised upon it. The queer old building in the background is the ancient Lingfield lock-up, called "The Cage." It is thought originally to have been a chapel. C.G.H.

SCOTTISH OPEN HILL-CLIMB.

Successful Event Organised by the Glasgow Western M.C.C. on Ballagoich Hill.

AN open hill-climb organised by the Glasgow Western M.C.C. was held at Ballagoich on September 24th. It is the first time that this hill has been used for a climb, but, with its straight half-mile of good surface, it was a great success.

There was a large entry, many competitors coming from Edinburgh and Falkirk. A. Brown rode from Aberdeen to compete on his 3½ h.p. Norton, and made a fine show, winning three firsts and the Paterson gold medal. R. M. Wilson put up a star performance on his 2¼ h.p. Hobart; the way his little machine took the hill in the 600 c.c. sidecar class came as a surprise to many. A. H. Alexander carried off five classes on his 3½ h.p. Douglas, while Douglas Alexander made fastest time of the day on his Indian.

The results are as follows:

CLASSES 1 and 3 (Solo up to 350 c.c. Experts barred).—Time: R. M. Wilson (2¼ Hobart). Formula: F. M. Wilson (2¼ Hobart).

CLASSES 2 and 4 (Solo up to 350 c.c.).—Time: J. W. Walker (2¾ A.J.S.). Formula: J. W. Walker (2¾ A.J.S.).

CLASSES 5 and 7 (Solo up to 600 c.c. Experts barred).—Time: A. Brown (3½ Norton). Formula: A. Brown (3½ Norton).

CLASSES 6 and 8 (Solo up to 600 c.c.).—Time: A. H. Alexander (3½ Douglas). Formula: J. W. Walker (2¾ A.J.S.).

CLASSES 9 and 11 (Solo unlimited. Experts barred).—Time: A. Brown (3½ Norton). Formula: A. Brown (3½ Norton).

CLASSES 10 and 12 (Solo unlimited).—Time: D. S. Alexander (7-9 Indian). Formula: A. H. Alexander (3½ Douglas).

CLASSES 13 and 15 (Sidecars up to 600 c.c. Experts barred).—Time: R. Watson (4½ Humber sc.). Formula. R. M. Wilson (2¼ Hobart sc.).

CLASSES 14 and 16 (Sidecars up to 600 c.c.).—Time: A. H. Alexander (3½ Douglas sc.). Formula: A. H. Alexander (3½ Douglas sc.).

CLASSES 17 and 19 (Sidecars unlimited. Experts barred).—Time: R. Watson (4½ Humber sc.). Formula: R. M. Wilson (2¼ Hobart sc.).

CLASSES 18 and 20 (Sidecars unlimited).—Time: Geo. Grinton (7-9 Harley sc.). Formula: A. H. Alexander (3½ Douglas sc.).

The four-stroke 2¼ h.p. lightweight has come to the fore in speed events since its success in the 250 c.c. class in the Junior T.T. R. M. Wilson, shown above, put up a star performance on his little Hobart.

SPECIAL AWARDS.

PRIZE FOR THE HIGHEST FIGURE OF MERIT IN THE GENERAL CLASSES.—J. W. Walker (2¾ A.J.S.).

PRIZE FOR HIGHEST FIGURE OF MERIT (experts barred).—R. M. Wilson (2¼ Hobart).

THE BARNETT GOLD MEDAL.—R. Wilson (2¼ Hobart).

THE PATERSON GOLD MEDAL.—A. Brown (3½ Norton).

PRIZE PRESENTED BY W. SIMPSON FOR FASTEST TIME OF THE DAY.—Douglas Alexander (7-9 Indian).

Tiverton M.C. and L.C.C.

Since its inception a short time ago, the club has gained enthusiastic support over the whole neighbourhood. With Capt. L. H. Amory as president, there is now a membership of over a hundred motorists. The club is now in proper working order; social runs have already been arranged, to the satisfaction and enjoyment of all. One reliability trial has so far taken place, and a hill-climb will probably be held shortly.

Bristol M.C.C.

Only one sidecar, F. G. Mann's Harley-Davidson, made a clean climb of Bwlch-y-Groes in the recent twenty-four-hour trial; four soloists, Anstice (3 A.B.C.), McWalters (6 Zenith), Cornish (2¾ Ready), and H. Spencer (4 Omega), also made perfect ascents. Results:

THE HUTCHINSON CUP.—F. G. Mann (7-9 Harley sc.), — McWalters (6 Zenith), and H. Spencer (Omega-Blackburne), tied.

FOURTH PRIZE.—E. G. Fery (6 Douglas sc.).

GOLD MEDALS.—K. J. Woods (3½ Wilkin sc.), E. Colmer (3½ Norton sc.), and — Cornish (2¾ Ready).

SILVER MEDAL and SPECIAL PRIZE.—J. Edbrooke (2¾ Douglas).

The last-named gained the special award for the best ride other than the prize-winners; at one stage he towed another competitor, similarly mounted, for twenty-seven miles.

Southport A.C.

On the 25th ult. the club held a reliability trial for the Searisbrick Cup. The course was one of 100 miles, mainly over moss roads, with two observed hills. Results:

A. Douglas (3¾ Scott), Russell King (3¾ Scott), A. Jarvis (2½ Jarvis), B. Allinson (3½ Sunbeam), and R. Ball (3¾ Scott), equal 1st. 1st Lightweight, A. Jarvis (2½ Jarvis); 2, C. Cunningham (2¾ Verus).

Week-end Club Events.

Oct. 8.—Sutton Coldfield and North Birmingham A.C. Hill-climb on Penkridge Bank.
Oct. 8.—Essex County and Southend A.C. Closed Speed Trials.
Oct. 8.—Redditch and District M.C.C. Sporting Reliability Trial (open to all Midland Centre A.C.U. clubs).
Oct. 8.—Taunton and District M.C. and L.C.C. Land's End Trial.
Oct. 8.—Luton and South Beds. A.C. Paperchase.
Oct. 8.—North Wales M.C.C. Hill-climb.
Oct. 9.—Stafford and District M.C.C. Consistent Driving Test.
Oct. 9.—Stamford and District M.C.C. Captain's Run.
Oct. 9.—North-west London M.C.C. Closing Run.
Oct. 9.—Leeds M.U. Hill-climb.
Oct. 9.—Sheffield M.C.C. Run to Castleton.
Oct. 9.—Halifax and District M.C.C. Run to Castleton.
Oct. 9.—Basingstoke and District M.C. and L.C.C. Club Run.
Oct. 13.—Oxford M.C. Speed Judging Contest.

Levis Athletic Club (Motor Section).

Results of the Yardley Cup trial, described last week, are appended:

YARDLEY CUP AND GODFREY GOLD MEDAL for the Best Performance of the Day.—A. R. Edwards (2¼ Levis), 246 marks.

SILVER MEDALS.—Class B: W. S. Hawcutt (2¼ Levis) and J. Knibbs (2½ Levis) tied, 243 marks each. Class C: N. D. Pickering (3½ Triumph), 232 marks.

SILVER MEDAL for the Best Performance on a Levis Motor Cycle with 26in. Wheels.—J. Knibbs (2¼ Levis), 243 marks.

BRONZE MEDALS.—Class A: G. S. Davison (2½ Levis), 229 marks. Class B: S. Jones (2½ Levis), 233 marks. Class C: W. V. Pickering (3½ Triumph) and J. H. V. Wood (3½ Triumph) tied, 220 marks each.

SPECIAL MEDAL for the Best Performance on the Observed Hills by a Competitor not qualifying for any other Award.—Gem Smith (3½ B.S.A.), 209 marks.

SPECIAL PRIZE for the Best Performance by a Private Owner on a Machine over 250 c.c. and under 350 c.c. in Classes B or C: J. Knibbs (2½ Levis), 243 marks.

PREMIER PRIZES.—1, For the best performance by a private owner on a machine up to 250 c.c. in Classes B or C: L. West (2¼ Velocette), 141 marks. 2, For the best performance by a private owner on a machine over 350 c.c. in Classes B or C: W. V. Pickering (3½ Triumph) and J. H. V. Wood (3½ Triumph) tied, 220 marks each.

G. H. Symonds (2¼ Levis), winning his class at 32.2 m.p.h. in the Brighton and Hove M.C.C. hill-climb.

Sutton Coldfield and North Birmingham A.C.

A hill-climb will be held on Saturday at Penkridge Bank, open to all clubs in the Midland Centre A.C.U. Classes will be run on time and formula, $\frac{C \times T^2}{W}$

Motor Cycling Club.

Results of the one day trial for solo machines, described last week, have been announced as follows:

GOLD MEDAL WINNERS.—C. F. Plowman (3½ Sunbeam), B. H. Brayne (4 Blackburne), D. H. Davidson (4 Indian Scout), P. Cunningham (3½ P. and M.), P. Street (3½ Sunbeam), R. Pugh (4 Triumph), A. C. Rhodes (4 Triumph), J. Wallis (Bradbury), V. Belfield (3 A.B.C.), L. Nicholson (Coulson-B.), N. C. Dear (3½ Sunbeam), J. McBirnie (7-9 Indian), V. Olsson (3½ Sunbeam), T. Francis (4 Triumph), S. J. Marks (4 Triumph), S. Dunford (2¾ Verus), M. O'Reilly (3½ N.U.T.), F. R. G. Spikins (3 A.B.C.), O. W. Jones (7-9 Harley-Davidson), C. Bourlet (3½ Ariel), S. A. McCarthy (5 Stanger), W. C. Hemy (2¾ A.J.S.), H. G. Bell (7 F.N.), G. M. Townsend (3½ P. and M.), M. A. Newnham (5-6 Raleigh), R. B. Clark (2¾ Coulson-B.), H. F. Edwards (4¼ B.S.A.), S. Warne (3 Warne), J. A. Hoult (3¾ Scott), T. J. Ross (3¾ Scott), and F. A. Longman (3½ Ariel).

The cases of E. Hillary (3½ Rover), who is reported to have left the course, and F. Begley (4 Indian Scout), who is reported to have missed his gear on Pole Steeple, are being considered.

Taunton and District M.C. and L.C.C.

Encouraged by the success attending the recent Yeovil-Land's End trial, the committee has decided to hold a further reliability run to Land's End on Saturday. The exact route on this occasion will be a secret one. The trial is open to the following clubs: Barnstaple, Bournemouth, Bridgwater, Dorchester, Exeter, Launceston, Okehampton, Plymouth, Taunton, Tiverton, Truro, Weston-super-Mare, and Yeovil. An excellent entry has been received.

East Midland Centre A.C.U.

Excepting an unfortunate accident to Mr. K. S. Topping, the honorary secretary of the Centre, the recent speed trials organised by the North Derbyshire M.C.C. were very successful. Results:

550 c.c. SIDECARS.—Expert: 1, E. Scarle (3½ Sheffield-Henderson sc.), 43.4s.; 2, Jack Haslam (3½ Douglas sc.), 47.1s. General: 1, O. B. Hodgson (3½ Sunbeam sc.), 54.2s.

750 c.c. SIDECARS.—Same placings as preceding class.

1,000 c.c. SIDECARS.—Expert: 1, E. Scarle (3½ Sheffield-Henderson sc.), 41.1s.; 2, G. Brough (8 Brough Superior sc.), 45.4s. General: 1, A. Robson (8 Zenith sc.), 44.3s.; 2, K. S. Topping (8 Zenith sc.), 52s.

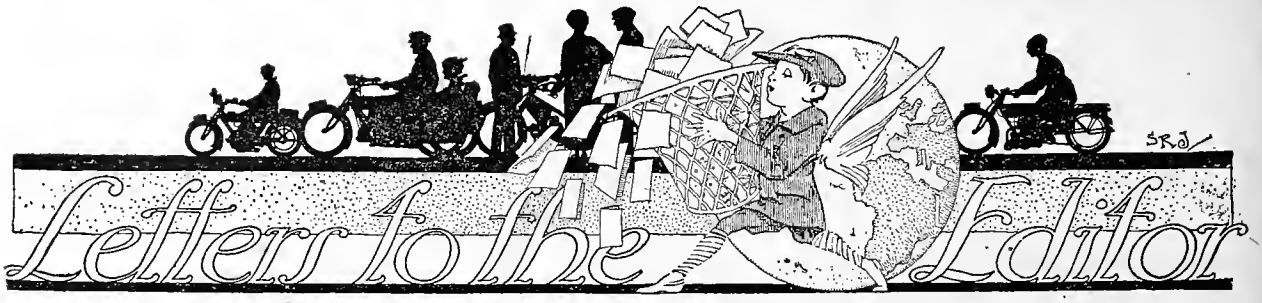
275 c.c. SOLO.—Expert: 1, G. Brough (2¼ J.A.P.), 45.1s.; 2, A. Palin (2¼ New Imperial), 59.3s. General: 1, A. Roberts (2¼ Omega), 51.4s.; 2, W. Bellian (2¼ Omega), 52s.

350 c.c. SOLO.—Expert: 1, G. Brough (2¼ J.A.P.), 45s.; 2, A. Palin (2¼ New Imperial), 54.3s. General: 1, J. Simpson (2¾ A.J.S.), 33.4s.; 2, H. Bannister (2¾ Coulson), 39s.

550 c.c. SOLO.—Expert: 1, E. Searle (3½ Sheffield-Henderson), 33s.; 2, Reg. Lucas (3½ Sunbeam), 37.4s. General: 1, J. Simpson (2¾ A.J.S.), 35.2s.; 2, H. B. Howson (3½ Norton), 36.1s.

1,000 c.c. SOLO.—Expert: 1, E. Searle (3½ Sheffield-Henderson), 32.4s.; 2, G. Brough (8 Brough Superior), 36.2s. General: 1, A. Robson (8 Zenith), 36.2s.; 2, R. Landrick (3½ Norton), 37s.

TEAM PRIZE.—Loughborough M.C.C.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

WHO CAN TELL?

Sir,—I was looking up the various performances of the Six Days in the issue of September 15th, when I suddenly observed that the petrol consumption figures for the 3¾ h.p. Scott reached as high as 98.1 m.p.g. Can anyone tell me how to attain this figure on this fascinating machine?

Reading. SOUTHERNER.

"COLLECTING FRICTIONAL ELECTRICITY!"

Sir,—The following extract from an article on "The Modern Motor Car" (published as far back as 1894), by Wilfrid J. Lineham, M.I.C.E., M.I.M.E., M.I.E.E., may be of interest to your correspondent Mr. L. W. E. Hartley:

"I must not omit to mention the external spark gap that is now universally employed, and which I call the Panhard spark gap.

"Whether true or not, it is said that some of Panhard's workmen discovered accidentally that an *external* gap of $\frac{1}{32}$in., in addition to that within the cylinder, made the internal spark occur with greater certainty. The truth of the result is indubitable, so that the secondary wire is now led direct to the dashboard, and there interrupted by a suitably protected contrivance, when the driver can see if the sparking occurs regularly." J.L.

Portobello.

Sir,—Although neither a "No. 8 hat" nor an electrical expert, may I advance the by no means original theory that the benefit obtained from an auxiliary spark gap accrues from the fact that this device insulates the secondary magneto winding from the sparking plug while the secondary current is "building up," thus preventing losses due to plug leakage, and consequently allowing a more rapid rise in potential. W. C. WINGFIELD.

Sir,—In connection with Mr. Hartley's letter, has any serious or successful attempt been made to replace magneto ignition by frictional electricity, incorporating, *e.g.*, a very small Wimshurst and condenser? What were the difficulties?

Reading. SOUTHERNER.

Sir,—Under the above heading a correspondent enquires about the use of extra spark gaps in the high-tension circuit.

The claim that any such device "collects frictional electricity generated by the engine" is best described as rot, and further comment on this point is unnecessary.

But there *is* something in the use of an extra gap in series with the plug. If the plug should be partly short-circuited by carbon, a very low resistance path is provided for the high-tension current, and under these conditions the voltage cannot attain a very high value, as will be readily understood by anyone conversant with the theory. If the plug conditions are very bad no spark will be produced. If we now put an extra gap in series with the plug the voltage is permitted to rise sufficiently to produce a spark and the sudden oscillatory discharge is sufficiently energetic to produce a spark at the plug points as well as at the gap in spite of leaky insulation. That is the case for the gap. Against it there is much to be considered. The "amplifiers" or "intensifiers" sold usually consist of a pair of points enclosed in a glass tube. This form of gap is just about the worst possible for the purpose. The erratic behaviour of such gaps when an impulsive voltage is applied has been the subject of many papers read before various scientific bodies. It is possible for the voltage required to jump a gap of this description to vary enormously at different instants, and its use puts an unfair strain on the insulation of the magneto, causing it to spark repeatedly at the safety gap, which is very likely to cause trouble if continued. One team of riders, who shall be nameless, spoilt all their chances in the recent Six Days Trials solely by the use of these "amplifiers."

It is not impossible to construct a gap free from the more serious disadvantages mentioned. A pair of spheres, or a ring with a wire through the centre, would be fairly satisfactory if well ventilated and kept clean; but the last two conditions are somewhat antagonistic on a motor cycle, and probably the best way out of the difficulty is to buy a good plug. Then the extra gap is unnecessary.

I enclose my card, but prefer to remain anonymous, as my hat is only "7¼."

Coventry.

Sir,—With reference to the letter from Mr. Hartley asking that an opinion should be given as to the advantage of the external spark gap by some "No. 8 hat," I would suggest that if he really wants information on this subject he might buy a copy of Mr. A. P. Young's book on "Magnetos"* and study it. The question is dealt with there, and the reasons why a spark gap type of distributer was adopted in many of the aero magnetos is explained.

Another course is to try for oneself. Oil up a plug well, and try whether it shorts more easily when there is an external gap or no gap.

Personally, I have found that a plug so oiled up that there was no sign of a spark with the wire coupled in the ordinary way would often spark quite well if the high-tension wire was held $\frac{1}{32}$in. from the terminal. I have also found that if for any reason the engine was liable to oil up its plugs, it would run far better with an external gap. Last summer I was running an engine of experimental type in which the lubrication was defective, and, in consequence, there was great difficulty in preventing the plugs oiling up. This was completely got over by introducing external spark gaps. F. STRICKLAND.

*Published by Iliffe and Sons, Ltd., 20, Tudor Street, London, E.C. 4.

This is the Cumberland County M.C.C. team that has for the second year in succession won the club team prize in the Scottish Two Days Trial. The riders are: W. T. Tiffen (2¼ Velocette), R. L. Williamson (3½ Norton), and W. B. Anderson (4 A.J.S.)

SUNDAY COMPETITIONS.

Sir,—I should like to endorse heartily the opinion of Mr. F. Rayner.

With all due respect to Mr. Dovener—whose letter, in my opinion, hardly savours of a truly sporting tone—I think it very unfortunate that our clubs cannot organise a satisfactory trial in the time they have on hand after Saturday midday. Moreover, I am sure that by far the majority of club members could give the whole of Saturday to this purpose if this were the rule.

I am a motor cycling enthusiast, and venture to call myself a sportsman; but give me the Sunday worth calling a Sabbath.

M. E. MILES.

TYRES, EX-W.D., EXPERIENCES WITH.

Sir,—For some months past your advertisement columns have been particularly full of advertisements dealing with cheap tyres, variously designated "Ex-W.D.," "Clearance," etc. I think it would be of interest to learn your readers' general opinion of these goods. My own experience in the matter persuades me that they are rather in the nature of a "lucky dip," and on the whole to be avoided.

My first experiment was with an American cover, 26×2½in. It was still in the original wrapping and appeared perfectly sound and fresh. After 500 miles running the canvas was showing through the tread, not all the way round, but for about half the circumference.

Next, I tried an English cover, 700×80 mm., extra heavy pattern. This, too, appeared quite fresh, and was in the original wrappings. After its first run of 150 miles, I noticed several long cracks in the walls, particularly near the bead and around the raised letters of the makers' name. The rubber in these places did not seem to be satisfactorily bonded with the canvas; it could be peeled away without much difficulty. A friend of mine had one of the same make, which was completely worn out in five weeks' normal use.

I should like to state here my appreciation of the fair dealing and courteous treatment I received from the people at the Central Garage, Thornton Heath, from whom I purchased the last mentioned cover. I wrote informing them of my bad luck, but scarcely expected them to accept any responsibility for a "clearance line" article. I was agreeably surprised when they offered to exchange it for another of different make free of all charge. The cover I have from them now is giving very satisfactory service, showing, I think, that cheap covers are rather a matter of luck.

I have no connection or interest in the above concern except that of a client who appreciates a

Stafford. FAIR DEAL.

INTERNATIONAL RECOGNITION OF THE LIGHT-WEIGHT SIDECAR.

Sir,—Under this heading, in your issue of September 1st, Mr. E. H. Humphries, of Messrs. Humphries and Dawes, has commented upon the decisions taken at the congress of the F.I.C.M. held in Geneva on August 8th, and has especially asked for explanations which he thinks I can give as having been in the chair at the said congress.

The minutes of the meeting having not yet been circulated to the different associations, it is hardly possible to give a detailed account of the discussion which took place when Mr. Ebblewhite introduced the motion of having the 350 c.c. sidecar class reintroduced into the F.I.C.M. regulations after its elimination only a year ago.

All I can state at present, and without the minutes before me, is that sidecar outfits of 350 c.c., and even of 500 c.c., have not proved a success in any of our mountain districts of which we have knowledge. In Switzerland, all sidecar machines up to 500 c.c. have had to be used very carefully and gingerly, and have not given entire satisfaction to their owners when they used them for mountain touring.

The congress therefore, after careful deliberation, considered that it would be unwise to foster, by racing and consecutive publicity, a type of machine which, in actual touring use, would not give entire satisfaction.

So far as I am concerned, I am well aware that, with the wonderful development in power of small size engines, conditions have materially changed in favour of reduced cylinder capacity. Unfortunately, small size engines are generally fitted to light or medium-weight frames, which do not seem adequate for carrying sidecars on which very often two or three passengers may be conveyed, as Mr. Humphries must himself admit just by contemplating page 203 of *The Motor Cycle* of September 1st (the same page on which his letter appears).

JULES NEHER,
President of the Swiss Motor Cycling Union.

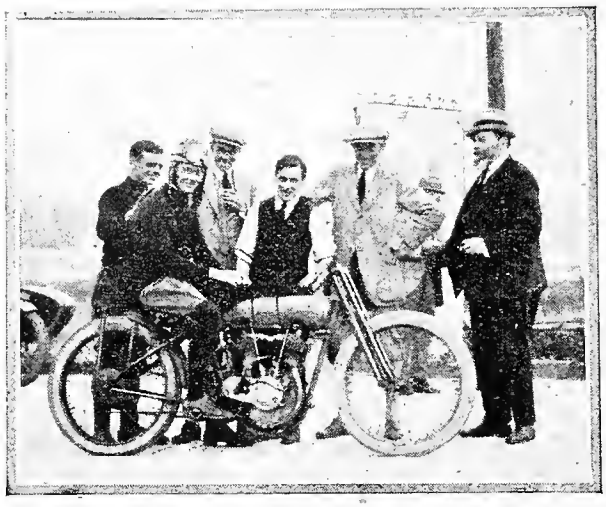
Geneva.

UNINTERESTING SPEED EVENTS.

Sir,—At the last meeting of the Norfolk M.C. and L.C.C. a number of our members expressed their surprise at the remarks contained in the report on our open speed trials published in your journal, and I am requested by my committee to write you on the subject.

At the dinner held after the trials, the Assistant Secretary of the A.C.U. (who acted as A.C.U. steward at the meeting) expressed in most emphatic terms his entire satisfaction of the way in which everything had been carried out, and congratulated the club on its undoubted success. Considerable

Two well-known solo riders in the successful English team in last week's International Trial between Holland and England. H. R. Davies (2¾ A.J.S.) and W. B Gibb (2¾ Douglas), followed by two of the visiting team, at Malvern.



C. F. Temple, in the opinion of many Brooklands *habitués*, one of the three best track riders in this country, has named his Harley-Davidson "Mutt." He is seen here being congratulated after breaking eight records.

importance was attached to this gentleman's kind remarks, knowing that he had been present at a vast number of similar meetings before. Moreover, as you know, a number of the competitors were men whose names are famous in the racing world, and who should therefore be most critical judges of the success or otherwise of a speed trial. They were also in unanimous agreement as to the unqualified success of the meeting.

Your representative's remarks upon the number of classes is not quite accurate as to facts. There were only eighteen classes and not thirty-four. The fact that the club members' times were taken as well as the open competitors' times in each event did not prolong the meeting in any way whatever, and the fact that members took prizes in each class as well as open competitors did not make that event into two classes. I wish to point out to you that the whole organisation of this meeting, which involved untold hours of work, was carried out entirely by members of the club on an honorary basis, purely for the sport it involved. *Hinc illæ lacrimæ.*

R. A. LOWER,
Hon. General Secretary Norfolk M.C. and L.C.C.

[In reviewing the Norfolk Club's speed trials, we pointed out that the meeting was unwieldy and monotonous, from the spectator's point of view, with such a lengthy list of classes. We agree that the organisation, as well as the entry list, were first-rate. The subject of uninteresting speed trials was discussed in a leading article last week.—ED.]

WHICH IS THE FASTEST NORTON MODEL?

Sir,—With reference to "Inquisitive's" letter in your issue of September 22nd, we should like to explain that the Brooklands Special and the B.R.S. engines are specially tuned and built with one end in view—power development—without which speed is, of course, impossible.

Upon completion in our works, these engines are sent in batches to Brooklands, where they are checked over and tuned by Mr. O'Donovan and his staff. After a few preliminary laps, they are officially timed over the "kilo," and a certificate of the individual performance of each engine is issued by the authorities. This certificate states that the engine has exceeded speeds of 70 and 75 m.p.h. as the case may be, and is signed by the track superintendent. After this the engine, exactly as when certified, is returned to our works and fitted either to a countershaft model 16H or direct belt drive model No. 9, and, after passing a short road test, is ready for despatch.

"Inquisitive" enquires whether the machines ridden by Mr. V. Horsman (when he finished first in the 500 mile race at Brooklands) and Mr. H. Hassall (when he won the Belgian Grand Prix) were standard 16H models. In both cases, the engines were standard and uncertified, tuned entirely by the respective riders. In this connection, we should like to point out that every standard model 16H is capable of being tuned to speeds to equal the Brooklands models provided the owner has the necessary tuning ability and riding skill.

The material used in all engines, whether certified or otherwise, is identical; but, while the standard engine is *capable* of being tuned for record speeds, the B.S. and B.R.S. have *actually accomplished* the speeds which are stated upon the Brooklands A.R.C. certificate, which is supplied to the purchaser of the machine.

For NORTON MOTORS, LTD.,
W. J. HASSALL.

Sir,—In reply to your correspondent "Inquisitive," as to which is the fastest Norton model, if he would read carefully the Norton catalogue it would impress even his lay mind that the B.S. engine is certainly the fastest.

This does not mean to say that the other engines they turn out have not the possibilities of equalling or exceeding the speed of the B.S. engine, but the certificate given with the B.S. engine is a guarantee that the engine has actually exceeded 75 m.p.h.

As the writer of the advertisement offering to tune up a 3½ h.p. three-speed model to do 75 m.p.h., may I correct "Inquisitive," who seems to have got the impression that no charge would have been made for this? As a matter of fact a charge was made after our customer had purchased his machine. This was not a big charge, as this particular engine was exceedingly fast when we received it from the works, and the time involved in tuning was very little.

Although our customer has now an engine which he actually witnessed doing 75 m.p.h., he has not a certificate in his possession to show an intending purchaser any time he wished to dispose of the machine.

That is the difference, "Inquisitive," and if you have sufficient tuning knowledge, believe us, you can make a Norton do over 80 m.p.h.

BULLOUGHS MOTORS, LTD.
L. MITCHELL.

SUMMARY OF CORRESPONDENCE.

F.E.W. valve attachments fitted to a fairly old J.A.P.-engined Enfield are enthusiastically praised by Mr. W. R. Burnett.

Complaining that few makes of motor cycle are really suitable for winter riding, "Splash" pleads for the more general adoption of protected transmission and all-black finish *à la* Sunbeam.

"W.B." (Stafford) comments on the over-zeal of the Slough police, who recently successfully summoned a youthful rider of a lightweight for exceeding the local speed limit immediately after making a strenuous push start.

Each and every week we receive dozens of letters commending the service of various makers and garages. Recently there has been an appreciable increase in the numbers of these unsolicited testimonials.

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Issued in conjunction with *The Motor Cycle.*

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The standard handbook on the motor cycle.
Price net, 2/6. By post, 2/10.

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A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

HILL-CLIMBING FORMULA.

Q. Can you supply me with a formula for hill-climbing competitions?—E.L.H.

The formula invariably recommended by *The Motor Cycle* is $\frac{C \times T^2}{W}$. Where C = capacity in c.cm., T = time, W = total weight. The lowest figure wins.

FITTING OVERSIZE TYRES.

Q. I am desirous of fitting 28in. × 3in. tyres on 26in. × 2¼in. rims. (1.) How much will the distance be from the rim to the circumference of the tyre? (2.) Are 28in. × 3in. tyres extremely liable to roll off either in cornering or at speed (40 m.p.h.) on a sidecar outfit? (3.) What size of tube do you recommend with these tyres? (4.) Do you recommend security bolts with these tyres?—A.E.L.

(1.) The distance will vary according to the makes of tyres and the pattern of the tread, but in most cases about 3in. (2.) There is very little danger of this happening. (3.) 28in. × 3in., although 26in. × 2½in. may be used in an emergency. (4.) Security bolts may be necessary; it is rather a matter to be decided by experience.

FINE SERVICE FROM HUB GEAR.

Q. About 14,000 miles have been covered on my 1913 Triumph, which is fitted with a Sturmey-Archer three-speed hub gear, and the latter has never given trouble. (1.) Is it now likely that the gears will suddenly go wrong, and, therefore, would it be advisable to have them overhauled, or should I let well alone? Although the gears still change properly, there is rather more backlash between the wheel and the belt drum than there used to be. (2.) At times, when in top gear, there seems to be a certain amount of "slip," although I inject thin oil frequently. Is this a sign of wear?—W.A.C.

(1.) The distance of 14,000 miles without trouble from your three-speed hub gear is very satisfactory. As the gears still appear to be working properly, it scarcely seems necessary that they should be overhauled. The backlash between the wheel and belt drum is due to wear, and may be disregarded if it is not excessive. (2.) The slipping on top gear is no doubt due to wear of the clutch plates, or weakening of the clutch springs. If it interferes with hill-climbing, new clutch plates or new springs should be fitted.

REMOVING BACK PRESSURE.

Q. I have a 1912 single-cylinder machine with silencer fitted across the frame under the magneto. If I run the machine with the cut-out shut it will not pull at all. Will any improvement be felt if I fitted an exhaust pipe direct from the cylinder without going through the silencer at all? I see that many racing men favour this arrangement.—L.R.O.

An exhaust system which does not allow the gases to pass through an expansion chamber does not comply with the law. We would advise you to close permanently the cut-out on the existing silencer and replace it with an extension pipe. Special fittings for this purpose can be obtained.

Important Dates.

Sat., Oct. 8th—B.M.C.R.C Championship Meeting, Brooklands.

Sat., Oct. 8th—Woolwich, Plumstead, and District Open Reliability Trial.

Sat., Oct 8th—The "Scott" Trial in Yorkshire.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Sat., Nov. 5th—Midland Centre A.C.U. Open Reliability Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Sat., Dec 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

SIDECAR ALIGNMENT.

Q. I have just bought a 1915 8 h.p. Matchless outfit, and it is in good running order, but steering requires some effort, as there is a distinct tendency for the steering to pull into the sidecar, *i.e.*, to turn to the left, even when running on the right-hand side of the road. What is the cause of this?—G.J.D.

Probably the sidecar is not correctly aligned; the sidecar wheel should be parallel with the rear wheel of the cycle. See "Motor Cycles and How to Manage Them." Steering is usually improved by adjusting the motor cycle so that it inclines slightly away from the sidecar. You will find that so adjusted the steering is much easier than when the machine is quite vertical. If this does not effect a cure, adjust the sidecar so that its wheel runs in about ½in. towards the front of the machine.

PROS AND CONS OF PETROIL.

Q. What are the chief points, good or bad, of the petroil system of lubrication with a two-stroke engine?—NOVICE.

The chief objection to the petroil system of lubrication arises from the amount of dirt which collects on the carburetter and petrol supply system generally, as a result of slight leakages, which are usually present but unnoticed until oil is mixed with the petrol. There are really no mechanical objections to this system, which is decidedly economical, simple, and quite efficient, especially in the case of roller bearing engines.

MAGNETO QUESTIONS.

Q. I have a 6 h.p. twin and the engine is difficult to start. I think the trouble is in the magneto. I have had it disconnected, and find that I cannot get a spark in the fully retarded position, whereas I can nearly always in the fully advanced. Also that by withdrawing the cam ring clear of the peg which limits the advance, and advancing still further, I can get a good spark for another ⅜in. circular motion of cam ring. It looks as if the slot limiting the travel of the cam ring is cut not quite in the best position relative to cams and armature. Will you answer the following: (1.) How can I verify that contact is breaking in the best position for the armature? (2.) Why is the vulcanite slip ring made V shape? Is there any other reason but to keep oil or grease from creeping on the contact surface? (3.) Would any damage to windings, condenser, etc., occur if I fitted an extra magnet outside the present one to intensify further the permanent field?—G.E.

(1.) A rough way of verifying whether the contact breaker points separate in the most favourable position of the armature is to rotate the latter by hand until the position of maximum resistance is felt. At this position the contact breaker points should be just separating in the fully advanced position. (2.) The V shape of the slip ring not only tends to protect the segments from oil or grease, but also the large area of non-conducting surface offers greater electrical resistance to leakages of the high-tension currents. There is absolutely no object in fitting extra magnets, and if you suspect that the present ones are weak it will be best to return the magneto to the makers to be remagnetised.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be s nt to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"F.F." (Stratford-on-Avon).—28×3in. tyres, W.S.R. variable jet, and Bowden extra air inlet on 4 h.p. Triumph.

"A.M.H." (Cumberland). — A.B.C.: General capability as a sidecar machine with passenger and luggage in a hilly district, speed, reliability, and consumption (both solo and sidecar).

"H.J.H." (Reading).—6 h.p. British Excelsior-Jap (Popular model) sidecar outfit: General reliability, speed, consumption, and ease of starting.

"C.A.I." (Blackpool).—7 h.p. A.J.S. sidecar: Petrol consumption with Binks carburetter, most suitable combination of jets, and oil consumption.

"D.P.T." (Ilford).—7-9 h.p. electric model Harley-Davidson sidecar: Speed and general reliability, petrol consumption, tyre mileage, controllability in traffic (chain snatch at speeds below 20 m.p.h. on top), and amount of attention necessary to engine (particularly valve gear).

"S.H." (Bootle). — A.J.S., Royal Ruby, and 6 h.p. B.S.A. sidecars: General experiences.

"L.R.G." (South Woodford).—3½ h.p. 1921 Rudge Multi: Speed, reliability, suitability for use in London traffic, steering, and effect of fitting special overlap cam.

"G.T." (Bermondsey). — Burlington clutch conversion sets for 4 h.p. Douglases: General experiences.

"C.T.P." (Northwood).—3 h.p. Royal Ruby: Comfort, speed, reliability, and brakes.

READERS' REPLIES.

LAPPING IN PISTON RINGS.

Under the above heading, in your issue of the 22nd ult., you, grudgingly, it is true, explain to "H.A.B." how to lap in his piston rings. Will you permit me to say that in a life experience of engineering shop practice this is something I have never permitted to be done. Some firms even go so far as to prohibit the polishing of cylinder bores, but insist that they shall be left as finished by the tool or the grinding wheel. The reason for this is that the abrasive used becomes embedded in the walls of the cylinder, from which it is practically impossible to remove it. Further, unless very skilfully done, the process would not result in a parallel or round bore. It is probable that the cylinder in question has distorted. It is commonly known that, unless the cylinder castings are seasoned or annealed before the finish boring operation, there is a liability to distort in the first hundred miles or so; but, once corrected, this rarely occurs. "H.A.B." would be well advised to get the cylinder reground by a reputable firm. If the piston rings he fitted were of a well-known make, it is very unlikely that these caused the trouble. Rings are so made that they give a uniform pressure all round the cylinder wall, either by turning to a special shape or by turning cylindrical, and, after cutting, being rolled or hammered on the inside to give them the necessary spring, and, finally, being ground in a special fixture to the exact size of the cylinder they have to fit. If your correspondent has to use crudely made rings, his better course would be to smear the cylinder walls lightly with Prussian blue, insert the rings in the piston, and push them up and down in the cylinder a few times, when the high places will be marked, and can then be very carefully filed off. This, however, is not a practice to adopt where properly made rings can be obtained.—ENGINEER.

A KNOCK AT SPEED.

Having read "A.R.H.B.'s" and other readers' experiences of the above, may I venture to give my own? After my machine had been running quite well, I started up (from cold) without any obvious change in the engine. As soon as I changed into top gear, a most alarming rattle began, and I thought that the big end was swinging about free in the crank case. I immediately shut down, when the rattle disappeared. On opening out again it commenced anew. On dismantling everything seemed O.K. The piston ring slots were cleaned out (I do not use a bottom ring), bearings tightened up, and the little end rebushed. I thought it might be piston slap, as my piston is very loose in the cylinder. On taking the 'bus on to the road it gave a few bangs and a rattle or two, and the flywheel came off. The flywheel key had sheared, and I found that so long as the key touched the flywheel anywhere the engine rattled badly when going all out, although it sometimes reached 30 m.p.h. before doing so. It was not through heat, as "Gudgeon Pin" states, for when riding normally I can leave my hand on the cylinder for several moments. A friend had the same trouble, which he cured by packing the taper on the shaft with copper foil.—FLYWHEEL.

I should like to add a few words to what has already been written on "two-stroke rattle." Having done most of my riding upon Villiers-engined machines, I cured the trouble in the following manner. In both the instances I am citing, the noise was caused, as "Gudgeon Pin" states, by the piston, but not through this "drying up." I found in both cases that the sides of the baffle had become shiny by contact with the cylinder wall, presumably that part above the point reached by the top ring at top dead centre. If this baffle is filed all the way round its circumference so as entirely to clear the cylinder wall, and if the rings are not allowed to stick or burn into their grooves, I am confident that a complete cure will be effected. When filing the baffle every part of the piston above the top ring must be given full clearance—at least .025.—OE 1382.

SPARKLETS.

British Success in Denmark.

In the twenty-four hours pair-race at Zeeland, Denmark, September 17th and 18th, Rasmussen (on a Rudge) and his partner Olsen (on a Wooler) finished as first pair in their class.

To Owners of Pre-war Machines.

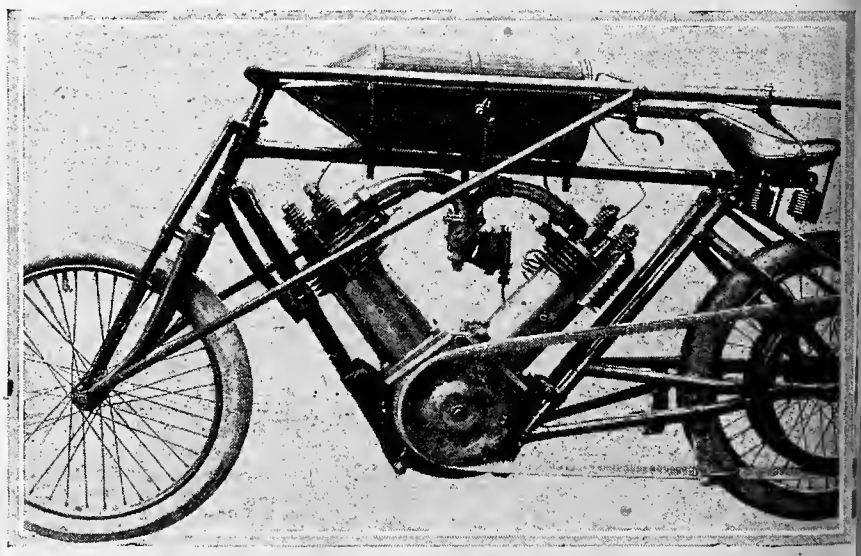
Owners of machines with hub gears are well catered for by the Cromwell Engineering Co., 327, Putney Bridge Road, London, S.W.15. This firm issues a useful series of "hub gear hints," and is now marketing a special oil (in tins) for these gears.

Found.

On Saturday, the 24th ult., Mr. Heritage, 59, Bourne Road, Stoke, Coventry, found a brake pedal on the Warwick-Leamington road.

Between Bidford-on-Avon and Honeybourne Station, Mr. Geo. Mannell, Brandon Villa, Honeybourne, Worcs., found a new sparking plug.

Mr. Harold Ainsworth, 4, Victoria Road, Penketh, near Warrington, wishes to return a pair of gloves left behind by the driver of a Rex sidecar on the Liverpool Road, Bold, on the 25th September.



A 20 H.P. MOTOR CYCLE.

This machine, obviously useless except in its particular sphere of work which is cycle pacing on the track, has points of interest, however. Observe the auxiliary exhaust ports, and the enormous pulley, giving a gear ratio of 1¾ to 1.

MOTOR CYCLE DEVELOPMENTS IN GERMANY.

Motor-assisted Bicycles Popular with Manufacturers. An Aluminium Narrow Angle V Twin. Several Flat Twins. A Single Track Runabout for Two.

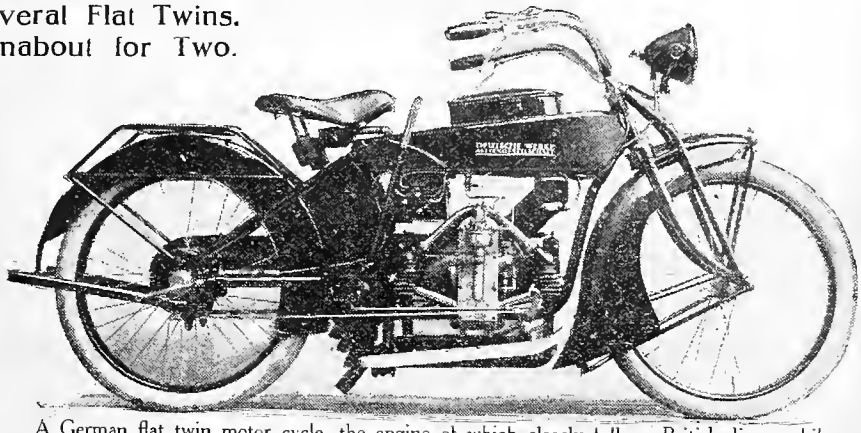
HIGH petrol costs and heavy taxation have had an important influence on German motor cycle design, as could be plainly seen in the models exhibited at the first Berlin post-war motor show last week. During the war our late enemies made little or no use of motor cycles, and there was consequently no development of design. With the return to peace conditions, they had to face heavy taxation and particularly high fuel costs, for although home-produced benzole is used to a considerable extent, American petrol is also necessary, and is very costly to the German, whose mark is only worth an American cent.

Because of these conditions, the German industry has turned towards the motor-assisted bicycle. In the Kaiserdamm Palace, a huge hall erected on the western suburbs of Berlin specially for motor shows, there is every conceivable variety of motor-assisted bicycle. And the German engineers appear to have taxed their brains to discover in how many different positions they can mount these little engines in an ordinary bicycle frame. They are in front, behind, on top, at the bottom, placed at all angles, and drive by belt, chain, and friction pulleys. The motor wheel type is favoured by the Opel Co., one of the biggest manufacturers of cars and bicycles, while the numerous other and smaller firms prefer to attach the machine to the bicycle frame. There is only one exception in the L.F.G. made by a firm which acquired some notoriety during the war as a manufacturer of aeroplanes, which has a motor wheel trailing behind, and which pushes the bicycle.

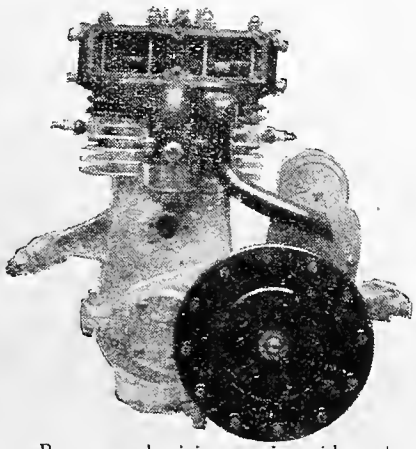
Under-powered Invalid Carriages.

In several cases these small engines are fitted to tricycles and four-wheelers for invalids and wounded soldiers; but some of the engines are so tiny that they must be inadequate for the work they are intended to perform.

No motor scooters were seen on the streets of Berlin, or indeed of any German city; but evidently it is believed that there is a future for them, for their construction has been taken up by the great Krupp firm. In design, it is difficult to find any difference between the product of this great German gun factory and some scooters which have been imported from America.



A German flat twin motor cycle, the engine of which closely follows British lines, while an American type front fork is fitted—the Deutsche Werke.



Bergmann aluminium engine with steel liners, cast iron cylinder heads, and direct-operated o.h. valves. From this view of the engine it is difficult to appreciate that it is a V twin.

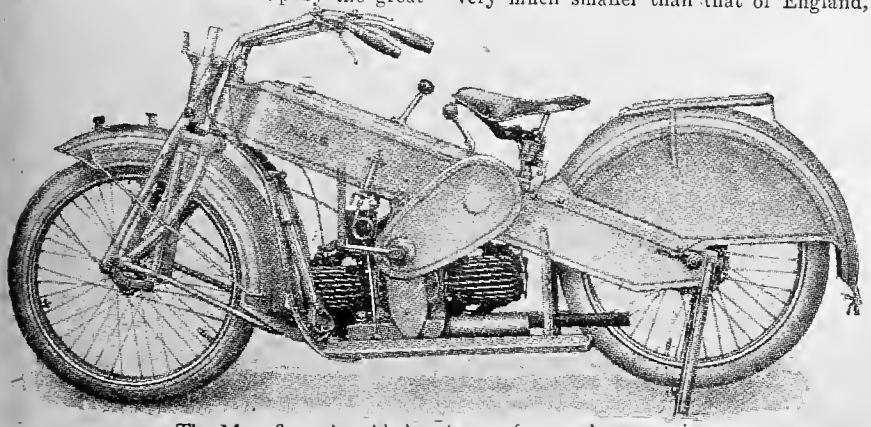
The German motor cycle industry is very much smaller than that of England, and the superiority of the home country is revealed in the adoption of British exclusively German, and where even the indirect products of foreign countries can be counted on the fingers of one hand, it is counted on the fingers of one hand, it is interesting to find the English Triumph two-stroke, presumably built in Germany under licence. On the whole, however, German engineers do not show a great deal of enthusiasm for the two-stroke.

The two German firms best known outside their own territory in pre-war days—N.S.U. and Wanderer—do not present machines with any new features of design, construction evidently having been taken up just where it was left off in 1914. Some of the really big factories, however, do not despise the motor cycle. As an example, the B.M.W., a company which developed a huge factory at Munich for the production of aviation engines, is specialising on a flat twin of very up-to-date design, built in various sizes for motor cycles and cycle cars. Labour costs being low in Bavaria, and the value of the mark having shrunk enormously, a unit such as this might be a serious competitor on foreign markets As to the complete machines, there is not very much to be feared from them, for although they have the advantage of low price when placed on a foreign market, they are, generally speaking, not equal to the British product.

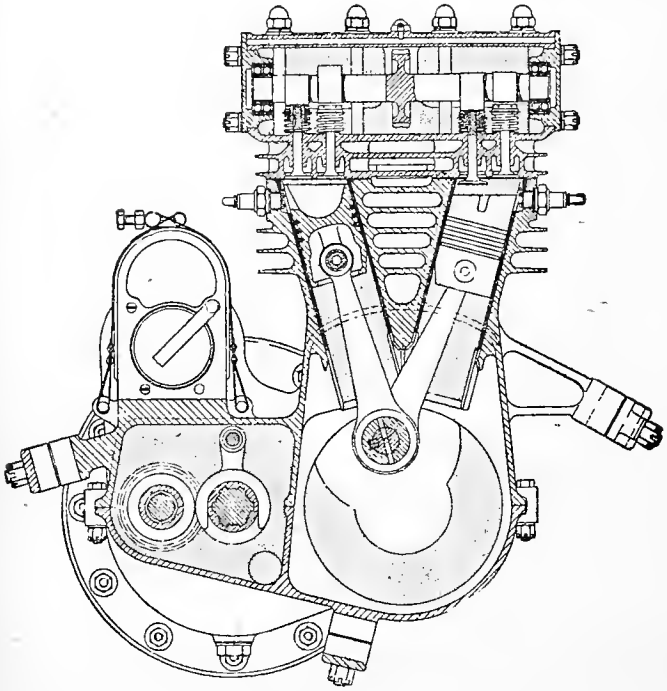
An Aluminium Engine.

Another good unit for assemblers is the Bergmann, a V type with aluminium cylinders, having steel liners and vertical overhead valves directly operated by an overhead camshaft, no gear being used between the cam and the valve stem. This engine has a cast iron detachable head, and is built as a unit with the change-speed gear. It is the work of one of the most reputed German engineers, and is undoubtedly a fine piece of work.

As an example of a good class 500 c.c. machine, with a powerful company behind it, the Deutsche Werke flat twin is interesting. This is produced in the former Government munition factory at Spandau, and is evidently the work of



The Mars flat twin with box frame of unusual construction.



The Bergmann narrow angle V twin with integral gear box. It is constructed of aluminium.

an engineer who has closely studied British design. The engine is a flat twin, recalling the Douglas, with vertical inlet valves, the rocker arms of which are enclosed in a metal box with hinged cover. Without having any startlingly novel features, it is a smart job.

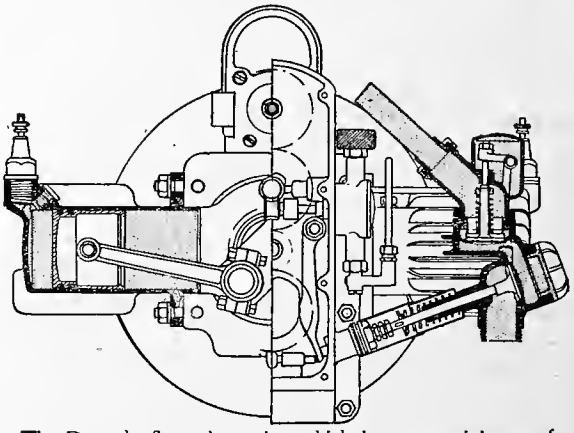
The Mars machine, another flat twin, is original by reason of its box frame. The engine, which is one of the most powerful to be found in the show, has no unusual features of design, being a flat twin of 80×95 mm., with horizontal side-by-side valves. All chain drive is used, there being two chains from the countershaft to the hub sprockets, protection for them being afforded by the box frame. Rear mudguarding is very adequate, the valances completely covering the upper half of the wheel. The guard can be taken off as a unit, and the wheel removed, leaving the chain sprockets in position. This machine is sold with a two-seater sidecar, the seats being in tandem, and, in accordance with the general rule in German car construction, the hood is concealed.

Belt Drive.

The Victoria machine is fitted with the well-known B.M.W. flat twin of 68×69 mm. bore and stroke. One of the features of this engine is a crank case forming an oil sump, with pump circulated oil supply to the main and the connecting rod bearings. Contrary to the more general German practice, final drive is by belt, instead of by chain, for both primary and secondary drives.

A single track runabout—the Mauser—demonstrated at the German motor show. For years our late enemies have endeavoured to produce a motor bicycle having most of the advantages of a car. Observe the small steadying wheels.

One of the most extensively used lightweights appears to be the M.F.Z., which is fitted with a single-cylinder overhead-valve engine, the valve operation of which is by push rods and rockers. This has the change-speed mechanism combined with the crank case and final drive by belt.



The Deutsche flat twin engine, which is very reminiscent of British design.

One of the novelties of the show is the Megola, with five-cylinder rotary engine built in the front wheel. This machine has already been described in *The Motor Cycle*. The cylinders, which, naturally, have all their rods connected up to one crank, have a bore of 52 mm. with a stroke of 60 mm., the general principle of construction being like that of the well-known Gnome aviation engine. A pressed steel open frame is used, with semi-elliptic springs for the rear; this type of construction gives a rather long wheelbase. Instead of the usual saddle there is a comfortable-looking armchair, the back of which is combined with the mudguard over the rear wheel.

Another armchair motor cycle is the Lomos, which has an open tubular frame and only 20in. wheels. An armchair is mounted in the place of the usual saddle, and immediately below the rider's legs is a single-cylinder air-cooled two-stroke engine of 55×60 mm. bore and stroke.

Single Track Runabout.

If our recollections are correct, the Mauser is the revival of an idea put forward in America several years ago. The machine is an ordinary type motor cycle with rather lengthened wheelbase, driven by a B.M.W. engine, and having a car type body built on this frame. There are two seats in tandem, and in addition to the two ordinary wheels a central axle with a small diameter wheel at each end. When standing, or running slowly, the axle can be dropped, allowing the wheels to come in contact with the road, but when running normally the axle is raised, and the machine runs just like an ordinary motor cycle. The flat twin engine, being placed fore and aft in the frame, is particularly well suited for this type of motor cycle. It is carried under the floor-boards, beneath the passenger's feet, and is invisible from outside. There are openings in the body to allow of a cooling draught.

ANOTHER SPORTING MODEL BIG TWIN.

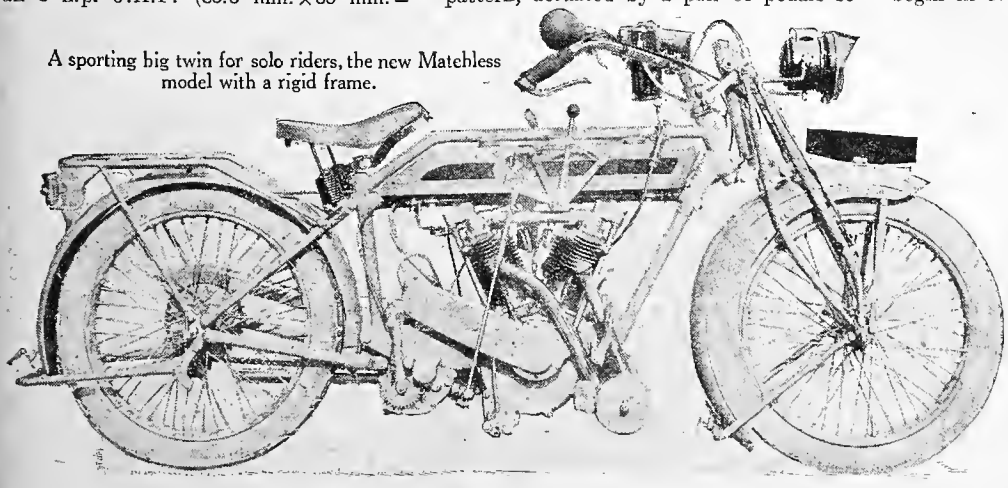
Rigid Frame 8 h.p. Matchless, for Fast Solo Enthusiasts, to Sell at £130.

IT is gratifying to note that manufacturers are taking serious notice of the fact that there are very few British big twin machines on the market suitable for solo riding. One of the latest manufacturers to recognise the demand for a powerful, sporting solo machine is the firm of Messrs. H. Collier and Sons, Ltd., 44, Plumstead Road, London, S.E.18, who, in the Model J Matchless, have produced a comfortable and powerful mount, fit for serious touring not only in this country, but overseas, where high power is often necessary through the heaviness of the roads.

The engine used is either a 7 h.p. M.A.G. (82 mm. × 94 mm. = 996 c.c.) or an 8 h.p. J.A.P. (85.5 mm. × 85 mm. = 976 c.c.). The frame is a modification of that supplied to the sidecar model, the rear portion being rigid. The transmission is by chain, the front chain being totally enclosed, while the rear chain is protected by means of a guard. So far as the gear box is concerned, this is identical with the sidecar model, and the arrangement of the kick-starter, which raises the exhaust valve, is retained, there being no exhaust valve lifter on the handle-bars. The gear ratios are 4.1, 7½, and 10½ to 1.

A front rim brake is fitted to the front wheel, but a contracting hand brake may be fitted to order if desired, while the rear brake is of the internal expanding pattern, actuated by a pair of pedals so that it may be applied by either foot. The usual type of Matchless clutch is fitted, and this may be actuated either by the heel and toe pedal, which has long been a feature of Matchless motor cycles, or by a lever on the handle-bar. Footrests instead of footboards are supplied, while 28 × 3in. tyres are a standard.

The Model J is intended not only to be a sports model, but also a double-purpose mount, and lugs are provided for the fitting of a sidecar. Considerable improvement has been made in the handle-bars, but the exact pattern of these has not yet been finally decided. It is hoped to place this model on the market for £130, and deliveries will begin in November.



A sporting big twin for solo riders, the new Matchless model with a rigid frame.

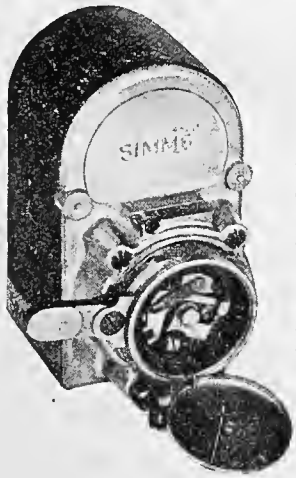
We tried the machine, and found it to be particularly well balanced and extremely comfortable, while owing to the fitting of a very large expansion chamber and a long exit pipe the engine is beautifully quiet. Needless to say, it has wonderful acceleration powers, steers remarkably well, and is capable of a high turn of speed. Tried on the steep hills in the Woolwich district, it made light of these on top gear, could be slowed down to a walking pace, and rapidly accelerated on a gradient of 1 in 12 or worse. As a competitor to the Americans, the new Matchless must be seriously considered.

RE-INTRODUCTION OF SIMMS MAGNETOS.

THERE is no name more intimately connected with magneto manufacture than that of Simms, for, eighteen years ago, Mr. F. R. Simms introduced the high tension magneto to the world, thereby conferring an enormous benefit upon the motor cycle movement that is even now not fully realised.

One Size Only.

Simms motor cycle magnetos were extensively manufactured before the war, but since that date the company has devoted its attention chiefly to the supplying of magnetos to industrial motors and now has these standardised on Leyland and Thornycroft lorries. At the present time, however, the manufacture of a motor cycle magneto has been resumed, and Simms magnetos, made in one size only, but in types suitable for single cylinder engines, flat-twin engines and V-twin engines, are again available. So far as design is concerned this follows absolutely standard and tried practice, there being no special features to mention concerning the construction of the magneto. It goes without saying, however, that the finest workmanship and material are employed; whilst eighteen years' experience of magneto manufacture ensures the Simms magneto being a thoroughly reliable article. One point in which the new Simms magneto is said to excel is its good spark at very low speeds.



A British magneto well known a decade ago, the Simms, which has been re-introduced in a thoroughly up to date form.

Good Spark at Slow Speeds.

Sparking in air at from 70 to 80 revolutions per minute, a spark length of 5.5 mm. is obtained. Simms Motor Units (1920), Ltd., Percy Buildings, Grove Street, Rathbone Place, London, W.1, is the address of the makers.

CHEAPER MOTOR CYCLES IN 1922.

THERE is every indication that motor cycles in 1922 will be much lower in price than during the current year. Many of the manufacturers are not waiting for the Olympia Show to announce their reduced figures, but are issuing them at once. In last week's issue were published the Triumph prices for 1922, and this week we are able to give several more 1922 programmes.

Ivy lightweights now range from £64 for the 2½ h.p. model with two-speed gear, clutch and k.s. to £102 for the sidecar.

The New Imperial range begins with the 2¾ h.p. Light Tourist three-speed at £63, and ends with the 8 h.p. sidecar outfit at £145. The sports model 2¼ h.p. three-speeder with clutch is £80. For 1922 the Rudge Multi 3½ h.p. model remains at £85, but the three-speed models have been considerably reduced, £100 being the price of the 3½ h.p. model (£120 with sidecar), and £120 for the 7-9 h.p. twin (£150 with sidecar).

A WELL-TRIED GEAR BOX.

New Burman Lightweight Three-speed Box, weighing only 20 lb.

AFTER most searching tests, in which thousands of miles of road work were included, the Model E Burman gear box is now launched on the market. Our readers will remember that this gear has been used successfully in the Junior Tourist Trophy Race and in most of the big reliability trials of the year, so that there is little doubt of its soundness both in detail and general design.

In construction it is simple, robust, and of excellent workmanship; constant mesh gears are employed throughout, dog clutches being used to lock the gear wheels to their respective shafts as required.

With regard to constructional details, the mainshaft runs on double ball bearings, a long bronze bush being used for the spigot bearing. The layshaft is stationary, and the sleeve carrying the gears revolves on ample bronze bushes. No loose keys are employed, the shafts being splined and the pair of gears for the introduction of the intermediate ratio are connected by a double fork plate and slide together.

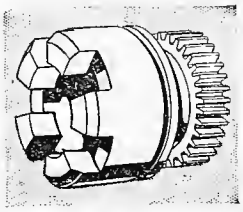
Independent Gear Location.

Normally, the middle gear wheel revolves freely on the layshaft, but when the intermediate gear is required it is locked to the sleeve by an overhanging dog. Top and bottom gears are engaged by dogs, the middle gear wheel on the main shaft being moved laterally to its extreme position in either direction in order to effect the engagements.

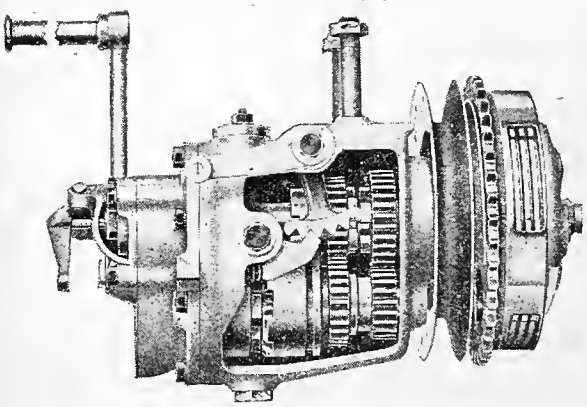
The striking gear is exceedingly simple, and a neat and substantial locking device is incorporated in the box. This consists of a toothed quadrant locked by a spring-controlled ratchet arm, and this alone is sufficient to locate the gears without the external quadrant.

Optional Control Levers.

Either a tank rail gate or a saddle tube quadrant can be supplied, and in each case it is practically impossible to miss a gear position owing to the effective design of the quadrant. The seven plate cork insert clutch is particularly interesting in that the corks are not of the usual circular section, but are so arranged as to present the greatest possible friction surface. When the clutch is withdrawn the chain wheel runs freely on two ball bearings.



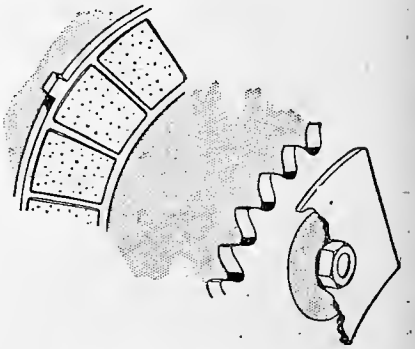
Middle gear is engaged by means of overhung dogs.



Cut away view of the Burman lightweight three-speed gear box, showing the simple internal locking device for positioning the gears.

Incorporated with the chain wheel is a very simple form of shock absorber. Large holes are cut in the sprocket and filled with rubber rings, the drive being conveyed through the rubber to steel bushes mounted on the driving pegs. This refinement is unusual and relieves the motor cycle designer from the necessity of incorporating any further shock-absorbing device.

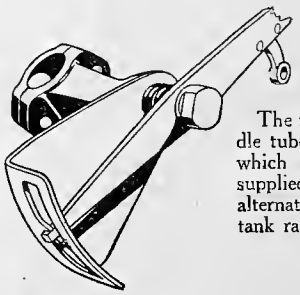
The box, which is admirably constructed in every detail, is interchangeable as regards belt and chain line and bracket fixings with other proprietary gears, and the kick-starter is of sensible proportions and unlikely to fail under the most severe treatment. In spite of the robust construction of the gear, which we are informed is up to the work of most 500 c.c. machines, the total weight is only 20 lb.



(Left) Specially shaped cork inserts in the clutch to ensure the greatest possible friction area. (Right) Rubber blocks are inserted in the chain wheel to absorb the transmission shocks.

Intended for Lightweights.

This new gear, which is intended for the increasingly popular $2\frac{3}{4}$ h.p. machine, is an important addition to the standard Burman lines which have already found their way into public favour by means of their genuine merit and sound construction.



The novel saddle tube quadrant which may be supplied as an alternative to the tank rail gate.

THE POPULAR MOTOR CYCLE.

Over 94,000 Increase of Motor Cyclists in Twelve Months.

ACCORDING to the Ministry of Transport, the number of motor cycles licensed from January 1st to the end of August amounts to 373,200, bringing in a revenue of £875,700. This is averaged at £2 7s. per motor cycle.

Compared with the figures issued, showing the position at the end of May, motor cycles have increased by over 3,000 and private cars by 16,500. The total revenue obtained from motor taxes (exclusive of miscellaneous items and horse-drawn hackney carriages) is £9,276,000 made up as follows:

	Number.	Tax receipts. £
Motor cycles	373,200	875,700
Private cars	242,500	3,981,000
Invalid vehicles ..	312	78
Commercial cars ..	128,200	2,639,300
Road locomotives ..	2,650	65,000
Motor ploughs	13,000	3,250
Motor tractors ..	1,520	23,200
Motor hackneys ..	82,800	1,593,500
Tramcars	15,200	11,400

It will be seen that motor cycles on the road exceed private cars by over 130,000, and are an easy first in point of numbers, while the increase during 1921 over the 1920 figures is greatly in excess of any other type of vehicle. 94,600 more motor cyclists have paid taxes this year than last year's number, while the increase in private car owners is 56,800. The increase in the two types of vehicles is shown in the following figures:

	1919-20.	1921.	Increase.
Motor cycles ..	278,600	373,200	94,600
Private cars ..	185,700	242,500	56,800

Of the total road receipts of £9,876,105, England and Wales have contributed £8,777,863, Scotland £888,227, and Ireland £210,015.

Current Chat

Times to Light Lamps.

Oct. 6th	... ...	6.27 p.m.
,, 8th	... ...	6.22 ,,
,, 10th	... ...	6.17 ,,
,, 12th	... ...	6.13 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

The Paris Salon.

The Paris automobile salon opened yesterday (Wednesday). Our next issue will contain an illustrated review of the motor cycle exhibits by members of *The Motor Cycle* staff.

H.M. the King and the Car Show.

His Majesty the King has been graciously pleased to grant his patronage to the International Motor Exhibition which will take place at White City and Olympia from November 4th to 12th next.

A Hectic Ride.

We think it will be a long time before the forty odd motor cyclists who competed in the Anglo-Dutch Trial will forget their ride across London to Chingford on their way to Harwich from Thames Ditton. London traffic is very demoralising to those unaccustomed to our rule of the road.

Next Saturday's Varied Programme.

All tastes in competitions are catered for by the important events on Saturday. There is the Woolwich, Plumstead, and District M.C. open reliability trial for those who want a comparatively straightforward run; there is the Scott trial in Yorkshire for the man who likes it rougher; and there is the championship meeting of the B.M.C.R.C. at Brooklands for the aspirant to speed honours. There are also one or two "centre-events," two of which, in the Midland centre (the Redditch trial and the Sutton Coldfield hill-climb at Penkridge), would probably have been better supported if they did not clash.

An "All-star" Team.

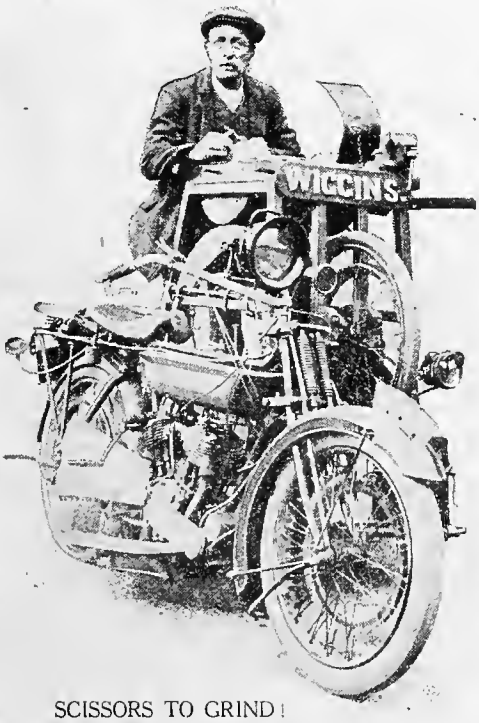
Fame travels afar—in the motor cycle world. At Worcester, during the visit of the Dutch motor cyclists for the England *v.* Holland trial, the visiting riders eagerly sought out Howard R. Davies, Eric Williams, and J. Whalley, on account of their T.T. fame. No doubt if the British team were next year made up of "all champions" the motor cyclist fraternity of Holland would be immensely delighted. Why not a team of men such as Davies, Dauce, Williams, Hassall, Le Vack, de la Hay, Dixon, Gibson, Whalley, Alexander, and such like?

Cleaning a Sooted Plug.

After suffering from misfiring in the rear cylinder for some time prior to the track test in the Anglo-Dutch Trial, F. A. Hardy (3½ Zenith-Bradshaw) saved his non-stop by detaching the high-tension cable, and "spark-gapping" the plug.

"The Motor Cycle" in Paris.

At the Paris Salon current copies of this journal may be obtained on *The Motor Cycle* stand. Furthermore, a full range of books for motor cyclists and car owners, published in conjunction with *The Autocar* and *The Motor Cycle*, will be available.



SCISSORS TO GRIND!

W. W. Wiggins, an old Northampton scissor grinder, has created a sensation among his fraternity with the new motor cycle grinder outfit on which he is seen seated. He has traversed the roads with an old bicycle outfit for forty-eight years, but although sixty-two years of age, he believes in moving with the times, and "now" revs instead of plods, covering a radius of thirty or forty miles a day, as compared with his old limit of twelve miles. The machine is a 6 h.p. Enfield twin, and the grinder is fitted to the sidecar chassis.

Special Features.

AN ISLE OF MAN T.T. IN 1922.

WHY ENGLAND WON—

Impressions of the Anglo-Dutch Trial.

Eric Williams Married.

Congratulations to Eric Williams, D.C.M., twice winner of the Junior T.T., who was last week married to Miss M. G. Lewis, of Dilwyn.

An Optimist!

In reply to an advertisement of his lightweight machine (present value £45-50), a reader received the following: "Seeing you want to sell your motor cycle, would you look at £20 (twenty pounds)? I do not wish to surprise you, but I am not keen on buying a back number on a falling market, when next season's machines will range from about £25."

A New Road to Southend?

A proposition is being brought before the Essex County Council to construct a new road between London and Southend.

At the present time there is no good main road, and the two routes through Grays and Stifford have become inadequate for the large amount of motor traffic. The Essex County Surveyor will be asked to prepare plans and specifications for a new main road.

The Old Wyche Road in Competitions.

The Worcester County Council recently decided to make application to the Ministry of Transport for the prohibition of motor traffic on the Old Wyche Road, Malvern. The Council received a petition from the Malvern Urban District Council, signed by residents in the Old Wyche Road, complaining of the danger and nuisance to the public and residents by motor cyclists using the road for trial and test purposes, and the Malvern justices similarly complained.

1922 Programmes.

In addition to the 1922 prices mentioned on page 000, the B.S.A. Co. have announced their next year's programme as follows: 4¼ h.p. chain-cum-belt, £107; all chain, £110; 6 h.p. twin, £132; 8 h.p. twin outfit, £185.

Douglas prices for 1922 will be reduced as follows: 2¾ h.p. two-speed, £75; 2¾ h.p. three-speed, £90; 4 h.p., £110; 4 h.p. sidecar, £135; 3½ h.p. sports model, £130; and 6 h.p. o.h.v. with sidecar, £165. All these prices include full equipment, lamp, horn, etc. Excepting the two-speed model, all the Douglas range is, of course, fitted with clutch and kick-starter.

Seaplane Squadron Reunion.

To-morrow, Friday evening, the 7th, ex-members of the Seaplane Squadron No. 8, R.N.A.S. (German East Africa 1916-1918) will hold a reunion dinner at Gatti's, when Capt. F. W. Bowhill, C.M.G., D.S.O., R.A.F., will preside. Mr. C. S. Thompson, 42, New Broad Street, London, E.C.2, is the organising secretary.

London's Motor Cycle Police Withdrawn.

The motor cycle section of the Metropolitan Police, formed a few months ago, has not proved so successful as was hoped, and is to be withdrawn. The section was intended more particularly for traffic regulation duties, and for dealing with offences against the Highways and Motor Car Acts. It is quite distinct from the special branch of the detective force, known as "the Flying Squad," which, using motor cycles and cars as occasion demands, has recently effected some sensational captures.

A BADGE INNOVATION.

Handle-bar badge for members of the M.C.C. who have gained a gold medal in any London-Edinburgh run. The price of these badges, which are enamelled in colours, is 10/-.

The Roughriders' Trial.

On Saturday the one event of the year which specially appeals to go-anywhere riders, the Scott Trial, takes place. The start takes place from the Cattle Market, Otley, at 9 a.m., and the finish is at Burnsall at 4.30 p.m. The route will be similar to last year's, but the scheduled average speed is 20 m.p.h.

A Warning.

We have received an urgent letter from the Commissioner of Police with reference to the noise and undue speed of motor cycles in the Metropolitan area. The complaints principally emanate from Richmond Hill, Hill Rise, Kew Road, and Sheen Road, and the Commissioner goes on to point out that doubtless many of the cases giving rise to complaint are due more to thoughtlessness than to any want of consideration for other persons; but should these motor cyclists persist so as to render it necessary to resort to drastic measures, the offenders will have only themselves to blame for any proceedings that may be taken.

CLUB NEWS. (Continued from page 409.)

South-eastern Centre A.C.U.

Promoted by the Brighton and Hove M.C.C. the hill-climb on the 28th ult. was supported by a number of well-known riders, including H. Le Vack (7-9 Indian), who made fastest time of the day, but only after a tie with Kaye Don on one of the new sporting 6 h.p. o.h.v. Douglases. As the appended results indicate, A. J. Koehler (3½ Douglas) was successful in five classes:

300 c.c. TWO-STROKES.—1, G. H. Symonds (2¼ Levis), 28s.

350 c.c. (AMATEUR).—1, J. Stockwell (2¼ Hobart), 18s.

350 c.c. (GENERAL).—1, J. Stockwell (2¼ Hobart), 18⅞s.

350 c.c. (OPEN).—1, J. Stockwell (2¼ Hobart), 19s.

500 c.c. (AMATEUR).—1, W. H. Sheraton (3½ Norton), 17⅛s.

500 c.c. (GENERAL).—1, A. J. Koehler (3½ Douglas), 15⅞s.

500 c.c. (OPEN).—1, A. J. Koehler (3½ Douglas), 15⅞s.

750 c.c. (AMATEUR).—1, W. H. Sheraton (3½ Norton), 16⅜s.

750 c.c. (GENERAL).—1, A. J. Koehler (3½ Douglas), 15s.

750 c.c. (OPEN).—1, A J. Koehler (3½ Douglas), 14⅝s.

UNLIMITED (AMATEUR).—1, W. H. Sheraton (3½ Norton), 16⅜s.

UNLIMITED (GENERAL).—1, A. J. Koehler (3½ Douglas), 15s.

UNLIMITED (OPEN).—1 H. le Vack (7-9 Indian), 14s.

600 c.c. SIDECARS.—1, B. S. Allen (3½ Norton sc.), 22⅜s.

UNLIMITED SIDECARS.—1, H. le Vack (7-9 Indian sc.), 16⅜s.

Worcester and District M.C.C.

The results of this club's successful hill-climb of the 24th ult. have been announced as below:

TOWNLEY CUP.—Eric Williams (2¾ A.J.S.), 29⅛s., fastest time of the day.

MELHUISH SILVER CIGARETTE CASE.—R. Eveson (3½ Norton), 33⅛s., fastest time by private owner.

CILT PLAQUE.—Eric Williams (2¾ A.J.S. sc.), 37⅜s., fastest three-wheeler or sidecar.

SOLO MOTOR CYCLES (Unlimited c.c.).—Expert: 1, E. Williams (2¾ A.J.S.), 30⅝s.; 2, E. Main (8-10 Zenith), 31⅜s. General: 1, E. Main (8-10 Zenith), 31⅜s.; 2, R. Eveson (3½ Norton), 33⅜s. Private: 1, R. Eveson (3½ Norton), 33⅜s.; 2, C. Eveson (3½ Norton), 36⅛s.

SOLO MOTOR CYCLES (not exceeding 600 c.c.).—Expert: 1, E. Williams (2¾ A.J.S.), 29⅛s.; 2, A. Tompkins (3½ Norton), 30⅛s. General: 1, —. Tompkins (3½ Norton), 30⅛s.; 2, R. Eveson (3½ Norton), 33⅛s. Private: 1, R. Eveson (3½ Norton), 33⅛s.; 2, C. Eveson (3½ Norton), 36⅛s.

SOLO MOTOR CYCLES (not exceeding 350 c.c.). On time.—Expert: 1, E. Williams (2¾ A.J.S.), 29⅜s.; 2, F. G. Morgan (2¾ Cotton), 45s.

Oxford M.C.

Extremely favourable weather attended the club's hill-climb on Aston Hill last Saturday. The hill rises gently to a sharp right-hand bend, where an easing of the gradient enables the rider to accelerate on top gear to the main climb after rounding a slight left turn at the bottom. The speeds were not unusually high, but some good riding and skilful gear manipulation were witnessed. Results:

CLASS 1.—1, M. Pearson (3½ Norton), 1m. 16⅝s.

CLASS 2.—1, I. P. Riddock (8 Zenith), 1m. 1⅝s.; 2, E. J. Cross (7-9 Harley-Davidson), 1m. 4⅜s.

CLASS 3.—1, H. Lindop (2¼ Velocette), 1m. 23⅞s.; 2, H. G. Moore (2½ Ner-a-car), 2m. 7⅜s.

CLASS 4.—1, H. S. Barge (G.N.), 1m. 30⅛s.; 2, C. Kimber (Bleriot Whippet), 1m. 58⅜s.

CLASS 5.—1, H. Lindop (2¼ Velocette), 1m. 17⅛s.; 2, S. G. Oliver (2¾ Douglas), 1m. 22⅜s.

CLASS 6.—1, I. P. Riddock (8 Zenith), 56⅝s.; 2, E. J. Cross (7-9 Harley-Davidson), 57s.

CLASS 7.—1, H. S. Barge (G.N.), 1m. 27⅞s.; 2, C. Kimber (Bleriot Whippet), 1m. 46⅝s.

CLASS 8 (3½ Norton), 57⅜s.; 2, F. Hancox (4 Triumph), 1m. 0⅝s.

AN INNOVATION FOR CLUB ENTERTAINMENTS.

DURING the most important events this year *The Motor Cycle* has been preparing an innovation to assist in making winter club life more attractive. The result of these efforts is *The Motor Cycle* film, which provides a most interesting hour's entertainment. This film features the leading stars in the motor cycle world in their history-making achievements. Included in the programme are the Junior and Senior T.T. races, the great 500 miles race at Brooklands, incidents in the Six Days Trials, and, to vary the interest, there are episodes in the greatest car race of the year—the Grand Prix at Le Mans.

This film will be loaned to the clubs during the winter months, and secretaries should lose no time in booking their dates. In writing, alternative dates should be quoted. Communications should be addressed to the Editor (Films Department), *The Motor Cycle* Hertford Street, Coventry.

NEW LONG DISTANCE RECORDS.

ON the afternoon of the finish of the Anglo-Dutch trial (Monday of last week), D. R. O'Donovan, riding a 3½ h.p. Norton and sidecar (79 mm. × 120 mm., 588 c.c.), in perfect weather, succeeded in breaking the fifty miles record. His average speed was 60.73 m.p.h. (97.73 km.p.h.), the time being 49m. 23.8s. He also beat the one hour record, covering in that time 60 miles 1,368 yards (60.77 m.p.h., or 97.80 km.p.h.).

A few days earlier Tudor Thompson, on a 2¾ h.p. Douglas (60.9 mm. × 60 mm., 350 c.c.), gained a wonderful series of records, breaking those for the 100, 200, and 300 miles, which have stood in the name of Hugh Mason, on a N.U.T.-Jap, since 1913. He also beat Holroyd's record of September 20th last year on a Blackburne, and gained Mason's three, four, five, and six hour records. As has been usual this year, he was favoured with excellent weather. The figures stand as follows, and they are remarkably consistent; the stamina of the small flat twin engine was well demonstrated by such sustained high speeds.

150 miles ..	2h. 23m. 56.9s. = 62.32 m.p.h. (100.61 km.p.h.).	
200 miles ..	3h. 12m. 37.2s. = 62.29 m.p.h. (100.24 km.p.h.).	
250 miles ..	4h. 3m. 45.2s. = 61.48 m.p.h. (98.96 km.p.h.).	
300 miles ..	4h. 55m. 3s. = 61.00 m.p.h. (98.17 km.p.h.).	
350 miles ..	5h. 48m. 21.7s. = 60.29 m.p.h. (97.03 km.p.h.).	
400 miles ..	6h. 37m. 4.4s. = 60.44 m.p.h (97.27 km.p.h.).	
3 hours ..	186 miles 1,511 yards = 62.28 m.p.h. (100.23 km.p.h.).	
4 hours ..	248 miles 1,686 yards = 61.48 m.p.h. (98.96 km.p.h.).	
5 hours ..	305 miles 219 yards = 61.02 m.p.h. (98.20 km.p.h.).	
6 hours ..	362 miles 1,294 yards = 60.45 m.p.h. (97.28 km.p.h.).	

The 1922 T.T. to be held in the Isle of Man.

Previous Decision Reversed at the A.C.U. General Meeting at Leicester.

AFTER all, the 1922 T.T. races will not be held in Belgium, and the Isle of Man will again be the scene of our classic speed event.

This reversion of the decision, which was made by the Management and Competitions Committees of the A.C.U. (on August 15th last), was arrived at on Saturday morning during the A.C.U. General Committee meeting held at Leicester.

A deputation from the Isle of Man, consisting of Councillor Crookall; Member of the House of Keys; Councillor Cowin, Mr. H. Cowin, the Manx M.C.C.; Mr. H. Mylchreest, president of the Manx M.C.C.; Mr. H. Rogers, secretary of the Manx Club; and Mr. G. J. A. Brown, *The Isle of Man Times* and A.C.U. delegate, attended the meeting, and nothing of importance transpired until it came to the report of the Competitions Committee of August 15th, which contained the momentous decision to hold next year's T.T. in Belgium. Mr. G. J. A. Brown then asked for information concerning the 1922 T.T., and what had led to the committee's decision.

Why Belgium was Chosen.

Mr. Greenhill then replied, giving five reasons which had influenced his committee in deciding that the race should be held in Belgium. First, the 500 c.c. machines had outgrown the Isle of Man course. Secondly, the possible dates were inconvenient. Thirdly, the restrictions imposed by the Isle of Man authorities rendered the holding of the race difficult. Fourthly, there was the heavy cost of organising the event in the Island. Lastly, if the race were held in Belgium it would be a useful lever to persuade the British authorities to give permission to hold the race in this country in future years. Mr. Otto Thomas (who was elected vice-president) rose on a point of order. The report could not be adopted, he said, as it had not yet been decided to hold the 1922 race. He thought that the manufacturers should have been consulted. He would be the last to suggest that the A.C.U. should be governed by the trade; but, in a case of this kind, the trade, which were reported to have spent £1,000,000 on the T.T. races, should have had the matter put before them.

Major Potter urged that the meeting should not bicker over procedure, but first decide if the T.T. should be carried out, and, secondly, if so, if it should be in Belgium. The first proposal was proposed and carried unanimously, while the second was proposed by Mr. F. H. Bevan, and seconded by Mr. Norman Longfield.

A lengthy discussion then ensued. First, Mr. S. L. Bailey proposed an amendment, but, before he had finished, Maj. Vernon Brook proposed that the Competitions Committee report of August 15th should be accepted, leaving out that portion dealing with the T.T. races. Mr. S. L. Bailey was then urged by the Chairman to carry on the discussion on Mr. Thomas's motion, and most ably put forward the case for the Isle of Man. It was most important, he said, that the race should be held in Great Britain. The value of the Isle of Man course had created an impression which had taken years to create, and enormous interest was taken in the event, not only here and on the Continent, but in our Overseas Dominions. If another course was used, the whole business would have to be started all over again. The behaviour of motor bicycles on the I.O.M. course was understood by the man in the street as clearly as b.h.p. It was the only great race whole-heartedly supported by Great Britain. Events were certainly held on the Continent, but could not be compared with this one. The modern engine had been developed by the T.T., and the 500 c.c. engine was not too fast for the Manx course. He did not think this type of engine was yet fully developed. As regards the international side, he gave a list of the foreign competitors of various nationalities who rode in 1914. As regards the restrictions in the Island, were not these, he asked, imposed very largely through the fault of the competitors? Riders had been trained on the Manx course, and there were fewer accidents now at high speeds than there had been in the past, when speeds were lower. He suggested that the race should be held in the I.O.M. in May, and asked if steps had been taken to run off the race in England. It was now clear, even at this early stage, that the feeling of the meeting was in favour of reverting to the Isle of Man, but the discussion continued, and Mr. Loughborough read favourable reports on the Belgian course from Messrs. A. G. Reynolds and F. H. Bevan. These gentlemen referred to the value of this circuit for testing the acceleration of engines, and the reliability of transmissions, the kindly attitude of the authorities, the guarding of the roads by 1,000 soldiers—thirty-three per mile—free of charge, special customs and travel facilities, and the number of possible Continental entries. Mr. Loughborough agreed that the race should be held in England, but saw no chance of getting a special Act passed in the next twelve months, but, if the race was held in Belgium next year, the A.C.U. would have a far more powerful lever with the British authorities.

Belgian Official Assistance.

The Chairman pointed out that in Belgium assistance was guaranteed by the Army, municipal, and Government authorities, and contributions to the value of £1,000 had been promised towards the expenses of the race.

After further discussion it was agreed to receive the views of the I.O.M. delegates. Councillor Crookall said that all Manxmen wanted to see the races held in the Island. The motor cycle tax would be reduced to 1s. for a month's visit, the Highway Board would erect an electric crane to facilitate the landing of the machines, while the I.O.M. Steam Packet Co. would carry and land the machines at an inclusive fee. There was still much A.C.U. property in the Island, and as the R.A.C. would run its races after the A.C.U., could not they share expenses in such items as the grandstand? With regard to the difficulties of daylight during practice in May, the hour could be extended to a later time.

Councillor Cowin said the Highway Board would grant any date up to within fourteen days of June 20th, the date of the car races, and would tar spray the course. The other delegates also spoke on the subject.

Mr. Quintin Nicol said he supported Belgium for business reasons—on account of the guarantee offered.

Apropos of engine size, Mr. Geoffrey Smith asked if 500 c.c. machines were still wanted. Was there not, he asked, a tendency to reduce engine sizes to 350 c.c.? Would it not be better to make the 350 c.c. machines the Senior class, and so advance further along the steps to progress?

Negotiations with I.O.M. to Recommence.

The discussion then went in the direction of seeing whether the Isle of Man would not make a similar monetary offer to that made by Belgium.

On behalf of the Isle of Man as an A.C.U. delegate, Mr. G. J. A. Brown then spoke on the subject ably and at length. He made promises to the A.C.U. similar to those made by Councillor Crookall, and stated that the cost of policing the Manx course did not exceed £150. Had the Island, he asked, been approached for a guarantee? As regards cases of profiteering, he had never heard of Isle of Man hotelkeepers being asked for special terms.

Next, a long discussion ensued as to whether the matter should be referred back or settled at once, and the final course was taken, and it was ultimately agreed that the 1922 T.T should be held, as formerly, in the Isle of Man, subject to a guarantee offered by the Manx authorities being acceptable to the General Committee.

Mr. Loughborough, dealing with the report of the Legislation Committee, gave a long list of the good work done by that body, on which the A.C.U. is represented.

As regards the 1922 competition programme, it was decided that the A.C.U. should hold the Tourist Trophy Races, the Six Days Trials, the Arbuthnot Trophy Trial, and the One Day Trial for stock machines, while one open trial should be allotted to each centre, to be run by that centre, or a club in the centre nominated by the board.

A proposal in the name of Mr. Nicol that A.C.U. events should not be undertaken unless they could be made financially profitable was put forward by Mr. G. Featherstone, and very fully dealt with by Mr. Loughborough, who explained the matter very clearly and at great length. It was decided to leave the matter to the Management and Competitions Committees.

As regards the Reliability Premiership, it was announced that eight centres were in favour of the scheme and two against.

The Tiverton and District M.C. and L.C.C., the Uxbridge L.C. and M.C.C., and the Connaught M.C.C. had their applications for affiliation to the A.C.U. accepted.

HILLS THAT HAVE LOST THEIR TERRORS.

Few Failures on Noted Cotswold Grades in the Manville Trophy Trial.

MOTOR cyclists following an arrowless trials route in unfamiliar country are rather like sheep—the one who goes confidently on at a doubtful turning is accepted as leader by the others, who find out too late that—dismissing the woolly analogy—a little more careful study of the route card would have paid.

This happened several times on Saturday during the fifth annual Manville Trophy Trial of the Coventry and Warwickshire M.C., which was otherwise a remarkably successful and enjoyable affair, attracting no fewer than seventy-five entries, despite the fact that it was a strictly closed club event. It was clearly stated in the regulations that only the non-stop sections would be arrowed, and, although the twenty odd miles before the lunch stop were admittedly very complicated to follow on the route card, the fact that fully 50% of the starters "discovered" all the observed hills and came in on time shows that it was not impossible.

Although troubled with clutch slip, D. A. Atkin (5-6 Rover sidecar) makes a good ascent of Sudeley Hill.

No Trouble Climbing.

Starting at Coventry—No. 1 at 8 a.m.—the earlier men had a cold, damp run through the morning mists almost to Saintbury, the first observed hill, for it was well after nine before the sun appeared. The hill was quite dry, however, and many of the soloists only used second gear for a hundred yards or so of the steepest portion. Neither were any of the sidecars seriously troubled, and the lone observer, consequently, had a dull time.

Following the time-honoured Midland trials route down Willersey, through Broadway to Winchcombe, brought the competitors to Sudeley Hill, which is only a shade more difficult—when, as on Saturday, it is dry—than Saintbury. Before getting thus far, however, J. E. B. Bramley (3½ Coventry Challenge) broke his frame and retired.

The only Morgan in the trial, driven by C. E. Hulse, conquers Rising Sun without difficulty.

One or two others were observed to be in difficulties on Sudeley. E. A. Barnett (2¾ Francis-Barnett) just survived the non-stop section with a loose petrol union, and P. H. Johnson, who with M. E. Holroyd, had been doing wonders on a belt-driven Rudge, broke a belt.

On Portway Hill.

Apart from one or two awkward gates (that opened inwards) there was little of note now until, passing through Cheltenham, the third observed hill, Portway, was reached. Here the surface was rough, but, as it was also dry, the majority had little difficulty in picking a clean course. A. L. Constantine (2¾ Hobart) failed, but W. F. Smith and F. T. Downs, also on Hobarts, made excellent ascents. In the same way there was some doubt whether M. W. Danks (2¾ Francis-Barnett) would get up, while E. A. Barnett, similarly mounted), never wavered. C. Mansfield (3 A.B.C.) appeared to be in difficulties with his gear lever, and E. M. Broughall (3½ Coventry Challenge) came up on a flat rear tyre—he retired later, having suffered, according to various reports, six to nine separate punctures.

M. E. Holroyd and P. H. Johnson on the belt-driven Rudges made wonderful ascents; but for sheer speed the palm must be given to the two sporting Humbers, driven by L. Crisp and M. Sealy. Of the sidecars, W. J. Mont-

T. R. Gibbins (8 Acme sidecar) makes a fast ascent of Rising Sun, which was in very good condition.

gomery's Brough Superior was as fast as most of the solo machines. R. A. Wright and H. Finch (on Triumph sidecars) were also very good, but H. A. Smith, on a third Triumph outfit, failed completely.

Less than three miles further on came Cranham Hill, which is, perhaps, not so steep as Portway, but which has an exceedingly deceptive turn studded with a miscellaneous collection of miniature boulders. How Holroyd (3½ Rudge) got up on a 7 to 1 gear only he himself knows; but Johnson had to slog this time. No. 13, A. L. Constantine, upheld popular superstition by failing, and riding down the hill. D. A. Atkin (5 Rover sc.) was troubled with acute clutch slip, but managed to scramble up, as did T. R. Gibbons (8 Acme sc.), after a stop through taking a wrong turning just on the hill. All the solo Humbers were again excellent, but W. Brandish was probably the most impressive of the three. The Rev. J. M. Philpott (2¼ Velocette), as usual, made an effortless, careful ascent.

Many go off the Course.

As already indicated, several competitors missed the next two tit-bits, the hairpin at Sheepscombe—comparatively easy—and St. Chloes Green—deceptively difficult for hot engines. Nevertheless, only two sidecars failed on the latter grade, W. A. Weaver (5-6 Coventry Victor sc.) and H. A. Smith (4 Triumph sc.) being the unfortunates. P. H. Johnson (3½ Rudge) had again to use his feet, which is not surprising considering that the hill is approached by a fairly acute right-hand hairpin.

Immediately after lunch, at Stroud, an easy starting test was held. Petrol taps were turned on by an official 15s. before the word to go, and marks were deducted for failure to start *in three seconds.* There was considerable nervousness amongst the early starters, who did not know just what they could do in the specified time, after their engines had had two hours to cool down; and, curiously enough, the first six men, variously mounted, lost more marks between them than all the rest put together. The Humbers and the chain-drive Rudges excelled in this test.

The Acceleration Test.

Proceeding *via* a weighbridge, where weights were obtained "while you wait," the competitors were sent up Rodborough Lane for the acceleration test (over a measured hundred yards from a standstill). As it was held on a grade of 1 in 10, clutchless machines were at a disadvantage. Some atrocious driving was witnessed. The three Humbers, a Norton, a Triumph, and an A.B.C. were best in the solo class, a Brough Superior among the sidecars, but the final results will be made on formula. Four sidecars stopped altogether.

On the homeward journey Birdlip was observed—with no result.

Rising Sun again.

Then came Rising Sun, which was bone dry, and therefore not such a terror as usual. Quite a number of spectators had gathered here, but, after M. W. Danks (2¾ Francis Barnett) and J. N. Roberts (2¾ New Imperial) had failed, they were treated to a procession of clean ascents. A non-competing Rover light car baulked W. E. Grant (7 F.N.), but he made a clean climb on his second attempt. It was touch and go with many more, but in every case they succeeded in breasting the summit unaided. Apparently those who had been finding the course too difficult had retired at the lunch stop.

Three of the early solo men missed the right turn to Gambles Lane, and made very excellent ascents of Post Office Hill. There were no cheering spectators, so they discovered their error in quick time, and made startling descents without losing their non-stops.

Thus, to all intents and purposes, ended the trial, for the run home *via* Willersey was not productive of incident, and it was an easy task for the survivors to ride in dead on time. One wily soloist rode up to within fifty yards of the finish, stopped, and coolly corrected his watch to official time (supplied by waiting friends). Approximately 80% finished; but, as quite a few had not completed the entire course, we refrain from publishing a list of finishers.

It should be an easy matter to find a winner, for not many retained absolutely clean sheets, and the acceleration test should prevent a tie.

Birdlip was observed, but there were no failures. E. Poppe (4 Triumph) on the upper reaches of the hill.

BIG TWIN BEATS THE SINGLES.

Game Struggle of Super-efficient 500 c.c. Machines with 1,000 c.c. Racer at Doncaster.

GOOD sport and some fine riding were exhibited by an entry of nearly 250 at the open speed trials of the Doncaster and District M.C.C. on Saturday last.

The half-mile course was in splendid condition, although a slight left bend and a rather short flying start through some gates rather tended to the registering of slower times than might have been expected.

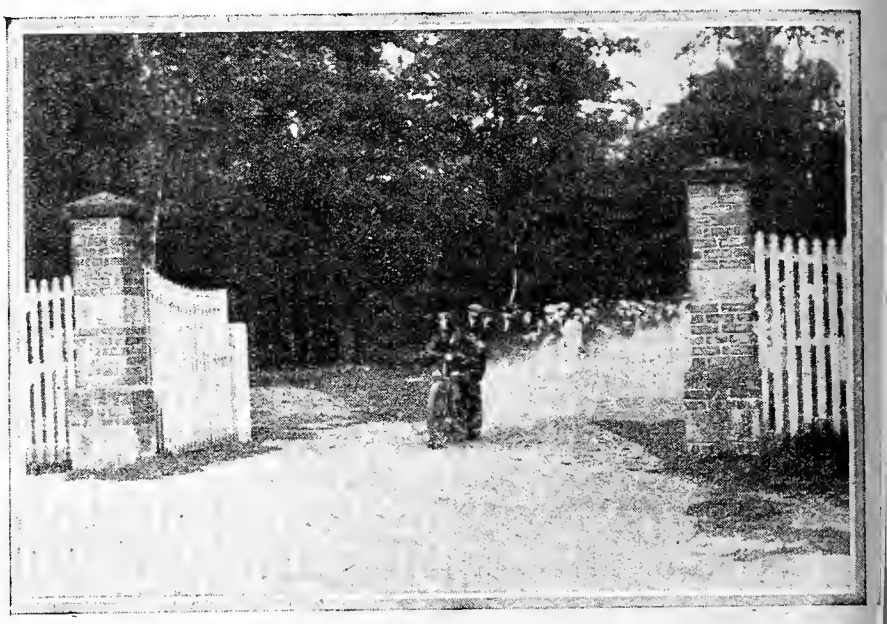
Several thousand spectators lined the course during the afternoon, and for once did not evidence any intention to stray. They evidently enjoyed the events, which were concluded without any untoward incident; and, although taking five and a half hours to run off, they did not flag to any extent, each class being run off promptly, the only intervals being those necessary for the riders to return to the starting post.

Results Promptly Announced.

Special mention might be given to the way in which the times were announced immediately after the riders had passed the finish, while at the end of each class the speeds of the leading men were also given out.

In Class 3 a re-run was necessary, J. R. Sylvester (2¼ Velocette) having the hard luck to crash within a few yards of starting; his carburetter was damaged, and he had to be content with second place.

E. Searle (3½ Sheffield-Henderson) seemed to get a bad wobble in the 500 c.c. Expert Class, which certainly put him out of the running, but a glance at the results of other classes proves that his nerves were not affected. In this class H. Collard on a Rover had to retire with valve trouble.



Getting up speed in the flying start. C. P. Wood (3¾ Scott) is shown passing through the gates that led on to the course proper.

Class 11 brought some very fast riding, for it was the best represented class, and thus the winner becomes the holder of *The Motor Cycle* Cup. Great interest was shown in the riding, but H. Le Vack (7-9 Indian) easily outpaced the field with a margin of 2s. at a speed of 81-82 m.p.h.; this time was the fastest of the day (22s.), and a record for the course. The same rider made the highest speed in the side-car classes at 67.16 m.p.h.

Speedy Lightweights.

J. H. Simpson did well on his 2¾ h.p. A.J.S., and with the excellent time of 25⅕s. easily beat numerous machines of higher capacity. The brothers Houlding, on 2 h.p. Matadors, rode well. The results as announced were as follows:

CLASS 1 (Two-strokes up to 250 c.c.).—Experts: 1, R. L. B. Taylor (2¼ Levis), 32⅜s.; 2, J. Sylvester (2¼ Velocette), 32⅜s.

CLASS 1a (Four-strokes up to 250 c.c.).—Experts: 1, N. Houlding (2 Matador), 31s.; 2, B. Houlding (2 Matador), 31⅛s.

CLASS 2 (as Class 1).—General: 1, R. L. B. Taylor (2¼ Levis), 32⅜s.; 2, W. Vines (2¼ Velocette), 34⅜s.

CLASS 2a (as Class 1a).—General: 1, N. Houlding (2 Matador), 31s.; 2, R. Wood (2¼ New Imperial), 32⅜s.

CLASS 3 (Two-strokes up to 300 c.c.).—Experts: J. R. Sylvester (2¼ Velocette) and R. L. B. Taylor (2¼ Levis) tied, 33s. Re-run: 1, R. L. B. Taylor, 33.4s.; 2, R. J. Silvester, 36.1s.

CLASS 3a (Four-strokes up to 300 c.c.).—Experts: 1, B. Houlding (2 Matador), 30⅜s.; 2, N. Houlding (2 Matador), 31⅝s.

CLASS 4 (as Class 3).—General: 1, R. L. B. Taylor (2¼ Levis), 32s.; 2, W. Vines (2¼ Velocette), 36s.

CLASS 4a (Four-strokes).—General: 1, N. Houlding (2 Matador), 30⅜s.; 2, J. C. Nichols (2 Omega-Jap), 31⅝s.

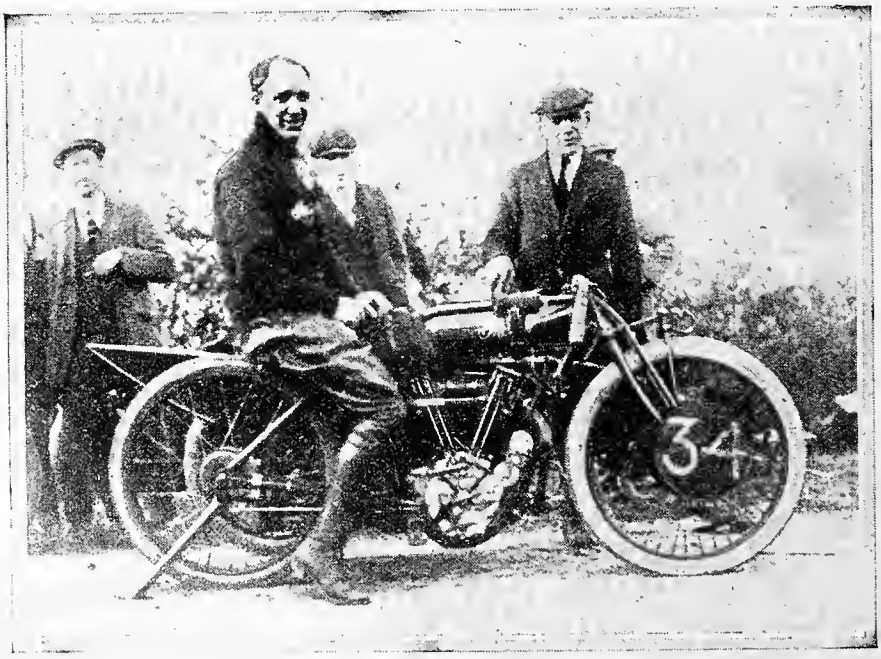
CLASS 5 (Solos up to 350 c.c.).—Experts: 1, J. H. Simpson (2¾ A.J.S.), 25⅝s.; 2, G. S. Bostock (2¾ A.J.S.), 27⅜s.; 3, B. Watts (2¾ Dot), 28⅛s.

CLASS 6 (Solos up to 350 c.c.).—General: 1, B. Watts (2¾ Dot), 28⅜s.; 2, J. Cooke (2¾ New Scale), 29⅛s.; 3, N. Houlding (2 Matador), 32s.

CLASS 7 (Solos up to 500 c.c.).—Experts: 1, W. Hassall (3½ Norton), 24⅝s.; 2, R. T. Cathorne (3½ Norton), 25s.; 3, J. H. Simpson (2 A.J.S.), 25⅛s.

CLASS 8 (Solos up to 500 c.c.).—General: 1, J. Sisson (3½ Norton), 26⅛s.; 2, R. Lucas (3½ Sunbeam), 27⅜s.; 3, S. Ollerhead (3½ Norton), 28⅝s.

CLASS 9 (Solo up to 750 c.c.).—Experts: 1, W. Hassall (3½ Norton), 24⅛s.; 2, R. T. Cathorne (3½ Norton), 24⅜s.; 3, J. H. Simpson (2 A.J.S.), 25⅛s.



Winner of *The Motor Cycle* Cup for fastest time in the best represented class, H. Le Vack (7-9 Indian), who also made fastest time of the day in both solo and passenger classes.

Big Twin beat the Singles.—

CLASS 10 (Solo up to 750 c.c.).—General: 1, E. Searle (3½ Sheffield-Henderson), 24⅝s. Three tied for next place at 27s., and on re-run were placed: 2, F. Sissons (3½ Norton), 25⅝s.; 3, S. Ollerhead (3½ Norton), 26⅜s.; 4, R. Lucas (3½ Sunbeam), 27s.

CLASS 11 (Solo unlimitd).—Experts: *1, H. le Vack (7-9 Indian), 22s.; 2, H. Hassall (3½ Norton), 24s. Three tied for next place at 24⅝s., and on re-run were placed: 3, R. T. Cawthorne (3½ Norton), 24⅝s.; 4, E. Searle (3½ Sheffield-Henderson) and F. W. Dixon (7-9 Harley-Davidson), 24⅜. *Fastest time of the day (speed = 81.82 m.p.h.).

CLASS 12 (Solo unlimited).—General: 1, E. Searle (3½ Sheffield-Henderson), 24⅜s.; 2, J. Stacey (7-9 Harley-Davidson), 25⅝s.; 3, F. Sissons (3½ Norton), 26⅝s.

CLASS 15 (Sidecars up to 500 c.c.).—Experts: 1, R. T. Cawthorne (3½ Norton), 28⅝s.; 2, E. Searle (3½ Sheffield-Henderson), 30s. Winner's speed over 63 m.p.h.

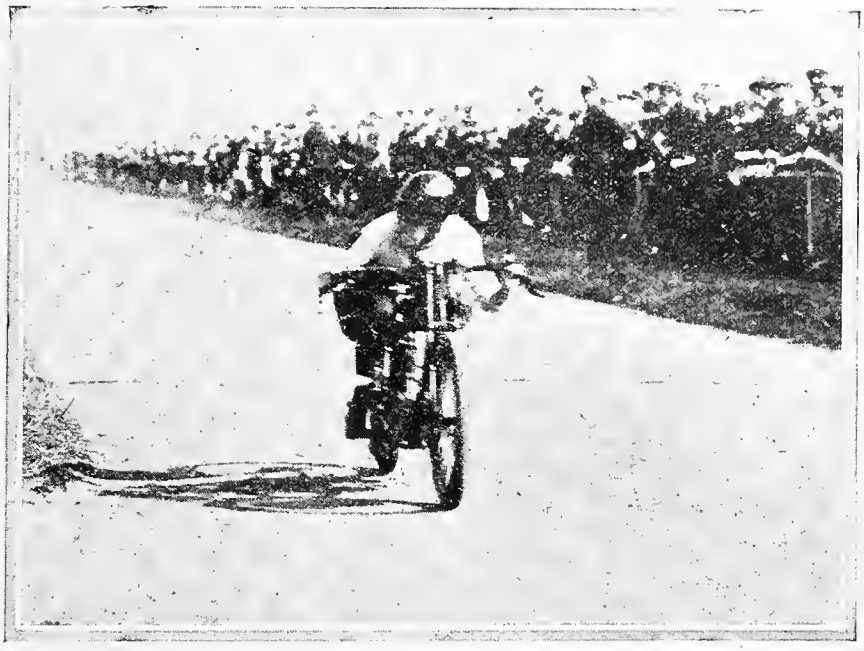
CLASS 17 (Sidecars up to 750 c.c.).—Experts: 1, R. T. Cawthorne (3½ Norton), 29⅛s.; 2, E. Searle (3½ Sheffield-Henderson), 29⅝s.

CLASS 19 (Sidecars, unlimited).—Experts: 1, H. Le Vack (7-9 Indian), 26⅝s.; 2, R. T. Cawthorne (3½ Norton), 29⅛s.; 3, E. Searle (3½ Sheffield-Henderson), 29⅜s.

CLASS 20 (Sidecars, unlimited).—General: 1, E. Searle (3½ Sheffield-Henderson), 30s.; 2, L. Padley (3½ Norton), 33⅜s.

Special Awards.

It is understood, although not confirmed, that A. B. Dodds (2¼ Levis) wins the *Chronicle* Cup and gold medal and a silver bowl, and that J. E. Claybourne (4 Triumph) wins a silver cup, these prizes being for Doncaster Club members only. Le Vack (7-9 Indian), as before-mentioned, gained *The Motor Cycle* Cup.



Miss Wilson (2¼ Velocette) adopts a most business-like riding attitude. She is shown crossing the finishing line.

A NOVEL MIDLAND EVENT.

GLORIOUS weather favoured the Birmingham M.C.C. Half-day Sporting Trial last Saturday; the entry was a very fine one for so late in the season, there being some fifty-two competitors. The route was sixty-six miles long, and was within a radius of twenty-five miles of Birmingham; it included a slow hill-climb, an acceleration test, a surprise brake test, as well as several stiff hills, a colonial section, and a "splash."

The first man departed at 2 p.m., the others following at minute intervals. From the commencement the course was very well arrowed, and some humorous officials had placed a few inspiring placards to encourage competitors—one worded, "Don't stop, accelerate," being placed outside an inn!

B. Kershaw (2¼ New Imperial) put up an excellent performance in the slow climb on Beacon Hill, his time being 10s. lower than any other competitor, including the sidecars. A. E. Phillips (3½ Norton) was next best of the solos; while in the sidecar class J. H. Ross (3½ Sunbeam sc.) made the best performance.

Next came a tricky hairpin corner. Most of the riders were very careful, being satisfied to crawl round at walking pace. There were very few failures, and these were all solo men, the first being a Connaught rider, who, approaching too fast, fouled the bank, and came off. R. C. Bennett, on a Federation, applied his brake, but could not release it again, consequently he came to a standstill. Other failures were C. Hollyoak (2½ Federal), L. West (2¼ Velocette), K. Sutherland (2¾ Douglas), and G. Pehrson (4 Dunelt). Miss Pickering, riding a 4 h.p. Powell, came round in wonderful style, and everyone applauded her.

The next difficulty was Gravel Pit Hill, where only twenty-six riders made clean ascents; but some consolation was found when, on reaching the top, they were met with a cartoon depicting a man with his finger to his head, worded, "This is where you want it."

In the acceleration test, the star performers were R. W. Duke (4 Triumph), B. Kershaw (2¼ New Imperial), T. H. Weaver (2¼ Verus), and F. A. Watson (3½ Sunbeam).

The brake test, which was a surprise event, was held near Ullenhall, and several were "caught napping," because they were required to pull up in the short distance of 21ft.

Forty-two finished on time and two were late, the others being on the "list of missing." Everyone arrived in a very happy mood, for which must be praised the excellent organisation and also the "social element" brought about by the introduction of inspiring notices on various portions of the route. Results are not yet available.

PRELIMINARY LIST OF THE PRINCIPAL EXHIBITORS AT OLYMPIA.

IN a little time we shall again be in the midst of the hectic days of the Olympia Motor Cycle Show. From an examination of the preliminary list of exhibitors, we may forecast that there will be no falling off this year either in the number of exhibitors or the interest of the exhibits. Several names are missing, but a number of newcomers take their place. The number of exhibitors exceeds two hundred and sixty, of which nearly half are large displayed stands on the ground floor. Following is a list of motor cycles, runabouts, and sidecars, together with the stand numbers:

Stand		Stand		Stand		Stand	
2.	Allon.	92.	Dayton.	62.	Hobart	38.	New Hudson.
9.	Ariel.	119.	Douglas.	124.	Humber.	69.	New Imperial.
7.	Armis.	136.	Dunelt.	60.	Indian.	99.	Norton.
7.	A.J.S.	30.	Dot.	64.	Ivy.	85.	New Scale.
7.	Beardmore-Precision.	56.	Diamond.	104.	James.	54.	Omega.
4.	Bown-Villiers.	143.	Economic.	59.	J.E.S.	108.	Osborne.
8.	Bradbury.	132.	Edmund.	45.	Kenilworth.	135.	Olympic.
4.	Brough Superior.	86.	Enfield.	138.	L.S.D. Runabout.	91.	O.K.
3.	B.S.A.	100.	Excelsior.	67.	Levis.	75.	Peugeot.
7.	Blackburne.	41.	F.N.	39.	Lea-Francis.	57.	P. and M.
8.	Connaught.	28.	Francis-Barnett.	65.	Matchless.	21.	Powell.
6.	Castle-Three.	27.	Grindlay Sidecars.	122.	Monopole.	17.	P.V
3.	Chater-Lea.	117.	Hack.	142.	Metro-Tyler.	22.	Quadrant.
0.	Coventry Victor.	35.	Harley-Davidson	58.	Millford Sidecars.	37.	Radco.
9.	Canoelet Sidecars.	25.	Hawker.	55.	Montgomery Sidecars	71.	Raleigh.
0.	Calthorpe.	66.	Hazlewood.	63.	Morgan.	61.	Rex.
2.	Cykelaid.	130.	Henderson Sidecars.	141.	N.U.T.		

Stand	
101.	Royal Ruby.
120.	Rudge.
96.	Rover.
129.	Sandham Sidecars.
131.	Scott Autocars.
128.	Scott.
24.	Sidecar Bodies.
93.	Sparkbrook.
72.	Sun.
29.	T.B. Runabout.
44.	Triumph.
23.	Unibus.
162.	Vindec.
36.	Velocette.
123.	Victoria.
73.	Wall.

A NEW M-L MAGNETO.

Light Weight, High Efficiency, and Compactness are Features of the Latest Model.

RECENT developments in special cobalt steels have given rise to the hope that the magnetos of the future would be smaller and lighter. That this hope was not unfounded is evidenced by the latest type of M-L magneto which has been produced for lightweight single-cylinder and flat twin motor cycle engines.

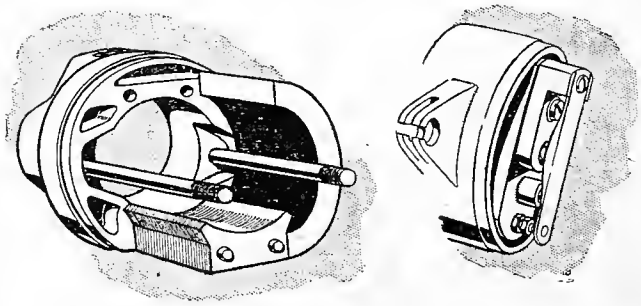
In construction this magneto is somewhat unusual, for, though the armature is of normal design, two separate magnets of remarkably small dimensions, though of very high capacity, are separated at each end by laminated pole shoes. Die cast aluminium end pieces of circular formation support the pole shoes, while the magnets are held in position by their own magnetism and the endwise grip of the two end pieces, which in turn are held together by two long bolts. Undercut grooves are formed in the end pieces, and into these fits a sheet steel cover which entirely encloses both pole pieces and magnets, and forms an effective waterproof protection. Following the lines of the Maglita set, the contact breaker has a parallel action, the movable point being mounted on a leaf spring which is forced outwards for the break by a rod operated by a face cam. On the removal of a spring cap the whole contact breaker stands clear of the remainder of the instrument, and the adjustment for the tungsten points is therefore extremely accessible.

Light Weight.

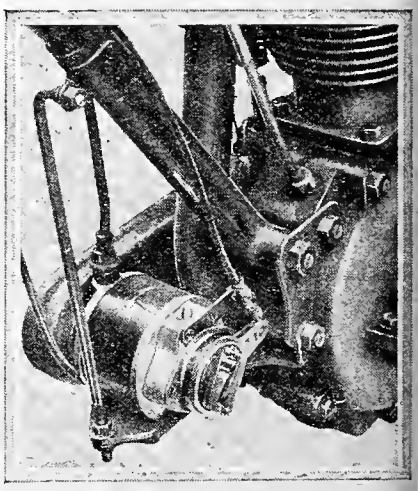
In appearance the new instrument is very neat and compact, and the weight is but 4½ lb. In addition, the simple construction will probably permit of its being sold at a low figure. We have had one of these magnetos in use on a 3½ h.p. Norton for some distance, and have found it satisfactory in every way. The starting and slow running are at least as good as either of the two instruments which we have previously tried, one of which was a special racing device, and we have not experienced a misfire at any speed. In spite of its light weight, the new M-L is robustly constructed, and it should be added that prolonged tests have proved the tungsten points to be eminently satisfactory with this special type of magneto. Though our illustration shows an external return spring for the spark retard, this fitting has been obviated in later models by an internal clock spring device, which adds to the neat appearance.

Maglita Improvements.

Detail modifications have also been made to the Maglita combined ignition and lighting device. The switch gear has been improved, and a time element has been introduced in the cut-out, so that there is little chance of the dim bulb coming into action during a momentary slowing for a corner.



(Left) Showing one of the magnets and laminated pole shoes.
(Right) The contact breaker is very accessible.



This illustration of the new M-L magneto on a Norton motor cycle conveys some idea of its small size. Its height is not much more than half the usual.

Included in the route of the Levis trial, described last week, was a portion called the "Colonial Section." Obstacles were placed on the smooth pathway, necessitating competitors traversing a section of bog. J. Knibbs (2¼ Levis) avoiding the branches.

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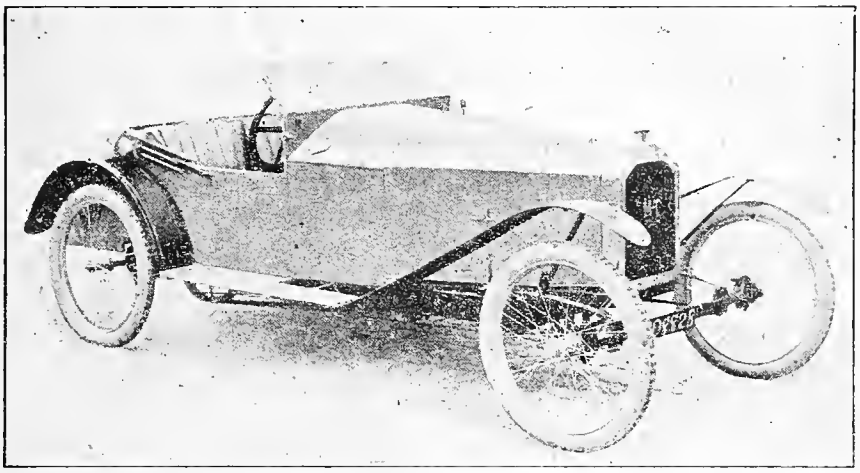

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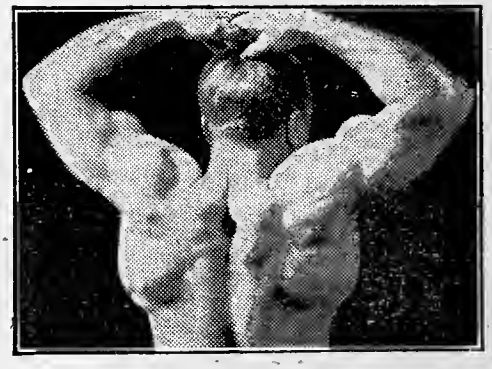
Amazing Result of a Course of MAXALDING

The Story of Case B12706 is briefly told here without comment or embellishment.

At the beginning of treatment—Condition: Heart dilatation. Great exhaustion and weakness. Measurements: Weight, 9 st. 4 lb. Height, 5ft. 1in. Neck, 12½in. Chest (expanded), 36in. Waist, 30in. Forearm, 8½in. Biceps, 10in. Triceps, 9in. Thighs, 18in. Calves, 12½in.



At the conclusion of treatment three months later—Condition: Heart, normal. Lungs, perfect. Health splendid. Measurements: Weight, 10 st. 7 lb. Height, 5ft. 1¼in. Neck, 15in. Chest (expanded), 44¼in. Waist, 32in. Forearm, 10in. Biceps, 13in. Triceps, 11in. Thighs, 23in. Calves, 14in.

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THE CURATIVE TREATMENT, which eradicates Functional Disorders, and strengthens the heart, lungs, and other internal organs.

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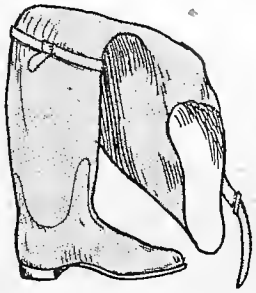

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Wood-Milne Extra Strong 32/6
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A fine assortment to suit all tastes.
British manufacture, by the makers to the Air Services during the war. All finest material throughout.
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Motor Cyclists' Water-proof Combination Suits.

Actually worth £3 3s. each.

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Brand New 1921-22 Models at greatly reduced prices. These machines are very slightly shop soiled, but carry the usual makers' guarantee.

	List Price.	Our Price.
MATCHLESS, Model H, standard, spare wheel, etc.	£185 0	**£160 0**
MATCHLESS, Model H, standard, spare wheel, 2-seater	£191 10	**£165 0**
MATCHLESS, Sports, spare wheel, etc.	£180 0	**£155 0**
Dynamo lighting, **£15** extra.		
INDIAN, Powerplus Combination, electrically equipped	£226 0	**£175 0**
INDIAN Scout, electrically equipped, speedometer	£172 0	**£135 0**
NEW IMPERIAL Combination, all-chain drive	£160 0	**£135 0**
NEW IMPERIAL, 2¾ h.p., 2-speed, clutch, and kick-st'r	£80 17	**£70 0**
ARIEL Combination, 7 h.p., dynamo	£186 0	**£160 0**
ARIEL 4 h.p. Combination	£135 0	**£120 0**
ALLON, 2¾ h.p., 2-speed, clutch, and kick-starter	£75 0	**£67 10**
LEYIS, 2¼ h.p., single-speed	£60 0	**£52 10**

	List Price.	Our Price.
CALTHORPE 3 h.p. Combination, dynamo lighting	£110 0	**£92 10**
CALTHORPE, 2¾ h.p. J.A.P., 2-speed	£69 6	**£62 10**
BLACKBURNE, 4 h.p., 3-speed, all-chain	£127 10	**£95 0**
WOLF, 4 h.p., 3-speed, Blackburne engine	£110 0	**£90 0**
COULSON, 2¾ h.p., 3-speed, spring frame	£91 0	**£85 0**
COULSON, 4 h.p., 3-speed, spring frame	£102 0	**£92 10**
NEW COMET, 2¾ h.p., 2-speed, clutch, and kick starter	£69 6	**£60 0**
DIAMOND, 2¾ h.p., 2-speed, clutch	£84 0	**£67 10**
WOOLER, 2¾ h.p., Brooklands model	£96 0	**£82 10**
O.K., 2¾ h.p., 2-speed	£59 17	**£52 10**
DUNELT 4¼ h.p. Comb., spare wheel, dynamo lighting	£150 0	**£140 0**

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1921 **HARLEY-DAVIDSON,** electrically equipped, C. and M. de Luxe Sidecar, disappearing hood, windscreen, mascot, etc.; cost £290 three months ago; unscratched the most handsome outfit on the road **£195**

1920 **HARLEY-DAVIDSON** Sports, 5 h.p., and Swan Sidecar, fully equipped, all lamps, speedometer, as new; run under 1,000 miles **£125**

1920 **HARLEY-DAVIDSON** 7-9 h.p. Combination, overhauled, re-enamelled, all lamps, horn, powerful outfit **£115**

1919-20 **A.J.S.** 6 h.p. Combination, dynamo lighting, horn, speedometer, windscreen, hood, disc wheels, and spare wheel; carefully used, and in new condition throughout **£130**

1920 **ZENITH** 8 h.p. Countershaft, and Zenith de Luxe Sidecar, Lucas electric lighting, horn, Easting windscreen; perfect condition **£135**

1920 **ZENITH** 8 h.p. Countershaft, and de Luxe bulbous back Sidecar, fully equipped, all lamps, horn, speedometer, as new **£130**

1915-16 **ZENITH** 5 h.p. Countershaft and Swan Sports Sidecar, all lamps, horn; exceptionally well preserved **£95**

1919-20 **ARIEL,** 4 h.p., and Watsonian Monarch Sidecar, electric lighting, horn, Easting screen **£95**

1919 **ROVER** 4 h.p. Combination, fully equipped; most carefully used **£95**

1920 **MATCHLESS,** 8 h.p., dynamo lighting, spare wheel, etc., hood, and screen; perfect condition **£145**

1920 **DOUGLAS** 4 h.p. Combinarion, hood, and screen, all lamps, horn, speedometer; as new **£115**

1919 **DOUGLAS** 4 h.p. Combination, all lamps, speedometer; as new in every respect **£105**

1916-17 **DOUGLAS,** 2¾ h.p., 2-speed, re-enamelled Indian red, fully equipped; very fast **£57 10**

1916 **DOUGLAS,** 2¾ h.p., re-enamelled makers' colours, all lamps, horn; as new **£60**

1915-16 **DOUGLAS,** 2¾ h.p., finished makers' colours **£55**

1919 **HOBART,** 2¾ h.p., 2-speed, all lamps; as new **£42**

1916 **HOBART,** 2¾ h.p., 2-speed, all lamps **£35**

1918 **TRIUMPH** 4 h.p. 3-speed Countershaft, thoroughly overhauled, re-enamelled, semi T.T. or touring bars **£80**

1914 **TRIUMPH** and Coach-built Sidecar, Grado gear, all lamps, horn, speedometer; exceptionally well kept **£95**

1914 **BRADBURY,** 4 h.p., 3-speed, clutch, and coach-built Sidecar, fully equipped, excellent order **£55**

1920 **NEW HUDSON,** 2¾ h.p., 2-speed, aluminium footboards, lamps, and horn **£60**

1919 **ROYAL RUBY** 8 h.p. Combination, re-enamelled, and thoroughly overhauled, new Sidecar **£55**

1916 **ROYAL RUBY,** 2½ h.p., single-speed **£115**

1918 **ENFIELD** 8 h.p. Combination, re-enamelled, and thoroughly overhauled **£32 10**

1917 **ENFIELD** 8 h.p. Combination, fully equipped; been stored for two years; snip **£116**

1916 **ENFIELD,** 3 h.p., 2-speed, all lamps, horn, thoroughly overhauled **£110**

1920 **B.S.A.,** 4½ h.p., 3-sp., all lamps, as new; **£85.** Or with new S'car **£55**

1915-16 **JAMES** 4½ h.p. Combination, all-chain drive, lamps, and horn, thoroughly overhauled **£105**

1918 **P. & M.,** 3½ h.p., 2-speed, re-enamelled, and thoroughly overhauled, all lamps ..... Solo, **£68.** Combination **£80**

1920 **WOOLER,** 2¾ h.p., variable gear, all lamps, horn, hardly used; as new **£90**

1920 **MORGAN** de Luxe, fully equipped, all lamps **£65**

1919-20 **MORGAN** Aero, special body; cost £275 ..... **Our price £155**

1914 **MORGAN** Sports, all lamps, etc. **£175**

1920 **TAMPLIN,** all lamps; run under 500 miles **£105**

1916-17 **WOLF,** 2½ h.p., 2-speed, clutch, and kick-starter, aluminium footboards; just been thoroughly overhauled **£120**

£37 10

The above machines have been thoroughly overhauled, and are guaranteed for three months from date of purchase. All are tax paid.

SIDECARS.

SWAN SPORTS, brand new, shop-soiled. List price, £33. **Our price, £25.** Fittings for all makes.

A.B.C., bulbous back, de Luxe, any colour, any fittings. Usual price, £30. Reduced to **£24.**

OTHER SIDECARS IN STOCK FROM **£16 16s.**

EXTENDED PAYMENTS—¼ down, the Balance, plus 7½%, payable in 12 monthly instalments.

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9, 10, 11, Royal Parade, W. CROYDON.

'Grams— "Track, Croydon."

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MOTOR CYCLES FOR SALE.

Blackburne.

BLACKBURNE 8h.p., 1921, with Volta (late Delta) sidecar de luxe, the most strikingly attractive outfit on the road, admired everywhere, practically new, mileage 850 only, tyres unpunctured, Stepney Road Grip on rear, P. and H. electric lighting, Bonniksen, Ace discs, Lucas horn, aluminium number plates, W.R.S., spares, tools, insured, tax paid, magnificent torpedo sidecar with door, very roomy and beautifully fitted, switchboard with ammeter, 8-day watch, and locker, with mirror mounted in turned aluminium dash, large locker and luggage platform at rear, neat petrol carrier, Triplex screen, coverall apron; bargain price, £205, fraction of cost; owner buying car; photos sent (returnable); seen week-ends or appointment.—F.V., 12, Grange Rd., Gunnersbury, W.4. [2742

Bown.

BOWN-VILLIERS, shop-soiled; £50.—Porter, Agent, Whitchurch, Salop. [2399

1916 Bown-Villiers 2¾h.p., splendid condition; £40. —14, Barnehurst Av., Erith. [3089

Bradbury.

6h.p. Bradbury Combination, 1919, perfect; best offer.—392, Burnley Lane, Chadderton, Oldham. [X0124

1914 Bradbury, 2-speed, countershaft, kick start, clutch, lamps, horn; £36.—Lingley, Thorofare, Woodbridge. [2845

BRADBURY Coachbuilt Combination, fully equipped, tax paid; £45.—Speechley, 86, Churchfield Rd., Acton, W.3. [2799

BRADBURY Combination, 1920, 4h.p., beautiful outfit, cost £150; £78; any exchange.—57, Kenbury St., Camberwell, London. [2865

BRADBURY 4h.p. C.B. Combination, 3-speed, clutch, perfect condition, all on; any trial; what offers? —Write, 9, Oppidans Rd., Primrose Hill, N.W.3. [2368

BRADBURY, 4h.p., Rally sidecar, all chain drive, new gear box, good running order; £80, or near offer.—Forster, Rookhope, Eastgate, Co. Durham. [2780

BRADBURY Combination, coachbuilt, Easting wind screen, 3-speed countershaft, kick starter, lamp, and accessories; great bargain, £47.—10, Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9145

Spare Parts:

BRADBURY Spares and Repairs Agents.—Bright and Hayles, 78, Church St., Camberwell. [1047

Brough.

WHAT Reasonable Cash Offers?—1916 3½h.p. 3-speed Brough, only used one season; evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X0122

3½h.p. Brough, Model N, 2-speed, o.h.v., fitted with sidecar, brand new body, recently overhauled by manufacturers; best offer.—252, Bolton Rd., Atherton, nr. Manchester. [2911

NEW 1921 3½h.p. Brough Flat Twin, overhead valves, 3-speed Sturmey-Archer, all chain drive, touring model; makers' price £130, bargain price £110.—22, Rodney St., Liverpool. [2472

NEW 1921 3½h.p. Brough Flat Twin, overhead valves, 3-speed Sturmey-Archer, all chain drive, T.T. sporting model; makers' price £130, bargain price £110. —22, Rodney St., Liverpool. [2473

BROUGH Late 1920 5-6h.p. Combination, new £40 Dunhill sidecar; Royal Easting, 6 volt electric lighting, tax, insurance, powerful, perfect, only used week-ends; cost over £200, sell £148.—Skidmore, 18, Chatsworth Gardens, Acton, W. [2409

Brown.

3½h.p. Brown, Bosch, B. and B., lamps, horn, tools, good tyres, licensed, just overhauled; £30, or near offer; also Bancroftian coachbuilt sidecar, complete, £15.—McDonald, Bungalow, Kelvin Rd., Ipswich. [3168

B.S.A.

B.S.A.—All models always in stock; delivered anywhere.

B.S.A. Replacements by return. Write for replacement catalogue.

B.S.A. Specialists: County Cycle and Motor Co., Broad St. Birmingham. [3248

B.S.A. 1921 Models in stock.—Porter, Agent, Whitchurch, Salop. [2398

3h.p. 1921 B.S.A. Combination, as new; £150.—Apply, F. H. Jenkins, Wallingford. [2431

BRAND New Shop-soiled B.S.A. Model H2; £103. —Jones Garage, Muswell Hill, London. [2991

BRAND New Shop-soiled B.S.A. Model K2; £100. —Jones Garage, Muswell Hill, London. [2992

NEW 1921 Twin B.S.A. Combination; £164.—Bounds, Garage, 223, High Rd., Kilburn, N.W. [2597

NEW 1921 4¼h.p. B.S.A. Combination; £142.—Bounds, Garage, 223, High Rd., Kilburn, N.W. [2599

B.S.A. Clutch Model, dropped frame, new tyres, belt, lamps; £26.—50, Marlborough Rd., Coventry. [X0170

REMOVAL BARGAINS

WE ARE OFFERING THE FOLLOWING MACHINES AT THE REMARKABLY LOW PRICES SHOWN, IN ORDER TO REDUCE STOCK PRIOR TO OUR REMOVAL INTO LARGER PREMISES.

INDIAN— 1921 (June), 7-9 h.p. combination, electrically equipped, tax paid, equal to new cost £230 ... ... **£175**

SUNBEAM—1920, 8 h.p. combination, Magdyno, extra large Henderson Elite Sidecar, spare wheel and tyre, Bonniksen Speedometer, tax paid, magnificent turnout **£175**

SUNBEAM—1921, 3½ h.p. Sports Model, fully equipped, tax paid, indistinguishable from new, only three weeks old **£135**

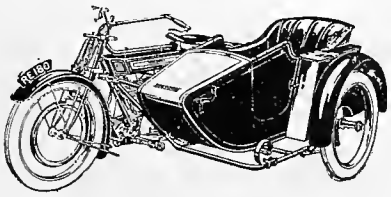
RUDGE-MULTI—Late model, 3½ h.p., clutch, equipped, brand new tyres, tax paid, bargain **£27**

ZENITH—1921, shop-soiled only, 5 h.p. Sports Model **£105**

SUN—1919, Villiers engine, tax paid, good condition **£32**

HARLEY-DAVIDSON—1920, Combination, fitted de luxe sidecar, electrically equipped, hood and cover, screen with side-shields, many extras, tax paid, low mileage **£150**

A FEW OF THE NEW MACHINES FOR WHICH WE ARE AGENTS.



ENFIELD—8 h.p. Combination, 2-speed, clutch	£160	0
ENFIELD—2¼ h.p., 2-speed, clutch	£60	0
ALLDAYS ALLON, 2¾ h.p., 2 sp., clutch	£75	0
LEA-FRANCIS, 5 h.p. twin, 3-sp., clutch	£135	0
LEA-FRANCIS, 3½ h.p., ditto	£125	0
ZENITH, 5 h.p., sporting model	£115	0
ZENITH, 6 or 8 h.p., ditto	£128	0
ZENITH, 5 h.p., clutch model	£131	0
ZENITH, 6 or 8 h.p., ditto	£144	0
MATCHLESS H or H2 Combination, screen, spare wheel and tyre	£185	0
MATCHLESS ditto, sports type	£180	0
SCOTT, 3¾ h.p., 2-speed	£130	0
SCOTT, 3¾ h.p., 2-speed, sports model	£130	0
NORTON, 3½ h.p., 3 speeds, kick-start	£132	0
NORTON, 3½ h.p., fixed gear	£98	0
NORTON Big Four, 3-speed, kick start	£135	0
P. & M.—4½ h.p., 4-speed, fully equipped combination	£150	0
P. & M., 3½ h.p., 2-speed, clutch	£115	0
EDMUND, 2¾ h.p. Blackburne, 2-speed, clutch, spring frame	£93	0
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SIDECARS. Large selection by leading manufacturers. Sidecars can be fitted on any make of machine immediately.

Comprehensive stock of Second-hand Motor Cycles and Combinations always available.

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Tel.: Cen. 864.

MOTOR CYCLES FOR SALE.

B.S.A.

B.S.A. 4¼h.p., all-chain drive, latest new 1921 model; £100.—Marston, 31, Bridge St., Chester. [2624

B.S.A. Late 1919 4¼h.p., large Cameolet sidecar, hood, screen, etc.; £105.—26, Dynevor Rd., Stoke Newington. [2429

B.S.A. Combination, 1919, hardly used, condition as new, lamps, etc.; £75.—Collard, 12, Station Parade, Muswell Hill. [3153

1916 B.S.A. 4¼h.p., 3-speed countershaft, taxed, equipped; bargain, 49 gns.—5, Addison Av., Holland Park, W.11. [3020

B.S.A. 4¼h.p. Combination, Model K., 1917, all on; any trial; a genuine bargain, £80.—Hazeldene, Craven St., Melton Mowbray. [2603

1916 4¼h.p. B.S.A. Combination, run about 6,000 miles only, perfect throughout, fully equipped; £70.—114, Brixton Hill, S.W.2. [3135

B.S.A. 4¼h.p., Model K., new Sept., 1920, little used, splendid condition, Cowey horn, lamps, tools; £70, or near offer.—Oldrid, Boston, England. [2449

1919 B.S.A. 4¼h.p. Combination, 3-speed, clutch, and K.S., all-chain drive, splendid condition; £95.—J. Powell, Shawbury, Shrewsbury. [X0140

B.S.A. 3½h.p., 2-speed, free, hand and foot control, good running order; 38 gns.; exchange lightweight and cash.—W., 83, Dutton St., Greenwich. [2856

6-7h.p. 1921 B.S.A. Combinations, shop-soiled only; reduced to £158/10 cash, or easy terms.—Wauchope's, 9, Shoe Lane, Fleet St., London. [1849

B.S.A. 4¼h.p. 1919 3-speed Combination, all chain, excellent running condition, gas lighting, screen, trial; £115.—Owen, Post Office, Amberley, Sussex. [2513

B.S.A. Combination, 1921, as new, speedometer, lamps, mirror, wind screen; bargain, £140.—Chatfield, Grosvenor Gardens Mews East, Victoria, S.W.1. [2563

1921 4¼h.p. B.S.A. Combination, Lucas lamps, Cowey, Easting, etc., good as new; £125.—Arthur G. Daw, B.S.A. Agent, 114, Brixton Hill, S.W.2. [3136

B.S.A. 1921 4¼h.p., chain-belt combination, perfect condition, insurance, tax, horn, spares; £115, or highest near offer.—17, Princess Rd., Crumpsall, Manchester. [X0163

1919 4¼h.p. B.S.A. and large coachbuilt sidecar (Model K.), speedometer, lamps, screen, hood, horn, good condition; £90.—47, Hazel Rd., Kensal Rise, London, N.W.10. [2693

B.S.A. 1917 4¼h.p. C.B. Combination, complete with lamps, horn, speedometer, and Easting wind screen, in excellent condition, and as new; bargain, £95.—24, Grosvenor Rd., Forest Gate. [2497

B.S.A. 4¼h.p., 1920, all chain, delivered April last, torpedo sidecar, all accessories, insurance, etc., perfect, smart outfit; £115; any trial.—Kia Ora, Woodgrange Av., Laindon, Essex. [3051

B.S.A. 4¼h.p. Combination, latest model, all chain drive, unused; £140.—Vivian Hardie and Lane, Ltd., 23, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [2403

BARGAIN.—Late B.S.A. combination, countershaft 3 speeds, clutch, kick starter, lamps, licensed, beautiful condition; any trial; as new; £65; guaranteed sound.—89, East Hill, Wandsworth. [2841

SPORTING B.S.A. 4¼h.p., 3-speed, T.T. bars, speedometer, electric light and horn, Binks, 2in. brass exhaust, Tan-Sad, etc.; any examination; £90; stamp, photo.—Riley, Church St., Flint. [2560

B.S.A. Late 1920 4¼h.p. All-chain Combination, luggage grid, Easting, handle-bar and foot clutch, mechanically perfect, smart appearance; trial; £100, or nearest.—Box 6,667, *c/o The Motor Cycle.* [2665

B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St. (off Blenheim St.) New Bond St., W.1. [0657

4¼h.p. B.S.A. Combination, 1920, excellent condition, lamps, mechanical horn, speedometer, Easting, luggage grid and spares, spare cover and tube; £125; appointment.—Young, 22a, Hillside Gardens, Highgate. [2379

B.S.A.—A motor cycle worthy of its name is the B.S.A.—We have always in stock at least three models, Model K, Model H, and 6-7h.p. twin; immediate delivery; all spares in stock; trade supplied.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0379

B.S.A. 1916 4¼h.p. Combination, 3-speed, chain drive, specially designed 2-seater sidecar for adult and child, lamps, horn, tools, overhauled last year by makers, fully insured to March next, licence paid; £65; owner bought car.—Corney, 96, Ulleswater Rd., Palmers Green, N.14. ('Bus 29.) [2891

Campion.

CAMPION-J.A.P. 8h.p. Combination, perfect, all on; £37.—17, Heaton Rd., Mitcham. [2753

2½h.p. Campion-Jap, new mag., lamps, new tyres; cost £48, sell £35, carriage paid.—Streete, Greendale Terrace, Whitwell, near Mansfield, Notts. [2537

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. P17
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Calthorpe.

CALTHORPE Junior, 2¼h.p., 2-speed; £20, or exchange.—17, Heaton Rd., Mitcham. [2752

1920 Calthorpe-Jap, 2¾h.p., 2 speeds, in nice condition, fully equipped; £39.—Maynard, 8, Silver St., Enfield. [3039

CALTHORPE 1921 Combination actually in stock for immediate delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd.; Clapham Common, S.W.4. 'Phone: Brixton 2417. [0509

2¾h.p. Calthorpe-Jap, 1914, single-speed, new Thomson-Bennett mag., new B. and B. carburetter, tank newly painted, machine overhauled; reason of selling, larger machine; £27, or nearest offer.—Bowie, 14, Garibaldi St., Scarborough. [2573

Cedos.

CEDOS 1921 Lightweight, 2-speed, brand new, and only slightly soiled; £45.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2299

Centaur.

CENTAUR, 3½h.p., 2-speed, fine condition; £32, or with £20 for combination.—37, Leamington Rd. Villas, W.11. [2818

Chater-Lea.

NEW 1921 2½h.p. Chater-Lea, 2-speed; makers' price £70, bargain price £49/10.—22, Rodney St., Liverpool. [2475

Chater-Lea-Jap.

CHATER-J.A.P. 6h.p., 3-speed countershaft, Coverley sidecar, Tan-Sad light luggage carrier, tax paid, the turnout finished in royal blue; £68.—W. Marriott, 170, Red Lane, Coventry. [X0136

CHATER-LEA-J.A.P. 6h.p. Combination, hood, screen, lamps, horn, speedometer, splendid condition; bargain, £60, or near.—Doe, 3, Truro St., Prince of Wales Rd., N.W.5. [2822

Clyno.

£35, worth double.—Clyno combination, 5-6h.p., good. —27, French St., Derby. [3115

1920 Clyno 2-stroke, 2-speed, h.b.c. clutch, tax, perfect; £42/10.—Gray's Garage, Watford. [2962

CLYNO 1920 2-stroke, 2-speed, clutch, tax paid, in good order; £40.—Moreton, Manor House, Southam. [X9916

CLYNO Combination, 6h.p., 2-speed, kick start, splendid order; £65; take lower power part.—57, Kenbury St., Camberwell, London. [2864

CLYNO Combination, 1917-18, 3-speed, clutch, K.S., fully equipped, spares; £75; exchange lower power.—131, Lavender Rd., Battersea. [3119

CLYNO 6h.p. 1918 Combination, perfect, 4 interchangeable wheels, light car tyres, 3-speed clutch, K.S., lamps, Klaxon; £75.—66, Perry Vale, Forest Hill Station, S.E.22. [3205

1920 2½h.p. Clyno, mileage under 1,000, lamps, horn, and all accessories, appearance as new and mechanically perfect; 39 gns.; seen after 5 p.m.—96, Gower St., W.C.1. [3032

CLYNO 6h.p., 2-speed, like new, and Canoelet sidecar, electric light, £65; also sidecar, complete, wants renovating, £7; money wanted.—Ross, 21, Woodbury St., Tooting, S.W.17. [3067

CLYNO 2-stroke, 1915 or 1916, in lovely condition, smart machine, tax paid, and guaranteed; £36, or offer.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9148

MISS DOOLEY.—1915-16-17 6h.p. Clyno motor cycles, clutch, K.S., renovated and complete from £55 each; thoroughly overhauled; seen any time during the day. Also engines and gear boxes for sale, new and second-hand.—Please apply to Miss E. Dooley, 33, Killyon Rd., Clapham, S.W.8. [3214

CLYNO 6h.p. Combination, recently overhauled, 3-speed, kick starter, mechanically perfect, spare and interchangeable wheels, pillion seat, lamps, speedometer, many spares, excellent condition, insured, licensed; bargain, £95, near offer; must sell; owner going abroad; appointment only.—R.C.B., 73, Delaware Rd., W.9. [1634

Spare Parts:

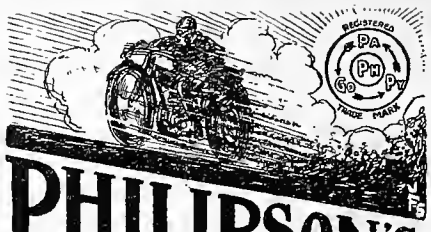
CLYNO Spares.—Huge stock of all parts, bolts, nuts, gear, clutch, engines, fork, wheel, and magneto parts, cheap. Don't waste time writing others; write and support an ex-soldier. Stamp, please.—Llanage, 79, Waverley Rd., Redland, Bristol. [2561

CLYNO Spares.—We can supply immediately from stock Clyno parts for all models. Parts supplied by us are perfect, not Government rubbish. Write requirements; stamp please.—Claridge's, Clyno House, 8, Chandos Rd., Redland, Bristol. 'Phone: Bristol 5034. [2562

Connaught.

ALLAN GRUZELIER for new or second-hand Connaught models immediately.—168, Regent St., W. Regent 205. [2540

CONNAUGHT 2¾h.p., 1921, mileage under 500, Sturmey-Archer 2-speed, kick start, Lucas lamps, tax paid, fully insured, climbed Porlock and Lynton; what offers? Seen by appointment.—Box 6,505, c/o *The Motor Cycle.* (D) [1545



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Coulson.

1921 Coulson B., 2¾h.p., 3 speeds and K.S., silent, fast; £75.—Bartlett, 11, Albemarle Rd., Beckenham. [2506

1921 Coulson-Jap Sports Model, 2-speed, clutch, brand new, list price 92 gns.; our price £68.—Below.

1921 Coulson-Blackburne 2¾h.p., 2-speed, clutch, kick start, brand new, special reduced price; £75; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3223

COULSON 2¾h.p. Sports J.A.P., 2-speed, clutch, brand new; cash £85, or £17 down and 12 payments of £6.—Below.

COULSON, 2¾h.p. Blackburne, 2-speed, clutch, brand new; cash £90, or £18 down and 12 monthly payments of £6/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2899

F.O.C.H. have a new 4h.p. Coulson, Export 3-speed, kick starter.—5, Heath St., Hampstead (near Hampstead Tube Station). [2583

COULSON 4h.p., spring frame, brand new; £90; deferred payments.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2904

COULSON, 1920, 4h.p. Blackburne, 2-speed, spring frame, splendid condition, engine perfect; £80.—Wilson, 36, Coney St., York. [3058

COULSON-BLACKBURNE 1920 2¾h.p., spring frame, 2-speed, clutch; £50.—Wilcox, 1, Salcombe Villas, Vineyard, Richmond. Trial, 'phone City 5391. [2704

1919 Coulson B 2¾h.p., spring frame, horn, pump, mirror, tools, licence, condition as new; £65.—Barkworth, Anna Valley, Andover. 'Phone: Andover 95. [2516

100 GNS.—Coulson-B. 4h.p. 1920 combination, 3-speed S.A., electric lighting, perfect condition throughout.—347a, New King's Rd., Fulham. Putney 737. [3027

NEW 1921 2¾h.p. Coulson B, Blackburne engine, Sturmey-Archer 3-speed, kick start, clutch; makers' price £117/12, bargain price £95.—22, Rodney St., Liverpool. [2478

COULSON, 1921, bought May, 3-speed, clutch, kick start, 4h.p., cost £126; seen any time by appointment; £90, or near offer.—Pope, 62, Holland Park Av., W.11. 'Phone: Park 2955. [2839

Coventry Eagle.

COVENTRY EAGLE, 2¾h.p. J.A.P., 2-speed, fully equipped, insured £70 until July next; what offers?—14, St. James's Av., Gravesend. [2649

1920 (April) Coventry Eagle, J.A.P. 2¾h.p., 2 speeds, clutch, K.S., excellent condition, fast, reliable, lamps, accessories; £45.—Box 6,624, c/o *The Motor Cycle.* [2391

Coventry Victor.

COVENTRY VICTOR, the perfect flat twin engine.—Immediate delivery of standard touring machine, 5-7h.p., 3-speed gear box, all chain drive, £125; also short wheelbase sporting solo machine, guaranteed 65 m.p.h., £135, winner 500 mile race Brooklands (750 c.c. class); send for catalogue. Agents wanted where not represented.—Coventry Victor Motor Co., Ltd., Coventry. [0520

Diamond.

1919 Diamond-Jap 2¾h.p., 2-speed, like new; £40, or nearest.—Hill, Bromley Lane, Kingswinford, Staffs. [3148

DIAMOND, 2¾h.p. J.A.P., 1920, 2-speed, good condition; £39/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2902

2¾h.p. Diamond, 2-speed, clutch, K.S., new condition; £35; exchange combination with cash.—120, Sutherland Rd., West Croydon. [3064

Dot.

1920 Dot-Jap 2¾h.p., 2-speed, just stove-enamelled black and gold, head lamp, horn, licensed, excellent order; £45.—Apply, 1, Oppidans Mews, Primrose Hill, London. [2611

DOT-J.A.P. 8h.p. T.T. Clutch Model, 1916, absolutely like new, Binks 3-jet, adjustable pulley, fast, reliable; best offer.—Trnefitt, Hotel Granville, Esplanade, Scarborough. [X002

Douglas.

DOUGLAS. Douglas. Douglas.

3½h.p. Sports Model; £135

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EXCELSIOR Model De Luxe Combination, 8h.p. Blackburne engine, 1921, unrecognisable from new, cost over £200, any trial any time; accept £145. —King, 35, Wellhouse Rd., Barnoldswick, via Colne. [3120

1921 2¾h.p. British Excelsior, new pattern Villiers engine, very slightly shop-soiled, complete with lamps, horn, pump, tools, and licence holder, 2 speeds, kick starter, clutch, open frame; £62.—Mobility, Andover. [2658

F.N.

4-CYL. F.N., 2 speeds, clutch, drop frame, good condition, licensed; £35.—10, Kemball St., Ipswich. [2614

£23, or nearest.—2¾h.p. F.N., tax paid, accessories, just been overhauled.—199, Harlesden Rd., Willesden, N.W.10. [2435

F.N. 2¼h.p., 2 speeds, clutch, shaft drive, horn, taxed, goes splendid; bargain, £21.—136, Ravensbury Rd., Earlsfield, S.W.18. [3245

F.N., 4-cyl., 2-speed, hand clutch, kick starter, all accessories, discs, very nice condition; £48.—365, King St., Hammersmith. [2826

Francis-Barnett.

1920 2¾h.p. Francis-Barnett, clutch and kick start, 2-speed, fully equipped, perfect condition; 58 gns.; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3224

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

£65.—Harley Combination, 1915, exceptionally good; worth £95.—27, French St., Derby. [3116

1921 Harley, electric model, double sidecar; £185. —Phillips, 20, Wightman Rd., Harringay. [2957

1919 Harley 7-9h.p. Combination, electric model, all accessories; £115.—Jones Garage, Muswell Hill, London. [3011

HARLEY-DAVIDSON, 1919, 2-seater sidecar, all accessories, tax paid; £79/10.—365, King St., Hammersmith. [2830

ALLAN GRUZELIER for new or second-hand Harley-Davidson models immediately.—168, Regent St., W. Regent 205. [2543

1916 Harley Combination, mag., electric lights, recently overhauled, good running order; £80.—60, Portland Rd., Worthing. [X0041

NEW 7-9h.p. Harley-Davidson Model F., complete, shop-soiled; £135.—Dickinson and Adams, Ltd., Motor Engineers, Luton. [2789

NEW 4h.p. Harley-Davidson Sports Model, complete, shop-soiled; £120.—Dickinson and Adams, Ltd., Motor Engineers, Luton. [2788

1920 Harley-Davidson Combination, excellent condition; £140; electric light, etc.—11, Cedar Rd., Cricklewood, N.W.2. [2421

1919 7-9h.p. Harley-Davidson Combination, dynamo lighting, an excellent outfit; great bargain, £100.—114, Brixton Hill, S.W.2. [3133

F.O.C.H. have a smart 1920 electric Harley and coach sidecar; bargain.—5, Heath St., Hampstead (near Hampstead Tube Station). [2584

1920 7-9h.p. Harley-Davidson Combination, dynamo lighting, disc wheels, etc.; £110.—28, Woodford Rd., Forest Gate, E. 'Phone: Stratford 2598. [2876

HARLEY-DAVIDSON Combination, good condition, new tyres, tax and insurance paid; any trial; £100, or nearest offer.—44, Whitley Wood Lane, Reading. [2358

1921 4h.p. Harley Sports, speedometer, lamps, brand new; £112; £53 under list; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3229

1920 7-9h.p. Harley-Davidson Combination, just overhauled by makers, lamps, horn, speedometer, hood, etc., splendid condition; £115.—Ferrari, Alfred St., Leeds. [3079

1921 Harley-Davidson 4h.p. Flat Twin, run 1,500, dynamo lighting, speedometer, mechanical horn, tax paid; £120; exchange.—Newnham Motor Co., 223, Hammersmith Rd., London. [2895

HARLEY-DAVIDSON 7-9h.p. 1918 Combination, new tyres, discs, screen, etc., guaranteed perfect, tax paid; reasonable offer; seen evenings.—17, Edith Rd., West Kensington. 'Phone: Western 1395. [2509

1919 Harley-Davidson 7-9h.p. Combination, mag. model, fully equipped, acetylene lighting, speedometer, horn, tools, excellent tyres, discs, tax to December; must sell; accept £105.—V.M., 24, Sheffield Terrace, W.8. [3167

HARLEY-DAVIDSON 1920 7-9h.p. Combination, electric lighting, hood, screen, side wings; cost 272, accept £150; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0068

HARLEY-DAVIDSON 7-9h.p., 1918, 3 speeds, foot and hand clutch, magneto model, kick starter, guaranteed faultless, aluminium discs, roomy sidecar, hood, wind screen, Tan-Sad, lamps, tools, tax paid; trial any time; bargain, £95.—Stepney Garages, 77, Palmons Lane, Commercial Rd., Stepney, London. [3143

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HARLEY 1919, with Harley 1921 sidecar, electric lights, speedometer, Klaxon horn; this machine has been little used and exceptionally well kept, looks new; £130, or near offer.—29, Portland Rd., Finsbury Park, London, N. [2407

HARLEY-DAVIDSON Late 1920 7-9h.p. Combination, electric model, Easting, double apron, tools, speedometer, just overhauled, like new, tax paid, insured all risks, including passenger, 2,000 miles; £170, bargain; owner bought car.—Williams, 13, Gwydr Terrace, Swansea. [2382

HARLEY-DAVIDSON 7-9h.p. Combination, smart appearance, just re-enamelled by makers, engine overhauled, electric lighting, spare parts (outer cover, inner tubes, chain, Tan-Sad, tools, etc.); owner purchasing car.—Any time between 9 a.m. and 8, Wednesday before 1 o'clock, 58, Lavender Hill, Battersea, or after at 247, Roman Rd., Bow. [2745

HARLEY-DAVIDSON, late 1920, No. L20T10164, electric model, disc wheels, mirror, watch, full kit tools, spares, luxurious C. and M. sidecar, concealed hood, side curtain, Auster double screen, fibre mat; reason for selling, buying a car; photos if required; this combination is absolutely in first-class condition, and is open to any expert examination; cost £284, will accept £190.—Apply, A. H. Brill, Trouville, Smitham Bottom Lane, Purley. Tel.: Purley 675. [2776

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Henderson.

1920 Henderson 10h.p. Combination, 4-cyl., 3-speed, tyres hardly used; £150.—Jones Garage, Muswell Hill, London. [3007

HENDERSON, 4-cyl., just overhauled, renewed, and bulbous 2-seater sidecar; £95; write trial.—32, Arcadian Gardens, Bowes Park, N.22. [2657

1920 Henderson Combination, as new; deliver to purchaser within 150 miles; any trial whatsoever; sacrifice, £125.—13, Victoria Rd., Sheffield. [2595

HENDERSON 1920 10h.p., 4-cyl., 3 speeds, hand and foot brakes, 2-seater sidecar, apron, Sandum screen, Sterling leg shields, 3 electric lamps, Cowey horn, Cowey speedometer, spare chain, etc., tax paid; 115 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [2738

Hobart.

BRAND New Shop-soiled Hobart, 2½h.p. 2-stroke Villiers engine; £42/10.—Jones Garage, Muswell Hill, London. [3001

J.A.P. (Hobart) 4h.p., overhead valve, 90 bore, 2-speed, free engine, 1914 model, in guaranteed order; £38.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9144

Humber.

HUMBER 2h.p., good order, tax paid; £18; exchanges.—76, London St., Chertsey. [2812

HUMBER 2¾h.p. Twin, 3-speed, clutch, lamps, discs, very fast; £28.—14, Phœnix St., Euston. [2715

3½h.p. Humber and Sidecar, handle starting, 2-speed, thoroughly overhauled; £48.—Bell, 49, Bouverie St., Chester. [2612

3½h.p. Humber, 2-speed, Bosch, Amac, tax paid, good running order; £25.—Middleton, 56, Leo St., Old Kent Rd., S.E. [3242

HUMBER Lightweight, running order, tyres new, £23; also 2¾h.p. T.D.C. 2-stroke engine, nearly new, £7; cash or exchange.—4, Park View, Ingleton. [X0013

LATE 1914 Humber Water-cooled 3½h.p., 3-speed, and sidecar, very little used, first-class going order, tax paid, lamps, spares, and all complete; £65. —"Journal" Office, Carmarthen. [3139

HUMBER 3½h.p., 2 speeds, clutch, starter, Bosch, B.B., Cowey speedometer, lamps, horn, tools, tax paid, sound condition and appearance; first £38 secures. —Hayes, 27, Highbury New Park, N. [2733

HUMBER 3½h.p. Coachbuilt Canoelet Combination, 3-speed, clutch, K. start, 3 lamps, horn, speedometer, etc., splendid condition; £40; level exchange, recent Douglas.—24, Brunswick Rd., Leyton. [2884

HUMBER 1912 3h.p., Bosch, B. and B., Druids, complete with lamps and horn, tax paid for year, tyres and belt very good, and is in good condition, runs well; £15.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [3060

HUMBER 4½h.p. Flat Twin, 1921 model, with special Grindlay sidecar, fully equipped with lighting set, horn, etc., cost over £170, only used 2 months, condition as new, running perfect; will sell at special price.—King, Allesley House, Bray's Lane, Coventry. [X9993

1921 Humber Flat Twin, luxurious Henderson sidecar, new August, electric light, speedometer, Cowey horn, watch, etc., lovely outfit, absolutely faultless; what offers? Wanted, family Morgan or similar, water-cooled.—Write, E.H., the Post Office, Desborough. [2820

MOTOR CYCLES FOR SALE.

Humber.

3½h.p. Humber Combination, coachbuilt, all black, 1916 rebuilt, 3-speed, kick start, clutch, lamps, splendid condition, sound and reliable; £60, no offers.—Spencer, Kenwood, Daventry, Northants. [2426

Indian.

7-9h.p. Indian, clutch model; £32.—Speechley, 86, Churchfield Rd., Acton, W.3. [2801

INDIAN Motor Cycle Frame, 1919; offers; cheap, perfect.—Norbury Terminus Garage. [3078

1915 Indian 7-9h.p. Combination, horn, rear lamp, good order; £80, or offer.—Morgan, Lille Barracks, Aldershot. [2444

1914 Indian 7-9h.p., 2-speed, indistinguishable from new; £47/10.—Jones Garage, Muswell Hill, London. [3019

INDIAN 7-9h.p., 1919, lamps and horn, excellent condition; £60; after 7.—28, Minford Gardens, Shepherd's Bush, W.14. [2700

1920 Indian 7-9h.p. Combination, electric, perfect order, only used this year; £135.—Greenwood, 30, Hainton Av., Grimsby. [2440

1919 7-9h.p. Indian Combination, discs, hood, screen, smart outfit; £75, bargain; must sell.—207, Westcombe Hill, Blackheath. [2923

INDIAN 5-6h.p., fitted with P. and M. gear, good condition; wants assembling; £25.—1, Springfield Park Crescent, Catford, S.E.6. [2855

1919 Indian Combination, little used, smart outfit; owner going abroad; must sell; first cheque over £100.—The Cot, Leigh-on-Sea. [2436

INDIAN 1920 7-9h.p. Combination, dynamo lighting, fully insured, splendid condition; £130, or near.—Pram Stores, Victoria St., Coventry. [X0164

1916 5-6h.p. Indian Combination, fully equipped, splendid condition; offers; after 5.—7, Goldsmith Lane, Roe Green, Kingsbury, N.W.9. [3102

£50.—Indian combination, 7-9h.p., 2-speeds, clutch, large metal sidecar, just had £10 overhaul.—Cordon, 30, Parthenia Rd., Fulham, S.W.6. [3130

£37 Saved; brand new 1921 Indian Scout solo, standard model, list price £157; our reduced price £120.—Jones Garage, Muswell Hill, London. [2985

£46 Saved; brand new 1921 7-9h.p. electric model Indian solo, list price £186; our reduced price £140.—Jones Garage, Muswell Hill, London. [2982

1916 3-speed 7-9h.p. Powerplus Indian Combination, electric lighting; £48, bargain.—28, Woodford Rd., Forest Gate, E. 'Phone: Stratford 2598. [2874

INDIAN 7-9h.p. Powerplus Model, complete with sidecar, and in very good working order, 1917 or 1918 model; £75.—Attwood's Garage, Stafford. [X9997

T.T. Powerplus 3-speed Indian, road racer, 1916-17, kick starter; nearest 59 gns; not W.D.; exchange.—Manager, Old Waverley Hotel, Southport. [3069

£37 Saved; brand new 1921 Indian Scouts, electrically equipped, list price £172; our reduced price £135.—Jones Carage, Muswell Hill, London. [2983

1917 7-9h.p. Indian, good condition, 2-speed, kick start, clutch, new tyres, tax paid, speedometer, electric lights, Klaxon horn; £50.—Hewens, Maidenhead. [0713

1915 7-9h.p. Indian, 3-speed, kick starter, clutch, electric lamps, horn, first-class condition throughout; £55.—Lewis, 46, Forest Drive East, Leytonstone, E.11. [2578

INDIAN 3½h.p. Sporting Twin, 3-speed, clutch, equal new, exchange Triumph or similar, cash either way; sell £65.—222, Albion Rd., Stoke Newington, N.16. [2815

1921 Indian Scout, electric lights, speedometer, new June, excellent condition; £86; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3227

£38 Saved; brand new 1921 Indian Scout Combinations, electrically equipped, list price £203; our reduced price £165.—Jones Garage, Muswell Hill, London. [2984

SPECIAL 8-valve Racing Indian, 3-speed, Senspray, Bosch, winner Scottish championship and other speed events this year; £120, or near.—R. J. Braid, Elie, Fife. [3045

INDIAN Combination, 7-9h.p., 1915, 3-speed, clutch, K.S., hood, and screen, electric lighting, perfect running order; £68, or offer.—13, Vernon Rd., East Sheen, Surrey. [2775

INDIAN 1915 7-9h.p., £23 worth new parts, perfect running order; £75, offers; seen 7.30 p.m., and Saturday 3.30 p.m.—Silva, 104, High St., Hampton Hill, Middlesex. [2528

INDIAN 1915 Coachbuilt Combination, 3-speed, lamps, 2 wind screens, tyres in good condition, tax paid; best offer, or exchanges entertained.—Lebeter, 572, Osmaston Rd., Derby. [2686

INDIAN 7-9h.p. Combination, late 1914, 2-speed, clutch, electric lighting and horn, speedometer, recently overhauled, tax and insurance paid; £55.—15, Laurie Park Rd., Sydenham, S.E.26. [2917

INDIAN Combination, 1920, 7-9h.p., electric equipment, many accessories; £135.—Vivian Hardie and Lane, Ltd., 23, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [2404

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7-9h.p. Indian 1920 Motor Cycle, with sporting sidecar, electric lighting set, in good running condition, been carefully driven by experienced rider; what offers.—F. Pickworth, The Terrace, London Rd., Spalding. [2685

1915 7-9h.p. Indian, 3-speed clutch, kick start, good running order, spring frame model £65, sidecar to suit £75; a snip, or exchange for lighter machine and cash.—Gray and Raynes, 8, Low Rd., Balby, Doncaster. [3212

1916 Powerplus Indian Combination, Swan s.c., electric or acetylene light, completely equipped, speedometer, screen, tools, spares, etc., handsome turnout and condition; bargain, £85.—W., 3, Victor Rd., Willesden, N.W.10. [2539

1920 Indian 7-9h.p. Powerplus Combination, electric lighting model, fitted with Easting wind screen and Brampton patent spring chain, speedometer, etc.; a real bargain, £125.—Jones Garage, Muswell Hill, London. [3008

INDIAN 7-9h.p. Combination, kick start, hand and foot clutch, wired for electric light, in excellent condition, also tyres very good; must sell; best offer over £50; trial invited.—Apply, A.W., 7, Beverley Rd., New Malden, Surrey. [3346

INDIAN Combination, 7-9h.p., huge coachbuilt Zeppelin sidecar, whole painted primrose and black, most distinctive outfit extant, guaranteed perfect; any trial; £80; instalments, or solo and cash; photos, stamp.—Potter, Harlow, Beds. [2408

INDIAN 7-9h.p., 1914, 2-speed, clutch, kick start, electric lamps and horn, speedometer, tools, tax, etc., just overhauled, enamelled, and parts renewed, condition excellent; 60 gns.—Duncombe, Laburnums, Lane Head, Wolverhampton. [X0109

INDIAN 1921 7-9h.p. Powerplus Combination, electrically equipped, electric horn, speedometer, absolutely indistinguishable from new, tax paid; £175; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0069

WANTED, purchasers for any model of new 1921 Indian motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0650

1920 Powerplus Indian Combination, engine 73R172, dynamo, electric and bulb horns, Orto 3-pane wind screen, hood, side curtains, mirror, spare long chain, tube, lamp bulbs, valve, all tools, mileage 2,500; trial by appointment after 6, Saturday all day; £135.—Skeat, 120, Cranbrook Rd., Ilford. [2654

INDIAN 1919 7-9h.p., spring frame, 3 speeds, kick starter, new engine, Goodyear tyres (excellent condition), T.T. handle-bars, carrier, large head light, tail lamp, Prest-o-Lite cyl., large metal toolbox, tools and pump, tax paid, £59/10; 1917 model, practically indistinguishable from new, tax paid, £59/10.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [2739

Spare Parts:

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

Ivy.

1920½ Ivy, 2-speed, kick start, equipped; 48 gns.—9, Church Rd., Harlesden. [2926

IVY Lightweight, 2½h.p., 2-speed, fully equipped, spares, new condition; bargain, £50.—28, Middleton Rd., Banbury. [2796

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

ISLE of Man T.T. Ivy, actual T.T. machine, has only been used in the race, fitted with close ratio 3-speed gear box, all chain drive, exceptionally large tank, special wheels; snip, £75.—22, Rodney St., Liverpool. [2479

SPECIAL 2¾h.p. o.h.v. Racing Ivy-Green, guaranteed in perfect mechanical condition, frame just re-plated throughout, new tyres fitted, winner of over 12 firsts in open competition; price £65.—W. Gilmour Smith, 136, Renfield St., Glasgow. [1754

Ixion.

LATE 1920 Ixion, Villiers 2-speed, fully equipped; £50, or exchange with cash for late Triumph.—116, Cambridge St., Pimlico, S.W.1. [2565

James.

DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0690

1919 James 2¾h.p., 2-speed, fine order; £35.—Jones Garage, Muswell Hill, London. [3017

MOTOR CYCLES FOR SALE.

Ner-a-Car.

NER-A-CAR.—The wonderful new 2-wheeler; price 66 gns. Purchase one of these delightful machines from Clement Butler and Co., 32, Borough High St., London. [2970

Norton.

PREMIER Motor Co. for 1921 Nortons.

ALL Models for Immediate Delivery at new reduced prices.

BIG Four, chain drive, £120; Model 16H, 3½h.p., 3-speed, T.T., chain drive, £115. Write for revised price list; easy payments only 4% extra. Buy you machine direct from the Norton specialists, The Premier Motor Co., Aston Rd., Birmingham. [0625

DAN GUY, Weymouth.—Norton Big 4 combination, £177; sports model, £132; from stock. [0696

NORTON 3½h.p., 3-speed, Model 16H, very fast machine; £115; quite new.—Marston, 31, Bridge St., Chester. [2621

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0718

ALLAN GRUZELIER for new or second-hand Norton models immediately. — 168, Regent St., W. Regent 205. [2545

1921 Big Four Norton Combination, fully equipped, condition excellent; £112; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3228

NORTON 3½h.p., B.R.S. engine, purchased Nov., 1920, do 65 m.p.h., lamps, horn, etc., insured for £125; any reasonable offer accepted.—Porter, Agent, Whitchurch, Salop. [2397

HALIFAX.—Norton new 1921 3½h.p., sporting, £80; 3½h.p., 3-speed, £115; Big Four, 3-speed, £120; reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [2667

NORTON.—Immediate delivery Big 4 and 16H Models; spare parts always in stock and sent per return. Call wire, write, or 'phone 4042.—G. H. Tucker, the Norton Rider, Agent, and Specialist, Redcliffe Hill, Bristol. [2289

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

N.S.U.

3½h.p. N.S.U. Combination, 2-speed, free engine, ride away; £30, or nearest.—Lucas, Edmacot, Nursery Rd., Sutton, Surrey. [3055

N.S.U. Lightweight, pretty machine, running order, any trial; £24; take push cycle part.—57, Kenbury St., Camberwell, London. [2862

N.U.T.

N.U.T. 1920 3½h.p., Magdyno, perfect, and as new; £115.—Holmleigh, Baring Rd., Grove Park, S.E.12. [2420

N.U.T., 1920, Magdyno lighting, excellent condition; £100.—Chambers, 60, Creffield Rd., Colchester. [2417

£85; 1921 N.U.T., as new, 3½h.p. twin sporting, 3-speed.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2255

N.U.T. 1920½ 3½h.p., dynamo lighting, mileage small; £110, or near.—Burley, Jun., Old Bedford Rd., Luton. [2741

BRAND New N.U.T., complete with Lucas electric lighting, shop-soiled only; £120.—Dickinson and Adams, Ltd., Motor Engineers, Luton. [2787

N.U.T.-J.A.P., Lucas dynamo lighting, brand new, for immediate delivery, shop-soiled only; £125.—E. Pollard, Broomfield Rd., Chelmsford. [X9269

NEW 1921 5h.p. N.U.T., with dynamo lighting, electric horn, 3-speed, kick start and clutch; makers' price £145, bargain price £96.—22, Rodney St., Liverpool. [2477

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, as new; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0070

N.U.T. 3½h.p., 1920, dynamo, splendid condition; £88.—Vivian Hardie and Lane, Ltd., 23, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [2405

N.U.T., 1920, special machine, 8h.p. Precision engine, 28×3 tyres, Magdyno, ammeter, Henderson Elite sidecar, screen, apron, Rushmore searchlight, 2 accumulators, magnificent condition; cost over £300, accept £190.—Moore, Moorville, Allerton Av., Harrogate Rd., Leeds. [1475

O.K.

1921 O.K.-Villiers, Mark IV. engine, 2-speed, as new, perfect; £47.—19, High St., Whitechapel, E.1. [2723

O.K. 2¾h.p., splendid condition, 2-speed; £55; T.T. bars.—H. Farris, The Ferns, Piddington, West Wycombe, Bucks. [2609

O.K. 2¼h.p., 2-speed, lamps, horn, etc., nearly new tyres, excellent condition; £35, or offer.—Highfields, East Chiltington, Lewes. 2441

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READING STANDARD

The WORLD'S MASTER Motor Cycle.

READING STANDARD, 8-10 h.p. Solo, including dynamo lighting **£163 0**

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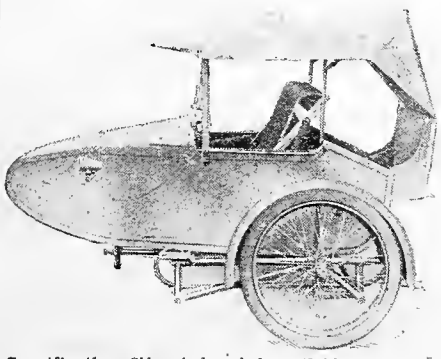
"PLUS ONE"

A Single or Double-seater Sidecar at will.



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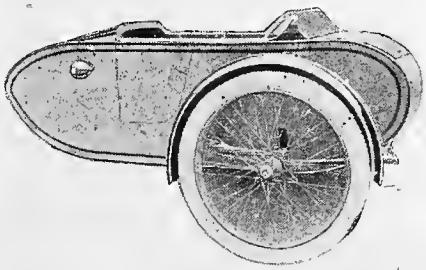

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Telephone: Langham 1601.

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O.K. Junior, new, 1921 single-speed model, £38; O.K. Junior, new, 1921 2-speed model, £57.—Marston, 31, Bridge St., Chester. [2618

O.K.-J.A.P., 1917, 2 speeds, clutch, all on, foot plates, aluminium exhaust; £35, or offer.—Burrows, College Av., Maidenhead. [2908

O.K., 1917, J.A.P. 2¾h.p., 4-stroke, 2-speed, lamps, etc., splendid condition; £46; owner bought combination.—Skippon, 15, South Terrace, Esh Winning, Durham. [2577

Omega.

OMEGA-J.A.P. 2¾h.p., July, 1920; £50, cost £83/14.—Goodey, Brightview, Hadley Rd., New Barnet. [2692

OMEGA-VILLIERS 2¾h.p., 1921, all on, good condition, tax paid; £45, or nearest offer.—Gray, 9, Princes Sq., Bayswater, W.2. [2570

OMEGA-J.A.P. 2¾h.p., August, 1920, 2-speed, clutch, kick start, fully equipped, condition excellent; £50; Mansfield.—Letters, Box 6,681, c/o *The Motor Cycle*. [3238

P. and M.

£40.—1918 P. and M.; seen evenings.—Kennard, 78, Yerbury Rd., Upper Holloway, N.19. [2518

1916 3½h.p. 2-Speed P. and M., overhauled; bargain, £45.—1, Bellingham Terrace, Catford. [2853

1918 P. and M., just overhauled; £55, or offer.—Jones, 73, New St., Kennington, London. [2737

P. and M., 2-speed, etc., Tan-Sad, lamps, horn, pump; £50.—Davis, 53, Lennard Rd., Penge. [2003

P. and M. Combination, 1919, overhauled, taxed, accessories; £70; offer.—50, Haverstock Hill, N.W.3. [3053

3½h.p. P. and M. Combination, 1920; £95; tax paid.—Wauchope's, 9, Shoe Lane, Fleet St., London. [1853

3½h.p. P. and M., excellent condition, tools, etc.; any trial; £65.—Thomas, Mansfield Villa, Binley Rd., Coventry. [X0080

1918 P. and M. Combination, perfect order, good appearance; £70.—73, Mortimer Rd., Kingsland, London, N.1. [2430

P. and M., Feb., 1920, excellent order, lamps, horn, speedometer; £65.—Soundy, 52, Berkeley Av., Reading. [2375

P. and M. Late Model 3½h.p., 2 speeds, fully equipped and perfect; £47.—62b, Highgate Rd., Kentish Town. [2572

1921 P. and M. Solo, brand new, not registered; first cheque for £100 takes it.—Bates, 4, Pasture St., Grimsby. [2592

P. and M., 1918, excellent condition throughout, lamps, Klaxon, insurance, tax paid; £56.—Abbott, 22, Fairfield Rd., Chelmsford. [2600

1918 P. and M., excellent condition, very fast, tyres and tubes as new; bargain, £55.—Bolton, 28, Denzil Rd., Willesden, N.W.10. [2482

1918 P. and M.-Empire Combination, lamps, speedometer, screen, insurance, etc., splendid outfit; £65.—201, London Rd., Croydon. [2774

P. and M. and Sidecar, R.A.F., new engine, gears, chains, 1919 2-speed, kick start, lamps, horn; £65.—George, The Blanquettes, Worcester. [X0045

£48.—P. and M. combination, 2-speed, kick start, Bosch, lamps, horn, electric inclusive, thoroughly reliable; offers.—Joy, 5, Park St., Brighouse, Yorkshire. [X0117

P. and M. 3½h.p., new appearance and splendid running order, acetylene lighting; £30; ride away; will teach novice.—H. A. Charwood, Y.M.C.A., Tottenham Court Rd., W. [2857

P. and M, autumn 1919, with sidecar, not W.D., fully equipped, speedometer, tax, insurance, recently overhauled; reasonable offer.—Mucklow, 9, St. George's Sq., London, S.W.1. [3105

P. and M. 1921 3½h.p., standard model; list price £115; very slightly showroom soiled, usual makers' guarantee given; £95.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2303

P. and M., 1917, W.D., painted blue, speedometer, Klaxon, copper exhaust, 3 toolbags, tax paid, looks dud, but mechanically sound; £40.—King, c/o 3, Holdenhurst Rd., Bournemouth. Seen at above address. [2442

Spare Parts:

P. and M.—Incomplete machines from £17/10; 1918 renovated machines, as new, guaranteed, £55.—Below.

P. and M.—Thousands of new and second-hand parts at miles below list.—Below.

P. and M.—Engines from £11, gears £5, frames 25/-, forks 70/-, wheels 45/- pair.—Below.

P. and M.—Carburetters 45/-, magnetos 50/-, chain case (magneto) 6/-, valves complete 5/-, saddles (new) 27/6.—Below.

P. and M.—Chain cases 32/6, footboards 12/6 pair, tanks from 18/-, Renolds chains 15/-.—Below.

P. and M. Specialist and agent, Lewis M. Ioman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [8507

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MOTOR CYCLES FOR SALE.

P. and M.

P. and M.—All parts in stock for P. and M.'s; send stamp; P. and M. specialist.—H. Beardwood, 147, Burlington St., Liverpool. [9524

P. and M. Parts.—Magneto chain covers, complete with back plate, 4/-; gear chain case, with detachable covers, 14/-; footboards, with bolts, 12/- pair; silencers, 7/6, with extension pipe 10/-.—Brett Bros., Stanningley, Leeds. [2491

P. and M. Spares: Handle-bars 5/6, front forks 18/-, front stays 3/9, gears £3, footrests and front stands 15/-, frames 12/-; crank cases, flywheels, connecting rods, timing wheels and cases, £3; cylinders £1, timing wheel cases 7/-. Ample stocks.—Pax Garage, Chapel Side, Moscow Rd., Bayswater. [7526

P. and S.

PEARSON and Sopwith, 1920, Villiers engine, 2-speed, as new; £35.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [X0102

Paragon.

PARAGON 2-stroke, 2-speed, spring frame, unridden; £55; exchange Triumph or similar.—Alderton, Hardwick Rd., Reigate, Surrey. [2883

Peugeot.

PEUGEOT 3½h.p., Bosch, single speed, fast; sacrifice £22.—17, Dyer's Lane, Putney. [2732

Phœnix.

PHŒNIX 3½h.p. Sporting, single speed 'bus, long plated exhaust, topping condition; £30.—Palmer, 66, Wells Rd., Bath. [2460

Precision.

2½h.p. Precision Junior. 2-speed, free engine, speedometer, all on; £30, or exchange for 3½h.p.—Turl, 86, Walton Rd., Manor Park, E.12. [2702

2½h.p. Precision Junior, 2-speed, perfect order, enamel and plating as new, tyres good, mechanical horn, licensed; £18 for quick sale.—248, Bentley Rd., Doncaster. [X0128

PRECISION Combination, 4½h.p., 3-speed, clutch, mechanically sound, appearance good, new tyres, taxed; £38. Wanted, lower powered machine.—Lewis, Firs, Llandewi-Skirrid, Abergavenny. [2575

PRECISION 4½h.p. Combination, 4-speed, kick, chain-belt, pillion coachbuilt sidecar, underslung, repainted, excellent condition, tax, insurance, July 1922; £75.—11, Stanley Gardens, Cricklewood. [2718

Premier.

5h.p. Premier, countershaft, 2-seater C.B. sidecar, D.A. lighting outfit, speedometer, etc., as new; what offers.—27, Malden Hill, New Malden. [2779

PREMIER, 3½h.p., engine rebushed, new cylinder, saddle, 6in. P. and H. lamps, re-enamelled black and gold, tax paid, done 200 miles, sidecar; £38, near.—56, Elmwood Rd., Chiswick, W.4. [3123

Spare Parts:

PREMIER Parts.—Write the specialists, enclosing stamped envelope for immediate reply.—Forfield Motors, Forfield Place, Leamington Spa. [X0153

P.V.

P.V.-VILLIERS, 2-speed, spring frame, splendid condition, insured; £45.—172, Sydenham Rd., Sydenham. [2725

Quadrant.

£75; 1920 4½h.p. Quadrant combination, tax paid, insurance, splendid order.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2256

2¾h.p. Quadrant, 2-speed, K.S., Bosch, splendid order, taxed, genuine bargain; first £25.—3, Shirehall Rd., Hawley, Dartford. [2909

1920 Quadrant 4h.p. Combination, fully equipped, licence paid for 1921, all in perfect order and condition; £90.—Jones Garage, Muswell Hill, London. [3009

QUADRANT Combination, 1920 4½h.p., mileage 900, complete, perfect, £130; also Chater-Lea 2¾h.p., 1919, 2-speed, little used, splendid condition, £40.—Newman, 70, Oakley Sq., Mornington, N.W.1. [2655

1920 Quadrant Combination, 4½h.p., 3-speed, kick start, all chain, Easting screen, dissolved acetylene, optional luggage grid; £100, or nearest offer.—Thomson, 76, Brondesbury Rd., N.W.6. 'Phone: Willesden 59. [2719

THE Sole Distributers and Official Repairers for Quadrants are the Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Tel.: Hop 210. All models; all spares; exchanges; deferred payments. Second-hand machines. [2251

Radco.

BRAND New Shop-soiled Radco 2½h.p., No. 2 model; £39.—Jones Garage, Muswell Hill, London. [2997

RADCO 2¼h.p., good condition, Amac carburetter, new tyres; £28.—Atkinson, 32, Portland St., Leamington Spa. [X0106

RADCO 2¼h.p., C.A.V. mag., 24×2½ wheels, lamps, excellent condition; £25.—Wren, 137, Moselle Av., Noel Park, Wood Green, N. [2701

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We realise that, at the present time of the year, many intending purchasers of motor cycles are waiting until after December 31st before buying, **solely on account of the full year's licence having to be paid** for the remaining part of this year. As a further special inducement, **we are prepared to pay the tax** for this year on the few remaining shop-soiled machines which we are still offering at huge reductions. This concession only lasts until our present stock is cleared.

DON'T MISS THIS OPPORTUNITY!

Send at ONCE for our LIST OF BARGAINS.

ALL MODELS TO SUIT ALL MOTOR CYCLISTS

N.B.—It will be helpful if you will give us an idea of your particular wants when writing.

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

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PREMIER Motor Co. for 1921 Raleighs.

EASY Payments only 4% extra. We can deliver to your address within 24 hours the new Raleigh 5-6h.p. flat twin, spring frame, chain drive; solo, 140 gns.; sidecar, 176 gns.; spare wheel and tyre, 6 gns.—Sole Birmingham Agents, The Premier Motor Co., Aston Rd., Birmingham. [0628

1921 5-6h.p. Raleigh, as new, tax paid, lamps, horn; £140.—Rusholme, Petergate, York. [X0125

RALEIGH Solo and Combinations, for immediate delivery; liberal exchanges.—Newnham Motor Co., 223, Hammersmith Rd., London. 'Phone: Hammersmith 80. [2896

Reading-Standard.

READING-STANDARD 1917 Combination, 3 speeds, electric lights and horn, Palmer cords nearly new; genuine bargain, £85, offers.—29, St. Albans Rd., Harlesden, N.W. [2530

Redrup.

REDRUP-RADIAL 1920 3h.p., 3-cyl., 4-stroke, 2-speed, clutch, kick start, acetylene lighting set, horn, etc., aluminium footboards, Hutchinson tyres, 2½ gallon tank, tax 30/- paid, in splendid condition, fast and quiet; £30; exchange.—1, Albert Cottages, Marlborough Rd., Old Kent Rd., S.E.1. [2793

Rex.

6h.p. Rex Combination, 2-speed, handle start, just overhauled, powerful; any trial; bargain, £55.—Compasses Garage, Romford. [2529

5-6h.p. Rex Motor Cycle, absolutely complete and guaranteed perfect, less mag. and carburetter; £11 lowest.—9, Red Hill, Bassett, Southampton. [3113

3½h.p. Rex, single speed, T.T. bars, B.B., M-L mag., horn, tax paid; any trial; £28; after 7 o'clock.—Barnes, 42, Norbiton Av., Kingston Hill, Surrey. [2527

SPECIAL Offer of Brand New 8h.p. Rex-Blackburne combination, detachable wheels, spare wheel, makers' list price £218, reduced to £160 cash; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X0064

REX, believed 1914, 3½h.p., single, Bosch waterproof, B. and B. pilot jet, P. and H. full lamp set, adjustable tappets, largest Lycett's pan seat, aluminium disc wheels, mechanical horn, tax paid, good tyres and belt, smart, and very fast, good condition throughout; £22/10, bargain.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [3059

Rover

ROVER 6h.p. Combination, 3-speed, K.S., latest new 1921 model; £155.—Marston, 31, Bridge St., Chester. [2626

£25 Saved.—Brand new shop-soiled 5-6h.p. Rover chain drive solo; £100.—Jones Garage, Muswell Hill, London. [2994

£35 Saved.—Brand new shop-soiled 3½h.p. Rover combination; £120.—Jones Garage, Muswell Hill, London. [2995

F.O.C.H. have 1919 T.T. Rover, exceptionally fast, fully equipped.—5, Heath St., Hampstead (near Hampstead Tube Station). [2582

ROVER 3½h.p., 3-speed, with new Montgomery sidecar, everything complete; £75.—Hounslow, 38, Normanby Rd., Willesden. [2652

1920 (August) T.T. Rover, Philipson pulley, all accessories, mileage 1,800, unscratched; £70.—Heady, 44, Alma Rd., Carshalton, Surrey. [2949

1920 Rover Combination, 5-6h.p. J.A.P. engine (twin), hardly used this year; £120, or near; bargain; ill-health cause of sale.—Nag's Head, Canterbury. [2695

3½h.p. Rover Combination, September, 1919, fully equipped, licence, excellent condition; £85.—Swallow, Willowgarth, Rose Valley, Brentwood, Essex. [2832

1920 3½h.p. T.T. Rover, sports, as new, b.b.c., Philipson, long plated exhaust, fully equipped; £70; exchange considered.—11, Banbury St., Battersea, S.W. [2821

1920 T.T. Rover, 3½h.p., Philipson pulley, original Dunlops, 650×65, fully equipped, a delightful mount, and perfect in every particular; 58 gns.—Maynard, 8, Silver St., Enfield. [3037

1917 Rover 4h.p., C.B. sidecar, lamps, horn, tools, good tyres, new Tan-Sad; £80.—Lawrenson, Oroxton Rd., Middlewich, Cheshire. [3145

ROVER 5-6h.p. Combination, 1918-19, splendid outfit, particularly fine engine, Easting, lamps, horn, tools, spares, licence paid, fully insured to April, owner bought car; £100.—96, Ulleswater Rd., Palmer's Green, N.14. ('Bus 29.) [2892

5h.p. Rover, large, comfortable sidecar and chassis, 3-speed, clutch, large mudguards, horn, tools, luggage carrier, speedometer, licence, insurance, excellent condition, and fast, new Easter, 1920.—Station Garage, Bath Rd., Hounslow. [2746

1920 3½h.p. Rover, 3-speed, chain-cum-belt, indistinguishable from new, low mileage, electrically equipped, Cowey speedometer, thoroughly overhauled by makers August, fully licensed, insured, and equipped; £95.—W. T. Roocroft, Heathfield, Sharples, Bolton. [2602

MOTOR CYCLES FOR SALE.

Rudge.

914 Rudge, lamps, horn, in good order; £26.—Lingley, Thorofare, Woodbridge. [2844

UDGE 3½h.p., clutch, tyres, good lamps, fast; £35.—14, Phoenix St., Euston. [2712

919 Rudge Multi, overhauled, equipped; 55 gns.—8, Leigham Court Drive, Leigh, Essex. [2823

1h.p. Rudge, discs, new Binks, licensed, cheap; 2 exchange.—Norbury Terminus Garage. [3072

RAND New Shop-soiled Rudge Multi 3½h.p.; £80.—Jones Garage, Muswell Hill, London. [2998

UDGE Multi, 1921, 3½h.p., T.T., new June, insured; £75.—Simpkins, 27, Old Town, Clapham. [2825

919 Rudge Multi 3½h.p., unscratched, as new; £60.—Jones Garage, Muswell Hill, London. [3013

921 Rudge Multi, I.O.M., practically new, fully equipped; £70. — 72, Longridge Rd., Earl's urt. [3103

UDGE, Sept., 1921, exceedingly fast, Cowey, and insurance; £83.—Ellison, Fernville, Greenroyd, lifax. [2486

UDGE, 1920, I.O.M., clutch, pedal start, Lucas accessories, spares; £65.—40, Fauconberg Rd., iswick. [3068

-6h.p. Rudge Multi, 1914, with Phœnix sidecar, excellent running order; £55.—139, Church Rd., ldington. [2357

UDGE Multi T.T. Model, 1921, very slightly shop-soiled; first cheque for £75.—G. H. Tupling, Ltd., itchurch, Salop. [3147

UDGE Multi, 1914, very good condition, new Dunlop tyres and belt, Tan-Sad, accessories, complete; 5.—Payne, Anerley, S.E.19. [2500

921 Rudge Multi, I.O.M., lamps, Klaxon, condition perfect; any trial; must sell; first offer £65.—ris, Catmos Villa, Oakham. [2963

1h.p. Rudge, thoroughly overhauled and enamelled, 2 accessories, tax paid; £40.—Shepherd, Enfield hway. Tel.: Waltham Cross 31. [0340

UDGE Multi 1921 3½h.p. T.T. Model, shop-soiled; list price £85; what offers?—Peacock, 219, High Balham. 'Phone: Southam 170. [2406

920 3½h.p. Rudge Multi, mileage 500, fully equipped, unscratched, guaranteed perfect; £60. atham, 114, Junction Rd., Highgate, N. [2767

UDGE and C.B. Sidecar, 3½h.p., 2-speed, clutch, K.S., lamps, mechanical horn, licence; £45.—wn, Prospect House, Vicarage Rd., Thetford. [2748

UDGE Multi, I.O.M., 1921 (April), Lucas lamp, horn, Cowey trip, tax, insurance; cost £95; mile-400; £75.—Barlow, 40, Ashbourne Av., Golder's en. [1471

921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. and 7-9h.p. Rudge Multi combinations, soiled, £130 £150. — Shepherd, Enfield Highway. Tel.: tham Cross 31. [0707

UDGE Multi, late 3½h.p. model, clutch, and pedal starting, fully equipped, tax paid, brand new tyres d; £27.—Parker's, Bradshawgate, Bolton; also 245, nsgate, Manchester. [X0071

UDGE Multi Combination, delivered August, 1920, Easting screen, lamp set, tax paid, under 2,000; , or exchange.—Bruton Mews Garage, 8-25, South oo Mews, Bond St., W.1. 'Phone: Mayfair 4282. [2425

are Parts:

E Banister and Botten's advertisement under Spares for Rudge parts. [2871

E Banister and Botten's advertisement under Spares and save money. [2872

Scott.

921 Scott 3¾h.p., slightly shop-soiled; £120.—Gibb, Motors, Gloucester. [3141

OTT Latest Touring Model, absolutely new; £110.—Marston, 31, Bridge St., Chester. [2622

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19 Scott, engine No. 3805, and Dunhill sidecar, lamps, spares, excellent order, trial; £65.—y, 88, Princes Av., Watford. [3100

20 Scott Motor Cycle, in perfect order and condition, tyres nearly new; £90, or near offer.—Mowat, Astley House, Bolton. [2533

OTT 3¾h.p., 1915, overhauled makers, all accessories, foot/hand gear control, Bosch, Binks, new, enamel good; £55, or exchange.—Ainsworth, Victoria Rd., Romford. [2948

20 Scott Combination, electric lights, fully equipped, excellent condition, mileage 2,700; £191/10, accept £110, or good solo and cash. (See hange.).—Jowsey, Brook St., Scarborough. [2690

OTT 1915 3¾h.p., sporting sidecar, topping condition, engine recently overhauled by makers, , horn; any trial; quick sale, best over £70 secures. bham, Motor House, Cliftonville, Margate. [2455

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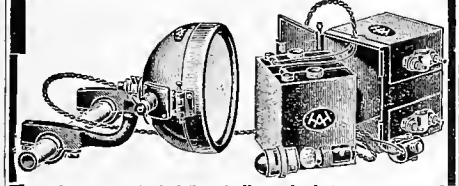

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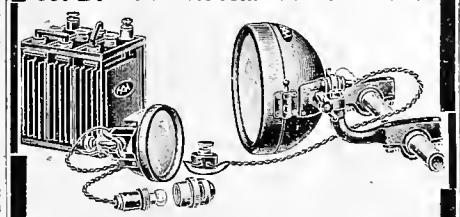

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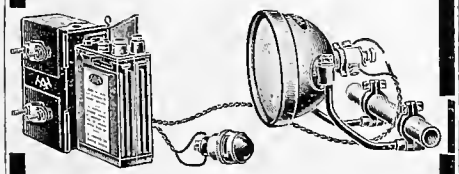

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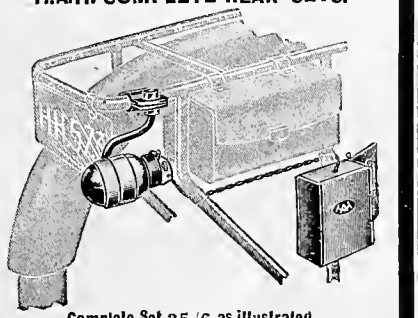

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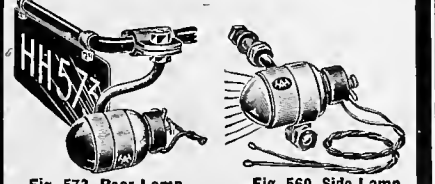

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920 Scout Combination For Sale, all accessories, just overhauled; what offers?—Write or call, Savage, c/o Abery's, Porchester Mews, Cleveland Sq., Bayswater. [3101

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SINGER 3½h.p., single, in sound, good condition; £26.—Harvey, 5, Baldock St., Ware, Herts. [2930

915 Singer 2¾h.p., 2-speed, clutch, splendid condition, tax paid, been stored 2 years; £24.—Wadlow, Orpington, Kent. [2916

SINGER Combination, 2-speed countershaft, excellent running order, new coachbuilt underslung sidecar, good tyres; £65.—Kent, 69, Blinco Grove, Cambridge. [2616

Sparkbrook.

SPARKBROOK, 2-speed sporting, new 1921 model, unused; to clear £60.—Browns' Garage, Kirbymoorside. [2501

Spur.

919 Spur Villiers, 2-speed, snip, nearly new; £40.—Jones Garage, Muswell Hill, London. [3015

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SUN-VITESSE 1921 2-stroke, 2-speed, all on, new condition; £55; part exchange other cycle.—Rex, Bridge Restaurant, Taunton. [2782

SUN, 1919 fixed geared model, 2¾h.p. Villiers engine, tax paid, good condition; £32.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0075

Sunbeam.

WANTED, buyer for a snipe Sunbeam combination; £110.—164, St. John's Rd., Hyde Rd., London, N.1. [2707

3½h.p. Sunbeam Combination, accessories, tax, like new; £125; cheaper part.—Walter Jones, Newport, Salop. [3066

919 Sunbeam 3½h.p., absolutely as new, very posh; a snip, £100.—Jones Garage, Muswell Hill, London. [3014

921 Sunbeam (May) Sporting Model, electric lamps, perfect condition; £135.—Wreo, Sycamores, Harpenden, Herts. [2374

916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Clapham, Yorks. [0714

919 3½h.p. Sunbeam Combination, Lucas, speedometer, perfect; sacrifice £95, no offers.—7, Gibson Sq., London, N.1. [2964

ALLAN GRUZELIER for new or second-hand Sunbeam models immediately.—168, Regent St., W. Regent 205. [2546

SUNBEAM 8h.p. Combination, 1919, electric light, speedometer, new condition; £125. — Ratcliffe Bros., 200, Gt. Portland St., W. [X0103

SUNBEAM 3½h.p. Combination, brand new, for immediate delivery, shop-soiled only; £175.—E. Pollard, Broomfield Rd., Chelmsford. [X9268

SUNBEAM 1919 8h.p., double seated Henderson sidecar, electric lighting, Klaxon, discs; price £110.—Ernest Hobbs, Little Faringdon, Lechlade. [2376

920 Sunbeam 4h.p., fully equipped, fitted with sidecar, all absolutely as new; a real bargain. £125.—Jones Garage, Muswell Hill, London. [3010

919 Sunbeam Combination, 8h.p., dynamo lighting, completely equipped; photo sent; insured August, 1922; £155.—Wright, 2, Park Rd., Rugby. [X0142

SUNBEAM, 1914, 2¾h.p., clutch, kick starter, accessories, perfect condition; £60, or best offer.—Write Box 100, at Horncastles, 60, Cheapside, E.C.2. [2428

921 3½h.p. Sporting Model Sunbeam, small mileage, delivered late July, excellent condition; £125; London, W.1.—Box 6,557, c/o *The Motor Cycle.* [1796

HALIFAX.—Sunbeam 1921 new 3½h.p. touring, 135 gns.; 3½h.p. sports, 130 gns.; reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [2666

SUNBEAM Solo, 1919, lamps and horn, in splendid order, smart machine; £75.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9151

920 3½h.p. Standard Sunbeam, mileage 3,500, complete with all accessories, licence paid, perfect condition; £115.—Coggins, The Hall, Raunds, Wellingborough. [2608

SUNBEAM 1920 8h.p., with sporting sidecar, dynamo lighting, all accessories, very little mileage, condition as new; £165.—Marston, 31, Bridge St., Chester. [2623

LATE 1920 Semi-sports 3½h.p. Sunbeam and C.B. sidecar to match, perfect, only done 2,000, Lucas lamps; £140, or nearest.—C. Wheatley, 30, Royland Rd., Loughborough. [X0130

SUNBEAM Combination, black and gold, 1919, lamps and horn, been thoroughly overhauled; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9150

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19 21 3½h.p. Sunbeam Combination, brand new, makers' guarantee, Lucas accessories; 150 gns.; solo machine part payment.—Pike, 114, Draycott Av., Chelsea. Tel.: Ken. 137. [2648

SUNBEAM Combination, late model, 8h.p. M.A.G., 3 speeds, interchangeable wheels, spare wheel, lamps, licence, screen, apron, etc.; nearest £125; exchanges —63, Solon Rd., Brixton. [3174

19 21 Sunbeam, T.T. model, mileage under 1,000, enamel and plating unscratched, Cowey horn, aluminium number plates, perfect, fast, silent; £134. —Lavin, Old House, Sonning, Berks. [3207

SPECIAL Sporting 3½h.p. Twin M.A.G.-Sunbeam (photo "The Motor Cycle," Aug. 25), unscratched, it; best over £100; evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X0123

SUNBEAM 1921 3½h.p. Sports Model, fully equipped tax paid, absolutely indistinguishable from new; £135; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0073

SUNBEAM 1918 3½h.p. Model, with sidecar, complete with all accessories, excellent condition; £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0072

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

SUNBEAM Latest 3½h.p. Touring Model, £155/8; 3½h.p. sports model, £152/5; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1332

8h.p. Sunbeam and Sidecar, delivered Dec., 1920, complete with spare wheel, horn, wind screen, Lucas light car generator and lamps, in splendid condition, bought car; £220.—Daniels, Lightpill Iron Works Stroud, Glos. [2465

SUNBEAM Late 1920 3½h.p. Sports Model, trials machine, 700×80 tyres, new condition, Lucas lamps and horn, Mills-Fulford 4-point connection sidecar, hood, Cameo wind screen, and luggage carrier, a perfect combination; £140.—G. Lee, 48, Irving Rd., Coventry. [X9998

8h.p. Sunbeam Combination, late model, a magnificent outfit, complete with all accessories, including hood, screen, spare wheel, electric lighting, etc., guaranteed in perfect order; must sell this week; meet buyer anywhere; £165, or near offer.—1, Guildford Rd., Pendleton, Manchester. [X0052

SUNBEAM 1920 8h.p. Model, Lucas Magdyno lighting, extra large Henderson Elite sidecar, interchangeable wheels all round, bulb horn, spare wheel and tyre, Bonniksen speedometer, tax paid, first-class condition throughout; £175; deferred payments if desired. —Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester [X0074

T.D.C.

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TORPEDO-PRECISION 2¾h.p., 4-stroke, countershaft 2-speed, engine rebuilt by makers, tyres good, lamps, licence; £35.—Underwood, Woolpit, Suffolk. [X0083

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19 18-19 Triumph, all accessories; any trial; perfect; 55 gns.—40, Aynhoe Rd., W.14. [2936

£118 secures 1921 model Triumph, sidecar, guaranteed perfect; cost £169.—1, Endsleigh Gardens, Ilford. [X9994

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50 GNS.—1916 Triumph, a snip. 'Phone: Wanstead 48.—374, Grove Green Rd., Leytonstone, E.11. [3185

BABY Triumph, £50; genuinely first-rate order, all accessories.—Harold Fallon, Mount Boone. Paignton. [2977

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BABY Triumph, 1915, 2-speed, new condition, accessories; £35.—64, Marsham St., Westminster. [2691

TRIUMPH Combination, countershaft, K.S., all on; £48, or exchange solo.—42, Viaduct St., Bethnal Green. [2549

4h.p. Triumph (1920), W.D.B., 3-speed, countershaft; a beauty; £82.—Stebbings, Attleborough, Norfolk. [3110

19 20 Triumph, Model H, countershaft, well equipped, as good as new; £75.—17, St. Charles Sq., W.10. [2759

£60; 1917 countershaft Triumph, in excellent condition.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2253

TRIUMPH 3½h.p., clutch, excellent running order, all on; £35, or near offer.—119, Lower Richmond Rd., Putney. [2661

19 21 Triumph, all chain, fully equipped, as new; £95. — Edwards, 50, Harrington Rd., South Kensington. [3232

TRIUMPH 1914 4h.p., 3 speeds, and sidecar, lamps, etc.; £48, great bargain.—114, Brixton Hill, S.W.2. [3138

BRAND New Shop-soiled Triumph 4h.p., Model S.D., chain drive; £110.—Jones Garage, Muswell Hill, London. [2999

19 21 Triumph 4h.p., chain drive, licence paid, not done 500 miles; £100.—Jones Garage, Muswell Hill, London. [3002

3½h.p. 1912 Triumph, Armstrong hub, Fellows mag.; £26, or exchange lightweight.—Scott, Old Farm Rd., Guildford. [2885

TRIUMPH 3½h.p., just overhauled, Bosch mag., good tyres, lamps, etc.—C. Kilby, 1, The Square, Sawbridgeworth. [2216

TRIUMPH Countershaft, 1917, new condition; £58; exchange Douglas and cash.—Cranleigh, College Slip, Bromley, Kent. [2639

ALLAN GRUZELIER for new or second-hand Triumph models immediately. — 168, Regent St., W. Regent 205. [2547

TRIUMPH 1919 4h.p. and Dunhill sidecar, fully equipped; £90, or exchange new light car.—41, Lovelace Rd., Surbiton. [2480

TRIUMPH, countershaft, late 1918, all on, tax paid; must sell, first reasonable offer accepted.—73, Sydney Rd., Ealing, W.13. [2953

19 21 Triumph Junior, perfect, ridden 300 miles, lamps, horn, licence, tools, and spare belt; £68.—45, High St., Daventry. [2427

TRIUMPH 1915 Combination, 4h.p., excellent order, 3-speed, clutch, kick starter, lamps, spares; £65. —Leach, New Park, Axminster. [2650

19 19 Triumph 4h.p. and Sidecar, 3-speed, countershaft model, fully equipped; £110.—Jones Garage, Muswell Hill, London. [3016

TRIUMPH, late 1918, 4h.p., little used, new condition, 3-speed, Klaxon horn; £78.—Eales, Brackenhurst Hotel, Hindhead, Surrey. [2455

19 17 Triumph, S.A. 3-speed, speedometer, Klaxon, tax paid, splendid condition; £60.—Dealey, Gossems End, Berkhamsted, Herts. [2413

2¼h.p. Triumph Junior, 1921, second-band, accessories, tax paid, insured; price £55.—Wauchope's, 9, Shoe Lane, London. [1855

TRIUMPH Combination, 1918 4h.p., countershaft, 3 speeds, kick start, splendid condition; £75, or nearest.—140, Coulsdon Rd., Caterham. [2647

35 GNS.—3½h.p. Triumph, 1914, excellent running condition, Bosch mag., all on, tax paid.—Knott, c/o McDonald and Gibbs, Wendover, Bucks. [2793

TRIUMPH Brand New 1921 Model H, new Montgomery £32/10 sidecar, nice outfit; must realise, £130.—365, King St., Hammersmith. [2824

TRIUMPH, 1918, countershaft, new appearance, perfect, lamps, Klaxon, etc.; £59.—Lawson, 8 Athenlay Rd., Ivydale Rd., Nunhead, S.E.15. [3200

TRIUMPH, clutch, coachbuilt sidecar, lamps, speedometer, complete, tax paid, good condition; rid away; £35.—Marett, 13, Wellesley Rd., Slough. [2666

TRIUMPH, 1920, Gloria sidecar, speedometer, lamps horn, condition perfect; £115; exchange higher power.—Brown, 1, St. Leonard's Rd., Surbiton. [3075

JUNIOR Triumph, as new, owner no time to use, not done 70 miles, new end of July, 1921; what offers? (London).—Box 6,641, c/o *The Motor Cycle.* [2465

TRIUMPH, 1914, 3-speed, clutch, underslung new bulbous back coach, smart lot; £45; exchange. —Taylor, 637, Seven Sisters, Tottenham, London. [2935

3½h.p. Triumph, T.T., just completely overhauled, clutch, lamps, etc.; trial; tax, like new; bought car; first over £39.—Long, R.A.F., Duxford, Cambs. [2695

19 21 Triumph, Type S.D., new June, perfect, Siemens lamps, speedometer, spares; £95.—Barrow, Willerby House, East Parade, Harrogate. [2785

LATE 1918 Triumph, 1920, Montgomery sidecar, fully equipped, insured, all spares, condition as new, nearest £80.—Thorogood, 305, Brockley Rd., Brockley, S.E. [3100

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1914 Triumph Combination, 4h.p., good condition, Stewart speedometer, spares and tools, fully insured; nearest £70.—Brooker, 37, Coundon Rd., Coventry. [X0027

TRIUMPH, all chain, 1921, mechanically perfect, frame, tyres likewise, mileage 2,000, accessories, spares; £95.—V.D., 23, Collingham Place, Earl's Court. [2065

BRAND New 1921 Triumph, ridden half a dozen times, lamps, Cowey, etc., tax and insurance, long pipe; first cheque £108 secures.—Goulden, 14, Sutton St., Hull. [2506

TRIUMPH 3½h.p., 2-speed, F.E., overhauled, new piston, etc., new tyres; £27/10, or exchange lightweight.—7, Ladbroke Grove, Holland Park. 'Phone: Park 2620. [3158

TRIUMPH Countershaft, 4h.p., 3-speed, enamel, plating, and mechanism splendid condition, lamps, horn, tax paid; 58 gns.—30, Crystal Palace Park Rd., Sydenham. [2887

TRIUMPH Combination, as new, lamps, tools, Klaxon, pillion, spares, tax, insurance, perfect throughout; £88, or near.—28, Brockenhurst Rd., Addiscombe. [2384

TRIUMPH 4h.p. Countershaft.—Several second-hand combinations, guaranteed, in perfect running condition, from £85 upwards.—Marston, 31, Bridge St., Chester. [2627

1921 Baby Triumph, electric lighting, Klaxon, watch, tax paid, hardly used, 12 months' insurance; £65.—Tel.: Museum 6626. A.S.C., 60, Mortimer St., W.1. [3191

TRIUMPH 4h.p. Countershaft Combination, excellent condition, all accessories and spare parts, fully insured, tax paid; £95, or offer.—115, Fernhead Rd., Maida Hill, N.W.9. [2918

TRIUMPH Countershaft, 1918, silver C.B. sidecar, fully equipped, perfect mechanical order, recently re-enamelled, any trial; £69; exchange solo.—11, Castlemaine Av., Croydon. [2710

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TRIUMPH 1921 (new June) 4h.p. and Gloria sidecar, all chain transmission, hood, wind screen, Klaxon, tools, licence paid, not yet run 500 miles, owner going abroad.—41, Amott Rd., East Dulwich. [2512

TRIUMPHS.—We are the North London agents, and can give immediate delivery; chain drive, chain-cum-belt models.—Jones' Garage, Muswell Hill, N.10; and at Woodside Parade, North Finchley. [0382

4h.p. Triumph, with Millford sidecar, new this summer; £95, including licence and insurance: genuine bargain; cash required towards house purchase.—A.H., 9, San Remo Parade, Westcliff-on-Sea. [2664

£95, bargain.—1920 Triumph combination, Gloria sidecar, Watford speedometer, Millers lamps, Cowey 3 gn. horn; expert examination invited. 'Phone: Wanstead 48.—374, Grove Green Rd., Leytonstone. [3184

TRIUMPH 1912 3½h.p. T.T. Model, fitted with latest dropped-back frame, brand new tyres, fully equipped, tax paid, fast machine; £35.—Parker's, Brodshawgate, Bolton; also 245, Deansgate, Manchester. [X0076

1919 Triumph, countershaft, Lucas lamps, horn, Cowey speedometer, Dunlop tyres, belt, spare chains, adjustable pulley and belt to convert single gear; £72/10.—Ecroyd, 73, Leyland Rd., Southport. [2809

TRIUMPH 1921 4h.p., countershaft, Type H, £115; 4h.p., chain drive, £125; in stock; exchanges.—Cambridge agents, Herbert Robinson, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995. [1331

TRIUMPH, 1918, 3-speed, countershaft, Klaxon, speedometer, 1920 Mead and Deakin sporting sidecar, electric and acetylene lights, insurance, tax, 100 miles trial; £80, offers.—49, Tottenhall Rd., Palmers Green. [2559

GLORIA-TRIUMPH Combination, late 1920, Triumph shields, Lucas King Road lamps, horn, Easting, Bonniksen, condition new, small mileage, owner-driven; reasonable offer.—44, Harefield Rd., Coventry. [X9310

TRIUMPH 1919 Combination, screen, legshields, footboards, carrier, speedometer, Tan-Sad, lamps, new tyres recently, excellent condition, spares; best reasonable offer. Evenings.—48, Alcester Rd., Moseley, Birmingham. [X0012

1921 Triumph Combination, chain model, Gloria sidecar, Lucas Magdyno, electric lighting set and horn, new last June; cost £200; in perfect condition throughout, with all spares; what offers?—Box 6,679, *The Motor Cycle*. [3240

TRIUMPH, 1914, Mills-Fulford sidecar, 3-speed clutch, thoroughly overhauled recently by makers, re-enamelled, all nickel parts re-nickelled, splendid condition; 60 gns.—Fletcher, 12, Derwentwater Rd., Acton. [3202

ALMOST New 1921 Triumph Gloria Combination, unscratched, trip speedometer, electric light, spring foot plates, wind screen, luggage carrier, spares, original tyres; £140.—Robinson, 109, Earlsfield Rd., Wandsworth. Regent 3703. [3166

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LAST 7 DAYS.

"SERVICE" Belted Suit. Made in Stont Double Twill, interlined rubber. All seams stitched, solutioned, and taped, giving *absolute* weather protection. Jacket, D.B., 36in. long, wind cuffs, storm collar, seatless trousers, leather-strengthened crutch, gussets, patent fasteners, All sizes.
Usual price 63/-; **Reduced to 47/6**
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380 only. Genuine TRIPLEX AVIATION MASK GOGGLES, lined nutria fur. Ex Government Surplus.
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50 pairs only. One finger DRIVING GLOVES, Sac wrist, in natural sheepskin, wool-lined, fingers and palms, tan cape.
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58 only. Tan Chrome Leather Helmets. Lined cotton fleece, fastening with strap and buckle. Usual price 18/6; **Reduced to 11/8.**

34 pairs only. "SERVICE" Legging Overalls. Made stout double texture mackintosh; colour fawn. Usual price 18/6; **Reduced to 12/5**

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"GOOD SERVICE" Oilskins are made from an entirely new material that is **guaranteed** not to **stick, crack, or let in wet.**

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5 only **Tan Trousers,** seatless, lined ..	27/6	**22/6**
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The Service Company Ltd. (LONDON)

289-293, High Holborn, LONDON, W.1.

MOTOR CYCLES FOR SALE.

Triumph.

1914 Triumph, 3-speed hub, just renovated makers, clutch, exceptional engine, lamps, horn, tools, spares, Tan-Sad, overalls licence insurance, good condition; £45.—38, St. Thomas's Rd., Brentwood. [3052

TRIUMPH Countershaft Combination, 1920 sidecar, Cameo screen, lamps, outfit just overhauled and in perfect condition, any trial; £80.—'Phone: Waltham Cross 299. 44, Sun St., Waltham Abbey. [3201

BARGAIN.—1914 Triumph, 3 speeds, F.E., and coachbuilt sidecar, lamps, etc., just been overhauled throughout; £65; will ride 25 miles to genuine buyer.—S. G. Auger, 4, Connaught Rd., Chatham. [2361

TRIUMPH 4h.p., 1920, with Gloria sidecar, aluminium disc wheels, lamps and spares; £105; officer serving in Ireland; bicycle stored for last 14 months.—Apply before Oct. 11th to Lt. Bolton, Swan Hotel, Reigate, Surrey. [2372

TRIUMPH Combination, Dec., 1913, 3 speeds, clutch, kick start, all lamps, 4-point sporty wicker underslung sidecar, very reliable, in perfect order; £50; can be seen Saturday afternoon and Sunday.—Elliott, 2, Mona Villas, Portfield St., Hereford. [3241

1920 Triumph Combination, coachbuilt, 3-speed countershaft, kick start, clutch, Eastings screen, Tan-Sad, spare tyre, lamps, accessories, tax paid, insurance, splendid condition; any trial; £98, bargain.—128, Mackenzie Rd., Beckenham, Kent. [2550

TRIUMPH Combination, 4h.p. countershaft, bulbous back sidecar, luggage grid, Lucas dynamo lighting set and electric horn, speedometer, spares, etc., insurance and tax paid, very fast machine; £90, or offer.—Chapman, 262a, King St., Hammersmith, W.6. [2380

1921 (April) Triumph Combination, all-chain drive, Sporting Montgomery sidecar, complete with Lucas lamps, Bonniksen speedometer (trip type), tools, mileage 2,000, very sporting and fast combination; £140.—Seen George Heath Ltd., John Bright St., Birmingham. [X0040

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

1920 Triumph Model H., not W.D., or renovated, D.R. bars, Cowey licence holder, tax paid, hand and foot clutch control, new Dunlop tyres, new belt, valve guard, mileage about 5,000, perfect running order, new condition, many extras.—Sellers, Croft House, Skirethornes, Threstfield, via Skipton. [2588

TRIUMPH, 1913, 3-speed, Millford sidecar, screen, dickey seat child, engine recently overhauled makers, P. and H. lamps, extra heavy Dunlops and Palmer cord, run 800, Watford speedometer, Mec. horn, mirror, spare tubes, belt, tax paid; £50.—Warkworth House, Isleworth. 'Phone: Hounslow 382. [3170

1921 Chain Drive 4h.p. Triumph, delivered from works in May, and carefully run in, solo gears, T.T. bars, steers hands off indefinitely and starts first kick from cold without priming, new 28×3in. rear tyre, Lucas (large) head and tail lamps, new spare chain, valve, etc., insured till June, 1922, for £140; £102, or offer.—MacLennan, 83, Mickleton Rd., Coventry. [X0096

TRIUMPH (Baby), recently cost owner over £70, enamelled grey, fitted polished aluminium discs and footboards, mud shields with large pockets, handle-bar cross-bar for mechanical horn, licence holder, etc., double set of tools, in absolutely new condition, posh little mount, admired whenever seen; must sell through illness; best offer over £55.—Richards, Lescrow, Fowey. [3065

Spare Parts:

TRIUMPH Spares sent per return from stock. Call, writer, or 'phone 4042.—G. H. Tucker, Redcliffe Hill, Bristol. [2291

TRIUMPH Parts.—Every part, any year, in stock; new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X0157

Tyler.

TYLOR-PRECISION, 1914, 2¾h.p. 2-stroke, very low, tax paid; bargain, £17/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [9152

Ladies' Motor Cycles.

LADIES' 2-stroke, Villiers engine, 2¾h.p., 2-speed, clutch, and kick starter, perfect; £35.—J. Devonshire, Elston, Newark, Notts. [2606

Velocette.

IMMEDIATE Delivery of any model Velocette on easy payment system at only 4% extra; all models reduced £10; 2-speed £65, 3-speed £75, lady's open frame £68. Buy your new machine direct from the Velocette Specialists. The Premier Motor Co., Aston Rd., Birmingham. [X0065

Verus.

VERUS 2½h.p., 1920, 2-speed, clutch, kick start, lamps, tax, good condition; £45.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [2903

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

MOTOR CYCLES FOR SALE.

Verus.

VERUS-BLACKBURNE 4h.p. Combination, Mills-Fulford, Easting, lamps, tools, extra panier bags, Dec., 1920, splendid condition; £100; any trial; private owner; Catford.—Reply, Box 6,643, c/o *The Motor Cycle.* [2471

Victor

19 21 Victor 8h.p. Sports Model; £60, gift.—6, Mount Pleasant Rd., Ealing, W.5. [2386

Villiers.

19 21½ 6K Villiers 2-speed, tax, insurance, perfect, any trial; £52.—Sunnyvill, Gloucester Rd., Tankerton, Kent. [2698

19 21 2½h.p. Villiers, 2-stroke, 2-speed, all on, mileage 400; no work; £47.—E.G.B., 267, Winchester Rd., Highams Park, E.4. [2353

19 19 2¾h.p. Villiers, 2-speed, good condition, P. and H. lamps, long exhaust, Klaxon, carefully used; £40.—Hutton, Eastcote, Leatherhead. [3152

VILLIERS 1919 2-stroke, 2 speeds, lamp, horn, mechanically sound; trial; £33.—Ayland's Boot Store, 509, York Rd., Wandsworth, S.W., or 'phone. [2925

Wilkin.

WILKIN Combination, 1920, 4h.p. Blackburne, Sturmey 3 speeds, clutch, kick start, all-chain, Lucas Magdyno lighting; cost £190, sacrifice £85.—63, Solon Rd., Brixton. [3173

19 21 4h.p. Wilkin-Blackburne, 3-speed, electric lights, excellent condition, new July; £78; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3226

WILKIN, shop-soiled only, 4h.p. Blackburne engine, 3-speed, clutch, kick starter, finished all-black; makers' price £132, our price £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0077

Williamson.

19 16 Williamson Combination, 8h.p. w.c. Douglas engine, 3-speed, Binks carburetter, undershield, luxurious sidecar, hood, screen, luggage grid, enamel and upholstery perfect, brand new 700×75 Palmer cord light car tyres, mechanically perfect, accessories; any trial; £65.—Brangton, Kingswood, Warlingham, Surrey 'Phone: Purley 575. [2924

Wolf.

WOLF 1918 2¾h.p., 2-stroke T.D.C., overhauled, lamps, pillion, accessories, tyres splendid all in sound mechanical condition; first £26; trial.—128, Mackenzie Rd., Beckenham, S.E. [2641

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler.

£47.—1920 Wooler; cash urgently needed.—12, St. Michael's Terrace, Wood Green. [3244

19 20 Wooler, splendid condition, electric lighting, 150 m.p.g.; £55.—Rouse, Cycle Agent, Wellington St., Kettering. [2514

WOOLER 2¾h.p., new August, 1920, lamps, horn, perfect condition; 66 gns., or nearest; cost £103.—Motors, 118, Dunning Rd., Middlesbrough. [2364

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

ZENITH 4h.p., Gradua gear; £20; good order.—68, Gloucester Rd., Regent's Park, N.W. [3086

19 19 Zenith Combination, unscratched, perfect; £75.—24, Balliol Rd., North Kensington. [3128

19 20 8h.p. Countershaft Zenith Combination, mileage only 3,000; £120.—53, Brixton Rd., S.W.9. [2243

ZENITH 8h.p. 1920 Sporting Model, very fast machine; £85.—Marston, 31, Bridge St., Chester. [2629

£60; 1919 6h.p. Zenith, all accessories, insurance.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [2254

19 20 5-6h.p. Zenith, T.T. model; £65.—28, Woodford Rd., Forest Gate, E. 'Phone: Stratford 2598. [2878

5-6h.p. Zenith, disc wheels, special oiling to front cylinder, lamps, sporty 'bus; £50.—14, Phoenix St., Euston. [2713

ALLAN GRUZELIER for new or second-hand Zenith models immediately. — 168, Regent St., W. Regent 205. [2548

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [0711

ZENITH Combination, 3½h.p., single-cyl., wicker sidecar, excellent condition; seen South London; £40.—Box 6,663, c/o *The Motor Cycle.* [2556

19 20 8h.p. Zenith, Gradna gear, splendid condition, complete with lamps, horn, tools, speedometer, tax paid; £110.—Mobility, Andover. [2659

ZENITH 8h.p. Late 1920 Countershaft Combination, carefully used, fully equipped, insurance policy; £120.—91, Abingdon Rd., Earl's Court. [3104

Showroom Soiled.

To-day's Price.		Ours.
£50 8s.	**O.K.** 2¾ h.p., special engine	£39 0
£155	**P. & M.** 3½ h.p. Comb.	£120 0
£175	**B.S.A.** 6-7 h.p. Comb...	£154 0
£165	**ARIEL** 6-7 h.p. Comb.	£140 0
£250	**CLYNO** Combination ..	£165 0
£155	**JAMES** 4¼ h.p. Comb...	£129 0
£186 4s.	**ENFIELD** 8 h.p., 2-seater, dyno. lighting..	£163 0
£115	**TRIUMPH** "H," 4 h.p.	£105 0
£100	**DOUGLAS** 2¾ h.p., "All on"	£85 0
£215	**MATCHLESS** 8 h.p., 2-seater, dynamo	£187 10
£185	**MATCHLESS** H/2 Standard Combination	£160 0
£69 5s.	**CALTHORPE** 2¾ h.p., J.A.P., 2-speed	£62 10
£47 10s.	**CONNAUGHT** 2¾ h.p. ..	£42 10
£155	**AMERICAN-EXCELSIOR** 7-9 h.p. Combination ..	£135 0
£155	**MARTINSYDE** 6 h.p. Combination.....	£139 0
£160	**ROYAL ENFIELD** 8 h.p. Combination.....	£138 0
£168	**NEW IMPERIAL** 8 h.p. and Sporting Sidecar ..	£130 0
£73 10s.	**NEW IMPERIAL** 2¾ h.p., 2-speed J.A.P. ..	£65 0
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50, High Road, WOOD GREEN, London, N.

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387, EUSTON ROAD, London, N.W.1.

'Phone: Museum 4978.

MOTOR CYCLES FOR SALE.

Zenith.

ZENITH 1920 5h.p. Countershaft Model, slightly showroom soiled; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2302

ZENITH Combination, 5h.p., countershaft, brand new (shop-soiled); list £164, accept £150 to first acceptance.—Harrison and Bunkall, Chichester. [2574

ZENITH 6-8h.p. Combination, practically new, speedometer, lamps, horn, hood, screen, tax paid; £130.—Tomlinson, 194, Church Rd., Hove, Sussex. [3160

19 20 5-6h.p. Zenith Combination, perfect condition, mileage under 800, Easting screen, lamps, horn; £100.—Radcliffe, 131, Holton Rd., Barry Dock. [2967

19 20-21 Sports Zenith 5h.p., brand new condition, Watford, Klaxon, F.R.S., low generator, all tools, absolutely as new; £79.—88, Lord St., Southport. [3070

3½h.p. Zenith Combination, good lamps, etc., reliable condition; £40, cheap.—Gray and Levin, 5, The Boulevard, Balham, S.W. Tel.: Streatham 2417. [2635

ZENITH-GRADUA 1920 5h.p. Combination (sporting), Swan sidecar, good tyres, top-hole condition throughout; £120.—Brook and Churches, Barcombe, Sussex. [2458

ZENITH 1921 5h.p. Model, brand new (shop-soiled only); £105; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0079

ZENITH-GRADUA 1914 8h.p. Sports Combination, tax paid, perfect running condition; any trial given; canoelet sidecar; real bargain, £48.—77, Highbury Hill, N. [2927

ZENITH 1921 5h.p. Sports Model, complete with lamps, horn, licence, and speedometer; perfect condition; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford.

ZENITH 1921 5h.p. Sports Model; list price £115; very slightly showroom soiled, usual makers' guarantee given; £97/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [2304

ZENITH 3½h.p. Combination, C.S., K.S., wind screen, all accessories, insurance, tax paid, recently overhauled, condition splendid; £90.—Mann, 18, Barons Court Rd., West Kensington. (Evenings.). [2974

ZENITH 8h.p., late 1920 sporting model, with brand new Canoelet sporting sidecar, whole outfit guaranteed as new, complete lamps, horn, and licensed; owner going abroad.—Apply, Browns' Garage, Kirbymoorside. [2503

4-5h.p. Zenith 1921 Sporting Model, lamps, horn, and licence, has just been thoroughly overhauled, only done 1,200 miles, first-class order; can be tried in London; for quick sale, £100.—Apply, Lt. Tod, R.A. Mess, Weedon. [2519

ZENITH 8h.p. Sports, 1920, sporting sidecar, really fast, 75 m.p.h. solo, 60 easy sidecar, Zephyr high compression pistons, racing cams, Senspray, P. and H., economical; what offers? Very smart.—Warner, 4, St. Andrews St., Cambridge. [2735

19 20 Zenith Sports Model, 5 h.p. J.A.P., tax paid £3, Klaxon, P. and H. lighting set, aluminium disc wheels, knee grips, 1921 silencer, condition absolutely as new, cost £125, real bargain; £85, or offer.—Teeth, 769, Romford Rd., Manor Park, London, E. [2696

ZENITH Sporting Model, 4-5h.p., 1920, fitted with Cowey speedometer, electric outfit, aluminium disc wheels, indistinguishable from new, has been thoroughly overhauled by Zeniths and just returned, all accessories; price £85, or near offer.—Spears, 115, Elborough St., Southfields. [2209

ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear and sidecar lamps, horn, Cowey speedometer, knee grips, Ace discs, luggage grid, indistinguishable from new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0078

ZENITH 8h.p. Countershaft Late 1920 Model Combination, brand new Swan Sports sidecar, Avro wind screen, speedometer, disc wheels, many spares and accessories, machine just overhauled at Zeniths, guaranteed in perfect condition, tax and insurance paid; £125.—Giles, 18, Old Cavendish St., W.1. [1867

Miscellaneous.

ZENITH, 8h.p., and sporting Swan sidecar, luxuriously equipped, going like new; 60 gns.

B.S.A. Combination, 3-speed gear box, fully equipped, re-enamelled and plated; 60 gns.

CALTHORPE-PRECISION, 4h.p., 2-speed gear box and sidecar, good running order; £30.

19 20 Edmund, £50; Coventry Eagle, shop-soiled £50; Invicta, £40; several others from £20.—Bunting's Motor Exchange, Wealdstone. [318

LIGHTWEIGHT, absolutely complete, less unit, T.T. bars, knee grips, good tyres; £14.—20, Frankfort St., Birmingham. [290

HALIFAX.—50 second-hand motor cycles and combinations; offers wanted. Get list.—Halifax Motor Exchange, Horton St., Halifax. [267

14 3h.p. Motosacoche, £16, good running order and condition; also 3½h.p. Rex, incomplete, £10; stamp for particulars.—Baldock, 5, Elmdale, Chepstow. [235

MOTOR CYCLES FOR SALE.

Miscellaneous.

WANDSWORTH Motor Exchange.—Great bargains in good motor cycles, combinations, fine selection.—Below.

WANDSWORTH.—Easy terms. Ride while you pay. Immediate delivery first deposit.—Below.

WANDSWORTH.—N.S.U., with coachbuilt sidecar, 3½h.p., mag., 2 speeds; gift, 29 gns.—Below.

WANDSWORTH.—Humber, with coachbuilt sidecar, 3½h.p., mag., 2 speeds, lamps; 38 gns.—Below.

WANDSWORTH.—Rudge, 3½h.p., mag., 2 speeds, kick, newly enamelled, beauty; 39 gns.—Below.

WANDSWORTH.—Zenith-Gradua, 4h.p. J.A.P., clutch, kick, newly enamelled; special, 45 gns.—Below.

WANDSWORTH.—Henderson, 8h.p., 4 cyls., mag., 2 speeds, lamp, licensed; only 48 gns.—Below.

WANDSWORTH.—Triumph, late, 3½h.p., mag., 3 speeds, clutch, nice machine; 46 gns.—Below.

WANDSWORTH.—Royal Enfield twin lightweight, 2 speeds, kick, licensed; cheap, 39 gns.—Below.

WANDSWORTH.—Humber coachbuilt combination, 3½h.p., 2 speeds, wants attention; clearance, 28 gns.—Below.

WANDSWORTH.—Premier coachbuilt combination, 3½h.p., 3 speeds, clutch, fine outfit; 49 gns.—Below.

WANDSWORTH.—1918 P. and M. coachbuilt combination, 3½h.p., 2 speeds, kick, lamp; 58 gns.—Below.

WANDSWORTH.—1915 Indian coachbuilt combination, 5h.p. twin, 3 speeds; sacrifice, 55 gns.—Below.

WANDSWORTH.—1918 Douglas coachbuilt combination, 4h.p., 3 speeds, kick, lamps; 69 gns.—Below.

WANDSWORTH.—1920 lovely Rudge Multi coachbuilt combination, lamps, hood, screen; 79 gns.—Below.

WANDSWORTH.—1920 Norton, fine coachbuilt combination, Big 4h.p., 3 speeds; 118 gns.—Below.

WANDSWORTH.—1920 Indian coachbuilt combination, 7-9h.p., dynamo lighting, 3 speeds; 115 gns.—Below.

WANDSWORTH.—1920 Scott coachbuilt combination, water-cooled, lamps, Klaxon, done 500 miles; 96 gns.—Below.

WANDSWORTH.—Zenith, splendid coachbuilt combination, twin J.A.P., runs well, licensed; 52 gns.—Below.

WANDSWORTH.—F.N., fine coachbuilt combination, 5-6h.p., 2 speeds, lamps; only 49 gns.—Below.

WANDSWORTH.—Rex coachbuilt combination, 5-6 h.p. twin, Bosch, 2 speeds, lamps; 36 gns.—Below.

WANDSWORTH.—Rex, late, beautiful coachbuilt combination, 6h.p. twin, 2 speeds; 55 gns.—Below.

WANDSWORTH.—1920 T.D.C. de luxe, 2¼h.p., lamps, licensed, fine running machine; 35 gns.—Below.

WANDSWORTH. — Alldays - Matchless, splendid coachbuilt combination, 4h.p., 3 speeds, countershaft; 58 gns.—Below.

WANDSWORTH.—Kenilworth scooter, 1½h.p., mag., lamps, licensed, drive away; cheap, 18 gns.—Below.

WANDSWORTH.—N.L.G., 3½h.p., mag., spring forks, drive away; bargain, 15 gns.—Below.

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WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [3026

MEBES and Mebes, the Original Light Car Specialists, invite reasonable offers for the following shop-soiled, but otherwise new motor cycles, as they are relinquishing this part of their business in favour of light cars.—Below.

BEARDMORE-PRECISION 3½h.p.; Wooler 2¾h.p., variable gear; Rover touring model, 3½h.p., 3-speed, clutch; Bat 6h.p. Model 4, clutch, 3-speed; M.C. 6h.p. suspension-frame model, clutch, 3-speed; M.O. 6h.p., rigid frame, clutch, 3-speed; L.M.O. 6h.p., clutch, 3-speed; also 6h.p. L.M.O. combination, fully equipped, used for demonstration only; and one Elite model Henderson sidecar and one spring-frame Henderson sidecar, both new, shop-soiled only.—4, Gt. Portland St., W.1. 'Phone: Langham 2230. [2490

M.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [2586

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£160	0	**ENFIELD,** 8 h.p., standard Combination	£138
£182	0	**ENFIELD,** 8 h.p., Combination, Lucas Magdyno lighting	£156
£68	0	**LEVIS,** 2¼ h.p., 2-stroke, 2 speeds	£62
£172	0	**MATCHLESS,** 8 h.p., Sports Combination	£150
£185	0	**MATCHLESS,** 8 h.p., standard Combination	£160
£191	10	**MATCHLESS,** 8 h.p., Family Combination	£165
£80	17	**NEW IMPERIAL,** 2¾ h.p., 2 speeds, clutch, and kick starter	£72
£115	0	**TRIUMPH,** 4 h.p., Type H	£105
£127	10	**TRIUMPH** Type SD	£115
£127	10	**INVICTA,** 3½ h.p., 3 speeds, kick starter and Millford Sidecar, screen	£105
£155	0	**MARTINSYDE,** 6 h.p., standard Combination	£145

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BAT, 1920, 8 h.p., Combination, 3 speeds, clutch, and kick-starter, spare rim and tyre, lamps, horn, speedometer, mirror, screen, and pillion seat; tax paid	£125
DOUGLAS, W.D., 4 h.p., Combination, 3 speeds, clutch, and kick starter; as new	£98
DOUGLAS, 1920, 2¾ h.p., 3 speeds, clutch, kick-starter, and accessories; tax paid	£80
ENFIELD, 1917, 3 h.p., 2 speeds, clutch and kick-starter, lamps, horn; tax paid	£55
ENFIELD, 1921, 2¼ h.p., 2-stroke, 2 speeds, Lucas lamps, horn; tax paid; as new	£57
NORTON, 1916, 3½ h.p., Model B.S. Philipson pulley; tax paid	£65
TRIUMPH, 1920, 4 h.p., 3 speeds, clutch and kick-starter, all-chain; tax paid	£95
TRIUMPH, 1920, 4 h.p., Model H, 3 speeds, clutch, and kick-starter, lamps, horn, speedometer, windscreen; tax paid	£110
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N.U.T., 1920, twin, with Swan Sporting Sidecar, Lucas' Magdyno lighting, etc.; tax paid	£115

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RENNOC Co. again ask you to send for their 1921 catalogue, the most comprehensive issued by any manufacturers.

RENNOC Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. 'Phone: Hornsey 1589. [8631

SIDECAR ATTACHMENTS.

GLORIA Sidecar, purchased with Triumph October, 1919, dash and screen fitted, only used occasionally, new condition, very smart; £28.—Major Stamford, Seaview, Priory Hill, Dover. [2448

ROYAL Leicester Sidecars are made for comfort. attachments for any machine; price 18 gns. upwards; have few cars to clear at reduced prices; repairs, repainting, etc.—The Willowbrook Motor Co., Leicester. [0335

SIDECAR, second-hand Mills-Fulford, complete, £5/10; new coachbuilt body, £5; new sidecar wheel, complete with spindle, 20/-; new valance mudguards, 10/6 each.—Murrays, 37a, Charles St., Hatton Garden, Holborn. [X0043

SIDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passage 27in. Tandem and single bodies fitted. Tested 7 years on motors up to 9h.p.—Hopley, Upper Highgate St., Birmingham. [0152

HEPPELTHWAITE'S.—£4/10, renovated underslung Douglas chassis, complete, or suitable for Clyno, P. and M., Rudge, or any make, 7/6 extra; new tyre, 30/-. We hold the largest stock of Douglas chassis in London (no swank). 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [3095

PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0388

MILLS-FULFORD Sidecar, unused, £8/10, second-hand £4/10; all Millford parts in stock. A large quantity of second-hand fittings at cut prices. Trade supplied. The best chassis for all purposes, and especially for the rider who desires to ride solo at times, as the chassis can be detached and attached single handed in 3 minutes.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (half minute from Brixton Skating Rink.) [3250

ROBINI.—Douglas chassis complete, enamelled, new tyre and tube, with Helen sports body, dark blue, £14; Douglas chassis, as above, with new Helen tourist, dark blue, £15/10; with De Luxe model, dark blue, £15/10; Mills-Fulford chassis, complete, new tyre and tube, with Helen sports model, £12/10; as above, with Helen tourist model, £12. Trade supplied. Chassis and bodies from £10. Carriage extra. For full particulars of bodies see Body column.—Brixton 1585.—T. Robini, 22, Water Lane, and 1, Tulse Hill, Effra Rd., Brixton, S.W. 'Buses and trams pass the door. [3219

RUNABOUTS AND CYCLE CARS.

DAN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

7-9h.p. Chater-Lea Cycle Car, 3 speeds, worm drive; £50.—13, North St., Barking. [2976

DAN GUY, Weymouth. Morgan agent; reduced price; Grand Prix 10h.p. M.A.G., £197, from stock. [0624

4-POINT Cycle Car for sale, Olav, complete, less mag.; £35, or offer.—Box 30, c/o *The Motor Cycle*. [2389

8h.p. Rover Light Car, dynamo lighting, tax paid; £205. — Ratcliffe Bros., 200, Gt. Portland St., W.1. [X0101

1921 T.B. 3-wheeler, dynamo lighting; cost £297, accept £165.—24, Balliol Rd., North Kensington. [3124

MORGANS, second-hand, several in stock.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1245

G.N. Popular, 1921, shop-soiled only; £175.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1246

MORGAN de Luxe, 1921, a.c., red, discs, electric light, as new; £185.—Taylor, Hawkhurst, Utley, Keighley. [2525

1920 Morgan Grand Prix, 8h.p. water-cooled J.A.P. engine; £137/10.—28, Woodford Rd., Forest Gate, E. [2879

ROVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Ct. Portland St., London, W.1. [0350

MORGAN, 1913-15, J.A.P. 8h.p., perfect; exchange for combination, or sell £100.—235, Victoria Rd., Wood Green. [3098

HALIFAX.—1921 11.9h.p. Lagonda coupe, fully equipped, tax paid; £335.—Motor Exchange, Horton St., Halifax. [2674

LATE 1920 De Luxe Morgan, water-cooled, beautifully equipped; any trial; £140.—24, Balliol Rd., North Kensington. [3126

1921 Coventry Premier Runabout, dynamo lighting, dickey seat; £165.—Ratcliffe, Bros., 200, Gt. Portland St., W.1. [X0100

A.C. Sociable, wheel steering, wind screen, hood, speedometer, lamps, good condition; £70.—31, Wilmington Av., Chiswick, W. [2373

MORGAN, 1914, stored during war, a.c., sporting, retyred all round, screen, speedometer, repainted and varnished; sacrifice £85; must sell.—23, Kempshott Rd., Streatham, S.W.16. [1932

BANCROFTIAN CO'S. GREAT SALE

In consequence of our Head Depot, 64, Bishopsgate, coming down, and not having sufficient room at 78, Bishopsgate, we have decided to clear our stock, the value of which is about £20,000, regardless of cost. No reasonable offers will be refused for large parcels, as we must clear our stock within short time. Everything for the Motor Cyclist in stock. We have advertised in "The Motor Cycle" since its first publication. Our Sale is Absolutely Genuine

Tyres. Please note all tyres advertised by us are simply last year's stock. Although they are sold as clearance, they are as good as when they left the factories. **We have no W.D. tyres.** The prices are actually below cost. **Wood-Milne.**—Special clearance line (not W.D.): Extra Heavy 4-ply, 26×2¼, **31/-**; 26×2⅜, **35/-**; 26×2½ to fit 2¼, **35/-**; 28×3, **37/6**; 700×80, **45/-**; 650×65, **42/-**; 26×2¼ Combination, **47/6**. All the Wood-Milne are extra heavy, clean, wrapped in the original packing. **Pedley.**—26×2¼ 3-ribbed, **36/6**. **Hutchinson.**—Brooklands, 26×2, **26/6**; Tourist Trophy, 26×2, **32/-**; 26×2½ to fit 2¼, **38/6**; Heavy 3-ribbed, 700×75, for Indian, or 700×65, or 750×65, all very heavy for other American machines, **52/6**; 650×65 Steel-studded Car Type, **70/-**; Firestone, 28×2½, **45/-**; 20×2, for Auto-wheel, **27/6**. Tube, **7/6**. **Palmer.**—26×2, Light, **27/6**; 650×65, Cord, **49/6**; 26×2½, Cord, Heavy, **49/6**. **Oylers.**—650×65 Ribbed Square Tread, **35/-**; 26×2½ ditto **35/-**. **Heavy Michelin.**—700×85, **55/-**. **Clincher.**—650×65 very heavy De Luxe, **42/-**, original 80/-; 28×2¼, **42/-**; 28×2, **37/6**; de Luxe Non-skid, 24×2, Junior, **19/6**; 26×1¾ Junior, **19/-**; 26×2 Heavy, **30/-**; 26×2¼ Junior, **22/6**; 26×2 Extra Heavy, **37/6**. **Dreadnought.**—Passenger, 700×75, **55/-**; 26×2½ Heavy de Luxe, **37/6**; 26×2½ Extra Heavy, **42/-**. We have only three Hutchinson 26×2¼ Wired Covers at **32/6** each.

Belts. **Clincher,** unused, not W.D.: ¾in., 6ft. 6in. **9/6**, 8ft. **11/9**; ⅞in., 7ft. 6in. **12/9**, 8ft. 6in. **14/9**; 1in., 7ft. 6in. **16/6**, 8ft. **18/6**; 1⅛in., 7ft. **18/6**, 8ft. **21/-**, 8ft. 6in. **23/-**. **Bates,** short lengths: ¾in., 5ft. **5/-**, 5ft. 6in. **5/6**; ⅞in., 4ft. 6in. **5/6**, 5ft. **6/3**; 5ft. 6in. **7/6**; 1in., 4ft. 6in. **6/9**, 5ft. **7/3**, 5ft. 6in. **8/3**. Leather Belts, ¾in., at **2/6** per ft. Belt Fasteners, **9d.** and **1/-**. Postage **1/-** extra.

Speedometers. Slightly soiled. **Smith's,** with trip, **£4 17s. 6d.**; **Watford,** with trip, **£5**; **Stewart,** with trip (£6 6s. model), **£5 5s.**; **Cowey,** slightly soiled, trip, **£5 12s. 6d.**, usual £6 15s.

Magnetos. Dixie, clockwise, twin, unused, perfect, **£2 17s. 6d.** Must sell; **Thomson-Bennett,** single, as new, **£3 3s.**

Sidecar Bodies. Coachbuilt, best quality, **£7 7s.** Original, £12 12s.

Windscreens. Actually in stock. **Eastings** Baby, Standard, Royal. **Bluemels** 1920 **£3 10s.**, usual £4 8s. **Cameo.** Hoods, finest quality, waterproof, with curtains round, **£3 5s.**

Tan-Sads. New, unused, with back seat. Original price, 57/-. Slightly soiled, **37/6.**

Carburetters. A few slightly soiled **B. & B.** and **Amacs, 59/6.**

Chains. **Renolds:** ⅜×7/16, **7/6**; ⅝×⅜, **6/3**; ⅝×¼, **5/10**; ½×¼, **5/2**; ½×3/16, **4/7**, per foot.

Waterproof Suits. Final reduction. Must be cleared. Less than pre-war prices. Great clearance, consisting of double-breasted coats with belts, storm cuffs and collars, and seatless trousers with gussets, patent fasteners and leather-bound seats. New and fresh, only been made recently, not half-perished W.D. Our price, **£2 2/-** to clear. Postage 1/6 extra. Could not be bought elsewhere under £4 10s. The greatest bargain ever offered. Order immediately to save disappointment. All stock sizes. Colour Fawn.

Gauntlets Clearance, limited quantity only. Leather, lined wool, 5/11; gloves ditto, 4/11, half usual price. Gauntlet mittens with thumb and finger, high-class leather, heavily lined wool (£1/1/0 line), 7/6 pair. Postage on above, 9d.

Soldering Apparatus. A combined soldering iron and blowlamp, the most marvellous invention, solid brass, 10in. long, not a toy, but a useful tool. No motorist should be without one. **4/7½**, post free. Original price, 10/6. Order at once, only a limited quantity. May save you pounds.

A few 1920 Motor Cycles to clear.

Keep this advertisement for reference.

BANCROFTIAN CO.,

64 & 78, BISHOPSGATE, LONDON.

'Grams: "Chalkel, London." 'Phone: London Wall 9397

RUNABOUTS AND CYCLE CARS.

1922 Morgan 4-seater, 10h.p. M.A.C., w.c., lamps, horn, etc.; £213/2; delivery from stock.—Gibb, Motors, Gloucester. [3142

MORGAN, a.c. 8h.p. J.A.P., electric light, perfect order; any trial; must sell; £90; after 6 p.m.—Pack Horse, Loughborough. [X0129

SCOTT Sociable, June, 1921, done 800 miles, all accessories; £255.—Write Howes, 7, Chatham Close, Hendon, N.W.11. Regent 1928. [2955

MORGAN, 1916, M.A.G., a.c., good condition, disc wheels, luggage carriers, many spares.—Berry, R.A.F., Cattewater, Plymouth. [2523

A.V. Monocar, 1920, unscratched, fully equipped; sacrifice, £80.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [2773

A.V. Monocar, 1920, 8h.p., dickey, electric, insurance, tax paid; exchange combination, or sell £85.—9, Aberdour Gardens, Goodmayes, Essex. [2494

BLERIOT-WHIPPET, 1921, electrically equipped, spare wheel; £125.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [2770

G.N., 1920, touring, dynamo lighting, many mechanical improvements, very smart little car; £180.—Telford Garage, 47, Streatham Hill, S.W.2. [2394

ONE Shop-soiled 1921 Morgan de Luxe, water-cooled M.A.G., full equipment; £190.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1243

MORGAN, Luxe, 1920, M.A.G. engine, water-cooled, mileage 3,600, spares, all excellent condition; price £155.—Palmer, 53, Shepherd's Bush Green. [3099

LATE 1920 G.P. Morgan, 10h.p. M.A.G. engine; dynamo lighting, exceptionally smart and perfect; £145.—24, Balliol Rd., North Kensington. [3125

HALIFAX.—G.N., 1920 (Nov.), 2-seater, dynamo lighting, speedometer, hood, screen, etc.; £175.—Halifax Motor Exchange, Horton St., Halifax. [2675

1920 Morgan de Luxe, W.C., fully equipped, speedometer, side mirror, disc; £145.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [2772

MORGAN Runabout, 1920, M.A.G. engine, dynamo and acetylene lighting, ride 100 miles to intending purchaser, all spares.—Box 6,688, c/o *The Motor Cycle*. [3256

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

1917 Grand Prix M.A.G. Engine Morgan, hood, wind screen, lamps, and speedometer; any trial; £120, offers, or exchange.—W., 45, West Sq., St. George's Rd., S.E.11. [2538

A.V. Monocar, late 1919, fully equipped, licensed, etc., in excellent condition throughout; £85, or exchange new Douglas.—Smith, Market Place, Willenhall, Staffs. [X0126

1920 Grand Prix Morgan, fully equipped, H.A.H. lighting set, aluminium dash and disc; £145.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [2771

1921 Morgan de Luxe and Grand Prix Models, for immediate delivery; extended payments; exchanges.—Reys, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1244

G.N., 1921, new standard touring, left works August, dynamo lighting, the comfort of a car at motor cycle and sidecar cost; £240.—Telford Garage, 47, Streatham Hill, S.W.2. [2395

1920 Crouch 2-seater, electric lighting, speedometer, detachable wheels, tax paid, appearance and condition as new; £155.—Tel.: Museum 6626. A.S.C., 60, Mortimer St., W.1. [3192

A.C. Sociable, modern Model de Luxe, excellent condition, hood, screen, luggage carrier, etc.; 85 gns., or nearest offer.—Milsom, Hill House, Etchinghill, Lymiage, Folkestone, Kent. [2437

£135.—A sporty 2-seater, 8-10h.p. w.c. J.A.P., 3 speeds and reverse, C.A.V. dynamo lighting, mechanically perfect.—324, Hither Green Lane, Lewisham, S.E.13. Tel.: Lee Green 2156. [2493

1920 Bleriot Whippet, electric lighting, horn, licensed Dec., spare wheel unused, really A1 condition; £108; exchanges or deferred.—Edwards, 50, Harrington Rd., South Kensington. [3234

A.C. Sociable, Type C., overhauled, perfect, reverse, wheel steering, hood, lamps, spare cover, tube, engine valve, tools, tax paid; £100.—35, Archer St., Notting Hill. 'Phone: Park 1689. (P) [2412

UP-TO-DATE 3-wheeler, 2-seater, 6½h.p., water-cooled, friction drive, and reverse, Dixie mag., hood, screen, horn; £70, or near offer, or exchange for motor cycle.—F.R., 20, Arngask Rd., Catford, S.E.6. [2706

COVENTRY Premier, 1921, 8h.p., w.c., dynamo lighting, spare wheel, speedometer, 3 speeds forward and reverse, done 2,000 miles, excellent condition; £200.—34, The Avenue, St. Margaret's, Twickenham. [3154

MORGAN, Grand Prix, 1916-17, water-cooled J.A.P., little used, repainted red and black, lamps, speedometer, clock, mechanical horn, new hood screen tools, tax paid; £125.—Smith's, 86, Chalk Farm Rd. (opp. Chalk Farm Tube Station), N.W.3. [318

RUNABOUTS AND CYCLE CARS.

MORGAN De Luxe, water-cooled model, complete equipment, £150; Morgan Grand Prix model, complete equipment, £155; Morgan 1920 Grand Prix model, specially equipped, £165.—Marston, 31, Bridge St., Chester. [2630

COVENTRY PREMIER, slightly soiled, 3-speed and reverse, spare wheel, etc., dynamo lighting, £210; Coventry Premier, new 1922 model, 4-wheeler, dynamo lighting, etc., £250; delivery from stock.—Marston, 31, Bridge St., Chester. [2631

MORGAN de Luxe, not done 500 miles, bought August, 1920, garaged practically ever since owner having to give up motoring, turnout complete as new, disc wheels, solid brass lamps and generator, mechanical horn, etc.; £200, or nearest.—Major Lloyd, St. Martin, Jersey. [2510

BLERIOT-WHIPPET, 1920-21, fitted reverse gear, electric and oil lighting, speedometer, clock, hood, large screen, detachable wheels, spare wheel, many spares, in new condition throughout; any inspection or trial; £150, genuine bargain.—Owen, 59, Scholefield Rd., Upper Holloway, N.19. [X0132

TAMPLIN-CARDEN 2-seater, 1919½, 8h.p. J.A.P., 3 speeds, Sturmey-Archer, seat starter, F.R.S. electric lighting, all tyres very good, has just been completely overhauled, and is in perfect condition throughout, very smart and fast, beautifully easy to control, climbs anything; any trial and inspection allowed; £65.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [3062

DUO 1915 4-wheeler, 8h.p. J.A.P., repainted, new hood, fully equipped, £70; Tamplin 2-seater, 1920, in the pink, £90; Merrall-Brown 2-seater, new 1920, 4-cyl. Coventry Simplex engine, well equipped, spare wheel, £160; dozens of others from £20; all ready to drive away.—Bunting's Motor Exchange, Wealdstone. [3181

CARS FOR SALE.

DARRACQ ¾ Landaulet, in good condition; £65.—77, Acre Lane, S.W.2. [3199

ROSS ¾ Up-to-date Landaulet; sacrifice £135.—22, St. Ann's Rd., London, S.W.9. [3200

£50 down and 12 payments of £5 secures reliable 4-seater.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments of £10 secures 12-14h.p. Fiat landaulet, repainted.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures 18h.p. Oakland touring, self-starting.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures Piccard-Pictet ¾ landaulet, dynamo lighting.—Palmer's Garage, Tooting.

£100 down and 12 monthly payments £12/10 secures Sheffield-Simplex ¾ landaulet.—Palmer's Garage, Tooting.

£275 Cash secures 18h.p. Meteor touring car, Saukey steel wheels, dynamo lighting, extra good.—Palmer's Garage, Tooting.

20h.p. La Buire ¾ Landaulet, small Six, 4 speeds, detachable rims; £295.—Palmer's Garage, Tooting.

15h.p. Panhard Modern ¾ Landaulet, monobloc, Bedford cord; exchanges; £250.—Palmer's Garage, Tooting

10h.p. Darracq Light 2-seater, 4 cyls., monobloc, enclosed valves; exchanges; £150.—Palmer's Garage, Tooting.

13.9h.p. Scripps-Booth Coupe, seats 3, monobloc, self-starting, dynamo lighting, detachable wheels; £225.—Palmer's Garage, Tooting.

£165 Cash secures very fine 15.9h.p. Armstrong-Whitworth 2-seater, dynamo lighting.—Palmer's Garage, Tooting.

£450 Cash.—Brand new 1921 Peugeot 4-seater, self-starting, 4 speeds, detachable wheels.—Palmer's Garage, Tooting.

£550 Cash.—1921 sports Charron 4-seater, dynamo lighting and self-starting, 6 detachable wheels.—Palmer's Garage, Tooting.

£65 Cash secures 1921 light 2-seater, 2 speeds; also 10h.p. Warren-Lambert 2-seater, £95.—Palmer's Garage, Tooting.

£160 Cash.—10h.p. 1916 Alldays light car, 4 cyls., monobloc, dynamo lighting; exchanges.—Palmer's Garage, Tooting. [2946

COX'S.—Complete printed list, fifty vehicles, £45 to £850, free on application. Call.

DOUGLAS S. COX, the A.S.M.M., 6, Lansdowne Hill, West Norwood. Call 9-6 (Saturdays 4). No business Sundays. [1277

METZ 4-cyl. 2-seater, in good order; offers, or exchange motor cycle or combination.—14, Glenelg Rd., S.W.2. [3197

DE DION 6h.p. 2-seater Car, complete, in first-class order; £65, tax paid; trial.—3, St. James's Rd., Upper Tooting. [1566

SALE, Humberette 2-seater, perfect; £100; exchange combination and cash.—19, Andover Place, Maida Vale, London, N.W. [2350

ARGYLL Chassis, complete with radiator (sound), gear box, and steering, modern; £20; suit 14-16h.p. engine.—Lingley, Thorofare, Woodbridge. [2848

Tel. No.: Museum 3971.

The Tyre Station

Guaranteed in PERFECT CONDITION.

Money willingly refunded if not more than satisfied.

All Goods sent on Seven Days' Approval against Remittance.

SURPLUS MANUFACTURERS' STOCK AND W.D.

24×2¼	
Dunlop Heavy	30/-
26×2	
Palmer Cord Heavy	35/-
Wood-Milne Extra Heavy	30/-
26×2¼	
Dunlop Heavy	36/-
Palmer Cord Heavy	36/-
Clincher Extra Heavy	27/6
Wood-Milne Heavy	23/6
Wood-Milne Extra Heavy	39/-
Bates Heavy	36/-
Goodyear Extra Heavy	30/-
Avon Sunstone	36/-
26×2⅜	
Dunlop Heavy	36/-
Dunlop Extra Heavy	42/-
Palmer Cord Heavy	36/-
Clincher Extra Heavy	30/-
Avon Heavy Rubber-studded	30/-
Wood-Milne Extra Heavy	35/-
Moseley Heavy	30/-
Hutchinson T.T.	29/6
Hutchinson Passenger	35/-
26×2½×2¼	
Clincher Extra Heavy	35/-
Heavy Rubber-studded	25/-
Extra Heavy Rubber-studded	30/-
26×2½ for 2½ Rims.	
Wood-Milne Heavy	32/-
Wood-Milne Extra Heavy	36/-
26×3×2½	
Dunlop Combination	55/-
26×3	
Englebert Extra Heavy	50/-
26×3 for 26×2½ Rims.	
Dunlop Extra Heavy	55/-
Dunlop Heavy	45/-
Wood-Milne Heavy	32/-
650×65 for Volturette Rims.	
Dunlop Steel-studded	47/6
Dunlop Grooved	42/-
Avon Sunstone	39/6
Goodyear Diamond	30/-
Burnett Grooved	30/-
650×65 for Standard Rims.	
Palmer Heavy Cord, Light Car Type	45/-
Wood-Milne Heavy	32/-
28×2½ for 2½ Rims.	
Wood-Milne Extra Heavy	60/-
Dunlop Heavy	42/6
Dunlop Extra Heavy	50/-
28×3 for 2½ Rims.	
Dunlop Extra Heavy	50/-
28×3 for American Rims.	
Wood-Milne Extra Heavy	30/-
Rom Combination	50/-
Dunlop Extra Heavy	50/-
700×75 for 650×65 Rims.	
Hutchinson Extra Heavy, Light Car Tyre	55/-
700×80 for 650×65 Rims	
Wood-Milne Extra Heavy	45/-

Motor Cyclists' Waterproof Combination Suits as illustrated last week, 25/-

When ordering, please write distinctly.

CARS FOR SALE.

HALIFAX.—Latest new Calthorpe, Lagonda, Standard, Coventry Premier, and Airedale cars. Get our exchange quotation.—Halifax Motor Exchange, Horton St., Halifax. [2673

10-12h.p. Clyde, White and Poppe engine, Zenith, 4-seater and light van body interchangeable to carry 6-cwt., good running order; £95.—Wait and Co., Ltd., Leicester. [2488

1916 Calthorpe 2-seater, dynamo, clock, speedometer, appearance and condition excellent, privately owned; £210.—Tel.: Museum 6626. A.S.C., 60, Mortimer St., W.1. [3193

110 GNS.—Lagonda 11h.p. 1915 4-seater, dynamo lighting, 5 detachable wheels, excellent condition; consider motor cycle part.—98, Tulse Hill, S.W.2. 'Phone: Brixton 2104. [3056

7-9h.p. Swift 2-seater, 1914, lamps, tools, tax, splendid order; Triumph or good cycle part payment; £135.—Gray and Levin, 5, The Boulevard, Balham, S.W. Tel.: Streatham 2417. [2636

MORRIS-OXFORD 10h.p. De Luxe Model, special sporting 2-seater body, bulbous back, bodywork unscratched, mechanically perfect, fast and economical; any trial or examination; £225.—71, Bengeo St., Hertford. [2524

10-12h.p. Clyde (£9 tax), White and Poppe engine, wide 2-seater, new hood, screen, Stepney, thoroughly overhauled and guaranteed, tyres almost equal new, repainted; photo; £105.—Wait and Co., Ltd., Leicester. [2487

HUMBER 10h.p., 4-cyl., smart 2-seater car with dickey seat, Bosch, Binks carburetter, economical, fast, guaranteed perfect, paintwork, mechanism, everything splendid condition, lamps, tools, tax paid; trial any time; bargain, £120; exchange combination and cash.—Charles, 45, Charles St., Commercial Rd., Stepney, London. [3144

TAXICABS.

SIDECAR Taxi Combinations, cash or gradual.—County Cycle and Motor Co., Broad St., Birmingham. [8449

£100 down and twelve monthly payments of £20 secures London taxi cab.—Details, Palmer's Garage, Tooting. [2937

MOTOR TRANSPORT VEHICLES.

WIND Screen, Easting Royal, like new; £3/10, bargain.—Campbell, 55, Gibson St., Hillhead, Glasgow. [X0053

£100 down and twelve monthly payments of £25 secures a magnificent 3-ton lorry.—Details, Palmer's Garage, Tooting. [2938

1914 5-cwt. 6h.p. Girling Delivery Van, repainted royal blue, overhauled and guaranteed perfect; £35.—Malvern Garage, Malvern Rd., Thornton Heath, Surrey. [2819

EXTENDED PAYMENTS.

HALIFAX.—New and second-hand motor cycles; deferred payments at lowest rates.—Halifax Motor Exchange, 25, Horton St., Halifax. [2672

FOR Best Treatment and best terms for light cars, cycle cars, or motor cycles of any make, new or second-hand, write Service Co., 292, High Holborn, W.C.1. [0672

ENGINES.

1913 L.M.C. Engine, 4¼h.p., complete; offers.—Norbury Terminus Garage. [3073

2¾h.p. Arden, new, C.A.V. mag.; offers.—Jones, 7, Collingham Rd., London, S.W.5. [X0026

REX 6h.p. Twin Engine, Bosch, B. and B., complete; £9.—Tintagel, Wickham Rd., Beckenham. [2576

4h.p. Bradbury, single, newly overhauled; £6, a bargain.—Dykes, 25, Moor Park, Stevenston, Ayrshire. [2446

5-6h.p. Rex Engine, a.i.v., Bosch, B. and B.; £7; offers.—Shepherd, Thwaite Flatt, Dalton-in-Furness. [3243

3½h.p. Stevens Engine, m.o.v., with T.B. magneto, fine condition; £8/8.—12, Winchester St., Taunton. [2805

4h.p. Twin, a.h.v., Bosch, Amac, £16; 2¾h.p. Dalman, £27/10, new, complete.—Tonge, Holmesfield, Sheffield. [2951

INDIAN.—A few Powerplus 7-9h.p. engines at the remarkably low price of £15/15 each.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [2740

2¼h.p. 2-stroke Engine, complete with C.A.V. magneto, new, complete and perfect; price £10; letter for appointment.—Kelowna, Earlsdon Av., Coventry. [X9390

HEPPELTHWAITE.—6h.p. W.C. Humber, single, complete unit, clutch, mag., carburetter, pump, etc., £14; 3½h.p. Triumph engine, £9; 3½h.p. Rex, £5/5, m.o.v.; 3½h.p. Rex, a.i.v., £3; 2¼h.p. Minerva, m.o.v., £3/10, a.i.v. £3; 2h.p. Peugeot, £2/10; 5h.p. Stevens, £3/10; White and Poppe less cylinder and piston, £2; James cylinder, 30/-; a.i.v. Rex cylinder, £1/10.—'Phone or write Heppelthwaite's, and see Sidecars column for chassis snips; stamp please.—19, Wilcox Rd., South Lambeth, London, S.W.8. [3097

ENGINES.

BARGAIN.—4h.p. Humber engine, complete, magneto, carburetter, guaranteed; £15.—Searle's Stores, Southborough. [3112

1915 Verns 2-stroke, complete, mag., Senspray, aluminium silencer, engine plates, all controls just rebushed, guaranteed; £8/10, or nearest offer.—Underhill, 12, Mervyn Rd., Bishopston, Bristol. [2522

J.A.P Engines. J.A.P. Engines. J.A.P. Engines.—I have the largest stock of J.A.P. engines and parts in England; over 30 engines always in stock to select from, and the price: 5h.p. twins, £17/10; 8h.p., fitted with new pistons and 1921 cylinders, £20; and 8h.p. at £18/10. Parts: 8h.p. J.A.P. crank cases, 50/- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam wheels complete, 15/- each; valves complete, 4/- each; valve guides, 3/6 each; tappet guides, 2/6 each; exhaust valve and inlet cap, 4/- each; tappets complete, 2/6 each; cam levers, inlet and exhaust, 4/- each; gudgeon pins, 5/- each; and all parts for J.A.P. engines. Stamp for reply.—Hawkins, 455, York Rd., Wandsworth. [9218

IGNITION APPLIANCES.

NEW Motor Cycle Magnetos.

500 for Immediate Disposal.—Thomson-Bennett, C.A.V., all degrees, single and twin, leads, and variable ignition, for all machines, £2/12/6, includes postage; Bosch £3, postage extra, 1/6. We forward immediately all magnetos on approval against cash. Money refunded if dissatisfied.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, London, S.W.9. [9809

COUNTY of London Engineering Works, Ltd.

MAGNETOS. Magnetos. Magnetos.

GOVERNMENT Surplus Unused Magnetos.—Having bought the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

COUNTY of London Engineering Works, Ltd.

PLUGS, high-tension, wire, plugs.

GOVERNMENT Surplus; new plugs in boxes.

A.C. (Titan), 1/6; K.L.G. type 7, detachable, 2/6; high-tension wire, new, unperished, 9 mm., 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., 2d. per yard, 25 yard coil 2/-.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d.; (see other goods under Miscellaneous.)—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London [5583

H.B. Ignition Co. for unused W.D. Thomson-Bennett magnetos, 500 in stock.

H.B. can supply from stock single and twin T.B., 42, 45, 50, 55, and 180 degrees, clock and anti, with baseplate and bolts for fixing on Triumph, P.M., B.S.A., J.A.P., Douglas, etc.; £2/10, postage 1/6.

H.B. sends all goods on approval per return post on receipt of cash; every magneto sent out carries H.B. 12 months' guarantee.

H.B. will take your old magneto in payment.

H.B. can offer you large discount for quantities of A.C. Titan plugs in boxes, 1/6 each. Send your enquiries to an old-established firm.—H.B. Ignition Co., 78, New Park Rd., Brixton Hill, London. [0694

SEVERAL Magnetos, cheap or exchange for gears or parts.—Box 6,687, c/o *The Motor Cycle.* [3255

SEVERAL Magnetos, perfect, all types; cheap; sale or exchange.—Norbury Terminus Garage. [3074

SPARKING Plugs, Sphinx, A.C., etc., perfect; 9d.; postage 3d., package.—15, Dallin Rd., Woolwich. [2385

K.L.G. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 69, Queen St., Wolverhampton. [5031

MAGNETOS by C.A.V.'s, Bosch, and Thomson-Bennett, 50% below cost; see last or next week's issue of this paper.—Vale Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3. [0700

P. and M. Magnetos, complete sprocket and chain, ready to go on, guaranteed; £2/7/6.—Below.

MAGNETOS, T.B., clock or anti, for any machine, £2/5.—Below.

500 SPARKING Plugs, new, guaranteed; 2/- each.—Motor Cycle Accessory Co., 868a, Old Kent Rd., S.E. [2349

THE MOTOR CYCLE

Insurance Policy

Testimony

THIS space will be occupied each week with copies of letters from Policy holders who have made claims. Original letters may be inspected.

Dear Sirs,

Your cheque in settlement of my claim to hand to-day, for which I thank you. I must express my appreciation of the prompt and business-like way in which my claim has been dealt with.

Yours faithfully.

The only Safe Test of Insurance is Claims. We settle Claims promptly.

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED

(Incorporating The Autocar Insurance Department, Established 1904).

Head Office:

77, Cheapside, London, E.C.2.

Telephone: City 9831 and 9832.
Telegrams: "Autoinsure, Cent, London.

IGNITION APPLIANCES.

RELIANCE Magneto Repairing Co. for repairs and new magnetos.—See below.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a written guarantee for 12 months.

RELIANCE test every magneto after repair under all running conditions, and, as we contract for many of the largest concerns, you need have no hesitation in placing your repairs and orders with us.

RELIANCE manufacture and stock spares for Thomson-Bennett, E.I.C., Splitdorf, U.H., Bosch, Dixie, etc.; special line genuine platinum screws for every make, 12/- per pair.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy that we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co., 283, St. John St., E.C.1, for new and second-hand magnetos.—See below.

THOMSON-BENNETT Magnetos, waterproof, variable ignition. These magnetos leave us in perfect condition, and carry our guarantee to either replace or refund cash if found unsatisfactory. Single-cyls., clock or anti, suit any machine, 55/-; 45, 48, 60, 55, 180 deg., for J.A.P., Clyno, Douglas, etc., 55/-.—See below.

C.A.V. Magnetos, brand new, single and twin-cyl., ideal for Douglas, Levis, Calthorpe, O.K., or any lightweight, single or 180° twin, 55/-.

E.I.C. Magnetos, absolutely brand new, not shop-soiled, ready to fit on Triumph, P. and M., B.S.A., Norton, Sunbeam, etc., £4; the above are genuine E.I.C. standard fitting magnetos.

BOSCH D.A.L. Magnetos, soiled only, otherwise as new, 1-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; powerful spark at low speed. All the above magnetos are waterproof, variable ignition, and guaranteed 12 months; postage 1/6.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [1071

CONTACT Points Renewed, guaranteed pure platinum, full thickness; 6/6, or 12/6 pair, return post.—Venimore, 31, Court Oak Rd., Birmingham. [X9914

JEBRON, registered 291298, greatly superior to platinum, for blades, screws, etc., cures misfiring; ebron screws fit Bosch mag., 10/6 pair; old screws, any make, Jebronised, 4/9 each, return post.

JEBRON Contacts, used by Messrs. Collier Bros., Colver, Martin, making world's records.—Jebron, 38, Herbert Rd., Woolwich, London, S.E.18. [0002

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [2284

MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [2939

MAGNETOS.—Thomson-Bennett, clock or anti clockwise, 42, 45, 50, 55, 180°, and single-cyl. 4-stroke, 50/-; 2-stroke, 45/-; variable ignition, new, waterproof, guaranteed; write for illustrated particulars.—Super Power Co., 81, Northside, Clapham, S.W.4. [3183

U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. AI, BI, AO, KBI, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [2764

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2381

RUNBAKEN Repair Services.—Dynamos, magnetos and starters. Huge stocks of spare parts and modern plant enable us to make a thorough and efficient repair to every make and type. Pack in a strong box, enclose instructions, and address to The Runbaken Magneto Co., Ltd., 115, Gt. Portland St., London, W. 'Phone: Mayfair 3586. North of England: Derby St., Cheetham, Manchester. 'Phone: City 8266. [025

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

Editorial Offices: Hertford St., Coventry.
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Telephone: 2970 and 2971 Midland.

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Subscription Rates: Home, 23s. 10d.: Canada, 23s. 10d.: other countries abroad, 28s. 2d. per annum.

The Paris Salon.

ANY British motor cyclist visiting the Paris Salon must first be impressed by its immensity, magnificence, and artistic arrangement. Second impressions concern the exhibits themselves, and the visitor is bewildered by the galaxy of glittering chassis and sparkling coachwork of the world's leading cars. When, however, he turns his serious attention to motor cycles he discovers that, if the Salon reflects French opinion, the manufacture of motor cycles is regarded as one of the subsidiary industries in the same category as pedal cycles, accessories, and tyres, and allocated a portion of the gallery where effective display is impossible. That is the main difference between the French motor cycle industry and our own; it has not yet been taken seriously, and while these conditions prevail the motor cycle movement in France will be severely handicapped.

Fortunately the British motor cycle industry is large enough to stand alone, and does not have to play a minor part in an exhibition of cars.

As regards the motor cycle exhibits in the Salon we were much impressed by the large number of British makes represented, and they lose nothing in being staged alongside those of our cross-Channel friends. This is not the case with the sidecars, for, in the quality of sidecar bodies, our French contemporaries easily surpass the productions of this country, and, incidentally, at prices considerably lower than the British article. It occurs to us that British sidecar manufacturers would learn much to their advantage were they to make a point of visiting the Salon or any other show where French sidecar bodies are exhibited.

At the present rate of exchange there does not seem much prospect of a large trade in British motor cycles in France, which will be appreciated when it is known that one British 4 h.p. twin-cylindered sidecar outfit costs in France almost as much as a French four-cylinder small car of a make well known in this country.

Head Lamp Dimming Etiquette.

NO question of road etiquette is in a more unsettled state than the vexed one of dimming head lamps when passing other road users.

Of course, the simple solution lies in a perfect anti-dazzle lamp, but if such a device has yet been evolved—and we doubt it—certainly it is not in use to any noticeable extent. From the average motor cyclist's point of view, therefore, the car driver who fails to dim his penetrating beam on the approach of a less powerfully-lighted vehicle is demonstrating his ignorance of the motor cyclist's difficulty in continuing to ride a solo machine into a blaze of light and the subsequent yawning chasm of blackness beyond.

Two cars or a car and a sidecar outfit may approach each other with no great danger, whatever their lights, for they are in stable equilibrium, and may slow down to a crawl without loss of steering way. The unhappy soloist, especially on a wet and cambered road, cannot ride at any speed into he knows not what, nor can he slow to a dead crawl for fear of wobbles in a space of unknown width; moreover, what to a car might be a mere brushing of wing tips, would inevitably result in a nasty spill to a solo machine. The question, of course, is complicated by the fact that the majority of motor cycle lamps, although quite powerful enough to offend, cannot be dimmed readily, although this, of course, does not apply to many of the electrical equipments now fitted to sidecars.

Regarding the whole subject without bias, the inevitable conclusion is that, until efficient anti-dazzle lamps are universal, each road user must base his "policy" strictly on consideration for others. In other words, it is no valid argument for anyone to complain that it is dangerous (to himself) to dim his lamps suddenly; he should reduce his speed. Nor should the driver of an electrically-equipped vehicle switch on again after finding that an approaching driver neglects the courtesy; the latter may be powerless in the matter.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS

By 'IXION'

Nearest Standard?

SOME bright lad is trying to start a discussion as to which is the best motor bicycle. It would be more to the point if the discussion centred round the firm which supplies stock machines most nearly equal in quality to the stunt 'buses handled by its own trade riders. I may be wrong, but I fancy that an almost unanimous vote could be obtained on that point, and, if so, the compliment is no small feather in the cap of the firm concerned.

Pilfering.

TIME was when I used to store various small accessories in special leather holsters disposed about the machine. This habit was forced upon me by designers who sent out machines with toolbags too small to carry more than a spare plug and the requisite ironmongery; so my spare carbide, inner tube, tyre repair outfit, and oil gun demanded special receptacles. Twice this summer all these special holders have been deftly emptied by lightfingered gentry, whilst my machine reposed outside—well, outside church. Now I keep them all in my pockets. 'Tis better so.

Cycle Car Detail Work.

I HAVE always urged that the real cycle car boom would not start until cycle cars adopted a more refined type of engine than most of them utilise. A 1,000 c.c. V twin is a lovely engine when it is throttled down on a high gear, which is its normal function on a motor bicycle; it is less lovely when it is stumbling over in free engine, or revving on a very low emergency gear—two occasions when the cycle car occupants are made to recognise that they have an engine. But I would add that the detail work on many cycle cars is skimped, for the simple reason that so much money has already been lavished on the chassis. A friend of mine brought home a new four-wheeler the other day. The bottom gear and the rear springing were out of action when he reached his house—which is separated by one county from the works. In the former case the trouble was due to saving 3d. on a proper yoke and pin joint; in the latter to saving 6d. on raw material. Some enthusiasts are trying to make cycle cars *too* cheap. There is nothing to be gained by trying to make a four-wheeler appreciably cheaper than the average price of a side-car of equal power.

More About Prop Stands.

THE latest prop stand to arrive is Mr. A. H. D. Alltree's which weighs 2lb. and looks sturdy enough to survive a Scottish Six Days. My enthusiasm for these gadgets has already bored one reader, who sends me a cutting from the *Passing Show*. "How to make a cheap bicycle stand—look for a nice wall." Well, I stick to my guns. If somebody will market a prop stand which does not weigh more than 2 lb., cost more than 10s., and take more than two hands and a foot to operate it, he will enjoy a little healthy trade.

Tent Pegs.

MY moan about the precarious shelter afforded by a tent in a gale has revealed the fact that there are many campers among our readers. They are sundered into two opposed camps. The one camp agrees with me that a 15in. peg is really desirable on certain types of soft ground. The other camp asserts that no gale will tug out 4in. skewers, provided you insert them in pairs, crossed like the letter X, with the guy attached to the peg which is more remote from the tent, and with both pegs leaning backwards at 30°. All I can say is that the short peg merchants should have been my guests in two of my 1921 camps, one on ground which had been ploughed and then parched by this record summer, the other on the dusty sand of a beach above highwater mark.

Broken Forks.

I THINK the times are ripe for some authoritative pronouncement by a steel expert on the safe life of a pair of forks. Many years ago, when motor cycles were fitted with light untrussed forks of push-bike (sorry, I mean pedal cycle) type, two of my best pals were killed by fractured forks. For years afterwards I fitted new forks every second year to any machines which I owned for keeps. Latterly, I

Occasional Comments.—

have had several friends rather seriously injured through the fracture of their forks, though reconditioned war machines appear to have been the culprits in most cases. Is there any simple method of ascertaining whether fatigue of the metal has commenced? If not, how long ought a modern fork of good design and material to last before the metal fatigues?

Pity Me.

I BELIEVE this cross-heading is a quotation from Browning, after he had tried to expound one of his own poems; anyhow, I like to be as literary as I can. I was setting out to say that a reader wants to know

(1.) Why an engine accelerates when you open the throttle. Surely it should absorb as big a charge with the inlet valve open for a long period on small throttle as with the valve opening quickly on full throttle. His friends say he ought to know, but they do not know themselves.

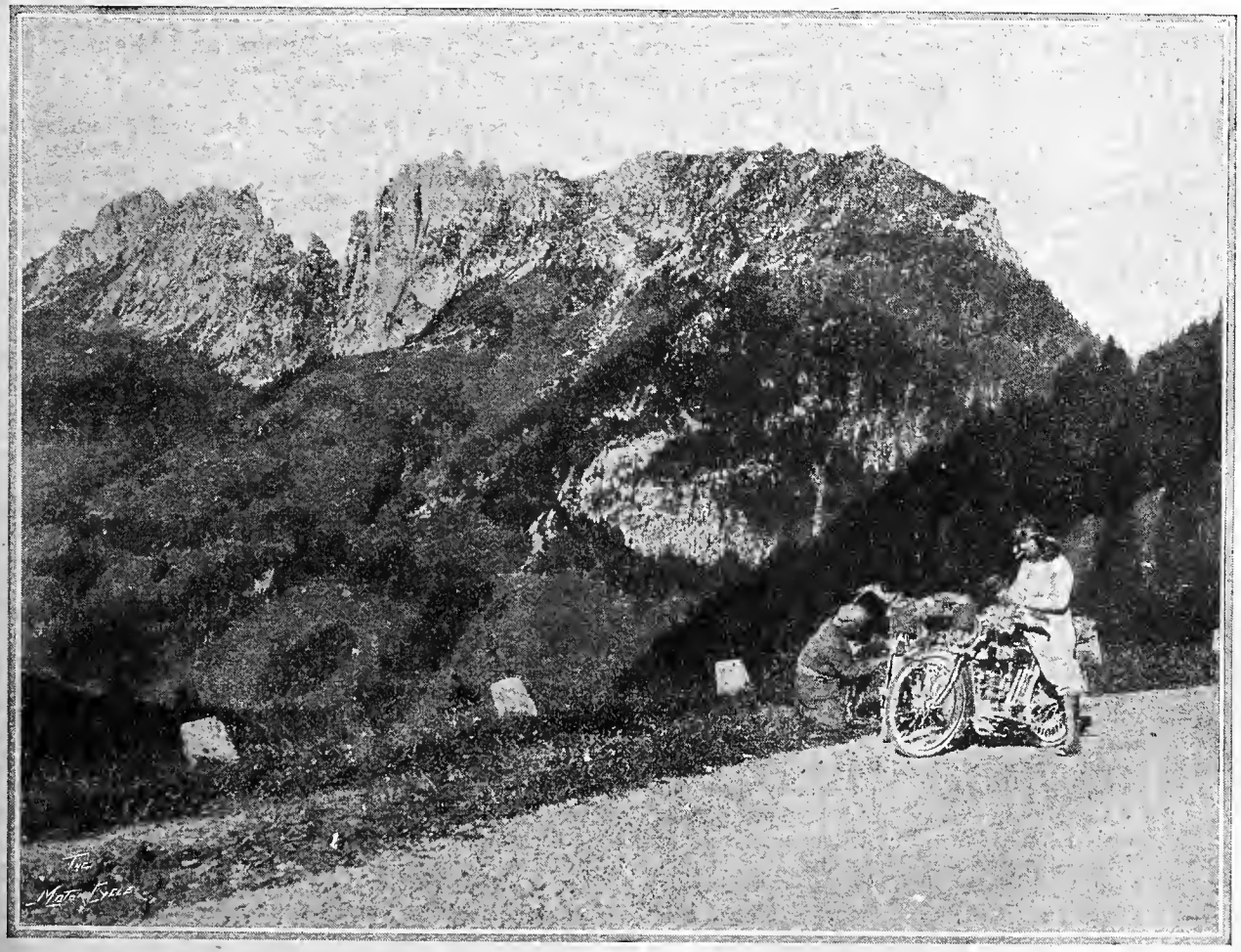
(2.) What single factor produces the initial acceleration when the throttle is first opened wider?

(3.) Why does weak mixture make an engine knock?

Do *you* know?

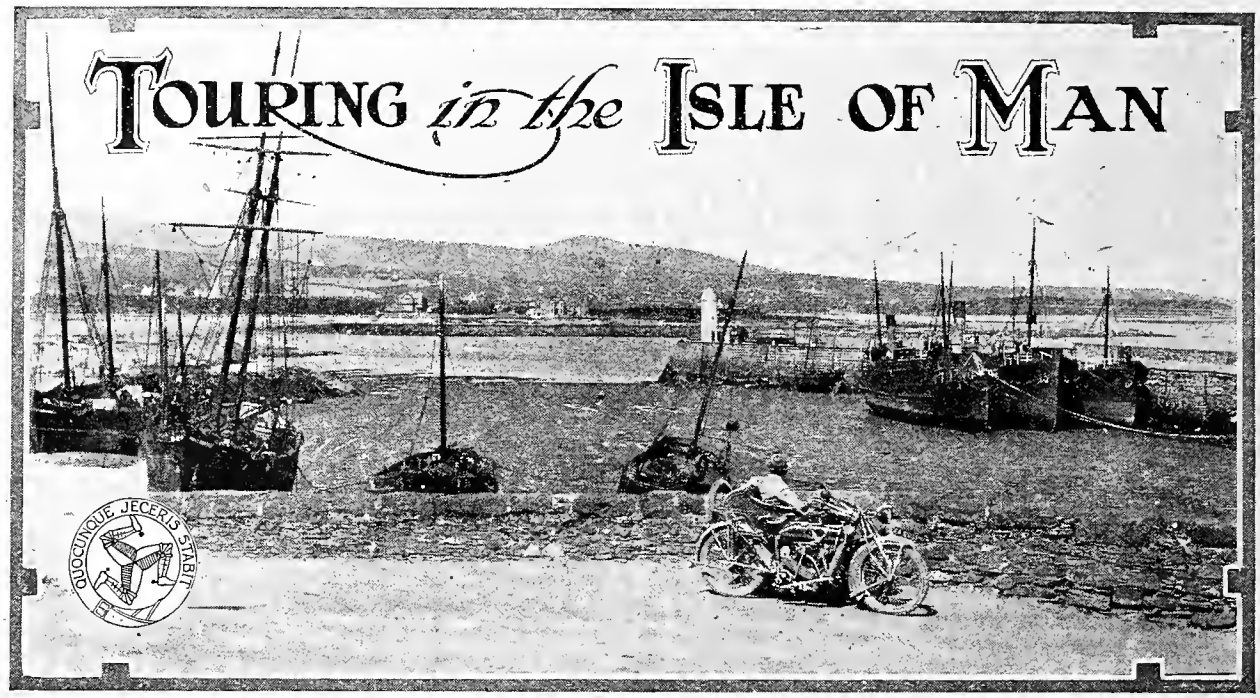
Six Days Fuel Records.

THE Bordesley Engineering Co. take strong exception to my remarks about the petrol records in the A.C.U. trials. Their Connaught two-stroke was credited with 132½ m.p.g., and they can produce many letters from clients who obtain 160 m.p.g. in daily work with standard Connaught machines. If the Bordesley Co. turn to what I said, they will find that I did not question the trial consumptions as a whole, or as accurate records in the vast majority of cases. What I said was that, in many cases, the riders obtained unusual economy for the make of machine they were riding by various stunts and wangles, of which coasting down hills and sheltering behind bulky sidecar outfits were quite frequent spectacles. Since the Connaught did not quite achieve its usual mileage per gallon, it is fairly obvious that it is immune from any charge of squeezing the best possible figure out of the rules. But I think harm would result if innocent readers were left to imagine that, under ordinary riding conditions, any amateur would register the excellent fuel economy obtained with all the machines in the trial. In some cases—of which the Connaught is evidently not to be numbered—he would find it quite difficult to get more than half the trial mileage.



Amid the foothills of the Alps. Two tourists on lightweights near the summit of the Col du Brüch, which was traversed by the competitors in this year's International Six Days Trials.

TOURING in the ISLE OF MAN



With the Sea on every Side, Varied Scenery and Associations of Quaint and Historical Interest, there is no Limit to the Charm of Mona's Limited Area.

TO the majority of motor cyclists the Isle of Man is just a convenient place in which to hold the Tourist Trophy races. Others know it, or rather Douglas, as a holiday place akin to Blackpool or Margate. A few have visited the island as tourists, and know that its 227 square miles contain much to interest the motor cyclist who explores them and is content to take it easy, for daily runs of a hundred miles are not the rule on Mona's Isle.

Far better is it to make Douglas or Ramsey, Port Erin or Peel, headquarters for the stay, and to explore the island in daily runs at leisure. And what is there to explore?

Let any motor cyclist take a "one-inch" ordnance survey map of the island, let him study it closely and note the suggestions of romance and old history to be found in the large number of tumuli, forts, cairns, stone circles, wells, burial grounds, etc., that are marked in the quaint old Runic type, indicating that the Isle of Man has its links with the ancient past.

Historic Associations.

If we look this up, we find that the Isle of Man was not founded by boarding-house keepers crowded out of North Wales resorts and Blackpool amusement caterers bent on finding a fresh outlet for their enterprise, as some might suppose. It has a highly interesting history going back long before Sir Hall Caine wrote his Manx novels. As before mentioned, the Druidical remains and Runic monuments are numerous. The Bishopric of Sodor and Man is supposed to have been founded by St. Patrick in 447. The island was known to the Romans as Mona, and was repeatedly raided by Norsemen.

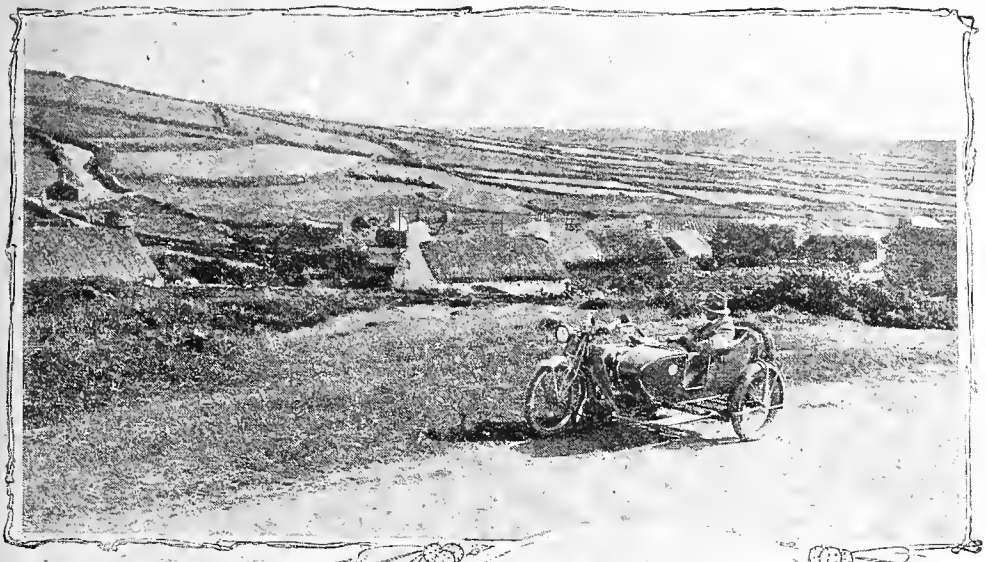
During the T.T. week, the present writer, with a colleague and a camera, not to mention a spring frame Matchless outfit, decided to steal a few hours off the T.T. course to see the island, and although time was limited, sufficient evidence was found to show that a week or a fortnight could profitably be spent, although the island is but thirty-three miles long and twelve miles broad.

The Nature of the Roads.

Every keen motor cyclist will, of course, tour round the Tourist Trophy course, and in doing so he will probably acclaim his admiration for those riders who covered it at such amazing average speeds. No amount of ink either in words or in reproduced photographs can adequately convey the difficulties of the large number of corners the racer has to negotiate, or of the climb up the mountain and the nature of the road which he traverses at such terrific speeds on the descent.

The one-inch ordnance map indicates the various classes of roads by different colours. There are "main routes," "other routes," "roads under 14ft. wide," and "minor roads." On the whole, the main routes are good—not nearly so wide as the main highways of this country—in fact, they may be likened to the British second-class roads—but generally having a good surface. The "other routes" are scarcely roads at all, while those in the third category compare favourably with farm tracks, and the "minor roads" are like nothing on earth.

In exploring the Isle of Man, the motor cyclist will be able to restrict his use of the second, third, and fourth-class roads to short *détours* off the main routes, when he must expect adventure, but may not always find it. A good machine with efficient brakes is essential if the main roads are left, as there are many precipitous descents bordering unprotected ravines.

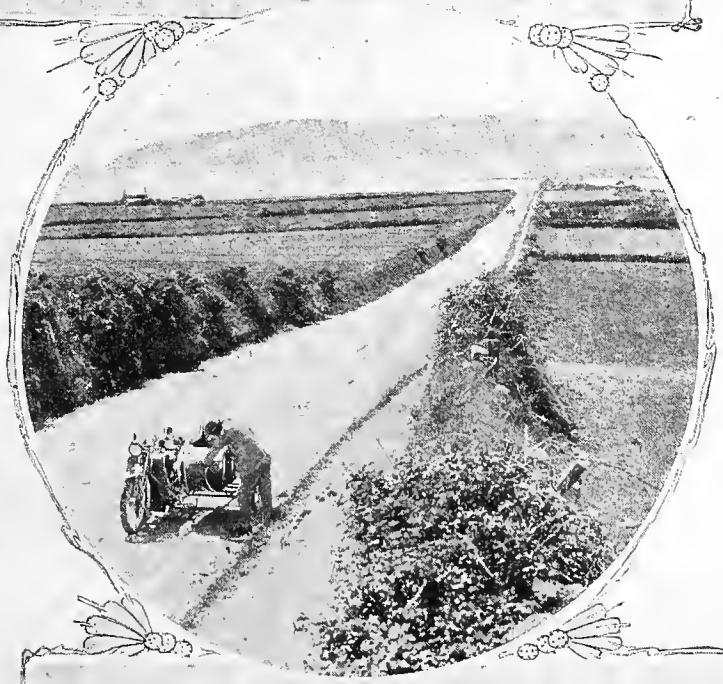


An old-world village in the south part of the island and near to the Calf of Man.

On one of the expeditions referred to, my companion was the chief of *The Motor Cycle* staff of photographers, and our trip was not quite a pleasure jaunt. Other photographers had been assigned duties on the mountain and far side of the island stretches of the T.T. course. The adventures of one of them have already appeared in these pages.

My companion's assignment included attendance at the start of the race, a dash round the outside of the course to Ballig Bridge, Laurel Bank, Ballacraine, and Kirk Braddan, thence back to Douglas for the finish. Now to get round to these places on the outside of the course meant negotiating some of the "other roads"; further, it called for open throttle and a confidence in the Matchless to stand a hectic ride over surfaces which would find the weak places. I may say that during the Senior race I was passenger during the business performance of which our first trip was but a route-finding run, and, despite the comfort provided by the Matchless spring frame and the excellent suspension of the sidecar body, my ribs were sore for days through hanging on to prevent divorcement from the outfit. However, on the rehearsal trip I was able to take in some of the characteristics of the scenery off the beaten track which we left at Foxdale—a mining village which would make an excellent background for a film play, although neither picturesque nor particularly interesting.

For a time our route lay over roads marked on the map as being "indifferent." It suffices to say they were, but eventually we were some 500ft. up among the ruins of a deserted



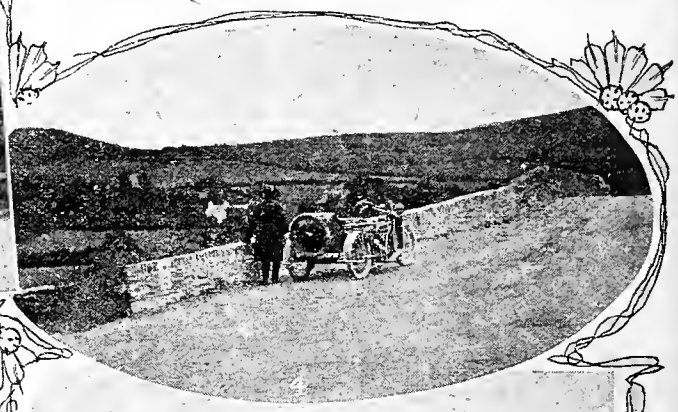
Soon after leaving Castletown Port St. Mary comes into view, nestling on the hills across the bay.

The Calf of Man from Cregneish: Spanish Head is on the left.

(1) The palace of the Bishop of Sodor and Man, between Kirkmichael and Ballaugh.

(4) Sulby Bridge, a dangerous corner on the T.T. course.

(5) Above Ramsey, a scene T.T. competitors seldom look back to view when on their long climb "up the mountain."

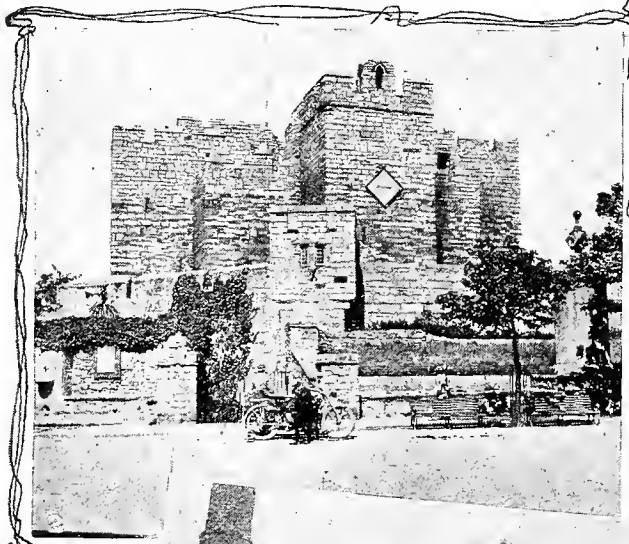


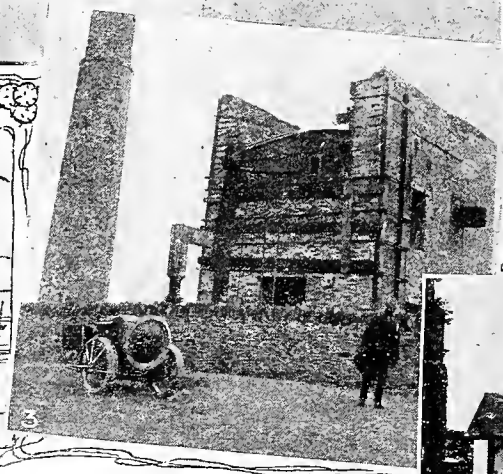
mine. A great beam engine towering above our heads intrigued our interest sufficiently to induce us to stop and explore. In the dusk or moonlight a more uncanny place could not be imagined. The crumbling building and decaying engine with its rusty rods leaning where they had fallen, the wind moaning in the gaunt roofless building all combined to produce an effect of utter desolation.

The old engine bore the date 1843, and, despite its enormous cylinder, we doubted whether it developed any more power than the best of the 500 c.c. machines which were to be raced the next day.

A study of the map revealed the presence of cairns, tumuli, and ancient forts in the vicinity. Not far away there was St. Patrick's Chair, all to be explored on a future occasion.

The scenery in this part of the Isle of Man is very like parts of Central Wales. The people, too, appear similar to the Welsh, and are certainly just as pious, as anyone motoring on Sunday will discover in the





(2) Rushen Castle, Castletown, originally a Danish fortress, afterwards the home of the kings of Man, and finally a prison.

(3) A deserted mill at Eairy, with a beam engine dated 1843

(6) The glistening whitewashed church at Rushen, near Port Erin.

Touring in the Isle of Man.—

groups about the innumerable chapels and churches and the look of silent reproach one receives.

Whitewash is favoured by most of the farmers, not only for the exterior of their houses and barns, but for the walls bordering their domains also.

Searching for Scenery.

The second expedition was purely in search of scenery, and our route lay chiefly over main roads to Castletown, Port St. Mary, and Port Erin.

We had both been to the island many times, yet our activities had been confined to regions in the neighbourhood of the T.T. course.

We decided, therefore, to find the Calf of Man, and the headland glorying in the romantic name of Spanish Head. Studying the map *en route* one wondered whether we were not in England, for such names as Hampton Court, Richmond Hill, and Southampton caught the eye.

At Ballacurrey we hesitated about taking a side road down Grenaugh Glen to the sea at Port Grenaugh, where there is a tumulus and a fort, but we carried on. At Ballasalla, a few miles further on, we hesitated again before taking the road to Castletown, but the route on the map was marked "other roads." We knew what that signified, and also that we had to traverse some of them, and also of the third and fourth-class, before we found the Calf of Man. There was "a site of battle A.D. 1250" down the "other road," but what on earth the contestants had to fight about we could not conjecture nor could we discover who fought whom.

Castletown was the seat of the Government from the sixth century until the middle of the nineteenth century, and Rushen Castle, in the centre of the sleepy town, and which was a Danish fortress in the tenth century, was long the residence of the Kings of Man. Near here there are ancient burial grounds, more tumuli and forts.

The run from Castletown to Port St. Mary is particularly picturesque, the latter port being in sight across the bay very soon after leaving the ancient capital. Here, as in Castletown, the town was apparently enjoying a siesta, so we pushed on towards our goal. On enquiring the way we were warned by a car driver that the route included a long steep hill, and he looked doubtfully upon our outfit. This gentleman had evidently little knowledge of the capabilities of the modern motor cycle, for we climbed that hill "on top," and we were still looking for it when we arrived at Cregneish—as sleepy as may be expected from its position on the map.

From Cregneish the road is of the fourth category, and for two miles to the end of the land on the shores of Calf Sound the reliable Matchless was most unfairly treated. Calf of Man was in sight for the whole time—a green island isolated by turbulent water.

Here we halted to sit upon the boulders overgrown with moss and besprinkled with diminutive pink flowers, to gaze upon this separate Isle of Man, which is private property, as we were advised by a notice on a deserted barn on the mainland. Others had been drawn there—a courting couple, and a party of elderly people who might have come from Manchester. Two fishermen hunting for bait completed the picture of sombre cliffs and angry waters—very like a fragment of Cornwall.

It was well worth the two miles of "minor roads" we had covered to reach it. There are dozens of such out-of-the-way beauty spots which can be reached if a motor cycle holiday is taken in the Isle of Man. The map suggests all kinds of weird places. The chasms at Bay Stacka, east of Spanish Head, Fleshwick Bay on the west coast just north of Port Erin, and the disused lead mines to the west of Foxdale. Glen Mayc, a mile or so south of Peel, is one of the most appealing of all Manx glens for the reason that it is natural.

Some Odd Corners.

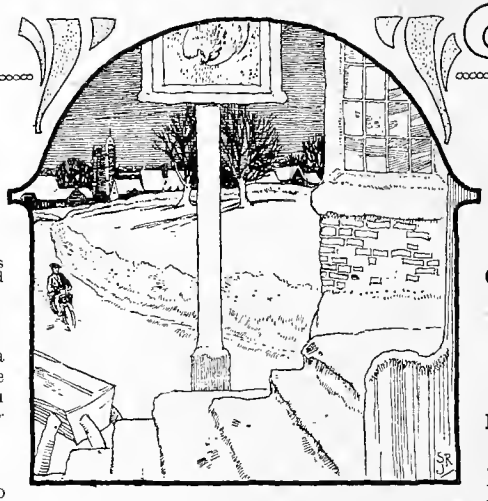
Then the north end of the island should be worth exploring, and the district between the main road and Maughold Head, north of Laxey.

If one is in search of adventure, it may be found by crossing from one side to the other of the T.T. course, traversing the rough country in the neighbourhood of Snaefell.

Undoubtedly there is fascinating country to explore in the Isle of Man, and even on the main roads there are many things to interest, and material in abundance for the photographer's camera. VEDETTE.

In the heart of England A James sidecar on the edge of the Green at Meriden. Turning on the Birmingham-Coventry Road.

CURRENT CHAT



Times to Light Lamps.

Oct. 13th	... ...	6.11 p.m.
,, 15th	... ...	6.7 ,,
,, 17th	... ...	6.3 ,,
,, 19th	... ...	5.59 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

The Paris Salon.

Elsewhere in this issue will be found a studied review of the varied range of the motor cycles at the Paris Salon, written and illustrated by members of *The Motor Cycle* staff.

Italian Champion Dead.

We regret to record the death of Carlo Maffeis, Italy's best known motor cyclist. Maffeis fell in the Italian Grand Prix last week and died from injuries received.

Taxes after October 1st.

Do our readers generally realise that only half tax is payable on new motor cycles or sidecars bought after October 1st?

French Motor Cyclists in the T.T.

According to the official journal of the Motor Cycle Club of France, some of its members will make a serious effort next year to carry off the T.T.

Official Anglo-Dutch Awards.

In the Anglo-Dutch Trial, fifteen British contestants gained gold medals, seven silver medals, and one a bronze medal. Of the Dutch team, twelve gained gold medals and eleven silver medals. The special cup winners announced in *The Motor Cycle* last week have been confirmed.

Institution of Automobile Engineers.

The second ordinary general meeting of the session of the I.A.E. will be held at the Chamber of Commerce, New Street, Birmingham, on Tuesday next, the 18th inst., at 7 p.m. A paper will be read by Mr. H. D. Teage on "The Development of the Single-cylinder Motor Cycle." Cards of invitation to admit visitors may be obtained on application to the Secretary of the Institution, 28, Victoria Street, London, S.W.1.

1922 Prices.

Prices of James machines for 1922 have now been fixed as follows: Standard two-stroke lightweight, £60; two-stroke lightweight fitted with separate gear box, £65; 3½ h.p. "sports" twin, £105; 4¼ h.p. single, £105; 7 h.p. twin, £125; *de luxe* sidecar, £35; and standard sidecar, £30.

It is promised that a considerable reduction will be made in the price of the Dunelt before Olympia; but for the present 1921 prices will stand, with a guarantee to refund the difference when the new figures come into effect.

British Motor Cycles in France.

There is a splendid array of British motor cycles at the Paris Salon, which lose nothing in being staged in the same building as those of the French industry.

Sunday Competitions in Wales.

Apropos our long-standing opposition to Sunday motor cycle competitions, it is interesting to note that the Cilcain Parish Council has asked the Flintshire County Council to take action to stop the holding of motor reliability trials on Sundays at Cilcain.

Official Nomenclature.

It seems extraordinary that in issuing statistics regarding motor taxation, the Ministry of Transport should refer to motor cycles as "cycles," as all the world knows that the ordinary cycle is not yet subject to taxation, and is still the favoured vehicle which uses the roads without contributing towards their upkeep.

Special Features.

MOTOR CYCLES AT THE PARIS SALON.
NEW BRITISH MOTOR CYCLES FOR 1922.
TOURING IN THE ISLE OF MAN.

Olympia becoming Too Small.

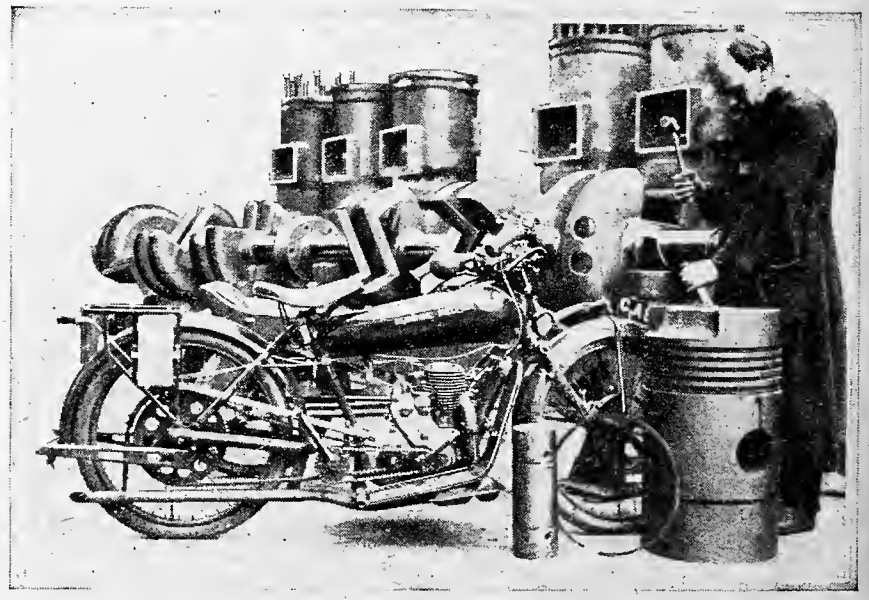
Owing to the increased number of exhibitors at Olympia this year, there will be a large number of interesting exhibits in the Annexe, which has hitherto been given over to offices and tyre stands.

North London Danger Spot.

A Finchley reader calls attention to the dangerous cross roads at Harrow, where the London-Harrow road bisects the Kingbury road. He considers that an A.A. scout would be much more profitably employed there than at Barnet, and has written to the A.A. to that effect.

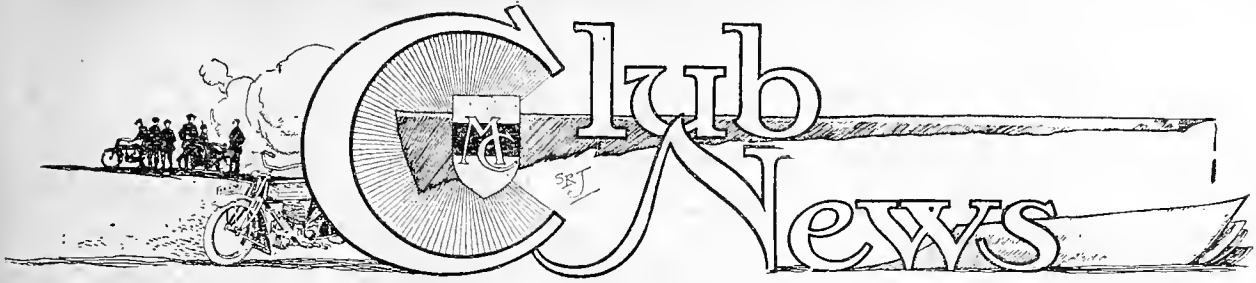
Motor Transport at Olympia.

To-morrow is the opening day of the Commercial Vehicle Exhibition, organised by the Society of Motor Manufacturers and Traders, at Olympia, and in connection therewith will be several congresses. That to be held on Monday morning, the 17th inst., at eleven o'clock, should be of interest to all road users, for the subject of the paper to be read by Mr. A. E. Brookes, O.B.E., M.Inst.T., engineer, surveyor, and architect to the Durham County Council, is "Highway Maintenance and Administration under Modern Traffic Conditions."



"TWO-STROKE PISTONS."

Recently we published an article on two-stroke piston design; the above example was (more or less) inadvertently omitted! It is the piston of a semi-Diesel oil engine, photographed by the side of a Beardmore-Precision in the Beardmore Oil Engine Works at Coatbridge. Observe the piston ring—of orthodox design if somewhat unusual size—and the mammoth gudgeon pin.



Eastern Centre A.C.U.

Starting and finishing at Ipswich next Saturday, a reliability premiership competition will be held. It will be open to members of any of the nine clubs in the centre.

Surbiton and District M.C.C.

Next Saturday the club will hold a one-day reliability trial, with the Sopwith hundred guinea challenge cup as the chief award. The start will be at the Talbot Hotel, Ripley, at 10 a.m.

Chester and District M.C. and L.C.C.

Until now Chester has not had a motor cycle club, but a promising future should await the newly-formed body, as above—the result of a recent meeting of local motorists at the King's Head Hotel, Grosvenor Road. Mr. John Gamon was elected captain and Mr. J. C. Walker vice-captain. Capt. Hill, 64, Cherry Road, Boughton Road, Chester, is the hon. secretary.

Lincolnshire A.C.

O. B. Hodgson, on a 3½ h.p. Sunbeam, made fastest time in the Thonock Park speed trials on the 1st inst., thus winning the Foster Challenge Vase. The course was one-third of a mile. Results:

350 c.c. SOLO.—Standing Start: 1, Mrs. Mary C. Jennison (2¼ Velocette), 26⅜s.; 2, F. Cotton (2¾ Douglas), 29⅝s.; 3, W. E. S. Herring (2¾ A.J.S.), 29⅝s. Flying Start: 1, Mrs. Mary C. Jennison (2¼ Velocette), 20⅜s.; 2, F. Cotton (2¾ Douglas), 22⅞s.; 3, Grace M. Durance (2¾ Douglas), 23⅞s.

550 c.c. SOLO.—Standing Start: 1, O. B. Hodgson (3½ Sunbeam), 24⅜s.; 2, Geoff. Staniland (3½ Norton), 25⅛s.; 3, J. T. Margrave (3½ Norton), 29⅝s. Flying Start: 1, O. B. Hodgson (3½ Sunbeam), 17⅝s.; 2, J. T. Margrave (3½ Norton), 19⅝s.; 3, Geoff. Staniland (3½ Norton), 20s.

UNLIMITED SOLO.—Standing Start: 1, A. E. Robson (8 Zenith), 24⅜s.; 2, O. B. Hodgson (3½ Sunbeam), 24⅝s.; 3, L. Peel (7·9 Harley-Davidson), 26⅝s. Flying Start: 1, O. B. Hodgson (3½ Sunbeam), 17⅝s.; 2, J. T. Margrave (3½ Norton), 18s.; 3, Geoff. Staniland (3½ Norton), 18⅝s.

Kidderminster M.C.C.

Such well-known test hills as Farlow Bank and Flagstaff Hill were included in the club's recent successful trial; and a stopping and restarting test, held on a 1 in 4 gradient, caused some excitement, and was a fine test of the various clutches. There were thirty-five entrants. Results:

"CASTLE" CHALLENGE CUP AND GOLD MEDAL, for best performance of the day.—F. W. Giles (7 A.J.S. sc.), won second year in succession.

SILVER CUPS.—For second best performance, H. Penn (2¾ New Imperial); for best 500 c.c. solo, F. J. Adam (3½ Norton); for best 350 c.c. solo, L. Hemingway (2¾ A.J.S.); for best single gear, L. Southwell (3½ Norton).

GOLD MEDALS.—For second best solo, A. Wilkes (3½ Rover); for second best sidecar, S. R. Roberts (7 A.J.S. sc.).

SILVER MEDALS.—J. G. Nixon (3½ Douglas), H. C. Rhodes (3½ Sunbeam), W. Allen (6 A.J.S.), H. Morris (2¾ Diamond), S. Griffiths (3½ Norton), W. Lewis (Castle-Three), and S. Minchell (3½ Triumph).

BRONZE MEDALS.—D. Henry (Castle-Three) and J. Higginson (6 A.J.S. sc.).

Week-end Club Events.

Oct. 16.—Rochester, Chatham and District M.C. and L.C.C. Run to Chislehurst.
Oct. 15.—Eastern Centre A.C.U. Reliability Premiership Trial.
Oct. 15.—Surbiton and District M.C.C. Trial for the Sopwith Cup.
Oct. 15.—Stockport and District M.C. Axe Edge Hill-climb.
Oct. 15.—Midland Cycling and Athletic Club. One Day Trial.
Oct. 16.—Coventry Triangle M.C. Run to Cathiron.
Oct. 16.—Barrow and District M.C. Hill-climb.
Oct. 16.—Manchester M.C. Closing Run.
Oct. 16.—Halifax and District M.C.C. Run to Aldborough.
Oct. 16.—Eastbourne and District M.C.C. Consolation Event.
Oct. 16.—Woolwich, Plumstead and District M.C. Hill-climb.

Evesham M.C.C.

The club held its second hill-climb on Hipton Hill on a recent Wednesday and Thursday evening. An excellent automatic timing arrangement had been fixed up by Mr. F. B. Bent, and, after a few preliminary mistakes, all went smoothly. Some fast times were done on this steep third of a mile, where the gradient at the crest is about 1 in 9. F. Morrall, on a stripped 4¼ h.p. B.S.A., made the climb in 23⅘s. (the fastest time of the day). The results in detail were:

350 c.c. SOLO.—1, A. Perkins (2¾ New Imperial), 40⅞s.; 2, J. Jones (2¼ Douglas), 43⅜s.; 3, F. Jinks (2¾ New Imperial), 51⅞s.

600 c.c. SOLO (Non-trade).—1, F. Byrd (3½ Norton), 27⅞s.; 2, P. F. Andrews (4¼ B.S.A.), 28⅞s.; 3, H. W. Smith (4¼ B.S.A.), 29⅜s.

600 c.c. SOLO (Members).—1, F. Morrall (4¼ B.S.A.), 23⅜s.; 2, V. Morrall (4¼ B.S.A.), 25⅛s.; 3, F. Byrd (3½ Norton), 26⅛s.

UNLIMITED SOLO.—1, F. Morrall (4¼ B.S.A.), 25⅛s.; 2, P. F. Andrews (4¼ B.S.A.), 25⅝s.; 3, C. Lewis (3½ Norton), 25⅛s.

60 c.c. SIDECARS.—1, F. Morrall (4¼ B.S.A. sc.), 31s.; 2, A. Sharp (4 Triumph sc.), 63⅛s.

UNLIMITED PASSENGER MACHINES.—1, F. Morrall (4¼ B.S.A.), 30s.; 2, R. Gibbon (8 Enfield sc.), 31⅛s.; 3, N. Bacon (6 Enfield sc.), 42⅛s.

Loughborough and District M.C.C.

As the result of the club's gymkhana on the 1st inst. in aid of the Loughborough Hospital, a cheque for £20 was handed to the institution.

North-west London M.C.C.

G. Baxter (6 Zenith sc.) was the winner on points of the very successful gymkhana on the 1st inst.; J. D. Sangway (5 Zenith) was second.

Bradford M.C. and L.C.C.

There were thirty-three starters and twenty-five finishers in the recent Merrick Cup Trial, which took the form of three 21½ mile circuits (each non-stop), awards being made, as under, on seconds error from schedule.

1, Merrick cup, J. C. Neilson (4 Harley), 49s. error; 2, silver medal, P. Shaw (3½ P. and M. sc.), 50s. error; 3, bronze medal, W. Moore (3¾ Scott), 56s. error.

Barrow and District M.C.

Fastest time of the day at the recent speed trials was made by G. Bethwaite (3½ Norton), who averaged 67.92 m.p.h. over the kilometre from a standing start. A lady competitor was first in the 350 c.c. class, despite a bad start. Results:

275 c.c. CLASS.—1, L. S. Parker (Velocette); 2, J. Atkinson (Velocette); 3, J. L. Hall (Velocette). Winner's speed, 52.94 m.p.h.

350 c.c. CLASS.—1, Mrs. Roberts (Monarch); 2, L. S. Parker (Velocette); 3, J. C. Deardon (Dot-Jap). Winner's speed, 55.38 m.p.h.

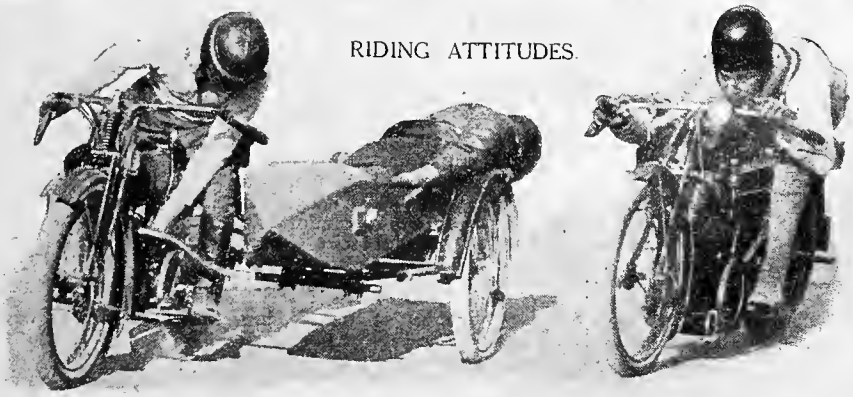
550 c.c. CLASS.—1, G. Bethwaite (Norton); 2, A. Hawkins (Triumph); 3, H. Jackson (Sunbeam). Winner's speed, 66.66 m.p.h.

750 c.c CLASS.—1, G. Bethwaite (Norton); 2, A. Hawkins (Triumph); 3, H. Jackson (Sunbeam). Winner's speed, 67.92 m.p.h.

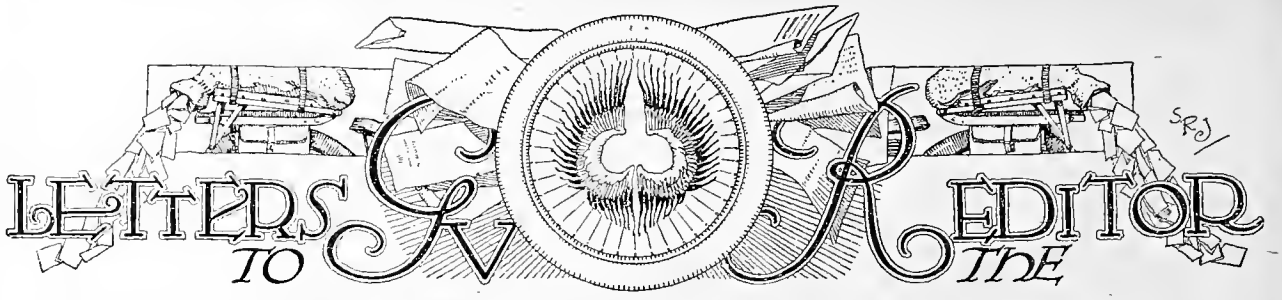
1,000 c.c. CLASS.—1, P. Barron (Indian); 2, G. Bethwaite (Norton); 3, H. Jackson (Sunbeam). Winner's speed, 66.66 m.p.h.

UNLIMITED SIDECAR MACHINES.—1, P. Barron (Indian); 2, H. Jackson (Sunbeam), 3, H. T. Wilson (Norton). Winner's speed, 59 m.p.h.

RIDING ATTITUDES.



Two snapshots taken at a recent Basingstoke M.C.C. hill-climb. On the left: A. J. Fleming (4 Harley-Davidson sidecar) changing gear while his passenger is doing his best to eliminate himself in order to reduce wind resistance. (Right) W. Julian (2¼ Levis) at 50 m.p.h.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

80 M.P.H. BRITISH BIG TWINS.

Sir,—I have read "Observant's" letters in your respective issues under the above heading with much interest. Who, may I ask, ever suggested that the Brough Superior engine was manufactured by Mr. Brough, as he seems to imply? Surely it is tolerably natural to call an improved 1913 engine (if this is the case) a 1921 model, is it not?

London, N.16. MORE OBSERVANT.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—I quite agree with Mr. A. Arnold that the 3½ h.p. Sunbeam comes on top. But when price has to be taken into consideration, the Sunbeam has to be put on one side. It is a splendid machine; but one has to pay an extremely high price for it. One of the world's best, and which heads the list for value for money, is the 3½ h.p. Rudge. I think everybody will agree with me on this point, and many may say that it is the world's best regardless of price.

I am lucky enough to own a Sunbeam, and, during the last five months, have covered 5,000 miles, and the reliability is nothing short of marvellous. Most of it has been hard riding. For instance, taking one of the many long runs, I rode from London to Wrenbury in Cheshire, a distance of 179 miles, in six hours, including two stops of about ten minutes each, and myself and machine were as fresh at the end as when starting. The same evening I attached my sidecar, and brought the day's run to well over 200 miles. This machine does not need balancing, but holds the road itself. H. M. MAIN CLARK.

Sir,—For an all-round solo machine, possessing such qualities as reliability, silence, silky running, excellence of finish, durability, etc., I plump each and every time for the 3½ h.p. Lea-Francis, which, in my opinion, is the aristocrat and Rolls-Royce of motor cycles. EM 940.

Bootle.

Sir,—Mr. Arnold has opened an interesting discussion in his letter on the world's best solo machine.

The Lanchester and Rolls-Royce built up their reputations on three main factors—reliability, comfort, and "finish." I agree that the nearest equivalent in the motor cycle world is the 3½ h.p. Sunbeam. Certainly, for "finish," the firm has no competitor, and I would also call it the most reliable; but for comfort there is room for improvement. C.J.

Ross.

Sir,—Undoubtedly, the chain-drive Triumph.

For monotonous reliability, economy from all points of view, go-anywhere capabilites, superb detail design, and finish, and value for money, this famous single is unexcelled.

With T.T. bars and a 28in. rear tyre, it is as comfortable, controllable, and fast as any sane rider could desire—and it positively revels in being neglected. Usual disclaimer.

Coventry. —UMPH.

Sir,—Mr. A. Arnold speaks reverently of the 3½ h.p. Sunbeam. I must state that I had always disliked the single-cylinder machine, though I had ridden such fine examples as the Triumph and the Rudge. One day I had the chance of trying a Sunbeam, and started off feeling that I might be converted. But I have to confess that the single-cylinder could not be disguised, and I have never come across any single that pleases me.

The V twin is even worse; witness the appalling splutter of any American V twins, except at fairly high speeds. The English examples certainly are less irritating; but then, think of their tortoise-like gait!

No doubt, I am exceedingly narrow-minded; but I feel that no motor cycle can claim to be a Rolls-Royce if it has anything less than car engine torque, smoothness of running, and complete absence of distinguishable explosions. Therefore, from the Rolls-Royce standpoint, the only motor cycles to be considered are the F.N., Henderson, Stanger, and Scott. The first two are complicated, the Stanger I have not yet tried, but am expecting great things from it. The Scott I know well, and place it far ahead of any other solo machine obtainable. I have never yet heard it seriously contended that there is a more comfortable machine. Its reliability is unquestioned—the last two Six Days Trials are proof. Durability? My own Scott is nine years old, and I recently ran from Bournemouth to Land's End without using low gear, except for starting and through towns. It will take a light sidecar and passenger at 45 m.p.h., though your correspondent is not thinking of speeds. Its purr is a delight to hear. Its safety on the worst surfaces is proverbial.

I am entirely a private rider; but for me it will be a Scott or a Stanger until a four-cylinder two-stroke is evolved.

NORMAN WILLIAMS.

MATCH-LESS ACETYLENE LIGHTING.

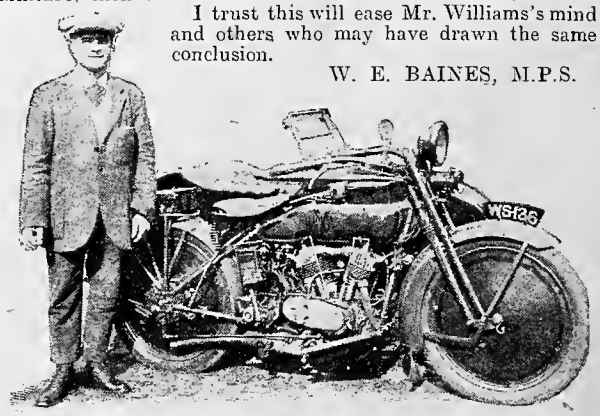
Sir,—I notice in your issue of September 22nd Mr. A. S. Lynne Williams presumes that my intention is to light up my acetylene lamps by means of a spark gap "without stopping," thus converting my lamps into explosive bombs.

May I apologise to him for the ambiguity of my English, if that is how he interprets it, as I may say that, being a chemist, I am fully acquainted with the characteristics of acetylene gas, and also having used a spark gap for lighting up whilst despatch riding in France (where I covered more than 50,000 miles) I am quite *au fait* with the *modus operandi*.

I shall arrange a switch for each lamp, and the procedure will be to dismount, with the engine running in neutral, open each lamp in turn, blow into it to disturb the explosive mixture, then switch on and off the relative switch.

I trust this will ease Mr. Williams's mind and others who may have drawn the same conclusion.

W. E. BAINES, M.P.S.



At least nine motor cyclists out of every ten will deplore the slackness of any fellow rider who neglects his mount. To find a winner for the best kept machine at any rally is often a difficult task. Walter Scott, shown above with his Harley-Davidson, was the winner in this respect at the recent rally at Hendon.

COST OF SPARES AND COMPONENTS.

Sir,—It may interest many of your readers to know that one of the best known 7 h.p. American twins would cost, approximately, £500 if assembled piece by piece from spare parts as listed in the current catalogue for the British market. Perhaps the firm whose conscience is pricked by the above fact would care to explain how this comes about. R.B.

London, E.C.4.

Sir,—Knowing the value of your space, I did not intend to communicate again with you on the above subject. I feel, however, that the letter of Mr. Ernest Gelder calls for a few comments.

He agrees right away that spares are more costly when bought separately.

I think he discusses too lightly the cost of assembling a complete machine.

He states that the quantity of replacement parts put in hand from time to time must of necessity be *smaller*, and adds that there is the risk of a *large* number never being wanted. He cannot argue both ways.

Further, he says that competition will always keep prices to a reasonable level. Let me point out that, while there is plenty of competition as regards *complete* machines, there is very little indeed as regards parts. Obviously, the owner of a particular brand has to go to the maker of that machine for his spares. Although a purchaser is aware beforehand what he has to pay for the motor cycle of his choice, he never knows what he will have to pay for spares.

My remarks as to the disparity in the prices for similar parts as charged by various makers is passed over.

I cannot see how, what he describes as an actual bugbear, can be *cheerfully* carried out.

There should be no "moral obligation" to supply spares. It should be a recognised duty. The firm that will stock spares at reasonable prices, and advertises the fact, will eventually get the business. The buyer will be saved at least two big disappointments—delay and unreasonable charges. POURQUOI.

London, E.C.14.

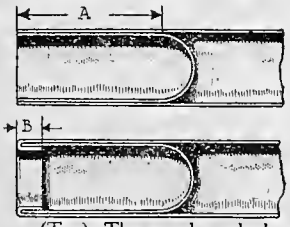
Sir,—The somewhat bitter complaint of your correspondent "A.X." will lose some point if he is informed that the repair to the bottom back stay of his cycle can be carried out by any really competent engineer at a cost of about 30s. "A.X.'s" machine is obviously a Triumph, and the list price of the lug he has fractured is 21s. 6d. In this case (a very common one) it is ridiculous to fit a complete new stay, when only one new lug is required to be brazed on. 30s., not 68s., please. GRAY AND LEVIN.

R. L. GANDY.

IMPROVING BUTT-ENDED TUBES.

Sir,—I find it very difficult to purchase butt-ended tubes at the average garage, and one is usually told that they are never asked for now, on account of the trouble they give (which, in my humble opinion, can be avoided).

The average tube is finished off as shown in A, and the "stuck" part is as arrowed. When the tube is blown up this part is stronger than the rest, which expands first, and tends to tear itself away, which, in course of time, it does. On getting a new tube, I always convert it as shown in B, where the "stuck" part is simply as indicated, which eliminates the tearing action.



(Top) The usual method of making butt-ended tubes. (Below) How "Butt-ended" alters his. (See accompanying letter.)

Two pieces of tin sweated together with solder will easily tear apart, but cannot be separated by an end pull. Again, when testing tubes in water for a puncture, if finished as A, no pressure can be applied, as trouble would appear at the recessed end; but, if finished as B, the end simply blows out, and will stand more pressure than the rest of the tube.

I find a solution made from Dunlop's filling for tyres dissolved in petrol is an excellent adhesive, if the tube has previously been well roughed with sandpaper.

Stoke-on-Trent. BUTT-ENDED.

COLLECTING FRICTIONAL ELECTRICITY!

Sir,—With reference to Mr. L. W. E. Hartley's letter in *The Motor Cycle* of September 22nd, permit me to offer an explanation of "Spark Intensifiers."

In connection with the explanation offered him by a retailer of the device, he may safely take it that such a theory is purely fallacious. Without analysing the theory of electro-statics, it will be evident that if such a theory was correct, a continuous discharge would take place across the gaps during the whole period that the engine was running, irrespective of the position of the magneto contact breaker.

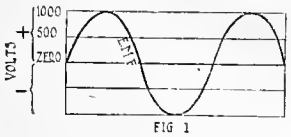


FIG 1

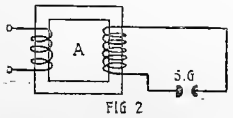


FIG 2

Dealing next with our correspondent's difficulty in connection with spark gaps in series, I can assure him that there is an advantage in such a system. The use of such a device is to increase the potential difference between the spark plug points. This is best illustrated by reference to figs. 1 and 2. Fig. 1 is a "sine curve," illustrating the nature of the e.m.f. set up in the circuit depicted in fig. 2. Now, if the source of supply A (fig. 2) is capable of producing sufficient high-tension e.m.f., the intensity of the spark at the gap S G is governed solely by the length of that gap. We will suppose that the length of gap is 0.1in., and that the e.m.f. at the instant of discharge is 500 volts: Then, if the gap be increased to 0.2in. the discharge e.m.f. will rise to 1,000 volts, as illustrated by the peak of the curve in fig. 1. Therefore, by fitting an extra gap in series with the spark plug, in addition to obtaining a greater e.m.f. at the points, a sharper and quicker spark is obtained, because the discharge does not occur until the e.m.f. has risen to the maximum value that it is possible for the magneto to produce, instead of starting half-way up the curve, and thereby prolonging the discharge over a considerable fraction of time.

It is assumed, of course, that these intensifiers are capable of adjustment, in order to suit the particular magneto with which they are being used. RADIO.

Grangemouth.

COMFORT IN A SPORTING SIDECAR.

Sir,—Why do not manufacturers fit a footrest, or stretcher, more particularly to the lighter sidecars, where the passenger's heels are on the floor?

Such an addition, when the body was under construction, would be quite simple to fit, and would cost but a few shillings, while the extra weight would be negligible; but the increased comfort to the passenger who is thereby enabled to steady himself in his seat instead of being tossed about like a loose parcel may easily be appreciated.

Having contrived such a fitment to my own little 'bus, I commend the idea to other sidecar users, and suggest that manufacturers might themselves test the difference in comfort which it makes. LH 1005.

London.

SANS CARBURETTER.

Sir,—Can anyone account for the following mysterious behaviour on the part of my 1920 4 h.p. Triumph?

After having decarbonised and reassembled, I pumped some paraffin into the crank case for the purpose of washing it out, and on turning the engine over by means of the kick start, to my great astonishment, it started to fire and kept on doing so until I lifted the exhaust. Note the engine being stone cold. Thinking it might be due to some petrol left in the carburetter, which, by the way, had previously been dismantled, I drained it bone dry, inserted some more paraffin in the crank case, and kick started. It again fired on the second kick. The spark was fully advanced, the petrol and air completely shut off, so at present I am at a loss as to why this should happen. I can vouch for this, as my friend, who also has a Triumph, was assisting me at the time.

(a) How far do you think I could travel on a crank case full of paraffin?

(b) Do you advise me selling my carburetter, as it appears I have no further use for it? PUZZLED.

Alexandria, Egypt.

EASIER EASY PAYMENT SYSTEMS.

Sir,—I have always made a speciality of meeting peoples' pockets so far as manufacturers' minimum terms allow me to do so, my minimum with a new machine being one-fifth of the total amount, plus interest, as deposit, and the balance payable in twelve, eighteen, or twenty-four monthly instalments.

Only the best of machines are allowed out on the two-year basis, as obviously some of the cheaper models would not allow of sufficient security in the event of payments not being kept up.

H. J. YOUNGS.

Kilburn.

Sir,—With reference to the several letters which appear in your issue for September 29th with regard to the above, we think your correspondents may take it that the present generally accepted terms for easy payment business have been adopted by the trade as being the only terms likely in its estimation to be satisfactory. It has to be remembered that motor cycles differ from most other articles supplied on the extended payment system, in so far as they involve, in addition to the monthly payments, a fairly substantial sum for running expenses and general upkeep, so that it is not sufficient for the intending buyer to feel that he could afford, say, £3 to £4 per month out of his regular income to meet the monthly instalments, but he must also see his way clear to something like a similar amount for his running costs. It is a fair assumption that if such a person has only been able to put by £10 or so without these additional expenses he has been living fairly well up to his income, and would find providing for the instalments and upkeep of a motor cycle somewhat irksome, unless he very materially altered his style of living. This would be bad enough for twelve months, but if continued for, say, eighteen months, the irksomeness is more than proportionately increased.

We think the above are factors which dealers and financial houses who undertake this class of business have in mind; and it must be also remembered that a large number of would-be buyers are probably so keen to become the owners of a motor cycle that they would be inclined to gloss over or under-rate the difficulties of providing for the monthly payments.

However, as your correspondence columns would seem to convey that there is a considerable public wishing to purchase on extended payments if the facilities were increased, and, as one correspondent points out, this might be a means of increasing the trade generally, this company, which can claim to be one of the pioneers of supplying motors on this system, is quite prepared to try the experiment, and will accept orders extending the payments over a period not exceeding eighteen months, one-fifth of the total cash price to be paid by the customer before the machine is delivered. But, as it has never been the policy of this company to induce the public to undertake obligations which they might ultimately regret, we would suggest that persons wishing to avail themselves of this offer should carefully consider whether they can afford not only the monthly payments but the necessary upkeep in addition.

We would also recommend those buyers who would like to purchase the latest 1922 models to commence putting by for the deposit forthwith, and bank a certain amount each month, or put it to their credit with some firm of standing, so that they may have the necessary sum available when they wish to make their purchase. We are prepared to assist in this way by accepting monthly payments on deposit, and paying a fair rate of interest on them pending delivery of a machine, on the understanding that the sum to a customer's credit can be withdrawn if so desired at any time; there being no obligation to purchase.

THE SERVICE COMPANY (LONDON), LTD.

Sir,—Respecting correspondence in your last issue on the question of easier easy payment systems, we might state that we have in certain cases extended our deferred payment system beyond the usual twelve months period, but have never increased this beyond eighteen months. Dealing particularly with the letter from "Anxious," we would like to mention that, from our own experience, we have found considerable difficulty in obtaining payment after a period of about one year, and whether this be due to the fact that owners have lost interest in the machine, or whether it can be attributed to some other cause we have not the means of ascertaining; but certain it is that there would be increased difficulty should the payments become unduly extended.

After all, a motor cycle can hardly be compared with furniture, as in the latter case the furniture is purchased and installed, and does not depreciate in its value quite so quickly as a motor cycle, whilst after the furniture is purchased there is no maintenance charge as with a motor cycle; and we have not infrequently found that there is a tendency to purchase machines that clients cannot afford to maintain, and, consequently, here again there is the further difficulty of collecting payments.

In the case, however, of sound references we certainly, so far as the makers' agreements allow, are quite prepared to extend payments to eighteen months should it be of assistance to any prospective purchaser of a motor cycle or sidecar outfit.

GEO. PETTYT,

Maudes' Motor Mart, London, Exeter, and Walsall.

EIGHTY HAIRPINS IN SEVEN MILES. The Stelvio Pass in Austria—one of the most famous climbs in the world, and surmounted by single geared British motor cycles before the war. The advent of the countershaft gear has introduced a new school of riders, and single gear exponents are disappearing. One is constrained to wonder whether present-day riders would care to climb this pass on a single-geared mount.

SUNDAY COMPETITIONS.

Sir,—As a constant reader, and one who has the greatest respect for your paper, I venture to disagree with your policy and with the opinions of your correspondents about Sunday competitions.

I think your correspondents must either be "men of leisure," who can indulge in competitions any of the other six days of the week, or be rather pharisaical in their observance of Sunday. All modern leaders of religious thought agree that the most beneficent way for a man who sits in a stuffy office all the week to spend the Sabbath is to take healthy outdoor recreation; for, moreover, "the Sabbath was made for man, *not* man for the Sabbath."

No outcry is made against playing golf or going for joy-rides on Sunday. Why, then, is such consternation caused at a harmless little reliability trial? However, the feelings of those holding contrary opinions should be considered. I agree that hill-climbs, with more or less open exhausts, should be repressed on Sundays, as I can quite understand them causing great offence. GROUSER.

Epsom.

NEXT YEAR'S SIX DAYS TRIALS.

Sir,—I venture to put the following idea regarding the English Six Days Trials for 1922 before your readers, and trust it may have some criticism.

That the trials should start from London and finish at Brooklands, making the outward objective Edinburgh, traversing an outward and return route which might be suggested by the A.C.U.

When the routes are chosen, let each A.C.U. Centre whose area becomes involved be responsible for the marking of the route, the checking of the competitors, and all arrangements for garage, hotels, replenishment, etc. A.C.U. officials to follow up the competitors, collect all reports, and arrive at their findings nightly. The A.C.U. to evolve some method of indicating to the public the position of merit of each competitor as he goes along from day to day. This could be done by the competitor carrying some symbol of his position of merit. This would add greatly to the interest the public take generally in the competition. As it is to-day, it simply looks upon every rider merely as a competitor, but has not the slightest idea as to who are prospective gold medallists and who are not. Some such general scheme would undoubtedly relieve the A.C.U. headquarters of a terrific amount of arduous work; would, of course, be a considerable saving financially to the Union; and would, in my judgment, create an interest and rivalry between the centres concerned, which I think could only tend to foster the good fellowship of the sport and pastime we have all so much at heart. It would likewise save the Union from much criticism which is often most unjustly levelled against it.

T. RUTHERFORD.

SIDECAR CONNECTIONS.

Sir,—The object of the article under the above heading, which was published in the issue of the 15th ult., appears to have escaped the perception of Mr. J. Willey entirely.

Unfortunately, motor cycle design has been evolved largely by those who have had comparatively little appreciation of the difficulties which would be encountered in the actual road performances of their products. Motor cycle design has probably more of that element of compromise which is said to be embodied in all mechanical construction than has any other branch of engineering.

It was with the spirit of compromise prominently before me that I penned the opinions to which your correspondent objects. I arrived at these opinions, moreover, after a prolonged experience and observation of sidecar construction and sidecar usage on the road. During the past two years I have suffered frame breakages on two of my sidecar machines as a direct consequence of what I consider to be a grave defect in almost all sidecar attachments. In both cases the breakages occurred with machines in which sidecar lugs were incorporated on the lines suggested by Mr. Willey.

That one connection (*i.e.*, the back fork connection) should be flexible, or should have vertical movement in the plane of, or parallel with, the sidecar axle, is a contention from which no second-hand references to "masses of contorted tubing," etc., will dissuade me.

Mr. Willey instances the Scott as "a really scientifically rigid chassis." Admittedly the Scott design is excellent; but it is not nearly so rigid as Mr. Willey imagines. The front triangulation is not in the plane of the blows delivered to the cycle frame from the sidecar wheel, and as it involves three yoke joints, minute movements must take place in any case. (If the front triangulation *was* rigid, vertical alignment of the cycle would not depend upon the adjustable diagonal tube stay.)

The back fork-end yoke joint has its tongue parallel with the ground instead of in a vertical plane; consequently, the above-mentioned slight relative movements of chassis and cycle frame (all accentuated by steering head play, wheel bearing play, tyre roll, etc.—compromise again!) result in continuous wrenching of this connection, which would be obviated if it was turned through an angle of 90°.

I know of at least three firms which have discarded sidecar lugs on the rear fork ends of their cycles in order to obviate continual fracture. Flexibility, or slight play in a vertical plane, is a *sine qua non* at this point, and would eliminate all too frequent back fork troubles.

Perhaps Mr. Willey is unaware of the fact that all our constructions flex to some extent, for "rigidity" is a very relative term. Certainly, when a sidecar has long front connections and short stiff rear fork attachments there is a considerable variation between the relative movements of the back and front portions of the frame and chassis respectively. The flexing of the front arms, which horrifies Mr. Willey with thoughts of crystallisation, will do no harm, except in conjunction with the comparative inflexibility of the rear attachment, where breakages generally occur.

A sound system of construction is embodied in the Enfield chassis—its main member is rigidly attached to the cycle frame in the nature of a parallel outrigger. If Mr. Willey rides behind an Enfield outfit over a rough road he will receive an eye-opener in the flexing of the transverse chassis members. The Rudge is on similar lines and equally satisfactory.

"If a motor cycle frame will not stand up to . . . a rigid chassis . . . let the remedy be applied to the frame," says Mr. Willey. Surely, my article was written to help those who design, make, or select sidecar chassis to attain that which would do the least harm to existing motor cycle frames which are designed primarily to withstand stresses in the vertical plane. I am convinced that a proper appreciation of non-rigid construction will permit even existing lightweight machines to be used with sidecars without detriment to their frames. To redesign machines to stand up to an attachment is a Gilbertian proposition.

WHARFEDALE.

SUMMARY OF CORRESPONDENCE.

"J.P." and "A.M" (Kilmarnock) wish to thank the party of motorists and the two motor cyclists who kindly rendered assistance in the accident on the Largs and Fairlie road on Saturday evening, October 1st.

A lady rider of a 2½ h.p. Enfield (writing from Trimdon) wishes to thank the Rudge-Multi rider who assisted her to get home with a broken valve on the 20th ult.

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A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle," desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

THREE AND A HALF TO ONE GEAR.

? What number of teeth should I require on my engine sprocket to get a gear of $3\frac{1}{2}$ to 1? The rear wheel sprocket has forty-five teeth, the sprocket on the gear box has seventeen teeth, while the clutch sprocket has thirty-five teeth. —J.S.

Twenty-six teeth on the engine sprocket will give you a gear slightly lower than what you require; twenty-seven teeth will give a slightly higher gear.

RESPONSIBILITY OF ROAD REPAIRING AUTHORITIES.

? Is it possible to claim damages from a borough council or corporation for an accident caused through the bad state of the roads in that borough; and also the best method to take action in the matter?—H.W.P.

A borough council or corporation is not responsible for accidents occurring through the bad state of the roads caused by ordinary wear and tear, but if an accident is caused through the negligent way in which a road is being or has been repaired, then such authority is liable. For instance, if through the negligent way a road was repaired there was some excavation left improperly filled in and this caused an accident, then there could be a successful claim for damages.

GEAR RATIOS.

? I have recently had a two-speed Albion gear box converted to a clutch model. Owing to the original sprocket having twenty-five teeth and the new one thirty-two, it has lowered my top gear to $6\frac{1}{4}$ to 1. (1.) How many teeth are required on the flywheel sprocket to raise the top gear to $4\frac{3}{4}$ to 1? There are fifteen teeth on the flywheel sprocket and thirty-two on the gear box sprocket, while the outside diameters of pulley and belt rim are $6\frac{1}{2}$in. and $18\frac{1}{2}$in. respectively. (2.) Will it do harm to the engine ($2\frac{3}{4}$ h.p. Blackburne) to run it on the present gear till I can obtain new sprocket?—H.E.W.

(1.) Nineteen teeth. It is perfectly easy to calculate the figures required yourself. First multiply the number of teeth or the diameters of all the driving elements and then multiply the similar dimensions of the driven elements; divide the latter product by the former to obtain the ratio. (2.) It will not do the engine any harm to run it on a $6\frac{1}{4}$ to 1 gear.

FOR LIGHTWEIGHT SIDECAR WORK.

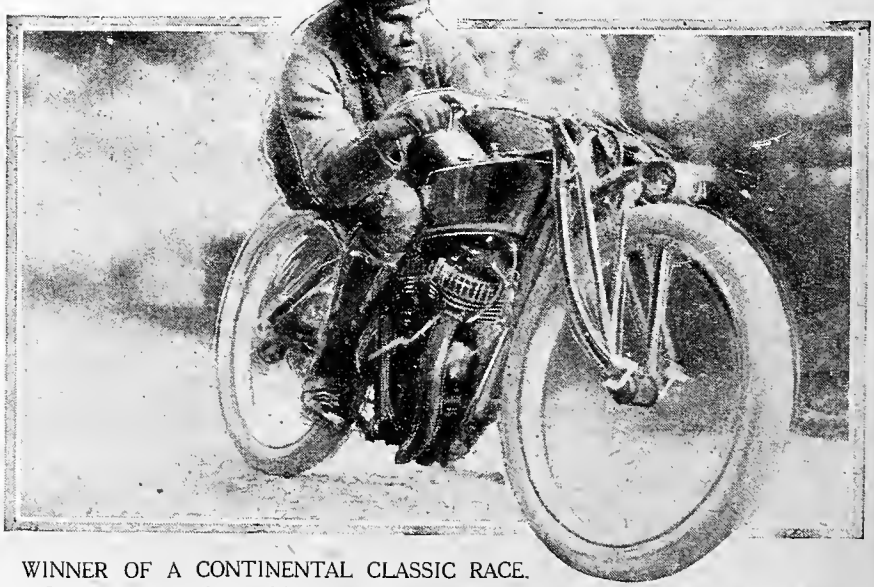
? Will you kindly inform me which would be the most suitable lightweight for fitting a sidecar — single - cylinder four-stroke, twin-cylinder four-stroke, or two-stroke? The weight to carry would be about 17 st., and upon fairly level roads. Also, please state the earliest model suitable, as I intend to purchase a second-hand machine for the purpose. Will you also kindly advise if the petroil system would be satisfactory if adapted to a four-stroke flat twin in lieu of the usual method?—A.S.

As a general practice, we do not advise the fitting of sidecars to light machines, unless the manufacturers specially recommend them for such use. For the most part, the frame and front fork construction of the average lightweight motor cycle is not designed to resist the enormous stress imposed by a sidecar attachment. If, however, you persist in the idea, we should recommend that you obtain a machine fitted with a single-cylinder $2\frac{3}{4}$ h.p. engine, preferably with outside flywheel if a four-stroke is selected. The petroil system cannot be applied to a four-stroke machine except to supplement the normal supply to the crank case.

USE OF BENZOLE.

? (1.) What size of jet should be fitted in an Amac carburetter on a $3\frac{1}{2}$ h.p. single-cylinder machine used for solo riding with benzole, and is any special adjustment of the carburetter necessary? Should the level be raised? (2.) Is a mixture of benzole and petrol recommended, or benzole only? (3.) What are the special merits or demerits of this spirit other than effecting economy? Is maximum speed or power affected?—J.R.B.

(1.) The level should be slightly lowered if benzole is to be used exclusively, and the jet may be slightly reduced in size. (2.) There is not the slightest objection to using benzole alone. (3.) Benzole gives a slight increase in power, chiefly noticeable at low speeds. Usually, however, the maximum speed remains the same. The engine very seldom knocks, owing to the slower rate of combustion, and it is possible to run with the ignition well advanced under all circumstances.



WINNER OF A CONTINENTAL CLASSIC RACE.

On a Daytona Beach record-breaking Indian, Kellner won the historic Semmering hill-climb for 1921. He is shown at speed on one of the many curves on the course. A pre-war $3\frac{1}{2}$ h.p. Triumph, driven by the Archduke Rainer Hapsburg, was first in the 500 c.c. class after a keen tussle with several post-war German machines.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"P.J.M." (Blacklion).—Norton Big 4 combination: Speed, consumption, reliability, and remarks in general.

"R.R." (Abingdon).—Flexekas valve guides: Effect on consumption, attention required, and improvement noticed.

"H.P.E." (Doncaster).—Binks, Cox, Degory, or other carburetter on 1921 Scott; also most suitable plug.

"T.S." (Dublin).—Reynolds runabout: General reliability.

"J.H.H." (Ramsey, Hunts).—Sports Sunbeam: Durability, reliability, ease of handling, gears, and speed.

"H.C.S." (Mitcham).—Cox-Atmos carburetter on Scott sidecar.

"V.G.H." (Plymouth).—Beardmore-Precision: Reliability spring frame, climbing, lubrication, and enclosed gears.

"B.A.T." (Wisbech).—6-7 h.p. B.S.A.: Petrol and oil consumption, ease of starting, reliability, speed, and climbing.

"T.L." (Morpeth).—Will this reader kindly repeat his full address to the Editor, so that replies to him may be forwarded?

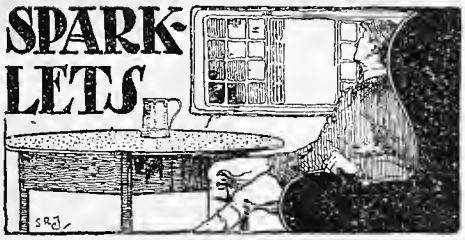
"J.S.H." (Prestwich).—3½ h.p. o.h.v. Douglas: Speed, gear ratios, reliability, consumption, quality of material and life of engine parts, and steering at high and low speeds.

"P.R.D." (Oxford).—3½ h.p. Norton with direct belt drive, with or without Philipson pulley: Ease of control in traffic, climbing, general touring, and life of belt with Philipson.

READER'S REPLY.

LOW PETROL CONSUMPTION.

In your issue of the 15th ult. a querist ("H.R.H.") asks you to disclose the name of a machine capable of doing 130 m.p.g., and in your reply you quote the Connaught, Levis, and Velocette, all of which I know from experience to be most reputable machines. It may interest your readers to know that I have got well over 120 m.p.g. from a two-stroke engine not belonging to either of the three you name. The machine in question is a Calthorpe 2¾ h.p. two-stroke, and anybody who has been over the road on which I got this mileage last September must have painful recollections of its atrocious surface. I started from Bundoran, Co. Donegal, and rode to Omagh, Co. Tyrone (forty-four miles), from Omagh to Newtownstewart, and back to Omagh (sixteen miles). This was a journey of sixty statute miles. When leaving Bundoran my tank was full, and lubricating oil was mixed through the petrol at the rate of half a pint to the full tank—a gallon and a pint I think it holds. As I had to go to Dungannon that evening, I considered that a replenishment of petrol would be required to complete the journey, so I called at a garage in Omagh and ordered half a gallon of petrol. The tank took the half gallon, less about a pint. This, in my opinion, was a very creditable performance. Needless to mention, I have no interest in the Calthorpe firm other than that of a satisfied user of one of their serviceable little machines.—P. F. ENGLISH.



Only Experimental.

The windscreen made by A. J. Homer and Son, illustrated in our issue of September 22nd, and shown on an Ariel sidecar outfit, is not being offered commercially as it was made for test purposes only.

Club Secretary's Success.

In addition to being secretary of the winning club at the recent North-West London M.C.C. rally at Hendon, Mr. S. C. T. Nunn was the driver of the 2¾ h.p. Connaught sidecar to win the special prize for the most ingenious fitment.

Litton Slack Echoes.

When F. W. James climbed Litton Slack fifty times in succession, Clincher tyres were used; and, as a photograph just to hand proves, only the tread of the rear tyre showed signs of wear. The Velocette sidecar on which G. Denley succeeded in climbing the same hill was a standard 2¼ h.p. model.

Six Days Trials Models Obtainable.

The O.K. Junior passenger machine which created so much attention in the A.C.U. Six Days Trial, fitted with all-chain drive and three-speed gear box, is actually in production, and delivery can be made within a few weeks at the 1922 price of 92 gns. Another new model which was tried out in the "Six Days," and is now being offered to the public, is the four-speed P. and M.

In the Cause of Charity.

In two afternoons the decorated sidecar outfit, representing a yacht, which was illustrated in *The Motor Cycle* of September 22nd, carried over 600 passengers. The machine, made and driven by Mr. H. Scott, of Cambridge, was a 5-6 h.p. Rover fitted with Watsonian sidecar; it appeared none the worse for its helpful service in aid of the London Hospital.

Important Dates.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Sat., Nov. 5th—Mid and Centre A.C.U. Open Reliability Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec. 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

Consumption Tests in Sweden.

At a trial for consumption held recently in Sweden, the winning machine in the 750 c.c. class was a 4¼ h.p. B.S.A., driven by Ivar Savosnick. It covered twenty-five and a half miles on one litre of petrol, which is equivalent to 115¾ m.p.g.

Gear Box Service.

Owing to the widespread popularity of the Sturmey-Archer gear boxes, the makers have appointed a chain of service agents throughout the country. Any delays due to ordering spares from the works will thus be obviated.

Successful Novices.

Only five sidecars gained gold medals in the Scottish Two Days Trial; and thus special credit attaches to the performance of the two successful Rover drivers, G. Stokes (on a 1919 model) and W. G. Donaldson, who were riding in their first and second trials respectively.

A Correction.

In our report of the Luton Hoo speed trials (page 392, September 29th), G. Read's Enfield machine, which made fastest time of the day, was stated to be an 8 h.p. Vickers engined model; we are now advised that it is engined with a 6 h.p. J.A.P. unit.

Built-up Number Plates.

An exceptionally good line for agents is the Ever-Ready aluminium number plate, which consists of a frame into which separate characters are inserted as required. These plates may be stocked, and with a sufficient quantity of letters and figures any required plate may be made up as required. They are made by the Adams (hitherto the Birmingham) Non-Ferrous Metal Co., of Forward Works, Legge Street, Birmingham.

Successful Closed Trial at Cambridge.

There were twenty-six entries for the recent reliability trial held by Messrs. H. Robinson, Ltd., the well-known motor agents of Cambridge, for their employees. All finished, and the awards were made on times at the secret checks. R. Griswood (4½ Humber) was the first motor cyclist, and third in the general category. A most enjoyable dinner was held after the event.

"Milestones" in Next Year's T.T.

Readers who visited the 1921 T.T. races will remember the useful John Bull "milestones," which were of considerable value to the competitors during the race. The Leicester Rubber Co. inform us that they intend to do the same next year, and will mark out the course in a similar manner with either mile or kilometre-stones, wherever the race may be held, whether in British territory or on the Continent. We understand that the A.C.U. has sanctioned this scheme.

Found on the Road.

A pair of leather gloves were found in Mitcham on the last Saturday in September by Mr. H. W. Inderwick. The loser should forward a description to him at Woodlands, Crofton, Orpington, Kent.

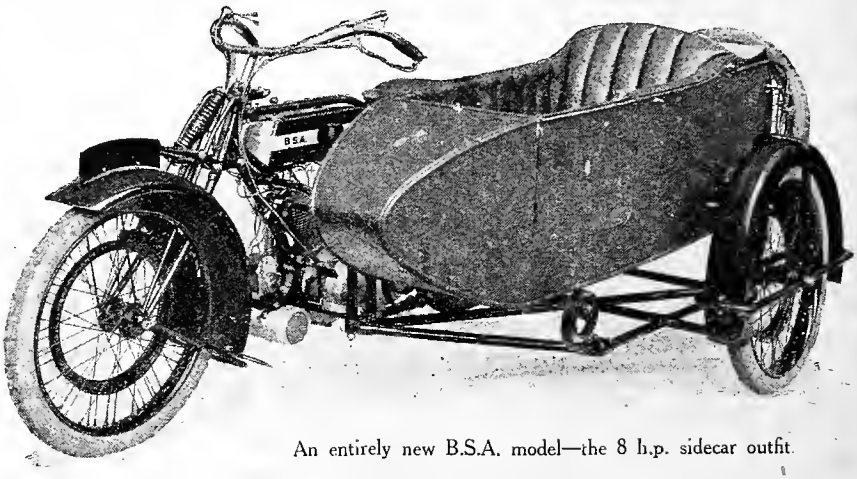
A Zenith rider also left his gloves in a Singer car in Devonshire, and the owner of the car, Mr. T. S. McIntyre, 225, Uttoxeter New Road, Derby, is anxious to have his address in order to return them

THE B.S.A. RANGE FOR 1922.

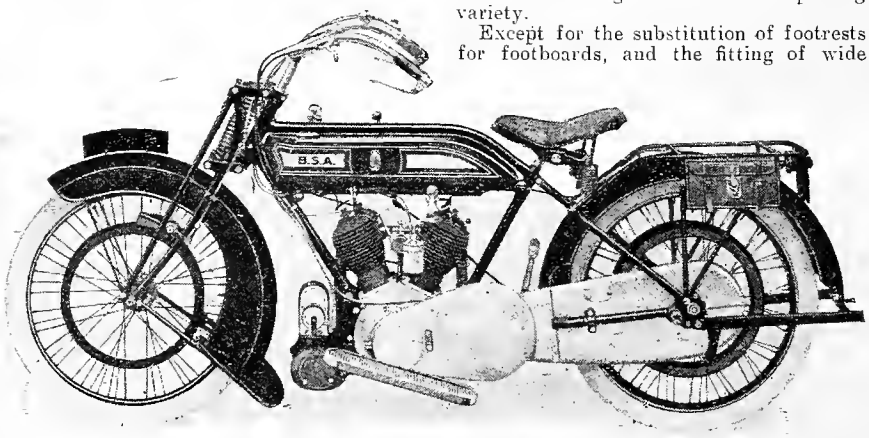
Three New Models: A "Light Six," an 8 h.p. Twin, and a Sporting Single.

IN addition to its already well-known types, the B.S.A. Co. has decided to list three new machines, which differ in detail only from present standards.

An 8 h.p. long-stroke engine (80×98 mm.=985 c.c.) will replace the standard touring 6 h.p. in a machine of almost identical specification. The B.S.A. interchangeable wheels, cast aluminium chain cases, and ample mudguarding, are, of course, retained; but, in addition, a Brooks B500 saddle will be standardised, and a long shoe brake operating in a dummy belt rim will be added. Thus, with the standard expanding rear wheel brake and the front belt rim brake, three methods of retarding the machine will be provided. A further modification consists of screwed nipples in forks and hubs to take the end of a screw-down grease gun. 28×3in. tyres are used. The engine is a larger edition of the 6 h.p. model, and embodies the oscillating mechanical oil pump introduced by the firm; in fact, with the exception of a slight modification in the timing gear, and an increase in cylinder dimensions, the engines are practically identical. A luxurious sidecar, with a strongly constructed chassis and very large luggage accommodation, is attached.



An entirely new B.S.A. model—the 8 h.p. sidecar outfit.



Broadside view of the "light six"—an excellent double purpose mount.

The Light 6 h.p. Twin.

The 6 h.p. engine has proved such a success that it is not to be dropped; but it will be fitted to a lighter frame—a modification of the 4¼ h.p. frame—and will be known in future as the "light six." Fitted with the same sidecar body as the 8 h.p., but with a simplified chassis, or with a sporting sidecar, the machine retains most of its original features, except that the wheels, though readily detachable, are not interchangeable; 26×3in. tyres are employed. No expanding rear brake is fitted in this case.

The "light six," which made its *début* in the Six Days Trials in the hands of M. C. Breese, is a compact and handy machine, which should be a fast and comfortable solo mount for those who prefer high power.

A third novelty is the Sports model "four-and-a-quarter," which may be obtained either solo or attached to an attractive-looking sidecar of the sporting variety.

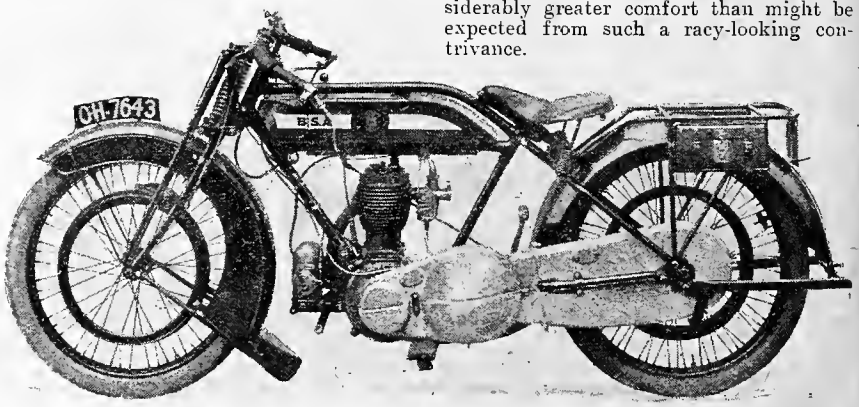
Except for the substitution of footrests for footboards, and the fitting of wide handle-bars, the machine outwardly resembles the standard single; but the piston and connecting rod have been lightened, and lighter flywheels with polished rims are employed.

Normally, only one pair of footrests is fitted, but provision is made for a second pair, which also forms an additional sidecar connection. A long, oblong section silencer with dual exit pipes is fitted below the chain stay in place of the usual expansion chamber in front of the engine.

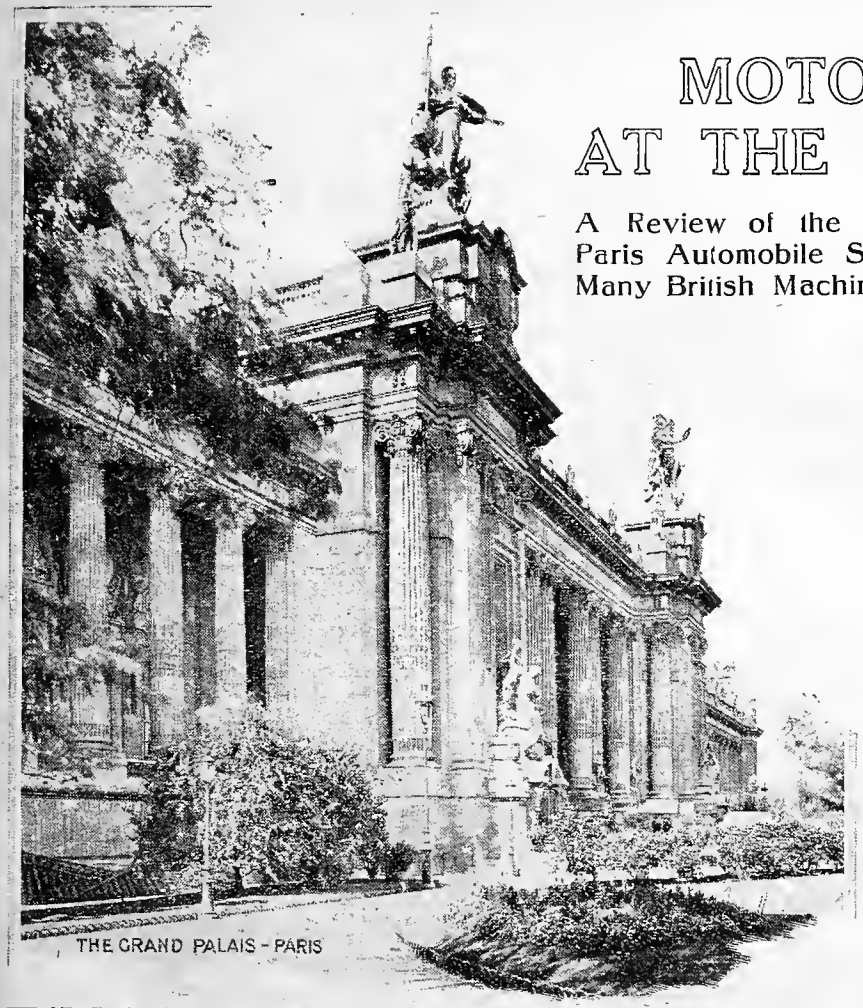
The 4¼ h.p. all-chain and chain-cum-belt models remain as before, so that the manufacturers now cater for all types of motor cyclist, except the lightweight rider. As usual, the finish of the new machines is in keeping with the reputation of the firm.

A neat expansion chamber fitted to the chain stay of the sporting model 4¼ h.p. B.S.A.

Of the sidecars, that fitted to the 8 h.p. machine is very roomy and well upholstered, and, in addition to a large locker, there is a luggage platform behind the seat. The springing is most luxurious, and a sturdy chassis is used. At the opposite end of the line comes the simple chassis and streamline shell of the sporting model, which nevertheless offers considerably greater comfort than might be expected from such a racy-looking contrivance.



Despite its adequate mudguarding and complete chain cases, the new sporting B.S.A has a very speedy and rakish appearance.


THE GRAND PALAIS - PARIS

MOTOR CYCLES AT THE PARIS SALON.

A Review of the Motor Cycle Exhibits at the Paris Automobile Show. Tendencies in Design. Many British Machines. An International Aspect.

THE Paris Automobile Show at the Grand Palais, Champs Elysées, was opened on Tuesday of last week. Without doubt, it is the most magnificent display of the productions of the motor cycle, cycle, and car industries of France (together with representative exhibits of Great Britain, the United States of America, Belgium, and Italy), that has ever been shown at any of the Paris exhibitions, which have been held for sixteen years.

At this time, when we are reviewing the French built motor cycles, we can opportunely refer briefly to the French motor cycle industry. When a glorious British win is recorded on the Continent we are apt to pat ourselves on the back, and think how wonderfully superior British motor cycles are to those made in other countries. Our products are certainly excellent now, but they were not always so. Years ago, when practically every English motor cycle had a French or Belgian engine, France led the way.

The Past.

In those days the names of De Dion and Werner meant perfection among motor cycle engines. Races without number were won by the brothers Collier, then daring youths, who drove their 2¾ h.p. De Dion engined Matchlesses to victory on Canning Town track. That was a wonderful little engine, most reliable, and though, compared with a modern motor, it seemed a mass of metal, it was a marvel for cool running and efficiency. Curiously enough the De Dion-engined motor bicycle was a rarity in France, though this is, perhaps, not to be wondered at, as the makers' motor tricycle catalogue of those days stated that they were prepared to accept orders for motor bicycles but did not recommend them.

At that time French motor bicycles and their riders were unassailable in their own country. Undoubtedly we owe much to our French friends for their brilliant pioneer work in the days of long ago.

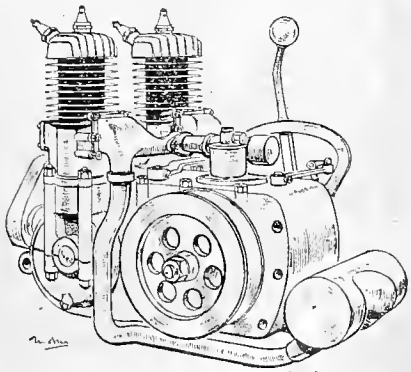
The Present.

At the present moment the French motor cycle industry, like every other, is in a bad way, owing to trade depression, but the French motor cycle movement is on the increase. The reasons for this are interesting. First, the wonderful success of the motor cycle in England has caused the Frenchman to think there must be something in it; secondly, during the late war, he has seen with his own eyes what our machines can do; and, lastly, the end of the war has thrown a number of British and American ex-army motor cycles on the market at a very moderate figure. This was naturally somewhat of a blow to the French motor cycle trade, but was good for the movement as a whole.

The Future.

It is a little difficult for the foreign observer to foretell the future in a country other than his own, but it is the opinion of those who know France well that there is a distinctly good prospect for the cheap motor bicycle; but it must be cheap, as the young Frenchman is not so well off as the average English youth. It may be light, but it must be robust, because the French roads, especially in and near the great towns, are more bumpy than our own. Owing to the low cost of upkeep there must be a greater demand for the motor cycle at the present time when few can afford a car, but much depends on the roads, and, unless they are put into a good state of repair, and are well maintained, the future of the motor cycle in France cannot be too rosy.

The beautiful, long, straight French roads are much improved since last year, but more work on them is needed, while the great main thoroughfares need building of Tarmac or other hard wearing material. Provided the exchange is stabilised between the two countries, and the rate is brought down more nearly to the normal, there is hope for British machines to be sold in France. Their quality is much appreciated and fully recognised, as some thousands are in use at the present day. Many French machines are now built on British lines, but while the fact that this must be so is realised, it is evident that a good deal of work yet remains to be done to bring them even to a state of equality with our own productions.


Pulley side of the two-cylinder two-stroke engine-gear unit of the new model Bleriot.

TENDENCIES IN FRENCH DESIGN.

Unconventionali y in Engine Design and Frame Construction. Side by-side Twin Engines Favoured. Many Motor-assisted Bicycles.

ALTHOUGH the French motor cycle industry is as old as, if not older than, that of this country, in order to be fair to our friends across the Channel one has to remember that the motor cycle movement in France was practically moribund in 1914. When the re-establishment of peace time industries took place in 1919, the French motor cycle industry was to all intents and purposes reborn.

Viewed as the productions of a new industry, the French motor cycles at the Paris Show reveal an enthusiasm and enterprise which, from the British standpoint, is surprising, to say the least. The English visitor must be astonished at some of the remarkable designs which are so different from what the British rider expects. But it does not necessarily follow that the British idea is right, at least so far as France is concerned. If the French ideal is a machine totally opposite to the British, then several manufacturers have achieved their aim. If, on the other hand, the potential French rider prefers a machine on British or American lines, then the makers referred to are in the same position as their *confrères* of two decades ago. They are pioneers—a much to be praised body of enthusiasts who, unfortunately perhaps, seldom reap any benefit from their labours and ingenuity.

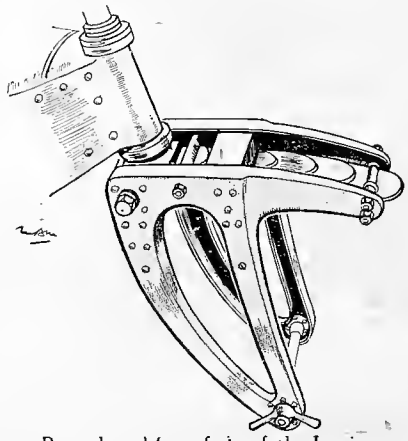
Three Main Classes.

The French motor cycles exhibited at the Grand Palais may be divided into three main classes :

(1.) The unconventional.
(2.) The conventional.
(3.) The motorised bicycle.

Conventionality is generally a matter of viewpoint. What is conventional in England may be unconventional in France; but in this case the use of the terms is quite permissible, for the reason that the unconventional designs are different from any yet produced by any country. Therefore they are as unconventional to French buyers as they would be to the British. The very English expression "like nothing on earth" was never better exemplified than in several machines at the Salon, but this is not meant in any sarcastic spirit; indeed, to apply the phrase to any design is, at any rate, a tribute to its originality.

We may, therefore, summarise the first group of French motor cycles as being extremely original, although they will depend for their future success upon two main factors—first, their originality,



Pressed steel front forks of the Janoir

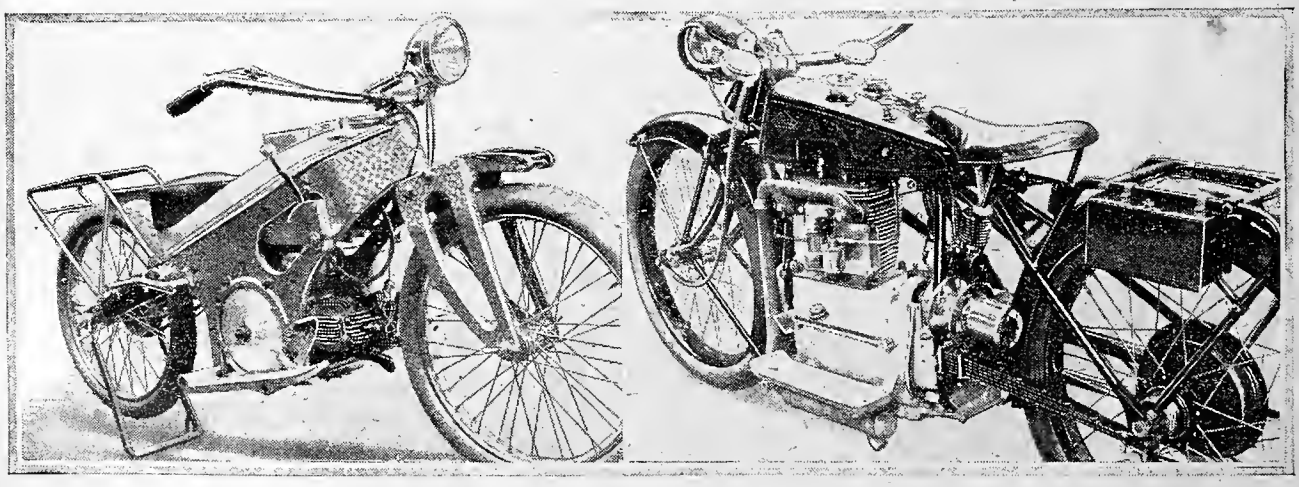
which must be proved justifiable by demonstration of some great advantage, whether in cost, economy, or increased comfort; and, secondly, upon whether their unique appearance will be accepted by the buying public.

Now, nine-tenths of British makers appreciate that unconventionality creates a line of resistance difficult to overcome, therefore they avoid it, and one is sometimes inclined to agree with their policy. On the other hand, if there were no brave spirits willing to face all criticism by launching out on new lines, there would be no advancement. In England, at all events, it has been proved times without number that the soundest policy is to progress by evolution. If 1921 fashions in ladies' attire had been introduced in 1896, the wearers in all probability would have been stoned; whereas, by a process of gradual evolution, what was impossible in 1896 becomes an accepted fact in 1921.

From the Buyer's Viewpoint.

Such designs as the Janoir and one or two others impress one in this light. They are opposed to accepted ideas of to-day, and on that account may be difficult to market commercially.

Thus the main tendency in one section of the French trade may be said to be revolutionary design based on a genuine belief that the public will appreciate the aims of the designers. But often the engineer's sense of proportion goes astray, and we should say that much of the ingenuity of such machines as the Janoir, Lutèce, Louis Clement, Blériot, and Peugeot front wheel drive will be lost on a public which is not composed of engineers. Excellent as are the pressed steel frames of the Louis Clement and Janoir, the buyer may be inclined to ask if they possess any great advantage over their contemporaries having tubular frames. To be justified, an innovation must have some great advantage, and, while the engineer may agree that certain machines are excellent specimens of engineering talent, the buying public may demand to know whether such construction signifies any advantage to them. Is it cheaper? Does it render a machine more accessible, or lighter, or easier to control? It is not sufficient to claim that pressed steel is better than tubes. Buyers require to know why, and answers based on theories carry little conviction nowadays.



Two unconventional designs. (Left) The pressed steel Janoir, with 8 h.p. flat twin engine. (Right) The Lutece, which has a side-by-side twin engine (built integral with gear box), shaft drive, and car type springing

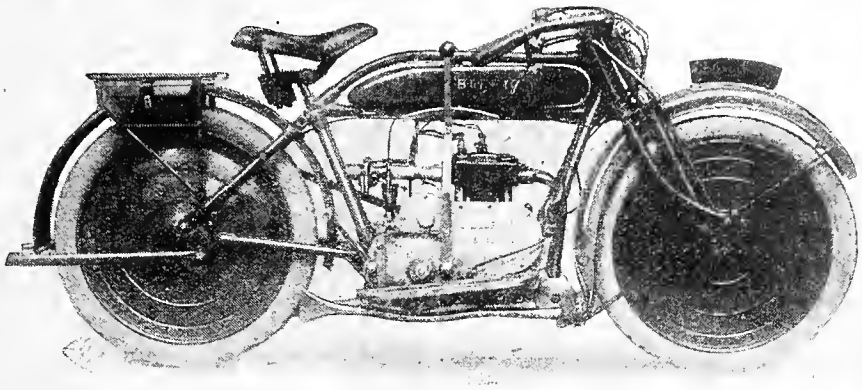
Motor Cycles at the Paris Salon.—

Such is our view of unconventionality after contact with the motor cycle movement since its inception.

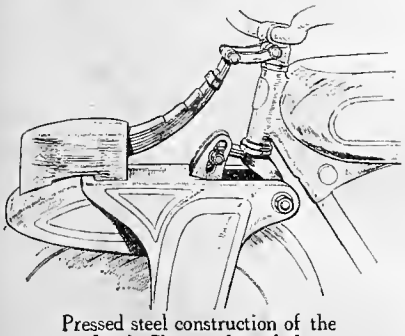
The Conventional Designs.

In passing on to the next group of motor cycles—the conventional types—one can summarise them in a very few words. Mostly they are fairly good imitations of popular British makes, using in some cases well-known British components in the usual British way, but in doing so the makers have perpetrated some of the errors of British makers of a decade ago.

It is not with such makers, however, that the rise or fall of any industry is dependent, and their sphere in the world of wheels is to supply a known and existing demand, and not to seek to advance the motor cycle movement. They neither make nor unmake history: they merely assemble well-known units, and compete with their *confrères* using the same units only on matters of price, equipment, or finish. Engine and gear unit manufacturers make the entry of small motor cycle makers into the industry quite an easy matter, and it is therefore not surprising that several of these machines are fitted with English-made power units and gear boxes or the engines and gears of component manufacturers in France.



Bleriot 500 c.c. side-by-side twin four-stroke, which embodies a concealed rear springing system. The disc wheels are built up from steel pressings.



Pressed steel construction of the Louis Clement front fork.

The apparent popularity of any particular type is not entirely genuine, if judged by assembled machines, as one maker producing, say, a really good two-stroke engine may induce many firms to fit that engine, but the chances are just as much in favour of another engine maker who markets a four-stroke. In England, the J.A.P. four-stroke and the Villiers two-stroke are fitted by the majority of "assemblers"; in France the Ballot two-stroke and the Zurcher four-stroke occupy similar positions.

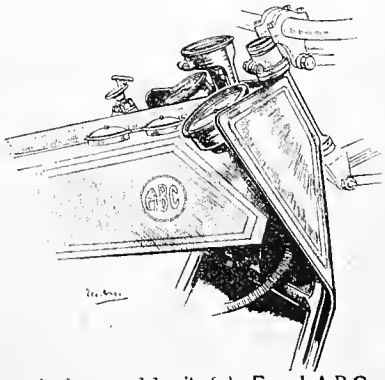
As in Great Britain, this section of the industry prefers not to specialise on any particular model, but offers both four and two-strokes, with and without two-speed gears, and, in the former types, with the option of clutch and kick-starter.

Auxiliary Engines.

Any visitor to the Grand Palais must be impressed by the large number of small engines fitted as auxiliary power units to pedal cycles. In this category we have conditions entirely different from those prevailing in the first two groups already referred to. Undoubtedly the number of these small units reveals the real crux of the whole position of the French motor cycle movement. France is a great cycling country and always has been, and it is considered that the greatest demand for power-propelled machines will eventuate from ordinary every-day cyclists.

In England motor cyclists form the greatest fraternity of any section of road users. There is nothing to be compared to it; but in France only the nucleus of a similar fraternity exists, therefore the strictly utilitarian machine must be considered, and a low-priced motor-propelled pedal cycle is the result of that consideration.

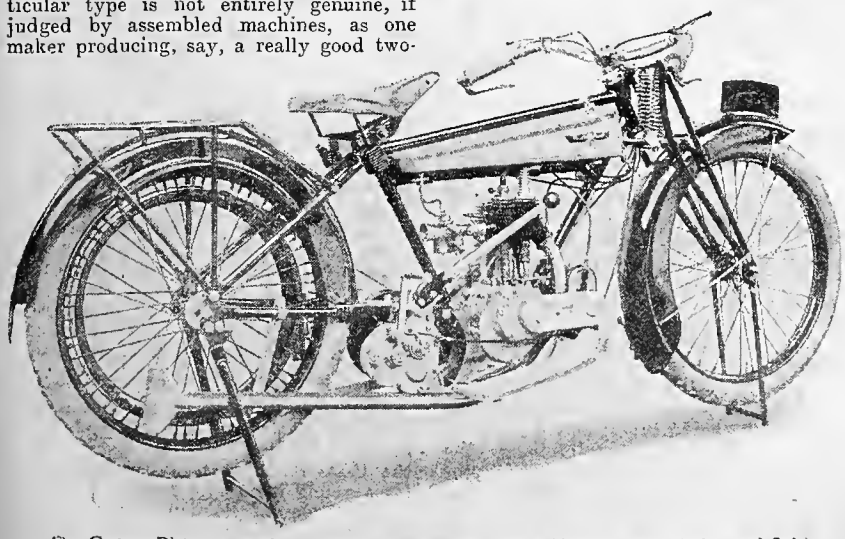
In this group of machines we have conventionality and unconventionality, but at times the two are so cunningly blended



An improved detail of the French A.B.C.: extensions to the leg guards. Observe the clock and speedometer on either side of the lubrication indicator.

that to the purchaser with, as yet, undeveloped ideas of what is, and what is not, approved engineering practice, all are equally attractive.

In this section the many makers appear to have deliberately set out to avoid perpetrating anything similar to their competitors, and it is impossible to say that there are any particular tendencies, for the reason that no maker has tackled the proposition in the same manner. It is astonishing the number of ways and means that can be adopted with a little ingenuity, and the French are nothing if not ingenious. Thus at the Paris Show there are tiny two-strokes and four-strokes utilising every form of mechanical transmission. Perhaps friction drive is a little more popular than any other, for one has a small pulley engaging with the front tyre, another a flat pulley in contact with a flat faced rim on the side of the rear wheel, and a third within the hub of the front wheel. Some have belt drive, others chain or gear transmission. Some



The Gnôme-Rhône, a machine which conforms to British ideas of clean design and finish The engine has an outside flywheel and the gear fitted is a Sturmey-Archer three-speed.

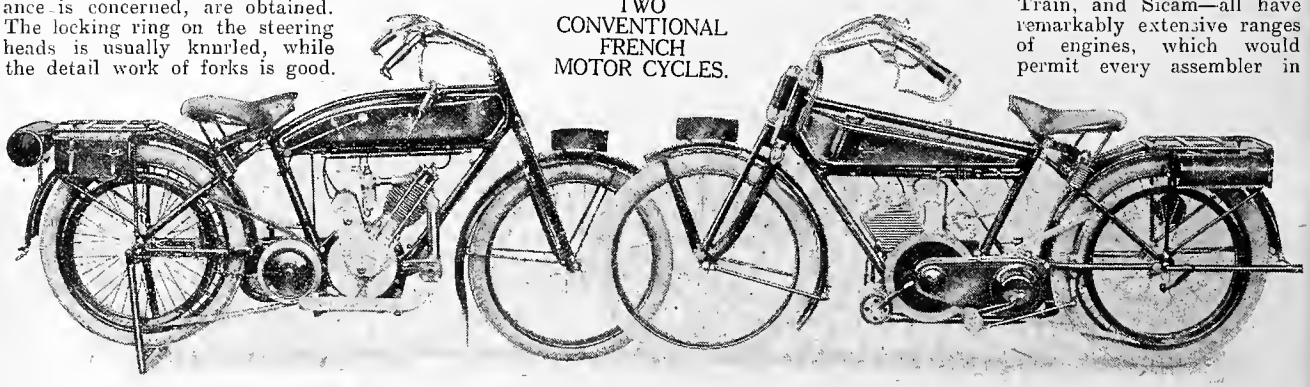
Motor Cycles at the Paris Salon.—

are fitted in the frame, others on the carrier, or on the handle-bar. The majority are two-strokes, and of the four-strokes some have automatic inlets and some are at the other extreme with mechanically operated overhead valves and detachable heads; and they are placed in all positions, vertical, inclined, horizontal, and even "upside down."

General Impressions.

As is to be expected from a nation so long identified with the manufacture of pedal cycles, the cycle work of most of the French exhibits is exceptionally good, but with a few exceptions, the mudguarding is capable of great improvement. Tanks, too, are somewhat rough, but strike one as being constructed of much stouter material than those of British machines. Welded frames appear to be much favoured, and very excellent results, so far as appearance is concerned, are obtained. The locking ring on the steering heads is usually knurled, while the detail work of forks is good.

TWO CONVENTIONAL FRENCH MOTOR CYCLES.



The Magnat Debon, a 400 c.c. four-stroke with overhead valves. It has a two-speed gear, chain-cum-belt transmission, and a cone type clutch. The design appears to be somewhat spoiled by the single forks fitted.

The Terrot two-stroke, an exceptionally well finished machine, following more or less conventional lines. Observe the square fins, and the spare petrol tin and circular tool box on the carrier.

Front Forks.

The kinds of front forks are many, and the majority are of the type which embodies blades hinged or pivoted directly below the steering column, and not a few utilise the principle of the well-known Triumph fork. Not a few have forks of the parallel link type on the lines of the Druid, while the well-known British fork units—Druid, Brampton, and Saxon—are included.

Tyres.

Taken on the whole, the size of tyres adopted is ample for the weight of the machine. In one case 710×90 mm. tyres are used, which, so far, appear to be the largest tyres yet used on a motor cycle.

Almost without exception, mudguards are insufficiently valanced, especially front guards, which generally have no valances at all forward of the forks. Silencing, too, has not received the attention due to it, and usually very small silencers are fitted, which are equipped with cut-outs.

In several designs means have been adopted to minimise faults where eradication should have been attempted. For example, the Peugeot Co. are responsible for a front fork, which requires a rubber buffer to prevent shock when the forks strike the head.

Name plates in lieu of transfers are fitted to many of the machines, and while these have a good appearance when new do not assist cleaning, as they present so many sharp projections to catch the cleaning rag.

Brakes.

French motor cycles are not well equipped with regard to brakes. On a large number of machines only one brake is fitted, and where the equipment includes two brakes they are usually fitted to operate on the same belt rim. In a few cases the brakes are side by side, one working in the V of the rim and the other on the flat extension between the V and the wheel spokes. Internal expanding and the external types are in evidence on the newer designs, but, taken generally, the brake work is not what one would expect from France. At least one solo machine has a hand brake similar to the clutch lever of an American machine.

THE PARIS SALON AT A GLANCE.

Features of 1922 French Motor Cycles.

Pressed steel construction.
Welded tubular frames.
Side-by-side twin engines.
Superb sidecar bodywork.
Auxiliary engines numerous.
Nearly thirty British makes represented.

Spring Frames.

It is to be expected that as bad roads are rather more the rule than the exception in France, designers would give consideration to the question of spring frames. The A.B.C. and the three newer designs (Janoir, Lutèce, and Blériot) are so equipped; therefore one may conjecture that there is a tendency in this direction.

Engines.

The details given below will show the tendency in engine types, and will reveal the surprising fact that probably the most unsuitable type of engine for motor cycles, the side-by-side twin, is represented by four different machines, while the well-tried V twin so general in this country is used as the power plant for a like number.

SINGLE-CYLINDER TWO-STROKES are fitted to the following motor cycles: Terrot, Peugeot, Soyer, Motosolo, Plasson, Alcyon, Thomann, D.F.R., Yvels, Louis Clement, Supplexa, Blanche Hermine, Armour, and Labor.

SINGLE-CYLINDER FOUR-STROKES to the under-mentioned: Griffon (two types), Ultima, Gnôme-Rhône, Magnat, Labor, Otobiron, Alcyon, Thomann, Armour, Yvels, and Viratelle.

SIDE-BY-SIDE TWINS.—Four-strokes: Blériot, Lutèce, and Viratelle. Two-stroke: Blériot.

V TWINS: René Gillet, Griffon, Alcyon, and Oriol.

FLAT TWINS: A.B.C. and Janoir.

WATER-COOLING is favoured by the makers of the Motosolo and Viratelle (two types).

OVERHEAD VALVES: Griffon, Magnat, and Otobiron.

Considering that at least three large engine unit manufacturers—Anzani, Train, and Sicam—all have remarkably extensive ranges of engines, which would permit every assembler in France to have a distinctive type or size to himself, one cannot help but marvel how the temptation has been resisted.

French engine design deserves every commendation, and many different two and four-stroke models are available. French motor cycle assemblers have the choice of several sizes in all types, including flat twin four-strokes from about 200 total c.c., several sizes of single-cylinders, and a variety of V twins from 750 to 1,100 c.c.—some with overhead valves, and both air and water-cooled. In two-strokes there are singles and side-by-side twins of several sizes, also obtainable either air or water-cooled.

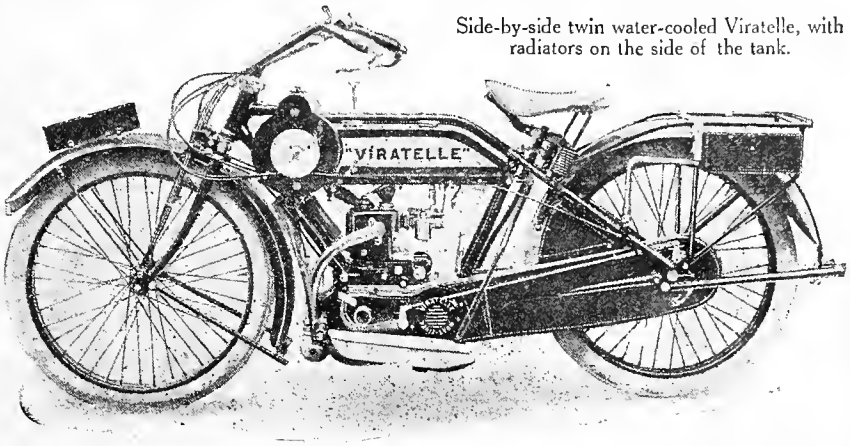
The rear position for the magneto is favoured by most of the French manufacturers, while in the case of single-cylinder engines an inclined position appears to be preferred, but this apparent tendency is misleading on account of so many fitting a proprietary two-stroke engine, which is designed to be so located in the frame.

Seventy Different Makes Represented.

Excluding the dozen or so auxiliary motors, no fewer than thirty French makers of motor cycles are exhibiting at the Paris Salon, a really excellent entry for a young industry. In addition, there are examples of Belgian, American, and Italian productions, besides nearly thirty British makes of motor cycles and sidecars on view.

THE EXHIBITS DESCRIBED—THE UNCONVENTIONAL TYPES.

UNDER this heading reference has already been made to the Janoir motor cycle; and as an unconventional machine it certainly takes first place. As will be seen from the illustrations, it not only employs a pressed steel frame, but its general outlines are quite the reverse of the accepted idea of what a motor bicycle should look like. It is sprung fore and aft on leaf springs, and a spring saddle is not considered necessary. We described an earlier model of this ingenious design at the time it was exhibited at the last Paris Salon, and our illustrations suffice to show its main points of interest. The sidecar, which is marketed with it, also has a sprung axle.

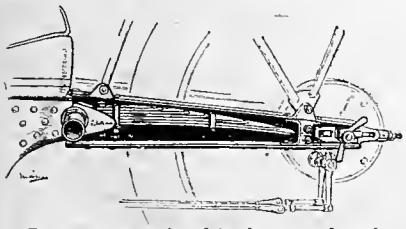


Side-by-side twin water-cooled Viratelle, with radiators on the side of the tank.

Car Practice.

The Lutèce is unconventional in another direction, and conforms more to accepted motor cycle practice plus certain features borrowed from the car. It has a vertical twin engine with gear box integral with the crank case, and the final drive is by shaft. Like the Janoir, it is sprung at the rear on leaf springs, but no torque rods are fitted, and stays, pivoted at the rear of the saddle, are intended to ensure lateral rigidity.

The Louis Clement is another pressed steel machine which made its *début* at the last Paris Show, and which now appears in an improved form. In 1919,

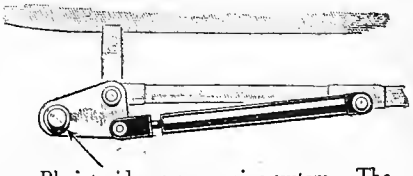


Rear springs enclosed in the pressed steel floating members of the Janoir.

however (there was not a show in 1920), a twin-cylinder model was exhibited, and this has been abandoned in favour of a Train single-cylinder two-stroke of 500 c.c. capacity.

Side-by-side twin engines are favoured by the Blériot Company, for, in addition to the four-stroke two-cylinder model now established on the French market, a twin two-stroke of 750 c.c. capacity is introduced this year—finished, in fact, a few days before the Salon opened. Like the four-stroke model, the gear box forms part of the crank case, the clutch is located between the two crank chambers, and there are three speeds and reverse, the latter, perhaps, more by accident than intention, since the power unit was designed for and is fitted in the new French Blériot cycle car. The machine presents quite a good appearance, but there is still a certain amount of experimenting to be done before the model will be offered to the public, such points as economy and silence not yet having had very close attention.

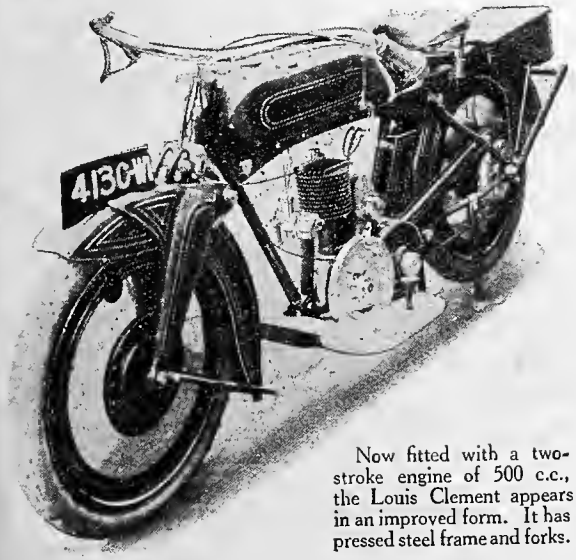
The last machine in this group is the Viratelle, which was seen outside Olympia last November. It has a water-cooled side-by-side four-stroke twin engine,



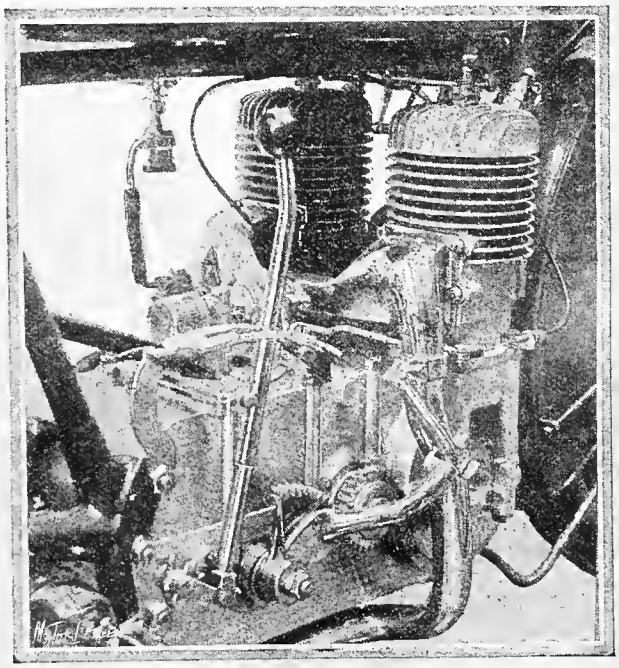
Bleriot sidecar suspension system. The arrow indicates the position of the wheel hub.

placed across the frame, with integral gear box, the final drive being by chain. Two circular radiators are located at the fore end of the tank. A single-cylinder model on similar lines is also exhibited.

EXAMPLES AND DETAILS OF SOME OF THE UNCONVENTIONAL DESIGNS AT THE SALON.



Now fitted with a two-stroke engine of 500 c.c., the Louis Clement appears in an improved form. It has pressed steel frame and forks.



Another unconventional type—the Blériot two-stroke side-by-side twin. It has two crank chambers with a clutch disposed between them, and drives through spur gears in a unit three-speed and reverse gear box.

Motor Cycles at the Paris Salon.—

THE CONVENTIONAL TYPES.

PROBABLY the nicest motor cycle in the Show from the English point of view is the French-built A.B.C. Although unconventional two years ago the design is now so well known that we place it in the category of the conventional. Several minor amendments have been made to the original Bradshaw design. The internal expanding brakes on both wheels are larger, the hot air muff on the induction pipe has been increased in area, and the overhead valve rockers are fitted with extra wire springs. Another addition is an oil circulation indicator fitted on the top tube, and forms the centre of three dials, the speedometer and clock being the other two, neatly disposed at the front end of the tank and protected by inturned extensions of the leg guards.

A Franco-British Machine.

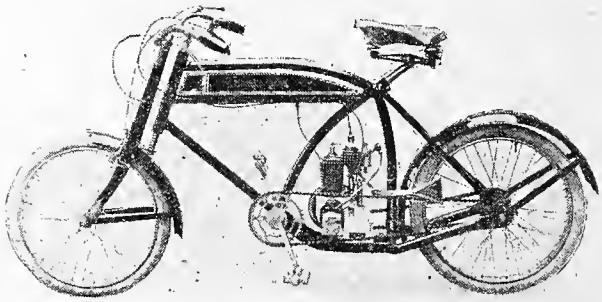
Exhibited alongside the A.B.C. is a new production, the Gnôme-Rhône, a taking looking machine quite on English lines. The engine is a four-stroke single of 500 c.c., having an outside flywheel and a cylinder reminiscent of the Triumph. Chain-cum-belt transmission is adopted, with a W.D. type Sturmey-Archer gear. The mudguarding is exceptionally well done, the side extensions being part and parcel of the main guards and of stouter metal than is usually adopted by British manufacturers.

Taken generally, the French makes, with old-established reputations in this country, are somewhat disappointing. One would expect something distinctive from the Peugeot concern, but apart from a novel front wheel-driven motorised bicycle, the Peugeot models are no different from their many contemporaries fitted with proprietary units. Other mediocre machines with old names are the Terrot, Labor, Alcyon, and René Gillet, all of which fit proprietary units. Taken on the whole, they are quite good for the market they are intended to supply, but it seems sad that in an industry that once led the way the pioneers should display so little enterprise.

The Griffon, another well-known French motor cycle, is an exception, and three distinct types are exhibited. The first is little more than a motorised bicycle, but has a tiny and beautifully made four-stroke engine with overhead valves; the second type is a four-stroke lightweight approximating to the popular J.A.P.-engined lightweight in Great Britain; and the third a V twin of 6 h.p. Both the two last-mentioned models are fitted with Burman gears.

On English Lines.

Previously known as the G.L.—a machine which competed in the 1919 Six Days Trial—the M.A.G.-engined Oriol follows accepted British practice, and some minor details, such as the foot plates and silencer, are carried out in a very neat manner. On the other hand, the finish of the mudguards is poor.



One of the several miniature motor cycles, the Monet-Coyon. Machines bearing this name, and engined with small four-stroke power units, are offered to the public in many forms.

Such names as Ultima, Thomann, Armour, D.F.R., Supplexa, and Blanche Hermine grace the tanks of quite conventional types of motor cycles, while the Yvels—the winner of the 250 c.c. class in the Grand Prix—is also on view. A machine known as the Motosolo has a two-stroke engine—one water-cooled, with the radiator neatly arranged in the fore end of the tank. The Magnat is a 3½ h.p. four-stroke with overhead valves, and the Soyer a neat two-stroke with detachable cylinder head. The only full-powered lady's model in the show is exhibited by this firm. It is a well-designed machine with an open frame, and a tank which forms a part of the frame. We were informed that there are, however, very few lady motor cyclists in France, which is somewhat surprising considering the activity of French ladies in other outdoor pastimes.

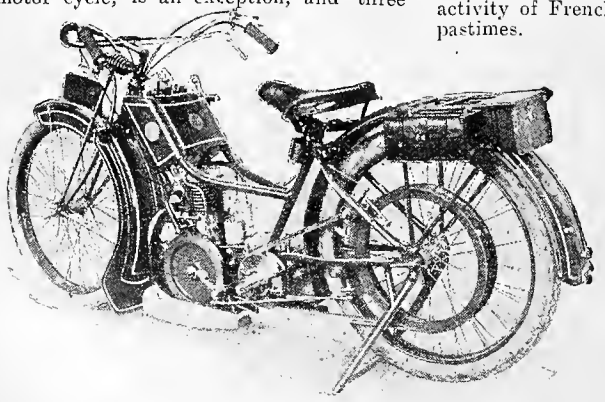
SUPER SIDECARS.

WHEN we say the French motor cycles do not come up to the English as regards design or finish, we may be forgiven, but as regards sidecar bodywork, upholstery, and finish the French have us badly beaten. There is no doubt that quite the finest sidecar *carrosserie* yet attached to motor cycles is now on view at the Paris Salon.

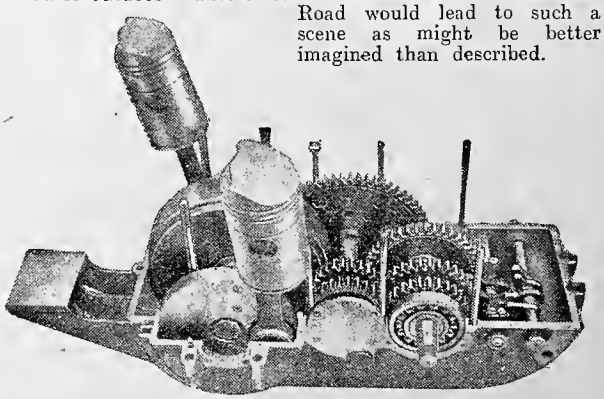
There is a distinct tendency to follow boat design, and one attractive feature is the varnished light wood deck which contrasts pleasantly with the painted or varnished natural dark wood of which the rest of the body is usually built. There is an excellent example of this on the D.F.R. stand, where the coachwork referred to is by G. Gille, of Puteaux.

Perhaps the highest class example of French sidecar coachwork is to be seen on the A.G. stand, where two bodies at once strike the eye. Of these, one is practical and the other highly and exquisitely ornamental. The practical body is an attractive looking and thoroughly sound piece of work. The chassis is mounted on semi-elliptic springs, while C springs support the body, which is not only comfortable but of pleasing design.

A special trunk is supplied, which fits behind the body. The hood is quickly detachable and easily folded so that it can be stowed away in a box made for the purpose and fixed near the step. The finish is excellent and far superior to that found in similar examples of this type of work in England. The other body is obviously specially got up for the Show, but is nevertheless interesting, as it demonstrates the length to which luxury sidecar bodybuilding can go. The style is Louis XV., and the body follows closely the design of a luxurious sedan chair. There are the four-pane plate glass windows, the graceful curves and lamps of the same period, while suitable carving (really moulding) and upholstery complete this unique body. The appearance of such a turnout on the Portsmouth Road would lead to such a scene as might be better imagined than described.



The only full-powered lady's motor cycle in the exhibition—the Soyer. It is of very pleasing design, exceptionally well made, and the tank forms part of the frame. The engine fitted is a two-stroke having a detachable head.



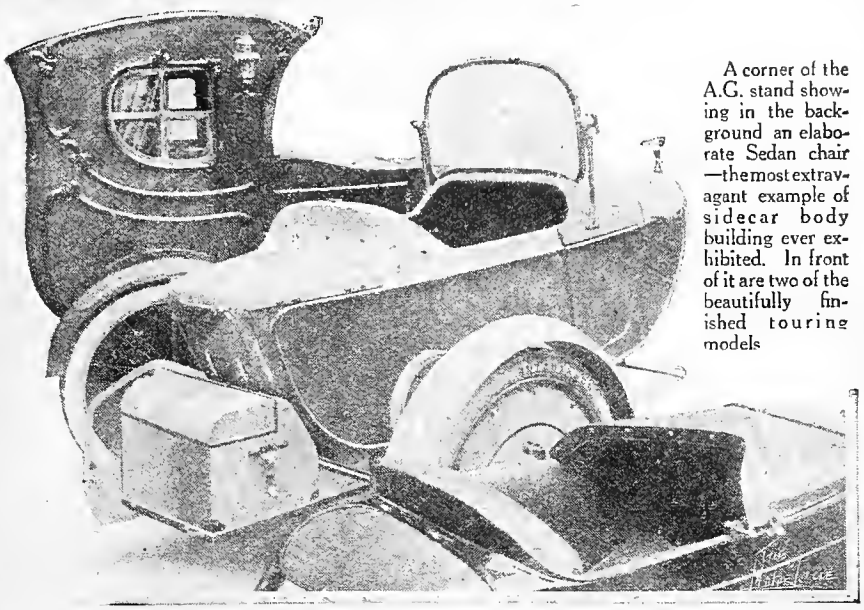
Details of the Blériot two-cylinder two-stroke power and gear unit, showing the lower half of the crank case, the gears, and pistons.

Motor Cycles at the Paris Salon.—

On the Indian stand, the Céèl sidecar is well worthy of mention. It is of the two-seated variety, and it must be stated here that until this year double-seated or multi-seated sidecars were unknown in France. Built of steel, there is no doubt that the Céèl is not only smart, but quite practical. The front passenger has ample leg room, and the rear passenger enough. Each has his own windscreen, and the hood protects both. It is interesting to note that the front passenger occupies the centre of the body, so that if only one seat is filled the balance is correct. The spare wheel, carried at the rear, is slipped over the tail and carried in a suitable bracket.

Boat Body Building.

A side car on the Lutèce stand is so like a boat, having a correct bow and a yacht pattern stern, that it looks as if one could rig a small mast and sail, put it in the water, and sail away. The deck is of varnished bird's-eye maple and the hull of mahogany, copper fastened—a very pleasing contrast—and, curiously enough, these boat pattern bodies do not look too uncomfortable. Tony-Bouley show a wide family sidecar with staggered rear seats and a seat in front for the child. The same firm also show a handsome two-seated body, with doors giving access to each seat.



A corner of the A.G. stand showing in the background an elaborate Sedan chair—the most extravagant example of sidecar body building ever exhibited. In front of it are two of the beautifully finished touring models

THREE-WHEELERS.

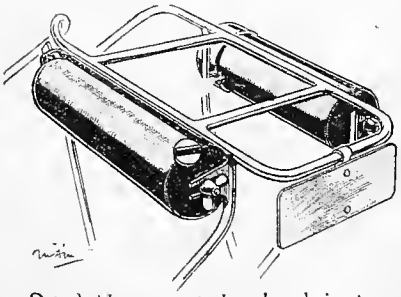
So far as three-wheeled cycle cars are concerned, the French-built Morgan is the sole genuine example. Four models of this make are shown—two water and two air-cooled. Of the former one is a sports type with a rather deep back to the body, and what seem to be slightly wider seats. The single screen is of rather unconventional pattern, as it is hinged near the top, while no hood is supplied. The other water-cooled model is the touring pattern. The air-cooled Morgan is provided with upright backs to the seats, which do not look too comfortable, and there seems little protection in the low-sided body. A well-finished polished chassis is also shown on the stand, while it is interesting to note that M.A.G. engines are fitted in all cases.

We have thought for a long time that the old forecarriage was dead, buried, and well-nigh forgotten; but Ajasson de Grandsagne has attempted its revival. He argues that the forecar is more safe and more rigid than the sidecar, it only pays the motor cycle tax in France, and has never been tried on a three-speed-cum-clutch motor cycle of modern construction. He does not seriously intend it for passenger-carrying, but rather for transforming a motor bicycle into a tricycle for winter use and for the transport of light goods in a suitable box carrier. Two examples are shown—one fitted to a Powerplus Indian, in which case the longitudinal members terminate at a point below the saddle, thus avoiding interference with the rear springing; while the other is fitted to a 4¼ h.p. B.S.A. The design has been modernised, in so far as the fitting of sprung front axles, coil springs being used.

This week's AUTOCAR contains a detailed illustrated review of the car exhibits at the Paris Salon, with special reference to the large number of small light cars to which so many French manufacturers are now giving their attention.

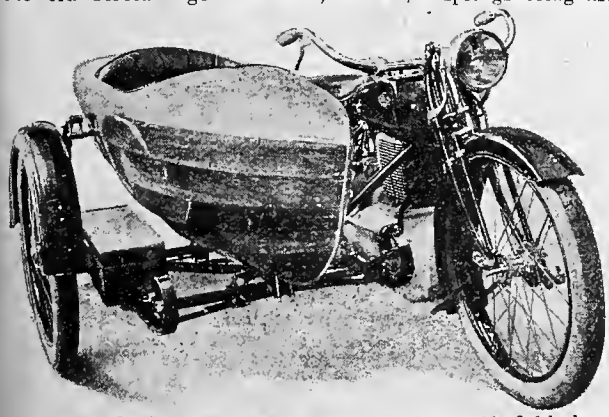
REAL FLYWEIGHTS.

The absurdity of the A.C.U.'s term "flyweights" for 250 c.c. machines in the T.T. is emphasised when one examines the tiny auxiliary engines for pedal cycles at the Paris Show. It was suggested to us in the Salon that we should term these machines "microbes."

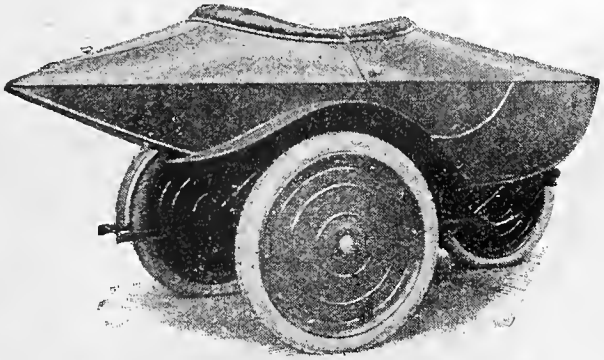


Detachable spare petrol tank and circular tool box to match on the D.F.R.

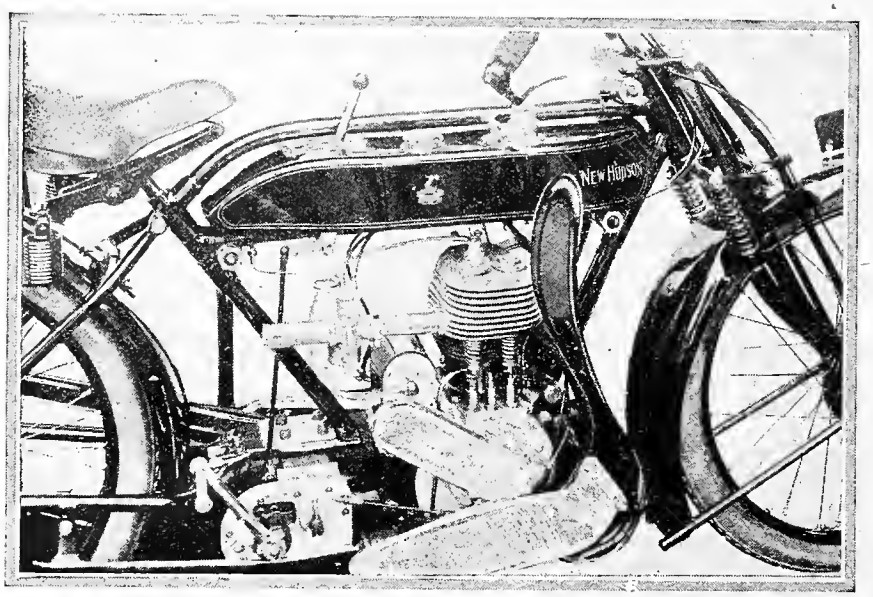
Upwards of a dozen types of these auxiliaries are being exhibited, of which probably the Peugeot takes pride of place. It is contained in the hub of the front wheel. The Cyclotracteur is a two-stroke employing a small friction pulley on the



A real dinghy sidecar on the Lutece. It is superbly finished in the natural colours of the wood—teak for the hull and bird's-eye maple for the deck.



The height of the Bleriot sidecar appears to be absurd, but French passengers desire to be on a level with their drivers in order to be sociable.



A new English model at the Salon—the 4 h.p. New Hudson, a sound and well-finished proposition, which marks the re-entry of the New Hudson into the sidecar world.

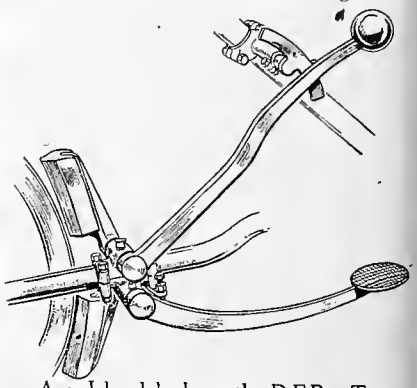
front tyre. The Exshaw is placed on the carrier, and drives by a chain, as does the Auxi; while the Motofly-Voisin is placed "upside down" on the side of the rear wheel. The Monet is used in a variety of ways, from propelling a cycle car to pushing a perambulator bicycle. Cyclette and the Sicam are the names of two others.

BRITISH EXHIBITS.

TUCKED away from the light that reaches the Gallery from the great glass domes of the Grand Palais are to be found specimens of representative British motor cycles. The Douglas has the largest display, and the $3\frac{1}{2}$ h.p. Sports model comes in for its full meed of praise from the French speedmen, who then seek out the black and gold Sunbeam of the type that won the Grand Prix. The Nortons, too, are there in numbers, one of them finished in aluminium paint throughout, which not a few assume to be the winner of the Belgian Grand Prix. The New Hudsons, like the Douglas range, have a stand to themselves. Here the new 4 h.p. sidecar outfit is on exhibition, and with it we shall deal later. It suffices to say that it is a good-looking, sound proposition, and worthy in every way to mark the re-entry of the New Hudson Co. into the sidecar field.

Triumphs are well known and respected, for their service during the war is still fresh in the minds of French buyers.

It is interesting to note that the number of imported machines exhibited is equal to that of French productions. Among the British machines, Rover, Diamond, and Ariel; Rudge, Velocette, and Raleigh; Enfield, Humber, and Scott; B.S.A., N.U.T., and A.J.S.; and Levis, Zenith, and Skootamota, may also be mentioned; while a Grindlay sidecar is shown fitted on the Humber, and Easting wind-



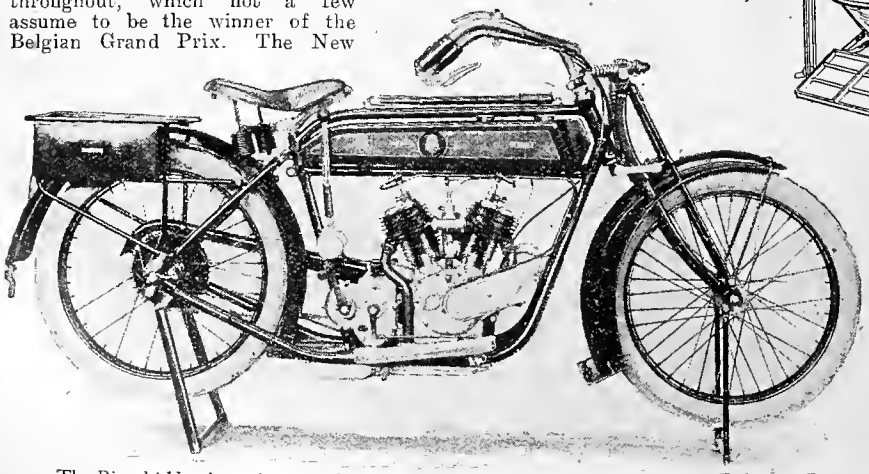
A real hand brake on the D.F.R. Two brakes operating on the belt rim is quite common practice in France.

screens on several machines. America is represented by most of her makes, ranging from the tiny Evans lightweight—one of which is fitted with a baby's sidecar—to the 1,100 c.c. Reading Standard. Indians and Harley-Davidsons are popular big twins; Schickle and Cleveland represent the two-strokes.

BODYWORK THAT IS MAGNIFICENT WITHOUT BEING OVER ELABORATE.

Graceful A.G. family body which has a bird's-eye maple "deck."

From Belgium comes the old-established Sarolea, fitted with a Sturmey-Archer gear, and the well-known four-cylinder F.N. Italy's representative is the Bianchi.



The Bianchi V twin, quite one of the nicest Continental machines exhibited at the Paris Salon. The engine is of 7 h.p., and the crank case bolts directly on to the horizontal duplex members of the frame. The gear box is fixed to the engine, and, at the rear, is connected by a single lug to the frame, thereby providing a three-point attachment.

ACCESSORIES.

IN France the motor cycle accessory business has been either ignored or neglected. French firms now depend largely on English carburetters and other parts, so that home-made fittings of this nature are few and far between. It is interesting to note, however, that the best-known French lamp manufacturers are devoting their attention to motor cycle requirements. British lines are being followed, but the finish and design of the majority are behind our own.

B.M.C.R.C. CHAMPIONSHIPS.

Many Records Smashed. Sidecar Race won at 76 m.p.h.

THE five-lap scratch championship races in the six standard classes produced the best afternoon's motor cycle speed work ever seen in this country. Blistering sunshine and a very large gate honoured the occasion, and records were broken wholesale.

The organisation of the actual racing was, as usual, superb. But the management must ask Mr. C. B. Cochran to take a hand if they have the faintest wish to convert motor cycle racing into a popular spectacle.

275 c.c. Solo Championship.

A megaphone warned the starters in each race that "hanging on" would entail disqualification, and that overtaking must be done on the outside wherever possible. J. V. Prestwich (2¼ Diamond-Jap) was a hot favourite, with Kaye Don (2¼ Massey-Arran) next in demand. Prestwich proceeded to run clean away from the field; and, ignoring many signals to slow down from backers, who feared a valve might go, he won anyhow. Placings:

	m.p.h.
1. J. V. Prestwich (2¼ Diamond-Jap) ...	62.16
2. E. Remington (2¼ Blackburne)	
3. W. J. Lord (2¼ New Imperial)	

J. V. Prestwich broke the following records: Five Miles Flying Record, 4m. 43.9s.=63.40 m.p.h. Ten Miles Standing Record, 9m. 38.04s.=62.28 m.p.h.

350 c.c. Solo Championship.

The bookies' offers showed that Don was "expected." Remington and Brockbank (2¾ Brock-Blackburne) got away best, and the latter headed a fast race for three laps. Just as the layers began to offer fours against Remington, Brockbank stopped, and let Remington in, to win by half the length of the straight. Don had plug trouble. Only three men were able to finish. Placings:

	m.p.h.
1. E. Remington (2¾ Blackburne) ...	69.39
2. Kaye Don (2¾ Massey-Arran).	
3. A. A. Swan (2¼ New Imperial).	

500 c.c. Solo Championship.

Don rode Le Vack's T.T. Indian, and Pullin had fitted an ingeniously balanced air intake to his sports model Douglas. Bailey and Emerson (Douglases) used metal bridges to steady their engines to the centre of the middle frame tube. The anticipated duel between Emerson and Halford (o.h.v. Triumph) was complicated by the pushful Pullin. Halford stole a nice lead by a magnificent getaway, but Emerson and Pullin soon caught him. After three laps Emerson went in front, and won by perhaps 500 yards, reducing the standing start ten-mile record to 7m. 32.6s.=79.54 m.p.h.

	m.p.h.
1. J. Emerson (3½ Douglas)	79.8
2. C. G. Pullin (3½ Douglas).	
3. F. B. Halford (3½ o.h.v. Triumph).	

1,000 c.c. Solo Championship.

Another gorgeous race! To the general amazement, and thanks mainly to a superb start, an English twin led for the first lap; but Remington (8 Blackburne) was soon passed by Le Vack (Indian), who led on the second lap, only to yield to Temple (Harley-Davidson) on the third. The Harley-Davidson streaked round the track at a frightful speed, and won by at least 100 yards. Placings:

1. C. F. Temple (7-9 Harley-Davidson) ... 92.47
2. H. Le Vack (7-9 Indian).
3. D. H. Davidson (7-9 Indian).

Temple broke two records in this brilliant ride, viz.: Five Miles Flying Start, 3m. 6.44s.=96.54 m.p.h. Ten Miles Standing Start, 6m. 34.88s.=91.17 m.p.h.

Baldwin broke a connecting rod; Harveyson had magneto trouble; and Remington broke his wheel rim.

600 c.c. Sidecar Championship.

Though no more than five starters turned out for this race, it was easily the most exciting of the day, and possibly the best ever contested at Brooklands.

Pullin (Douglas sc.), Horsman, and O'Donovan (Norton sc.), raced over the whole five laps in a compact little clump at over 60 m.p.h. Horsman led after the first and fourth laps; whilst Pullin was in front on laps 2 and 3, though there was never more than a few yards in it; and O'Donovan was always with them. On the fifth lap O.Donovan went ahead, and won, to the rage of the bookies, who had stopped laying up fifteen minutes before the start. Placings:

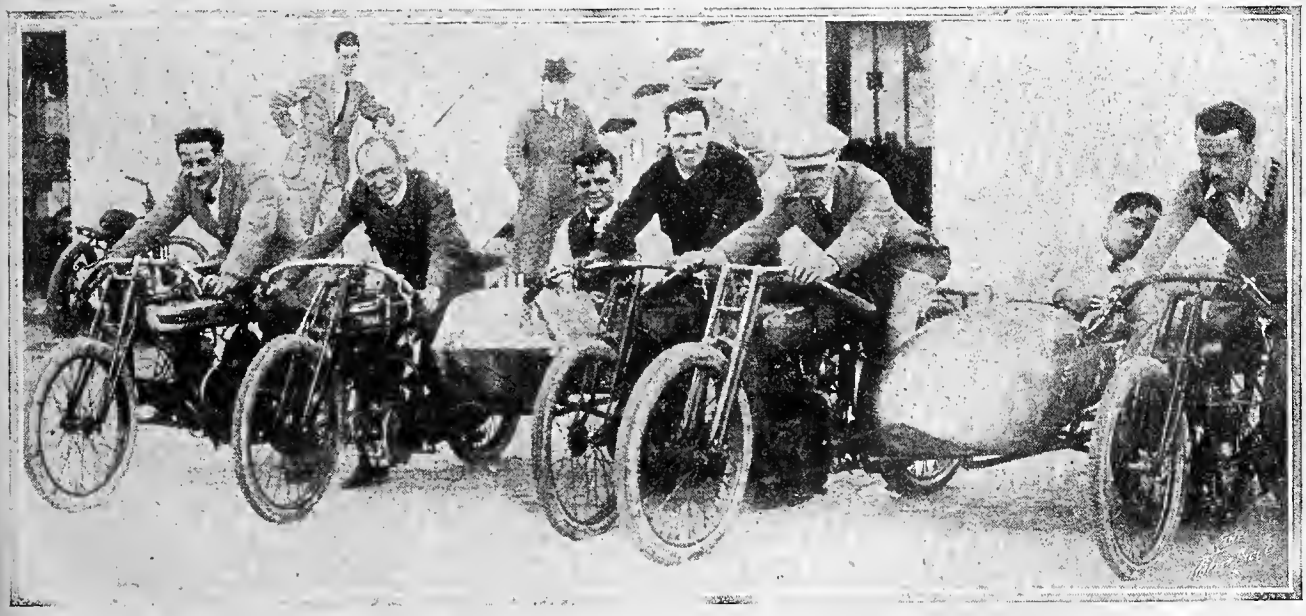
	m.p.h.
1. D. R. O'Donovan (4 Norton sc.)	62.39
2. V. Horsman (3½ Norton sc.).	
3. C. G. Pullin (3½ Douglas sc.).	

1,000 c.c. Sidecar Championship.

This ought to have been another Temple-Le Vack duel; but the Indian refused to start for 100 yards, and the repeated effort caused the engine sprocket to shear not long after. Temple's famous Harley-Davidson, "Mutt," now adorned with a beautifully streamlined aluminium sidecar, led by 100 yards at the end of one lap, and travelled so magnificently that the spectators forgot to deplore the runaway character of his win. Great anxiety was created by a report that Le Vack had gone over the banking, which was fortunately an invention. Placings:

	m.p.h.
1. C. F. Temple (7-9 Harley-D. sc.) ...	76.00
2. D. H. Davidson (7-9 Indian sc.).	
3. O. de Lissa (8 Motosacoche sc.).	

Temple broke the following records: Five Miles, 3m. 20.81s.=77.98 m.p.h. Ten Miles, 7m. 56.35s. =75.57 m.p.h.



ALL THE CHAMPIONS.

The winners of the various championship races at Brooklands last Saturday. Left to right: J. L. Emerson (3½ Douglas), D. R. O'Donovan (4 Norton sidecar), E. Remington (2¾ Blackburne), C. F. Temple (7-9 Harley-Davidson sidecar), and J. V. Prestwich (2¼ Diamond-Jap).

A YORKSHIRE STEEPLECHASE.

Boulders, Bogs, and Heather—The Scott Trial.

IN spite of many imitators, the Scott trial still remains in a class by itself as regards sporting events. Perhaps the reason lies in the suitability of the country in the neighbourhood of Ilkley, or perhaps the secret lies in the cheery spirit of the organisers and the thorough sportsmanship of the Yorkshire riders who form the bulk of the entry.

On Saturday last a band of some fifty optimists gathered at Otley in a drizzling mist, of whom twenty-nine only were to survive the course, and many of these were very late. Most of the competitors were mounted on Scotts—old Scotts, new Scotts, Scott Squirrels, and hybrid Scotts—but there was a fair sprinkling of other machines.

A number of machines had exhaust extensions reaching up to the carrier so as to avoid "drowning" in the deep splashes.

Within ten minutes of the start the riders were plunged into Dobpark splash, a deep and rocky stream, with a natural gallery for spectators in the form of a packbridge. Many failed, to the great amusement of the onlookers, and many crossed safely to receive well-merited applause, but perhaps the best crossings were those of L. Whalley (Sunbeam) and J. Baker (Scott).

The real hard work commenced at Grimwith Reservoir, where all signs of a track disappeared, and competitors attempted to follow a line of stakes, picking their way between boulders and bogs. This stretch culminates in a series of gulleys, the last of which formed by a stream.

It was amusing to watch the set faces of the old hands as they approached the obstacle and the looks of blank amazement on the faces of those who saw the course for the first time.

Some machines were already showing signs of damage, and after the long spell of low gear work many exhaust notes were distinctly fluffy. Catherick's Denelt had a damaged mudguard. Clapham (Scott) dashed at the obstacle and shed his saddle frame, several had missing footrests, and one carrier was adrift. B. Hill (Velocette), W. Wells (Sunbeam), A. Hill (Triumph), H. Sellers (Sunbeam), W. Edwards (Powell), C. P. Wood (Scott), A. Budd (Triumph), and W. Backhouse (Triumph) made the best performances. Mrs. Knowles, whose very sporting entry had been the subject of much comment, did not arrive, having had the bad luck to suffer from a drowned magneto.

W. T. Brand (4 Triumph) climbing a slag heap in Hebden Ghyll, on the course of the Scott trial.

Over the Yorkshire moors. Jesse Baker (3¾ Scott) bogged near Grimwith Reservoir. Awaiting their turns to cross the obstacle are B. Hill (2¼ Velocette), G. M. Townsend (3½ P. and M.), and M. Sedgwick (3½ Sunbeam.)

After Lunch.

After the lunch stop, Hebden Ghyll and the track through the Cupola Works was the first item of interest. This section was responsible for at least three falls, Russel King (Scott), G. Townsend (P. and M.), and one of the Velocette riders being unlucky in this respect. Further up the moor an unexpected water hole caused some amusement. Near Grassington F. Moffat (Scott) collided with a cow and retired. Darnbrook Hill was in fair condition, but, shortly after, a humorous youth nearly caused a bad accident by slamming a gate shut in the face of Capt. Knowles, who was approaching at speed on his Norton.

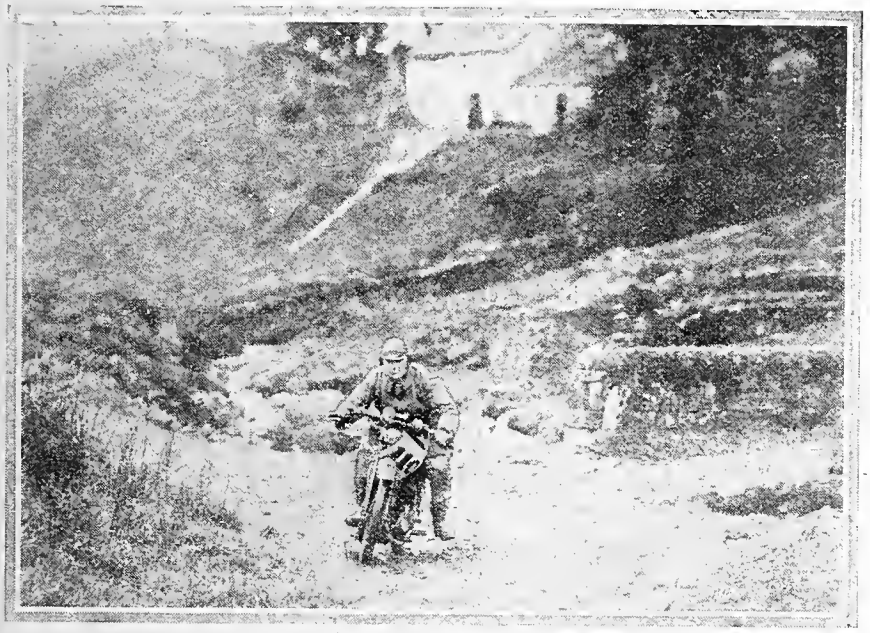
As usual, a small crowd collected to watch the ascents of Park Rash. The hill was in comparatively good order, and caused only a few failures. C. P. Wood, who had now gained the lead from forty-eighth place, came up at a great pace. He was followed by Whalley, whose ascent was equally fine. Jesse Baker (Scott), H. Moorhouse (Triumph), W. Moore (Scott), and W. Clough (Scott) were the star performers.

The crossing of the Nidd was deep, but the bottom was comparatively smooth, so that there was less trouble at this point than was expected. The Scar, however, was practically unclimbable; in fact, not a single rider made a really clean ascent with feet on the rests.

In spite of falls, it was a cheerful group of survivors who assisted Mr. N. Vinter in auctioning a programme signed by C. P. Wood and Mrs. Knowles; the sum of nearly £5 was collected for this work of art, in aid of St. Dunstan's Hospital.

Results were worked out at Burnsall, and prizes were distributed by Mrs. R. Vinter before the breaking up of the party. Results:

To Club Secretaries about to plan their winter programmes: see page 456 for particulars of "The Motor Cycle" film.



Entering Hebden Ghyll. M. Sedgwick (3½ Sunbeam) on a "good section" of the route.

BEST PERFORMANCE OF TRADE.—C. P. Wood (3¾ Scott).

BEST PERFORMANCE OF AMATEUR.—J. Whalley (3½ Sunbeam).

BEST PERFORMANCE ON A SCOTT, EXCLUSIVE OF SCOTT STAFF.—G. Hill (3¾ Scott).

TRADE TEAM PRIZE.—Scott Team: C. P. Wood, H. Langman, and W. Clough.

AMATEUR TEAM PRIZE.—Sunbeam Team: H. W. Sellers, A. R. Naylor, and W. Wells.

CLUB TEAM PRIZE.—Bradford Team: W. Moore (Scott), A. R. Naylor (Sunbeam), and C. B. Haig (Scott).

CONSOLATION PRIZE. — B. H. Catherick (Dunelt).

The following received certificates for completing the course:

B. Dewhurst (Triumph), H. Russel King (Scott), E. C. Eckroyd (Triumph), B. H. Catherick (Dunelt), Jesse Baker (Scott), M. Sedgwick (Sunbeam), J. C. Thompson (Martinsyde), Capt. Knowles (Norton), A. Hill (Triumph), G. M. Townsend (P. and M.), W. Edwards (Powell), H. W. Sellers (Sunbeam), A. R. Naylor (Sunbeam), W. Wells (Sunbeam), J. S. Duxbury (Scott), C. W. Ward (Triumph), A. E. Budd (Triumph), E. H. Wheatley (Triumph), W. Moore (Scott), C. B. Haig (Scott), G. Clapham (Scott), W. T. Brand (Triumph), H. S. Moorhouse (Triumph), J. Whalley (Sunbeam), W. Backhouse (Triumph), G. Hill (Scott), C. P. Wood (Scott), H. Langman (Scott), and W. Clough (Scott).

NOTES.

As a spectacle, the Scott Trial fails merely because the average spectator will not walk, and dare not ride to the most interesting points.

There *are* sections of road in the trial, but only where it cannot be helped.

The consolation prize for the man who fell off most often was indeed a trophy. It took the form of a bottle of whiskey with a suitable quotation attached, pointing out that, although in a race all ran—only one obtained *the* prize.

Amongst the survivors alone we counted fourteen machines with damaged or missing footrests, and there were also—other troubles.

Our sincere sympathies are with Jesse Baker, who fell early in the day, and severely hurt his knee. He pluckily finished the course, and put up a very fine show.

C. P. Wood's average speed was most amazing.

The programmes were—as they modestly claimed to be—priceless. The advertising matter showed a very pretty wit.

In times past herds of sheep and cattle grazed on the peaceful Yorkshire moors; but, as in the case of the buffalo of America, the herds have been decimated by the advancing waves of—well, civilisation!

SUCCESSFUL MIDLAND HILL-CLIMB.

THE Sutton Coldfield Club's hill-climb last Saturday on Penkridge Bank, near Rugeley, turned out a very successful event; and, as it was open to all members of clubs in the Midland Centre A.C.U., the entry was rather large, amounting to thirty-nine in all.

The weather conditions were very favourable; and, as the surface of Penkridge is of Tarmac, and in no way broken up, some fine speeds were attained.

A. W. Thrush's (2¼ Levis) riding position aroused much interest. He adopted the unusual attitude of lying on the top of his machine with his legs crossed over the rear mudguard. Incidentally, he came first on time and formula in his class. Another competitor, although not yet seventeen, who put up a very creditable performance, was G. E. Rowley (2¾ A.J.S.), and quite a number of people requested him to sign their autograph albums.

G. Dance (Sunbeam) was well to the fore again, easily making the fastest time of the day, 30⅕s. F. G. Edmond, riding an o.h.v. Triumph for the first time in competition, also did well.

The timing was carried out by means of telephone, and formula results were worked out on a comptometer, and afterwards verified by slide rule. Results:

350 c.c. SIDECARS.—F. C. Greenwood (2¾ Sunbeam sc.), first on time and formula; O. Wade (2¾ A.J.S. sc.), second on time and formula.

560 c.c. SIDECARS.—G. Dance (3½ Sunbeam sc.), first on time; F. C. Greenwood (3¼ Sunbeam sc.), second on time, first on formula. Non-expert: P. Cheston (3½ Norton sc.), first on time.

UNLIMITED SIDECARS.—G. Dance (3½ Sunbeam sc.), first on time; F. C. Greenwood (3½ Sunbeam sc.), second on time, first on formula. Non-expert: P. Cheston (3½ Norton sc.), first on time.

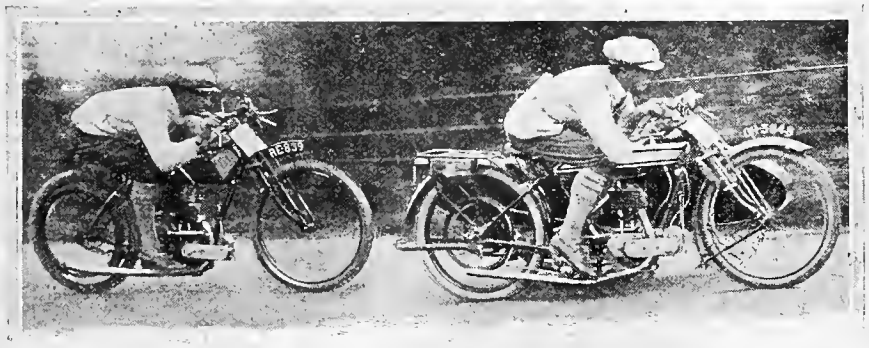
250 c.c. SOLO.—A. W. Thrush (2¼ Levis), first on time and formula; J. N. Roberts (2¼ New Imperial), second on time; J. W. Moxon (2¼ Coventry Eagle), second on formula. Non-expert: T. Stone (2¼ Massey-Arran), first on time.

350 c.c. SOLO.—F. C. Greenwood (2¾ Sunbeam), first on time; O. Wade (2¾ A.J.S.), second on time; A. W. Thrush (2¼ Levis), first on formula; J. C. Nicholls (2¼ Omega (second on formula). Non-expert: J. C. Nicholls (2¼ Omega), first on time.

560 c.c. SOLO.—G. Dance (3½ Sunbeam), first on time; H. Hassall (3½ Norton), second on time; F. C. Greenwood (3½ Sunbeam), first on formula; A. W. Thrush (2¼ Levis), second on formula. Non-expert: F. G. Edmond (3½ Triumph), first on time; J. C. Nicholls (2¾ Omega), first on formula.

UNLIMITED SOLO.—H. Hassall (3½ Norton), first on time; F. G. Edmond (3½ Triumph), second on time; F. C. Greenwood (3½ Sunbeam), third on time, first on formula. Non-expert: F. G. Edmond (3½ Triumph), first on time; J. C. Nicholls (2¾ Omega), first on formula.

CYCLE CARS.—H. F. S. Morgan (Morgan), first on time and formula.



RIDING POSITIONS AT PENKRIDGE.
Snaps during the Sutton Coldfield A.C. speed trials last Saturday. (Left) B. Fidgeon (2¼ Diamond). (Right) P. Cheston (Norton sidecar).

ON THE KENTISH DOWNS.

A Two-circuit Course in the Woolwich Club's One Day Open Trial.

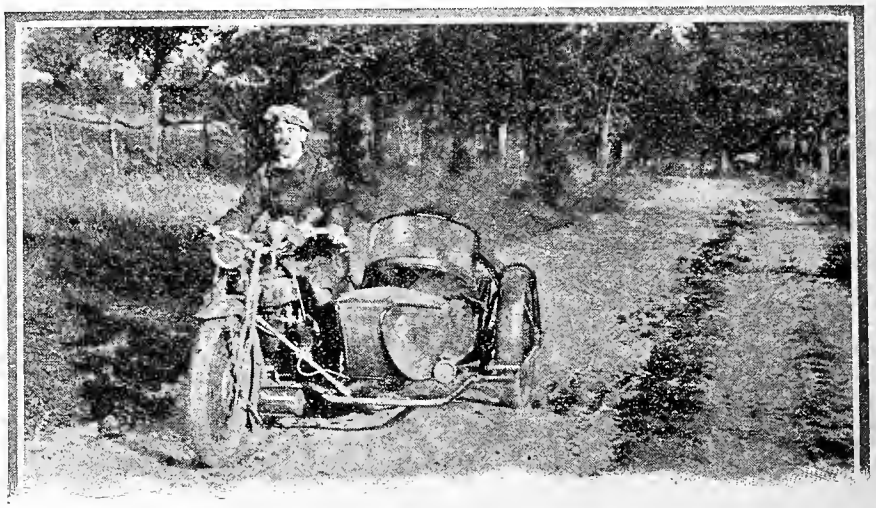
A SUCCESSION of steep hills, separated by stretches of rough by-tracks, found the weak spots in a number of machines in the one day reliability trial organised by the Woolwich, Plumstead and District Motor Club on Saturday last.

Knockholt, one of the prettiest little villages in Kent, was the scene of the start, the lunch interval, and the finish. The trial was approximately 100 miles in length, and at one minute intervals the thirty-four competitors were directed along a well-arrowed route through Sundridge to Ide Hill. York, Toys, and Brasted hills were traversed in succession; but the severity of the latter, however, was accentuated by the imposition of a starting, stopping, and acceleration test.

In this there were few failures. However, the engine of H. F. Edwards's 8 h.p. Matchless appeared to resent the prevailing heat, and partially seized; while the only 3½ h.p. Rudge entered in the trial, ridden by B. T. Seade, also failed, as did Allen (8 Matchless sc.), who burst a tyre.

J. A. Hoult (3¾ Scott) employed a novel idea of tying a piece of string to his stand, which was kicked down when stopping, and deftly pulled up when getting away on first gear.

B. J. Simms (4 Triumph) was the victim of a loose gear change lever bolt, which inappropriately released itself as the first gear was engaged, thus rendering the machine uncontrollable.



C. R. Collier (8 Matchless sidecar) on the colonial section between Westerham and Chalk Pit. He is co-designer and co-manufacturer of the Matchless, and co-donor of the premier award which he won.

Chalk Pit Hill again. G. Jenner (3½ Norton) climbing in an unconcerned manner.

A tricky bit of road was provided before reaching Titsey Church, where a left bend joined the main road for some distance before striking off the trail to Chalk Pit Hill.

This climb is a real "trembler," insomuch as the frame does quite as much work as the other essential parts of the machine. The surface would have caused some real fun had the gods decreed rain. As it was, however, the loose, dry stones and dust permitted a good grip for the tyres.

Of the group of hills which rise out of the basin in the vicinity of Westerham, Polesteeple caused some difficulty. Succombe, a long hill terminating in a sharp bend at the entrance to Upper Warlingham village, is probably more notorious.

Lady Sidecarist Does Well.

C. R. Collier (8 Matchless sc.) made an excellent climb, whilst a similar machine in the capable hands of Mabel Hardee defied all the terrors of the gradient.

Polesteeple and its hairpin was next negotiated. T. J. Ross (8 Matchless sc.) was the first up, and swung round the hairpin with the same ease as he had climbed the hill. J. Wallis (6 Bradbury) just missed the hedge. H. W. Harrington (2¾ Douglas) attempted too much speed, and shot beyond the bend, only to return at the bidding of a kindly observer. R. B. Clark was not quite at home on his Matchless and swerved a little at the corner; whilst R. P. Steytler (6 P.V. sc.) just scraped round. A winding route *via* Cudham then terminated at the "Three Horseshoes" in Knockholt village.

Opinion was divided as to the inclusion of the lunch "scramble" in the trial.

Twenty-five survivors faced the starter for the afternoon's run, which was the identical route followed in the morning. Of these, ill luck befell G. Maund (3 A.B.C.), G. Nott (8 Matchless sc.), W. J. Reynolds (3 A.B.C.), J. R. G. Haill (7 Harley sc.), and H. Chalklen (7 Harley sc.).

A gold medal was awarded to the riders making the best performance in each class, and also for the best performance of the day. The latter was easily secured by C. R. Collier (8 Matchless sc.), who also carried off the "Matchless" Cup.

W. B. Mills (6 Clyno sc.) gained a gold medal in his class, his error being 1m. 9⅖s. Collier was but 14⅖s. over time. The team prize went to the A.J.S. riders—F. W. Giles, R. G. Mundy, and W. C. Hemy.

Survivors:

P. Cunningham (3½ P. and M. sc.), J. Wallis (6 Bradbury), C. R. Collier (8 Matchless sc.), T. J. Ross (8 Matchless sc.), F. J. Watson (6 Ariel sc.), H. W. Harrington (2¾ Douglas), Mabel Hardee (8 Matchless sc.), R. B. Clark (7 Matchless), W. B. Mills (6 Clyno sc.), F. W. Giles (7 A.J.S. sc.), R. P. Steytler (6 P.V. sc.), R. G. Mundy (7 A.J.S. sc.), F. O'Brien (8 Matchless sc.), W. C. Hemy (7 A.J.S. sc.), A. Clark (4 Triumph sc.), G. E. Stacey (2¾ Verus), G. Jenner (4 Norton), and S. A. McCarthy (5 Stanger).

SMALL CARS.

Motor cyclists interested in small cars should read "The Autocar," the parent journal of "The Motor Cycle."

Light, medium, and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interests of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

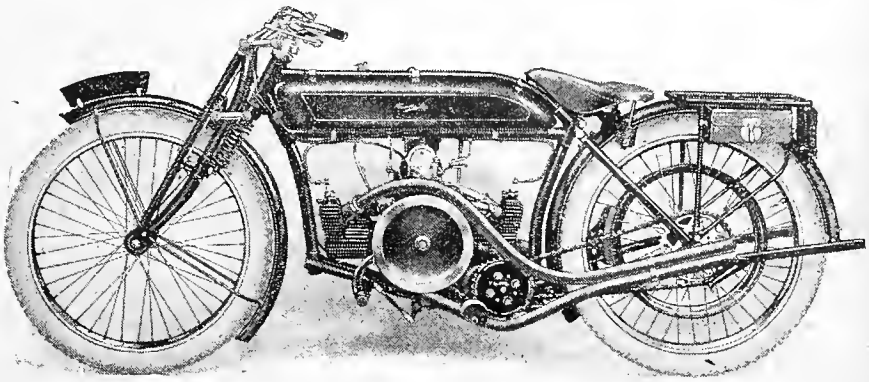
Every Friday - - Price 4d.

HUMBERS FOR 1922.

A New 75 m.p.h. Sporting Model at a very Moderate Price. Few Alterations in the Touring Machine.

NEXT year the sporting solo rider will be specially catered for by several firms who have hitherto devoted themselves to, and built up reputations on solid, reliable double-purpose mounts. Quite one of the most attractive of these new "sports" models is the 1922 flat twin Humber, which will sell at the wonderfully moderate figure of £100.

In general layout the sporting model differs but little from the standard Humber, which, incidentally, was always a fascinating solo machine. Closer examination reveals several modifications and improvements; and that these have been successful is proved by the fact that the new model has already been timed to do 75 m.p.h. on the road.



Flywheel side of the Sporting Humber, showing the exhaust arrangements.

A Special Engine.

Aluminium pistons, with two narrow rings at the top, a higher compression ratio, a redesigned camshaft giving a quicker lift to the valves, and completely interchangeable valve pockets are the chief alterations to the well-known 600 c.c. (75×68 mm.) flat twin engine. (It will be remembered that the valve pockets on this engine have always been quickly detachable; but on the touring model the exhaust passages take a downward turn to the silencer, which is unnecessary when long exhaust pipes are fitted.)

Although the standard three-speed gear box with clutch and kick starter is used, no transmission shock absorber is fitted; neither are chain guards, although it has not been definitely decided that these will be discarded. So that the change speed gate will not foul the rider's knee, it has been slightly modified, leaving both sides of the tank clear for the inevitable knee grips. The gear ratios are 4.5, 7.4, and 12.4 to 1. The footrests are adjustable in a very ingenious manner, the various changes of position being located by a peg in a drilled quadrant on the supporting bar.

Most comfortable flat handle-bars, narrow mudguards, a Brooks racing saddle, and 26×2½in. three-ribbed Dunlop tyres complete the specification of the sporting model.

Detail alterations only have been made on the touring machine, chief of these being a "breather" on the timing case, which ejects oil vapour on to the primary chain and a cranked gear lever.

Detail Items.

Sump lubrication, with a mechanical pump for retaining the oil level, plus an auxiliary drip feed, a Claudel-Hobson single lever carburetter, and Druid pattern forks have been retained on both models. An all-black finish is an optional item; while, if desired, a Lucas dynamo lighting set, for which a neat, enclosed drive has been designed, may be supplied as an extra. The price of the touring machine has been fixed at £110, or, with Grindlay sidecar, £144.

NEW THREE-SPEED LIGHTWEIGHT.

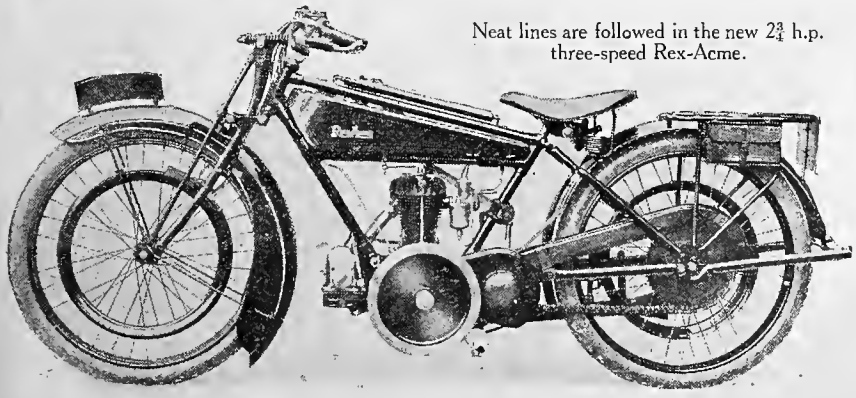
An All-chain Drive 350 c.c. Rex-Acme for 1922.

FROM all indications next year will be a lightweight year—from the soloist's point of view, anyhow. The 350 c.c. machine with a three-speed gear and all-chain drive, is now a true go-anywhere mount; and realisation of this fact has led the makers of the Rex-Acme to expend much thought on a model of this type to sell at a very competitive price.

In appearance the new lightweight suggests a *de luxe* specification, and it would be difficult to point out any feature, either in design or finish, which could reasonably be improved were price a matter of much less consideration.

Outside Flywheel Engine.

The power unit is a 2¾ h.p. Blackburne engine, and the method of almost wholly enclosing the primary chain—a difficult matter with an outside flywheel—is very neat. Either a two-speed or a lightweight three-speed Sturmey-Archer gear box may be fitted at option, and a transmission shock absorber is dispensed with by using a Brampton spring link chain for the final drive.



Neat lines are followed in the new 2¾ h.p. three-speed Rex-Acme.

The brakework is simple, neat, and efficient—dummy belt rim on both wheels. The rear brake pedal is conveniently placed, and the hand-operated front brake is smooth and powerful. Illustrating the careful detail design, the footrest bars are independently screwed into a special lug, and the mudguard bridge on the rear stays is shaped to conform with the special section of the 6in. guard. Equally extensive is the front guard.

Refined Equipment.

Brampton forks, with double vertical springs, are standard, as is a neat, "flat" handle-bar.

Finished in Royal blue, the tank has unusually good fittings, including the "most visible" type of Best and Lloyd drip-feed, with a flat, circular glass, and large, secure filler caps. It holds about one and a half gallon of petrol.

Another model, which resembles the one under review at a first glance, differs in power unit (a 292 c.c. J.A.P.) and transmission (chain-cum-belt *via* a two-speed gear box). There are also detail differences in the mudguarding, control levers, and spring fork.

CURRENT CHAT (Continued from p. 434).

Reward of Enterprise.

One of the features of the last Olympia Show was the Enfield 8 h.p. sidecar outfit, selling at £160, then a low figure for such a machine. That the Enfield Cycle Co.'s cut price policy was right is now proved by the very excellent balance-sheet just issued, for a profit of £66,155 has been made. Ordinary shareholders secure a dividend of 15% free of tax, and the "A" preference shareholders have had two dividends at the rate of £7% per annum each. A balance of £37,703 is transferred to the Reserve Fund. Such a result is indeed satisfactory.

More Records Broken.

On Friday last V. Horsman, riding a 3½ h.p. Norton, recovered the 500 c.c. class hour record, covering fifty miles in 40m. 27.9s. = 74.14 m.p.h., and 73 miles 644 yards = 73.38 m.p.h. in the hour, an improvement of 1.51 m.p.h. over the record established by J. L. Emerson on a Douglas on September 24th. On the following day, E. Remington on a 2¾ h.p. Blackburne covered ten miles (standing start) in 8m. 36.5s. = 69.7 m.p.h. This record stood only for one day, for on Monday, K. Don, riding a 2¾ Massey-Arran, covered the same distance in 8m. 25.48s. = 70.22 m.p.h.

"The Motor Cycle" Film.

We have already received a large number of requests for the loan of *The Motor Cycle* film, which has been prepared by us to give clubmen an hour's entertainment such as is impossible to obtain elsewhere.

Imports and Exports.

According to the Board of Trade returns for September, 1,557 "motor cycles and tricars" were imported against 35 during August. As the value of these fifteen hundred odd machines is given as £21,448 (or approximately £14 apiece), it would appear that some of them are ex-Army stock. The export figures are not so startling, the most pronounced feature being the decline in number and value of exported British machines compared with August. Detailed tables are appended :

IMPORTS.

	Aug., 1921.		Sept., 1921
Number of motor cycles ..	35	..	1,557
Value of machines and parts	£12,756	..	£36,491

EXPORTS.

	Aug., 1921.		Sept., 1921
Number of motor cycles ..	539	..	425
Value of motor cycles only.	£44,366	..	£34,747
Value of parts	£30,848	..	£18,341
Total value	£75,214	..	£53,588

Royal Patronage for the Show.

His Majesty the King has graciously consented to give his royal patronage to the seventh cycle and motor cycle show, which opens at Olympia on November 28th next. H.R.H. the Duke of York has announced his intention of visiting the show, probably on Wednesday, November 30th.

Additions to Olympia Exhibitors.

Owing to delay in having a stand allotted at Olympia, the name of the Coventry Eagle Cycle and Motor Co. did not appear on the list published last week. This company is exhibiting on Stand 47.

The Wulfruna Engineering Co. (1920), Ltd., of Wolverhampton, will also be at Olympia.

Forthcoming Midland Open Event.

As already indicated under "Important Dates," an open trial will be held by the Midland Centre A.C.U. on November 5th. It is promised that there will be no secret checks, etc., but that the event will be rather like a good stiff day out of the Scottish Trials. Further particulars may be obtained from Mr. P. W. Bischoff, Sunhoney, Richmond Road, Wolverhampton.

CLUB NEWS. (Continued from page 435.)

Reigate, Redhill, and District M.C.C.

On Wednesday of last week the club held a petrol consumption test, with the following results :

SIDECAR CLASS.—1, E. P. Duplode (8 Zenith sc.).

SOLO CLASS.—1, Reg. Green (3½ Sports Sunbeam).

Oxford M.C.

No accidents, high speeds, and wonderful weather all contributed to make the speed trials, which were held on Akeman Street, Chesterton (near Bicester), on Saturday last, the most successful event yet held by the club. Classes won by trade riders also carried special awards for amateurs. The distance was one mile from a standing start. Results (in awards : A. = amateur ; T. = trade) :

CLASS 1 (Sidecars up to 650 c.c.).—1, M. Pearson (3½ Norton sc.), 1m. 17⅘s. (T), bronze medal; 2, S. Hancox (4 Triumph sc.), 1m. 18⅘s.; 3, L. A. Welch (4¼ B.S.A. sc.), 1m. 25⅘s. (A.), bronze medal. Won at 46.39 m.p.h.

CLASS 2 (Sidecars unlimited).—1, I. P. Riddoch (8 Zenith sc.), 1m. 6⅘. (A.), silver medal; 2, E. J. Cross (7-9 Harley-Davidson sc.), 1m. 9⅘s. (T.), bronze medal; 3, A. W. Cross (7-9 Indian sc.), 1m. 21⅘s. (A.), bronze medal. Won at 54.05 m.p.h.

CLASS 3 (Solo up to 250 c.c.).—1, C. Kimber (2¼ Levis), 1m. 22⅘s. (T.), bronze medal; 2, C. Reyersbach (2¼ Velocette), 1m. 23⅘s. Won at 43.8 m.p.h.

CLASS 5 (Solo up to 350 c.c.).—1, F. G. Oliver (2¾ Douglas), 1m. 15⅘s. (T.), bronze medal; 2, C. Reyersbach (2¼ Velocette), 1m. 20⅘s; 3, C. Kimber (2¼ Levis), 1m. 21⅘. Won at 47.62 m.p.h.

CLASS 6 (Solo unlimited).—1, E. J. Cross (7-9 Harley-Davidson), 56⅘s. (T.), silver medal; 2, F. H. Lewis (3½ Norton), 1m. 3s. (T.), bronze medal; 3, S. Hancox (4 Triumph), 1m. 3⅘s.; 4, L. A. Welch (4¼ B.S.A.), 1m. 7⅘s. (A.), silver medal.

CLASS 8 (Solo up to 650 c.c.).—1, F. H. Lewis (3½ Norton), 55⅘s.* (T.), silver medal; 2, S. Hancox (4 Triumph), 1m. 2s. (T.), bronze medal; 3, M. Pearson (4 Norton), 1m. 2⅘s.; 4, L. A. Welch (4¼ B.S.A.), 1m. 9⅘s. (A.), silver medal; 5, E. Colegrove (4 Triumph), 1m. 15⅘s. (A.), bronze medal. * Fastest motor cycle time of the day (64.75 m.p.h.).

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes approximately an hour to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trial, and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, for a list of open dates.

Leicester M.C.

Official results of the Bowerman Cup two-stroke trial have been announced as under :

WINNER OF BOWERMAN CUP: G. Povey (2¼ Velocette), 199 marks. Gold medal: G. Denley (2¼ Velocette), 196 marks. Silver medal: P. J. Strong (2¼ Enfield), 190 marks. Bronze medal: H. J. Woodgate (2¼ New Hudson), 189 marks.

GENERAL CLASS.—Gold medal: L. West (2¼ Velocette), 197 marks. Silver medal: L. Judge (2¼ Velocette), 197 marks. Bronze medal: J. L. Baxter (2½ Clyno), 187 marks.

BEST SIDECAR PERFORMANCE (Expert).—Silver medal: E. Amey (3 Ivy), 182 marks.

BEST PERFORMANCE BY NOTTINGHAM RESIDENT.—Gold medal: J. R. Sylvester (2¼ Velocette), 179 marks.

MOST PLUCKY PERFORMANCE (Leicester).—Silver medal: H. Ward (2¼ Campion), 171 marks.

BEST PERFORMANCE IN CLASS A.—Gold medal: G. Povey (2¼ Velocette), 199 marks.

AN OUTSTANDING PERFORMANCE.—Silver medal: W. Pym (2¾ Beardmore-Precision), 185 marks.

TEAM PRIZE (Gold medals).—Leicester Velocette team: A. Bowerman (2¼ Velocette), L. Judge (2¼ Velocette), and L. West (2¼ Velocette), 581 marks gained.

Basingstoke M.C.C.

It is estimated that 2,000 spectators were present at the highly successful hill-climb held on the 29th ult., formula and time results of which are now available :

FORMULA CLASSES.

600 c.c. SIDECARS.—1, W. Osmond (3½ Ariel sc.).

1,000 c.c. SIDECARS.—1, W. Osmond (3½ Ariel sc.).

275 c.c. SOLO.—1, W. Julian (2¼ Levis).

350 c.c. SOLO.—1, W. Julian (2¼ Levis); 2, B. Potter (2½ O.K.).

550 c.c. SOLO.—1, H. V. Stevens (3½ Norton); 2, W. Julian (2¼ Levis).

750 c.c. SOLO.—1, H. J. Gifford (3½ Norton); 2, W. Julian (2¼ Levis).

1,000 c.c. SOLO.—1, G. A. Gammon (3½ Norton); 2, O. W. Tyler (7-9 Indian).

TIME CLASSES.

600 c.c. SIDECARS.—1, A. J. Fleming (4 Harley-Davidson sc.), 1m. 7s.

1,000 c.c. SIDECARS.—1, A. J. Fleming (4 Harley-Davidson sc.), 1m. 4⅘s.

275 c.c. SOLO.—1, R. Stevens (2¾ Douglas), 37⅘s.

550 c.c. SOLO.—1, H. V. Stevens (3½ Norton), 30⅘s.

1,000 c.c. SOLO.—1, R. W. H. Davis (8 Zenith), 32⅘s.

North-west London M.C.

The programme of this club produces several novelties each year. The latest, last Saturday, took the form of a "point-to point time schedule," the exact position of each check being defined only to the extent of a named circle of a diameter varying from one-half to one inch on the official map. Starting from Edgware, the checks were situated near Aldenham, Ridge, Mill Hill, Kingsbury, and Stanmore. To those familiar with the network of roads at these points, the fact that the winner was far behind schedule will cause no surprise. Many failed to discover the checker at all. Results :

1, T. E. Moon (Douglas), penalty 161; 2, J. D. Sangway (Zenith), 257; 3, D. F. C. Fitzgerald (Norton), 305; 4, Miss Thomas (Morris), 405.

Grip & Long Mileage

BELDAM TYRES have most rubber where it is most needed—hence long mileage.

But you get more than mileage: the Beldam design of tread assures a steady grip on the road, and less puncture-liability. And they cost less! More mileage, more safety, more satisfaction—for less money! Ask a user. Booklet "Testimony" sent free on request. Write to-day. Or send a trial order.

The Beldam Tyre Co. (1920) Ltd.,
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Telephone: Ealing 125

Manchester and District and North Wales: W. Briggs & Co., Windsor Bridge, Salford. Nottingham: The City Rubber Co., 106, Upper Parliament St. Colne, Lancs.: G. W. Rushworth, Brown Street. Four Northern Counties: R. Y. McIntosh & Co., 13, Shakespeare Street, Newcastle-on-Tyne. Scotland: Drysdale & Co., York Place, Dumfries. Ireland: Messrs. Hill & Co., Motor Engineers, Galway.

PRICES OF BELDAM MOTOR CYCLE TYRES.

Size.	All Rubber, V Design 3-ply.			All Rubber, V Design 4-ply.		
in.	£	s.	d.	£	s.	d.
26×2	2	1	9	2	11	0
26×2¼	2	4	3	2	11	3
26×2¼	2	4	6	2	13	0
26×2½	2	5	9	2	14	0
26×3	2	10	3	2	16	9
28×3	2	13	6	3	0	9

Also 26×3in. ccr. fitting.

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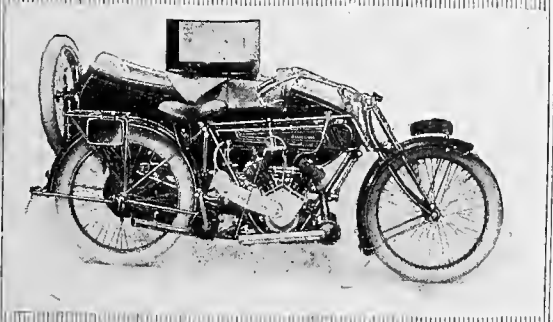
All British

Cost less—Last longer

Blackburne

"The Machine that runs like a Car."

MOTOR CYCLES



BLACKBURNE SCORES AGAIN

Brooklands Meeting, August 27th, 1921.

EVENT	ENGINE	RESULT
3	2¾ h.p.	3rd
4	2¾ h.p.	1st
6	8 h.p.	1st
7	2¾ h.p.	2nd

For power, speed, and reliability you cannot beat the Blackburne.

INSIST UPON HAVING A BLACKBURNE ENGINE

FITTED TO YOUR MACHINE—
YOU CANNOT HAVE A BETTER.

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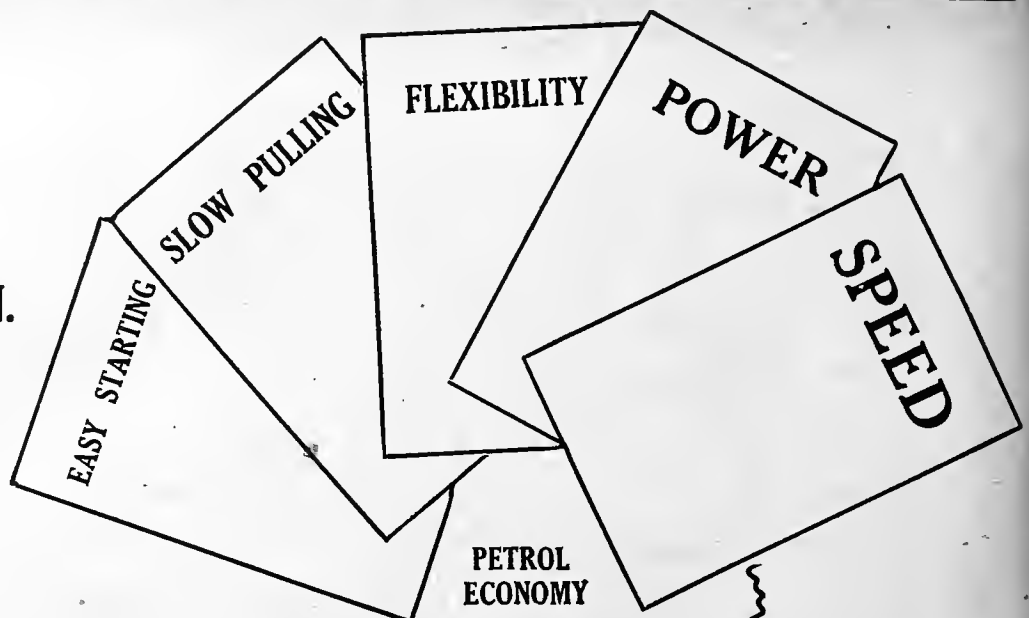

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KEEP HIM OFF!

This little beggar works whilst you're asleep or busy—takes pounds and pride off your "outfit" Stop his activity with "Corrosine" *the* Rust-Preventer & "Derusta" *the* Rust Remover.

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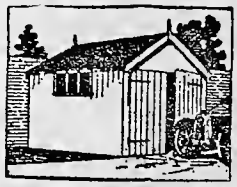
PORTABLE WOOD IRON ASBESTOS BUILDINGS

OF EVERY DESCRIPTION.

Horticultural, Rustic, and Poultry Appliances.

MOTOR CYCLE HOUSES FROM £7 15 0



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SIDECAR SPRINGS.

REAL SPRINGS 12/6 each.

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GODDARD'S MOTOR HOUSES.

A well-constructed house, built of ¾ in. matchboard, on stout framing, made in sections to bolt together, roof of matchboard covered tarred felt.

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Size	Height to Ridge	£ s. d.	Floor extra.
7ft. × 5ft.	6½ft.	7 4 0	0 18 0
8ft. × 6ft.	7ft.	7 17 6	1 9 0
9ft. × 6ft.	7¾ft.	8 15 6	1 11 6
10ft. × 7ft.	8ft.	13 0 0	1 16 0

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Spare Parts for

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The Ideal BOOT

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Perfectly New, absolutely Waterproof, and easy to slip on and off. These boots are of far superior quality, and will give far more service than similar articles, of infinitely inferior materials, which are offered by other stores at slightly lower price.

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Our Price - 35/-

Postage and packing, 1/6. **In Brown or Black.** All sizes. Guaranteed to be made of the finest Government Leather. Sizes from 4 to 12. Smaller sizes suitable for ladies. These boots reach to the knee, and have full length tongues and side buckles, which effectively prevent any water penetrating through the lace holes or over the tops of the boots. The uppers are strong and stout, and yet extremely soft and pliable. **The SMARTEST and MOST COMFORTABLE Trench Boot procurable.**

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25—R. A. F. Model 3½ h.p. P. & M., 2-speed, kick-start and clutch—Solo—**£30 down** and 12 monthly payments of £2-12-6.

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Well upholstered and roomy new coachbuilt sidecar, and chassis for either of the above **£10 down** and 12 monthly payments of 17/6.

CASH TERMS.

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Acetylene generator, head and tail lamps, tools, pump, and mechanical horn, £5 the set

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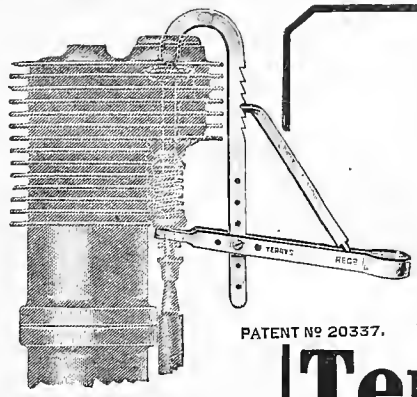

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Patent Valve Spring Lifters

IT fits any engine, and enables a valve to be taken down whilst hot.

At one operation it holds valve down, and lifts spring clear of pin, and holds it in any position—leaving both hands free.

It is high-grade quality and will give good service.

1/6 each with ratchet back
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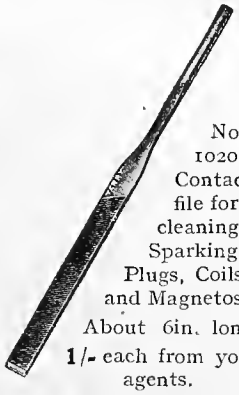

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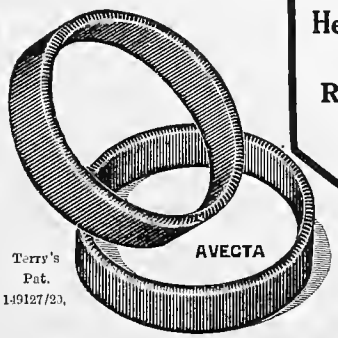
Ask for Terry's—remember "Terry" quality.



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		Elite.	O.A.	3 Spires.
Cycle :	½" × ⅛" and ½" × 3/16"	13/6	8/4	6/5
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Motor Cycle per foot :	3/8" × ⅛"	½" × 3/16"	½" × ¼"	⅝" × ¼"	⅝" × 3/8"	¾" × 5/16"	¾" × 3/8"	¾" × 7/16"
	4/-	4/11	5/5	6/1	6/6	6/10	7/3	7/9

"THE COVENTRY" CHAIN CO., LTD., COVENTRY.

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BRADBURY 4h.p. Combination, 1920, fully equipped; £70.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [X0475

BRADBURY 4h.p. Coachbuilt Combination, 3-speed, clutch, fully equipped, tax paid; £45.—Speechley, 86, Churchfield Rd., Acton, W.3. [3644

6h.p. (late) 1914 Bradbury Combination, sidecar new last February, cost £40, folding child's seat, electric lighting, perfect condition; £90, or near.—11, Girton Rd., Sydenham, S.E.26. [3351

1921 6h.p. Bradbury Combination, 3-speed, kick start, fitted with Grindlay patent spring wheeled sidecar, brand new, never been registered; cost me £184, will accept £125.—Geo. Pickard, 96, Burley Lodge Rd., Leeds. [3468

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Brough.

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BROUGH and Sidecar, 1920, all on, engine just overhauled by Mathers, 1922 improvements; real bargain, £75.—Redgate, 21, Parliament St., Nottingham. [3618

NEW 1921 3½h.p. Brough Flat Twin, overhead valves, 3-speed Sturmey-Archer, all chain drive, touring model; makers' price £130, bargain price £110.—22, Rodney St., Liverpool. [2472

NEW 1921 3½h.p. Brough Flat Twin, overhead valves, 3-speed Sturmey-Archer, all chain drive, T.T. sporting model; makers' price £130, bargain price £110.—22, Rodney St., Liverpool. [2473

Brough Superior.

BROUGH Superior, solo, carefully ridden and well run in; £145.—Ross, 38, York Mansions, Battersea Park, S.W.11. Any morning before 11. [3603

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B.S.A.—All models always in stock; delivered anywhere.

B.S.A. Replacements by return. Write for replacement catalogue.

B.S.A. Specialists: County Cycle and Motor Co., Broad St. Birmingham. [3248

B.S.A. 1921 4¼h.p., brand new, slightly shop-soiled; a sacrifice, £95.—Below.

B.S.A. 1921 Combination, Canoelet sidecar, brand new, slightly shop-soiled; bargain to clear, £103.—Below.

B.S.A. 1921 6-7h.p. Combination, brand new, slightly shop-soiled; a bargain, £156.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

B.S.A. Combination, coachbuilt car, in perfect condition; £50.—31, Silver St., Enfield. [3897

BRAND New Shop-soiled B.S.A. Model H2; £103.—Jones Garage, Muswell Hill, London. [2991

NEW 1921 B.S.A. Combinations in stock; list price.—Bounds' Garage, 223, High Rd., Kilburn. [3575

BRAND New Shop-soiled B.S.A. Model K2; £100.—Jones Garage, Muswell Hill, London. [2992

1921 4¼h.p. B.S.A., new condition, equipped; £105, or offer.—Box 6,804, c/o *The Motor Cycle*. [4149

B.S.A. Combination, 1916, electric lighting, good condition; nearest £85.—Ellis, Norfolk Rd., Harrogate. [3771

B.S.A. Combination, 1921, all-chain, 4¼h.p., complete, accessories; £120, nearest.—Davis, 227b, Brooke Rd., Upper Clapton. [3457

B.S.A. 4¼h.p. Combination, all-chain, Watford, fully equipped, licence; any trial; nearest 95 gns.—35, Trafford Rd., Eccles. [4104

DEC. 1919, B.S.A. 4¼h.p. all-chain combination, fully equipped, low mileage; £90.—159, Mornington Rd., Leytonstone, E.11. [3452

B.S.A. 4¼h.p. Combination, 1920 model, with hood, screen, lamps, horn, etc., in excellent mechanical condition; £100.—239, Walthall St., Crewe. [3539

F.O.C.H. have a 1919 4¼h.p. B.S.A. and Canoelet sidecar; £75, bargain.—Fair Offer Car House, 5, Heath St., Hampstead (nr. Hampstead Tube Station). [3687

B.S.A. 1920 4¼h.p. Combination, with accessories; cost £170, what offers? Must sell; owner purchased car; inspect any time.—241, Main Rd., Sidcup. [4269

B.S.A.—We can supply all models for cash, exchange, or deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4188

1919 4¼h.p. B.S.A., with sidecar, Tan-sad, Klaxon, lamps, spares, excellent condition; £95.—Hambly, 113, Longford Rd., Chorlton-cum-Hardy, Manchester. [X0520

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NORTON, 1921 (Sept.), 3½ h.p., 3-speed, K.S., fitted speedometer, head lamp, tail lamp, horn, knee-grips, mudshields, mileage approx. 100. To clear **£105**

MATCHLESS 1921 H Combination, M.A.G. engine, Magdyno lighting, horn, speedometer, mudshields, screen, tax paid, as new **£170**

ZENITH, 1921 (new), 5 h.p., sports model. List price £115. Our price **£100**

HARLEY-DAVIDSON latest model 4-5 h.p. Combination, fully equipped, speedometer, tax paid, as new **£120**

INDIAN 1921 7-9 h.p. Combination, electrically equipped, tax paid, as new. Cost £230 ..... **£170**

SCOTT, 3⅜ h.p., sports model, tax paid, new 6 weeks ago **£100**

SUNBEAM (new, shop-soiled), 3½ h.p., sports model, tax paid, born **£135**

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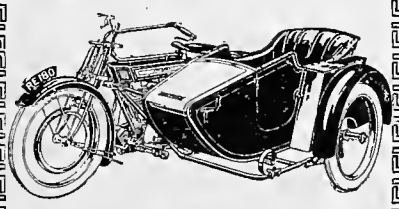
TRIUMPH, 4 h.p., all-chain, 3-speed, K.S. **£115**

TRIUMPH, 3½ h.p., T.T., o.h.v., all-chain **£120**

TRIUMPH Junior, 2¼ h.p., 2-speed **£65**

MATCHLESS H Combination, spare wheel and tyre, screen **£185**

MATCHLESS H sports model **£180**



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6-7h.p. B.S.A. Combination, accumulator, lighting set, Easting Royal, horn, etc., new May, 1921, cost £185, run 1,000 miles; £150.—Box 47, c/o *The Motor Cycle*. [X0406

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. B.S.A. twin combination, 1921, shop-soiled only; reduced to £160; easy terms without extra charge. [4202

B.S.A. 6-7h.p., small mileage, most luxurious sidecar, with car hood, side screen, and luncheon table, suit invalid; £140.—Seen Sandums, 336, Gray's Inn Rd., W.C.1. [0718

B.S.A. 4¼h.p. Combination, 1915, excellent condition, any trial, all chain, special spring cush, Binks, Tan-Sad, spares and tools; £70.—Hazelwood, 27, Doggett Rd., Catford. [3593

B.S.A., Aug., 1920, 4¼h.p., all-chain, Montgomery sidecar, lamps, Klaxon, speedometer, spring seat pillar, tax paid; £110, or thereabouts.—Arnold, 41, Park Rd., Worthing. [3872

B.S.A.—Being official agents we have them always in stock, and immediate delivery can always be given.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0379

B.S.A. 4¼h.p., coachbuilt sidecar, 2-speed, free clutch, kick start, electric light, wind screen, excellent condition; £65, or near. After 5 o'clock.—Housekeeper, 54, St. Mary Axe, E.C.3. [3707

B.S.A. 1919 4¼h.p., 3-speed, clutch, Lucas King of Road, spare belt, tools, etc., licence paid, thoroughly reliable; any trial; what offers?—Callaghan, Excise, Bornis, Co. Carlow. [3547

1919 B.S.A., 4¼h.p., coach sidecar, just thoroughly overhauled, and in splendid condition, lamps, tax, etc.; bargain, £78; exchange Triumph or Sunbeam.—Blanden, Lakenheath, Suffolk. [3859

B.S.A. 1919 4¼h.p. Combination, speedometer, Easting, tools, accessories, all on as new; £97/10; trial given.—Moore, 40, Sedgeford Rd., Shepherd's Bush. 'Phone: Hammersmith 1158. [3868

B.S.A. 1913, 2-speed, clutch, Canoelet sidecar, lamps, new tyres, belt, excellent condition throughout; exchange for solo, or sell.—'Phone: 1562 Mayfair.—Seen 125, St. Margaret's Rd., Twickenham. [3346

B.S.A. 4¼h.p. 1920 All-chain Combination, lamps, horn, speedometer, Easting, and luggage grid, unused spare valve, chains, covers, tubes; £115; appointment.—Young, 6, Jackson's Lane, Highgate, N.6. [4036

1920½ B.S.A. Combination, 4¼h.p., lamps, tools, spares, comfortable coachbuilt folding sidecar, mileage 1,100, tax and insurance paid, excellent condition, carefully ridden; £110, or offer.—9, Yarrell Mansions, Queen's Club Gardens, W.14. [3939

B.S.A. Model H2 4¼h.p., with B.S.A. No. 3 sidecar, 1921 latest model combination, not done 50 miles, tax paid, new last week; great bargain, £129/15.—Wilkins, Simpson, opposite Olympia London. [4224

B.S.A. Model H2 4¼h.p. with B.S.A. No. 3 sidecar, 1921 latest model combination, not been 50 miles, tax paid, new last week; great bargain, £129/15.—Wilkins, Simpson, opposite Olympia, London. [3268

B.S.A. 1919 Combination, lamps, horn, screen, spares, tax paid, nearest £80; also 1921 Norton, model H17, lamps, horn, speedometer, tax paid; £90.—Priest, Cleveland House, Clifton St., Stourbridge. [3925

1921 (May) B.S.A. 4¼h.p. Combination, No. 3 sidecar, Lucas Magdyno lighting, electric horn, Easting Royal, Tan-Sad, tax, new condition; cost £184, £145, or reasonable offer.—Mills, 77, Dudley Rd., Tipton. [4245

B.S.A. Specialists. All models in stock; easy payments.—Authorised West End Agents, Vivian Hardie and Lane, Ltd. ('Phone: Mayfair 6559), 23, 24, Woodstock St. (off Blenheim St.) New Bond St., W.1. [0657

BRAND New B.S.A. 4¼h.p. Combination, all-chain drive, sidecar, carries makers' full guarantee; £135.—Vivian Hardie and Lane, Ltd., 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [0725

B.S.A., 4¼h.p., 1917, Mills-Fulford sidecar, Easting screen, perfect condition; any trial and examination; full kit tools, speedometer, 2 new tyres, lamp, etc.; price £70, or near offer; seen any time.—Blake, 11, Broadway, Church End, Finchley, N.3. [3427

B.S.A. 1920 4¼h.p., all chain drive, 3-speed, K.S., hand clutch control, fitted with electric lighting set (accumulator), speedometer, electric horn, complete with tools, spares, etc., in very good general condition, licence paid, ride away; £75, or near offer.—6, Warwick St., Regent St., W.1. [3703

Spare Parts:

B.S.A. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3984

Calthorpe.

1920 2¾h.p. Calthorpe-Jap, 2-speed, completely equipped; £40.—Victoria Garage, Surbiton. [3851

2¼h.p. Calthorpe 2-stroke, 2-speed, overhauled, excellent; £25.—Dosser, Slingsby, Malton. [4139

CALTHORPE Junior, 2h.p., 2-speed, speedometer, lamps, licensed; £20.—49, Vesta Rd., Brockley. [3654

CALTHORPE Junior, 2¼h.p. Precision, tappets, crank case, gears, frame (Druids), wheels for sale.—Gables, Dartford Heath, Kent. [3982

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Calthorpe.

CALTHORPE, 2¾h.p. J.A.P., Enfield 2-speed gear, new appearance; £35; will forward on deposit system.—Snow, Laurel St., Dalston, E.8. [3294

CALTHORPE 1921 Combination actually in stock for immediate delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd., Clapham Common, S.W.4. Phone: Brixton 2417. [0509

Camplon.

CAMPION-VILLIERS 2½h.p., good condition, all accessories, electric lamps; £30.—Hill, Whitehill Rd., Ellistown. [X0499

Cedos

CEDOS 1921 Lightweight, 2-speed, brand new but slightly soiled; £42/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0585

Chater-Lea

CHATER-LEA 2-stroke, 2-speed, new condition; £28.—33, St. Stephen's Rd., Bow, E. [3639

NEW 1921 2½h.p. Chater-Lea, 2-speed; makers' price £70, bargain price £49/10.—22, Rodney St., Liverpool. [2475

CHATER-LEA, 3-speed and reverse gear box, almost new, Stellite hubs, bearings, stub axles, etc.; offers.—Ivy Villa, Carshalton Rd., Sutton. [3590

CHATER-LEA, 8h.p., tandem sidecar, will hold 1 adult and 2 children, hood, lamps, speedometer; £80.—141, Tufnell Park Rd., Holloway, N.7. [3421

CHATER-LEA Combination, 5-6h.p., 2-speed, free engine, Chater-Lea gear box, 1920 Amac, good tyres, horn, lamps, foot clutch, in running order; £35, offers.—Buckley, 12, Barlet St., Lower Edmonton, N.9. [4273

Cleveland.

CLEVELAND 3h.p., 2-speed, clutch, kick starter, only run 200 miles; £60; would accept good push-cycle part.—70, West Hill, Wandsworth. [3494

1920 Cleveland 3h.p., 2-stroke, 2-speed, hand clutch, lamps, mechanical horn, licence, 3in. tyres (unpunctured), economical, fast, comfortable, splendid condition and appearance; £55.—Williams, Richmond House, Ponciau, Wrexham. [3551

Clyno.

CLYNO 6h.p. Combination, all on, like new, spare wheel; any trial; £100.—Mead, 67, Deacon Rd., Kingston. [3405

CLYNO 1914 5-6h.p. Combination, 3-speed, Binks, accessories, just overhauled; £70.—Ashbee, Rose Valley, Brentwood. [3736

CLYNO 2¼h.p., 2-speed and clutch, 1920, lamps and tools, splendid little mount; £52.—Bell, 106, Gaisford St., London, N.W.5. [3440

CLYNO Combination, 6h.p., 2-speed, kick start; any trial; £68; take older machine part.—57, Kenbury St., Camberwell, London. [3849

CLYNO 6-8h.p. Combination, 1914, excellent condition, all accessories; nearest £80; seen after 6 p.m.—34, Harewood Rd., Merton. [3659

CLYNO 1917 2½h.p., 2-speed, clutch, tax; £28.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4192

CLYNO 6h.p. Combination, 3 speeds and kick starter, coachbuilt sidecar, screen, luggage carrier, tax paid; 40 gns.—Willoughby, Merstham, Surrey. [3788

1920 Clyno 2½h.p., 2-stroke, clutch, tax paid, insurance, all on, splendid condition and appearance, reliable; £43.—15, Broadhurst Gardens, Hampstead. [3559

8h.p. Clyno Combination, all on, excellent condition, also tradesman's large covered sidecar and chassis; £100 the lot; separate.—Templar, Court Rd., Cardiff. [X0513

CLYNO Lightweight, 1914-1915, single speed, lovely solo, in good order; £32.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4055

CLYNO 1917 5-6h.p. Combination, 3-speed, K.S., recently overhauled and repainted, all on, licensed; 65, or offer.—78, Tamworth St., Fulham, S.W. [4171

5-6h.p. Clyno Combination, 3-speed, K.S., 1921 Binks, screen, hood, side curtains, accessories, tax paid, excellent running order; £70.—Hodges, Lauderdale, Dawlish. [3622

1917 5-6h.p. Clyno Combination, countershaft, clutch, 3-speed, kick-start, spare wheel, fully equipped; £65.—Wheatley, 1, Paddock Cottage, Hampton Court Rd., Hampton Court. [3733

CLYNO 6h.p. 1918 Combination, very nice condition, speedometer, screen, Lucas lamp and horn, interchangeable wheels and spare, licensed, insured to May, 1922; £65.—Crow Bros., Guildford. [3844

1918 Clyno Combination, 5-6h.p., 3 speeds, kick start, horn, lamps, pillion seat, etc., in good running order, tax paid; £75.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [4038

OF Interest to Tradesmen.—6h.p. 1917 Clyno and sidecar, 3-speed, spare wheel, complete with easily detachable tradesman's sprung carrier chassis, easily take 3 cwt., any trial; £90 lowest.—Snow, Laurel St., Queen's Rd., Dalston, E.8. [3295

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MISS DOOLEY.—1915-16-17 6h.p. Clyno motor cycles, clutch, K.S., renovated and complete from £55 each; thoroughly overhauled; seen any time during the day. Also engines and gear boxes for sale, new and second-hand.—Please apply to Miss E. Dooley, 33, Killyon Rd., Clapham, S.W.8. [4156

Spare Parts:

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CLYNO Spares.—I can supply instantly all parts for all Clynos. Support an ex-soldier. Write requirements; stamp, please.—Llanage, 79, Waverley Rd., Redland, Bristol. [3588

Connaught.

CONNAUGHT, 1916, standard single speed; £27.—Cleverley, 29, Allandale Rd., Enfield Wash. [3596

CONNAUGHT 2-stroke, brand new, sacrifice for £4 under list price.—46, Cromwell Rd., Walthamstow. [4291

2½h.p. Connaught, 2-speed, month old, perfect condition; £42.—Ellum, 56, Seabourne Rd., Bournemouth. [4238

Coulson.

COULSON 2¾h.p. Sports J.A.P., 2-speed, clutch, brand new; cash £85, or £17 down and 12 payments of £6.—Below.

COULSON, 2¾h.p. Blackburne, 2-speed, clutch, brand new; cash £90, or £18 down and 12 monthly payments of £6/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2899

COULSON, 2¾h.p. Blackburne, fully equipped, speedometer, Binks, under 3,000, spares, as new; £70.—Simmonds, Field Lane School, West Hampstead. [3938

NEW 1921 2¾h.p. Coulson B, Blackburne engine, Sturmey-Archer 3-speed, kick start, clutch; makers' price £117/12, bargain price £95.—22, Rodney St., Liverpool. [2478

Coventry Eagle.

1920 Coventry Eagle, Villiers 2½h.p., 2-speed gear, excellent condition, licence, owner bought car; £40.—Manafon Cottage, Berriew, Mont. [X0394

F.O.C.H. have 1920 3½h.p. Coventry Eagle, 3-speed, kick starter, and Millford sidecar, fully equipped, tax paid; £88.—Fair Offer Car House, 5, Heath St., Hampstead (nr. Hampstead Tube Station). [3685

Coventry Victor.

COVENTRY VICTOR 5-7h.p., Aug., 1920, with Grindlay de Luxe sidecar, Easting Royal, lamps, Klaxon, £130; or solo £90.—Rogers, 57, Allesley Old Rd., Coventry. [X0471

COVENTRY VICTOR, the perfect flat twin engine.—Immediate delivery of standard touring machine, 5-7h.p., 3-speed gear box, all chain drive, £125; also short wheelbase sporting solo machine, guaranteed 65 m.p.h., £135, winner 500 mile race Brooklands (750 c.c. class); send for catalogue. Agents wanted where not represented.—Coventry Victor Motor Co., Ltd., Coventry. [0520

Diamond

£45.—2¾h.p. Diamond, J.A.P., Enfield 2-speed, accessories, as new.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [4014

Douglas.

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1921 Models in Stock: 4h.p. combination, £170; 4h.p. solo, £130; 2¾h.p. clutch model, £105; 2¾h.p. 2-speed model, £85; shop-soiled bargains; extended payments if desired; spare parts stocked; repairs.—Douglas Specialists, Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., London, W.1. 'Phone: Mayfair 6559. [0375

DOUGLAS. Douglas. Douglas.

1922 Models.

2¾h.p., 2-speed, fully equipped; £75.

2¾h.p., 3-speed, fully equipped; £90.

4h.p. Solo, fully equipped; £110.

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3½h.p., o.h.v., fully equipped; £130.

6h.p., o.h.v., all-chain, and new design, roomy sidecar; £165.

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DOUGLAS Specialities.—75% of catalogue prices allowed on old machines purchased from us if returned in good condition within 12 months.

VIVIAN HARDIE and Lane, Ltd., 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [0703

DOUGLAS, 2¾h.p., smart and fast, all on; £47.—323, Earlsfield Rd., S.W.18. [3633

1919 2¾h.p. Douglas, well equipped; £42.—24, Balliol Rd., North Kensington. [4040

MOTOR CYCLES FOR SALE.

Enfield.

19 20 6h.p. Enfield Combination, lamps, horn, Easting screen, tax, insurance; £120, or near offer. —Roberts, 111, Chamberlayne Rd., Willesden, N.W.10. [3278

£25 Saved.—Brand new shop-soiled Enfield 8h.p. combination, electrically equipped; £25 below list price, £157.—Jones Garage, Muswell Hill, London. [2993

ENFIELD 1917 6h.p. Combination, lamps, speedometer, Klaxon, etc., oversize tyres, sidecar hood; £80.—Mylam, 197, London Rd., Croydon. 'Phone: 2379. [4113

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1921, shop-soiled only; reduced to £155; easy terms, no extra charge. [4203

19 21 Enfield Combination, fully equipped, Tan-Sad, Easting, tax paid, in splendid condition, only run a few miles; £135.—Tebbutt, 34, Liverpool Rd., St. Helens. [3544

ENFIELD 3h.p. Twin, 1919 (guaranteed), 2 speeds, clutch, K.S., lamps, tools, etc., perfect in appearance and tune; accept £52.—Leach, Coppenhall Terrace, Crewe. [3971

LATE 1920 Enfield Combination, as new, Magdyno, splendid equipment; sacrifice £130.—James c/o Bradmore, 482, Harrow Rd., Paddington. Tel.: Willesden 1744. [2913

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1917, fitted with Tan-Sad speedometer, lamps, etc., ready for the road, tax paid; £95. [4206

19 21 Enfield-Jap, Lucas Magdyno, mileage 2,500, perfect condition, Cowey, Easting, Tan-Sad, spare cover, insurance, tax paid; £175.—Malt, 47, Clock House Rd., Beckenham. [4271

ENFIELD.—We are official agents, and can give immediate delivery of any model of this foolproof motor cycle.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0380

19 18 Enfield Combination, Lucas dynamo lighting and horn, extra horn, screen, hood, tyres nearly new, Tan-Sad, tax paid, topping condition; £100.—63, Stewart Rd., Bournemouth. [3389

ENFIELD Combination, 8h.p., hood, screen, pillion, discs, electric-acetylene lighting, accessories, speedometer, excellent condition; £110.—35, Bramblebury Rd., Plumstead, S.E. [4064

19 21 (Aug.) Enfield Combination, 8h.p., complete wind screen, Lucas lamps, horn, tax paid, also fully insured, ridden under 300 miles; bargain, £135.—34, Manchester Rd., Swindon. [3623

ENFIELD.—Immediate delivery latest model 8h.p. combination, £160; 2¼h.p. model, £65; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also, 245, Deansgate, Manchester. [X0426

3h.p. Enfield, 1916½, 2-speed, K.S., recently fitted with new bearings, chains and tyres; £39, or exchange, cash adjustment.—Stanley Green, 1, Albert Place, Belle Grove, Welling, Kent. [4045

ENFIELD Combination, 8h.p., 1918, 700×80 tyres, electric lighting, speedometer, hood, wind screen, Klaxon, tax paid, reliable outfit, any trial; £110.—8, Darley Rd., Wandsworth Common. [3816

ROYAL ENFIELD 1919 6h.p. Combination, lamps, speedometer, tools, spares, etc., very good condition, outer covers all new, tax paid, fully insured; £120.—Barrett, 30, Church St., Chatham, Kent. [3658

ENFIELD Combination, 6h.p., 1916, completely overhauled, fitted with discs, hood and screen, and Cowley, very smart, licence paid and insured; £100.—Apply by letter to Motor, 73, Romford Rd., Stratford. [3428

WANTED, purchasers for any model of new 1921 Royal Enfield motor cycles and combinations for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0645

19 21 (Feb.) Enfield Combination, 8h.p. Vickers engine, as new; £150; oversize tyres, Easting, J.A. cyls., 2 spare tyres and tubes, new Renolds chain, plenty of tools, splendid condition; any trial; seen by appointment; entering sanatorium causes sale.—Edwards, 84, Finchley Rd., N.W. [3381

ROYAL ENFIELD 8h.p. Combination, 1921, delivered March, Magdyno, Easting, Brooks' back rest, Tan-Sad pillion, spares, licensed to 31/12/21, insured to 18/3/22, splendid order, tyres little worn, owner buying car; £160, or near offer; trial.—Write, Ealing, Essendon, Herts. [3543

ENFIELD Combination, late model, 6h.p., in exceptionally good condition, Lucas lamp set, hood, wind screen, Bonniksen speedometer, sidecar upholstered this spring, Tan-Sad, new oversize tyres, 3 new tubes one month ago, 75 m.p.g.; £125.—, Bath Rd., Bedford Park, W.4. [4112

19 21 (June) 8h.p. Enfield Combination, condition as new, mileage 400, Easting, Tan-Sad, lamps, fully insured; cost £190, accept £160, or nearest; would consider Triumph solo exchange and cash; any trial and examination.—Write, appointment, 65, Albert St., Regent's Park, N.W.1. [3305

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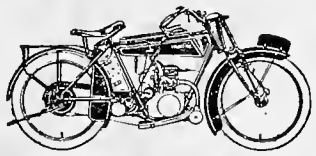

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Enfield.

ENFIELD Combination, new June of this year, 8h.p., new type Vickers engine, dynamo lighting, wind screen, etc., licence paid, not run 500 miles; £150.—E. Pollard, Broomfield Road Garages, Chelmsford. [3496

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3087

Excelsior.

NEW 1921 2¾h.p. Excelsior, Blackburne engine, Sturmey-Archer 2-speed, kick start and clutch; makers' price £88, bargain price £75.—22, Rodney St., Liverpool. [2476

F.N

F.N. Lightweight, see under Exchanges.—47, Curzon Rd., Ealing, W.5. [3602

F.N., 4-cyl., bargain, £26; will exchange for lightweight.—46, Uxbridge Rd., Hanwell. [3614

F.N. 5-6h.p. Combination, excellent order; £60, or nearest offer.—Moore, Park Garage, Wood Vale, Forest Hill, S.E. [3408

4-CYL. F.N. 5-6h.p., 2-speed, Bosch, Dunlops, overhauled, enamelled, ride away; 20 gns., bargain. —Pastrycook, 179, York Rd., Islington. [3922

F.N. 1920-21 7h.p., 3-speed, ridden 2,000 solo only, 650×60 mm. car tyres, 70-80 m.p.g., 64 m.p.h., electric lighting, etc., showroom condition inside and out, property of expert, seen and tried by appointment; cost £170, accept £110, or near offer.—9, Radnor Place, W.2. [3569

Spare Parts:

F.N. Spares.—We can supply for all models from 1904; prompt attention to all enquiries. Please send frame number or old part as pattern.—Langford's, 37, Cricklewood Broadway, London, N.W.2. [3919

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

19 19 Harley Henderson Elite Combination, beauty prize winner; £115; photo.—20, Alfred Rd., Acton, W. [4135

19 18 7-9h.p. Harley, as new, guarantee given; £75. —28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [4084

19 19 Harley 7-9h.p. Combination, electric model, all accessories; £115.—Jones Garage, Muswell Hill, London. [3011

HARLEY-DAVIDSON Combination, 1919, just overhauled, trial; £80.—Baker, 430, Lordship Lane, Dulwich. [3556

19 20 Harley-Davidson and Henderson Elite sidecar, perfect condition; great sacrifice, £135.—Morden Garage, 5, Lewisham Rd., S.E.13. [4100

HARLEY-DAVIDSON 7-9h.p., 1919, Canoelet M.M.4 sidecar, lamps, horn, accessories; £110, or will sell solo.—Write, 202, Maxey Rd., Plumstead. [3443

£85.—Harley-Davidson, 7-9h.p., clutch model, engine No. M 541, special racing model, lamps, horn, tool box, and Tan-Sad.—A. Harmer, 2, Church St., Kingston. [3887

HARLEY-DAVIDSON 1919-20 Combination, electric light, Easting wind screen, spares, etc.; £145.—Write, W. I. Farraud, 97, Barrowgate Rd., Chiswick, W. [X0273

HARLEY-DAVIDSON Late 1915 Combination, mag., recently thoroughly overhauled; trial given, appointment only; £95.—Whitton, 25a, Hungerford Rd., Holloway, N.7. [3903

HARLEY-DAVIDSON.—Immediate delivery of all models, reduced prices; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0430

HARLEY-DAVIDSON Combination, 1919, P. and H. lamps, fully equipped, unscratched, guaranteed perfect; £110.—Eaves, c/o Healey-Royle, Chemist, Wells Rd., Shepherd's Bush. [4272

HARLEY-DAVIDSON 1919-20 7-9h.p. Elite Combination, dynamo lighting, excellent condition, as new; 140 gns.—Below.

HARLEY-DAVIDSON 1917 7-9h.p., excellent condition; 77 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [3326

19 19 Harley Combination, new 1920, overhauled, tax, equipped, touring sidecar, splendid condition; £95, or exchange with cash for Morgan.—60, Dyne Rd., Brondesbury. [3620

19 21 Harley-Davidson, has only run 3,000 miles, electric lighting, sporting sidecar; cost £260; what offers?—Can be seen Curzon Garage, Carrington Mews, Hertford St., Mayfair. [9986

HARLEY-DAVIDSON 1921 Combination, dynamo lighting, speedometer, etc., hood and screen, perfect condition, small mileage; £140 cash, no offers. —Cahoon, 8, Grenville St., W.C. Museum 6594. [4091

HARLEY-DAVIDSON 1919-20 Combination, Tan-Sad, complete Lucas dynamo lighting, all tyres good, smart appearance, mechanically perfect; £125.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [4247

MOTOR CYCLES FOR SALE.

Harley-Davidson.

GREATEST Bargain This Week.—1918 Harley-Davidson combination, lamps, Klaxon, licensed, good tyres, large bulbous back sidecar, 3 speeds, kick start, ride away; first £75.—89, East Hill, Wandsworth. [4215

HARLEY-DAVIDSON 1919-20 Combination, Tan-Sad, complete Lucas Dynamo lighting, all tyres good, smart appearance and mechanically perfect; bargain, £125.—Colonial Motors, 104a, Finchley Rd., Hampstead 7822. [3271

HARLEY-DAVIDSON 7-9h.p. 1918 Combination, Henderson de Luxe sidecar, disc wheels, T.T. bars, 3 lamps, speedometer, Klaxon, insurance, tax paid; £85.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [4311

HARLEY-DAVIDSON Flat Twin Combination, new July last, speedometer, Klaxon, P. and H. acetylene lighting (unused), tyres unpunctured, a fine outfit, licensed and fully insured; a bargain, £130; owner buying car.—100, Station St., Burton-on-Trent. [3597

HARLEY-DAVIDSON Electric, 7-9h.p., bought new last April, cost over £240 the combination. We are open to accept the average motor cycle present price or a shade below, so send along for a bargain.—Horswill, Indian Agent, 42, Bridge St., Chester. 'Phone: 943. [3492

HARLEY-DAVIDSON 1920 7-9h.p., electric model, speedometer, excellent condition; expert examination invited; trial run to genuine buyer; £115, or with new luxurious C. and M. 1921 sporting sidecar, V wind screen, and luggage deck; £165.—Flemons, Broadway, Beaconsfield. [3555

HARLEY 1919 7-9h.p., practically new appearance, touring sidecar, Cameo screen, apron, horn, 3 lamps, pump and tools, tax and £6 insurance paid, any trial; £95.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [3934

HARLEY (1920, Dec.), a smart electric model, Henderson Elite sidecar, discs, equipped with every possible accessory, run 2,000 miles, outfit in beautiful condition; sale necessitated by owner going abroad; ride 50 miles to genuine enquirer; £160.—9, Delafield Rd., Charlton, S.E.7. [4242

HARLEY-DAVIDSON 7-9h.p. Electric Model, late 1920, only done 1,400 miles, fitted with large bulbous back sidecar, beautifully upholstered, fully equipped with horn, speedometer, lamps, screen, Tan-Sad, etc., and licence paid; absolute bargain, £155; only wants seeing.—Bastone's, 228, Pentonville Rd., King's Cross, London, N.1. [4263

HARLEY Combination, 7-9h.p., 1920, absolutely as new, guaranteed faultless, tyres new, electric light, speedometer, tax paid, aluminium discs, Tan-Sad, Barker's mudshields, beautiful de luxe Patey sidecar, hood, folding screen with side shields, 2 lockers, all tools, many spares; any trial; £200, or near offer.—Veasey, 194, Balham High Rd., S.W.12. [3592

HARLEY-DAVIDSON 1920 7-9h.p., special finish, plated tank, M-L. magneto, sports handle-bars, fitted with Gazekah sporting sidecar and every conceivable accessory, including Smith's speedometer, 4 electric lamps, electric horn, clock, aneroid, mirror, Aoster wind screen, gradiometer, originally cost over £350, tax paid; £180.—Maudes', 100, Gt. Portland St., London, W.1. [X0560

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3988

HARLEY-DAVIDSON Spares, huge stock, engines, frames, gears, sprockets, all sizes; send your wants. Repairs while you wait, by experts, and no big cigar prices. Quickest and best service in the country. Futurist Garage Specialists, for Harley-Davidsons only, 13, Wheeler St. (Central), Birmingham. [X0536

Henderson.

10h.p. Henderson Combination, with Lucas dynamo lighting set, any trial, as new; £125.—13, Victoria Rd., Sheffield. [3756

1920 Henderson 10h.p. Combination, 4-cyl., 3-speed, tyres hardly used; £150.—Jones Garage, Muswell Hill, London. [3007

FOR Sale, Henderson combination, 1920 (Dec.); £265; all on, sporting; must sell, no reasonable offer refused.—'Phone: Western 2007.—Lugg, 39, Abingdon Rd., W.8. (Any trial.) [4306

HENDERSON 1921 4-cyl., side valves, 3 speeds, reverse model, dynamo lighting, Elite combination, tax paid, excellent condition; 190 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [3327

LATE 1920 Henderson, unscratched, mileage negligible, original tyres unpunctured, 65 m.p.h. and m.p.g., acceleration unequalled, Tan-Sad, lamps, horn, speedometer; £135.—C.K., Bolnore, Haywards Heath. [3937

HENDERSON, late 1920, perfectly tuned for touring, 60 miles to gallon, does Reigate Hill 20 m.p.h. with passenger, Capjon Mudd sidecar de luxe, enclosed luggage accommodation, disappearing hood, Triplex glass wind screen, electric lighting throughout, dynamo, Klaxon horn and Cowey auxiliary horn, Tan-Sad rear seat, machine like new throughout; price £180; reason for selling, owner bought 1921 model.—London Motor Garage, 161, Gloucester Rd., S.W.7. [4237

From a FRAME To a WASHER

Engine Parts for 2¾ h.p. Douglas.—Cylinders, front only, **£1 15s.**; Pistons, complete, **12/-**; Piston Rings, **1/6**; Gudgeon Pins, **1/3**; Big-end Bushes, **3/-**; Small-end Bushes, **2/-**; Exhaust Lifter Links, **7/6** per set; Timing Side Ball Races, **12/-**; Cam Wheel Studs, **3/-**; Intermediate Wheels, **5/-**; Valve Guides, **2/-**; Tappets, complete, **3/-**; Tappet Guides, **2/6**; Flywheel Sprockets, 16, 17, and 18 T., **3/9**; Exhaust and Inlet Valves, complete, **4/-** each; Silencers, complete with Unions, **17/6**; End Plates, **9d.**; Carburetter Gauze, **4d.**; Gauze Washer, **6d.**; Amac Jets, No. 26, **2d.**

2¾ h.p. Douglas Tank, **£2 15s.**; Oil Pump Plunger, complete, **4/6**; Petrol Filter and Tap combined, **3/6**; Drain Tap, **2/-**; Tank Caps, glass or plain, **2/-**; Drip-feed Needle Valves, **4/-**.

Frame Parts for 2¾ h.p. Douglas.—Frame, **£7**; Mudguards, **12/-** per pair; Rear Stands **12/6**; Front Stands, **4/-**; Clips, **1/-**; Frame Races, **1/-**; Fork Spindles, long, **1/9**; Fork Spindles, short, **1/6**; Shackles, **1/3**; Front Brake, complete with Lever and Cable, **15/6**; Belt Rims, not drilled, **12/6**; Wheel Rims, front **7/6**, rear **8/6**; Carriers, **17/6**; Saddles, **£1 10s.**; Footboards, **12/5** per pair; Handle-bars, semi-T.T., **15/-**; Head Locking Rings, **1/6.**

2¾ h.p. Douglas Gear Box, original aluminium halves, but fitted throughout with new ball races and gears, **£5**; Pulleys, **6/-**; Chain Wheels, **7/-**; L.H. Chain Wheel Nuts, **8d.**; Adjustable Clamp for Gear Rod, **3/-**; Ball Races, large **7/6**, small **5/6.** All other Parts in stock.

4 h.p. Douglas Big-end Bushes, **3/6**; Small-end Bushes, **2/6**; Flywheel Sprockets, **5/6**; Valve Guides, **2/6**; Clutch Draw-bolt, complete, **4/6**; Clutch Plate Ball Races, **1/-**; Fork Springs, **3/6**; Brake Springs, **9d.**; Rear Stand Clips, **1/6**; Exhaust Pipes, **26/-** per pair; Silencers, **16/6**; Footboards, **15/-** per pair, Belt Rims, not drilled, **15/-**; Frame Head Lugs, **23/-**; Y Lugs, **12/6**; Undershield, **5/-**; Carriers, **25/-**; Tank only, **£3 10s.**

Rear Spring for 4 h.p. Douglas Chassis, **15/-**; Front Springs, **4/-**; Luggage Carrier, with straps, **£2 10s.**; Sidecar Mudguards, **18/6.**

Triumph Spares.—Piston Rings, **1/6**; Inlet Valves, complete, **4/-**; Exhaust Valves, complete, **8/-**; Rear Wheel Spindle, with Cones, **5/-**; Front Wheel Spindle, with Cones, **4/-**; Wheel Cups, **8d.**; Tool Kits, **18/6**; Rear Stands, **22/6**; Oil Squirt, **3/-**; T.T. Handle-bars, with grips, new, **15/-**; Renolds Chains, 50 links, **15/-.**

Armoured Tool-bags with strap fastenings and clips, for Triumph, **7/6**; Special Deep Bag, 2¾ h.p. Douglas, **9/6**; Long Bag, for 4 h.p. Douglas, **13/6.**

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MOTOR CYCLES FOR SALE.

Henderson.

HENDERSON 1920 Model, 4-cyl, 10h.p., electric combination, Elite sidecar, wind screen and hood, one of the finest outfits on the road, in new condition, recently overhauled and all worn parts replaced, electric lit speedometer; the whole outfit has been privately owned and carefully driven, and is a bargain at the price asked; £110.—Ash, The Hall, Dallinghoo, Wickham Market (near Ipswich), Suffolk. Telegrams: Ash, Charsfield. [3276

Hobart.

1919 Hobart 2½h.p. 2-stroke, fine condition, genuine, trial; £30.—72, Beechfield Rd., Harringay, N.4. [3808

2¾h.p. Hobart 2-stroke, new, all on, insured, licensed; £43.—Edwards, Edward's St., Pontardawe, Glam. [3940

HOBART, Villiers, 1920, 2½h.p., lamps, tax, looks like new; £39.—Windsor, Loney Green, Shareshill, Wolverhampton. [X0487

HOBART Combination, 3-speed, kick start, splendid outfit; £58; take older machine part.—57, Kenbury St., Camberwell, London. [3848

HOBART-J.A.P. 2¾h.p., 2-speed, clutch, K.S., new tyres, long exhaust, new March this year, winner numerous trophies; £50.—862, Argyle St., Glasgow. [4225

Humber.

HUMBER Motor Cycle, twin-cyl., single speed; £18.—Victoria Garage, Surbiton. [3854

1921 Humber 4½h.p. Flat Twin, Dunhills Limousette sidecar, small mileage; £145.—Rydal, Wordsworth Rd., Wallington. [4239

3½h.p. Humber Combination, 3-speed, K.S., counter-shaft; £55, or offer.—Ludlow Villa, Coleridge Rd., N., Finchley. [3976

HUMBER 3½h.p. Combination, 1914, 3-speed S.A., tax, lamps, and tools, etc., good condition; £48.—8, Zoffany St., Holloway, N.19. [3522

6h.p. 1917 Flat Twin Water-cooled Humber Combination; £75; exchanges.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [3825

1921 (late) 4½h.p. Twin Humber Combination, complete, new condition, low mileage, insured, tax paid; £120.—Lockington, 55, Earl St., Coventry. [X0525

HUMBER Lightweight, 2h.p., new B. and B., tyre and tube, rebushed, condition perfect, all on; £25.—Pryor, Off Licence, Newchapel, Lingfield, Surrey. [371

HUMBER, late 1920, 4½h.p. flat twin, just over hauled by Humbers, and indistinguishable from new; price £110.—Timewell, 61, South Castle St., Liverpool. [X0277

1921½ 4½h.p. Humber Combination, nearly new, all fittings, Bluemels screen, Tan-Sad, etc.; bargain, £125.—Cummings, 101, Fulham Rd., South Kensington, London. [397

F.O.C.H. have 2¾h.p. twin Humber, hub clutch, kick starter, fully equipped, tax paid; £25.—Fa Offer Car House, 5, Heath St., Hampstead (nr. Hampstead Tube Station). [356

1921 Humber Combination, guaranteed perfect condition, fully equipped, electric lighting, speedometer; cost £195 in June, accept £125.—Chase Hill, Enfield. [331

HUMBER 3½h.p., Bosch, B.B., heavy Dunlop, guaranteed perfect running order; any trial examination; £20 and good cycle secures absolute bargain; Herefordshire.—Box 6,808, c/o *The Motor Cycle.* [411

Indian.

INDIAN 7-9h.p., clutch model, excellent condition £55, or exchange.—80, High St., Bexley. [42

INDIAN 7-9h.p. and Coachbuilt Sidecar; £35 Speechley, 86, Churchfield Rd., Acton, W.3. [36

1916 Indian Combination, 3-speed, K.S., d wheels; £55.—17, Heaton Rd., Mitcham. [40

1914 Indian 7-9h.p., 2-speed, indistinguishable from new; £47/10.—Jones Garage, Muswell Hill, London. [30

7-9h.p. Indian Combination, wants attention; £ offer; appointment.—323, Amhurst Rd., St Newington, N.16. [3

INDIAN, 1915, clutch, Binks, good running conditi must sell; £35, nearest offer.—Mitchell, The dens, Farnham, Surrey. [3

INDIAN 5-6h.p. Motor Cycle, clutch; £50; with without sidecar; too fast for owner.—2a, Col dale Av., Hendon, N.W.9. [3

INDIAN, 1915, K.S., 3-speed, electric light, b hand-foot clutch, B. and B. carburetter; offers.—Slater, Southbrook Rd., S.E.12. [3

INDIAN Scout, done 150 miles, full electrical equipment, etc., perfect; £140.—Trevista, The Gr Coulsdon, Surrey. 'Phone: Purley 1171. [3

7-9h.p. Indian Powerplus Combination, electric l ing, 3 speeds, K.S., registered in April, 1921, as new; £110.—Lees, 17, Fairbridge Rd., High N.19. [

1919 Powerplus Indian Sporting Combination, l ing, speedometer, D.A. lighting; £105; exch A.B.C., Norton, N.U.T.—Apple Porch, Maidenhead [

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Matchless.

MATCHLESS Combination, July, 1921, Lucas Magdyno, fully equipped, perfect condition, mileage 2,000; £180, no offers.—Trevista, The Grove, Coulsdon, Surrey. 'Phone: Purley 1171. [3578

MATCHLESS, Model H2, Oct., 1920, M.A.G. engine, Magdyno, speedometer, spare wheel, electric and bulb horns, long exhaust; £145.—Mylam, 197, London Rd., Croydon. 'Phone: 2379. [4114

MATCHLESS Combination, Model H, M.A.G., every fitment, little used, cost nearly £250 with spares, etc., tax and insurance paid; take £180; no offers entertained.—J. Dennis, The White Horse, Richmond, Surrey. [1711

1920 Matchless, M.A.G. engine, trip speedometer, hood, screen, horn, legshields, sidecar step, pillion, acetylene lamps, separate generators, tools, insured fully July, 1922; quick sale, £120.—Pitts, Cromwell Av., Cheshunt, Herts. [3369

MATCHLESS Combination, H, 1920, 7-9h.p. J.A.P., hood, screen, Magdyno, speedometer, spare wheel, new tyres, Klaxon, Binks, spares, tools, little run, insured to June; owner leaving England; £170, or offer.—Haslam, Rayleigh, Essex. [3122

£25 under List Price.—We have a few 1921 sports model Matchless combinations which we can supply with spare wheel complete, £155; less spare wheel, £150; covered with the makers' guarantee.—Jones Garage, Muswell Hill, London. [2986

MATCHLESS, 1921, very special offer, brand new, slightly shop-soiled, free delivery. Prices: Sports £150, Model H combination £160, Family model £165.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

MATCHLESS Combination, 1920, J.A.P., 3,700 miles, overhauled recently by Colliers, lamps, horn, speedometer, hood, screen, and side wings, sidecar step and spare wheel, tax paid; nearest £150.—Letters, G., 30, Great North Rd., Highgate. 'Phone: Hornsey 2903. [4035

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MATCHLESS Combination, Model H, 1920-1, 8h.p. J.A.P., 3-speed, K.S., dynamo lighting set, electric horn, hood, screen, spare wheel with new Dunlop cover, speedometer, horn, licence Dec., 1920, perfect order, any trial at any time by appointment.—'Phone: Ilford 330.—A. N. Ellis, c/o John Smith and Co. (London, E.), Ltd., Hainault Works, Chadwell Heath. [4167

SAM E. CLAPHAM, Motors, Greenwich. 'Phone: 751.—The premier Matchless agent. Can offer some exceptional bargains in new and second-hand 1921 models at end of season prices. Get in touch with Sam E. Clapham and secure one. Place your orders now for 1922 models with the agent. Note address: Sam E. Clapham, Motors, 27, Stockwell St., Greenwich, S.E.10. [3179

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

Metro

METRO-TYLER, 2-speed, hardly used; £35, bargain.—Beale, Westwell St., Plymouth. [3394

£35.—Metro-Tyler, 1919, 2-speed, new condition; on view in London.—61, Albany Rd., Coventry. [X0474

METRO-TYLER, 1920, 2-speed, sports, completely overhauled, rehalanced, Lucas lamps; £37.—27, St. John's Rd., Putney. [4126

METRO-TYLER, 1920, 2-speed, good condition, new cylinder and piston just fitted; £42. — Shaw, Eyes Mount, Rainhill, Lancashire. [3797

1921 (March) Metro-Tyler, discs, well equipped, all accessories, not 1,000; cost £89, accept £70; guaranteed.—201, High St., Walthamstow. [2450

METRO-TYLER 2¾h.p., 2-speed, just overhauled, perfect condition, lamp, horn, tax paid; £35. Store 6 p.m.—B. and C. Studios, 317, Hoe St., Walthamstow. [3290

Minerva.

½h.p. Minerva, rebushed, new mag., tax paid; ride away; £20.—63, Camilla Rd., Bermondsey. [3962

MINERVA, 2¾h.p., sporting, low, T.T. bars, long exhaust, new Dunlops; £24.—Blackshaw Farm, Ilkley. [3648

½h.p. Minerva Twin, Bosch, Amac, Grado gear, drop top tube, wide tank, 2 brakes, spring forks, mechanical valves; bargain, £14.—89, East Hill, Wandsworth. [4216

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Horn. [8493

Moto-Reve.

MOTO-REVE Twin, back cylinder needs attention, otherwise perfect, take 2; bargan, £7; after 6.—Orogood, White House, Aveley, Essex. [4006

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Size.	Make.	Our Price.	List Price.
26×2	Wood-Milne Special	25/-	48/-
"	Englebert Passenger	23/6	53/-
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26×2¼	Beldam Extra Heavy	35/-	51/3
"	Palmer Cord	32/6	53/6
"	Beldam Heavy	30/-	41/3
"	Spencer-Moulton Ex. Hvy.	30/-	68/-
"	Goodyear A.W. Tread	28/6	—
"	Hutchinson T.T.	27/9	56/6
"	Clincher de Luxe Heavy	27/6	54/6
"	Wood-Milne Special	25/-	53/9
"	Englebert Touring	22/6	49/-
26×2½	Palmer Cord Heavy	35/6	62/-
"	Hutchinson T.T. Rub. Stud.	27/6	59/9
"	Clincher de Luxe Ex. Heavy	25/-	68/6
26×2¼ × 2¼	Clincher de Luxe Heavy	32/6	51/3
26×2½	Wood-Milne Combination	50/-	102/-
"	Wood-Milne Extra Heavy	36/-	72/3
"	Clincher de Luxe Heavy	29/6	58/9
28×2¼	Goodrich Safety Tread	27/6	100/-
28×3	Goodrich Safety Tread	51/6	100/-
"	Englebert Racing	47/-	100/9
"	Wood-Milne Extra Heavy	30/-	81/-
650×65	Goodrich Safety Tread	42/6	83/9
"	Goodyear A.W. Tread	35/-	—
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700×80	Beldam Bulldog	61/-	—
"	Firestone Rubber Non-skid	58/-	87/8

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MOTOR CYCLES FOR SALE.

Monarch.

MONARCH, 1920, Villiers 2-stroke, 2-speed, as new; £37.—19, Graiton Mews, Warren St., W.1. [3410

1920 8h.p. Monarch Combination, J.A.P. engine, Sturmey-Archer 3-speed gear box, machine in splendid condition, tyres good, Milford quick detachable coachbuilt sidecar; no reasonable offer refused.—Box 6,773, c/o *The Motor Cycle*. [3566

Motosacoche.

MOTOSACOCHE 2½h.p., good condition, must sell; bargain, £15.—93, Clock House Rd., Beckenham, Kent. [3475

Neal-Dalm.

NEAL-DALM, 1920, 3h.p., 2-stroke, 2-speed, lamps, Klaxon, Tan-Sad, accessories; £50-£55; buying combination.—Hele, The Friars, Hereford. [3418

Ner-a-Car.

NER-A-CAR, latest type, licensed, unscratched, cost £72, done 50 miles only; accept £66.—Ribbs, 13, Portway, Frome. [4108

NER-A-CAR.—The wonderful new 2-wheeler; price 66 gns. Purchase one of these delightful machines from Clement Butler and Co., 32, Borough High St., London. [2970

New Hudson.

NEW HUDSON 2¼h.p. Popular, 1921, showroom model shop-soiled; £45.—New Hudson Depot, 45, Gray's Inn Rd., W.C.2. [4096

4h.p. New Hudson, 3-speed gear, clutch, good tyres and belt, all accessories, perfect condition; £37.—Bass, High St., Amersham. [4168

NEW HUDSON Combination, 1920, 3½h.p., 3-speed, K.S., guaranteed perfect, tax paid; £90, bargain.—Nicoll, Stationer, Perth. [3735

NEW HUDSON 2¼h.p. De Luxe, kick starter, 1921, showroom model, shop-soiled; £60.—New Hudson Depot 45, Gray's Inn Rd., W.C.2. [4095

3½h.p. 2-speed New Hudson, new lamps, mechanical horn, enamel unscratched; bargain, £35.—3, Norwood Rd., Heroe Hill, S.E.24. [4233

NEW HUDSON 2¼h.p. Model de Luxe, 2-speed, new, never ridden, £55; also same model, little used, £45, licence paid.—Rogers, 42, Church Rd., Hendon. [3950

£35.—1913 2½h.p. New Hudson, 3-speed and clutch, condition and appearance as new, stored 5 years; any trial; fully equipped, spares.—Meyers, 8, Chubworthy St., New Cross. [3414

NEW HUDSON Lightweights, all models, on view; Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Catalogues and any information by return.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [4094

New Imperial.

1920 8h.p. New Imperial Combination, new condition; £95.—9, Church Rd., Harlesden. [3964

1920 New Imperial 8h.p. Combination, perfect, little used.—72, Cedar St., Southport. [3823

1921 New Imperial, 2¾h.p., 3-speed, clutch, K.S., licensed; nearest £55.—1, Market Place, Pickering. [4169

NEW IMPERIAL-J.A.P. 2¾h.p., countershaft, 2-speed, excellent condition, tax paid; £36.—28, Bourne Rd., Bexley, Kent. [3299

1920 New Imperial, 6h.p. J.A.P., Grindlay spring wheel sidecar, perfect order; £100, or near.—Runeckles, 10, Brudenell Mount, Leeds. [X0495

NEW IMPERIAL 8h.p. Combination, first-class condition, complete; owner buying car; £130, or nearest offer.—Tindles, Motor Works, St. John's Chapel, Weardale. [X0496

1920 (November) New Imperial, 2¾h.p., 2-speed, clutch, kick starter, lamps, Watford speedometer, tax, etc., excellent condition; £60.—B., c/o Salter, 9, The Pavement, Middle Lane, Crouch End, N.8. [3604

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NORTON, 4h.p., sound condition; £40.—Darke, 2, Warwick Place, W.9. [3385

DAN GUY, Weymouth.—Norton Big 4 combination, £177; sports model, £132; from stock. [0696

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—4h.p. Norton and sidecar, 1920, tax paid; £75. [4207

3½h.p. Norton, Sturmey countershaft, as new; £83, or exchange with cash.—49, Well St., Hackney, E.9. [4117

NORTON Big Four Combination, sporting sidecar; £85.—Gutteridge, Coventry Rd., Market Harborough. [3500

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0717

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NORTON, 1921, 3½h.p., 3-speed, do 80, small mileage, as new, complete; nearest offer £105.—68, Corporation St., Stafford. [3655

NORTON 3½h.p., 2-speed, clutch, kick start, fully equipped, spares, indistinguishable from new; £70.—27, Oliver Rd., Walthamstow, E.17. [3975

NORTON, 1921, T.T., fully equipped, scarcely used, as new, insured; £75, offers, exchange.—Heath, 168, Wellington Rd. South, Hounslow, Middlesex. [3833

NORTON.—Immediate delivery all 1922 models, reduced prices; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0422

19 19 (Oct.) T.T. Norton, Philipson and fixed pulleys, new Dunlops, new rings, guaranteed mechanically perfect, exceptionally fast; £70.—Price, Malakoff, Abergavenny. [4133

HALIFAX.—Norton new 1921 3½h.p., sporting, £80; 3½h.p., 3-speed, £115; Big Four, 3-speed, £120; reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [3908

16 H Norton, 1921, in perfect condition, just overhauled by makers, not been used since, plated tank, Bonniksen electric horn; £85; any trial.—30, Forest Rise, Walthamstow. [3890

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NORTON Agents.—Spares by return of post; overhauls. Forward your Norton carriage paid. We will completely dismantle, decarbonise, enamel, fit new small parts where we think they are required, and return carriage paid £10. Tuning for speed, 16H. models only, £5, and £1 per mile over 70 m.p.h. Machine tuned on Binks Rat-trap, and timed over flying half-mile. You can come here, ride or time your own machine when ready.—Bulloughs Motors, Ltd., Waterloo St., Oldham. [3670

N.S.U.

£12/10.—N.S.U. 3½h.p., mag., perfect running order; first cheque secures.—Johnstone, 6, Dovemount Place, Hawick. [3420

N.S.U. Twin, spring frame, new Druid forks, Grade gear, handle starter, good tyres and belt, splendid order; £30.—56, Seabourne Rd., Bournemouth. [4236

SPORTING N.S.U. C.B. Combination, 6h.p., gears, clutch, spring frame, Easting, Tan-sad, fully equipped; offers; privately owned.—Allendale Garage, 278, Balham High Rd., S.W. [3753

N.U.T.

N.U.T. 2¾h.p. o.h.v. Brooklands Model, Philipson, new tyres; 57 gns.—Larter, Twyford, Bishops Stortford. [3615

N.U.T. 2¾h.p. o.h.v. Twin, Zephyr pistons, tuned competition machine; further information; offers.—James, Randolph Crescent, Edinburgh. [3374

NEW 1921 5h.p. N.U.T., with dynamo lighting, electric horn, 3-speed, kick start and clutch; makers' price £145, bargain price £96.—22, Rodney St., Liverpool. [2477

O.K.

O.K., 1920, all accessories, tax; sacrifice, £28.—70, Baring Rd., Lee, Kent. [3944

O.K.-VILLIERS, 1920, 2-speed, guaranteed as new; £42/10.—217, Belsize Rd., Kilburn. [3822

LATE 1920 O.K. Junior, complete; £30.—101, Fulham Rd., South Kensington, London. [3978

BARGAIN, O.K. Junior, 2¾h.p., brand new; sacrifice £35/10.—Sun Garage, Henshaw St., Oldham. [X0501

19 20 O.K. Junior, shop-soiled, tax paid, lamps, etc.; £45.—Morriss and Co., Ltd., 139, Finchley Rd., N.W.3. [3400

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19 20 O.K.-Villiers, 2½h.p., 2-speed, perfect, tyres new, P. and H., tax, insurance, 85 m.p.g., 2 up anywhere; trial; 50 gns.—73, Highworth Rd., New Southgate, London. [3884

19 20 O.K., 2-speed, accessories, insurance, tax paid, excellent condition; £40, or exchange with cash for higher power.—Warburton, Corringham Rd., Stanford-le-Hope, Essex. [3936

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OMEGA-J.A.P., late 1919, 2¾h.p., 2 speeds, perfect condition, insured; £45.—51, Campbell Rd., Southsea. [4243

OMEGA-J.A.P. 2¾h.p., July, 1920, cost £83/14; £50.—Goodey, Brightview, Hadley Rd., New Barnet. [3974

OMEGA-J.A.P. 1920 2¾h.p., guaranteed thorough going order and condition, lamps, etc.; £45, or exchange late Triumph, cash adjustment.—29, Alexandra St., Southend. (D) [3767

OMEGA-J.A.P. and Henderson Lightweight Sidecar, 1920, 2¾h.p., 2 speeds, kick starter, Easting screen, and lamps, horn, etc., tax paid, condition as new; £60.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), N.W.3. [4310

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P. and M., late model, as new; £50.—114, Hill St., Peckham, S.E.15. [3713

19 16 3½h.p. P. and M., 2-speed, good order; £45.—1, Bellingham Terrace, Catford. [4010

19 18 P. and M., in parts, not quite complete; £25.—1, Bellingham Terrace, Catford. [4017

P. and M., 1919, not W.D., fully equipped; £60.—Ratcliffe Bros., 200, Gt. Portland St., W. [X0478

P. and M., S. type, excellent condition; £46; exchange good lightweight.—30, Fordel Rd., Catford, S.E.6 [3461

P. and M., July, 1920, perfect, fully equipped, and trial; £80, or nearest.—Parsons, Newall St., Abertillery. [3811

P. and M. Coachbuilt Combination, fully equipped, tax paid; £45.—Speechley, 86, Churchfield Rd., Acton, W.3. [3644

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P. and M., 1918 (late), coachbuilt sidecar, splendid condition; any trial; what offers?—Juffkins, Shillingford Hill, Wallingford. [3695

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P. and M. Combination, splendid running machine recently overhauled, New Dunlops, tax paid; £60.—Chapman, 82, Battersea Rise, S.W. [2040

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£52 Lowest.—P. and M., 1918, fast, excellent condition, electric lamps, etc.; bargain; only wanted seeing.—35, Freegrove Rd., Holloway, N.7. [3717

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19 13 P. and M., exceptionally fine condition, unused during winter, economical and reliable; any trial; genuine bargain, £45.—Davies, Emlynfan, Newcastle Emlyn. [X0400

P. and M. and Sidecar, engine just been decarbonised, good running condition; £45.—Call any time between 9 a.m. and 6 p.m. at 45, Laurie Park Rd., Sydenham, S.E.26. [3717

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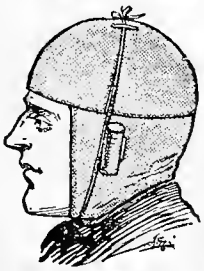

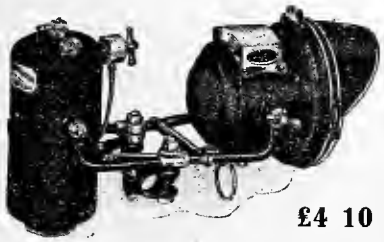

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1920 7h.p. 3-speed Regent-Coventry Victor, luxurious sidecar, discs, electric lighting, perfect order; only £65.—2, Half Moon Lane, Herne Hill, S.E.24. [4235

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REX 4h.p. T.T. Model, 2-speed, clutch, lamps, rear seat, etc., as new, 30/- tax, a splendid bargain, must sell; £30.—54, Marcellus Rd., Hornsey Rd., N.7. [3723

REX Late Model Coachbuilt Combination, 4½h.p. water-cooled, 2 speeds, hood, screen, lamps, mechanical horn; any trial; must sell; sacrifice 39 gns.—77, Arthur Rd., Wimbledon Park. [3379

REX Combination, 6h.p., 1914, stored 4½ years, hood, screen, speedometer, 2 speeds, handle start, tax and insurance paid, tyres, unpunctured, any trial; £60; after 5.—23, Acre Rd., Merton, S.W. [3949

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ROVER, 3½h.p., 1913, T.T., mechanically perfect, new tyres, very fast, ride 50 miles; genuine bargain, £27/10.—57, Villiers St., Stoke, Coventry. [X0570

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3½h.p. Rover Combination, 1918, perfect condition, tax paid, lamps, speedometer, tools; £100, or nearest offer.—Downshire Motor Co., 28, Rosslyn Hill, Hampstead, N.W.3. [3279

MOTOR CYCLES FOR SALE.

Rover

ROVER 1919-20 6h.p. Combination, not W.D., makers' colours, specially picked engine, and outfit was winner of gold medal in the London-Edinburgh; the whole is in perfect condition, Gloria sidecar, 3 speeds, countershaft, all chain drive, Lucas full lamp set, Stewart speedometer, Lucas horn, full tool kit, tax paid, 3 new tyres just fitted; an exceptional opportunity to secure a really fine outfit at a bargain figure; accept £95 for quick sale; any trial and examination.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [4127

Royal Ruby.

ROYAL RUBY 2¾h.p. Sports, 1921, equipped, insured, perfect; £65.—Atkins, Kingfield, Woking. [4005

1921 Royal Ruby Combination, 2¾h.p., sports model, full equipment, almost new, tax paid; £90.—Fowler and Brigden, 130, Euston Rd. Museum 4827. [3683

1919 8h.p. Royal Ruby Combination, handsome outfit, fully equipped with lamps, electric lights, horn, etc.; bargain, £90.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [4081

Rudge.

RUDGE Multi 5-6h.p., good tyres and belt, splendid machine; £35.—Ellum, Pokesdown, Hants. [4237

BRAND New Shop-soiled Rudge Multi 3½h.p.; £80.—Jones Garage, Muswell Hill, London. [2998

1919 Rudge Multi 3½h.p., unscratched, as new; £60.—Jones Garage, Muswell Hill, London. [3013

T.T. Rudge, fully equipped; must sell, bargain. £35.—Purser, Manor Farm, Old Windsor, Berks. [3792

RUDGE Combination, clutch, kick start; any trial; £52; take older machine part.—57, Kenbury St., Camberwell, London. [3847

3½h.p. Rudge Multi Combination, 2 months old, licensed, insured, tools not unsealed; reasonable offer.—309, Roman Rd., Bow. (D) [3390

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

RUDGE Multi 1921 3½h.p. T.T. Model, shop-soiled, list price £85; what offers?—Peacock, 219, High St., Balham. 'Phone: Streatham 170. [3359

RUDGE Multi 3½h.p., 1920, splendid condition, all on, tax paid, reliable machine; what offers?—Ovrington, Helmbury St. Mary, Surrey. [3696

1921 Rudge Multi 5-6h.p., sidecar, etc., all complete, and new in May; real bargain, going cheap.—Edwards, 77, Retherfield St., N.1. [3720

RUDGE Multi, 3½h.p., 1921, electric light, horn, tax, insurance, tools, perfect condition; 80 gns., or offer.—B., 24, Upper Montagu St., W.1. [3361

RUDGE Multi, I.O.M., 1920 model, new tyres, speedometer, Tan-Sad, absolutley sound; £65, must sell.—43, Morley Rd., East Twickenham. [3415

ISLE of Man Rudge Multi 3½h.p., 1920, speedometer, lamps, spares, insured, excellent condition; £59.—Remington, Chalet, Sanderstead Hill, Croydon. [3896

RUDGE Multi, 1917-18, perfect condition guaranteed, lamps, etc., 3,000 miles only, fast; £45.—Plowman, 46, Iverson Rd., Brondesbury, N.W.6. [4076

RUDGE Multi 1921 3½h.p., T.T. model, shop-soiled; list price £85, what offers?—Peacock, 219, High Rd., Balham. 'Phone: Streatham 170. [4304

£26.—Sporting Rudge Multi, 1913, smart appearance, excellent condition, licenced, tyres as new, just overhauled.—Bacon, Offington Lane, Worthing. [3814

3½h.p. Rudge Multi, 1914, appearance and condition very good, tyres nearly new; bargain, £50, or with sidecar £65.—Moss and Rushworth, Abridge, Essex. [3347

RUDGE Multi 3½h.p., September, 1919, engine No. 16914, clutch, starter, new heavy Dunlops and belt, good condition; £48.—Morris, Printer, Worcester. [3752

1920 Rudge Multi, new March, 1921, insurance £6/15, Tan-Sad, Klaxon, tax paid, as new; what offers; owner going abroad.—Sampford, Southminster. [4004

RUDGE Multi 1920 I.O.M. Special, low, short wheelbase, speed model, tax paid, excellent condition; 67 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [3322

1921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. and 7-9h.p. Rudge Multi combinations, soiled, £130 and £150.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0707

RUDGE Multi, 1921, 3½h.p., T.T. model, brand new, slightly shop-soiled; accept £78/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

1920 3½h.p. I.O.M. Rudge Multi, Cowey speedometer, P. and H. lamps, etc., in excellent condition, very fast; £67/10, or near offer.—H. B. Reeve, 61, Victoria Terrace, Littlehampton. [3858

RUDGE Multi Combination, delivered Aug., 1920, Easting screen, lamp set, tax paid, under 2,000; 82 gns.—Bruton Mews Garage, 8-25, South Bruton Mews, Bond St., W.1. 'Phone: May. 4282. [3406

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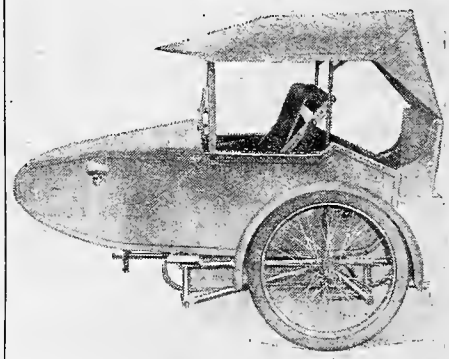

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MOTOR CYCLES FOR SALE.

Rudge.

1920 (December) Rudge I.O.M., lamps, horn, tools, spares, licence, insurance, plating untouched, appearance and condition as new; £69.—9, Cartwright Rd., Cheriton-cum-Hardy, Manchester. [X0466

£65.—T.T. I.O.M. 3½h.p. Rudge Multi, 50 m.p.h., 90 m.p.g., mileage between 2,500 and 3,000, conscientiously run in, guaranteed (in writing) 1920, not ridden till April, 1921, and sound; ride fair distance to prospective owner.—166, Church Rd., Upper Norwood. [3894

RUDGE Multi, 3½h.p., 1920, late, brand new Lucas lamps, electric rear, new spare belt in leather case, horn, tax, knee grips, starter, full T.T. bars, in brand new condition, tyres unpunctured, very economical and reliable; £70.—Willis, Shotley Castle Rd., Weybridge. [3929

Spare Parts:

SEE Banister and Betten's Advertisement for Rudge spares under Parts and Accessories. [3866

Scott.

SCOTT Combination, good running order; £48.—Gillett, 9, Spencer Rd., Acton. [3748

SCOTT 3¾h.p., 1913, good condition, but requires adjustment; £20.—Hibbs, 13, Portway, Frome. [4107

SCOTT Combination, 1915, wind screen, Klaxon, and electric light; £55, or nearest.—20, Denison Rd., Ealing. [3799

SCOTT 3¾h.p., water-cooled, fast, powerful; £48, take older machine part.—57, Kenbury St., Camberwell, London. [3846

£38, or best offer secures 1914 Scott, Millford sidecar, lamps, horn, licensed, insured for £85.—145, Leander Rd., Brixton Hill, S.W.2. [3711

1920½ Scott Combination, as new, perfect condition electric lighting, Easting, etc.; £110, no offers.—Box 6,806, c/o *The Motor Cycle.* [4155

1919 Scott, engine No. 3805, and Dunhill sidecar lamps, spares, excellent order, trial; £65.—Sealey, 88, Princes Av., Watford. [3100

SPORTING 1920 Scott, as new, purple Ace discs electric lighting, full equipment, fast; accept £80.—122, Lower Mortlake Rd., Richmond. [4000

1920 (late) Scott, semi-T.T. bars, accessories, 3in tyres, splendid condition; good bargain, £85.—Frank Smith, Underwood, Morton Banks, Keighley. [4049

SCOTT 1919 (late) Combination, Easting, accessories, nice outfit, splendid condition; £85.—Pindar, Court Farm, Aylton, Ledbury, Herefordshire. [3870

F.O.C.H. have 1920 Scott Combination, tax paid, excellent condition; £113.—Fair Offer Car House, 5, Heath St., Hampstead (nr. Hampstead Tube Station). [3688

VERY Special Sporting Scott Combination, worth sending for particulars and photo; bargain clear; excellent reason for disposal; London district. Box 6,772, c/o *The Motor Cycle.* [3525

SCOTT 1919-20 Combination, in very special condition double lubricator; cash, exchange, or deferred; £88.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4155

1915 Scott, with roomy sporting sidecar, engine overhauled by makers this summer, appearance very good, mechanically perfect, fully equipped, lamps, spares, £60.—Ramsay, 93, Sussex Rd., Watford. [3515

SCOTT.—Immediate delivery latest models; standard model, £130; Squirrel, guaranteed 60 m.p.h., £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0434

1921 Scott, Magdyno lighting, electric horn, speedometer, mileage 500, splendid turnout; also 1921 2¾h.p. Douglas, K.S., clutch, wind shields, electric light, mileage 2,000; offers.—Coombes, Grove Park Tube race, Harrogate. [3270

Spare Parts:

SCOTT Riders!—We are always at your service. Any part; any repair; any sort of help. 12 years' Scott experience. Hundreds of satisfied customers.—Ward Motors, Ltd., the Scott Specialists, 32, Hustler St., Bradford. [0700

Singer.

SINGER 1912 4h.p. Combination, practically new coachbuilt sidecar, 3 speeds, clutch, full lamp set, tax paid, in perfect condition throughout, smart and fast, tyres very good; £34.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [4140

Sparkbrook.

SPARKBROOK 2¾h.p. Lightweight, new; usual price £64, price to clear £50.—M.A.A., Ltd., 89, Wigmore St., W. [4000

Sun.

SUN, 1919 fixed geared model, 2¾h.p. Villiers engine, tax paid, good condition; £32.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0466

SUN-VILLIERS 2¾h.p., e.h.i.v., 2-speed and clutch, T.T. bars, very fast, cheap for cash; £32/10.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4155

Sunbeam.

SUNBEAM 1919 3½h.p. Combination, complete with lamps, etc.—Vincent, Hemsworth Lane, Ellinthorpe, Wakefield. [3

MOTOR CYCLES FOR SALE.

Sunbeam.

1919 Sunbeam 3½h.p., absolutely as new, very posh; a snip, £100.—Jones Garage, Muswell Hill, London. [3014

1916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Clapham, Yorks. [0714

1920 Sunbeam 4h.p., fully equipped, fitted with sidecar, all absolutely as new; a real bargain. £125.—Jones Garage, Muswell Hill, London. [3010

SUNBEAM and Sidecar, 1918, 3½h.p., many extras, electric lighting, special mudshields, complete tool kit, etc.; £100.—Lubbock, Peterhouse, Cambridge. [3657

HALIFAX.—Sunbeam 1921 new 3½h.p. touring, 135 gns.; 3½h.p. sporting, 130 gns.; reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [3907

1921 Sports Sunbeam, unscratched; sacrifice £125, or exchange Triumph and cash.—Jackson, Heatherlea, Grappenhall Rd., Stocktonheath, Warrington. [3981

NO. 1 Sunbeam Sidecar, screen, apron, mat, soiled, 42 gns.; 3½h.p. Sunbeam, unregistered, stored 3 years, excellent condition, £95.—Dosser, Slingsby, Malton. [4136

RELIABLE Combination, 1920 (July), 3½h.p. Sunbeam, H.A.H. electric lighting, tax paid; owner bought car; £125, or offer.—Coulson, Watton Abbey, Cranswick. [4025

SUNBEAM, 1919, 3½h.p., only done 4,500 miles, electric lights, Bonniksen speedometer, leg guards, and luggage box; £100.—E. Rotherham, 27, Spon St., Coventry. [X0364

1919 3½h.p. Sunbeam Combination, engine just overhauled, splendid condition, mileage 3,500, sidecar little used; trial welcomed; offers over £110.—Poole, Elworth, Sandbach. [3434

1921 Sunbeam 3½h.p. Touring Model, guaranteed not run 100 miles, equal to new in every respect, fully licensed; £135.—Julian, 84, Broad St., Reading. 'Phone: 1024. [3483

SUNBEAM Combination, 1914, 3-speed, Canoelet sidecar, in splendid order; bargain, £62/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4053

SUNBEAM 3½h.p. Combination, 1921, Lucas Magdyno, Cowey horn, Bonniksen, tax, insurance, absolutely perfect; cost £210, price £163; London.—Box 1758, c/o *The Motor Cycle*. [3489

SUNBEAM Combination, 1919, Sunbeam sidecar, 3-speed and reverse, all chain drive, lamps and horn; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: 2813. [4054

8h.p. 1920 Sunbeam Combination, Lucas dynamo lighting set, electric horn, speedometer, interchange wheels and spare, hood, screen, luggage grid, all recently overhauled and in most excellent condition; £145.—Moxhams, Newport, Mon. [3350

SUNBEAM 1919 4h.p. Sporting Canoelet Combination, new tyres, all accessories, fast, economical, owner bought car; nearest £95; by appointment.—Taylor, 65, Altenburg Gardens, Clapham Common, S.W. [3474

1919 8h.p. Sunbeam Combination, J.A.P. engine, Lucas dynamo lighting, spare wheel, hood, screen, all in good condition; £160, or exchange good lightweight and cash.—Williams, 19, Portland St., Cheltenham. [X0470

SUNBEAM.—Immediate delivery latest models, reduced prices; 3½h.p. standard model, 135 gns.; 3½h.p. sports model, 130 gns.; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Hanagate, Manchester. [X0428

SUNBEAM 8h.p. Combination, dynamo lighting, spare wheel, hood, wind screen, speedometer, tyres, in perfect condition; £180, or nearest offer; private owner, Sir Malcolm Murray.—Can be seen at Cook's Garage, Sunningdale. [4026

1919 3½h.p. Sunbeam Combination, winner Reliance Cup, 1919, many golds, perfect order, Easting, electric side, tail, acetylene head, Lucas horn, Cowey speedometer, Sunbeam shields, sprockets, spares; £125. 8, Borrowdale Rd., Liverpool. [3436

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

AUG., 1921.—3½h.p. Sports Sunbeam with sporting coachbuilt sidecar, engine No. 150/14327/S, small range solo, electric lighting, trip speedometer, whole outfit as new, spares; offers over £140; trial by appointment.—Gardner, 14, St. Swithun's Terrace, Lewes. [3540

SUNBEAM 8h.p. 1921 (June) Combination, 3 lamps, horn, and spare wheel, 5 tyres, tools, spares, insurance to June, 1922, under 3,000 miles; owner going up through ill-health; £210, or nearest offer; Plymouth district.—Box 6,791, c/o *The Motor Cycle*. [3677

SUNBEAM 2¾h.p., special racing model, very fast, complete with Bonniksen speedometer, set of spare mudguards, small, and large petrol tanks, 4 sprockets, spare gears, 2 pistons, 3 new complete valves and chain, £110.—G. Stephenson, "The Rhuddlan," 20a, Esplanade, Scarborough. [3506

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MOTOR CYCLES FOR SALE.

Sunbeam.

1921 Sunbeam, T.T. model, mileage under 1,000, enamel and plating unscratched, Cowey horn, aluminium number plates, perfect, fast, silent; £134.—Lavin, Old House, Sonning, Berks. [3207

1921 (July) 3½h.p. Sunbeam Combination, in perfect condition, fitted with acetylene lamps, and all latest improvements; price £170, or near offer, cost £220.—Peet, Edgehill, Devonshire Av., Grimsby. [X0514

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

CROSS, Rotherham, can supply any model Triumph from stock at list prices. [X0517

3½h.p. Triumph, tax, electric, perfect running order; £20.—10, Briscoe Rd., Merton. [3805

TRIUMPH, good running order; £18; genuine bargain.—70, Baring Rd., Lee, Kent. [3945

TRIUMPH 1920 4h.p., beautiful condition, all accessories.—41, Gateley Rd., Brixton, S.W.9. [3442

TRIUMPH 3½h.p., 3-speed, clutch (hub); £35; evenings.—18, Wellington St., Woolwich. [3599

1914 Triumph, 3-speed hub gear model, complete, lamps, etc.; £39.—Cross, Agent, Rotherham. [X0518

TRIUMPH, 1914, absolutely perfect, splendid condition; best offer.—119, Brecknock Rd., N.19. [3739

TRIUMPH, new 1921, C.S., lamps, etc.; £85; quick sale.—Wilton, White Swan, Upper Norwood. [4294

TRIUMPH 3½h.p., good condition, all accessories; £50, nearest.—Apply, 180, Whitehill Rd., Ellistown. [X0498

DAN GUY, Weymouth.—1921 Triumph, all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

COUNTERSHAFT Triumph, 1921 engine and gear box, fully guaranteed; £75.—33, Hackford Rd., Brixton. [3412

3½h.p. Triumph, drop frame and tank, perfect; £33.—Simpson, Orchard Rd., Sunbury-on-Thames. [3728

TRIUMPH 1916 Countershaft Combination, in excellent condition; £57/10.—217, Belsize Rd., Kilburn. [3821

TRIUMPH Grindlay Combination; £95; deposit system only.—Oakford, Jordan Well Chambers, Coventry. [X0567

TRIUMPH, 1913-14, clutch, guaranteed perfect throughout; best cash offer.—57, Stopford Rd., Plaistow. [4179

1914 Sporting 4h.p. Triumph, 3-speed, clutch, P.S., all on; £45, offers.—Sutfield, 115a, High Rd., Streatham. [3511

1920 Triumph, Model H, countershaft, well equipped, as good as new; £75.—17, St. Charles Sq., W.10. [2759

TRIUMPH, 3½h.p., free engine, well equipped, good order, licensed; £25.—Bunting's Motor Exchange, Wealdstone. [4032

TRIUMPH 3½h.p., 1913, S.A. 3-speed and clutch, excellent order; £35/10.—169, Commercial St., Aberbargoed. [3926

BRAND New Shop-soiled Triumph 4h.p., Model S.D., chain drive; £110.—Jones Garage, Muswell Hill, London. [2999

£45.—Triumph combination, 3-speed, K.S., lamps, horn, tax paid, good condition.—W.H., 36, Birkbeck Av., Acton. [3450

TRIUMPH 1912 3½h.p., splendid order; £25, or nearest; bargain.—Tindles, Motor Works, St. John's Chapel, Weardale. [X0497

TRIUMPH 3½h.p., Bosch mag., Senspray, good tyres, lamps, etc., good condition.—Eastaugh, Highbury House, Saxmundham. [3549

TRIUMPH, C.S., new this year, all details new; offers; letters only.—Powell, 1, Linslade Villas, Dorset Rd., Eltham. [4296

TRIUMPH Combination, 4h.p. countershaft, excellent condition, tax, insured; £68; evenings.—115, Tuam Rd., Plumstead. [3780

1914 3-speed Triumph, lamps, horn, tax paid, good condition, any trial; £42.—Guy's Retreat, Buckhurst Hill, Essex. [3288

TRIUMPH 1919 4h.p. and Dunhill sidecar, fully equipped; £90, or exchange new light car.—41, Lovelace Rd., Surbiton. [2480

3½h.p. Triumph Motor Cycle, 3-speed, with sidecar chassis, in good running order; £33.—Fellowes, 15, Union St., Sheffield. [3499

TRIUMPH Junior, 1920, splendid condition, waterproof suit, accessories, complete; £52.—Smith, 47, High St., Wellington, Salop. [3552

MOTOR CYCLES FOR SALE.

Triumph.

1919 Triumph 4h.p. and Sidecar, 3-speed, countershaft model, fully equipped; £110.—Jones Garage, Muswell Hill, London. [3016

TRIUMPH, 1913, 3½h.p., clutch model, renovated, splendid running order; £37.—28, St. George's Rd., St. Margaret's-on-Thames. [3826

1921 Triumph Combination, Dunhill sidecar, fully equipped, tax paid, guaranteed perfect; snip, £115.—33, Hackford Rd., Brixton. [3411

3½h.p. Triumph Combination, 3 speeds, free engine, clutch, new No. 2 Montgomery sidecar; £52.—Whiteley, Gas Works, Kirkburton. [X0407

TRIUMPH, 1918, countershaft, in perfect order, lamps, fully equipped; £50.—204, Ladbroke Grove, W.10. 'Phone: Park 5541. [4002

TRIUMPH Motor Cycle, 4h.p., countershaft drive, 3-speed, good condition, new tyre; £60.—View Dr. Hopkins, Stroud, Freshwater, I.W. [4267

TRIUMPH 1911 Combination, 3-speed Armstrong, hand and foot clutch, accessories, tax paid; £48.—Edwards, 125, Catford Hill, S.E.6. [4066

1916 4h.p. Triumph 3-speed Countershaft, fully equipped, tax paid; £47/10.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [4078

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. 1913 Triumph, all accessories, tax paid; £40; no extra charge for easy terms. [4210

1921 Triumph and C.B. Sidecar, Easting screen, F.R.S. electric lamps, tools, like new; £130.—Haste, 8, Queen St., Rawdon, near Leeds. [3724

TRIUMPH Late Countershaft Combination, Easting, lamps, overhauled, fine outfit, splendid condition; £70, offer.—Box 6,796, c/o *The Motor Cycle*. [3712

1919 4h.p. Triumph Combination, with lamps and all accessories, splendid condition; £90, or offer.—Gordon, Tregenna Mead, Eastbourne. [3606

1919 Triumph Countershaft Combination, lamps, Cowey horn, speedometer, any trial, tax paid; £85.—Guy's Retreat, Buckhurst Hill, Essex. [3287

TRIUMPH Combination, 4h.p., countershaft, coach-built sidecar, perfect order throughout; £67/10.—Owen, 59, Scholefield Rd., Upper Holloway. [X0525

TRIUMPH Late 1919 Combintaion, Mills-Fulford, speedometer, lamps, etc., perfect condition, little used; what offers?—C. H. Pizey, Royston, Herts. [3368

TRIUMPH 1920 4h.p. Countershaft, new Gloria sidecar, lamps, Klaxon, perfect condition, tax paid; £112.—30, Norbury Court Rd., Norbury, S.W.16. [3534

TRIUMPH 1918 4h.p., 3-speed countershaft, Lucas lamps, very good condition; £57/10.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [4077

TRIUMPH Countershaft 3-speed Combination, in first-class condition; £75, or exchange lightweight and cash.—97, Waldegrave Rd., Teddington, S.W. [3377

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼h.p. Triumph Junior, tax paid, fully insured, all accessories; £55; no extra charge for easy terms. [4209

TRIUMPH Combination, 1919, Gloria, perfect condition, any trial, tax paid, lamps, disc wheels; bargain, £120, or offer.—White, 156, High St., Merton. [3902

COUNTERSHAFT Triumphs.—Only a few W.D. machines left, fully renovated and guaranteed; do not miss this opportunity; £65.—33, Hackford Rd., Brixton. [3413

TRIUMPH, all chain, 1921, mechanically perfect, frame, tyres likewise, mileage 2,000, accessories, spares; £95.—V.D., 23, Collingham Place, Earl's Court. [2065

LATE 1918 Triumph, 3-speed, K.S., lamps, horn, Tan-Sad, etc., thoroughly overhauled; any examination or trial 2 up; 60 gns.—Fox 102a, Church St., Chelsea. [3954

1918 Triumph Countershaft Combination, renovated 1920, 4h.p., 3-speed Sturmey, K.S., Easting, lamps and spares; £90, or offer; mornings.—29, Somali Rd., N.W.2. [3444

TRIUMPH 1919¾ 4h.p. Countershaft, 3 speeds, speedometer, new tyres, fully equipped; 82 gns., bargain; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [3320

£125.—Triumph Gloria combination, 1920, screen, hood, Tan-Sad, electric lighting and gas, spares, beautifully equipped. After 5.30 p.m.—3, Wyatt Rd., Highbury, N.5. [3447

TRIUMPH Combination, Nov., 1918, with new cylinder piston, back wheel, sprockets, Grindlay 1920 sidecar with spring wheel; £80.—Webster and Bennett, Foleshill, Coventry. [X0393

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1348

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0382

TRIUMPH 3½h.p., very fast and reliable, recently overhauled, rebushed, and re-enamelled, new belt, good tyres, all on; £32, bargain.—Gibbon, Hunton Bridge, King's Langley, Herts. [3462

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Triumph.

COMBINATION Worth Seeing.—1919 Triumph, splendid condition, Henderson Aero sidecar (coach-built), all accessories, disc wheels; £120, or near offer.—86, Calverden Rd., Balham, S.W.12. [3710

1921 Triumph Junior 2¼h.p., 2-speed, 2-stroke, complete with lamps, horn, tax paid, splendid condition; £47.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0077

TRIUMPH 1912 3½h.p. T.T. Model, fitted latest dropped frame, new tyres, fully equipped, tax paid, fast machine; £35.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0432

1920 Triumph 4h.p. Combination, accessories, condition as new, mileage 1,000, tax and insurance paid, any trial; £110; private sale; owner going abroad.—120, Northview Rd., Priory Rd., Hornsey, N.8. [3806

TRIUMPH, 1920, just overhauled by the makers, frame and tank re-enamelled, new Lucas lamp set, machine as new; a gift at £85; owner bought car.—Seen at Melrose and Co., Victoria Rd., Stanford-le-Hope, Essex. [3336

1914 Triumph, 3-speed, clutch, engine just overhauled and gears, receipt to show, with 1920 Parsons coach sidecar, cost £30, all new tyres, fully equipped, any trial; bargain, £50.—128, London Rd., King's Lynn. [4213

TRIUMPH.—Latest models in stock, reduced prices; Model H, chain-cum-belt, £105; model H, all-chain, £115; 2¼h.p. Junior, £65; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0424

1921 Triumph, type SD, roller chain, registered July, nearly as new, also Paragon folding sidecar, £125, or sell separately; 1915 Douglas, renovated by Douglas Motors, Ltd., A1 mount, £55, or near offer.—71, Warwick Av., Bedford. [4049

1917 Triumph, renovated 1920, hand clutch, coach-built Canoelet sidecar, new 1920, speedometer, many accessories, insured, tax paid; owner shortly leaving for India; any trial; £75, or offers.—F. Champion, Heatherside, Horsell, Woking. [3416

TRIUMPH, something appealing to speed merchants, machine fitted B.S.A. engine, single-speed, specially tuned, very hot on hills, Philipson, large copper exhaust, T.T. bars; bargain, £38/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [4261

TRIUMPH 3½h.p., Bosch watertight, Grade gear, free engine, kick starter, splendid order, good tyres, fast, powerful, guaranteed, lamps, tools, with bulbous back coach sidecar, side door, wind screen; trial; bargain, £32.—Stepney Garages, 77, Salmons Lane, Stepney. [3769

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

Spare Parts.

TRIUMPH Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [3990

TRIUMPH Spares sent per return from stock. Call, writer, or 'phone 4042.—G. H. Tucker, Redcliffe Hill, Bristol. [2299

SPARE Parts.—Hackford Engineering Co. for any Triumph countershaft spare, always in stock.—33, Hackford Rd., Brixton. [3411

1914 3½h.p. Triumph Free Engine Wheel, complete, £5/10; bottom back stays, 21/-.—Bremridge, Haileybury College, Herts. [3611

TRIUMPH Parts.—Every part, any year, in stock; new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X0533

Velocette.

VELOCETTE 1920 2-stroke, 2 speeds, fully equipped as new; £42, bargain.—136, Ravensbury Rd., Earlsfield, S.W. [4023

VELOCETTE, 1921, 2-speed, fully equipped and licensed, slightly soiled only; £52/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0574

VELOCETTE, 1921, 3-speed, clutch, special model. This machine was produced at a cost of £12 specially for racing purposes, and can attain a speed of over 60 m.p.h., and will lap Brooklands at 54 m.p.h. Unusual opportunity for competition riders. Offers invited.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0534

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Verus.

1920 Verus 2½h.p., horn, lamps, 2-speed, kick, clutch, tax paid; £40.—63, Stewart Rd., Bournemouth. [3311

MOTOR CYCLES FOR SALE.

Verus.

1920 Verus 2½h.p., in perfect order, small mileage, lamps, etc.; £38.—W. Evans, Collingham, Newark. [3612

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

VERUS, 2¾h.p. Blackburne, late 1920, 2-speed, K.S., clutch, ridden about 450 miles, indistinguishable from new; £72, or nearest.—68, High Lane, Chorlton-cum-Hardy, Manchester. [3412

1920 (September) 4h.p. Verus Blackburne, 3-speed, Swan sporting sidecar, painted and lined to match tank, screen, luggage grid, apron, step, electric light throughout, speedometer, Ace discs, horn, etc., condition perfect, exceptionally smart sporting outfit; £115; small car wanted.—Harrison, Coddenham, Ipswich. [3356

Vindec

VINDEC-SPECIAL-J.A.P., late 1914, 8h.p., 2-speed combination, Milford C.B. sidecar, with child's seat and wind screen, complete with lamps, speedometer, many spares, appearance good, mechanical condition excellent, been carefully driven, seen by appointment, Ealing district; £85, genuine bargain.—Box 6,769, c/o *The Motor Cycle*. (D) [3562

Williamson.

WILLIAMSON Combination, 8h.p. w.c., 2 speeds, good order; £78.—13, Epsom Rd., Leyton. [3892

Wolf.

WOLF 2¼h.p. 2-stroke, 1919, 2-speed, countershaft, perfect condition; £33.—Hibbs, 13, Portway, Frome. [4106

WOLF 2½h.p., 1921, 2-speed, clutch, kick, horn, lamps, tools, very little used; £45.—63, Stewart Rd., Bournemouth. [3387

WOLF-J.A.P., 2¾h.p., 2-speed countershaft gear box, electric lighting, Palmer tyres, Klaxon, licensed, long exhaust, T.T. bars; genuine bargain, £22.—89, East Hill, Wandsworth. [4217

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 1417. [0508

Wooler

WOOLER, 1920, as new, fully equipped, very smart. 21, Fordel Rd., Catford. [3999

WOOLER, 1921, tax paid, equal new; £85. Call after 5 p.m.—1, Spencer Park, S.W.18. [3467

1922 Wooler, latest 3-speed, chain drive, tax paid; first offer £75.—66, Adelaide Rd., West Ealing. [4308

1920 Wooler, all accessories, just overhauled, perfect condition; £55, bargain.—Box 6,802, c/o *The Motor Cycle*. [4147

WOOLER (special machine), shop-soiled only; £75.—Applebee Bros., Wooler Agents, Church Hill, Walthamstow. [3503

WOOLER 1920 3h.p., first-class mechanical condition, late 1920 model, fully equipped; £47/10.—Ice, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

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ZENITH, 8h.p., clutch model, 1920, new, and fully guaranteed; £110.—Below

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ZENITH, 8h.p., 1920, De Luxe sidecar, electric lighting, acetylene lighting, disc wheels, clock, speedometer, fully licensed, only run 800 miles, cost over £200; £150.—Below.

ZENITH, 1919 model, delivered 1920, sports machine with sidecar; £75. — M.A.A., Ltd., Smith Service Depot, 89, Wigmore St., W. [4028

1920 Zenith 5h.p., K.S., clutch, Bonniksen, fine condition.—Stokes, Elstree, Herts. [3448

1914 Zenith 2½h.p., recently overhauled; £30, or offer.—Hudson, Great Shefford, Berks. [3382

h.p. Zenith Combination, splendid order, been well cared for; £55; all on.—Harris, School, Roydon, Essex. [3431

ZENITH Combination, 1915, 4h.p. J.A.P., Bosch; £95.—Write appointment, Owner, 48, Barmeston Rd., Catford. [3744

ZENITH 8h.p. Sports, condition as new, guaranteed; bargain, £48/10, or exchange lower h.p.—217, Kilburn Rd., Kilburn. [3820

1919 6h.p. Sports Zenith, perfect condition throughout, fully equipped; £75, or near.—A. Rodway, Elm Rd., New Malden. [3807

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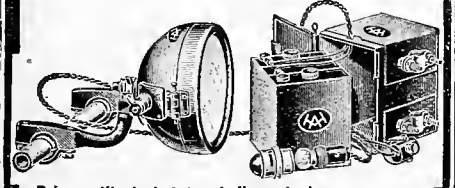

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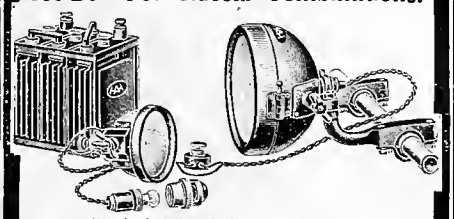

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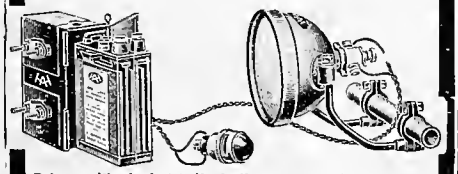

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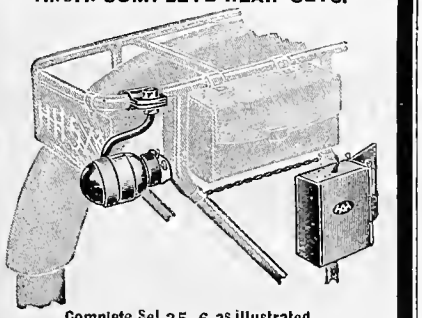

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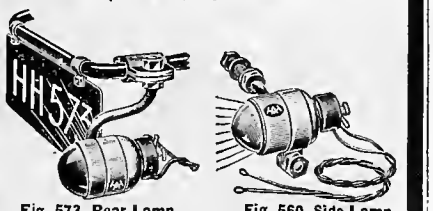

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1914 Zenith Combination, 8h.p., tax and insurance paid, excellent condition, drive away; what offers?—55, Tremaine Rd., Anerley. [3501

1921 Zenith 5h.p. Sports, accessories, Tan-Sad, tax paid, mileage 1,000; £85, or near offer.—29, St. Peter's Sq., Hammersmith, W.6. [1620

4h.p. Zenith Coachbuilt Combination, enamelled red, take 3 anywhere; bargain, £38, no offers.—Dunkley, Brackley, Northamptonshire. [3591

5h.p. Zenith Countershaft Coachbuilt Combination, as new, electric light, perfect condition; any trial; £62/10.—6, Thirlmere Rd., Muswell Hill. [3446

ZENITH Twin, 1917, Canoelet sporting sidecar, electric lamps, Palmer cords; nearest £75 accepted.—Adams, 14, Gilbert St., Museum St., W.C. [3465

5-6h.p. Zenith Combination; £75; part exchange lightweight, 2¾h.p. Douglas preferred, or good 2-stroke.—J. Austin, 147, High St., Harlesden. [3564

ZENITH 1921 5h.p. Sports Model, very slightly used, 1921 licence paid; £90.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0582

£105.—1921 8h.p. Zenith, countershaft model, practically new, insurance, accessories; sidecar, £10.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [4015

ZENITH 1914 Sports Model, Bosch, Senspray, F.R.S. spares, tyres, enamel, plating and engine perfect; £60, or offer.—Wadey, Five Oaks, Billingshurst. [3933

ZENITH 4-5h.p. Countershaft, kick start, complete with lamps, tax paid, guaranteed perfect; £45.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [4082

ZENITH 6-8h.p. Gradua Combination, 1919, magnificent turnout; trial, appointment by letter; £110, or nearest.—Box Villa, 157, Maybank Rd., South Woodford. [3883

ZENITH-BRADSHAW 3½h.p., immediate delivery; exchanges; deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4187

ZENITH 1921 5h.p. Model, brand new, shop-soiled only; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0435

ZENITH 5-6h.p., late countershaft model, Swan sidecar, unridden since completely reconditioned September; £85, or exchange high power solo.—2, Norton Mews, Hove. [3763

ZENITH Combination, 8h.p., 1920, countershaft, lamps, speedometer, discs, spares, grey finish, winner gold medals; offers.—Charlesworth, Kingsdale, Stanmore, Middlesex. [3857

ZENITH 1921 5h.p. Sports Model, complete with lamps, horn, licence, and speedometer, perfect condition; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0581

1919 8h.p. Sports Zenith, lamps, horn, spares, including 2 covers, tubes, belt, valves, etc., licensed and insured, excellent condition; £78. After 5.—Gale, 22, Desenfans Rd., Dulwich, S.E. [3961

1921 5h.p. Zenith, indistinguishable from new, beautiful finish, mileage under 100, licensed, fully equipped; real bargain, £95.—Lt. Bickmore, 2, Seymour Rd., Southfields, S.W.18. [3790

1920 8h.p. Clutch Zenith and Sidecar, in perfect condition, fitted Lucas lamps, T.T. bars; will consider a late model solo and cash, or will give cash and above for G.N.—Letter, Newbold, 23, Melrose Rd., West Hill, Wandsworth. [3362

LATE 1920 8h.p. Countershaft Zenith De Luxe Combination, mileage 1,400, magnificent sidecar, equipped F.R.S. electric lighting, horn, speedometer, bevelled discs, latest Brooks saddle; cost £214, accept £110; unscratched.—24, Balliol Rd., North Kensington. [4039

ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear, and sidecar lamps, horn, Cowey, knee grips, Ace discs, luggage grid, indistinguishable from new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0433

ZENITH, 1921, 5h.p., sports model, Gradua gear, every accessory, lamps, etc., in brand new condition, mileage negligible, runs like a Rolls-Royce, fast and flexible; accept £85 for quick sale; cost over £130 tax paid; would consider lightweight part.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [4128

JULY, 1919.—8h.p. Clutch Model Zenith and Swan sidecar, thoroughly renovated and in perfect condition throughout, Miller aluminium side and tail with Lucas generator, Klaxon, 2 spare tubes, makers' kit with many extras and spares, unused retread on sidecar, unused spare extra heavy Dunlop, Palmers, spare Dunlop belt, pair Brooks' gaiters, tax and licence paid, holder fitted, machine not used since end of last year; £105, or close; sole reason for selling, ill-health.—Brainsby's Garage, Peterborough. [3274

Ladies' Motor Cycles.

LADY'S Douglas, condition and appearance as new, very little used; 60 gns.—Goulson, Belvoir Rd., Coalville. [4134

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

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LADY'S Velocette 2½h.p., 2-speed, lamp, horn, etc., splendid condition, licence paid; £35, or offers.—Mrs. Carroll, Marine Drive, Hornsea. [X0410

1915 2¾h.p. Lady's Douglas Combination, 3-speed, clutch, kick start, fully equipped, good condition; £55; separate.—West Farm, Effingham, Leatherhead. [3613

LADY'S Hobart, 1913, 2½h.p., 3-speed, clutch, lamps, horn, tools, tax, tyres new, condition and appearance excellent; 24 gns.—74, Victoria Rd., Stretford, Manchester. [X0467

VELOCETTE, 1921 (June), lady's model, 2½h.p., 2-speed, mechanical lubrication, all-chain, mileage under 250, cost over £80, Brampton forks, aluminium legshields, footboards, B.B. carburetter, horn, tools, repair outfit, plug, and tax; expert examination and trial; £54.—10, Cross Rd., Lexden, Colchester. [3877

Miscellaneous.

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A FEW Combinations offered at reduced prices: Standard model £160, 2-seater £165, sporting £150; gradual payments 5% on balance only.—J. Tassell, 1a, Bloomfield Rd., Plumstead. [5374

FREAK Motor, all new, 2¾h.p., E.I.C., Amac, discs, T.T. bars, fast and sporty; £60.—1, Fortnam Rd., N.19. [3947

DOUGLAS with 2-speed, £17; also Triumph 3½h.p., £17; both good order.—Hall, Heckman, Whetstone, London. [3542

WANDSWORTH Motor Exchange.—Great bargains; finest selection motor cycles, combinations, in London.—Below.

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WANDSWORTH.—1919 P. and M. coachbuilt combination, 3½h.p., 2 speeds, kick; cheap, offers.—Below.

WANDSWORTH.—Magnificent F.N., latest 5-6h.p. made, 2 speeds, clutch, lamps; 68 gns.—Below.

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WANDSWORTH.—Triumph, 3½h.p., mag., good tyres, drive away; bargain, 26 gns.—Below.

WANDSWORTH.—Zenith, 4h.p. J.A.P., Gradua gear, clutch, kick, newly enamelled; 45 gns.—Below.

WANDSWORTH.—Triumph, 3½h.p., Bosch, 3 speeds, clutch, kick, nice machine; 46 gns.—Below.

WANDSWORTH.—N.L.G., 3½h.p. Peugeot engine, spring forks, drive away; clearance, 15 gns.—Below.

WANDSWORTH.—F.N., 4½h.p., 4-cyls., Bosch, shaft drive, wants attention; gift, 13 gns.—Below.

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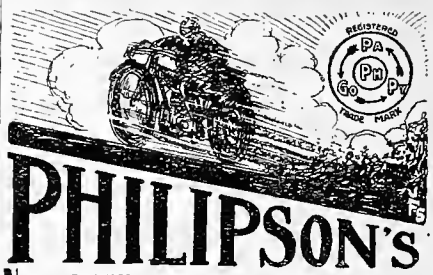
WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [3927

NEW Lightweight Motor Cycle, less engine, petrol tank painted yellow with blue panel, sloping top tube, 2-speed gear, tyres, belt, brakes, and all controls, low racing bars, wheels balanced, half back mudguard detachable with carrier, suit either 247 or 293 c.c. J.A.P. or 348 c.c. twin J.A.P.; a gift at £30, cost double.—T. Twentyman, Pickering, Yorks. [4170



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BARGAINS.—1921 Rudge Multi, £85; 1921 4½h.p. Ariel, £110; 1921 7h.p. Ariel, £125.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3h.p. twin Humber, 3-speed, £18/15.—Booths Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 5h.p. Enfield, 2 speeds, £29/15; 6h.p. Chater-Lea, Grado gear, £21/15.—Booths Motories, Halifax.

BARGAINS.—6h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P. and M., 1914, £39/15.—Booths Motories, Halifax.

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/15; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [3301

1916 4½h.p. Combination with Mills-Fulford sidecar and extra child's seat, all on, licence; £80.—Sandums, 336, Gray's Inn Rd., W.C.1. [0719

HALIFAX.—50 second-hand motor cycles and combinations. Offers wanted. Get list. Cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [3911

DOUGLAS 2¾h.p., also Junior Triumph, both in excellent condition, all on, tax paid, accessories, Triumph insured; would separate.—21, Haydon Park Rd., Shepherd's Bush, W.12. [3891

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [3183

NEW Motor Cycles at End-of-season Prices.—Raleigh combination, 5-6h.p.; Royal Ruby 3h.p.; Wooler Brooklands model; Wooler tourist model; and Hobart; prices and details on application.—Clark and Co., Station Rd., Doncaster. 'Phone: 176. [3561

SAM E. CLAPHAM (Motors), Greenwich.—Previous to stocktaking, we can offer some rare bargains in new and second-hand motor cycles at end of season prices; exchanges, cash, or easy terms; write, call, or 'phone Greenwich 751.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [3180

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [3689

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B.S.A., Ariel, or other big single. See Exchange.—48, Bromehill Rd., Bromley, Kent. [3485

WANTED, 2¾-3½h.p. bike, cheap, not earlier 1914.—R.G., 26, West Hill, Highgate. [4119

WANTED, good Morgan, combination, and Douglas.—24, Balliol Rd., North Kensington. [4044

CASH on sight for several old solos or combinations, must be very cheap.—Write, 20, Theed Av., Barnes. [3785

WANTED, 2¾h.p. Douglas, 2-speed, not earlier 1913; about £30.—King, Egrove, Oxford. [X0492

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SUNBEAM Sports, end of season bargain.—Full particulars, Baines, Wigton St., Hightown, Manchester. [X0272

£100 offered privately for 1920 Indian dynamo combination, equipped.—Box 6,778, c/o *The Motor Cycle.* [3567

WANTED, countershaft Triumph solo, not earlier than 1918, for cash.—Maynard, Woolhampton, Reading. [3803

SOLO Wanted, modern, light or medium weight, any condition, but must be cheap.—Write 11, Stirling Rd., E.17. [3742

WANTED, 4-cyl., F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [3151

COACHBUILT Combination, Humber and Roc gear preferred, about £25.—Ridgway, Eagle Hotel, Mablethorpe. [3530

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3152

WANTED Urgently, modern lightweights, cash waiting.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [4262

WANTED, Henderson 4-cyl. combination, dynamo lighting preferred. Send full particulars.—287, Cleethorpe Rd., Grimsby. [3662

WANTED, 1921 A.J.S. or 8h.p. Sunbeam combination, dynamo, good condition; Midlands.—Box 5,790, c/o *The Motor Cycle.* [3676

TRIUMPH 1920 or 21 3-speed Countershaft Model; state lowest price for spot cash and where seen.—Box 55, c/o *The Motor Cycle.* [X0562

WANTED, countershaft Triumph, 1918 or later, condition immaterial if cheap for cash.—30, Crystal Palace Park Rd., Sydenham. [4048

COMBINATION Wanted, A.J.S., Matchless, Sunbeam, or similar machine; light car considered.—Write, Thompson, 253, Munster Rd., Fulham. [3765

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harington Rd., South Kensington. 'Phone: Ken. 3709. [0604

WANTED, good motor cycles and combinations for cash; also machines accepted for sale on commission.—Ratcliffe Bros., 200, Gt. Portland St., W. [0705

W. T. DUNN, Ltd., 326, Euston Rd., N.W.1; require unlimited quantity modern solos, combinations, Morgans, light cars, etc.; top prices paid; cash on sight.—'Phone: Museum 5391, write, or call. [0332

P. and M.'s, incomplete machines or parts required immediately; bankrupt stocks purchased; combinations and modern solo machines; cash waiting.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [8508

TRIUMPH Combination, must be late model, chain-cum-belt or all chain, state fullest particulars, not W.D. model.—Advertiser, 40, Carlton Mansions, London, W. [X0563

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£125 Cash for 1920 Bat-Jap 8h.p. combination, Cowey speedometer, Cowey horn, Cameo screen, perfect order and good condition; will ride 50 miles prospective purchaser.—Write, Box 6,807, c/o *The Motor Cycle.* [4153

TRIUMPHS.—W. T. Dunn, Ltd., are special buyers of these machines, 1915 or later, single machines quantities; spot cash on sight.—Write, 'phone, or call, W. T. Dunn, Ltd., 326, Euston Rd., N.W.1. 'Phone: Museum 5391. [0681

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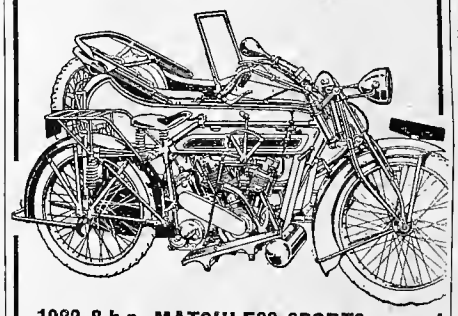

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MILLFORD Mediumweight sidecar body, Taylor screen, in good condition; £4/10, or exchange push cycle, gramophone, etc.—Finchampstead, Farnburn Av., Slough. [339

WILLOWBROOK Royal Leicester Sidecars, smartest designs, first-class finish; prices from 17 gns. Write for catalogue. Repairs undertaken, hoods, windscreens, etc.—The Willowbrook Motor Co., Leicester. [033

BODIES (six only), built for Chater-Lea 10h.p., coach built, 2 lockers, painted and upholstered; real bargain, £11/10. 'Phone: Chiswick 1859.—Burlington Carriage Works, rear George and Devonshire, Burlington Lane, Chiswick. [352

HEPPELTHWAITE'S.—£4/10, renovated underslung Douglas chassis, complete, or suitable for Clyno, P. and M., Rudge, or any make, 7/6 extra; new tyre 30/-. We hold the largest stock of Douglas chassis in London (no swank). 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [309

PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Winncycle Co., Ltd., 236, High Holborn, W.C.1. [038

SIDECAR ATTACHMENTS.

IDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passge 27in. Tandem and single bodies fitted. Tested years on motors up to 9h.p.—Hopley, Upper Highte St., Birmingham. [0152

EALLY Nice Large Touring Bowser Coachbuilt Sidecar, would take extra child's seat, smart dark een finish, makers' lining and transfers, strong chassis, point connections, not a W.D. renovation; honestly rth £15, clearance £12, or exchange, cash either way. e Accessories column.—Wingfield, Stanley Rd., Bromy, Kent. [3959

MILLS-FULFORD Sidecar Chassis, unused, £8/10; second-hand, £4/10; bodies made to your own sign; bodies in stock from £5/5; chassis and bodies mplete from £11/11. Come and see us, you will be terested. Quantity of second-hand fittings at cut ices. Mills-Fulford stockists.—Tel.: Brixton 1292. ur number is 26.—Light Car and Motor Cycle Engeering Co., 26, Tulse Hill, Brixton (½ minute from rixton Skating Rink). [3694

OBINI.—Douglas chassis, enamelled, new tyre and tube, with Helen sports body, £14; Douglas assis, as above, with new Helen tourist, £15/10; th de luxe model, £15/10; Mills-Fulford chassis, w tyre and tube, with Helen sports model, £12/10; above, with Helen tourist model, £12; chassis and dies from £10; carriage extra; for full particulars bodies see Bodies Column. Brixton 1585.—T. obini, 22, Water Lane, and 1, Tulse Hill, Effra Rd., rixton, S.W. 'Buses and trams pass the door. [4023

RUNABOUTS AND CYCLE CARS.

915 Morgan Grand Prix; £120; any trial.—166, Dunstable Rd., Luton. [3619

50.—8h.p. 2-seater runabout, tax paid; trial.—37, Marlborough Rd., Romford. [3878

AN GUY, Weymouth, G.N. official agent.—Popular model from stock; £198. [0691

YCLE Car, tandem, 8h.p. J.A.P., hood, screen; £75; exchange.—210, High St., Tonbridge. [3625

921 8h.p. Rover Light Car; £200; exchange entertained.—37, Arlington Rd., Surbiton. [3764

921 T.B., dynamo lighting, spare wheel; £155.—24, Balliol Rd., North Kensington. [4043

.V. 1920 2-seater, w.c., dynamo, perfect; cost £300, bargain, £125.—6, Church Rd., Forest Hill. [3952

MORGANS, second-hand; several in stock.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [4181

.N. Popular, 1921, shop-soiled only; £175.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [4182

AN GUY, Weymouth, Morgan agent; reduced price; Grand Prix 10h.p. M.A.G., £197, from ick. [0624

.N., 1920, dynamo lighting, condition as new, all new tyres; £165.—7, Batoun Gardens, Hammerith. [3609

MORGAN de Luxe, 1921, a.c., red, discs, electric light, as new; £185.—Taylor, Hawkhurst, Otley, eighley. [2525

MORGAN de Luxe, 1920, J.A.P., fully equipped, insured, perfect condition; £170.—7, Tormount Rd., amstead. [3598

OVER Light Car, 1921 model, 8h.p., early delivery; 250 gns.—Godfrey's, Ltd., 208, Gt. Portland St., ndon, W.1. [0350

RAND Prix Morgan, new February, every equipment; £175.—Walley, Milton Rd., Sneyd Green, nley, Staffs. [X0461

ROUCH, early 1920, fully equipped, completely overhauled; £145, near; appointment.—Dean, Burys Bank, Lingfield. [3941

ATE 1920 De Luxe W.C. Morgan, beautifully equipped; any trial; £140.—24, Balliol Rd., rth Kensington. [4042

ASH Rattlers requiring cycle cars, runabouts, and cars, see Douglas S. Cox's, West Norwood, advement under Cars. [3843

MORGAN G.P., Sept., 1920, 10h.p. w.c., hood, disc, electric; £140.—Dawe, c/o Dental Surgery, 216, rtobello Rd., W.11. [3905

AMPLIN, 1920, very fast, in perfect order, complete kit; bargain, £110.—Ralph, 7, Titchbourne , Edgware Rd., W. [3401

30.—8h.p. Riley, water-cooled, 3-wheeler, for quick sale.—Sparkright, Winchester Mews, Winchester , Swiss Cottage, N.W. [3411

920 G.P. Morgan, new condition, tax paid; £165, or exchange late combination and cash.—19, alton Mews, Warren St., W.1. [4285

918 Morgan, Grand Prix model, water-cooled, good condition throughout, any trial; £130.—x 6,788, c/o *The Motor Cycle*. [3673

LLDAYS Midget, 2-seater and dickey, detachable wire wheels; £125; exchange.—59, Palfrey Place, rset Rd., Clapham Rd. S.W.8. [3829

920 Grand Prix Morgan, fully equipped, unscratched; £140.—Hillier, 1, Thorpe Mews, Camdge Gardens, Ladbroke Grove, W.10. [3969

OVENTRY Premier, 1922, 4-wheel model; £250; immediate delivery; cash or deferred payments.—tcliffe Bros., 200, Gt. Portland St., W. [X0477

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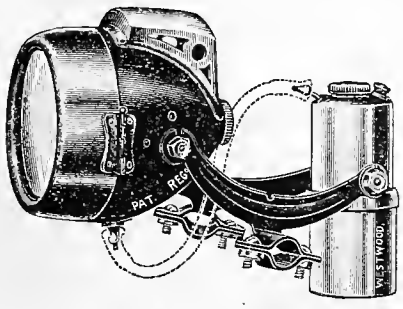

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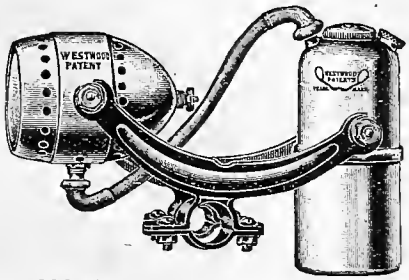

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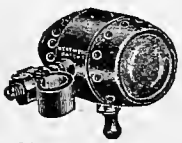

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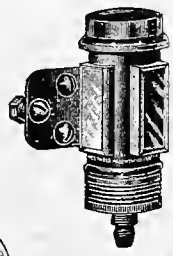

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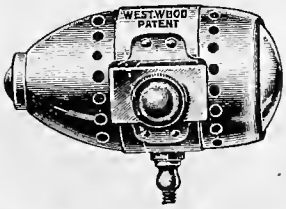

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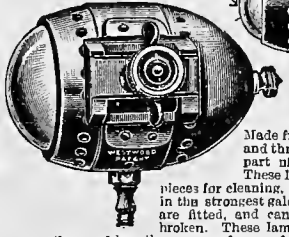

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A.C. Sociables, modern, fully equipped, mechanically sound, good appearance, from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W.1. [3425

1915 Grand Prix Morgan, water-cooled, excellent order; £110, or exchange combination and cash.—White, 437, West Green Rd., Harringay, N.15. [4097

MORGAN De Luxe, 10h.p. Precision, a.c., hood, screen, lamps, toolbox, smart, just painted; best offer over £105.—Stott, Branch Rd., Batley, Yorks. [3423

G.N., Sept., 1920, dynamo lighting, detachable wheels, speedometer, numerous spares, recently overhauled; £175.—Carmel, Cove, Farnborough, Hants. [3881

1921 Morgan de Luxe and Grand Prix models for immediate delivery. Extended payments, exchanges.—Reys, 378-384, Euston Rd. 'Phone: Museum 6436. [4180

£95.—1921 Carden, complete with lamps, horn, hood, screen, speedometer, tax paid, small mileage, excellent; trial run.—Carden, 25, Grosvenor Rd., Birkenhead. [4103

A.V. Monocar, 8h.p., appearance new and unscratched, hardly used, dynamo lighting set; £95, or offer.—Mead, Haven, Portsmouth Rd., Esher, Surrey. [4283

NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

MORGAN, 1918, Grand Prix model, good condition throughout, water-cooled, illness compels selling, no reasonable offer refused.—Hull, c/o Cass, St. Mary's St., Ely. [3674

G.N., 1921, dynamo lighting, done 2,000 miles only; cost £275, sacrifice £167/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

MORGAN, 1921, Grand Prix, very little used, M.A.G. engine, every accessory, appearance as new; £195.—Mylam, 197, London Rd., Croydon. 'Phone: 2379. [4115

KINGSBURY 8-10h.p., 2-seater, brand new, dynamo, discs, licensed; list £295; must sell, whatever loss; any offer over £175 considered.—Seen Army and Navy Stores, S.W. [4227

8h.p. 2-seater Sporting Cycle Car, Simplex o.h.v. V twin, a.c., discs, running order, but wants tuning; snapshot; offers, or exchange solo.—Collier, Aston Clinton, Aylesbury. [3956

A.V. Monocar, 1919, 6h.p. J.A.P. engine, electric lighting, disc wheels, excellent condition and appearance throughout; bargain, £55.—29, Allsop St., Baker St., N.W.1. [3515

CARDEN 1921 (August) 2-seater, hood, wind screen, tools, horn, oversize tyres, electric lighting, insurance, 70 m.p.g.; £120.—Chatsworth House, Derby Rd., Ponders End, N. [3637

MORGANS.—The latest models in stock at greatly reduced prices. Liberal exchanges and extended payment terms. Spares for all models from stock. Authorised agents.—Below.

MORGAN Grand Prix, w.c. M.A.G., 1916-17, in first-class mechanical condition, paint, etc., excellent; £115.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

1920 Morgan de Luxe, w.c., speedometer, side mirror, hood, cover, disc, in perfect condition; £140.—Hillier, 1, Thorpe Mews, Cambridge Gardens, Ladbroke Grove, W.10. [3968

1920 Crouch 2-seater, electric lighting, speedometer, detachable wheels, tax paid, appearance and condition as new; £155.—Tel.: Museum 6626. A.S.C., 60, Mortimer St., W.1. [3192

£175.—G.N. standard touring, 1921, adjustable tappets, dynamo lighting, detachable wheels, toolbox, petrol carrier, magnificent condition, any trial.—Wynter, R.A. Mess, Aldershot. [X0465

BLERIOT WHIPPET, 1920, perfect condition, complete, lamps, horn, tools, spare wheel, speedometer, etc.; open to any examination; £145.—Mr. C. Heasman, Chartwell Farm, Westerham. [3630

COVENTRY PREMIER New 4-wheeler model actually in stock; cash or deferred payments.—Lamb's, 50, High Rd., Wood Green, 387, Euston Rd., N.W.1; 151, High St., Walthamstow. [3497

A.C. Sociable 2-seater, 5-6h.p., Bosch, 2 speeds, hood, screen; any trial; gift, 39 gns.; exchange motor cycle or combination.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [3928

VICTOR 1915 Cycle Car, 2-cyl., water cooled, 2 speeds and reverse, fast and quiet 2-seater, lamps and horn; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4052

COVENTRY VICTOR Engined 2-seated Cycle Car, 2-speed, reverse, discs, hood, screen, built October, 1920, unpunctured, 60 m.p.g.; cost over £200, accept £130.—37, Cranley Gardens, Palmer's Green, N. [4124

RUNABOUTS AND CYCLE CARS.

A.V. Monocar, 1919, 6h.p., large head lamp, side, tail, car generator, speedometer, horn, wind screen, tax paid, good condition; £70; no reasonable offer refused; week-ends.—Hadlow, Woodlands Rd., Bickley, Kent. [4063

MORGAN, late 1918 Grand Prix, very special lot, engine 10h.p. water-cooled Precision, tax paid, insurance paid up till Sept., 1922, C.A.V. lighting, new tyres, Goodrich front, oversize Bates back, mahogany dashboard containing switchboard, speedometer, spot light and sight feed lubricator, new Binks carburetter of latest type, colour primrose and black, disc wheels; the foregoing is open to any examination and trial; reason for disposal, owner bought large car; price and further particulars on request; a real end-of-season bargain.—11L, Kramer Mews, West Brompton, London. [3521

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SIDECAR Taxi Combinations, cash or gradual.—County Cycle and Motor Co., Broad St., Birmingham. [8449

£100 down and twelve monthly payments of £20 secures London taxicab.—Details, Palmer's Garage, Tooting. [4160

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HALIFAX.—Perry 8h.p., w.c., 2-seater; £135.—Halifax Motor Exchange, Horton St., Halifax. [3916

£85.—12-16h.p. Sunbeam 2-seater, 4-cyl., 5 detachable wheels, fine running order.—King, Egrove, Oxford. [X0491

DE DION 6h.p. 2-seater Car, complete, in first-class order; £65, tax paid; trial.—3, St. James's Rd., Upper Tooting. [1566

G.N. Late 1920 Model de Luxe, dynamo lighting, etc.; 140 gns.—Miss Watts, c/o 77, Acre Lane, London, S.W.2. [4088

CADILLAC, 30h.p., 8 cyls., 7-seater, 1916 model, little used; £275, worth £600.—Dr. Carr, 94, Branksome Rd., Brixton, S.W. [4089

HALIFAX.—G.N., 1920 (Nov.), 2-seater, dynamo lighting, speedometer, hood, screen, etc.; £175.—Halifax Motor Exchange, Horton St., Halifax. [3915

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; 230 gns.; terms cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [X0476

HALIFAX.—Latest new Calthorpe, Lagonda, Standard, Coventry Premier, and Airedale cars. Get our exchange quotation.—Halifax Motor Exchange, Horton St., Halifax. [3914

SWIFT 7-9h.p. 2-seater, new tyres, very smart, guaranteed; £125, or exchange late combination.—217, Belsize Rd., Kilburn. [3819

8h.p. De Dion, tax paid, mechanical valves, mag. ignition, good running order; trial; £55, or exchange motor cycle.—Bishop, Fernbank Rd., Ascot, Berks. [3777

DAIMLER 15h.p. Touring Car, Knight engine, C.A.V., excellent order; offers, or exchange single combination or small car.—8, Crowhurst Rd., Brixton, S.W.9. [4090

HUMBER Coupe, 10h.p. twin, Bosch, Claudel, gate, 5 detachable wheels, new tyres; exchange for combination.—S., The Limes, Woodberry Down, N.4. [4297

1915 Lagonda Coupe, overhauled, and recently repainted, acetylene lighting, must sell; offers wanted.—A.S.C., 60, Mortimer St., W.1. Tel.: Museum 6626. [4265

10-12h.p. Clement 4-seater, new mag., Zenith carburetter, good condition, 25 m.p.g.; bargain, £75; can be seen evenings or week-end.—43, Lansdowne Rd., Tottenham. [3319

BABY Pengeot, 1915, 3-speed, tax paid; £130; motor cycle or combination taken in part exchange.—Overend and Cotton, Grafton Mews, Warren St., W. Museum 6980. [3309

1916 Calthorpe 2-seater, dynamo lighting, clock, speedometer, in good order throughout; offers wanted; owner must sell.—A.S.C., 60, Mortimer St., W.1. Tel.: Museum 6626. [4264

K.R.I.T. 1914 5-seater Touring, 3 speeds and reverse gate, detachable rims, hood, screen, lamps, tax paid; £95, or exchange.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4051

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14h.p. Light Ariel with 4-seater sports body, fa and reliable, do any trial, exchange for sma 2-seater or combination. Wire or phone Dalston 186 London.—S. B. and L. Splitter, 16, Woodberry Down N.4. [429

1919 Chevrolet Touring Car, dynamo lighting, sel starter, 5 detachable wheels, repainted as new perfect running order; £195, or exchange motor cyc or combination and cash.—5, Norwood Rd., Herne Hill, S.E.24. [42

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LIGHT Coachbuilt Motor Van; £100; exchange ente tained.—Grove, 18, Fore St., Edmonton, Londo [421

UNIO Van, 15-cwt., any trial; going cheap; offe wanted; must clear.—Allison, Church Rd., Acto [424

£100 down and twelve monthly payments of £2 secures a magnificent 3-ton lorry.—Details, Pa mer's Garage, Tooting. [41

CHATER-LEA Motor Cycle and business sidecar, h.p., 2-speed.—Bradfords, 57a, High St., Syde ham. 'Phone: Sydenham 1493. [37

LORRY (small), Adams 10h.p., 3-speed and revers mag., carry 10-cwt., do good service; £25.— Butterworths' Garage, 64, Mill Lane, Brixton Hill 'Phone: Streatham 2813. [40

FAFNIR 12h.p., 4-cyl., smart 2-seater, Solex carb retter, Bosch, faultless, guaranteed, simple, fas economical, lamps, etc; trial; bargain, £110; exchan combination and cash.—Owner, 14, Piggott St., Burde Rd., Stepney. [37

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MOTOR Cycles, Cars, Lorries. Best treatment. Write Kenneth, Beadnall, 130, Northfield A Ealing. [32

HALIFAX.—New and second-hand motor cycles; d ferred payments at lowest rates.—Halifax Mot Exchange, Horton St., Halifax. [391

FOR Best Treatment and best terms for light car cycle cars, or motor cycles of any make, new second-hand, write Service Co., 292, High Holbor W.C.1. [068

ENGINES.

2¾h.p. Arden, new, C.A.V. mag.; offers.—Jones, Collingham Rd., London, S.W.5. [X00

P. and M. Engine and Gear, late; £9.—1, Sprin field Park Crescent, Catford, S.E.6. [38

DE DION Engine, 2¾h.p., magneto and carburetter £5/10.—Flack, Kynnersley, Wellington, Salo [39

2¾h.p. Singer Engine, sell or exchange with ca for 2-stroke.—Walter, Kiaora, Westmoors, De set. [37

2¾h.p. Minerva, m.o.v., 50/-; 3-speed Opperm gear box, 50/-.—N., 16, Pleasant Place, Ma gate. [36

J.A.P. 7-9h.p. Twin W.C. 1918 Model, guarantee £20, offers.—Tait, Glendower Hotel, South Ke sington. [36

3h.p. 45° twin m.o.iv. engine, by Brevet, in go condition; £6.—Cooper, 63, Avenue Rd., Ca herwell, S.E.5. [42

4h.p. Douglas Engine, 1919, complete with carb retter and magneto; £16.—Snow, Laurel S Dalston, E.8. [42

1916 J.A.P. Engine, 6-8h.p. twin, mag., inducti pipes, exhausts, splendid condition, guarantee £18; approval.—79, Friern Rd., E. Dulwich. [39

2¼h.p. 2-stroke Engine, complete with C.A.V. m neto, new, complete and perfect; price £1 letter for appointment.—Kelowna, Earlsdon Av., Co entry. [X93

3½h.p. Minerva, mechanical valves, perfect conditio £3/15; appointment in writing to inspect Ray, 1, Station Mansions, Station Rd., Church En Finchley, N. [37

1915 3¾h.p. Precision, Bosch, B. and B., pull engine plates, as new, £14/10; 1913 3½h. Brough single engine plates, pulley, perfect; £7.—8 Lordsmill St., Chesterfield. [X04

10-12h.p. Cadillac Engine, with gear, mag., a carburetter, horizontal stroke, make good g engine; exchange, or sell £10.—Cooper, 63, Avenu Rd., Camberwell, S.E.5. [32

INDIAN.—A few Powerplus 7-9h.p. engines at t remarkably low price of £15/15 each.—Smith 86, Chalk Farm Rd. (opposite Chalk Farm Tube St tion), London. 'Phone: Hampstead 2767. [39

COMPLETE Unit, 3½h.p. Minerva, overhaul Simms mag., B. and B. carburetter, Mabon clut handle-bar control, silencer, all first-class; £10/5 fi cash.—Barwick, Victoria Parade, Ashton, Preston. [X04

DOUGLAS 2¾h.p. Engine, complete with magnet brand new carburetter and induction pipe, co trols, silencer, 2-speed gear box, chain and belt, p fect; cost £60; accept £40, or nearest.—Box 6,7 c/o *The Motor Cycle*. [35

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A REX Twin, 1913, special sporting solo type, 7-9 h.p., aluminium pistons, specially lightened parts, ill do 70 m.p.h., Binks carburetter, mag.; £16; con-der 2-stroke part exchange.—110, Willows Rd., Can-on Hill, Birmingham. [X0576

BROLER 2-stroke Engines.—One of our many testi-monials: "My combination pulls like a 5h.p. vin. Liveridge and Meriden are easy top gear climbs ½ to 1)." You can travel 5 to 50 m.p.h. and as ng as you like on Brolers.—Brooks, Traeler and Cox, urborough, Leicester. [X0538

5h.p. 50° V Twin, a.i.v., cylinders like glass, new gudgeon pins, bushes, etc., valves reground, com-lete with polished induction pipe, exhaust pipes, twin lencers, engine plates, large adjustable pulley and cast agneto platform, drilled connecting rods, clearance 6; 2½h.p. Minerva, £3/5. See Accessories column.—ingfield, Stanley Rd., Bromley, Kent. [3957

HEPPELTHWAITE.—6h.p. W.C. Humber, single, complete unit, clutch, mag., carburetter, pump, ., £14; 3½h.p. Triumph engine, £9; 5-6h.p. 4-cyl. N., complete unit, £12/10; 7h.p. twin Premier unit, 11; pair w.c. J.A.P. cylinders, off Morgan, 6/15; 3½h.p. Rex, a.i.v., £3; 2¼h.p. Minerva, o.v., £3/10, a.i.v. £3; 2h.p. Peugeot, £2/10; 5h.p. tevens, £3/10; White and Poppe less cylinder and iston, £2; James cylinder, 30/-; a.i.v. Rex cylinder, 1/10.—'Phone or write Heppelthwaite's, and see Side-ars column for chassis snips; stamp please.—19, Wil-ox Rd., South Lambeth, London, S.W.8. [3097

J.A.P. Engines. J.A.P. Engines. J.A.P. Engines.—I have the largest stock of J.A.P. engines and arts in England; over 30 engines always in stock to lect from, and the price: 5h.p. twins, £17/10; 8h.p., ted with new pistons and 1921 cylinders, £20; and h.p. at £18/10. Parts: 8h.p. J.A.P. crank cases, /- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam heels, complete, 15/- each; valves complete, 4/- each; lve guides, 3/6 each; tappet guides, 2/6 each; ex-nst valve and inlet cap, 4/- each; tappets complete, 6 each; cam levers, inlet and exhaust, 4/- each; dgeon pins, 5/- each; and all parts for J.A.P. gines. Stamp for reply.—Hawkins, 455, York Rd., andsworth. [3665

IGNITION, LIGHTING, ETC.

H.B.I.

H.B. Ignition Co. carry large stocks of new and second-hand magnetos. Thomson-Bennett 42, 45, 55, and 180°, single and twin.

H.B. Specialise in T.B. for fixing on Triumph, P.M., B.S.A., J.A.P., Douglas, etc., £2/10, postage 1/6. A.V. clock twin, for 2⅝h.p. Douglas, etc., £2/15.

H.B. will take your old magneto in payment.

H.B. sends all magnetos on approval against cash. Every magneto dispatched carry H.B. 12 months' arantee

H.B. Ignition Co. ('Phone: Brixton 610), 78, New Park Rd., Brixton Hill, London. [0694

NEW Motor Cycle Magnetos.

500 for Immediate Disposal.—Thomson-Bennett, C.A.V., all degrees, single and twin, leads, d variable ignition, for all machines, £2/12/6, in-ides postage; Bosch £3, postage extra, 1/6. We ward immediately all magnetos on approval ainst cash. Money refunded if dissatisfied.—The ntral Motor and Ignition Works, 14a, Lough-ough Rd., Brixton, London, S.W.9. [4266

MAGNETOS 50% Below Original Cost.

BOSCH W.D. 1-cyl., variable ignition; 63/-, de-livered.

THOMSON-BENNETT and M-L's of Coventry, 1-cyl. A.D.S. or P.L.R. types, 40/-, delivered, suitable stationary engines. Any of the above if variable nition 10/- extra.

C.A.V., suitable for 2 or 1-cyl. lightweight motor bicycles, height 4½in., breadth 2⅝in., depth 4½in., riable ignition and short circuiting terminal, gunran-d platinum points, and workmanship of the finest; yl. fires at 180°. All working parts are interchange-le with C.A.V.'s types KU1 and 2. 52/6, delivered.

THOMSON-BENNETT Types A.M.1 and 2. variable ignition and short circuiting terminal; A.M.2 fires 180°; 55/-, delivered.

THOMSON-BENNETT 4-cyl., variable ignition; £5/5, delivered.

T.B.—Any of these magnetos supplied clock or anti-clock. When ordering state which when looking driving end and whether 1, 2, or 4-cyl.

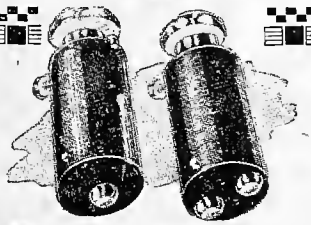
TERMS: Net cash. Satisfaction or cash returned, if requested within 21 days.—Vale Engineering Synd., 11, Brown's Buildings, St. Mary Axe, E.C.3.

C.A.V. 2-cyl. Clockwise Aeroplane Starting Magnetos, platinum points, workmanship of the finest, and working parts are interchangeable with C.A.V.'s pe KU2, perfect for plug testing. One, carriage paid, /-; lots of six, rail forward, 22/6 each, of 20 at /6, of 100 at 20/-.—Vale Engineering Synd. Terms d address as above. [0698

STRA Dynamo, 6 volt, as new; £4.—Bond, Brasted, Kent. [3932

PLATINUM Points, heavy, 11/- pair. Send pattern. —Wallis, Redhill Rd., Hay Mills, Birmingham. [3422

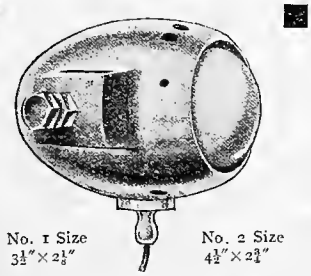
ACCESSORIES



ADAPTERS

To convert bayonet to screw in bulb.

Single or Double Pole, **2/-** each, post free.

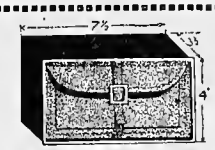


No. 1 Size $3\frac{1}{2}'' \times 2\frac{1}{8}''$ — No. 2 Size $4\frac{1}{2}'' \times 2\frac{3}{4}''$

STADIUM SIDECAR LAMPS.

Cast aluminium. Highly polished. Manufactured in two sizes.

No. 1 Size **3/9** Carriage Paid. No. 2 Size **4/6**



METAL CASED TOOL BAGS.

Leather front. 2 clips supplied with each bag. Best value obtainable.

5/9 each. **10/9** per pair.

CARRIAGE PAID.

Turner's Stores — The Motor Cyclists' Accessory House

180-1-2, Railway Approach, SHEPHERD'S BUSH, W.12

'Phone:—Western 6177.

IGNITION, LIGHTING, ETC.

COUNTY of London Engineering Works, Ltd.

MAGNETOS. Magnetos. Magnetos.

GOVERNMENT Surplus Unused Magnetos.—Having bought the entire stock of the following makes of magnetos, we are able to offer them at large dis-counts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable igni-tion and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

COUNTY of London Engineering Works, Ltd.

PLUGS, high-tension, wire, plugs.

GOVERNMENT Surplus; new plugs in boxes.

A.C. (Titan), 1/6; K.L.G. type 7, detachable, 2/6; high-tension wire, new, unperished, 9 mm., 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., 2d. per yard, 25 yard coil 2/-.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d.; (see other goods under Miscellaneous.)—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London [5583

RELIANCE Magneto Repairing Co. for repairs and new magnetos.—See below.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a written guarantee for 12 months.

RELIANCE test every magneto after repair under all running conditions, and, as we contract for many of the largest concerns, you need have no hesita-tion in placing your repairs and orders with us.

RELIANCE manufacture and stock spares for Thomson-Bennett, E.I.C., Splitdorf, U.H., Bosch, Dixie, etc.; special line genuine platinum screws for every make, 12/- per pair.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be cer-tain of getting the usual promptness and courtesy that we have always endeavoured to give.—Reliance Mag-neto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co., 283, St. John St., E.C.1, for new and second-hand magnetos.—See below.

THOMSON-BENNETT Magnetos, waterproof, vari-able ignition. These magnetos leave us in per-fect condition, and carry our guarantee to either replace or refund cash if found unsatisfactory. Single-cyls., clock or anti, suit any machine, 55/-; 45, 48, 50, 55, 180 deg., for J.A.P., Clyno, Douglas, etc., 55/-. —See below.

C.A.V. Magnetos, brand new, single and twin-cyl., ideal for Douglas, Levis, Calthorpe, O.K., or any lightweight, single or 180° twin, 55/-.

E.I.C. Magnetos, absolutely brand new, not shop-soiled, ready to fit on Triumph, P. and M., B.S.A., Norton, Sunbeam, etc., £4; the above are genuine E.I.C. standard fitting magnetos.

BOSCH D.A.L. Magnetos, soiled only, otherwise as new, 1-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; powerful spark at low speed. All the above magnetos are water-proof, variable ignition, and guaranteed 12 months; postage 1/6.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [1071

P. and M. Magnetos, complete sprocket and chain, ready to go on, guaranteed; £2/7/6.—Below.

MAGNETOS, T.B., clock or anti, for any machine, £2/5.—Below.

500 SPARKING Plugs, new, guaranteed; 2/- each.—Motor Cycle Accessory Co., 868a, Old Kent Rd., S.E. [4300

EXIDE Accumulator in open glass cell, 6 volt 15 amp., perfect order; best offer.—Bartlemas, Sand-wich. [3367

TWIN Thomson-Bennett and C.A.V. Magnetos, 180°, from 30/-.—12, Cornwall Mews, Gloucester Rd., S.W.7 [3324

K.L.G. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 59, Queen St., Wolver-hampton. [5031

IGNITION, LIGHTING, ETC.

DYNAMOS, 6 v. 8 amp., cut-out, Lucas, third brush control; £5 each.—Jenner, 165, Church St., Mitcham. [4070

PLUGS.—Brand new W.D. Apollo; 2/6; post 3d.—Central Garage, 302, London Rd., Thornton Heath, S.E. [4175

BOSCH 50°, waterproof, 75/-; 1-cyl., 60/-; several from 30/-; approval.—F., 21, Bristol Gardens, Maida Vale, W.9. [3802

LUCAS Dynamo Lighting Sets, complete, from £7 each.—Dept. H.I., Leslie Dixon and Co., 9, Colonial Av., Minories, E.1. [0709

ELECTRIC Rear Lamps, with bulb and wire, 2/6; sidecar ditto, 2/6; money back if dissatisfied; postage 3d.—95, Grosvenor Rd., Highbury. [3900

BOSCH Magneto (Triumph), enclosed; £3, or exchange with cash for 45° Bosch, enclosed.—19, Wilcox Rd., South Lambeth, London, S.W.8. [4230

C.A.V. Magnetos.—Extraordinary bargains. Brand new 180°, twin or single, approval against cash, 38/6, carriage free.—Langfords, 27, Cricklewood Broadway, N.W.2. [3921

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [2284

MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [4162

MAGNETOS, Thomson-Bennett, clock or anti, 42, 45, 50, 55, 180°, and single-cyl. 4-stroke, 50/-, 2-stroke 45/-. Variable ignition, new, waterproof, guaranteed. Write for illustrated particulars.—Super Power Co., 81, Northside, Clapham, S.W.4. [4105

MAGNETO and Dynamo Repairs Service, also self-starters, batteries, and general electrical equipment are speedily and thoroughly repaired by the Runbaken Repairs and Spares Service, all work returned indistinguishable from new. Spare parts for every known make.—Connecticut Service Station.

THERE is a Service Depot in every large town. Call to-day for a quotation. Head Office and Works, Derby St., Cheetham, Manchester; Manchester town depot, 288, Deansgate; London depot, 115, Gt. Portland St., W.1; Leeds depot, 52, Woodhouse Lane; Liverpool depot, 65, Renshaw St.; Birmingham depot, 192, Corporation St.; Bristol depot, 14, Colston St.; Paris depot, 40, Rue Brunel. [0258

U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. AI, BI, AO, KBI, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [2764

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon 'Phone: 435 Croydon. [2381

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1 'Phone: Museum 1158. T.A.: Kumagnelec, Euroad. [6015

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos. Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approved A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [0263

TYRES.

6/6 is the cost of repairing your burst tyre.—Below

YOU can't afford to throw an old tyre away; the cost of repairing is low for a thorough sound job.—Below.

RETREADING Old Covers with studded treads, 12/6, 15/6, 17/6, and 20/-, returned carriage paid in 3 days.—Below.

PHŒNIX Tyre Repairing Co., 224, Sherlock St., Birmingham. [X0512

:: INDISPUTABLE INVESTMENTS. ::

A.B.C. 1920 Combination, dynamo model, with Swan sporting Sidecar, completely equipped, including speedometer and 1921 licence £110

BLACKBURNE 1920 8 h.p. Combination, Swan Sidecar, fully equipped and licensed, very fine outfit £132 10

B.S.A., 1921, Model K2, 4½ h.p., 3-speed, very fine condition, complete equipment, including lamps, horn, and 1921 license . £87 10

B.S.A., 1921, Model H2, 3-speed gear, chain drive, completely equipped, including lamps, horn, and speedometer, 1921 license paid, fitted with aluminium number plates, exceptional condition £90

DOUGLAS 1919 4 h.p. Combination, electric lighting, 3-speed, very fine condition .. £80

ENFIELD 1921 Combination, Lucas Magdyno, windscreen, license, very fine order £150

EDMUND-J.A.P., 1920, 2¾ h.p., 2-spd., spring frame, fully equipped and licensed £55

HARLEY-DAVIDSON 1918 7-9 h.p. Combination, unusually fine condition, appearance almost as new, fully equipped and highly recommended £100

INDIAN 1919 Powerplus Combination, complete with genuine Indian Sidecar, dynamo lighting, speedometer, Cameo screen, etc., mechanical condition guaranteed, appearance and tyres good £90

INDIAN 1920 Powerplus Combination, fully equipped and licence paid, exceptional condition £120

JAMES 1918 6 h.p. Combination, dynamo lighting and full equipment, mileage less than 2,000, almost new condition £105

MATCHLESS 1921 8 h.p. M.A.G. Combination, equipped with electric lighting set, Easting screen, etc., very small mileage, almost new condition £130

NORTON, 1921, 3½ h.p., 3-speed, sports model, fully equipped and licensed, exceptional condition £100

NEW HUDSON, 1920, 2¾ h.p., 2-speed, licence paid exceptional condition £40

N.U.T., 1920, 3½ h.p., Magdyno, lavishly equipped, and almost as new £100

ROVER, 1921, T.T., 75 m.p.h. model, used only 400 miles, and specially prepared for competition, better than new, fitted with hand-controlled Philipson and knee-grips, licence paid £80

RUDGE-MULTI, 1920, 3½ h.p., and Canoelet Sidecar, completely equipped with lamps, horn, and speedometer, and 1921 licence paid, had very little use £80

SCOTT 1920 Sports Model Combination, fully equipped, and licence paid, not used since Easter, 1921 ..... £100

SCOTT 1921 500 c.c. Squirrel. J. W. Tolladay, winner of the 500 c.c. Handicap at Brooklands, Sept. 17th, 1921, offers his his reserve machine with guaranteed kilo. speed of 75 m.p.h. ..... **Offers invited**

TRIUMPH Junior, 1920, 2-speed, fully equipped, and licence paid £45

VERUS-BLACKBURNE, 1920, 2¾ h.p., 3-sp., special engine with side valve head and also separate competition overhead valve head and gear, exceptionally fine condition £75

Extended payment propositions catered for on non-rigid lines. For further bargains, see Miscellaneous Columns. Unequalled bargains offered.

Layton Garages

90, High Street, OXFORD,
And London Road, BICESTER.

'Phone—581 & 784 Oxford.
'Phone - - - 35 Bicester.
'Grams—"Integrity, Bicester and Oxford."

TYRES.

24×2 Hutchinson Rubber-studded 22/3.

24×2¼ Clincher de Luxe Rubber-stud Heavy 26/-.

26×2 Hutchinson Brooklands R.S. 26/5, Palmer cord heavy 34/6.

26×2¼ Dunlop Heavy 36/-, Macintosh chain 32/3, Bates special heavy 34/9, Palmer cord heavy 34/9, Palmer cord 34/9, Rom combination 41/9, Avon combination 38/9, Avon Sunstone 32/9, Wood-Milne combination 46/-, Beldam combination 35/-.

26×2⅜ Palmer Cord Heavy 35/3, Clincher de Luxe extra heavy 27/9, Palmer cord 35/9, Dunlop heavy 35/9, Dunlop extra heavy 41/-, Avon tricar 32/9, Hutchinson passenger R.S. 32/9.

26×2½×2¼ Avon Rubber-studded 24/6, Avon heavy rubber 29/6, Hutchinson rubber-studded 31/-.

26×2½ Rom Combination 45/-, Maciotosh chain 35/9, Hutchinson rubber-studded T.T. 33/-, Dunlop heavy 45/-, Avon Sunstone 42/6, Wood-Milne extra strong 34/6, Wood-Milne special 31/7.

650×65 Wood-Milne Extra Strong 40/-, Palmer cord (light car pattern) 41/6, heavy rubber non-skid.

650×65 (for Voiturette rims) Dunlop Steel-studded 47/6, Dunlop 3-ribbed 45/-, Dunlop grooved 42/6, Burnett grooved 30/-.

26×3 (for 650×65 rims, equivalent to 700×80 for 650×65 rims) Englebert Touring Rubber-studded 30/-, ditto passenger ditto 32/6, ditto superior reinforced 37/6.

700×75 (to fit 650×65 rims) Hutchinson Small Car 3-ribbed 55/-.

700×80 (to fit 650×65) Wood-Milne Extra Strong 45/-.

28×3 (to fit American rims) Dunlop Heavy 45/-, Clincher de Luxe extra heavy 45/-, Wood-Milne extra strong 32/6, ditto 3-ply 28/-.

28×3 (to fit 2½ rims) Dunlop Extra Heavy 50/-, Dunlop heavy 45/-.

NEW Tubes, in all sizes, 7/- each, butt-end 6d. extra; tubes with one small vulcanised patch by manufacturers, otherwise quite new, 5/6.

THE Above Lines are sent 7 days on approval, and forward passenger train, carriage paid.

REMEMBER, the reputation and guarantee of Emanuel's is behind all we sell.

H. EMANUEL and Co., Tyre Factors, 27, Belgrade Rd., Stoke Newington, N.16. Stores: 37a, Balls Pond Rd., Dalston, London, N. Tel.: Dalston 3161. [0723

HERBERT ROBINSON, Ltd., Green St., Cambridge.

GREAT Reductions in motor covers and tubes; brand new and guaranteed; money refunded if tyres not approved of.

24×2 Dunlop Heavy, 34/6; tubes, 7/6.—Robinson's.

24×2¼ Dunlop Heavy, 36/3; tubes, 8/-.—Robinson's.

26×2 Dunlop Heavy, 36/6; tubes, 8/-; Wood-Milne, 25/-; combination, 44/-; clearance tubes, 4/6.—Robinson's.

26×2¼ Dunlop Heavy, 37/3; tubes, 8/3; Dunlop extra heavy, 55/3; tubes, 9/6; Bates heavy, 45/-; Palmer, 30/-; Wood-Milne combination, 35/6; Beldam combination, 35/6; Matchless, 20/-; Pedley, 20/-; clearance tubes, 4/6.—Robinson's.

26×2⅜ Dunlop Heavy, 41/6; extra heavy, 49/6; tubes, 9/-; Palmer, 35/-; Avon studded, 30/-; Dunlop clearance, heavy, 30/-; extra heavy, 34/-; John Bull, 48/6; Moseley, 30/-; Bates, 50/-; Hutchinson passenger, 30/-; clearance tubes, 6/-.—Robinson's.

26×2½ to Fit 2¼ Dunlop Heavy, 46/-; extra heavy, 55/3; tubes, 9/6; John Bull, 48/6; new tubes, 6/6; clearance tubes, 4/6.—Robinson's.

28×3 Avon Extra Heavy, 50/-; tubes, 6/6.—Robinson's.

650×65 Avon Extra Heavy, special bargain price, 42/6; tubes, 6/6; Dunlop heavy, 46/9; extra heavy, 53/3; Dunlop tubes, 10/-.—Robinson's.

700×800 Dunlop Heavy, 46/9; extra heavy, 53/3; tubes, 10/6.—Robinson's.

HERBERT ROBINSON, Ltd., Green St., Cambridge. [4252

MISS DOOLEY.—New heavy Dunlop, 28×2½, 25/- each.—Below.

MISS DOOLEY.—New Macintosh, 28×3, 25/- each.—Below.

MISS DOOLEY.—New Spencer Moulton, 26×2½, £1 each.—Below.

MISS DOOLEY.—New 26×2¼ tyres, various makes, 25/- each.—Below.

MISS DOOLEY.—New Palmer endless tubes, 28×3, 5/- each.—Below.

MISS DOOLEY.—New Dunlop butt-ended and end-less, 28×3, 5/-.—Below.

PLEASE apply for all the above to Miss E. Dooley, 33, Killyon Rd., Clapham. [4155

BASTONE'S for Covers and Tubes; no better or cheaper house.—See displayed adverts. [2344

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

Editorial Offices: Hertford St., Coventry.
Telegrams: "Motorcycle, Coventry."
Telephone: 10, Coventry (5 lines).

Advertising and Publishing Offices: 20, Tudor St., London, E.C.4
Telegrams: "Cyclist, Fleet, London."
Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings Navigation Street, Birmingham.
Telegrams: "Antopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.: Canada, 23s. 10d.: other countries abroad, 28s. 2d. per annum.

The Popular Motor Cycle.

THE statistics recently issued by the Ministry of Transport and already given in *The Motor Cycle* show that no less than 94,000 more motor cyclists paid licences than the number officially recorded in 1920.

While the new system of licensing no doubt makes accuracy more certain, and probably there were a few machines on the road last year upon which no taxes were paid, the enormous increase is remarkable. Every manufacturer will agree that the present year has not been so successful as it might have been, and there is a tendency in some quarters to discredit the accuracy of the figures; but the revenue obtained speaks for itself—the average tax is £2 7s., and the total revenue from motor cycles £875,700. Nevertheless, the increase this year in numbers is over 25% of the official figures for 1920. The figures reveal a very satisfactory state of affairs and emphasise the great popularity of motor cycles.

In America the tendency is quite in the reverse direction, which may be attributed to the failure of the American industry to realise that the motor cycle's greatest feature is its economy. In the U.S.A. very few of the mediumweight and lightweight types, so popular in this country, are made in any quantity.

The total revenue derived from the new taxation already exceeds the £7,000,000 "budgeted" to road users and upon which the taxation schedules were based. It is natural that motor tax payers should be curious as to the purposes to which these extra millions will be put. Are they to be spent on improving the roads, and so contributing to the solution of the present unemployment problem?

Another question motorists will ask is whether, in view of the surplus this year, taxes will be reduced in the future? *Everyone in this country is severely over taxed, and the burden on the country is one of the reasons for the present trade depression.* A reduction in motor taxes next year would materially assist the motor industry to find employment for thousands of artisans now doing nothing, increase the number of vehicles on the road, and so help to circulate money in every part of the country.

Price Reductions.

ALMOST every post brings us notifications of price reductions of motor cycles and accessories. By the time that the Olympia Motor Cycle Show opens, the price level for 1922 will have been reached and business should resume a more normal aspect. At the present moment, it is an undoubted fact that a number of prospective buyers are withholding their orders in anticipation of a substantial drop in costs; in addition they are awaiting with interest the introduction of new models.

It is perhaps rather early to make an accurate forecast of the Olympia Exhibition, but it is safe to say that the general tendency will be towards the production of cheaper machines than to the introduction of startling novelties.

In a way, this is all to the good, provided that the movement is not overdone, to the detriment of development. It is clear, for example, that, if manufacturers were influenced only by the public clamour for cheaper machines, we should arrive at a stage where small tyres, and poor fittings and workmanship, would be the rule, and real progress in design would stagnate.

Fortunately, the British motor cycle trade as a whole is far too sensible to follow such a short-sighted policy, and has a reputation of excellence to maintain; we may rely also on the brains of some of our designers to produce new models which will show a definite advance over past practice.

In spite, therefore, of the recent trade depression, there is every reason to expect that 1922 will mark a very considerable improvement in the motor cycle trade. Lower prices of motor cycles, petrol, oil, tyres, etc., will add very considerably to the number of those who will be able to afford to enjoy the cheapest and most pleasant form of locomotion.

An index to the advertisements in this issue will be found on the page facing the back cover.

OCCASIONAL COMMENTS By "IXION"

Why Gates are Small.

FROM a correspondent:

"Having nothing particular to do on Saturday, October 8th, I decided to take a party over to see the B.M.C.R.C. championships at Brooklands. The snag was that we did not know what time the first race was billed to start. We searched carefully through the current and back issues of all the technical papers. We hunted in vain for even a one-line advertisement in the daily newspapers. We enquired at the local L.S.W.R. station. We turned up the official programme of an earlier meet, when the first race had kicked off at 2 p.m., but, of course, this was no guarantee that the championships would commence at 2 p.m. Finally, having no idea whether the meeting opened at noon or at 2 p.m., we went off to see a professional soccer match. The soccer people take care to let everybody know when they are going to kick off, so they get the gates. I have often found myself in a similar difficulty about club hill-climbs, etc., and I really marvel that secretaries do not keep *The Motor Cycle* informed in advance of the *hour* as well as the *date* of their fixtures."

'Nuff sed?

Wanted, a Showman.

WHEN I meditate on the varied spectacles with which Brooklands has provided me this summer, I feel that the management really needs a heart to heart talk with a professional showman, *i.e.*, somebody who has first lost and then made money by attempting to draw the public to a spectacle which they originally regarded with indifference. Let me say frankly that I vastly prefer a B.M.C.R.C. meet to one organised by the B.A.R.C. The pros of the motor cycle events are that the spectators are massed at the fork, where they can watch the start, the race, and the finish without padding wearily about on unyielding concrete, or clambering up precipitous hills; and, secondly, that the races are often fairly lengthy, so that the riders' fortunes undergo kaleidoscopic changes, as do also the tempers of the bookies. Against the B.M.C.R.C. one must, however, urge several incredible facts. They furnish not one square inch of shelter from the Brooklands sun, which is several million more B.Th.U. than any other sun this side of the equator. They compel one to go a mile to obtain food or drink, an excursion for which the programme makes no allowance. They endeavour to keep their events as secret as a new tank in 1917. They divide the small territory at the fork by several barriers, so that even if one sports the badges of a judge, timekeeper, and pressman, mobility would be difficult, even if visitors' cars and cycles were parked, instead of being stuck down anywhere and everywhere. Nevertheless, I thoroughly enjoy the average B.M.C.R.C. meet.

But the B.A.R.C.

BY contrast at a car meeting the start is usually carried out as furtively as initiation into the Ku Klux Klan, many parasangs away from the paddock, or I cannot see the monster projectiles at close quarters. If I stay in the paddock, I shall not see much of the race. If I go to the hill, I must sprint down again and along the straight to see the finish. All these journeyings must be done on foot; and I should not be a motor cyclist if I liked walking. Finally, the races are usually so short that the fortunes of the racers depend principally on the handicapping; and if a man manages, either by running dark or by gingering up his tuning, to defeat the judgment of the handicappers, I am not half so thrilled by his victory as I am at a B.M.C.R.C. meet, where perhaps six men are using sister engines—275 c.c. J.A.P.'s, 500 c.c. Nortons, or 1,000 c.c. Yankees—and defeating their rivals from scratch on level terms. No. Give me the B.M.C.R.C. every time, petty as a motor cycle is by comparison with a 350 h.p. Sunbeam; but let the B.M.C.R.C. develop the showman's instinct during the winter, or engage somebody who has it. Any theatre, cinema, or football club which was run on B.M.C.R.C. lines would have the shutters up inside three months.

The Note of Hooters.

I REMARKED the other week that the average bulb hooter is not rowdy enough for blind corners, considering the amount of traffic one meets nowadays. This provoked the Dekla people to forward me a sample of their manufacture. Its arrival reminded me that I had long meant to congratulate them on having exorcised the twists which make the ordinary bulb horn so liable to rust and so tiresome to clean, for their "trumpet" is straight-sided and smooth. The note is very possibly just

Occasional Comments.—

about as piercing as that of a bulb horn can be; but I am afraid it only strengthens my conviction that electric hooters or exhaust whistles are demanded by modern riding conditions. To quote two examples: Every time I start out from Hot Air Villa I have *(a)* to negotiate a walled V corner; and *(b)* to overtake motor 'buses. A lorry tried to pancake me at the aforesaid corner, and when I remonstrated, the driver remarked that he had sounded his horn, that I hadn't sounded mine, and that in no case would my blood have lain at his door. As it happened, I couldn't hear his horn, and I had given three full-blooded toots on mine. As for 'buses and coaches—well, I've tried my Dekla horns on them repeatedly, and they take no more notice of them from astern than a tipsy Aussie took of a Bolo major on Armistice night. The Dekla people make an excellent electric horn, so they will bear me no malice for my general contention that we live in a noisy epoch, and must make more noise ourselves if we wish to survive.

The Silence of Oil-cooling.

I HAVE now been privileged to drive one and sit behind the other of the only two oil-cooled engines in the world. (I exclude the ordinary air-cooled engine, yclept "oil-cooled" by the cynics, for it is only 50% oil-cooled, whereas the new Zenith bicycle and the new Belsize car have Bradshaw engines which are at least 80% "oil-cooled.") We all know that the ordinary "air-cooled" engine has a special metallic ring of its own. I do not in the least object to this noise where solo machines are concerned. But on all passenger mounts—whether sidecar, cycle car, or car—it spoils the tick-over, and, when such an engine is pulling hard, its tinny resonance is not relished by many people with quite the same fervour as the purr or roar of a water-cooled engine. Now the new oil-cooling may turn out to have special defects of its own, if only of a sentimental character; at any rate, it is much too juvenile for me to enthuse precipitately about it, though I already like it passing well. But one thing can and should be said in its favour, even at this early date; it makes for a remarkably quiet engine. The cylinder barrel quite clearly acts as a sounding box on ordinary engines. When that sounding box is first of all largely submerged in an oil bath, and, secondly, secreted inside a capacious crank case, its resonance gets rather daunted. Neither of the Bradshaw oil-cooled engines possesses any tinny ring.

Boycotted.

AN officer in a Sikh regiment discourses interestingly of overseas trade. There are British machines in India, for which not one solitary spare part exists in that country; I do not know which to admire most, the impudence of the vendors, or the optimism of the purchasers. The complaints of our riders in the International Six Days about the effect of altitude on carburation leave him cold; in riding up to Kashmir for a shoot, he began by climbing 6,000ft. and presently dropped 5,000ft. He states quite justly that a carburetter which does not embody a lightning adjustment for such variations is of no use to him. Given a suitable machine and adequate service, he considers that British firms should take stringent measures to prevent profiteering on the part of their agents in India. I should have thought that the ordinary laws of supply and demand would have prevented overcharging for new machines in these days; but perhaps my gallant correspondent is thinking of repairs and spare parts.

AUTUMN IN WALES.

Many of the 1922 models which will be shown at Olympia will have passed through a period of intensive testing which approximates to a year's normal running. Recently, in Wales, we met a party on new Rex models returning from an expedition among the steepest hills in the Principality. On the road from the summit of Llanberis Pass to Capel Curig; in the distance Snowdon may be seen.

The SPIRIT of a SPORTING TRIAL

O'er bog or steep,
through strait,
rough, dense,
or rare,—
"Paradise Lost"

IN our report of the Scott Trial last week, some mention was made of the cheerful spirit which pervades the whole gathering. At no other event have we experienced quite so much good-natured fun or quite such good sportsmanship, so that it seems worth while to try and convey to our readers some idea of the atmosphere.

The trial is unique in many ways, the organisation is excellent, and every provision is made for the comfort of competitors—*except when in the saddle*—and the route is the last word in villainy. No photographs can convey the nature of the difficulties which have to be faced, and no one who has not seen the course would believe that motor cycles would survive them. Any of some five or six sections would cause streams of protests in an ordinary trial, yet not a grumble is to be heard from the tired and often bruised competitors, who are proud to receive their certificates or joke about their mishaps. A premier award is a thing to dream of, and many would rather earn a certificate in this trial than a "gold" in an ordinary reliability event.

An Advantage.

Undoubtedly, those who do not know the course start under a considerable handicap, and performances such as those of the Scott team can only be accomplished by a combination of first-class men with a knowledge of Yorkshire and machines that will stand the racket. The Sunbeam win in the class for amateur teams was very popular, and Whalley's performance was little short of miraculous. Triumphs also showed up well in the hands of local riders.

"Incidents" are far too frequent for the mere journalist to handle, and, even though one of the coveted certificates occupies a place of honour in his office, it is impossible to be everywhere on a course of this description.

One well-known Scott rider went to some trouble in arranging for a comfortable ride. Previous to the event, he spent some time in fitting a specially-sprung saddle, and the work was admirably done; nevertheless, within thirty miles of the start we observed him dashing at a series of gulleys—at the first, both rider and machine lept high in the air, and there were ominous sounds, at the second there was a rending crash, and the special seat attachment parted company with its owner. In spite of this, the rider finished the course.

Even after the short morning's run, many machines were shorn of footrests, carriers, mudguards, etc., and not a few riders bore honourable scars. It is no disgrace to fall off during a Scott Trial, and few, indeed, are the survivors who can boast that they stuck to their saddles throughout. Of the twenty-nine machines to complete the course, there were not ten which had emerged without visible damage. Why do we ride? Why do we risk our necks and our machines? Why do we enjoy it? And what good does it do?—I do not know. All I do know is that if I do not again compete next year—and on my own machine, too—it will be because I am to be numbered amongst the halt, or the maimed, or the blind.

Spectator's View Points.

It was for such a reason that I was a spectator this year—doctor's orders—and, in spite of the agonised expressions of the riders as they jolted over boulders or dragged their machines out of bogs, an insane (possibly) longing came over me to be amongst them again. Perhaps all motor cyclists are a little mad; at any rate, spectators at the Scott Trial may be excused for reaching this conclusion, yet they are good sportsmen, and they do enjoy a really sporting trial, and will travel far to attend it.

HERE IT IS,
THE
Canoodle Sidecar
Built Like a Boat,
As Comfortable as a Tin Roof. ?
Just as much room for 2 as 1,
or
Can be Used for Bathing Baby.
Price 7/9; Larger Size, 9d.
Write for Brochure;
CANOODLE SIDECARS UNLIMITED (Capital 4,000,000 roubles),
Lovers' Lane, SLOPTON-ON-SLUSH.

ONE SURE REMEDY FOR INDIGESTION.
Carburetted Magnesium
(Unregistered Trade-Mark).
BUY THIS WONDERFUL CURE—
AND EAT TIN-TACKS LIKE AN OSTRICH.
CARBO-MAG. LTD., Carbo Works, Carbo Street, CARBOTOWN.

One of the pages of "advertisements" in the official programme of the Scott Trial.

The Spirit of a Sporting Trial.—

Now as to the programme. This artistic piece of literature is compiled by a member of the Scott staff; it contains much good advice and many bad advertisements.

In addition, there is the following poem of undoubted merit, in which the firm's own production is mocked in no uncertain terms—after all, if a machine can stand this sort of publicity, it must have its points.

With Apologies to Mr. George Robey.

THE FACT IS.

I've just bought a wonderful motor, it has an engine, a tank, and a gear,
Now I have this new toy, all the world is a joy, I travel for miles without fear,
I ride it in day-time and night-time, all its uses I cannot describe,
It rings like a bell, and travels like ——
It belongs to a wonderful tribe.
May I say it's a marvellous goer?
Well, perhaps, that is hardly correct
Marvellous true, and it sometimes does go,
Though I am rather afraid it's inclined to be slow;
Perhaps it does overheat on occasions,
It is even reputed to knock,
It's a wonderful 'bus—though it's taught me to cuss,
Well the fact is—SOME CROCK!
I used it last for a journey, to Brighton, to spend the week-end,
The weather was fine, so I started at nine, and sent off a wire to my friend.
The 'bus was in fine fettle, it started first kick of my feet,
So I mounted my steed—put her into low speed—
And waved to the kids in the street.
The journey was really successful,
Well, perhaps that is hardly the word,
At least it was pleasant, now that I can say,
Though I felt rather tired at the close of the day;
Well, when I say tired, I was weary!
I was almost too fagged out to talk,
I'd a terrible thirst! though my feet were the worst,
Well, the fact is—I HAD TO WALK.
Now this really wonderful auto is the joy of my life so to speak,
It gives to my boy, in a minute more joy, than a car could give in a week;
It never goes right for an hour, it breaks down at the slightest excuse,
It fizzles and pops, and misses and stops,
And causes the vilest abuse.
It's a sort of a kind of a Triumph,
Well, Rudge is p'rhaps nearer the mark,
Yet it isn't a Rudge and it isn't a Bat,
Though all of these names make me take off my hat;
Now Douglas you guess, or Zenith or Nut,
You may even surmise it's a Dot,
It's a wonderful bike—a real Yorkshire Tyke,
Well, the fact is—IT'S A SCOTT.

AT THE HEAD OF HEBDEN GHYLL.

Alex. Hill, a Triumph rider, illustrates "Spectator's" remarks that "the route was the last word in villainy." (The upper photograph depicts B. Dewhurst, another Triumph rider.)

The following instructions to competitors and spectators are amusing:

INSTRUCTIONS TO COMPETITORS.

Competitors must on no account assist one another by drinking all the water in the splashes.

Competitors found removing gates to make footboards will be disqualified.

Competitors may lift their machines over rough places, but must bounce them on the ground every three paces.

Competitors must cross all splashes under their own power. The use of oars, floats, life-buoys, etc., is prohibited.

INSTRUCTIONS TO SPECTATORS.

Don't loiter in the middle of the splashes, as you may baulk other swimmers.

Don't stand in the road! Lie down; it makes a better surface for the competitors.

Valves, wheels, engines, cylinders, etc., may be found on the road. These will have been discarded by competitors to reduce weight. Spectators will greatly assist if they bring any such spare parts direct to Burnsall.

This is not a Race, it's a Tragedy.

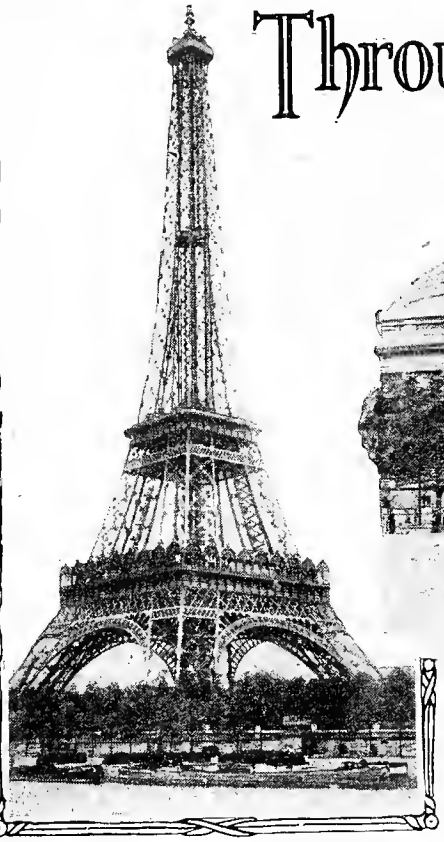
This programme may be purchased for 6d. or more, and all receipts are handed to St. Dunstan's; various auctions are also held for this worthy object, and it is to be regretted that the patients are unable to enjoy a little of the innocent fun which takes place—it would surely do them a power of good.

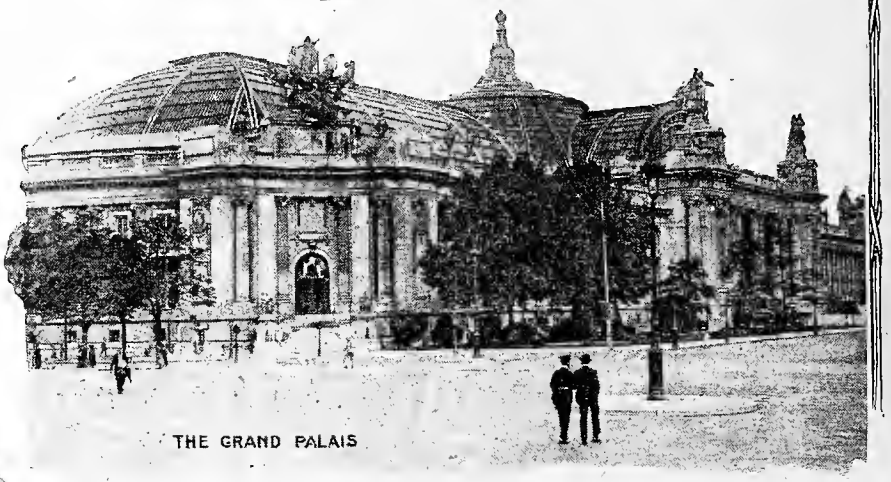
Well, perhaps the Scott trial is too severe to be really popular with all sections of the public, but, nevertheless, it is a classic event.

SPECTATOR.

Through Feminine Goggles

Paris and the Salon





THE GRAND PALAIS

IMPRESSIONS OF A TRIP TO THE FRENCH CAPITAL FOR THE AUTOMOBILE SALON.

By Mab. Lockwood Tatham.

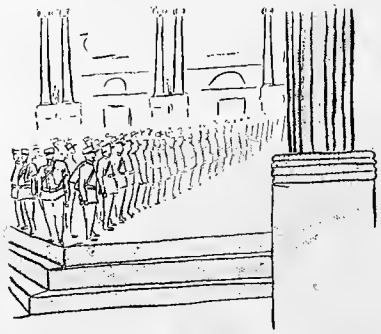
I AM going to start my impressions of the Paris Show with a confession. It was my first visit to the "gayest city in the world," so I must be forgiven if I claim a feminine privilege and digress sometimes from the main point—which is the motor cycle exhibits. But if you are a man, dear reader, please do not be alarmed, and rush to the usual masculine conclusion that I am going to discuss dress. It is an almost unbelievable statement, but literally I was not inside a shop!

Our contributor arrives in Paris.

It had been my original intention to make the journey by road, but not being quite sure how the French people regarded lonely lady motor cyclists (and I had also heard rumours of bad roads), I left my little Cedos in its garage and took a taxi to Victoria.

There was little of interest in the sea trip from Dover to Calais—that is, from the motor cyclist's point of view—but I judged that the ship was on full throttle most of the way across, for which we were duly thankful, for the sea was choppy.

In the Customs House at Calais I had my first opportunity to air my knowledge of French; then came the long journey to the capital, and my first experience with French taxis.



Hundreds of picturesque police form a guard of honour for the important personage opening the exhibition. Our correspondent sends a plea that the Life Guards would help the decorations of Hammersmith Road.

The specimen I eventually got into had a red Chinese lantern for a tail light, one cylinder, no springs, a pip-squeak horn, and a villainous-looking driver! His driving was hair-raising, and he had to stop every time he changed gear. It took me five minutes to realise he was not on the wrong side of the road. I do not think I like that right-hand rule. It might be all right when one is used to it. And oh! how dark the streets were after London. I expected bright lights, gay music, smiling faces and laughter. And I found gloom, silence, sad people, and gravity. I suppose it is *la guerre* combined with the prohibition of absinthe, but getting a smile out of a Parisian nowadays seems as difficult as getting a nail out of a back tyre.

Next morning I sallied forth, under a blazing sun and cloudless sky in my thinnest frock, to the Grand Palais, and after driving down the Champs Elysées I stood and gazed at the most wonderful building and exterior ornamentation I have ever seen. Surrounding the entrance were trees and grass slopes in summerlike verdancy—much greener than London—and the gilded-winged figures surmounting the columns on a

Through Feminine Goggles.—

An impression of M. Mahon, the President of the premier motor cycle organisation of France—the U.M.F.

nearby bridge glittered in the sunlight, while flags fluttered everywhere, and lines and lines of gendarmes (or are they just common and garden policemen?) lent dignity to an already imposing scene. Then inside—*hundreds* of cars!

Of course, being a motor cyclist before all things, I steered straight up to the section of the gallery set apart for those exhibits, and there I saw all that the heart of a human being could desire in the shape of a light vehicle on two (or three) wheels and an engine.

I was very impressed with some of the lightweight solo machines, which struck me as being suitable for ladies, although designed for mere man. There was one lady's model, however, the Soyer, a beautiful thing in several tones of blue, having a two-stroke engine, and a frame which embodied the tank. A very kind Frenchman informed me that the ladies of his fair country are not over keen on motor bicycles, and I guessed that one machine had been designed more to create a demand than to meet one.

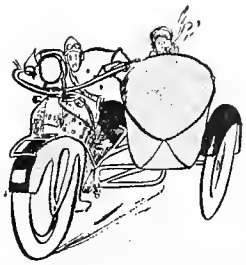
A Monet "double" idea, one of about fifty-seven varieties

Another stand which occupied my attention for some time was the Monet and Coyon exhibit. Never have I seen such a weird collection of objects with engines attached. I have sketched my impression of the cycle car, which, by the way, is brilliant yellow and black, and so small that it might be garaged under the dining room table. I think it must have been designed for madame and the baby; anyway the engine was only a kind of auto-wheel affair, so if madame were big the baby would have to be very young. There was also the double bicycle (no, not a tricycle, it had four wheels), which I would love to see being propelled down Bond Street. They also had bicycles with engines on the carrier, several sorts of motor bath chairs with one and two seats, bicycles, quadricycles, auto-wheels, etc. I rather expected to see a unicycle, otherwise every form of vehicle seemed to have been considered. Anyway, I can imagine that the designer is one of a large family who has endeavoured to cater for all of relatives from grandma to the baby.

How some couples might look in the little Coyon cycle car.

Here is a selection from the many charming mascots which caught the feminine eye: The Egyptian dancer symbolised grace, but the large bill of the bird suggests a heavy consumption, while our contributor asks us to imagine the lower contemplating figure after a tyre burst.

When I am very old and I still pine for the scent of petrol I may persuade one of my grandchildren to let me have a Monet Coyon catalogue before I finally decide on a bath chair. At present the Gnôme-Rhône is more to my fancy. The colour scheme was so chic! Cream and blue tank with an aeroplane engine on wings transfer in red and black, shaped like a scarab! It also had other merits. The frame had beautiful sporting lines, and an engine that might have been designed by someone in the Blackburne works who owned a Triumph.



The pressed steel frame construction of the Janoir evidently startled our correspondent, who dreamed of it as above.

Seeing my interest, the owner promptly invited me to ride one last week in the race around Paris. Unfortunately my time is limited!

A really charming lightweight machine was called the Terrot. I liked the neat spare tank for petroil corresponding to the tool case on the carrier, also the spare inner tube holder. Even all those gadgets would not prevent using the carrier as a flapper bracket.

London and Paris fashions.

By the way, our French sisters certainly are not prepared for in that way. The Harley-Davidson was the only machine with a pillion seat fitted. It seems to be a case of sidecar or nothing over there.

If I were a sidecar enthusiast my next year's outfit would embody a French body on a British chassis. Some of the sidecar bodies in the Salon were really beautiful, but I do not like the way many of the makers hoist them up in the air. They look so ungainly, and they cannot always be comfortable. The Viratelle, for example, slopes to the front, and the shape of the back compelled you to lean forward, while the cushion for your feet turns up your toes. On the other hand, the Lutèce was a lovely model with a graceful, comfortable sidecar shaped like a boat. The mahcine itself had a self-starter.

Some of the models have very sporting lines.

There was also a wonderful Sedan chair of the Louis XIV. period, with lamps to

The difficulties of the char lady who was instructed to clean inside one of the little saloons.

Through Feminine Goggles.—

match. I can imagine Marie Antoinette's dainty face peering out of the tiny windows, and scrutinising with surprised eyes the little electric bulbs that furnish the light for the quaint lamps.

Luggage Accommodation.

Quite the other extreme was a striking looking torpedo two-seater, in which the beauties of to-day are asked to recline gracefully against the knees of whoever may be occupying the rear seat, for no back rest is fitted. Then there was another sidecar with enough luggage accommodation for a honeymoon tour—a beautifully finished body illustrated last week in company with the Sedan affair.

Some of the colour schemes were very effective and often uncommon, the Griffon, for instance, is finished in *café au lait*, chocolate, and pale gold.

Space being limited, I cannot mention here all the machines which impressed me—there were so many—but I must refer to one which I am sure must have been the result of a wonderful dream. This was the Janoir; it had a frame of pressed steel, and the engine was a flat twin, and, to the feminine eye, it appeared tremendously heavy. Of course, I am quite prepared for my brothers of the wheel to tell me that it has many advantages, and is a tribute to engineering skill, but, then, so is the Forth Bridge! Probably to the men on Mars the machines we love so much would appear as monstrosities, and perhaps the Janoir would be, to them, what Venus de Milo is to the artist. I am only giving a woman's view. But frankly I returned with a feeling of disappointment.

French ladies would appear to take little or no practical interest in motor cycling. I searched for feminine enthusiasts in vain. A good Frenchman explained to me as delicately as possible that it was not considered quite *comme il faut*. But I am sure it is only a matter of time before Frenchwomen realise the joys of the open road on two wheels as well as on four, as we have done for quite a long time now.

National Characteristics that weren't!

One thing that struck me particularly in my rambles round the show was the difficulty in telling the difference between English and French people. Wishing to sharpen my pencil, I marched up to a fierce-looking individual with an Apaché hat and pointed beard, and asked in my best French, "*Avez-vous un canif s'il vous plait?*" He replied, "Sure thing—let me sharpen it for you!" On the other hand, a thoroughly British-looking person in tweeds who used a Gillette every morning suddenly hurled volumes of French at me without any warning. I went away. I am very much afraid he wanted to sell me something.

The Paris Salon is undoubtedly an education in itself, and I hope that next year there will be more of my own sex to appreciate it both among our own English enthusiasts and our French sisters.

HOW MUCH PETROL ARE YOU WASTING?

Some Questions on Fuel Consumption Asked and Answered by a Motor Cyclist.

WHAT mileage do you obtain from a gallon of petrol?

The engine only requires a certain amount of petrol to enable it to carry out its work efficiently, but between the amount of petrol the engine actually uses and the amount you pour in the tank there is usually a wide discrepancy.

How are we to account for this difference?

Before going any further, it must be clearly understood that the engine must be in good order—a "dud" engine was never yet economical.

If you are a regular reader of *The Motor Cycle*, that is to say, an enthusiast, it is in all probability in first-class condition, but if you are a beginner, get a copy of "Motor Cycles and How to Manage Them"—I did when I started, and found it invaluable for many years. However, let it be assumed that your machine is in good order—compression, timing, jet size and petrol level O.K., and no undue friction in engine, transmission, or road wheels. Many people gear too high; it is a pity, as there is no real advantage to be gained—it wastes petrol, as has been proved by tests, does no particular good to the engine or transmission, and, in the case of "single lungers," is apt to add to the weight of the tyre bill.

Waste Not, Want Not.

Do you fill your tank from a two-gallon tin or measure it out by the gallon? There is a difference!

After an overhaul or a greasy road-side job you probably rinse your hands with petrol—an excellent idea, too, but do not accuse the engine of consuming that petrol.

Do you "dope" before starting up, or flood the carburetter rather liberally? The engine gets little value from that, you know.

Running your engine in "free" is not healthy for your m.p.g. figure; do it no more than is necessary.

Two Economy Tips.

During the war, when there was a pressing need for economy in petrol, many weird and wonderful "gadgets" were fitted to motor cycles by the credulous in search of those extra m.p.g., not to mention various "dopes" that we were exhorted to add to our precious fluid. Of the whole bunch, there were but two (in my humble opinion) of any real value:

1. An extension pipe of six to eight inches in length fitted to the air inlet of the carburetter.
2. An extra air valve in the induction pipe.

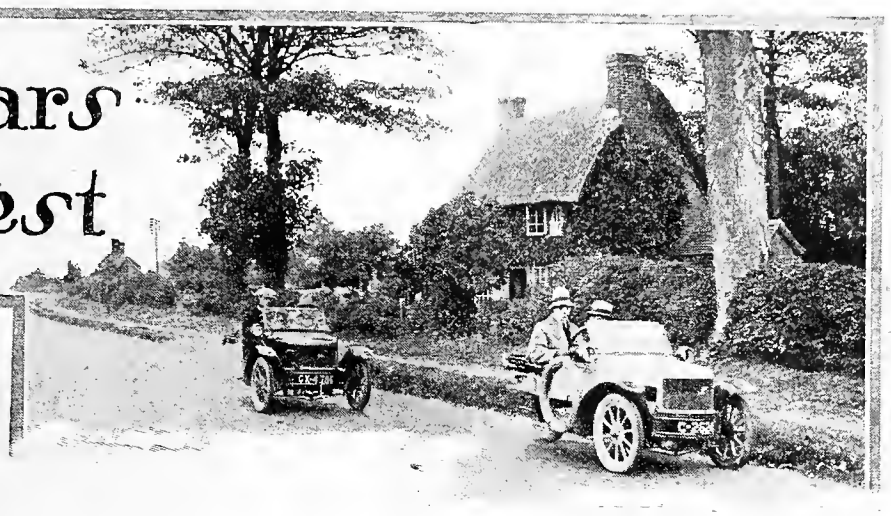
The former traps any blow-back, and also tends to give a "cleaner" insweep of gas, whilst the second has the effect of breaking up the mixture better.

Here is a little tip—not by any means new, but not too well known—that is well worth trying.

Give your engine a clean up—externally—particularly the induction pipe, carburetter, and petrol pipe. Now add a small quantity of engine oil to the petrol in the tank. After running a few miles you will in all probability find that your petrol pipe and carburetter bear distinct traces of oil. In the ordinary course of events, petrol is leaking at these points the whole time you are riding.

All the above are little points that are so easily overlooked, but they should all be watched if economy is desired. P.S.

Cycle Cars Under Test



THE "L. S. D." THREE-WHEELED RUNABOUT.

SPECIFICATION.

ENGINE: 8 h.p. J.A.P., air-cooled.
TRANSMISSION: Shaft to gear box, hence by single chain to rear wheel.
WHEELS: Sankey artillery, detachable and interchangeable.
STEERING: Direct.
SPEEDS: Two forward and reverse.
TYRES: 700 × 80 mm.
LUBRICATION: Drip feed.
PETROL CONSUMPTION: 50 m.p.g.
EQUIPMENT: Large screen and hood, acetylene lighting, with large car type generator.
PRICE: £215.
MAKERS: Sykes and Sugden, Ltd., Linthwaite, Huddersfield.

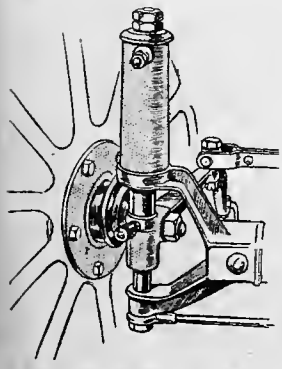
THE two points upon which the three-wheeled runabout is usually criticised are its alleged propensity for rolling and the possibility of discomfort through having three-wheel tracks instead of the two of the sidecar or the car.

These two faults are suspected in all three-track vehicles, and have undoubtedly influenced many sidecarists to pass over the runabout when the sidecar no longer fulfils their requirements.

It is probably true that 90% of the experimental models of three-wheelers have rolled considerably when first introduced to the road, and the ultimate success or failure of the production model has been due to the manner in which the disconcerting tendency has been overcome.

Importance of Correct Springing.

In most cases rolling is caused by the fitting of car-type front axle and springs, the latter being designed from data obtained from experience with four-wheelers. No three-wheeler with car-type front springing giving the same amount of movement permitted in a car is immune from rolling. Therefore, it becomes necessary to damp out road shock with as little movement as possible, hence it becomes necessary to reconsider entirely the front springing question when it concerns a three-wheeler.

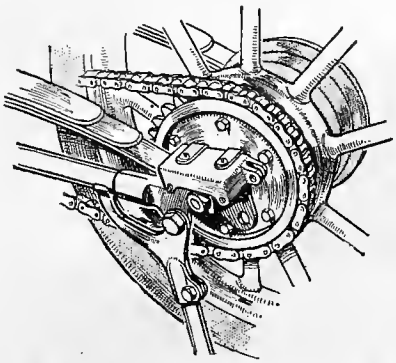


Front suspension and steering swivels.

The three-tracks bogey owes its origin to bad roads. On smooth roads it matters little whether a car is supported on three or four wheels, and the same may be said if the pot-holes are so plentiful that it is impossible to steer clear of them. We will assume that a road is holed like a cullender: *each* wheel of a vehicle would then receive its shocks, and obviously the three-wheeler would suffer least because it had only three wheels. The whole question, therefore, is reduced to a matter of driving, and the fact that with only two tracks it is easier to "dodge" the pot-holes.

Massive Construction.

These theories have accrued from experience with several three-wheelers of ancient and modern design, and quite recently we were afforded an opportunity to test them again aboard an L.S.D. runabout, which, as most of our readers are aware, is the production of a North-country factory. Those who have examined the sturdy construction of the L.S.D. will better understand the reason for its strength when it is remembered that the roads in the neighbourhood of the West Yorkshire manufacturing towns are such that they would break up any vehicle with any weaknesses in its



Rear suspension and driving wheel of the L.S.D. Observe that the runabout is fitted with a stand *à la* motor cycle.

Road Test of "L.S.D."

construction. With its bad roads, miles of *pavé* and multitudinous hills, there could be no better locality to prove any design, and the L.S.D. has the appearance of having been "bred" where the going is hard.

We once came across an L.S.D. which had been in collision with a steam tractor, and a local wag expressed surprise that the little runabout had come off "second best." Although intended as a joke, it serves to illustrate the impression one obtains that the L.S.D. is capable of withstanding any amount of rough usage. The artillery wheels enhance this impression, and have had something to do with it being likened to a British bull dog. This is a good simile certainly, but one which its manufacturers could afford to render less effective by a little change in the design of the engine bonnet—an excellent piece of metal work, but somewhat unusual to the eye.

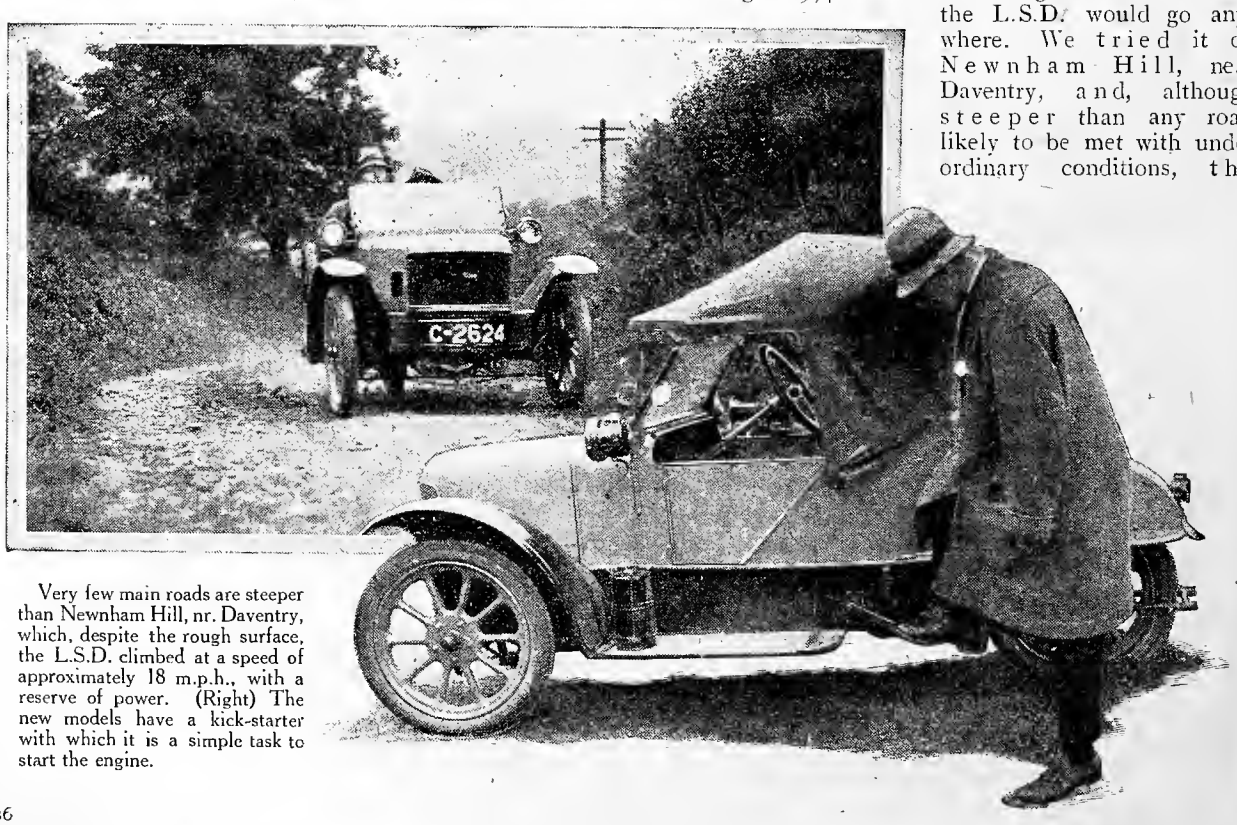
Since the L.S.D. was last seen at Olympia the bodywork has been vastly improved, which visitors to the forthcoming show will appreciate. Those who are thinking of purchasing a runabout should sample the seating accommodation. It will be found that there is more leg room than in the majority of light cars.

Controllability is one of the L.S.D.'s strong points. Only very occasionally was it found necessary to engage low gear, even after a stop.

On the road we found that the comfort could be favourably compared with the best sprung sidecar—and perhaps a little more. The quality of the roads was from good to "middling," and at speeds up to 30 m.p.h. the vehicle did not roll, and the three-track bogey did not obtrude itself upon us.

As an example of steady running, it may be mentioned that on the runabout we were driving a small key hung on a piece of string from the dashboard and remained steady for miles on end—it neither danced nor swayed like a pendulum.

The L.S.D. has only two speeds, and, not knowing what freak hills we should attempt to ascend, the makers delivered the car with the lower of two sets of ratios, which are optional to the purchaser. The top gear was in the neighbourhood of 5½ to 1, and bottom gear 9¾ to 1. On these gears we should say the L.S.D. would go anywhere. We tried it on Newnham Hill, near Daventry, and, although steeper than any road likely to be met with under ordinary conditions, the



Very few main roads are steeper than Newnham Hill, nr. Daventry, which, despite the rough surface, the L.S.D. climbed at a speed of approximately 18 m.p.h., with a reserve of power. (Right) The new models have a kick-starter with which it is a simple task to start the engine.

Cycle Cars under Test.—

runabout ascended it at a speed exceeding 18 m.p.h. For anywhere but the hilliest country the gears mentioned were too low, as the maximum speed permissible was about 35 m.p.h. Notwithstanding the air-cooled J.A.P. engine made no objections when called upon to maintain 30 m.p.h. for stretches of twenty miles, neither was vibration excessive. For anyone who does not require to exceed 35 m.p.h. often the ratios mentioned have their advantages. In traffic, for instance, we did not find it necessary to change down when forced to a crawl, the engine picking up on top gear in a manner not usually associated with sidecar outfits.

As regards controllability, anyone who has driven a motor cycle can manage an L.S.D. The levers for the Amac two-lever carburetter are on the large diameter Sturmey wheel, a drip feed lubricator is on the dash, there are pedals for the clutch and powerful service brake, hand levers for the change speed, side brake and reverse.

We tested the brakes on the steepest portion of Newnham Hill, and found that with engine in neutral either of the brakes, which are both on the rear wheel, would pull up and hold the vehicle.

To swing over a 1,000 c.c. V twin is much more difficult than to perform the same feat with a four-cylinder engine, and the makers of the L.S.D. have now wisely fitted a pedal starter at the side of the vehicle, which not once during a trial failed to start the engine at the first "kick."

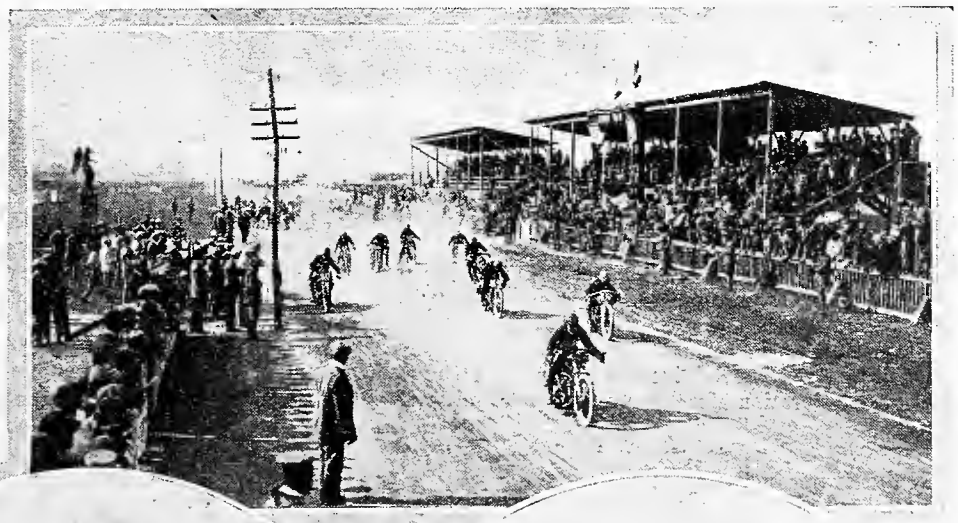
There is no doubt that the L.S.D. is well made and quite up to the work expected from a vehicle of its type, and we think that if a little closer attention were given to improving the general appearance these machines would be very popular next year, although, so far, the makers have had no difficulty in disposing of their output.

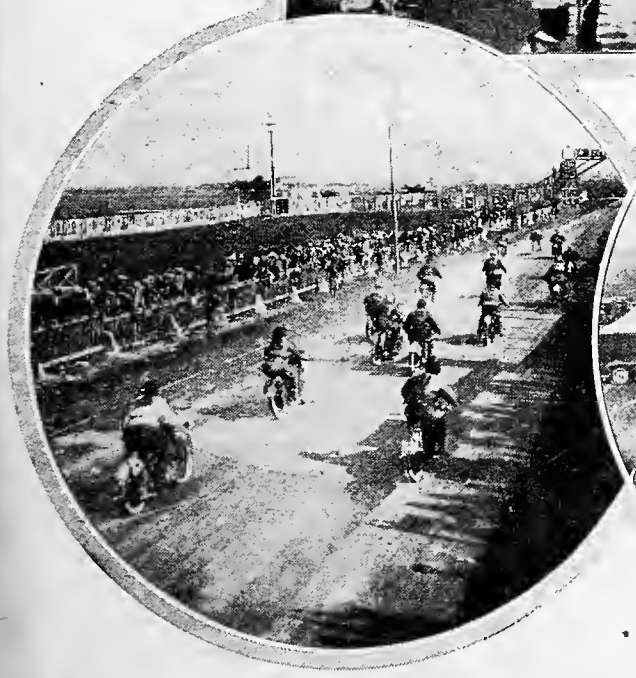
SCENES IN THE ITALIAN MOTOR CYCLE GRAND PRIX.

(Top) The start of the 750 c.c. class, which was won by D. Malvisi, on a 7-9 h.p. Harley-Davidson.

(Right) An impression of the fine speed way

(Left) Competitors in the 500 c.c. class getting away at the start. This class was won by M. Accerboni on a Frera.



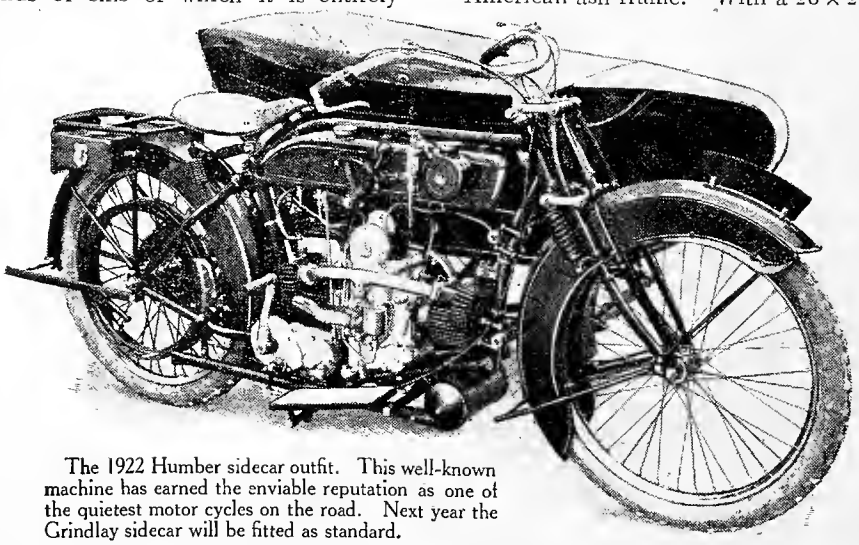


PASSENGER MACHINE TOPICS.

Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers.

Collated by "Vedette."

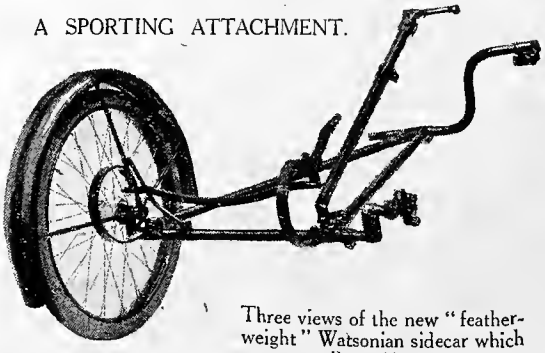
PROBABLY the enthusiastic sidecarist changes his sparking plug more frequently than any other item on his machine. This much-maligned article is blamed for all kinds of sins of which it is entirely innocent, and many a sound plug is "scrapped" without just cause. This, however, is by the way, for the Bluemel Type S plug, which I have been testing for some months past, has given entire satisfaction in every respect. It has not shown any signs of leakage at the detachable gland, it has never sooted up, and has not caused pre-ignition, although it it fitted to a high-compression single-cylinder engine, and has been instrumental in the accomplishment of several long-distance journeys at high average speeds. A pair of these plugs has also given excellent service on a 7 h.p. A.J.S. sidecar. The plug is thoroughly well-made, and the special insulating material shows no signs of deterioration after several thousand miles of hard usage.



The 1922 Humber sidecar outfit. This well-known machine has earned the enviable reputation as one of the quietest motor cycles on the road. Next year the Grindlay sidecar will be fitted as standard.

EVEN the owner of the sporting or semi-sporting solo machine usually desires to become a sidecarist at some period of his career. Hence the popularity of these ultra-light streamline sidecars, in which the younger generation love to loll. Quite one of the neatest and most "sporting" of this type that I have seen for some time has just been introduced by Watsonian Sidecars, Ltd., Conybere Street, Birmingham, who, of course, are the makers of the popular "R 34" attachment. The illustrations show the simplicity of the triangular chassis and of the springing; the body, too, is light and simple, being constructed of polished aluminium on an American ash frame. With a 26 × 2½in. tyre the complete attachment weighs only 60 lb., and, what is perhaps more important, costs only £17 10s. (including crate or fitting).

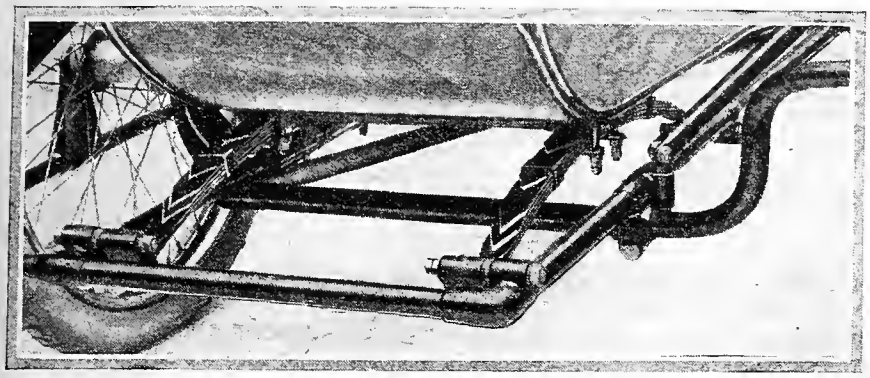
A SPORTING ATTACHMENT.



Three views of the new "featherweight" Watsonian sidecar which sells at £17 10s.

I HAVE taken delivery of a little Verus-Blackburne sidecar outfit. It is a fascinating little machine fitted with a Canoelet sporting sidecar with scoop type windscreen. My first impressions are that, despite its small capacitiy, this type of machine has great possibilities for the younger generation. There is plenty of speed; in fact, in this direction it reminds me of the average pre-war 3½ h.p. outfit. There are two little points I do not like. First, the aluminium toolbox in the top tube chattered in a most disconcerting way that I have removed it, much against my inclination; it is such a handsome fitment. Secondly, the little sidecar, when empty, also chatters, where, I have not yet discovered, but I rather suspect the shackles. I hope to improve this by the use of spring washers.

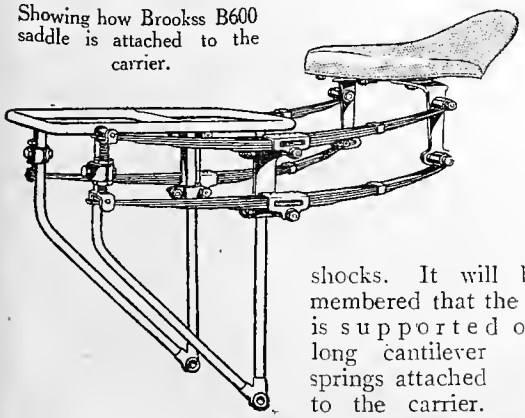
MUCH ink has been spilled on the subject of spring frames, and many are the designs which have been put forward, and yet few machines have incorporated this eminently desirable feature. In the meantime, I have been



Illustrating the elliptic springing of the 1922 Triumph sidecar.

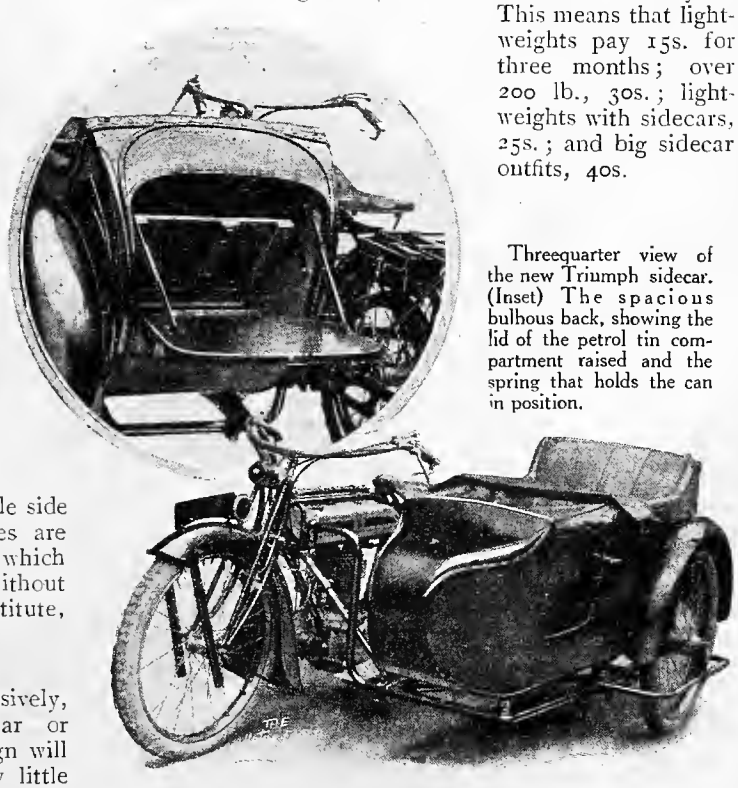
experimenting with a Brooks B600 laminated spring saddle attached to a medium-powered sidecar outfit. The result is all that can be desired from the rider's point of view, though, of course, the rear part of the machine is not insulated from road shocks. It will be remembered that the saddle is supported on four long cantilever springs attached to the carrier. The arrangement is such that the full length of the spring comes into action and the saddle has a parallel motion of considerable magnitude. In addition, the springing is instantly adjustable to the rider's weight by means of a simple screw and nut device conveniently situated at the rear of the carrier. In actual practice, the increase in comfort over a normally well-sprung saddle attached to a rigid frame machine has to be experienced to be believed. In the present condition of many of our roads, anything which will increase the comfort of the rider is eminently to be desired, and, after riding the Brooks B600 for some 3,500 miles, we have nothing but the highest praise to offer. There is no noticeable side roll, and the shocks from the worst pot-holes are smoothed out into an easy floating motion, which enables long daily mileages to be accomplished without discomfort. Certainly as a spring frame substitute, the Brooks B600 will be hard to beat.

Showing how Brookss B600 saddle is attached to the carrier.



SO familiar is the purple sidecar fitted, exclusively, to Triumph machines for the last year or two that a somewhat drastic change in its design will come as a surprise to many who probably saw little room for improvement. The spring wheel has been discarded entirely, as has the petrol tin carrier on the chassis—a method of carrying spare fuel which, it will be remembered, aroused considerable discussion in our correspondence columns a little while back. In consequence the chassis has been considerably simplified. The wheel is of the enclosed variety, supported at both sides on vertical lugs, which "undersling" the whole sidecar four or five inches. Two half-elliptic springs are now used at the rear, and two compression coils in front. Whilst following the same general lines as hitherto, the body is larger, and now has a bulbous back serving as a luggage space and housing for the spare tin of petrol, which is held securely in place by a spring on the underside of a hinged partition. It is unnecessary to comment on the detail design and finish, which are only what one expects on a Triumph production. This sidecar will make its appearance at Olympia, and will be fitted as standard thereafter.

THE reminder in last week's issue of *The Motor Cycle* that only half taxes are payable after October 1st came as a surprise to many people who ought to have known better. It has now been definitely announced that, in addition to the above concession, a tax of 10s. only is required from the man who buys a sidecar for an already registered machine during the last three months of the year. This means that lightweights pay 15s. for three months; over 200 lb., 30s.; lightweights with sidecars, 25s.; and big sidecar outfits, 40s.



Threequarter view of the new Triumph sidecar. (Inset) The spacious bulbous back, showing the lid of the petrol tin compartment raised and the spring that holds the can in position.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

LIGHTWEIGHTS IN THE INDIAN JUNGLE.

Sir,—The correspondent who contributed your article entitled "Lightweights in the Indian Jungle" in the issue of August 25th, and his friends, are to be congratulated on their boldness in trying their luck on a Kacha road (in a neighbourhood at one time, I think, not unfamiliar to Sir Eric Geddes) during the rains.

They are less to be congratulated on their (?) sportsmanship in shooting feathered game during the close season.

Lakhimpur. F.

SUNDAY COMPETITIONS.

Sir,—Mr. Miles, in his recent letter, says he "is a motor cycling enthusiast and ventures to call himself a sportsman." I do not dispute this statement, though we disagree on the above question, but why does Mr. Miles state that my letter "hardly savours of a truly sporting tone?" Surely not because he disagrees *re* Sunday trials, as everyone is entitled to his own opinion.

I most certainly contend that the half day on Saturday is not sufficient for club events (especially reliability trials). I hardly think Mr. Miles can reside in either Lancashire or Yorkshire when he says that "the whole of Saturday could be devoted if necessary." Sunday riding is a very popular feature, and I still fail to see any difference between joy-riding and reliability trials on Sundays. The average clubman is just as good a fellow as any other rider—perhaps better. Who knows? I am always prepared to do anything I can to help motor cycling as a clean, healthy sport on all days, and as long as I am convinced that Sunday trials are essential to club life, so long shall I support and work for them.

W. A. DOVENER,
Hon. Secretary Bradford M.C. and L.C. Club.

PUNCTURE-SEALING TUBES.

Sir,—Our attention has been drawn to a paragraph in your issue of 6th October, by "Ixion," in which a user of the Challenger puncture sealing tube states that, with a tube he had tested, the punctures only partially sealed, and that the tube had to be inflated at intervals until it could be removed for repair.

Such a case is very unusual, and we are inclined to think this user must have got hold of one of our earlier tubes, in which the puncture-sealing material was in a thinner layer than we are at present using. Even so, in ninety-nine cases out of a hundred the punctures sealed rapidly and satisfactorily. Certainly, such could not happen in the present make of tube, through which comparatively large objects repeatedly penetrate without any leakage whatever.

Only to-day we have received a cover for repair fitted with a Challenger puncture sealing tube which had been pierced right through cover and tube by a halfpenny. There was no deflation except for a second while the halfpenny was being withdrawn. The puncture sealed itself immediately and the tube requires no repair.

The writer's argument about an exceptionally long nail piercing right through the inner side of the tube really requires little answer. In such a case, the nail would not deflate the tube in the first instance as in an ordinary tube, and, therefore, would be easily heard and withdrawn before it had time to penetrate right through to the back. To protect the tube all round would cause quite unnecessary weight, considering the extreme rarity of such a possibility.

J. P. COCHRANE AND CO., LTD.
(COLIN R. CROMBIE, Director).

GRAPHITE FOR CHAIN LUBRICATION.

Sir,—We are in complete accord with the advice given by the writer of the article headed as above, Mr. G. J. Denbigh, M.Sc., namely, the recommendation that your readers should obtain their supplies from firms of repute who evidently employ scientific control in their factories.

Our Foliac motor graphite, which is used in our Foliac motor chain compound, contains no grit or sand. The carbon content is over 98%, and the difference is principally talc or soft mica, which is non-abrasive. Your contributor will be aware that talc and mica contain 63% and 46% respectively of silica, but that such silica is distinctly not sand.

We think this well-known distinction should be made very clear in your columns.

GRAPHITE PRODUCTS, LTD.
B. PHILIPS SMITH.

27.32 M.P.H.—A PRIVATE OWNER'S T.T. LAP RECORD

Sir,—In September, when in the Isle of Man, I took my machine, a lightweight fitted with a 2¾ h.p. J.A.P. engine, round the T.T. course. Being a complete stranger to the course, riding an untuned machine, with full touring equipment, I consider that my average speed of 27.32 m.p.h. (per Bonniksen and watch) a creditable performance for so small a machine.

I feel sure that your readers would be interested to know how standard machines ridden by private owners have performed round the course. OMEGA.

Cambridge.

TYRES, EX-W.D., EXPERIENCES WITH.

Sir,—My experience is about the same as "Fair Deal's." One 28×3in. Wood-Milne I had from Allen Bennett, after doing 1,200 miles, looked as new, but another Wood-Milne, 26×2½in. for 2¼in. rims, from another firm was worn bare to the canvas under 300 miles. Since this I have thought it advisable to leave W.D. alone. If dealers would only guarantee a reasonable mileage from these tyres, many more, like myself, would no doubt buy them.

A. DASHFIELD.

Sir,—My experience of these tyres is exactly the opposite of "Fair Deal's," as related in *The Motor Cycle* recently.

I ran a 26×2½-2¼in. tyre on the rear wheel of my 4 h.p. Douglas sidecar for 4,000 miles, and when I sold the machine it was still doing good work on the front (Dunlop extra heavy, 30s.).

I bought a Goodyear, 28×3in., for 50s. from the Hendee Co., and after 2,500 miles on the rear wheel of my Harley sidecar it looks good for a further 2,000.

A friend bought a 29×3in. for 55s., which has been running for a considerable time on the rear wheel of his Harley sidecar, and it is still going strong, and he is a driver who likes to drive at his outfit's best speed whenever possible, and he does not believe brakes are made for ornament.

SOUTHCOMB MAY.

Sir,—In answer to "Fair Deal," *re* above, I purchased two 28×3in. tubes. They were W.D., and appeared to be quite all right and packed in original boxes. After a run of fifteen miles the butt end blew out. I tried the second, and the butt and valve both blew out. I wrote to the people at the Marble Arch Motor Garage, Edgware Road, from whom I purchased them, and explained what had happened, and they immediately sent me another new tube.

Wimbledon, S.W.19. HARLEY-D.

"GATHERING ADVERT. MATTER."

Sir,—I suppose you have amongst your readers many who, like myself, have ridden and taken a vast interest in motor cycles way back over the years, and who, though now, alas! perchance fat and forty, have a sneaking regard for a fast 'bus, and dislike the "hot and bothered" note of the two-stroke. We read week by week of terrific speeds in hill-climbs up and down the country made on one or two famous machines. In the words of our picturesque cinema cousins, may we have at some future date a "close up" photograph of the actual engines used.

I merely ask as one who last year and this has bought two different makes of machines, each of which is famous for speed, records, and cups. I do not mention medals, for indeed they must have such a stock of these that probably they have been long since melted down for exhaust pipes on their directors' Roll-Royces.

However, in both the bicycles mentioned, the road performance was disappointing. Very. The front fork springing as sold to the public is not used by them in competition. Transmission varied, and engine design was quite a different proposition from that used to gather advertisement matter.

I have now in use a model 16H Norton, which, as a solo machine, is a really fine job. I mention this solely because it is a pleasure to ride a bicycle which, though standard, is good enough to force other manufacturers to build special machines to keep their name in front of those who love a really fast and efficient motor cycle.

My notepaper will prove to you I am not in anyway connected with the trade. GEO. F. COLE.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—I am somewhat surprised to see that no one has yet put forward the undoubted claims of the 3½ h.p. Norton for the world's solo title. Having owned two of these machines—one pre-war single-geared and the other post-war three-speed—I feel it my duty to claim fair consideration for this estimable mount. As regards reliability, I can only state that my present record is over 5,000 miles without a road stop, except for tyres. The speed and hill-climbing capabilities of the Norton are unquestionable, as a glance at any competition results will prove—and these results *are* obtained on standard machines—but, in addition, to these qualities, the smooth, slow running and the instant and rapid acceleration of this mount are surely hard to beat. The addition of 700×80 mm. tyres (which can be fitted to the standard 650×65 mm. rims) has made my machine the acme of comfort. Detail finish might possibly be improved; but I, for one, prefer results to "pretties," and have no reason to be ashamed of my favourite mount on any score.

H. WHITEHOUSE.

Sir,—I agree with Mr. Arnold that, provided the argument is conducted on a sound basis, it would be interesting, and to a certain extent instructive, to learn the opinion of other readers regarding this subject.

I have followed very closely the correspondence in *The Autocar* regarding the world's best car, but find the whole thing getting further from the point every week, through sheer lack of a substantial basis upon which to argue. It is useless to take price into consideration, for there is no comparison between the machine that is built up to a standard of perfection and the machine that is built down to a price. It is also a sheer waste of time and space for a correspondent to state that he considers his 2¼ h.p. Tink-a-ponk to be the world's best machine because it does all that he requires of it, has given him long, economical, and exceedingly satisfactory service, and, when not in use, may be folded up and hung in the wardrobe, thereby saving garage fees. His little 'bus is wonderful, no doubt, but stand it by the side of a Sunbeam, and one will realise that a comparison is absurd.

I do not say that the Sunbeam is the world's best, because, being a resident in the South of Ireland, I am, unfortunately, out of the running, so to speak. Here I take off my hat to *The Motor Cycle*, for it is only through this inestimable paper that I am able to keep in touch with a truly sporting world. I am certain that the world's best machine can be looked for in England. Motor cycling is more prevalent in England than in any other country, and the English manufacturers are in the forefront of the motor cycle industry.

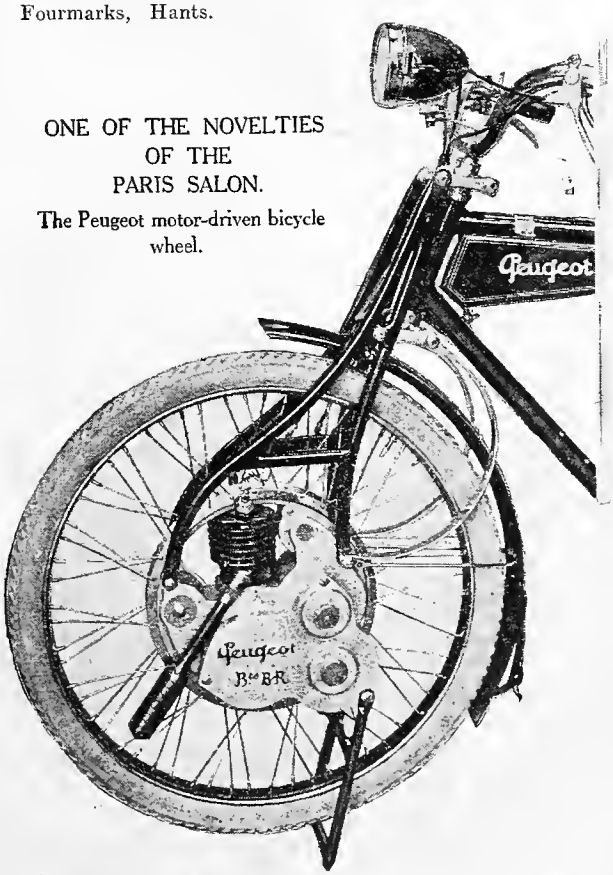
Of really first-class machines, on the manufacturing of which no expense has been too great, and in the designing of which every detail has been studied to a marked degree by the finest brains of the motor cycling world, there are but few. Study the performance of these few, as to reliability, durability, accessibility, and other abilities that one expects to associate with a thoroughbred, and it confines the choice of the world's best motor cycle to an exclusive and very minute circle. E. S. BADCOE.

Sir,—In reply to Mr. A. Arnold's letter, I am glad to see this discussion started, as I had meant to do so for some time. My ideal is the 'bus I own, a 1920 three-speed 4 h.p. Triumph, with A.C.E. discs, speedometer, etc.

London, N.12. TRIUMPH.

Sir,—In my opinion the 16H Norton has that honour. While being a really fast machine, it is docile in traffic and as reliable as a Rolls-Royce. These machines are finished beautifully, and nothing is overlooked as regards small adjustments. As for noise, the exhaust *is* rather loud, but valve clatter is almost entirely absent, and the exhaust itself does not bother. SATISFIED.

Fourmarks, Hants.



ONE OF THE NOVELTIES OF THE PARIS SALON.

The Peugeot motor-driven bicycle wheel.

Sir,—As a purely solo machine, I think the Scott cannot be excelled. It is to be assumed, however, that by "purely solo machine" we infer that the question of sidecar usage will never be considered in relation to it.

The Scott was designed essentially for solo work, and its designer definitely abandoned the sidecar idea when he seriously tackled the three-wheeled passenger vehicle; hence, the Scott Sociable.

Having cleared the air, I base my opinion that the Scott is the best solo machine on the following points: (1.) It steers better than any other machine I have ridden; on rough or greasy surfaces it is stable to a remarkable degree. (2.) It is *really* comfortable; riding position, saddle springing, smoothness of propulsion, and fork springing approach the ideal. (3.) Controllability thoroughly good; controls distributed to both hands and feet, and all operated without change of riding position.

These qualities outweigh the little extra attentions which this machine occasionally demands. TYKE.

Coventry.

SHAFT-DRIVEN CYCLE CARS.

Sir,—It has often occurred to me that there are apparently no shaft-driven cycle cars on the market. Why should this be so? The maxim of cycle car manufacturers is "Car comfort at motor cycle cost." That the shaft drive is practicable on one wheel is demonstrated by the F.N. in particular. Why, then, do not manufacturers approach one step nearer to cars by embodying this type of drive? I do not see that much extra cost would be entailed, as the F.N.—a motor cycle—has this drive, and is not abnormally dear. It is surprising to me that this query has not cropped up in your pages before.

SHAFT DRIVE II.

Tottenham.

[At least two three-wheelers—T.B. and Scott—are shaft-driven.—ED.]

DANGEROUS LICENSING DELAYS.

Sir,—Appended is a copy of a letter which I have just addressed to the London County Council in connection with the registration of a motor cycle and sidecar which I had bought at the beginning of June. The letter speaks for itself, and, to my mind, this long delay on the part of the London County Council in effecting the transfer of ownership on its books ought to be mentioned in the press in the interest and for the protection of the motoring fraternity. The latest Motor Licensing Act, as I understand it, is not merely framed to facilitate tax gathering, but also for the protection of motor owners against theft, etc., by giving them a proper "title deed." If I am right in my contention, the Act, as at present handled by the London County Council, defeats its own ends as far as the public protection is concerned. How is a theft to be traced if it takes four to five months to register the change of ownership?

F. W. STRAKOSCH.

[COPY.]

"With reference to my previous letter, dated September 3rd, which, so far, has remained unanswered, I hereby again wish to draw your attention to the fact that, although the registration book referring to the above number had been sent to your department as far back as June 3rd for the purpose of transferring the ownership out of the vendor's name into my own, it has not yet been returned to me. I should feel grateful if you could give the matter your earliest attention.

"I trust you will excuse my insistence, but I am prompted by a very unpleasant experience in connection with my previous machine. Fully six weeks after I had sold it, and when it was apparently still standing in my name, although the registration book had been sent immediately to your department on completion of sale, I was visited by a police inspector suspecting me of having either maliciously or accidentally set the heath near Keston on fire. It turned out that the police had been supplied by your department with my name and address as the owner of the No. XB——, which, of course, was wrong."

INTERNATIONAL RECOGNITION OF THE LIGHT-WEIGHT SIDECAR.

Sir,—I have read with much interest Mr. Jules Neher's reply to my letter of September 1st.

Apparently, the international body is no longer an international body, but purely one studying conditions of Switzerland. In this case, it merely resolves itself into a parish meeting, and I can only assume that its Continental members are so far behind the general trend of design that they have unwittingly fallen into an error in violently opposing the reintrodnction of the 350 c.c. sidecar class.

From an economic point of view, we all want the highest efficiency for the least money paid; and, in fact, must have this to-day to carry on successfully.

Since my last letter was written events have happened in which lightweight sidecars have taken part which should clearly prove to Mr. Neher and his *confrères* that engines have so developed that a small cubic capacity engine would now comfortably take two average passengers practically anywhere. So far as frame construction is concerned, how are manufacturers to develop without they are given the opportunity of a try out in such trials as the F.I.C.M. are responsible for?

It is apparently unknown to these people that by scientific frame construction average loads of 2 cwt. are daily running about England for the quick and economical delivery of goods, quite apart from the pleasure given to the man of moderate means who desires something more sociable than the solo motor cycle inside £100 cost.

The illustration on page 263 of your issue of September 1st just once more brings forward the old tag that the motor cycle and sidecar is the cheapest four-seater in the world, though I am not suggesting that it would be wise and desirable for every sidecar rider to load his back wheel as the gentleman portrayed has done.

Nevertheless, there is heaps of room for the cheap, economical, go anywhere, lightweight motor cycle and sidecar, and they certainly should not be excluded from the F.I.C.M. regulations unless that body want to lay themselves open to being partisan, or merely look ridiculous.

Mr. Jules Neher will remember that years ago he and I experimented with a lightweight small capacity M.A.G. engine, which astounded even me, and which is, I believe, giving good results.

Since then progress has been rapid, and I am quite sure there will be multitudes of lightweight sidecar outfits on the roads of the world before this time next year.

E. H. HUMPHRIES,
Managing Director Humphries and Dawes, Ltd.

WHAT IS A STANDARD MACHINE?

Sir,—Might I trespass upon your space in order to ask Mr. J. H. Wilkinson what exactly he means, in his letter of Sept. 29th, by a "guaranteed standard machine"?

For instance, does he consider the fitting of special handlebars, carburetter, exhausts, plugs, lighter mudguards, or an alteration in timing to be deviations from the standard?

If so, then I should say that very few standard machines have ever been entered for open speed events, and not many for reliability trials.

If, on the other hand, the above alterations do not constitute deviations from the standard, why should the fitting of special cylinders, pistons, gear boxes, or anything else be considered to do so?

The argument is, thus, rather a wash out, and, in my humble opinion, almost every machine ceases to be standard very shortly after it gets into the hands of an enthusiastic private owner.

RAF.

London.

SUMMARY OF CORRESPONDENCE.

A liquid blacklead known as "Zebo" is recommended by Mr. H. Walton to those who like to blacklead their cylinders.

According to two local correspondents, long exhausts pipes are taboo in Devizes and in Blakedown, a village on the main Birmingham-Kidderminster road. At the latter place the fine is usually £3, and sometimes "to avoid monotony," £5.

Eton police, according to "J.C.W.," appear to be on the look out for motor cyclists whose rear number plates are obscured.

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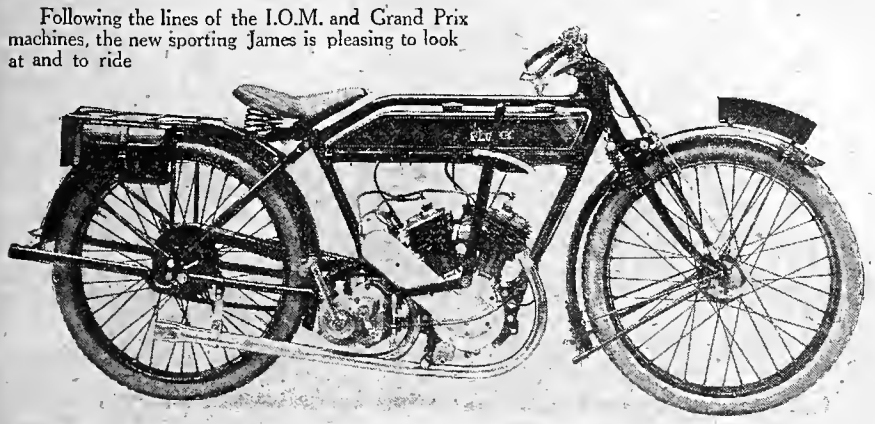
CATERING FOR ALL TASTES.

Improvements in each of the James Models. Introduction of an Attractive Sports Machine.

Following the lines of the I.O.M. and Grand Prix machines, the new sporting James is pleasing to look at and to ride

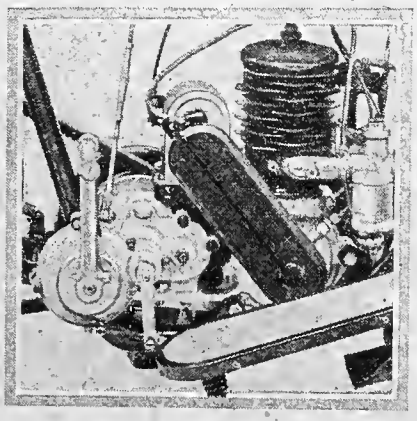


WITH the conversion of the 3½ h.p. twin into a true sports model, there will be a 1922 James to suit every type of motor cyclist. In this policy the James Co. is almost unique, for the machines are made throughout at one factory, and not merely assembled, like the products of most other firms with an ultra-wide range of models.

In point of interest, the new sporting machine must come first. The 64 × 77 mm. (496 c.c.) V twin engine does not differ in general design from last year's, but its efficiency is such that a guaranteed speed of 60 m.p.h. may be obtained without special tuning. Neat and symmetrical long exhaust pipes, taper valve springs, hexagon nuts on the induction pipe, and separate lubricating leads to each cylinder and to the crank case are the chief alterations.

It is in the frame, tank, and bicycle parts that the biggest change is noticeable. These have been "cleaned up" or re-designed on the lines of this year's Isle of Man and Grand Prix models, resulting in a considerable weight reduction (200 lb. for taxation), and a wonderfully natural and comfortable riding position—quite the best we have yet experienced. An exceptionally wide tank (which holds two and a quarter gallons) and careful consideration of handle-bar and footrest angles are chiefly responsible for this feeling of comfort.

Transmission is by chain, through a James three-speed box with clutch and kick-starter; light chain guards only are fitted; and a polished aluminium gate—die-cast, like the majority of the aluminium castings on all the models—improves the appearance of the gear-chain mechanism. The gear ratios are 5, 6.9, and 10.25 to 1. Internal expanding brakes are fitted to both wheels, the front one following the lines of that fitted to the company's pedal cycles for many years.



Gear box and power unit of the additional two-stroke model.

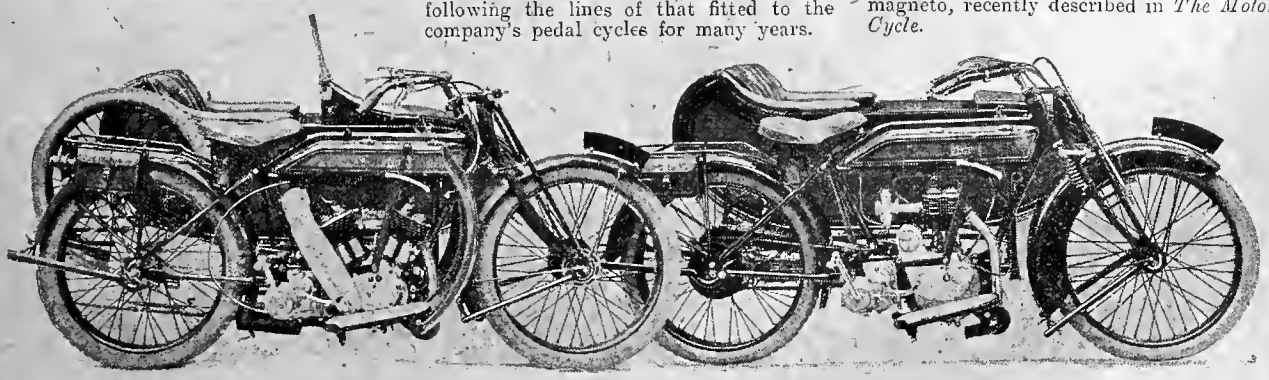
At £105, this model represents a very attractive proposition to the sporting soloist. Quite in a different class, the 4½ h.p. (86 × 103 mm. = 598 c.c.) single is primarily intended for economical side-carring, and has also undergone much improvement for 1922. It is now an easy task to remove the cylinder, the design of which has been modified. Framework and cycle parts have, again, been cleaned up and lightened, and 28 × 3in. tyres have been standardised. As on the sports model, a light guard only covers the rear chain—in this case, a Brampton spring link—and an aluminium gate is fitted. The rear brake is internal expanding. The sidecar chassis has been entirely re-designed, and the bodywork has been improved in minor details. With sidecar, the price is £135.

So successful has been the 7 h.p. sidecar outfit this year that only impovements in what may be termed convenience have been made. All three wheels are quickly detachable and interchangeable, and it is proposed to incorporate a speedometer drive which will remain *in situ* when the front wheel is removed. Oil-bath cast aluminium chain cases replace the light guards hitherto fitted, and the brake pedal is now offset to give easier operation.

Other Models.

All the well-known features of the 73 × 89.5 mm. (749 c.c) engine, the staggered fins, the offset exhaust valves, and the valve and tappet covers are retained, as is the heel-operated clutch. Brampton type forks are fitted; but on the other James models only the vertical parallel motion is retained. The outfit, with screen, grid, etc., sells at £160.

The standard 2¼ h.p. (66 × 70 mm. = 239 c.c.) two-stroke has been least altered of all. It will be remembered that this model has a double chain drive to the countershaft, a dog clutch giving high and low gears. An additional model will now be marketed with a conventional two-speed gear box with clutch and kick-starter. Both the lightweights, which are respectively £60 and £65, now have internal expanding front brakes, and are fitted with the new lightweight M-L magneto, recently described in *The Motor Cycle*.



(Left) Aluminium chain cases and detachable and interchangeable wheels are the chief alterations to the 7 h.p. James outfit. Vee shaped Sterling leg-shields will also be substituted for the type shown.
(Right) The "Big Single"—a sturdy example of the economical sidecar machine.

THE SINGLE-CYLINDER SOLO MOUNT.

Extracts from a Paper read before the Institution of Automobile Engineers.

THAT the 1904 3 h.p. Triumph engine was almost exactly similar to many 1920 single-cylinder engines illustrates how little conventional design has changed during the past seventeen years. This point was mentioned by Mr. H. D. Teage, of *The Motor Cycle*, in a paper read last Tuesday before members of the Institution of Automobile Engineers at Birmingham.

The following are extracts from the paper:

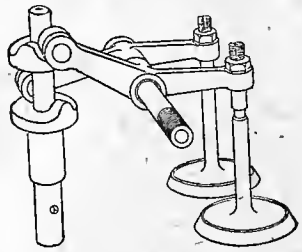
The original engine (the 3 h.p Triumph) had a ball bearing crankshaft of normal built-up construction, side-by-side mechanically-operated valves, and any individual part might be mistaken for that of a modern motor cycle engine. The 3 h.p. Triumph is given as an example of a seventeen-year old engine which was the forerunner of the present-day single-cylinder engine, and as showing that improvements have taken place in detail only. A second example of up-to-date engine design was the de Havilland, originally designed by Mr. G. de Havilland, and afterwards developed by Messrs. C. S. and E. A. Burney. One of these engines, built in 1903, is still in the possession of the author. The design embodied a solid crankshaft, a large outside flywheel, plain bearings, detachable head, and mechanically-operated valves, both actuated by a common cam. The engine did not reach the market till nearly ten years later, when the forerunners of the now popular Blackburne began to appear.

Such improvements as have taken place during recent years have been largely confined to efforts to discover the most suitable compression ratio by a process of elimination and to improvements in valve gear, and though these are steps in the right direction, with but few exceptions, they have not yet gone far enough.

However much good the sidecar has done for the motor cycle, and it undoubtedly showed up some weak spots, which were consequently corrected, it unfortunately did a certain amount of harm. The ideal solo machine can never be suitable for heavy sidecar work, and the ideal sidecar machine is bound to be too heavy and clumsy for the critical solo rider.

Weight.

It is obviously undesirable for any type of machine to carry about even a pound of unnecessary weight, and until a considerable improvement is made in weight-saving no present-day machine can be called really efficient. At first sight it would appear to be a difficult matter to cut weight to any considerable extent, and it must be admitted that to make an appreciable reduction in the weight of *an existing model* would be an arduous and costly proceeding, and that the result would not be worth the cost, though many pounds could still be saved by a careful survey of all parts. On the other hand, if the whole question of weight is carefully studied and a new machine laid out as a result of this study, it will be found that a very much lighter machine can be produced at approximately the same cost.

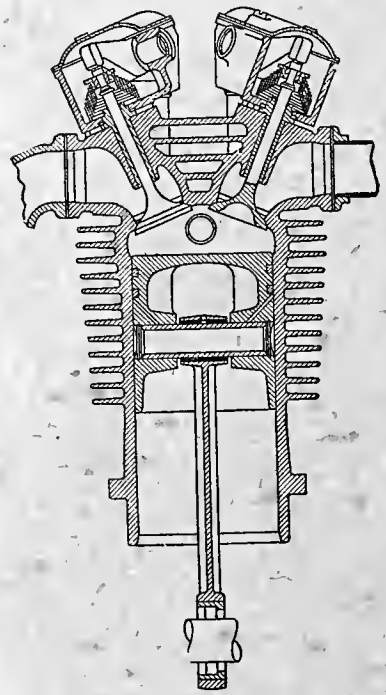


A pair of bevel gears is saved by the ingenious arrangement of cams on the H.F.G.

It is not only in the engine that weight can be saved. An engine-shaft clutch can be made much lighter than a countershaft clutch, since its speed is higher. Gear boxes are often used with no reference to the power which they are designed to transmit. Frame lugs are often quite unnecessarily heavy, and the strength of the frame would be increased by scientific cutting away of these lugs.

Valve Gear.

A bad design of overhead valve gear is no better, and probably considerably worse, than a good side-by-side valve arrangement, but taking into consideration fuel consumption, power, and a given standard of excellence in each case, the overhead valve engine will have a slight advantage in every case. First, if the valve gear is placed in the head, it is a comparatively easy matter to provide a well-shaped combustion chamber. Secondly, if the ports are equally well designed the overhead valves may be smaller and lighter to provide the same efficiency. Thirdly, a carefully designed overhead-valve cylinder is a much simpler foundry proposition, and there is less likelihood of a large proportion of scrap; and, fourthly, it is easier to provide equal and adequate cooling to such parts as most need cooling.



Enclosed valve gear and push rods, and excellent cylinder design. The Hotchkiss.

The two greatest difficulties lie (1) in designing an overhead valve cylinder-head which provides reasonable cooling facilities and yet is a simple moulding proposition, and (2) in devising a simple and easily made operating mechanism for inclined overhead valves.

Taking these points in the order named, inverted valves to be of adequate proportions involve a considerable increase in the diameter of the cylinder head, since to provide sufficient cooling for the centre of the cylinder head they must be set fairly wide apart. Since also the normal valve gear necessitates the setting of the valves in line with the frame, it is not easy to arrange the cooling fins in such a way as to provide proper cooling without involving costly patterns and foundry work.

Longitudinal head fins will leave an uncooled pocket at the vital spot between the valves, while transverse fins, though easy enough to mould, are almost useless as regards cooling. We are left, then, with the alternative of circumferential ribs and with the difficulty of providing enough of these to give an adequate cooling surface. Probably the most satisfactory solution of the problem is to increase the head thickness towards the centre of the head to a very considerable degree, and to use the largest possible number of finely pitched ribs.

To prevent burning and distortion of exhaust valves the walls of the exhaust port should be carried up well clear of the cylinder walls, leaving a clear space for air to impinge on the casting at the junction of the port and the head.

Overhead Camshafts.

Inclined overhead valves, especially in conjunction with a long stroke engine, provide an ideal combustion chamber and gas flow; cylinder fins of the circumferential type are easily applied and the foundry work is simple; it is not, however, easy to devise a satisfactory valve gear. An obvious solution lies in the use of an overhead camshaft carried well clear of the casting for cooling purposes. Unfortunately, this involves considerable cost in bevels, or skew gears, thrust races and expansion joints, though it is possible to devise a simple two-step chain drive which shall not be unduly strained by cylinder expansion. A simple method of avoiding a multiplicity of gears is used by the H.F.G. light car.

If push rods are used, both rods and rockers should be kept as light as possible, and tension rods are preferable to compression rods if this can be arranged. The M.A.G. engine long ago demonstrated the fact that overhead valve gear may be suitably enclosed, and a very ingenious system of enclosed valve gear is in use on the Hotchkiss light

The Single-cylinder Solo Mount.—

car engine. This system provides a simple method of machining rocker-pivot bearings for inclined valve engines, while the total enclosure of the valve gear keeps the push rods warm and helps to minimise the increase in tappet clearance when the engine warms up. If push rods are employed it is of the utmost importance that separate return springs should be fitted for the operating gear, and that the valve springs should attend to the valves alone.

In defence of the side-by-side valve engine it must be stated that good efficiency can be obtained from this type if enough care is expended on the design of the valve ports, combustion head, and cooling areas, though after twenty years' experience the engines which have been so designed might be counted on the fingers of one hand.

Two-cycle Engines.

On account of simplicity and ease of manufacture alone, the three-port two-cycle engine has an immense field for development, and it has already gone a long way in assisting the production of the machine for the multitude.

It is curious that the would-be designer of a two-cycle engine is faced with an extraordinary absence of data on which to base his calculations, as such figures as are available refer almost entirely to low-speed engines such as are used in launches.

A mechanical transfer valve has many possibilities, since by delaying the closing of such a valve it would be possible to use a fixed carburetter and control on variable compression, the excess charge being returned to the crank case as in the case of the Pullin design.

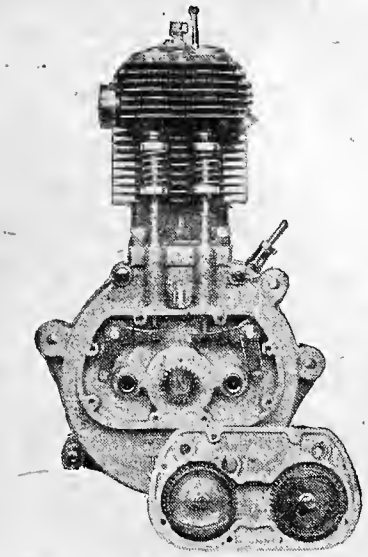
The most fascinating problem, however, lies in the possibilities of direct injection.

Cooling.

With the data available there should be no difficulty about cooling either a two or four-cycle engine of any size likely to be used in motor cycle work. There are, however, many engines in which very considerable improvement can be made. Since cylinder cooling relies mainly on convection, it is essential, if the best results are to be obtained, that the ribs should be arranged so as to receive the maximum draught, and any shielding of one rib by another is undesirable. The cylinder head is the most important part as regards cooling, the barrel, except in the case of two-cycle engines, being comparatively unimportant. Care must be taken to ensure sufficient thickness of material to even up the temperature throughout so far as is possible, and most existing motor cycle cylinders err by being on the thin side.

It is useless to employ deep radiating fins if there is insufficient thickness at the root to carry away the heat from the cylinder, and the recent practice of using long ribs "as thin as the foundry can cast them" has its origin in a mistaken theory.

It is not necessary to use aluminium or alloy cylinders to obtain good cooling if sufficient metal is used and scientifically disposed. Nor is there any need for water-cooling on any single-cylinder motor cycle engine, and such a tendency would be a retrograde movement, especially from the solo rider's viewpoint.



The 3 h.p. Triumph engine, showing the similarity of this seventeen years old engine to modern production.

Lubrication.

The history of lubrication of motor cycles is of some interest, since many manufacturers have used a considerable amount of ingenuity in breaking away from standard car practice; whether or not this ingenuity has been wisely expended is a matter which is open to discussion. From the earliest days the simple hand pump has found favour with motor cyclists, and is still the most common form of lubrication to-day, though in many cases it is refined by sight feed and drip attachments. Curiously enough, when trouble was experienced with plain bearings in conjunction with this somewhat crude form of lubrication, motor cycle designers decided that, rather than improve the system, they would evade its faults by using ball bearings wherever possible. The practice has gradually expanded until the majority of modern engines are fitted with ball or roller main and big end bearings, while in one case rollers are used even in the small end.

SMALL CARS.

Motor cyclists interested in small cars should read "The Autocar," the parent journal of "The Motor Cycle."

Light, medium, and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interests of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

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This scheme has worked satisfactorily, since it leaves only the piston and timing gear to the tender mercies of the novice, and once the engine has been thoroughly run in, it is wonderful how much evil treatment these parts will withstand.

The lubrication of two-cycle engines is a somewhat complex matter. The "petroil" system gives remarkably good results, and is a very simple method of proportioning oil supply to load; it has, however, the disadvantage of being messy.

Dry Sump Lubrication.

Excess oil in the crank case makes its presence felt in a much more objectionable manner than in the case of a four-cycle engine, and, consequently, a dry sump lubrication system appears desirable. This end may be achieved in two ways. The simplest is to utilise a release valve in the lowest part of the crank case to drain the sump, and the pressure thus generated may be utilised to circulate the supply. A system on these lines is embodied in the new Hawker two-cycle engine.

The same end may be obtained in a more positive manner by the use of a plunger pump arranged to draw oil from the lowest part of the crank case. If necessary, this pump could be timed to operate on every explosion stroke or every alternate stroke, involving a very slight increase in cost, which would probably be well repaid by the advantages gained.

Steering head design calls for much criticism, and yet very little improvement has been made. There is, it is true, a tendency to fit larger ball races, but few designers appear to realise the fact that there is heavy radial loading on the head races and that the normal races used in motor cycles are unsuitable for radial loads. Cup and cone bearings should be much more satisfactory, and it is probable that a plain bearing head with a good sized ball thrust at the base would give results as good as, or better than, the more usual system of two thrust races.

Unit Systems.

It is curious that the unit engine and gear box system has not become more popular in this country. The A.B.C., Clyno two-cycle, Beardmore Precision, and Wooler colonial models practically complete the list of existing British machines, though the Diamond, Singer, Veloce, and Villiers have all built machines of this type, and the Superb Four is a promising design. On the other hand, almost every modern Continental and American design embodies the gear box with the crank case (either cast integral or bolted on).

Spring frames have been a fruitful source of discussion, and much ingenuity and paper have been expended on the subject, but, as far as the solo mount is concerned, their inclusion in the specification should be justified by the fact that lighter parts can be used in frame manufacture, so that the total weight of the fully sprung machine is little or no greater than that of the unsprung type, and the former is equally rigid laterally.

Once shaft drive becomes popular, the unit system will automatically come into vogue, and in the meantime the designers of the machine for the multitude would do well to study the designs of the Clyno and the Gillet two-cycle machines.

Judges' Report on the Six Days Trials.

Extracts from the Official Report and Results issued by the Auto Cycle Union.

THE Auto Cycle Union has now issued its shilling booklet on the annual Six Days Trials held in August—a little late, it is true, but not so late as last year, when the report was issued about Show time. At the same time, there seems no reason why this report should not be made public while the trial is still fresh in the public mind.

The results differ only in minor details from those published in *The Motor Cycle* for September 8th and 15th. We append extracts.

"With so many machines of dissimilar character it is impossible to say that any particular motor cycle, or make of motor cycle, did best in the trial. For this reason, instead of a single team prize as in previous years, five team prizes had been offered by the Union, one in each of the classes thought particularly worthy of encouragement. In each of the following cases members of the winning team were all gold medallists: New Imperial, A.J.S. (winners in two classes), Rover, and P. and M. No team prize was offered in Class D (medium-weight solos) or in Class H (cycle cars), but in these two classes such meritorious performances were made by the three 3¾ h.p. Scotts and the Morgans that the judges have requested the Competition Committee of the Auto Cycle Union to award their manufacturers some special recognition.

"In general the following performances were of exceptional merit: P. and M., Scott, A.J.S., Matchless, O.K., F.N., New Imperial, Rover, Morgan, T.B., and G.N. All of the six cycle cars that started, viz., three Morgans, the T.B., and two G.N.'s succeeded in winning gold medals.

"Special mention must be made of the 2½ h.p. O.K. Junior and sidecar driven by F. C. North. With an engine of only 292 c.c. capacity, this outfit climbed all hills and completed the trial. That such a light passenger machine can provide a sure means of rapid transport for two adult persons appears a fact of real importance to both user and manufacturer.

The Various Tests.

"THE ROAD TEST.—On the road the competing machines ran, as was expected, with clock-like regularity. The few marks lost for unpunctuality were usually due to tyre trouble or carelessness. The weather throughout the trial was favourable. An occasional shower of rain improved the road conditions, and the two most severe hills in the trial, Porlock and Lynton, were in excellent condition. Nevertheless, it is evident from the results that the modern motor cycle is more than capable of climbing any gradient likely to be encountered by the general user.

"THE SILENCE TEST.—The judges are glad to be able to report a great improvement as regards noiselessness. Many of the competing machines were fitted with special silencing arrangements, which did not appear to cause any loss in overall efficiency. Again and again favourable comments were heard from spectators when a particularly noiseless machine passed them. The judges would venture to recommend the improvement of standard machines to a further extent, and the elimination of mechanical noises, which with certain makes of machine were very pronounced indeed.

"THE BRAKE TEST.—Most brakes were excellent. Front brake controls on several of the machines were not of sufficient strength. Faulty attachment of an otherwise efficient front brake led to disaster in the case of No. 1 (2¼ Cedos) who was disqualified for obtaining and fitting a reinforcing plate. The brakes on the P. and M.'s, which provide for the outfit being held when unattended, are worthy of special notice.

"FUEL AND OIL CONSUMPTION TESTS.—The results obtained from the fuel and oil consumption tests, particularly when the loads are taken into account, are instructive. The Union would direct particular attention, not to any extraordinary individual performances, but to the following analysis of the results, based as they are on 730 miles of running over ordinary touring roads.

	Average Ton-miles per Gallon.	Cost per 100 Miles
250 c.c. solo	17.49	2/2¼
350 c.c. solo	18.72	2/2¼
500 c.c. solo	18.05	2/8¼
750 c.c. solo	16.40	3/1¼
600 c.c. sidecars	20.79	3/6¼
1,000 c.c. sidecars	20.49	3/11¼
1,100 c.c. cycle cars	20.30	4/4½

"The judges realise that every advantage of downward slopes was taken by drivers to reduce fuel consumption. The use of the throttle as an air brake and of a variable jet controllable whilst driving were commendable features on certain machines.

"As regards oil consumption, many competitors confessed that before the trial they were ignorant of the quantity of oil really required. The actual amount of oil used up as a lubricant in an internal combustion engine is, of course, very small; a comparatively large surplus has to be fed to make good losses by leakage and burning, and to prevent the working oil becoming too dirty. Other things being equal, the consumption of oil by an engine largely depends on the accuracy of workmanship of its component parts. If too little surplus oil is fed, serious damage must ensue. If too much, the engine will become dirty inside and out, the exhaust system will be fouled, plugs will get 'oiled up,' whilst valve stems and tappets will become choked with oil and dust, etc., etc. Lacking any definite guide, the average motor cyclist over-lubricates, and in the light of the results disclosed by this test the Union itself appears to have erred on the generous side when the maximum consumption of oil was allotted.

"No engine trouble was reported as due to insufficient lubrication; on the other hand, certain engines, which throughout the road test were given an unusually small quantity of oil, performed exceptionally well in the speed test. No. 6 (2¼ New Imperial) was the best in Class A, both for oil consumption and speed; the machine making highest speed in Class D, No. 30 (3½ Martinsyde), used 94.6% less oil than was allowed; No. 45 (7 F.N.) was the fastest machine on the track, and showed a saving of 124.6% of oil on the road, whilst similar results are noticeable amongst the fastest of the passenger machines, such as No. 90 (8 Morgan), No. 69 (8 Matchless), and the three P. and M.'s.

Final Test.

"The final test of the machines was divided into three parts: First, the high speed test on Brooklands, then the ascent of the test hill, and, finally, an external examination. The 730 miles on the road having been of the nature of an extended trial run, during which valuable information as to hill-climbing, brakes, noiselessness and running costs had been obtained, this 68 miles at high speed was almost certain to disclose any weakness not previously apparent. It was just possible, however, for a machine to have failed towards the end of the speed test, and yet to accomplish the distance at the required average speed. In 1920, at least one machine completed the requisite number of laps within the time limit with a broken piston at the finish.

"This year, to obviate such a possibility, every machine, after completing the speed test, had to be driven up the test hill, with its gradient of 1 in 4, to prove that not only engine but transmission also were in working condition.

"Eighty-four per cent. of the machines which started the trial reached the final test, and of these 92% completed the speed test. Over 60% of the latter passed the final examination without loss of marks.

"The final examination disclosed a noticeable improvement in reliability and simplicity of operation of gear boxes. Kick-starters were often over-hard to operate, and it was noticed that in several cases steering heads and fork links needed lubrication. There was a marked difference amongst the successful machines as regards cleanliness and neatness. Such machines as the P. and M., A.J.S., Matchless, O.K., and Dunelt show that reasonable cleanliness is easily attained. Controls and particularly control cables, can be arranged so as not to interfere with cleaning, and the shielding of engine parts appears very desirable. Although a number of machines were dirty, the marked improvement observed on others shows that dirt and motor cycles are not inseparable.

"Under the heading of 'General Remarks,' the judges state that they are of opinion that over the relatively short distance covered no part of the power unit should have needed attention. They recommend that further attention should be given to general cleanliness and to the prevention of rattle in accessories and fittings. Transmissions should not have required frequent lubrication; this re-

To Club Secretaries about to plan their winter programme: see "Club News" page for particulars of "The Motor Cycle" film.

CHAMPIONSHIPS

At Brooklands, 8th October, 1921.

Championship Scratch Race, Class A (275 c.c. solo)

***1st** J. V. Prestwich—Diamond J.A.P. **2nd** E. Remington—Blackburne

* Breaking flying 5 mile record at 63.40 m.p.h. and 10 miles (standing start) record at 62.28 m.p.h

Championship Scratch Race, Class B (275—350 c.c. Solo)

1st E. Remington—Blackburne.

Breaking 10 mile (standing start) record at 69.70 m.p.h.

Championship Scratch Race, Class C (350—500 c.c. Solo).

†1st J. Emerson—Douglas. **2nd** C. G. Pullen—Douglas.

† Breaking 10 mile (standing start) record at 79.54 m.p.h.

Championship Scratch Race, Class E (500—1000 c.c. Solo).

‡1st C. F. Temple—Harley-Davidson. **2nd** H. le Vack—Indian.
3rd D. H. Davidson—Indian.

‡ Breaking flying 5 mile record at 96.54 m.p.h. and 10 miles (standing start) record at 91.17 m.p.h

Championship Scratch Race, Class G (600—1,000 c.c. Sidecar).

||1st C. F. Temple—Harley Davidson. **2nd** D. H. Davidson—Indian.

|| Breaking flying 5 mile record at 77.98 m.p.h. and 10 miles (standing start) record at 75.57 m.p.h.

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B. M. C. R. C.

CHAMPIONSHIP MEETING,

8th OCTOBER, 1921.

Class A. 1st and 3rd PLACES

ALSO BEATING

WORLD'S RECORD

For FIVE and TEN Miles

SOLE MANUFACTURERS:

J. A. PRESTWICH & Co., Ltd.,

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JAP BRITISH & BEST ENGINE.

THE Norton

at Brooklands, on October 7th, Mr. V. Horsman, riding a

STANDARD 3½ h.p. MODEL 16H,

WAS SUCCESSFUL IN

SMASHING

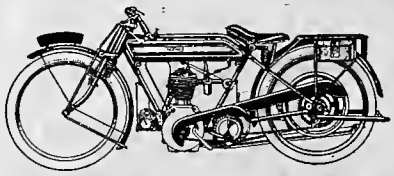
THE

ONE HOUR RECORD at 73.38 M.P.H.

AND ALSO THE

50 MILE RECORD at 74.14 M.P.H.

(500 c.c. class, subject to A.C.U confirmation.)



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Judges' Report on the Six Days Trials.—

mark would also apply to the links of sidecar springs.

"It is obviously important to design the suspension of a passenger-carrying machine so that overloading does not produce any damage.

"All unnecessary cables should be removed from the handle-bars, as the resulting simplicity would strongly appeal to the inexpert public. The provision of detachable wheels with dustproof bearings is not yet sufficiently general.

"It appears that modern transmission has progressed somewhat further than has the power unit. Much more attention should be given to the elimination of noise of every kind. The Morgan and T.B. machines were noticeably good under the heading of mechanical silence.

Demonstrating British Superiority.

"Although the percentage of premier awards is lower than those won in the 1920 trial, the judges consider that with the revised system of marking the 1921 Six Days Trials have demonstrated more fully and convincingly than has ever been done previously the general all-round excellence of the British motor cycle, whilst at the same time it has indicated where improvements would seems to be desirable."

The report is signed by the two judges, Dr. A. M. Low, A.C.G.I., M.I.A.E., etc., and Lt.-Col. D. F. Nicholl, and the clerk of the course, Mr. T. W. Loughborough, A.M.I.A.E., secretary of the Auto Cycle Union.

SCRAMBLING ROUND SURREY.

Sporting One-day Trial of the Surbiton and District M.C.C. for the Sopwith Cup.

TRIAL organisers are in an unfortunate position nowadays, for, when efforts are made to provide sport in a category different from that to which we are accustomed, they are invariably the victims of high-pressure criticism. When sidecars and solo machines compete over the same course, it is extremely difficult to include tests sufficiently severe to impede the soloist without overburdening the three-wheelers to disadvantage.

The Surbiton and District M.C.C. trial on Saturday is a concrete example. In order to find a super-rider and machine from among the sixty entrants attracted by the generous prize of a 100 guineas cup (presented by Mr. T. O. M. Sopwith, C.B.E.), a course reminiscent of the shell-ridden areas of Flanders was selected.

The wide tarred road from Ripley, the starting point, to Guildford reassured the riders, optimists all, of their vision of a real joy ride, which, blessed with a crisp morning air and bright sunshine, seemed to be materialising.

Guildford High Street, with its unique hill, was descended, and, thereafter, surprises of the type that instinctively glue the hands to the bars and sink the knees into the tank greeted the competitors at every turn.

An Appetiser.

Deflected at the bottom of the High Street, the route rose steeply up a middle gear hill from the Guildford valley, and, as a primer for the riding which would be required later, a two mile grass track was traversed.

Breathing time was granted whilst admiring the beautiful country surrounding Farncombe, Godalming, and Haslemere; no doubt a cunning scheme to disarm the riders from the terrors to follow.

With curiosity aroused by a sudden but well-indicated left turn off the main road from Haslemere, the ruts, holes, and boulders which jumped before the eyes were not so great a surprise.

Solo men, if more fortunate than V. Gayford (8 Zenith), who slid into the rut, could plunge along the narrow ridge separating the gulleys; sidecar outfits, however, were doomed to axle scraping.

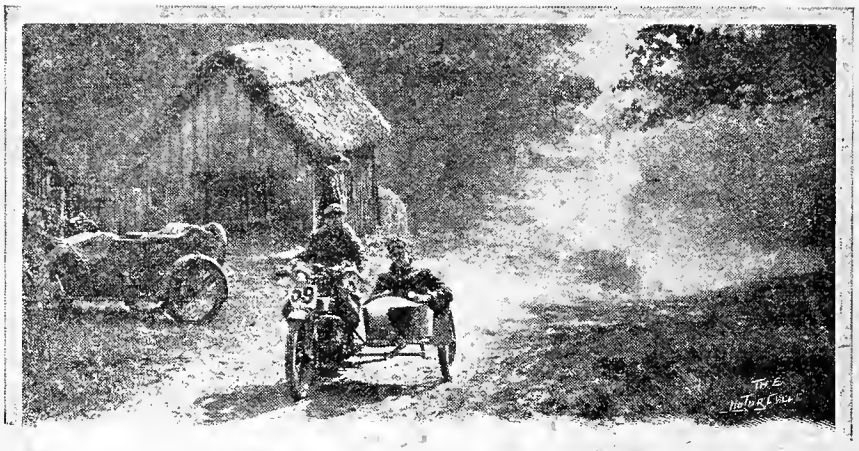
Had normal October weather been the rule, it would have been big odds against a single clean climb of Bexley Hill; as it was, a small patch at the bottom defied the back wheels of many of the sidecar machines. Higher up, things were worse. Here a gradient of about 1 in 7, studded with boulders as numerous as the adjectives employed by the unlucky riders, weeded out many aspirants to the cup. F. C. Townshend's 8 h.p. Zenith was as unhappy as its pilot, whilst Secretary Reeves (also on a Zenith), probably anticipating the difficulties his high gear would involve, came up at speed and hopped from boulder to boulder. E. A. Leeding (3½ James) just saved a spill, whilst J. S. Bennett's 4 h.p. Metro-Tyler had no scruples and roared up at full throttle. A. H. Lowe (3½ Norton) had bad luck when his back wheel slipped into the rut at the side of the track and spoiled his clean sheet. An 8 to 1 low gear was too high for C. C. Labin's 3½ h.p. Indian. R. A. Green, a speed merchant on a 3½ h.p. Sunbeam, was lucky to escape a fall when his footrest struck a rock halfway up the hill. D. H. Davidson (4 Indian Scout) made an excellent climb, and R. Chaplin (3½ Sunbeam) also qualified, although he took the hill slowly. C. E. Taylor (2¾ Vasco) did not turn up; that he and H. Sawtell (8 Morgan) had retired was reported later.

A circular route *via* Eastbourne terminated at Haslemere, the lunch stop, but before reaching there Fernhurst accounted for many failures; stops were recorded against R. G. Spikins (A.B.C.), F. A. McNab (8 Trump-Jap), J. L. Boscall (A.B.C.), E. A. Leeding (3½ James), C. I. Freeman (A.B.C.), C. C. Labin (3½ Indian), A. S. Richardson (6 Trump-Jap), and R. Chaplin (3½ Sunbeam). It will be gathered that few riders with clean sheets entered the field in the afternoon.

The Afternoon's Run.

Ill-luck prevented Kaye Don (2¾ A.J.S.) from starting. Apparently an improperly cleaned petrol tin was the cause of water in his jet. He got away later. A colonial section of sandy soil, boulders, and cart tracks was followed by a freak climb, known as High Button. There were many failures, due partly to the gradient, and partly to the soft nature of the road. W. H. D. Steer (8 Zenith sc.) stopped and had to push, and so had C. I. Freeman

J. Abbot (8 Zenith) and C. Finch (8 G.N.) taking the steep hill leading up to the main Milford-Haslemere road.



A picturesque scene on the route of the reliability trial held by the Surbiton and District M.C.C. for the Sopwith One Hundred Guinea Challenge Cup. A Matchless sidecar on the rough surface of Fernhurst Hill.

(8 Enfield sc.), K. H. Bywaters (8 Zenith sc.), C. A. Chaplin, and K. Preston (5 Zenith).

The last and most "freakish" climb of the day was situated in the woods which encircle Gomshall. A narrow track of appalling surface, gradually lessened in width as the climb proceeded, until, terminating in a sharp rise to the knoll at the top, the width of the rideable track did not exceed 5ft. As a consequence, much sport resulted.

Leaf Hill, as it was christened, could not be climbed in the winter months, as the thick layer of leaves, soddened by the rain, would not permit a grip of any sort. Fine weather again saved the situation. Kaye Don (2¾ A.J.S.) came up first, well within his recovered time. His speed was good. R. G. Spikins (3 A.B.C.), however, simply leaped up.

R. C. Charlesworth made a great effort, and, with scientific humping of the back wheel, just succeeded in bringing his big Zenith sidecar to the top.

Wheel spin was the cause of W. H. D. Steer's (8 Zenith sc.) failure. R. A. Green (3½ Sunbeam) again climbed at speed, as also did D. H. Davidson (4 Indian Scout).

F. A. McNab (6 Trump-Jap) hit a boulder, which tore the footrest and engine plate away; he subsequently retired.

The route was excellently indicated by red dye, whilst the general organisation was very good. Results:

THE SOPWITH 100 GUINEA CUP.—D. H. Davidson (4 Indian Scout).

GOLD MEDALS.—W. J. Kelly (3½ Norton), J. S. Bennett (4 Metro-Tyler), R. B. Clark (8 Matchless), L. Nicholson (2¾ Coulson), A. H. Love (3½ Norton), G. E. Cuffe (2½ Metro-Tyler), R. G. Spikins (3 A.B.C.), Allan Gruzelier (8 Zenith), and V. Gayford (8 Zenith).

SILVER MEDALS.—F. C. Townshend (8 Zenith), lost 10 marks; R. C. Charlesworth (8 Zenith sc.), 0; R. C. Staunton (4 Triumph), 4; R. A. Green (3½ Sunbeam), 12; E. A. Leeding (3½ James), 15; E. R. Jacobs (2¾ Wooler), 18; Kaye Don (2¾ A.J.S.), 10; A. G. Wall (2¾ Cedos), 4; J. Abbott (8 Zenith), 5; Clifford Finch (8 G.N.), 12; Stanley Watson (8 G.N.), 10; E. L. Showell (6 Martinsyde), 10; O. Clark (8 G.N.), 6.

BRONZE MEDAL.—W. H. D. Steer (8 Zenith sc.), lost 20 marks.

TEAM PRIZE.—R. C. Charlesworth (8 Zenith), V. Gayford (8 Zenith), and F. C. Townshend (8 Zenith).

SPEED TRIALS ON THE BOIS DE BOULOGNE.

World's Flying Kilometre Record in 250 c.c. Class broken by British-engined Machine and British Rider.

FOR the first time in history the Bois de Boulogne, in Paris, was the scene last Thursday morning of motor cycle speed tests. Thanks to the energetic Motocycle Club de France, the municipal authorities consented to allow the famous Allée des Acacias, which, during the season and at certain hours of the day, is the most elegant rendezvous in the world, to be given up for three or four hours to attempts on motor cycle world's records. In addition to this, the authorities placed at the disposal of the organisers a force of more than 2,000 soldiers, police, and municipal guards, who were used for controlling traffic and keeping spectators off the course. The event is really unique, and constitutes a most important victory for motor cyclists, for although there is no legal speed limit in France, the Bois de Boulogne is most jealously guarded, and at normal times fast driving is almost as rigorously suppressed as in Hyde Park.

An Ideal Speedway.

The Allée des Acacias is a broad, perfectly straight highway, passing through the heart of the Bois, from Porte Maillot to Longchamps. The surface is tar macadam, and was in excellent condition on the morning of the trials. The only complaint of riders was that they had not had any preliminary practice; they felt that had they known in advance the surface was so good they could have made even better time.

The English rider, J. V. Prestwich, broke the world's record in the 250 c.c. class by averaging 68.59 m.p.h. for the flying kilometre. In accordance with the international regulations, the average was calculated on the out-and-home runs. The machine was built by Bartlett, a well-known English motor cyclist, who has been resident in France for several years, and was equipped with a J.A.P. engine. Times in the 250 c.c. class were as follows:

J. V. Prestwich (2¼ J.A.P.) ...	32⅜s.
Jolly (2¼ Armor)	35⅘s.
Vernisse (2¼ Yvels)	36⅘s.
Moussard (2¼ Mousse)	46⅜s.
Rasser (2¼ Rasser)	46⅘s.

There was only one competitor in the 350 c.c. class, namely, Meunier (on an Alcyon), who covered the kilometre in 31⅘s.

No records were broken in the 500 c.c. class, although Péan (on a twin Peugeot) came very near lowering the figure held by Judd on a Norton. The French rider made very fast time on the outward run; but on the return his engine seized, and he cut the tape with the momentum he had acquired, his time for the kilometre being 26⅕s., compared with the record of 25s. The others in this class were:

Marc (3½ Alcyon)	29⅕s.
Bartlett (3 A.B.C.)	29⅜s.
Millaud (3½ Motosacoche) ...	29⅘s.
G. Jolly (3½ Alcyon)	32⅘s.

In the 750 c.c. solo class Gillard (on a Peugeot) was timed in 26⅘s., and Liandois (on a machine of his own make) in 34s. Pelissier (on a Motosacoche) was fastest in the 1,000 class (time, 25s.), followed by Coquide (on an Indian) in 29⅕s.

Bartlett (riding an A.B.C. in the 600 c.c. sidecar class) made the best time of the day by covering the flying kilometre in 34⅖s. Coquide (on an Indian) was first in the 1,000 c.c. class with 36s., followed by Psalty (on a Harley-Davidson) in 43⅖s.

Cycle cars were run both as solo mounts and with passenger. In the former class Darmont established a record with his Morgan in 28⅜s., the second in this class being Mauve (on an Elfe), time 34⅖s. In the cycle car class with passenger, the results were as follows:

1. Lombard (Salmson)	29⅜s.
2. Darmont (Morgan)	30s.
3. Chabreiron (E.H.P.)	31⅛s.
4. Lams (Mathis)	34s.
5. Mauve (Elfe)	50⅜s.

The winning machine in this class is the new four-cylinder cycle car with which Lombard won the Grand Prix race at Le Mans a few weeks ago.

BRITISH SUCCESS IN ITALIAN GRAND PRIX.

British machines scored a sweeping success in the 350 c.c. class of the Italian Grand Prix race, pictures of which appear on another page of this issue. Detailed results, including distances, times, and winners' speeds are appended:

350 c.c. CLASS.—1, A. Garanzini (2¾ Verus), 2h. 51m. 30s.; 2, F. B. Badino (2¾ Douglas), 2h. 52m. 38s.; 3, F. Ramni (2¾ A.J.S.), 3h. 4m. 11s. Distance, 224.9 km. Winner's speed, 56 m.p.h.

500 c.c. CLASS.—1, M. Accerboni (3½ Frera), 3h. 40m. 8s.; 2, —. Gileri (3½ Frera), 3h. 47m. 31s.; 3, B. Oppessi (3½ Triumph), 3h. 51m. Distance, 311.4 km. Winner's speed, 52.5 m.p.h.

750 c.c. CLASS.—1, M. Castagno (4 Indian), 3h. 30m. 25s.; 2, R. Rava (4 Indian), 3h. 54m. 54s. Distance, 311.4 km. Winner's speed, 55.2 m.p.h.

1,000 c.c. CLASS.—1, D. Malvisi (7-9 Harley-Davidson), 2h. 54m. 9s.; 2, V. Faraglia (7-9 Harley-Davidson), 2h. 57m. 45s.; 3, A. Ruggeri (7-9 Indian), 2h. 58m. 50s. Distance, 311.4 km. Winner's speed, 66.7 m.p.h.

Current Chat

Times to Light Lamps.

Oct. 20th	... ...	5.57 p.m.
,, 22nd	... ...	5.55 ,,
,, 24th	... ...	5.53 ,,
,, 26th	... ...	5.50 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

First Olympia Show Number.

To-morrow's issue of *The Autocar* will form the first of the four Special Show numbers, and will deal particularly with Accessories and Coachwork.

Motor Cycles in South Africa.

Only twenty-four British motor cycles were imported into South Africa during the month of July. Germany and the U.S.A. sent four each.

Some Dog!

Under the heading of "Dogs, Poultry, and Live Stock for Sale," a Blériot-Whippet is offered for sale in a provincial newspaper.

Ex-W.D.

Ex-W.D. parts were used in several machines at the Paris Salon; for example, Harley-Davidson engines were fitted in a new cycle car.

Egyptian Imports of Motor Cycles.

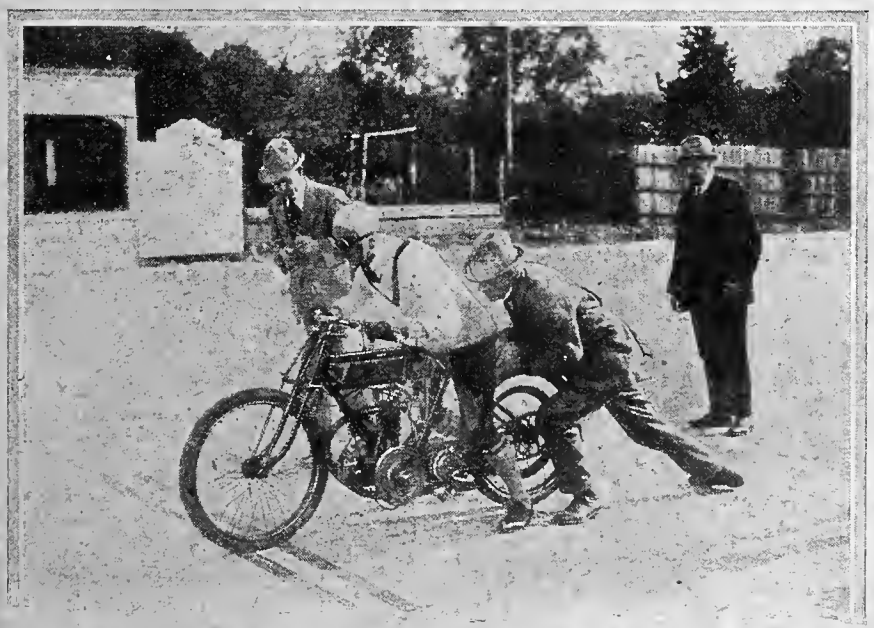
In July, 1920, sixty-eight motor cycles were received into the country, but the corresponding month this year only six. Four of these were from the United Kingdom and two from France.

Road Conference.

Twenty-one countries were represented at the International Road Conference at Paris last week. The conference is due to the initiative of the French Government, which is anxious that steps should be taken towards modifying road regulations throughout the world.

New M.C.C. Trials Secretary.

To enable the Motor Cycling Club to carry out its successful competitions in the most efficient manner possible, the committee has appointed Mr. F. T. Bidlake, the well-known timekeeper, to be the permanent trials hon. sec. for the club. Mr. Bidlake's first great work will be to organise the London-Exeter run; particulars will shortly be published.



Kaye Don starting his record-breaking ride at Brooklands last week. On a 2¾ h.p. Massey Arran, he broke the ten miles record (standing start), covering the distance in 8 min. 26.48 secs.=70.22 m.p.h. The engine is an o.h.v. Blackburne.

Special Features.

THE SPIRIT OF A SPORTING TRIAL.
THROUGH FEMININE GOGGLES.
THE SINGLE CYLINDER SOLO MOUNT.

Helvellyn climbed by Lightweight.

An O.K.-Union rider, W. S. Chapman of Butterknowle, claims to have reached the summit of Helvellyn (3,118ft.). He used a gear of 18 to 1. He ascended from Patterdale, *via* Grisedale Tarn, and descended to Wythburn. Those who know this locality will appreciate that it is a remarkable achievement.

The Grand Prix Races.

Some confusion may exist in the minds of our readers owing to the number of motor cycle races on the Continent bearing the title Grand Prix. The most important of these was the Grand Prix of the Union Motocycliste de France, an event bearing the importance in France that the T.T. races hold in England. There was also the Grand Prix de France, organised by the Motocycle Club de France—a live and energetic club—but naturally this race did not occupy the same exalted position as that to which we first referred. Finally, there was the Grand Prix organised by the Belgian Motor Cycle Federation, which occupies in Belgium the same position as the T.T. does in England. So as to clear up the matter finally, we give herewith the results of these three races, together with reference to the issues of *The Motor Cycle* in which they were reported:

GRAND PRIX DE FRANCE, M.C.F. (CIRCUIT DE PROVINS).
(July 7th, p. 14.)

	h.	m.	s.
250 c.c. Class (149 miles).—Sandford (2¼ M.S.)	4	47	27
350 c.c. Class (183 miles).—Marc (2¾ Alcyon)	3	45	16
500 c.c. Class (183 miles).—Naas (3 A.B.C.)	3	28	54
1,000 c.c. Class (183 miles).—Andre (7-9 Harley-Davidson sc.)	4	34	57

GRAND PRIX DE L'U.M.F. (CIRCUIT DU MANS).
(July 28th, p. 126.)

	h.	m.	s.
250 c.c. Class (161¼ miles).—Vernisse (2½ Yvels-J.A.P.)	3	44	49
350 c.c. Class (193½ miles).—Meunier (2¾ Alcyon)	3	55	0
500 c.c. Class (193½ miles).—A. Bennett (3½ Sunbeam)	3	13	24⅘

GRAND PRIX DE LA F.M.B. (CIRCUIT DE SPA BELGIUM).
(August 18th, p. 210.)

	h.	m.	s.
250 c.c. Class (141 miles).—Kicken (2¼ Gillet)	3	9	41
500 c.c. Class (188½ miles).—H. W. Hassall (3½ Norton)	3	18	53

B.M.C.R.C. Annual Dinner.

Monday, November 28th, is the date selected for the annual dinner of the British Motor Cycle Racing Club.

Level Crossings.

Every level crossing should be guarded by gates; recently a Leicester motor cyclist was killed through this omission. This is a matter our motoring organisations might take up.

Season Tickets for the Show.

Season admission tickets for the Motor Cycle Show at Olympia (November 28th to December 3rd inclusive) are now available, price 7s. 6d. each, on application to the British Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., "The Towers," Warwick Road, Coventry.

Kickham Convalescent.

We are glad to know that E. Kickham, who was so severely injured in the Grand Prix Race, is back in England. His leg is still in plaster and his arm out of action, but there is every prospect of a complete cure. We congratulate him on his recovery, which the doctors say is due to his cheery optimism.

Roads Improvement.

The annual general meeting of the Roads Improvement Association will be held at the Chamber of Commerce, New Street, Birmingham, on Thursday, October 27th, at 7 p.m. The chair will be taken by the Earl of Denbigh.

Red Lamps on Motor Cycles.

Some doubt still exists in the minds of motor cyclists—and in the minds of the police!—as to whether or not motor bicycles need carry a rear red lamp at the present time; but we are assured by the Legal Department of the Auto Cycle Union that riders of solo machines are exempt. On the other hand, it is urged that, for the safety of the motor cyclist himself, without considering the convenience of the other road users, a lighted rear lamp should be carried after dark. The sight of a red lamp ahead is a considerable comfort to the overtaking motorist, no matter what type of vehicle he is driving, and is in itself a valuable protection to the user. There is no doubt at all that sidecarists must carry a rear lamp, but they have the option of lighting either the front or back number. This Order dates from 1913, but there is no order compelling the use of a rear lamp on a solo mount.

Closing Brooklands Meeting.

The final race meeting of the B.M.C.R.C. for the 1921 season will be held on Saturday, November 5th, and there will be three-lap handicap races for machines up to 500 c.c., from 500 c.c. to 1,000 c.c., and for passenger machines. Following these, there will be a winners' handicap for the first four finishers in each race. A five-lap championship race for machines between 500 c.c. and 750 c.c. will also be run. This should be a most entertaining meeting; and the handicap events will no doubt result in some close finishes.

THE SOPWITH CUP TRIAL. (See "Scrambling round Surrey.") Competitors on High Button Hill: L. Nicholson (2¾ Coulson - B), and A. G. Wall, whose mount is a 2¾ h.p. Cedos.

A Tang in the Air.

The time for leather helmets, thick gloves, and warm clothing is making evident its approach.

Lectures on Carburation.

Club secretaries who are arranging winter evening items in their programmes are advised to communicate with C. Binks (1920), Ltd., Eccles, Manchester, as this well-known firm of carburetter specialists has arranged a lecture on carburation, illustrated with lantern slides.

Utility Sidecars.

Several tradesmen's sidecars are exhibited at the Commercial Vehicle Show at Olympia, together with numerous light vans which would undoubtedly interest those of our readers who are tradesmen alive to the advantages of the ability promptly to deliver customers' orders. The current issue of *Motor Transport* contains a description of these exhibits.

British Machines in Holland.

Apropos the recent Anglo-Dutch trial, it is interesting to receive particulars showing the imports into Holland of motor cycles during July, 1921. These were as follows: German motor cycles numbered 107, Belgium 27, Great Britain 85, and United States 100. The totals for the first six months of this year were from Germany 568, Belgium 352, Great Britain 1,209, and United States 1,735.

A Commonsense View.

Some remarks on motor cycle trials recently expressed by the Northampton Borough Coroner, Mr. A. J. Darnell, are in refreshing contrast to the views put forward by various rural authorities who attempt to prohibit trials in their districts. The occasion was an inquest on a boy who was killed through a rider in a hill-climbing competition crashing into the spectators at speed. In summing up, the Coroner said that no blame could be attached to the rider, but he considered that where tests were held on narrow roads they should be attended only by club officials and the police. He was not saying that these trials were not necessary or desirable. It was just as well to hold these tests to show that England could produce a motor cycle as good as any other nation. We may add that Mr. Darnell is neither a motor cyclist nor a car owner, and his comments are, therefore, all the more valuable, but we fear that if the public were excluded the value of such tests would be lost.

A 2,500 MILE TRIAL IN FRANCE.

NEXT spring there will be held in France a motor cycle reliability competition of a more pretentious nature than ever previously attempted in that country, for the competitors will be called upon to make a complete tour around France, starting from Paris, following the coast line to the Pyrenees, skirting the Spanish frontier, following the Italian, Swiss, and Belgian frontiers almost as far as the North Sea, and then dropping down to Paris after having covered nearly 2,500 miles.

There is something in the idea of a *tour de France* which appeals to the Frenchman, for long before railways appeared it was the habit of young artisans to make a tour afoot around their country before settling down. Of later years the cyclist Tour de France race has become almost a national institution. From time to time there have been reliability tours around France for motor cars, but no such competition has ever been held for motor cycles. Starting from Paris on April 14th, the daily stages will end at Caen, Nantes, Bordeaux, Toulouse, Avignon, Nice, Grenoble, Besançon, Strasbourg, Rheims, Lille, and Paris, the average distance to be covered each day being in the neighbourhood of 200 miles. Regularity will be the basis of the competition, with penalisations for late arrival at the various controls. The organisation is in the hands of the Motocycle Club de France, which has just submitted the date and the rules to the approval of the governing body, the Union Motocycliste de France. Entry fees have been fixed at 1,000 frs. for one machine, 1,800 frs. for two, and 2,500 frs. for three, these amounts including insurance against fire risks and third party accidents. The event is international in character, and it is hoped that British riders will compete.

HAIRPINS—RIGHT AND LEFT.

Driving Ability, Ease of Steering, Hill-climbing, and Reliability Tested in the M.C. and A.C. Midland Centre Trial.

ALTHOUGH "this wonderful weather" did its literal best, it did not quite succeed in making last Saturday's M.C. and A.C. trial as easy as were many of the, so called, most difficult events of the year. Imagination fails to portray what would have happened had Saturday been wet, for, although 141 of the 141⅓ miles route were bone dry and 95% of the sixty-five starters finished, not 45% retained absolutely clean sheets.

The lightweights, for the most part with freak low gear ratios, and the Morgans and G.N.'s particularly distinguished themselves in what was a severe test, both of machines and driving ability; but, to penalise those with ultra-low gears, "a low gear acceleration test" was held on Saintbury, consequently the first point of interest on the route.

Special commendation is due to R. G. G. Beesley's plucky lady passenger, who never hesitated in leaving the 3½ Sunbeam sidecar when necessary. They are shown bouncing over the gulley at the top of Bussage.

Varying Speeds on Low Gear.

B. Kershaw (2¼ New Imperial) was extraordinarily fast, and as he performed very well later, he should be well in the running for one or two of the trophies. Others to show up well here were W. B. Gibb (3½ Douglas) and G. F. Povey (2¼ Velocette). W. A. Bown (2½ Bown-Villiers) and E. Neal (2½ Metro-Tyler) were surprisingly slow, but P. Aherne's Ner-a-car had quite a creditable turn of speed, for which he was to pay for later—a 9 to 1 bottom gear does not make a 2¼ h.p. lightweight a go-anywhere machine!

Apart from a surprise observed hairpin at Sheepscombe, it was fair going now to Stancombe Hill, although E. Arthur (3¾ Scott) somehow succeeded in breaking his frame in the neighbourhood of Andoversford. Wet leaves made the lower portion of the hill unexpectedly difficult, but the hairpin higher up was in good condition; and, excepting the Ner-a-car, all the soloists got up with varying degrees of confidence. Wheel slip troubled the sidecarists in general, and Reg. Brown (3½ Sunbeam in particular) so much so that he decided to retire there and then.

Next came a precipitous winding descent through a wood ("Caution" in block letters on the route card, but almost unnecessary in the absence of recent rain), and then Bismore—rocky, steep, but dry. F. Adam (3½ Norton) was one of the few failures, the result of a hair-raising dry skid.

Exactly a mile further on, Bussage was easily the most difficult hill of the morning's run. Approached suddenly by a left-hand turn the 1 in 4 bottom portion looked dry, but certainly was not; and W. F. Smith (2¼ Hobart) and A. Linforth (2¼ Armis) were early deceived, and failed. Bert Kershaw (2¼ New Imperial), J. Doherty (2¼ Levis), J. Lidstone (2¼ James), and J. Johnson (2½ Sun) made outstanding climbs among the lightweights. Of the heavier solo machines, R. W. Duke's Triumph and W. B. Gibb's 3½ h.p. Douglas were probably best. L. Paynter (3½ Norton) skidded and fell; but T. F. Blumfield (6 Ariel) made a clean and fast ascent despite a tendency to wobble. Both T. H. Richards (4 Triumph) and H. Prosser (3½ Ariel) held their legs out ready for skids which did not come, but a like precaution was not in vain in the case of J. H. Walker (6 B.S.A.).

One of the few sidecarists to make a clean ascent of Bussage was L. Newey (6 Ariel sidecar). The reason is on the carrier and weighs 18 stone!

Wheel-slip on Bussage.

On the whole, the sidecars made a poor showing. F. A. Watson (3½ Sunbeam sc.) and N. Hall (2½ O.K. sc.) both hung on to the railings at the side to prevent their outfits running back; while H. G. Uzzle's 8 h.p. New Imperial sidecar came up like a crab, but it had no claws, and stopped. Helped by his passenger on the carrier, T. R. Gibbons (8 Acme sc.) made a clean ascent of the most difficult portion, only to break a belt higher up. While he was getting out of the way, the drivers of the three Morgans improved the shining hour by fitting Parsons chains, and their subsequent ascents were in consequence very fine. So were the three G.N.'s, and particularly Eastwood's, which disdained the aid of "Mr. Parsons." L. Newey (6-7 Ariel sc.) found that his

Hairpins—Right and Left.—

eighteen-stone passenger on the carrier was a sure preventive of wheel slip; but T. F. Watson's (4 Norton sc.) young lady passenger would probably have been too light had she left the sidecar. The latter driver appeared much surprised at his failure.

Quite the finest sidecar climb was made by F. H. Brown (4 Rex sc.); but R. G. G. Beesley (3½ Sunbeam sc.), assisted by his plucky lady passenger, was also quite good. All the other sidecars had to be assisted.

Knapp Hill concluded the morning's difficulties. Perhaps the best performance on the hairpin here was made by N. Hall (2½ O.K. sc.), but J. Wraight on a similar mount did not do so well.

Hills came thick and fast after the lunch stop at Stroud; but the first of these, Bownham, certainly did not merit the dozen or so observers placed there. Kershaw—and, indeed, all the earlier lightweights—made light of the gradient; and J. Lidstone (2¼ James) was very unlucky to come off in a rut. Aherne, as usual, pushed the Ner-a-car up. Smith (2¼ Hobart) and both the O.K. sidecars failed; but Smith (on the 2¼ Morris sc.) made a wonderful ascent. J. L. Shaw's Morgan (without Parsons) failed; and Eastwood (G.N.), who had broken a magneto chain after Bussage, had apparently re-timed his engine in a hurry.

Rising Sun Hill did not trouble many on Saturday. H. Boynton (7 James sidecar) made a very fast ascent.

Giddynap, from a New Angle.

Most of the competitors knew Giddynap, but even the most pessimistic had no idea that it was to be taken with a sharp right-hand bend on to the steepest stretch, which is quite 1 in 3. It was a test of driving ability, more amusing to the spectators than to the drivers. The low-geared lightweights were again good; but Povey (2¼ Velocette), Linforth (2¾ Armis), and G. Mason (2½ Connaught), all footed. Aherne did not attempt it. J. P. Brettal (2½ Connaught) fell, and his trouser leg got mixed up with the primary chain; which happened first no one knew. C. L. Sprosen (on the third Connaught) whizzed round, but "conked out" in a yard or two. G. Hill (2½ Diamond) ran up a grass bank of 1 in 2, but recovered. W. Danskin (3½ Rudge) had a hectic time, but F. Sibley (similarly mounted) was good.

R. Duke (4 Triumph), W. B. Gibb (3½ Douglas), G. Butcher (3½ Sunbeam), and F. Adam (3½ Norton) were, in the order named, best of the soloists; C. Atcherley and H. J. Stretton Ward (both on Triumphs) had rough passages. A. E. Rollason, W. T. Woodcock, and T. Blumfield (on Ariels), L. Paynter (4 Norton), and F. Begley (4 Indian), all merited a "v.g." H. Prosser (3½ Ariel) tried to get round at speed, but did not succeed.

When the first sidecar (F. A. Watson's 3½ Sunbeam) danced round on one wheel and overturned, a relief party was quickly organised—and had a busy time! In an endeavour to keep the machine from lifting, Mrs. Bladder got too far on to the New Imperial carrier, and, defying all known rules, the *outside* sidecar wheel lifted. The first passenger machine to take the turn successfully was H. V. Collins's Norton. Then Hall's O.K., with a scared-looking passenger, repeated the unicycle stunt, but recovered; the second O.K. sidecar failed completely. L. Newey (6 Ariel sc.) and H. G. Uzzle (8 New Imperial sc.) were both good, as was T. F. Watson (4 Norton sc.), whose passenger seemed most unconcerned. After a remarkably fine climb, Smith (on the little Morris outfit) broke his belt. His active passenger did not avail Beesley (3½ Sunbeam sc.) this time, and it took four strong men to push the outfit up. Then, taking just the correct wide turn, H. Boynton (7 James sc.) made the star sidecar ascent of the day, and was only beaten by the three Morgans and two of the G.N.'s; Eastwood (on the third) failed after five or six spectacular attempts.

After this, the remainder of the trial seemed easy, and even Rising Sun caused few failures. Both the O.K. sidecars were good, but Smith's Morris was even faster—until his belt again broke.

There were time checks at Winchcombe and at the top of Willersey, and then plain sailing to the finish on the Birmingham-Alcester Road, which had also been the scene of the start.

The organisation was excellent; and the arrows, if not too judiciously placed, were plentiful.

KNOCK-OUT HILL-CLIMBING AT AYR.

THE Glasgow Motor Cycle Club brought its competition season to a close by holding a very successful knock-out hill-climb on the Asylum Brae, near Ayr.

The handicapping, which is always a difficult business, was good, and almost all the events were fought out within a few yards of the finishing line.

Douglas Alexander rode his experimental overhead valve Norton, the same as he had at Ballagoich, and although he seemed to have got a few more m.p.h. into it, he failed to catch George Kelly (2¾ A.J.S.) in the 600 c.c. class. When riding his 7-9 h.p. Indian, however, he won both the events in which he entered. The Barr and Stroud sleeve valve machine was the dark horse of the afternoon. It was ridden in the first five events by R. D. S. Barr and G. H. Wilson, and was only beaten by George Kelly in the 350 c.c. class. It was unfortunate that the magneto gave out at this stage, and it was withdrawn from the rest of the classes in which it was entered.

This is the first knock-out hill-climb held in the West of Scotland, and, from a spectator's point of view, it is to be hoped it will not be the last. It is undoubtedly more interesting to watch two men riding against one another than to see a solitary competitor riding against time. Results:

350 c.c. SOLO.—General: 1, G. H. Wilson (2¾ Barr and Stroud). Experts Barred: R. D. S. Barr (2¾ Barr and Stroud). Open Scratch: Geo. Kelly (2¾ A.J.S.).

600 c.c. SOLO.—General: G. H. Wilson (2¾ Barr and Stroud). Experts Barred: R. D. S. Barr (2¾ Barr and Stroud). Open Scratch: Geo. Kelly (2¾ A.J.S.).

1,000 c.c. SOLO.—General: Geo. Kelly (2¾ A.J.S.). Experts Barred: J. Beck (3½ Brough). Open Scratch: D. S. Alexander (7-9 Indian).

600 c.c. SIDECARS.—General: Geo. Kelly (2¾ A.J.S. sc.). Experts Barred: R. Watson (4½ Humber sc.).

1,000 c.c. SIDECARS.—General: D. S. Alexander (7-9 Indian sc.). Experts Barred: R. Watson (4½ Humber sc.).

CLUB NEWS

The club movement shows no tendency to decelerate its rapid march of development. Every town has its club; old boys' associations are finding a common interest in motor cycles—a happy means of preserving schoolmate friendships in manhood. Most large works, and large garages, too, have their motor cycle clubs. Above is seen a turnout of the employees of Messrs. Herbert Robinson, Ltd., the Cambridge agents, on the occasion of their recent trial.

Cardigan and District M.C. and L.C.C.

We are asked to make it clear that this club was not responsible for the hill-climb to have been held at Pentrecourt on the 6th inst., and which was apparently abandoned.

Birmingham M.C.C.

Although gold medals in the sporting trial (described in *The Motor Cycle* of the 6th inst.) could have been won by any competitor whose total marks were 95% of those of the best performer, only one qualified. B. Kershaw (2¼ New Imperial) won the silver cup for the best performance, and H. V. Collins (3½ Norton sc.) was the gold medallist.

Lincolnshire M.C.C.

There was not a very large entry, but some good riding and skilful gear manipulation was witnessed at the hill-climb on Willingham Hill on the 8th inst. The fastest time of the day was made by A. B. Hodgson on a 3½ h.p. Sports Sunbeam. Results:

275 c.c. SOLO.—1, Mrs. M. C. Jennison (2½ Velocette), 35⅘s.; 2, C. H. Gosling (2¼ Levis), 43⅕s.

350 c.c SOLO.—1, Mrs. Jennison (2½ Velocette), 35s.; 2, F. C. Cotton (2¾ Douglas), 37⅘s.; 3, G. H. Gosling (2¼ Levis), 51⅕s.

550 c.c SOLO.—1, A. B. Hodgson (3½ Sunbeam), 30⅕s.; 2, N. Plastow (3 A.B.C.), 33⅗s.; 3, A. M. Burgess (3½ Norton), 35⅕s.

750 c.c. SOLO.—1, A. B. Hodgson (3½ Sunbeam), 30⅕s.; 2, N. Plastow (3 A.B.C.), 30⅘s.; 3, J. T. Margrave (3½ Norton), 32s.

UNLIMITED SIDECARS.—1, A. B. Hodgson 3½ Sunbeam), 37⅗s.; 2, A. E. Robson (8 Zenith), 51⅗s.

Stourbridge and District M.C.C.

Results have now been announced of the annual autumn half-day trial, which was held on October 1st over an eighteen-mile circuit, covered twice, including the following hills: Hagley Wood, New Walton, Shut Mill, and Beacon.

WALLACE CUP, for Best Performance of the Day—Tie, J. Dosher (Enfield sc.) and F. S. Barnes (Sunbeam).

STOUR VALLEY CUP AND GOLD MEDAL: Best Performance by a Private Owner on a Machine under 275 c.c.—S. Downing (Velocette).

SILVER MEDALS.—J. Dosher (Enfield) and F. S. Barnes (Sunbeam).

BRONZE MEDALS.—D. Greig, G. L. Gardner, J. Brookes, W. Worrall (Sunbeams), E. Griffiths, W. E. Smith (Nortons), F. Ferriday, H. Robinson (Triumphs), A. E. Rock, S. Rock (Rocksons), and J. Lewis (B.S.A.).

TEAM PRIZE.—The "Cripples'" team: Messrs. Greig, Gardner, and Barnes (Sports Sunbeams).

Week-end Club Events.

Oct. 22.—West Kent M.C.C. Speed Judging Test.
Oct. 22.—Birmingham University M.C.C. Run to Twyford.
Oct. 22.—Liverpool M.C. Percy Butler Shield Second Half-day Trial.
Oct. 22.—Taunton and District M.C. and L.C.C. Annual Dinner.
Oct. 23.—Ilkley M.C. and L.C.C. Autumn Reliability Trial.
Oct. 23.—Halifax and District M.C.C. Run to York.
Oct. 23.—Sheffield M.C.C. Run to Budby Wood.
Oct. 23.—Rochester, Chatham, and District M.C. and L.C.C. Surprise Run.
Oct. 26.—Eastbourne and District M.C.C. Annual Dinner.
Oct. 26.—Leeds M.U. Whist Drive and Dance.

Uxbridge and District L.C. and M.C.C.

This newly-formed club held a very successful reliability trial to Eastbourne on October 2nd, with the Committee Cup as premier award. Results:

COMMITTEE CUP AND GOLD MEDAL: W. Milligan (3½ Sports Sunbeam).
SILVER MEDAL: H. Robinson (2¾ Wooler).
BRONZE MEDALS: H. S. Milward (3 A.B.C.) and R. Donaldson (3½ Norton).

North Wales M.C.C.

Four well-known Welsh hills—Alt-y-Bady, Dolywern, Sun Trevor, and Conquering Hero—were included in the club's sporting trial, which resulted as follows:

PREMIER AWARD (for the best performance of the day): W. Edwards (4 Powell).
GOLD MEDAL: J. O. Jones (4 Triumph).
SILVER MEDAL: J. H. Fox (4 Norton).
BRONZE MEDAL: W. Williams (5-6 Raleigh).
CLUB PRIZE: J. H. Davies (3½ Sunbeam), F. T. Jones (3½ Sunbeam), and W. Williams (5-6 Raleigh).

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes approximately an hour to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates on or after the Olympia Motor Cycle Show.

Herts M.C. and L.C.C.

Formed during the early part of the year, with H.Q. at Hatfield, the membership of this club has increased weekly, and several most enjoyable events have been organised. The competition season finished up a fortnight ago with a most successful map-reading and speed-judging contest over a course of eighty-five miles, for which there were nearly thirty entries.

Members are now being enrolled for next year, and all interested should write to the hon. sec., Mr. D. C. Archer, "The Hawthorns," Hoddesdon.

Coventry and Warwickshire M.C.

Results have now been worked out of the Manville Trophy trial, described in *The Motor Cycle* a fortnight ago. Eleven competitors in the motor cycle class lost no marks, but the acceleration test gave first place to R. A. Grindlay (3 A.B.C.), an A.B.C. thus winning the trophy for the second year in succession. G. W. Ravenhall (3½ Rover sc.) wins the gold medal in the sidecar class, while silver medals are awarded to all who lost no more than twenty marks.

Yorkshire Centre A.C.U.

At a Board meeting of the Centre, held in Leeds on the 10th inst., it was unanimously decided that the one open event which is to be allocated to the Centre for 1922 be a reliability trial. It was proposed by the Ilkley Club and seconded by the Bradford M.C. and L.C. Club that a "colonial" trial be arranged (worse than the Scott course) with a loop course for sidecarists. The Harrogate Club proposed that the event be run by the Centre officials, and not allotted to a club to organise. The Yorkshire Centre promises a real sporting event next year, and they can certainly provide *the* course. The next meeting of the Board will be at 4 p.m., Saturday, November 19th, at the Hotel Metropole, Leeds, to be followed by the first annual dinner at 6 p.m. the same day at the Victory Hotel, Leeds. It is hoped that Colonel Brereton and Mr. Loughborough will be present on this occasion.

Proposed Stranraer M.C.C.

Those interested in forming a club as above might communicate in the first place with Mr. D. Lang, 12, Hanover Street, Stranraer.

Stocksbridge and District M.C. and L.C.C.

On October 8th the club held its Thompson and Webb Trophy reliability run over the same course used by the Sheffield and Hallamshire M.C.C. on the annual Traders' Trophy run. The winners (now confirmed) are:

1, Len. Hayward (3½ Sunbeam); 2, W. Brown, jun. (7-9 Harley-Davidson sc.); 3, C. W. Hayward (5-6 Clyno).

Best Lightweight and Special Prize: H. Webb (2¼ New Imperial).

Loughborough and District M.C.C.

The club has arranged for the presentation of the East Midland Centre Cup to take place at the smoking concert, to be held on Friday, November 4th. A whist drive is to be held in the Corn Exchange on Wednesday, November 23rd, and it is also suggested that application be made for the use of *The Motor Cycle* cinematograph film of the principal events of the year.

Guernsey M.C.C.

On Thursday, the 6th inst., a successful reliability trial was run over a thirty-eight miles give-and-take course in Guernsey. The fifty-nine entries included nine from the neighbouring island of Jersey. Mr. Geo. H. Lock, local A.C.U. consul for Guernsey, was responsible for the organisation.

The premier award was the Thomson reliability cup, the full results being as under:

1, J. Roberts (2½ Coventry Eagle), single-geared; 2, S. Arnold (2¾ Douglas); 3, P. Manger (4 Verus-Blackburne); 4, A. Lewis (2¾ Douglas); 5, A. Candey, Jersey (4 Triumph).

An allowance of 20% was made for single-geared machines.

Leinster M.C.C.

A reliability trial from Dublin to Enniscorthy was held on the 8th inst., with the following results:

CAPTAIN'S CUP (for machines up to 350 c.c. solo, or sidecar machines up to 600 c.c.).—C. S. Maguire (4¼ Humber sc.).

CARTER-DRAPER CUP (for machines over 350 c.c. solo, or sidecar machines over 600 c.c.).—J. Brown (4 Douglas).

GOLD MEDAL.—J. Brown (4 Douglas).

SILVER MEDALS.—T. E. Green (2¼ Enfield), T. F. Slevin (2¼ Velocette), T. Henry (2¼ Velocette), J. A. Carvill (4 Triumph), R. Murphy (4 Triumph), G. A. Daly (4 Triumph), H. Adair (4¼ B.S.A. sc.), Hon. H. Massy (7-9 Harley sc.), F. Holmes (8 Enfield sc.), and R. Walsh (2¾ Coulson B).

BRONZE MEDALS.—J. W. Lacy (8 Sunbeam sc.), James Adair (4¼ B.S.A. sc.), John Adair (4¼ B.S.A. sc.), W. E. Gilmour (4 Douglas), P. Smyth (7-9 Indian sc.).

Redditch and District M.C.C.

The club's most important event of the season, a one-day reliability trial, with the B.S.A. and Terry Challenge Cups as premier awards, was held on Saturday, October 8th, over an interesting course, which embraced both the Cotswolds and the Clent Hills.

Forty competitors, comprising twenty-four solo, ten sidecar, and six cycle car riders, started from Redditch Gasworks, and followed the usual route to Saintbury Hill, where a re-start and low-gear speed test was observed. A colonial stretch over the Cotswolds brought the competitors to Winchcombe; and, after a loop to Rising Sun Hill, a return to Winchcombe was made for the purpose of a time check. Owing to the prolonged tropical weather, all hills were quite dry, and the going was so good that only five failures were observed on Rising Sun.

Shut Mill Hill—almost unrideable in wet weather—was also quite dry, but sufficiently severe to cause twelve failures, principally because of the deep ruts.

The provisional list of results is given below; and an observation of the few competitors to finish with 100% marks to their credit will indicate the severity of the course even under summer conditions. The trial was open to members of all the clubs in the Midland Centre A.C.U.

B.S.A. CHALLENGE CUP AND GOLD MEDAL.—B. Kershaw (2¼ New Imperial).

TERRY CHALLENGE CUP AND GOLD MEDAL.—H. Boynton (6-7 James sc.).

REDDITCH AND DISTRICT M.C.C. CLUB CUP.—L. Sealey (3½ B.S.A.).

GOLD CENTRE MEDALS (100% marks).—A. Norton (4½ B.S.A.), H. Walker (6-7 B.S.A.), L. Sealey (3½ B.S.A.), B. Kershaw (2¼ New Imperial), J. Dosher (8 Enfield sc.), H. Boynton (6-7 James sc.), and G. Silk (8.7 G.N.).

SILVER MEDALS (90% marks).—P. Howles (5 Brough), T. Weaver (2¼ Verus), G. Mason (2½ Connaught), R. Brown (3½ Sunbeam sc.), E. Smith (3½ Norton sc.), H. Malins (8.7 G.N.), J. Cave (8.7 G.N.), F. Bicknell (2¼ Enfield), and T. Wood (2¾ Verus).

BRONZE MEDALS (75% marks).—H. Ward (4¼ B.S.A.), J. Lidstone (2¼ James), C. Jenkins (4¼ B.S.A. sc.), and S. Lewis (6-7 B.S.A. sc.).

TEAM PRIZE.—E. Smith (3½ Norton sc.), B. Kershaw (2¼ New Imperial), and T. Weaver (2¼ Verus).

Woolwich, Plumstead, and District M.C.

More detailed results have now been issued of the Matchless Cup open trial, which was described last week. Results:

MATCHLESS CUP AND GOLD MEDAL.—C. R. Collier (8 Matchless sc.).

FIRST-CLASS CERTIFICATE AND GOLD MEDAL.—G. E. Stacey (2¾ Verus), P. Cunningham (3½ P. and M. sc.), and W. B. Mills (6 Clyno sc.).

FIRST-CLASS CERTIFICATE.—T. J. Ross (8 Matchless sc.), R. B. Clark (8 Matchless), F. O'Brien (8 Matchless sc.), S. A. McCarthy (5 Stanger), F. J. Watson (6 Ariel sc.), F. W. Giles (7 A.J.S. sc.), R. G. Mundy (7 A.J.S. sc.), and W. C. Hemy (7 A.J.S. sc.).

TRADE TEAM WINNERS (Gold medals).—F. W. Giles (7 A.J.S. sc.), R. G. Mundy (7 A.J.S. sc.), and W. C. Hemy (7 A.J.S. sc.).

SOUTH-EASTERN COUNTIES INTER-CLUB CUP WINNERS.—Woolwich, Plumstead and District M.C. Team A: C. R. Collier (8 Matchless sc.), T. J. Ross (8 Matchles sc.), and A. H. Ilsley (8 Matchless sc.).

BEST PERFORMANCE BY A WOOLWICH CLUB MEMBER (outside the Matchless Cup winner).—F. O'Brien (8 Matchless sc.), Duncan Best Cup and gold medal.

BEST PERFORMANCE BY A LADY.—Mrs. M. Hardee (8 Matchless sc.), special prize.

BEST PERFORMANCE IN THE TRIAL (outside the Matchless Cup winner).—F. J. Watson (6 Ariel sc.), gold medal.

"THE MOTOR CYCLE" FILM.

Enthusiastic Reception of the Cinema Record of 1921 Events.

APPLICATIONS for *The Motor Cycle* film are already pouring in, and those clubs which wish to book a definite date are advised to lose no time in making their preliminary arrangements. As far as possible dates will be allocated in order of receipt, but future suggested dates should be after the Show at Olympia (November 28th-December 3rd).

Club secretaries are, in some cases, arranging with their local cinema managers; there is little difficulty in arranging the inclusion of a film such as *The Motor Cycle* record of 1921 events as an addition to the usual programme. As a spectacular picture it is almost as interesting to the general public as to the enthusiastic motor cyclist. This scheme overcomes the difficulty of hiring a special hall, projector, and screen, which more ambitious proposal is being adopted by some of the A.C.U. centres.

Tabloid History of the Year.

Many of our readers have no doubt already seen fleeting glimpses of the T.T. on the screen—incidents that are just becoming interesting when—flicker!—a fashionable wedding or foundation stone laying abruptly breaks the spell. For a whole hour *The Motor Cycle* film shows motor cycle history being made, not only in both Tourist Trophy Races, but in the 500 miles race at Brooklands and the A.C.U. Six Days Trials, and, to lend variety, there are several exciting scenes from this year's car Grand Prix at Le Mans.

Club secretaries who have already made applications will be informed as soon as possible if their suggested dates are confirmed. Enquiries should be addressed to the Editor (Film Dept.), *The Motor Cycle*, Hertford Street, Coventry.

EASTERN CENTRE PREMIERSHIP.

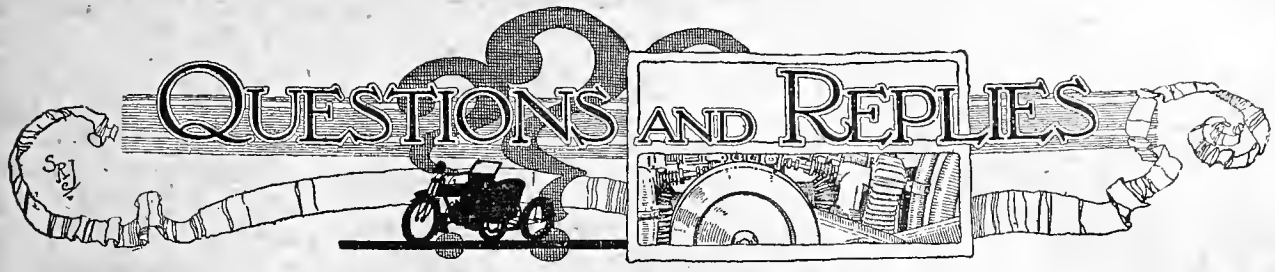
ON Saturday, the clubs comprising the Eastern Centre A.C.U. held a reliability premiership trial. The start took place from the Great White Horse, Hintlesham, nr. Ipswich, and the course consisted of a circuit of thirty miles covered four times, making 120 miles in all. Much of the surface was of a "colonial" nature, including several watersplashes, some of these being very deep. Not a single competitor made an absolute non-stop run. Marks were given for reliability, and there was also an engine starting test (held after the lunch stop), competitors having to start their engines within five seconds. In the afternoon, a slow-running test was held on a gradient, the maximum speed allowed being 5 m.p.h. This was followed by an acceleration test, in which the best man in each class established a standard, the others losing marks proportionately. L. F. McCardie (7-9 Harley-Davidson sc.) made the best performance of the day. Results:

350 c.c. CLASS.—S. M. Greening, Essex M.C. (2½ Verus-Jap), silver medal; H. W. Harrington, Essex M.C. (2¾ Douglas), bronze medal.

500 c.c. CLASS.—T. P. Hemsman, Norfolk M.C. and L.C.C. (3 A.B.C.), silver medal; E. H. Gowing, Norfolk M.C. and L.C.C. (3½ Sunbeam), bronze medal.

750 c.c. CLASS.—E. A. Colliver, Essex M.C. (4 Indian Scout), gold medal; W. J. Pretty, Ipswich and District M.C.C. (4 Triumph), silver medal; C. E. Dansie (4 Harley-Davidson), silver medal; E. T. Elliott, Essex M.C. (4 Indian Scout), bronze medal.

1,000 c.c. SIDECAR CLASS.—L. F. McCardie, Ilford M.C.C. (7-9 Harley-Davidson sc.), gained premier award and gold medal; H. W. Wheeler, Norfolk M.C. and L.C.C. (8 New Imperial sc.), bronze medal.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

A MAGNETO TO DYNAMO CONVERSION.

Is it possible to convert a Dixie magneto into an a.c. dynamo? If so, would you please tell me what length and gauge of wire to use in the armature? I want it to illuminate about two six volt lights. —J.H.H.

It would no doubt be possible to convert the Dixie magneto into an a.c. generator, but the instructions for so doing cannot possibly be given in a paragraph. You should obtain a simple handbook, such as can be bought at any good booksellers, on the making of small electrical instruments, in order to gather a general idea as to the method of procedure. We would suggest that 20 gauge or 22 gauge cotton-covered wire would be suitable. Get as much as possible on to the original armature core.

CARBURETTER ADJUSTMENT OF OLD ENGINE.

(1.) Some time ago I bought a Binks carburetter for my 1910 2¾ h.p. Douglas. When received, the jets were 0, 3, and 7 respectively, but with these the consumption was abnormal. Now I use 000, 00, and 2, and still cannot get more than 40 m.p.g. Everything seems all right; no leakage past the jets, or any other part of the carburetter. I wonder if the jets are still too large, as when extra air is admitted the machine gains speed. I tried for air leaks round the induction pipe with petrol, but all was tight. The speed, I may say, is anything from 28 to 30 m.p.h. with a.o.i.v. (2.) The spark occurs at top dead centre with the lever threequarters retarded. Is this correct? (3.) As there seems to be a waste of power with the lever fully advanced, would I gain anything by timing the spark to occur at top dead centre, the lever fully retarded.—F.S.

(1.) If the speed increases permanently when the extra air is opened (on all the jets) it is is evident that the mixture is too rich, and smaller jets should be fitted. Try 0000, 000, and 2, and if these do not give a satisfactory result, write to the makers of the carburetter. It is just possible that the high consumption is due to some other cause, such as excessive belt slip, or faulty compression, or weak valve springs. (2.) The spark is timed more or less correctly, but it might be retarded a little. (3.) The most suitable timing would be for the spark to occur when the piston is on top dead centre with the control lever two-thirds retarded.

REPLACING SINGLE WITH TWIN ENGINE.

I am running an Invicta with 500 c.c. Abingdon engine, and am thinking of fitting a 5 h.p. twin J.A.P. I take it that owing to the more even torque and less impulse per cylinder, the frame would not be stressed any more than at present. Will you be good enough to give me your opinion as to this?—C.F.B.

You will be quite safe in fitting the 5 h.p. twin-cylinder engine to a frame which was designed for a 500 c.c. single-cylinder. As you suppose, the more even torque and smaller impulses will stress the frame even less than the normal engine does.

Important Dates.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Sat., Nov. 5th—Midland Centre A.C.U. Open Reliability Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

CHANGING A GEAR BOX.

A 6-8 h.p. Campion-Jap combination (late 1916), which was fitted with a four-speed Jardine gear box, became unserviceable owing to someone tampering with the kick-starter and clutch, and the gear box was rendered irreparable. However, I am thinking of having a Sturmey-Archer gear box fitted, and wish to know (1) whether there will be much alteration to be made on the machine; and also (if there is not) (2) how I shall have to set about the conversion? The machine is a chain-cum-belt drive.—F.R.J.

(1.) It will probably be necessary to have a bracket suitable for carrying the Sturmey gear box, brazed into the rear stays of the machine. (2.) It would be best to consult the makers of the machine, as they have now adopted this make of gear box as standard, and could probably supply a complete conversion set.

ADAPTING A DYNAMO.

I have a dynamo developing six volts two ampères at 3,000 r.p.m. Will you please tell me if this could be suitably fixed up to light a head light on a countershaft Triumph; and, if so, would you mind telling me what you would consider the best method of carrying this out? Would it be possible to light the lamp direct from the dynamo?—W.S.W.

Not knowing the dynamo which you mention, it is impossible to give you a definite answer; but, in all probability, it is one designed to run at a constant speed, and possibly also may not be suitable for use in a position where it would be exposed to the weather. If there is no speed or output regulating device it will certainly not be satisfactory to use it on a motor cycle, since its speed would be continually fluctuating. It would be absolutely essential to use accumulators in the system; if the lamps were directly connected their life would be short.

COMPLETING A PURCHASE.

Having paid a deposit of £1, leaving a balance of £26 10s., on an old sidecar outfit, I do not wish to go any further with the matter, but unless the balance is paid within a week the seller has threatened me with county court proceedings. I have signed no form or agreement with him, but have admitted the payment of £1 in a letter. Can he compel me to complete the payment? If so, have I the right before paying the balance of demanding him to prove to me, in an actual test, that the machine will do what he has claimed for it, *i.e.*, is an excellent hill-climber, with plenty of power and in perfect running order? To do so, he would first have to take out a licence, which, I presume, he is not willing to do.—J.C.

The payment of a deposit on account of the price of the machine constitutes a contract to complete the purchase, and the owner will be within his rights if he takes steps to obtain the balance. Apparently there is no obligation on his part to demonstrate the machine; but, if it does not conform to his guarantee when you receive it, you might recover some portion of the purchase price if you take action against him for misrepresentation. If you do not complete the purchase there is nothing to prevent the owner selling the machine for the best price possible and suing you for the difference between what he obtains and what you should pay.

READERS REPLY.

A KNOCK AT SPEED.

With reference to "A.R.H.B.'s," "H.H.C.A.'s," and others' remarks and tips about the Junior Triumph in your issues of September 1st and 22nd, I own such a machine, which has served me in a similar manner to your correspondents. The metallic clanking after climbing long hills on top gear is certainly due to enlargement of the deflector sides. Mine used to scrape the cylinder, but I filed both sides to give a slight clearance, and that noise did not recur, as I recently climbed a hill three miles long on top gear, rise about 800ft., and had no sign of the noise at all. Regarding sticking of the top piston ring, mine always got stuck near the peg. I fancy this is due to the peg boss being so near the underside of the deflector that that little lump of metal permanently distorts the ring slots. I have in some measure cured my trouble by emery papering and filing the top of the ring for about half an inch or so each side of the slit. To keep the top of the deflector as free as possible from overheating, it is advisable thoroughly to scrape out the carbon inside the deflector. I recently obtained just under ½ oz. from underneath mine. With regard to magneto timing, mine was timed in the orthodox way; but as I could not get more than about 18-20 m.p.h. with this, I experimented, and found the best position to be with the lever fully retarded, the points breaking with the arrow at six minutes to twelve. It is just possible that there is a certain amount of lag in my magneto, which is a Bosch. With this setting and spark lever two-thirds advanced, the machine will hum along at nearly 30 m.p.h. without any sign of overheating or distortion, gentle rises or long slight up grades making very little difference to the pace. I might mention that the crank case compression, bearings, rings, etc., are in as good order as possible, and the compression with the engine either cold or hot as near perfection as no matter. The slits in the exhaust pipe should be scraped out and kept open, and the pipe kept as free from deposit inside as possible. The squashed end, if made as near circular in section as it can be, assists matters considerably. The exhaust system would benefit if an auxiliary pipe were added in substitution for the left end plate of the exhaust box. This makes a great improvement, and necessitates less frequent cleaning of the present pipe fitted as standard.—C.A.F.

EXPERIENCES WANTED.

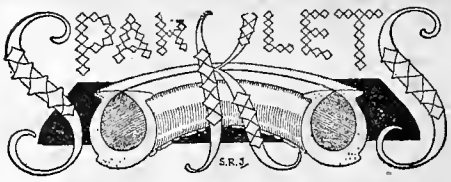
Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

T.T. Rudge-Multi solo; speed on hills, with sidecar: Consumption with makers' or other carburetter.

"G.A.P." (London, N.W.1.).—1921 T.T. Rudge Multi solo: Speed on hills, consumption, belt wear, noise of o.h.v., reliability, and comfort.

"G.W.C." (Wallasey).—1920 4½ h.p. Quadrant with sidecar: General performances, reliability, consumption, and speed.

"I.R." (Banwell). — F.E.W. valve attachments on single-cylinder.



In Denmark.

Eight hundred kilometres (approximately five hundred miles) were covered in a recent twenty-four hours trial held at Copenhagen. Two Wolf lightweights, with Villiers engines, were successful in completing the course without loss of marks.

Found on the Road.

Mr. P. Butcher, of 257, South Street, Garrowtree, Rotherham, found a lady's black mackintosh between Bubwith and Selby on the 2nd of this month, while on the day previous a 6 volt dry battery was picked up near Hailsham by the Rev. G. H. West, of St. Christopher's, Eastbourne.

Show of Used Vehicles.

It has been decided to hold the third automobile show of used motor vehicles in the City Hall, Manchester, from November 5th to 19th. A motor bicycle anticipated to fetch a price up to £75 if of 1921 or 1920 manufacture will be admitted on payment of £2; 1919, or earlier, £2 10s. Sidecar outfits and cycle cars, 1921-1920 models, £2 15s.; 1919, or earlier, £3 10s. If the desired price is up to £100 the entry fee would be increased 5s.

Mr. W. Glass, 12, Buckingham Street, Strand, London, W.C.2, the organiser of the show, has arranged for this to take place immediately before the Olympia Motor Cycle Show, so that it gives motor cyclists anxious to buy new machines a chance of selling their old mounts.

Works Trials.

The prize distribution in connection with the recent Humber trial took place early this month at a social gathering under the presidency of Col. Cole, O.B.E., managing director of Humber, Ltd. Efficiency certificates were awarded to 66% of the entrants in the trial.

The first motor cycle competition ever organised for the employees of John Marston, Ltd., was held on Saturday, October 1st. It consisted of a mixture of paperchase, distance-judging, and speed-judging. Mr. A. S. Bowers (managing director) acted as starter. Mr. J. E. Greenwood (designer) was "hare," and Messrs. T. C. de la Hay and P. W. Bischoff shared the timekeeping and checking.

Each rider was given a different (and secret) speed at which to ride, and he had to find and follow the course and finish as near to his time as he could guess it, watches and speedometers being barred. The winner was A. Cowan (2¾ Sunbeam sc.). The speed set him was 14.41 m.p.h., and he was only 8s. out at the finish. N. W. Bowkett was second, and C. E. Greenwood third. There was also a sweepstake on estimating the exact distance, which was 28.8 miles. Cowan's passenger, M. Harper, was only 362 yards out. After the finish, a large party sat down to tea at the Stewponey Hotel. The next Sunbeam works competition is fixed for Saturday next.

Stabilising Second-hand Values.

A scheme whereby they are prepared to allow 75% of the catalogue price for any machine purchased from them if returned in good condition within twelve months is being inaugurated by Vivian Hardie and Lane, Ltd., 24, Woodstock Street, London, W.1.

A Useful Oilcan.

In order to popularise their motor cycle oils Alexander Duckham and Co., Ltd., have offered to present a quart can of motor cycle oil to any reader who cares to apply for one at their City Depot, 4, Broad Street Place, London, E.C.2. All the reader has to do is to mention *The Motor Cycle* and to state the particular machine for which the oil is intended. The cans are fitted with telescopic spouts.

It is interesting to note that R. Croucher, who rode an 8 h.p. Matchless sidecar outfit in the A.C.U. Six Days Trials, used Duckham M.C.6 oil, and showed a consumption of 1,557 m.p.g.

The A.A. and M.U. Handbook.

The new edition of the Automobile Association and Motor Union handbook, which is issued annually to members, contains a vast amount of information for motorists, including taxation regulations, particulars of licence cards, and conditions which must be observed when buying or selling new or second-hand motor vehicles. A considerable portion of the book is devoted to the advantages of membership and to the services rendered to members by the A.A. road patrols. The Association is gradually replacing the pedal cycles by motor cycles, giving the road organisation greater mobility, and allowing the patrols to cover larger areas. Another interesting development is the provision of road service outfits carried on sidecars. The Association has also issued a road map of London so as to allow members to get from central or other points of London on to the main arterial roads, and also to enable motorists who are travelling from one side of the Metropolis to the other to traverse a route which avoids the more congested portions. On the back of the map is an excellent street plan of London.

Catalogues Received.

Dunlop Rubber Co., Ltd., 41, Easy Row, Birmingham: Revised lists of motor cycle tyre and belt prices.

Ferodo, Ltd., Chapel-en-le-Frith, Derbyshire: Catalogue of Ferodo friction linings for brakes and clutches.

John Marston, Ltd., Sunbeamland, Wolverhampton: A handsome brochure, describing Sunbeam performances in the Senior T.T. races of 1914, 1920, and 1921, as well as in the last French Grand Prix.

Cromwell Engineering Co., 327, Putney Bridge Road, London, S.W.15: Spare parts lists of the Sturmey-Archer three-speed countershaft gear and of the Sturmey-Archer and Armstrong motor cycle hub gears, together with hints on fitting and adjusting.

Allen-Liversidge, Ltd., 106, Victoria Street, S.W.1. In addition to the manufacture and supply of cylinders of dissolved acetylene and motor cycle lamps, this concern makes a speciality of and catalogues oxy-acetylene welding and cutting equipment, which is largely used in the motor and motor cycle trades.

Don't give it up!—

There is no reason why you should give up motor cycling for the winter. With proper clothing, and the right machine you will find it just as cheap, just as quick and convenient, and even more sporting and enjoyable than summer riding.

But treat yourself to the right machine. Examine the design and finish of the Beardmore-Precision. For its first cost you get first-class value. Then—it is cheap to run and maintain; simple, safe, and comfortable to drive; and can be hosed down in three minutes after a muddy run, and left to dry without damage.

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BEARDMORE
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THREE MODELS.

At £85: The luxurious spring-frame Beardmore-Precision, with:—The Precision 350 c.c. two-stroke engine, developing over 4 h.p. Detachable cylinder head. Automatic lubrication. Precision patent two-speed in unit with engine. Clutch and kick-starter. All-chain drive with shock absorber. Full Cantilever spring frame. Petrol tank (two steel pressings welded together), mudguards, and toolcase form part of frame. Band brakes. Footboards and legshields in one. All-black finish.

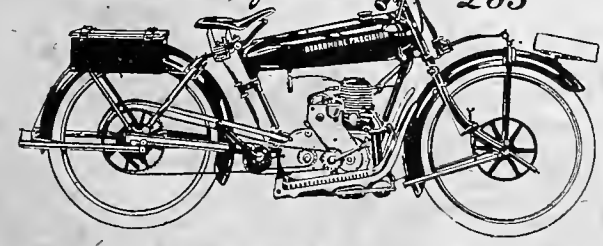
At £105: The Sports Sidecarette. Same as the Standard, but minus the rear springing. Light sporting coach-built sidecar, with water-proof cover-apron and windscreen complete.

At £75: The Sports Solo. Same as the Standard, but minus the rear springing; Sturmey-Archer two-speed gear box with kick-starter and clutch: chain and belt drive; belt rim rear brake, and foot rests; weight, 198 lbs.

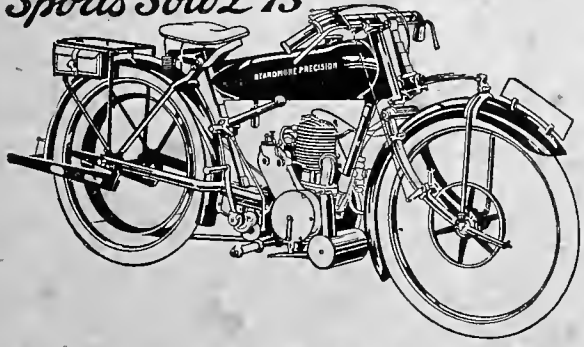
Both Sports Models have also a lighter pattern of rear mudguard, carrier, and stand, and one toolbag. Any model can be fitted, if desired, with the B.T.H. Sparklight electric lighting equipment at the following prices, which include all lamps, wiring, and fitting:

Solo .. £7 10 0 Sidecarette .. £8 10 0

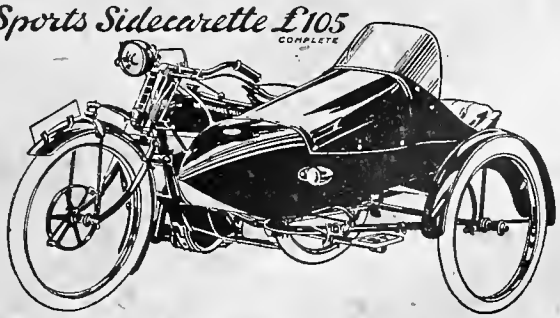
Standard Spring Frame £85



Sports Solo £75



Sports Sidecarette £105



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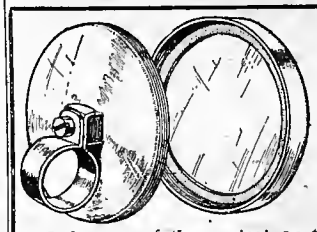

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THE MOTOR CYCLE.

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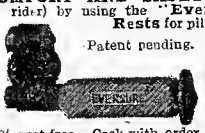
COMFORT AND SAFETY
(for driver and rider) by using the "Eversure" Foot Rests for pillion seat riders.



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An even balance, No side slipping.

A child can fit it.

Small cost.

Price 7/6 pair, 8/- post free. Cash with order. Special terms to the trade. Standard size, ⅞in. Other sizes to order. Fixed on back stays of machine.—**G. NICHOLLS,** The Central Garage, 103, Little Park St., Coventry. Tel. 1260.

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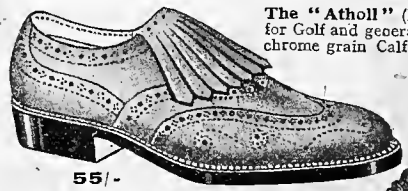

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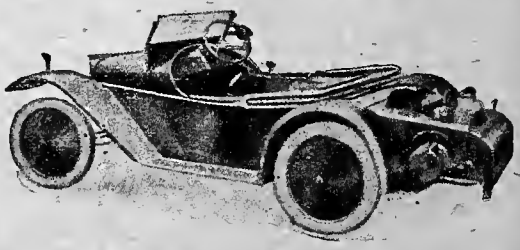

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A.B.C.

A.B.C., new January, 1,500 miles, dynamo lighting, perfect condition; £105.—26, Liverpool Rd., Thornton Heath. [5032

1920 A.B.C., hardly scratched, in beautiful condition, every fitting, full equipment; £80.—Cullum, 79, High St., Eton, Bucks. [4519

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A.B.C.

1920 3h.p. A.B.C., dynamo lighting, perfect condition throughout, not done 1,000 miles; £90.—Baines, 166, Belgrave Gate, Leicester. [X0974

A.B.C., 1920, 3,500 miles, splendid condition, electric lighting, licensed, insured, 120 m.p.g.; £85.—Dawson, Birkby Grange, Huddersfield. [5203

A.B.C., 3h.p., new January, 1921, 4-speed, semi-T.T., accessories, tax, insurance, almost new; bargain, £85; well worth inspection.—164, Broadfield Rd., Catford. [5050

1920 Dynamo A.B.C. Combination, Gracemill aluminium body, well equipped; £105, or exchange 1921 2¾h.p. A.J.S. and cash; Berkshire.—Box 73, c/o *The Motor Cycle.* [X0907

A.B.C. Combination, 1920, dynamo lighting, speedometer, spares, A.B.C. sidecar wind screen, 3,000 miles, recently overhauled; £120; Ealing.—Box 79, c/o *The Motor Cycle.* [4709

A.B.C. 1920 Combination, dynamo model, with Swan sporting sidecar, fully equipped, including speedometer and licence; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4818

A.B.C., 1920, perfect condition throughout, fast, powerful, and reliable, very easy starter, Palmer tyres, very economical in petrol (about 100 m.p.g.) and in oil, tax paid, spring frame, Brooks saddle (No. B175), 4 speeds, semi-T.T. handle-bars; £95.—Box 59, c/o *The Motor Cycle.* [X0565

Abingdon.

4h.p. 1914 Abingdon, 2-speed, countershaft, h.b.c., clutch; £29.—33, Snell's Park, Edmonton. [4724

3½h.p. Abingdon, countershaft 2-speed; £35; exchange lightweight.—Hale, Bourts, Lydbrook, Glos. [4575

3½h.p. Abingdon, clutch, Bosch, Senspray, licensed, perfect running order; bargain, £25.—Middleton, 35, Millais St., Albany Rd., Camberwell, S.E.5. [5053

A.J.S.

A.J.S. Motors.—Make appointment at Olympia with Geo. Merrick, 174, Listerhills, Bradford. [4577

A.J.S. 2¾h.p., 1915, 2-speed, clutch, excellent little machine; £32.—Bent, Main St., Ratby, Leicester. [X0934

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0637

A.J.S. Combination, 1921, small mileage, accessories, fully insured; £170.—St. Trinians, Manor Rd., Weston-super-Mare. [5052

1920 A.J.S. Combination, complete, side curtain, electric lighting; bargain, £160.—45, Waterlow Rd., Highgate Hill. [4506

1920 (Oct.) A.J.S. Combination, Binks, Cowey, dynamo, mileage 6,000, rebushed; £185.—88, Chestnut Rd., West Norwood. [5109

A.J.S. 1919 Combination, lamps, horn, speedometer, first-class order; £125, or near offer.—G.B., Vicarage, Holmes Chapel, Cheshire. [4375

A.J.S. Combination, 1920, 6h.p., small mileage, Lucas lamps, speedometer, spare wheel, hood, etc.; £140.—Harrison, 5, Vernon Av., Blackpool. [4566

1918 6h.p. A.J.S. Combination, complete, best accessories, spare wheel, screen, good condition; £120. Liverpool.—Box 72, c/o *The Motor Cycle.* [X0903

1920 A.J.S. Combination, licensed and insured, lamps, 3 generators, Klaxon, speedometer, hoods, spares; £155.—Bonner, 117, Charlotte St., W.1. [4390

A.J.S., 2¾h.p., sports model, completely equipped; £95. — Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

1918 A.J.S. Combination, 6h.p., fully equipped, lamps, spare wheel, Easting, perfect, any trial; £125.—38, Hazeldene Rd., Goodmayes, Ilford. [4349

1917 A.J.S. Combination, 2-seater sidecar, spare wheel, hood, screen, speedometer, lamp set, Tan-Sad, new tyres; £118.—25, Vernlam Av., Walthamstow. [4861

A.J.S. Combination, 1920, dynamo lighting, electric horn, hood, screen, speedometer, many spares, as new; £155.—Ratcliffe Bros., 200, Gt. Portland St., W. [5198

115 GNS.—1919 A.J.S. combination, complete with lamps, etc., splendid condition; very great bargain.—Julian, 84, Broad St., Reading. 'Phone: 1024. [4580

A.J.S. 1921 7h.p. Combination, as new, mileage 2,000, hood, side screen, all lamps, perfect condition; £195.—Findlay, 28, Borough Rd., Burton-on-Trent. [4571

A.J.S. Late 1919 6h.p. Combination, spare wheel, speedometer, watch, hood, lamps, etc., very good condition; £140.—Pfundt, 13, Birkhurst Rd., South Croydon. [4645

A.J.S. 1920 6h.p. Combination, spare wheel, speedometer, Binks, electric lighting (4 volt accumulator); nearest £130.—Evered Davies, Castle St., Aberystwyth. [4805

MOTOR CYCLES FOR SALE.

A.J.S.

2¾h.p. A.J.S. Combination, specially built this year, sporting, perfect, fully equipped, smartest on road; bargain, 100 gns.; photographs or trial.—14, West St., Wolverhampton. [4410

1919 A.J.S. Combination, spare wheel, hood, screen, speedometer, pillion, etc., tax, insurance, splendid condition; trial by appointment; £120.—Weobley, 11, Manor Rd., Rugby. [X0947

A.J.S. 1914 5-6h.p., with Swan sidecar, in excellent mechanical order, electric lighting (accumulator), engine recently overhauled; £70.—Apply, Box 6,940, c/o *The Motor Cycle*. [4621

A.J.S. 1919 Combination, well equipped, and in perfect mechanical condition, hood, screen, luggage carrier, etc., licence paid; £110.—West London Garage, Kenley St., Princes Rd., W.11. [4920

A.J.S. Combination (Oct., 1919), 3,200 miles, hood, speedometer, lamps, Tan-Sad, special saddle, etc., insured to August, 1922, like new; £130.—Parish, Shortheath, Farnham, Surrey. [4350

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

A.J.S. 1920 6h.p. Combination, completely equipped, Lucas lamps, Tan-Sad, Easting, special fitted tool box, owner driven, smart, perfect condition; £140.—Pewsey Motor Co., Pewsey, Wilts. 'Phone: 16. [5011

1920 A.J.S. Combination, in perfect order, recently overhauled by Messrs. Taylor and Co., P. and H. and Lucas lamps, B. and B. pilot jet, Tyneside, Stewart trip speedometer; £140.—Box 6,950, c/o *The Motor Cycle*. [5192

1920 A.J.S. 6h.p. Combination, excellent condition, new Sept., 1920, complete with 3 lamps, horn, licence, spring seat-pillar, and spare wheel; £165, or near offer.—Apply, R. W. Holloway, Westergate House, Arundel, Sussex. [4606

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A.J.S. 1921 Combination, latest model, brand new, slightly shop-soiled; genuine end-of-the-season bargain; complete, with interchangeable wheels and spare, £175; list price £195; exchanges entertained.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

A.J.S. 1919 6h.p. Combination, grand condition and appearance, Lucas lighting, air pillion seat, screen, spare wheel, all necessary tools, new spare chain and inner tube, several other spares, licence to Dec., also £180 insurance policy (transferable) to June next; a real bargain, £145.—Harrison, 69, Borton St., Hulme, Manchester. [4312

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3983

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

Alldays.

1916 Alldays Allon, 2¾h.p., spleadid condition; £35.—Symes, 22, Ceylon St., Battersea. [4455

ALLDAYS Allon, 1917, good condition, tyres, lamp set and horn (new); £37/10.—237, Broadway, Bexleyheath, Kent. [4866

1921 (March) Alldays Allon, lamps and all accessories, splendid condition; £70.—J. Stafford, 26, Sherbrooke Rd., Fulham. [3036

1921 Alldays Allon, fully equipped, including speedometer, mileage under 500; a gift, £65.—Jones Garage, Muswell Hill, London, N.10. [4259

ALLDAYS Allon 1917 2¾h.p., 2 speeds, clutch, thoroughly overhauled, lamps, tax and insurance, condition and appearance excellent, speedy; £40, or near.—Dodd, 104, Plough Rd., Battersea. [4329

American X.

8-10h.p. American X., 3-4-seater sidecar, electric, suit family or taxi, guaranteed; photo.—McDonald, 35, Park Rd., Ilford. [4965

1920 American X Combination, 3-speed, kick starter, lamps, spares; exchange oil engine or solo and cash; offers.—Nodder, Ashover, Chesterfield. [X0798

£90.—American X Combination, 7-9h.p., in good running order, all accessories, etc., tax paid.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [5122

AMERICAN X, 1920, dynamo lighting, Renoec sidecar, screen, very powerful; £97/10; exchange or deferred.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4790

£52 Below List Price.—Special offer of new latest model American X, royal blue finish, 27×3½ tyres, etc.; £165; easy payments only 4% extra; write for special clearance list.—The Premier Motor Co., Aston Rd., Birmingham. [5075

Ariel.

3½h.p. Ariel. See advt. No. 4423, under Harley-Davidson. [4424

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Wonderful Value.

LEVIS TWO STROKE

SHOP-SOILED MODELS.

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Ariel.

ARIEL 1914 3½h.p., good condition; £30.—202, Trinity Rd., S.W.17. [4441

DAN GUY, Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0689

1920 3½h.p. Ariel, lamps and speedometer, as new; £78.—Ross, 86, High Rd., Lee. [4474

ARIEL 3½h.p. Model, slightly shop-soiled; £90 for quick sale.—Autoveyors, Ltd., Service Dept., 4-12, Palmer St., S.W.1. [0468

ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

1920-21 3½h.p. Ariel, complete with all accessories and speedometer, sporting sidecar, guaranteed perfect; £95.—Jones Garage, Muswell Hill, London, N.10. [5124

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £155; no extra charge for easy payments. [5102

ARIEL 6-7h.p. 3-speed Countershaft Combination, screen, lamps, good condition; £59.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4786

ARIEL Combination, 1916 5-6h.p. twin, lamps, etc., 3-speed, K.S., sound condition; £80, or exchange late Allon and cash; weekdays after 6 p.m.—1, Ardgowan Rd., Catford. [4629

ARIEL Combination, 3-speed, counter, sheet, electric lighting, electric horn, Easting, speedometer, insured, tax paid, spares; trial; very smart; photo; £95.—97, Scotts Rd., Leyton. [3885

ARIEL 4½h.p. 1921 Combination, lamps, horn, speedometer, done under 2,000 miles; owner buying 1922 model Ariel; £140.—Anderson, 36, Buddon Terrace, Newcastle-on-Tyne. [5085

ARIEL 1915-16 6h.p. Twin, countershaft, lamps, horn, tools, tax paid; ride away; Ariel sidecar, hood and wind screen; £80.—Gore's Motor Works, Railway Rd., King's Lynn, Norfolk. [4677

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

ARIEL Combination, 3½h.p., 3-speed, kick start, new January, 1921, speedometer, Easting, lamps complete, spotless condition, as new, tax and insurance paid, low mileage; £125, close offer.—27, Wolseley Rd., Forest Gate. [X0824

1920 (late) 3½h.p. Ariel Combination, Watsonian Monarch sidecar, Lucas lamps, horn, Binks, Easting, new tyres, accessories, tax paid, condition excellent; owner buying car; £110.—Wilson, Yarsop, Mansel Lacy, Hereford. [5010

Aster.

3½h.p. Aster, drop frame, new B. and B., Bosch, tyres; any trial; £20; selling through unemployment.—Bennett, 135, Acre Lane, Brixton. [4746

Bat.

£50 Saved.—Brand new shop-soiled Bat 8h.p. solo; £110.—Jones Garage, Muswell Hill, London. [2996

1920 6h.p. 3-speed Bat, with Henderson sidecar, all lamps, D.A. cylinder, Cowey horn and speedometer, sidecar screen; tax paid, perfect; £95.—7, Norwood Rd., Herne Hill, S.E.24. [4953

1914 Bat-Jap 6h.p. Combination, 3-speed, speedometer, lamps, Easting, etc., licence, completely overhauled, mechanically sound, tyres new; trial; £60.—Millington, Rowley Park, Stafford. [4576

BAT-J.A.P. 1914 8h.p. Countershaft, Sturmey-Archer 3-speed, sporting aluminium sidecar, fully equipped, tax paid; £75.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4057

£50 Below List Price.—Special offer of brand new 6h.p. 3-speed Bat-Jap, chain drive, spring frame; £110 cash; easy payments only 4% extra; write for special clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [6076

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COMPLETE Sets of Gears for Bat motor cycle, 1919-20 models; delivery from stock.—The Motor Gear and Engineering Co., Ltd., High Rd., Seven Kings. [5259

Beardmore.

NEW 3½h.p. Beardmore-Precision, spring frame, 2 speeds, and kick start, unridden; £78.—3, Parker Lane, Burnley. [X0941

1921 3½h.p. Beardmore, spring frame, new June, unpunctured, lamps, horn, insured; cost over £90, sell £78.—Hoare, Burbage, Wilts. [4451

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6h.p. Bradbury combination, 1921, shop-soiled only; reduced to £145; no extra charge for easy terms. [5101

1920 Beardmore-Precision, lamps, horn, licensed, small mileage, excellent condition; £55.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0833

Blackburne.

1920 4h.p. Blackburne, full accessories, nice order; trial given; £75.—Ross, 86, High Rd., Lee. [4475

MOTOR CYCLES FOR SALE.

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2¾h.p., 2-speed, fully equipped; £75.

2¾h.p., 3-speed, fully equipped; £90.

4h.p. Solo, fully equipped; £110.

4h.p. and Sidecar, fully equipped; £135.

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VIVIAN HARDIE and Lane, Ltd., 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [0703

1919 Douglas 2¾h.p., 2-speed, perfect; £42.—24, Balliol Rd., North Kensington. [4852

1921 2¾h.p. Douglas, complete, and tax paid; £75, new.—Cross, Agent, Rotherham. [X0906

4h.p. Douglas, complete, speedometer, lamps, as new; £73.—40, Forest Hill Rd., London, S.E.22. [4998

2¾h.p. Douglas Motor Cycle, splendid condition; £28. —Apply Naish, Church Rd., Wheatley, Oxon. [4548

DOUGLAS 1920 4h.p. Combination, like new, equipped; £96.—Clark, 7, Exhibition Rd., S.W.7. [5063

£52.—Douglas, 4h.p., 1918, renovated, makers' colours.—Mather, 82, Rutland Rd., Harrow. [4928

DOUGLAS, fitted A.B.C. engine, 3 speeds, lamps, licensed; £55.—Box, 201, Earl's Court Rd., S.W. [5019

1917 Douglas, splendid order, long copper exhaust; nearest £40.—M'Fadyean, Piccadilly, Montrose. [X0851

£45.—2¾h.p. Douglas, 1917, very good condition and reliable, ridden daily.—Woods, 6, Bourne Av., Windsor. [4520

1914 Douglas £38, 1915 £42, 1916 £45, all 2¾h.p., 3 months' guarantee given.—Ross, 86, High Rd., Lee. [4476

DOUGLAS 2¾h.p., 2-speed, 1921, accessories, nickel exhausts, tax: £68.—Allen, 60, Coolhurst Rd., N.8. [4827

HERBERT ROBINSON, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995.—Below.

DOUGLAS 1922 3½h.p. Sports Model, overhead valves, all-chain drive, clutch and kick starter, specially designed for speed, best quality horn, lamps, and licence holder, etc.; £130.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 2¾h.p., 2-speed, best quality lamps, horn, licence holder, etc.; £75; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 2¾h.p., 3-speed, clutch, and kick starter, best quality lamps, horn, licence holder, etc.; £90; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 4h.p. Solo, best quality lamps, horn, licence holder, etc., £110; combination, £135; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge. [5092

2¾h.p. Douglas, renovated, good condition; £35 cash. —Langdale Smith, Holton, Wheatley, Oxon. [X0395

DOUGLAS 3-speed, clutch, K.S., fully equipped; £47.—Ratcliffe Bros., 200, Gt. Portland St., W. [5197

DOUGLAS 1917 4h.p. Combination, good condition, speedometer, lamps, etc.; £75.—202, Trinity Rd., S.W.17. [4440

DOUGLAS 4h.p., 1918, renovated as new, mechanically perfect; £65, or exchange.—71, Twilley St., Wandsworth. [4650

DOUGLAS 2¾h.p., 2-speed, all accessories, tax paid, very nice condition; sacrifice £41.—365, King St., Hammersmith. [4912

DOUGLAS Combination, 1916, any examination or trial; reason disposal, bought car.—Box 6,771, c/o *The Motor Cycle.* [3519

HALIFAX.—Douglas new models: 2¾h.p. £75, 3½h.p. sports £130.—Halifax Motor Exchange, Horton St., Halifax. [4595

BARGAIN.—3-speed Douglas, 1915, splendid order; ride away; £32.—G. Mayne, 6, Townshend Rd., Regent's Park, N.W. [4565

ALLAN GRUZELIER for new or second-hand Douglas models immediately. — 168, Regent St., W. Regent 205. [4359

1921 Douglas, 2¾h.p., 2-speed, new March, all on; £67/10 cash, lowest.—Edwards, 19, Buckleigh Rd., Streatham, S.W. [4962

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On Easy Terms.

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B.S.A., 4¼ h.p. model K2, c. & k.-s.	£107 0
DOUGLAS, 2¾ h.p., 2-speed.....	£85 0
ENFIELD, 2¼ h.p. 2-speed, ...	£65 0
FRANCIS-BARNETT, 2¾ h.p., 2-sp., clutch and kick-starter	£85 0
HUMBER, 4½ h.p., 3-speed, c. & k.-s.	£140 0
LEVIS, 2¼ h.p., single-speed	£60 0
NEW IMPERIAL, 2¾ h.p., 3-speed,	£63 0
NEW IMPERIAL, 2¾ h.p. 3-speed. clutch and kick-starter	£69 0
O.K., 2½ h.p. single-speed	£50 8
O.K., 2½ h.p., 2-speed, clutch & k-s.	£67 0
SUN, 2¼ h.p. single-speed	£47 5
SUN, 2¼ h.p., 2-speed, clutch & k-s.	£63 0
TRIUMPH, 2¼ h.p., 2-speed, ...	£65 0
TRIUMPH, 4 h.p. model SD, all-chain, clutch, & kick-starter	£105 0

NEW COMBINATIONS

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DOUGLAS 1916-17 2¾h.p., 2-speed, accessories; sacrifice £33.—13, St. George's House, Coptic St., New Oxford St., W.C. [4626

1919 Douglas, 2-speed, in excellent condition, fully equipped, special engine; £55.—Ratcliffe Bros., 200, Gt. Portland St., W. [5200

1920 (July) 2¾h.p. Douglas, 3-speed, clutch, kick start, lamps, horn, splendid condition; £70.—5, Banister Rd., Southampton. [4742

1918 4h.p. Douglas Combination, perfect running order, electric lighting; £95, or near offer, must sell.—33, Land St., Croydon. [4964

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1919 Douglas Combination, good condition, insurance, tax, accessories; £87; after 7.—11, Sydney Rd., Muswell Hill, N. [4284

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1920 Douglas 2¾h.p., 3-speed model, in perfect condition, licensed, and many extras; price £55.—The Caterham Motor Co., Caterham Valley, Surrey. 'Phone: 98 Caterham. [5216

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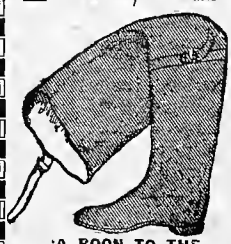

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SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD Lightweight, 1921, all on, tax paid; 60 gns.; private owner.—Allison, 6, Station, Selby. [X0921

ENFIELD 1920 2-stroke, absolutely new condition, equipped; £44.—Clark, 7, Exhibition Rd., S.W.7. [5066

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1921 8h.p. Enfield Combination, screen, etc.; £90, or nearest offer.—407, Coldharbour Lane, Brixton. [5164

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ENFIELD 1921 2¼h.p., kick start, Maglita electric lighting, practically new, all accessories; £55.—17, Denman Drive, Golder's Green. [4569

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ROYAL ENFIELD 6h.p. Combination, practically new, all accessories; no dealers; price £120.—Yeatman and Sons, West Norwood. [4540

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6h.p. Enfield Combination, mechanically perfect, £10 worth of accessories, spares; any trial given; £75.—King, 35, Wellhouse Rd., Barnoldswick, Colne. [4319

£25 Saved.—Brand new shop-soiled Enfield 8h.p. combination, electrically equipped; £25 below list price, £157.—Jones Garage, Muswell Hill, London. [2993

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1921, shop-soiled only; reduced to £155; easy terms, no extra charge. [5098

ROYAL ENFIELD Combination, 1917, 6h.p., dynamo lighting, Easting, as new throughout, tax and insurance paid; £100.—304, Fulham Rd., S.W. 'Phone: Kens. 2372. [4345

ENFIELD 6h.p. Combination, 1915, 2-speed, recently overhauled, first-class condition, licensed to Dec. 31st, lamps, horn, etc.; £75.—Ruston and Hornsby, Ltd., Lincoln. [4619

ENFIELD 1921 Combination, brand new, slightly shop-soiled; £140; sacrifice.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

FOR Sale, 1921 Enfield motor cycle, 2¼h.p. 2-stroke, in good condition, perfect running order, and all accessories.—Apply, John R. Miles and Son, 47, Mile End Rd., London, E.1. [X0849

ENFIELD.—We are official agents, and can give immediate delivery of any model of this foolproof motor cycle.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0380

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WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1917, fitted with Tan-Sad, speedometer, lamps, etc., ready for the road, tax paid; £95; easy terms. [5103

ENFIELD 1912 6h.p. Enfield Combination (coach-built sidecar), fully equipped, Easting screen, exceptionally good condition, tax paid; £65; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0900

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1920 Lea-Francis 3½h.p., M.A.G., all accessories, absolute new condition; £75, a real bargain; must sell, owner giving up.—19, Cann Hall Rd., Leytonstone, E.11. [4628

LEA-FRANCIS, genuine 1914, J.A.P. 3½h.p. twin, 2-speed, clutch, enclosed chains, good Palmers, lamps, horn, Tan-Sad, stored war, exceptional condition; going abroad; seen London; £60.—Box, 6,859, c/o *The Motor Cycle.* [4357

Lincoln-Elk.

4h.p. Lincoln-Elk Combination, 2-speed, clutch, kick start, good Dunlops; first offer over £30 accepted, absolute bargain.—Miller, 151, Kingston Rd., Teddington. [4714

Lloyd.

LLOYDS Motor Cycle, late model, 2½h.p., 4-stroke, accessories, very smart and fast, beautiful running machine; sacrifice, £25, cash needed.—Dental, 769, Romford Rd., Manor Park, London, E. [4983

Marloe.

MARLOE, 2¾h.p. Blackburne, brand new, countershaft; cash £68/10, or £14 down and 12 payments of £5.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5132

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Matchless.

MATCHLESS.

A FEW Combinations offered at reduced prices: Standard model £160, 2-seater £165, sporting £160; gradual payments 5% on balance only.—J. Tassell, 1a, Bloomfield Rd., Plumstead. [5374

BRAND New Unridden Magdyno Matchless, complete: £178.—Bruce, Crisphams, Buxted, Sussex. [4663

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MATCHLESS Combination, late 1920, Lucas lighting, all accessories; £140.—40, Replingham, Southfields, S.W.18. [4996

BRAND New 1921 Matchless Combination, M.A.G. engine, spare wheel; accept £152.—24, Balliol Rd., North Kensington. [4854

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1921 Matchless 8h.p. Combination, new, electric lights, fully equipped; £170.—Paynter, Longcauseway, Farnworth, near Bolton. [4797

MATCHLESS 1920 8h.p. J.A.P. Combination, speedometer, lamps, spare wheel, etc.; £130; excellent condition.—202, Trinity Rd., S.W.17. [4439

MATCHLESS 1920 H Model Combination, lamps, horn, speedometer, first-class condition; £130.—Hill, 50, Crayford Rd., London, N.7. [4436

1921 New Standard Model H Matchless Combination, M.A.G. engine; end of season bargain 150 gns.—Ross, 86, High Rd., Lee, S.E. [1708

MATCHLESS.—Still a few 1921 shop-soiled models; standard £160, 2-seater £165; Magdyno £20 extra.—Maudes', London, Exeter, and Walsall. [X0959

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MATCHLESS Combination, 8h.p. J.A.P., 1918, perfect condition, all accessories; real bargain, £80.—Stern, 27, Hammelton Rd., Bromley, Kent. [4722

£68.—Matchless combination, 1915, M.A.G. engine, 3 speeds, K.S., wind screen, spares, excellent condition; bargain.—136, Ravensbury Rd., Earlsfield, S.W. [5112

MATCHLESS Models for earliest delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4785

£25 under List Price.—1921 standard models Matchless combinations, a few only; £160; covered with the makers' guarantee.—Jones Garage, Muswell Hill, London. [2987

1919 Matchless, sidecar, purchased new by owner, £100; 1921 2-stroke taken part exchange.—9, Canterbury Terrace, Sutherland Av., Maida Vale, W.9. Hamp. 4899. [4537

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1921 Matchless-Jap, never ridden, Magdyno lighting, accessories, tax paid, insured, Lucas horn, sidecar step, owner going abroad; accept £170.—205, Bexley Rd., Erith, Kent. [3429

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MATCHLESS, 1920 (July), Magdyno lighting, spare wheel, speedometer, wind screen, etc., perfect condition, trial, owner buying car; sacrifice, £140, near offer.—Purcell, 12, Elm Grove, Wimbledon. [4384

1921 Matchless Combination, M.A.G. engine, 2-seater sidecar, fully equipped, condition and appearance as new, insured until March, tax paid; cost £240; price £175.—79, Main Avenue, Bush Hill Park, Enfield, N. [4607

MATCHLESS Combination, 7-9h.p. M.A.G., 3-speed, countershaft, hood, screen, lamps, speedometer, etc., excellent condition throughout; £98, or offers; appointment.—Martin, 9, Lindore Rd., S.W.11. [5140

MATCHLESS New 1921 Standard Combination, straight from works, £160; sports combination, £150; 2-seater, £165; new solo Model J, £150.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [5067

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MATCHLESS 1921 H Combination, M.A.G. engine, Lucas Magdyno lighting, screen, spare wheel and tyre, mudshields, speedometer, as new; £170; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0894

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135 GNS.; exchange cheaper machine and cash.—Matchless 1920 combination, Model H, Magdyno, hood, screen, luggage grid, spare wheel, speedometer, smart turnout, fast, any examination, trial.—Scabridge, Haasler Rd., East Dulwich. Sydenham 2452. [4802

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MATCHLESS 1921 M.A.G. Magdyno Combination, electric and bulb horns, speedometer, Easting and Matchless screens, hood, Binks and Amac carburetters, tyres good, spare bulbs, gadgets, etc., will drive 50 miles from London to exhibit, machine has been treated like an only child; price £175 net.—Box 6,927, c/o *The Motor Cycle.* [4497

SAM E. CLAPHAM, Motors, Greenwich. 'Phone: 751.—The premier Matchless agent. Can offer some exceptional bargains in new and second-hand 1921 models at end of season prices. Get in touch with Sam E. Clapham and secure one. Place your orders now for 1922 models with the agent. Note address: Sam E. Clapham, Motors, 27, Stockwell St., Greenwich, S.E.10. [3179

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

Metro.

METRO-TYLER, 1919 (late), fully equipped, perfect; £27.—17, Heaton Rd., Mitcham. [4758

1920 2¾h.p. Metro-Tyler, lamps, horn, licence paid, practically new; £50.—Reader, 32, Coniston Rd., Muswell Hill. [4999

METRO-TYLER, 1920, 2-speed, sports, completely overhauled, rebalanced, Lucas lamps; £37.—27, St. John's Rd., Putney. [4123

M.T. 2½h.p., Dec., 1919, 2-speed, just overhauled, new bushes, tyres, all on, discs, go anywhere, perfect; £35.—Write, Cullen, 20, Wade Rd., E.16. [4417

1920 2½h.p. Metro-Tyler, S type, 2-speed, lamps, horn, licensed, only run 50 miles; £60.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0832

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

MOTOR CYCLES FOR SALE.

Monarch.

MONARCH-J.A.P. 1920 2¾h.p., 2-speed, kick start, fully equipped, discs, new tyres and belt guaranteed; bargain, £48/10, or exchange.—217, Belsize Rd., Kilburn. [5152

Moto-Reve.

MOTO-REVE 2h.p., splendid condition, tax paid; £15.—3, Stockbridge Rd., Chichester. [4408

Motosacoche.

MOTOSACOCHE 1¼h.p., new belt, licence paid; £12 to clear.—Oswald, Dunacre Rd., Brechin. [4552

MOTOSACOCHE 2h.p., Bosch, Amac, tax paid; £18; ride away.—J. Kenning, 4, Wellington St., Mexborough, near Rotherham. [4432

New Hudson.

4 h.p. 3-speed New Hudson Combination; a gift, £38.—Ross, 86, High Rd., Lee. [4484

NEW HUDSON 1920 Model De Luxe Lightweight, completely equipped and almost new; £37/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4825

£35; 1914 4h.p. T.T. New Hudson, 3 speeds, clutch, new tyres, lamps, licensed, long exhaust, flexible, fast, excellent condition, guaranteed; exchange.—89, East Hill, Wandsworth. [4687

NEW HUDSON 1914 Big Six Combination, hub gear, not used during war, excellent condition and appearance, 3 new tyres and spare, all on; £70.—Smith, 44, South Bar, Banbury. [X0945

LATE 1921 New Hudson 2¼h.p., 2-speed countershaft, Model de Luxe, exceptionally low built, 24in. wheels, all on, tax paid, perfect throughout; appointment only.—115, Stratford Rd., Plaistow, E. [4405

NEW HUDSON Lightweights, all models, on view; Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Catalogues and any information by return.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [4094

New Imperial.

2¾h.p. New Imperial-Jap, 2-speed, countershaft, excellent condition; £45.—80a, High St., Bexley. [5151

NEW IMPERIAL, 2¾h.p. J.A.P., 1920, 2 speeds; £45.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5135

NEW IMPERIAL, 1921, 3-speed, 350 c.c. T.T. J.A.P., very special; £75.—Clark, 7, Exhibition Rd., S.W.7. [5065

LATE 1920 Imperial 2¾h.p., 2-speed, fully equipped, pillion; after 6 o'clock; £60.—8, Lauhill Rd., Elgin Av., W.9. [4836

NEW IMPERIAL-J.A.P., 2¾h.p., 2-speed, perfect order, very fast; bargain, £28.—4, Camplin St., New Cross, S.E. [4733

1921 New Imperial 2¾h.p., 2 speeds, clutch, kick starter, lamps, horn, licence, excellent; £58.—40, Wellington Rd., N.W.8. [4666

1921 (July) New Imperial 2¾h.p., 3-speed, clutch, kick start, scarcely used, lamps, complete; accept £67.—John, Lyndale, Narberth. [4330

NEW IMPERIAL, 1921, 2¾h.p., tax, insurance, A.A., paid to Aug., 1922, fully equipped, ride away; £65; offers.—128, Graham Rd., Wimbledon. [4679

NEW IMPERIAL.—2¾h.p., No. 1 model, 3 speeds, £63; clutch and kick start models, No. 2, 2¾h.p., 3 speeds, with clutch, £69; extended payments arranged, also exchange.—Wauchope's, 9, Shoe Lane, London. [5105

New Scale.

1921 New Scale 3½h.p., 2-speed, kick start, hand clutch (not Colonial model), 100 miles; disposal health reasons; privately owned; complete, £65.—Box 6,925, c/o *The Motor Cycle*. [4486

1920 New Scale Combination, 3½h.p., 2-speed, kick start, hand clutch (not Colonial model), sidecar and box attachment for trade purposes; £55.—Inspection Premier Sheet Metal Co., Beever St., Oldham. [4487

Norton.

PREMIER Motor Co. for Nortons.

LATEST Improved Models for immediate delivery at 1922 reduced prices.

BIG 4, chain drive, £120; Model 16H., 3½h.p., 3-speed, T.T., chain drive, £115; Model 9, 3½h.p., belt drive, £80. Write for revised price list. Easy payments only 4% extra. Buy your machine direct from the Norton specialists, The Premier Motor Co., Aston Rd., Birmingham. [0625

DAN GUY, Weymouth.—Norton Big 4 combination £177; sports model, £132; from stock. [0696

1920 (Nov.) Norton, B.R.S., speedometer, lamps, insurance, mileage 2,000; £58.—37, Arlington Rd., Surbiton. [4897

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0717

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—4h.p. Norton and sidecar, 1920, tax paid; £75; easy terms arranged. [5093

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15 Very Special Offers.

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1921 Shop-soiled Brand New Mounts.

List Price.		Sale Price.
£185 0	8 h.p. **MATCHLESS** Comb. ..	£158
£182 0	8 h.p. **ENFIELD** Comb., electrically equipped	£153
£226 0	7 h.p. **INDIAN** Powerplus Combination, electrically equipped	£175
£175 0	6-7 h.p. **B.S.A.** Combination	£155
£162 10	4 h.p. **WILKIN-BLACKBURNE** Combination.....	£120
£75 0	2½ h.p. **VELOCETTE,** 2-speed	£60
£80 17	2¾ h.p. **NEW IMPERIAL,** 3-speed	£60
£65 0	2¼ h.p. **ENFIELD,** 2-speed ..	£55
£105 0	2¾ h.p. **DOUGLAS,** 3-speed. kick-start	£85
£110 0	3½ h.p. **COVENTRY EAGLE,** 3-speed	£85
£115 0	3½ h.p. **P. & M.,** 2-speed....	£95
£68 0	2¼ h.p. **LEVIS,** Model S, 2-speed	£56
£126 0	4 h.p. **COULSON B,** 3-speed, kick-start	£90
£122 0	4 h.p. **OMEGA** Blackburne, 3-speed	£90
£115 0	5 h.p. **ZENITH,** Sports Model	£90

The above prices are for cash—we cannot accept exchanges on those machines—and we have only one of each to offer at those special prices.

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113-115, Lothian Road, EDINBURGH.
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MOTOR CYCLES FOR SALE.

Norton.

ALLAN GRUZELIER for new or second-hand Norton models immediately. — 168, Regent St., W. Regent 205. [4363

1921 Big 4 Norton Combination, fully equipped, perfect condition; any trial offers.—Chambers, Fearfield House, Stapleford, Notts. [X0938

1915 3-speed Hub Gear Norton, new tyres, mechanically perfect, licence paid, very fast; £60.—P., 5, Craufurd Drive, Maidenhead. [4973

3½h.p. Model 16H. Norton, March, 1921, condition excellent, spares value £10; particulars with pleasure; 80 gns.—Vale, Leominster. [4445

NORTON 1919 3½h.p., T.T., excellent condition, engine perfect, h.b.c. Philipson, horn, knee grips, etc.; £55.—Dunira, Epsom Rd., Guildford. [4707

1921 Norton, Model 16H, Lucas lamps and horn, tax paid, only few weeks old; cost £140, 95 gns.—Julian, 84, Broad St., Reading. 'Phone: 1024. [4581

NORTON, B.R.S., unscratched, Philipson, new tyre, new head light, registered, very fast, £58; torpedo sidecar to suit, £11.—156, Browning Rd., East Ham. [4430

NORTON 1922 Models now for delivery at reduced prices; deferred payments or exchanges arranged.—Maudes', 100, Gt. Portland St., London; and Walsall Garage, Walsall. [X0957

HALIFAX.—New Norton models: 3½h.p. sporting £80, 3½h.p. 3-speed £115, Big Four 3-speed £120, reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [4594

T.T. Norton, h.c. Philipson or 2-speed gear, exactly year old, lamps, Cowey, Watford, knee grips, mileage well under 2,000, unscratched, 70 m.p.h.; £72.—C.K., Belmore, Haywards Heath. [5057

NORTON Big 4, late 1919, heavy chains, 3in. Palmer cord on back wheel, pillion seat, spare Dunlop cover, speedometer, lamps, etc., splendid condition; £95.—Graham, Bungalow, Walmersley, Bury, Lancs. [4395

NORTON.—Immediate delivery Big 4 and 16H Models; spare parts always in stock and sent per return. Call wire, write, or 'phone 4042.—G. H. Tucker, the Norton Rider, Agent, and Specialist, Redcliffe Hill, Bristol. [2289

NORTON 1921 Big Four with sporting sidecar, Lucas Magdyne lighting, Lucas horn, Cowey speedometer, oversized tyres, absolutely as new; £160; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0899

NORTON 1921 3½h.p. 16H Model, Smith speedometer, head lamp set, tail lamp, horn, knee grips, metal mudshields, licence holder, tax paid until Dec., as new; £105; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0895

1921 Specially Built 4¼h.p. Norton, engine in 3½h.p. I.O.M. frame, specially tuned, long exhaust and silencer, all lamps, horn, tools, Canoelet K4 sidecar, painted primrose, screen, luggage grid; photo if desired, mileage 1,000; £125, or offer.—K. Booth, 71, London Rd., Leicester. [4489

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

N.S.U.

£24.—2¾h.p. N.S.U. twin, Bosch, running order.—Toney, Causeway, Coalpitheath, Bristol. [4327

N.U.T.

85 GNS.—1920 N.U.T., Magdyno, perfect.—79, Castleton Mansions, Barnes. [4864

N.U.T. 1920 3½h.p., Magdyno, mileage 3,000, excellent condition, accessories, spares; £110.—Root, Clarke Ltd., Herne Bay. [4740

1920 (October) 3½h.p. N.U.T., Fallolite lighting set, Cowey horn, tools, perfect condition; £75; owner must sell.—Apply, Love, 21, Park Rd., Bromley, Kent. [4894

N.U.T. 1920 3½h.p., dynamo lighting, tax paid, equal to new; deferred payments if desired; £110.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0887

N.U.T. 1920 3½h.p., dynamo lighting, electric horn, Cowey speedometer, mileage 2,500, indistinguishable from new, tax paid; photograph; £110.—Holmleigh, Baring Rd., Grove Park, S.E.12. [4538

N.U.T.—Sole agents for nine counties. Sub-agents being appointed under attractive conditions. No binding contracts asked. Specially attractive discounts to agents stocking one machine.—Maudes' Motor Mart, London, Exeter, and Walsall. [X0958

O.K.

1920 O.K., 2¾h.p., accessories, good condition; owner going abroad; £35.—Bradley, Castle St., Dover. [4372

29 GNS.—2¾h.p. O.K.-J.A.P., 2-speed, ride away anywhere, tyres good; bargain.—181, Newton Rd., Burton-on-Trent. [5026

O.K. 2¼h.p., 2-speed, lamps, horn, etc., nearly new tyres, excellent condition; £33, or offer.—Highfields, East Chiltington, Lewes. [5110

MOTOR CYCLES FOR SALE.

Rudge.

RUDGE Multi, 1921, very slightly shop-soiled, 3½h.p., T.T. model; £78/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

1921 3½h.p. Rudge, I.O.M., T.T., £85; 5-6h.p. and 7-9h.p. Rudge Multi combinations, soiled, £130 and £150.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0707

RUDGE Multi 3½h.p., new July, 1921, Lucas fittings, Tan-Sad, etc., tax paid, in perfect running order; £75, or best offer; owner going abroad.—C. F. Halsall, 110, Wilton Rd., Victoria, S.W.1. [5114

RUDGE Multi, T.T., late 1920, with handsome sidecar, lamps, horn, Cameo screen, spares, tax paid, insured, condition perfect; £85.—6, Faraday Mansions, Queen's Club Gardens, West Kensington. [4377

1920 (late) Rudge Multi, I.O.M., 3½h.p., low mileage, excellent condition throughout, fast, sporting, no-trouble 'bus, P. and H. lamps, Cowey, spares, and tools; £63.—7, William Place, Chase Side, Enfield. [4712

1920 Special Single Gear T.T. Rudge, specially low frame and exceptional rake on forks, giving excellent position for fast riding, very good engine that will rev. without rattle, Dunlop tyres, Lucas horn, Millers lighting set, licence, weight 188 lbs.; £65 for quick sale.—35, Stafford Rd., Wallington. [4450

Spare Parts:

BANISTER and Botten for Rudge new spares; half price.—341, Upper St., N.1. [4884

Saltley.

1921 Saltley-Villiers 2¼h.p., 2-stroke, 2-speed, kick start, done 200 miles; must sell; what offers?—Apply, C. Stonier, Coppice Rd., Talke, Staffs. [4514

Scott.

1920½ Scott, splendid condition, lamps, accessories; £75.—Wolstenholme, 11, Castle St., Hinckley. [X0908

SCOTT-SQUIRREL, July, 1921, equal new, perfect; £90.—Particulars, Wilkinson, Twigmoor, Doncaster. [X0920

F.O.C.H. have 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [4588

SCOTT 3¾h.p., 2-speed, water-cooled; £48; take lightweight or push cycle part.—57, Kenbury St., Camberwell, London. [4751

SCOTT, 2-speed W.C.H. twin, Bosch, Amac, all chain, overhauled, runs perfectly; nearest £35.—Barclay, 251, Maryhill Rd., Glasgow. [4334

1915 Scott, recent overhaul, many new parts (£30), guaranteed condition; selling, reasons; photo; £55.—G., 104, Mildmay Rd., Romford, E. [4605

SCOTT Combination, just overhauled; £88; cash, exchange, or deferred.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4791

1920 (late) Scott, semi-T.T. bars, accessories, 3in. tyres, splendid condition; good bargain, £85.—Frank Smith, Underwood, Morton Banks, Keighley. [4046

1914 3¾h.p. Scott, K.S., large size tyres, excellent condition, Binks; £50; exchange Norton or Zenith, or lightweight and cash.—120, Clerkenwell Rd., E.C.1. [4857

VERY Special Sporting Scott Combination, worth sending for particulars and photo; bargain to clear; excellent reason for disposal; London district.—Box 6,772, c/o *The Motor Cycle.* [3520

SCOTT 1920 3¾h.p. Combination, fully equipped, Easting screen, tax paid, new condition; £90; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0898

SCOTT, 1921, 500 c.c., Squirrel Model.—J. W. Tollady, winner of the 500 c.c. handicap at Brooklands, September 17th, 1921, offers his reserve machine, with guaranteed speed over the kilo. of 75 m.p.h.; offers invited.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4821

Spare Parts:

SCOTT Riders!—We are always at your service. Any part; any repair; any sort of help. 12 years of Scott experience. Hundreds of satisfied customers.—Ward Motors, Ltd., the Scott Specialists, 32, Hustler St., Bradford. [0727

Singer.

1916 Singer 2-seater, French grey, black wings, nickel radiator lamps and fittings, dynamo electric lighting, speedometer, mirror, bulb and Klaxon horn, condition as new, nearly new tyres, done small mileage; any examination; illness reason for selling; 195 gns.—Chauner, Hallwood Cranbrook, Kent. [4573

THE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Maswell Hill, London, N.10. [0731

Spare Parts:

SINGER Spares are my speciality. 4½h.p. cylinder, complete with piston, £5/10; 2½h.p., £5; 4½h.p. connecting rods, 30/-; 2½h.p., 25/-; adjustable pulleys, all types, 27/6; large quantity of spares in stock.—Pearson, Gate House, Cheylesmore, Coventry. [X0981

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1913-14 TRIUMPH Comb. ..	£50

ALL THE ABOVE MACHINES ARE LICENCE PAID, AND IN EXCELLENT CONDITION.

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1915 2¾ h.p. DOUGLAS, 2-sp., dynamo lighting, licensed, excellent condition £43

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MOTOR CYCLES FOR SALE.

Spur.

BRAND New 1921 Spur, 2½h.p., 2-stroke, single speed, Villiers engine, Amac, Brampton, Dunlops, etc., nice machine, won by owner in a competition, and has never been ridden; list price 45 gns., first £30 secures, no offers.—Beaney, 118, St. George's Rd., Hastings. [4984

Sun.

SUN-VILLIERS 1916 2-stroke, in perfect condition, fully equipped; £35, or exchange.—71, Twilley St., Wandsworth. [4651

Sunbeam.

£65.—3½h.p. Sunbeam, believed 1918, perfect order; any trial.—18, Friars Place, Chelmsford. [4748

SUNBEAM Solo, 3 speeds, clutch; £95, or near offer.—Shaw, Estate Office, Jervaulx Abbey, Middleham. [X0854

1920 Sunbeam 3½h.p., fully equipped, tax paid; solo £95, combination £110.—Philpot, Motors, Canterbury. [4561

1916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Clapham, Yorks. [0714

1921 Sports Sunbeam, small mileage, fully equipped; £135. Wanted, Brough Superior.—Seymour Hotel, Gloucester. [4574

3½h.p. Sunbeam, done 500 miles, lamps, horn, tax, condition as new; £90.—Fitt, c/o Pikes, 102a, Church St., Chelsea. [5147

SUNBEAM 2¾h.p., H.B. clutch, K.S., speedometer, horn; 50 gns.; appointment.—Poole, 143, Knox Rd., Wellingborough. [4850

ALLAN GRUZELIER for new or second-hand Sunbeam models immediately.—168, Regent St., W. Regent 205. [4364

3½h.p. Sunbeam Combination, almost brand new, fully equipped; nearest £135; appointment.—156, Dale St., Walsall. [4718

79 GNS.—3½h.p. Semi-sports Sunbeam, 1919, fully equipped, as new throughout; any trial.—4, Elm Gardens, Hammersmith. [4518

HALIFAX.—New Sunbeam 3½h.p. Touring; 135 gns., reduced price; exchanges quoted.—Motor Exchange, Horton St., Halifax. [4593

SUNBEAM 3½h.p., late 1920, practically unsoiled, Lucas accessories; £110.—R. East, Atheneum, Vale of Health, Hampstead, N.W. [5168

1915 Sunbeam Combination, in perfect running order, sidecar newly upholstered and painted; any trial; price £85.—Write Hutchings, High St., Eastry, Kent. [4470

1921 Sunbeam 3½h.p. Touring Model, guaranteed not run 100 miles, equal to new in every respect; 125 gns.—Julian, 84, Broad St., Reading. 'Phone: 1024. [5214

SUNBEAM 1914 2¾h.p., 2-speed, all accessories, little used, equal new in every way, original enamel, wants seeing; £67/10.—365, King St., Hammersmith. [4910

SUNBEAM and Sidecar, 1918, 3½h.p., many extras, electric lighting, specially constructed mudshields, toolkit, etc.; £100.—Lubbock, Peterhouse, Cambridge. [4985

SUNBEAM 1921 3½h.p. Sports Model, fully equipped, good condition, tax paid; £135; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0890

SUNBEAM Combination, 1914, 3-speed, Canoelet sidecar, in splendid order; bargain, £62/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4053

1921 Sunbeam Sports, specially fast, lamps, horn, Bonniksen speedometer, 2 racing carburetters, 3 tool cases, many spares; bargain, £130.—Duthie and Son, 52, High St., Montrose. [4549

LATE 1920 3½h.p. Sunbeam, semi-T.T. bars, footboards, Cowey speedometer and horn, perfect condition, small mileage; best offer accepted.—12, Mayfield Rd., Wimbledon, S.W.19. [4678

SUNBEAM Combination, 1919, Sunbeam sidecar, 3-speed and reverse, all chain drive, lamps and horn; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: 2813. [4054

SUNBEAM Combination, 6h.p. J.A.P., perfect, excellent condition, all on, oversize tyres; only wants seeing; price £135, or near offer.—H.G., 11, Chancellor Rd., West Dulwich, S.E.21. [4353

1919 8h.p. Sunbeam with Swan sidecar, electric lamps, Cowey horn, wind screen, licensed, excellent condition; £130.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0836

1921 Sunbeam, T.T. model, mileage under 1,000, enamel and plating unscratched, Cowey horn, aluminium number plates, perfect, fast, silent; £134.—Lavin, Old House, Sonning, Berks. [3207

WANTED, purchasers for any model of new 1921 Sunbeam motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0648

LATE 1920 3½h.p. Sunbeam, equipped regardless of cost, black and gold discs, aluminium polished, watch, speedometer, spare sprocket, valve, and springs, rings, tyre, tube, proceeding abroad; accept any reasonable amount.—22, Brent St., Hendon. [5184

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 8h.p. 1919 Combination, M.A.G. engine, complete lighting set, speedometer, interchangeable wheels and spare, screen, luggage grid, a real elegant turnout, looks and is like new; £135; exchange and cash considered.—Maton, 37, Canterbury Rd., Dalston, N.1. [5175

SUNBEAM 1921 Combination, 3½h.p., detachable wheels, spare wheel, over £20 worth of accessories, cost over £235 all on, indistinguishable from new; accept £120.—Apply, Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [4886

£115 and £88.—Special sporting 3½h.p. twin Sunbeam, M.A.G. (photo "The Motor Cycle," Aug. 25th), delivered June, unscratched. Also 1914 3½h.p. Sunbeam, unused since 1917. Sell one only. Near offers. Evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X0953

1919 Sunbeam 8h.p. Combination, engine overhauled by makers, Magdyno, ampmeter, horn, spot and inspection lamps, hood, wind screen, spare wheel, Cowey speedometer, tax paid, insured £200, excellent condition; £165, or near offer.—Craswell, Ravenswood, Ashford, Middlesex. [4533

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

3½h.p. Triumph, 3-speed; bargain, £29.—Ross, 86, High Rd., Lee, S.E. [4475

CROSS, Rotherham, can deliver all model Triumphs from stock at list prices. [X0904

TRIUMPH Coachbuilt Combination, 2-speed, clutch, £42.—53, Cannon St., St. Albans. [5174

1913 3½h.p. Triumph, fine order; great bargain, £25.—41, Regent St., Wellington, Salop. [X0950

1919 C.S. Triumph, with lamps, nice order, very fast; £78.—Ross, 86, High Rd., Lee. [4481

£25.—3½h.p. Triumph, clutch, sporting machine, fully equipped.—King, Egrove Farm, Oxford. [X0930

1921 Triumph, new September; £80; trial, appointment.—Wilton, White Swan, Upper Norwood. [5187

TRIUMPH 1912 3½h.p., fixed engine, excellent running order; £25.—Pepper, Colsterworth, Grantham. [4603

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

BABY Triumph, 1921, little used, lamps, horn, tools, spares, as new; £60.—B. Kinneen, Galway, Ireland. [X0802

TRIUMPH C.S. Combination, Dunhill sidecar, fully equipped, tax paid, done 100 miles; £110.—Below.

BRAND New Countershaft Triumph, 3-speed, etc.; bargain, £90.—Below.

COUNTERSHAFT Triumph, renovated, new engine and gear box; £75.—Below.

TRIUMPH, countershaft 3-speed, etc., snip; £60.—The Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W.9. [5169

DAN GUY, Weymouth.—1921 Triumph, all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

TRIUMPH 1913, clutch, any trial; £30 for quick sale; owner going abroad.—59, Holland Rd., Brixton, S.W. [4313

1920 Triumph, Model H, countershaft, well equipped, as good as new; £75.—17, St. Charles Sq., W.10. [2759

1921 Triumph 4h.p., all-chain, condition and appearance as new, tax paid; £105.—Philpot, Motors, Canterbury. [4564

£12/10.—Triumph 3½h.p., Bosch, Senspray, tyres almost new.—J. Greenwood, jun., 81a, King's Cross, Halifax. [4336

TRIUMPH, 1919, 54322, 3-speed, all on, condition as new, taxed, fully insured; £65.—50, Cranmer Rd., Forest Gate. [4923

ALLAN GRUZELIER for new or second-hand Triumph models immediately. — 168, Regent St., W. Regent 205. [4365

TRIUMPH 1918 Combination, good condition, lamps, horn, tools, etc.; £72/10.—Cope, 15, Upper Hagley Rd., Birmingham. [X0955

3½h.p. Triumph, tax paid, rebored, new piston and parts, perfect; £19/10; snip.—58, Cromwell Rd., Upton Park, E. [4702a

TRIUMPH, 1913, countershaft K.S., coachbuilt combination, fully equipped, equal to new.—36, High St., Old Woking, Surrey. [4401

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. 1913 Triumph, all accessories, tax paid; £40; easy terms arranged. [5096

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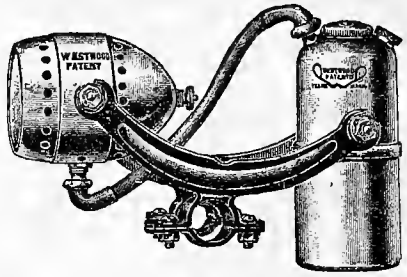

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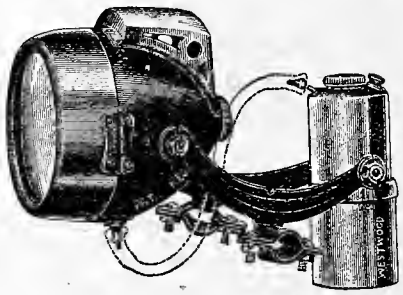

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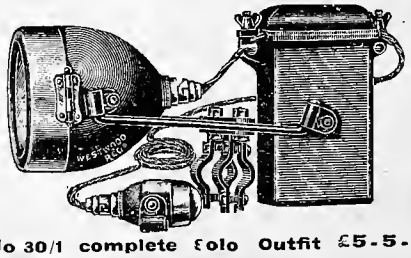

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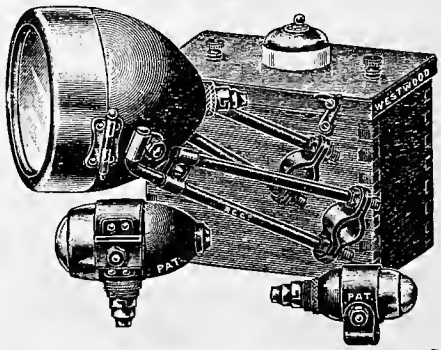

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TRIUMPH 1920 Combination, all on, excellent condition; £90. — Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5134

£38.—Triumph, 1913, clutch model, C.B. sidecar, beautiful condition throughout.—Kitching, 19, St. Michael's Rd., Stockwell. [4716

1919 Countershaft 4h.p. Triumph, recently overhauled, licence, insurance, tax, etc.; £55.—136, Lymington Av., Wood Green. [4335

1914 Triumph and sporting sidecar, speedy and reliable, only wants seeing; £48. After 6 p.m.—5, Ridgmount Rd., Wandsworth. [4550

1920 Triumph, Grindlay sprung wheel sidecar, all accessories, tax paid, perfect; nearest £120.—Whittle, 82, Castle St., Hinckley. [X0882

TRIUMPH Coachbuilt Combination, 3-speed, 1914, splendid order throughout; £48; tax paid.—Speechley, 86, Churchfield Rd., Acton, W.3. [4812

TRIUMPH, 1920, with Gloria sidecar, accessories; £98.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4792

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼h.p. Triumph Junior, tax paid, fully insured, all accessories; £55; easy terms arranged. [5095

£35; Triumph, 1913, 3-speed, clutch, original enamel, good tyres, lamps, Klaxon, etc., licensed.—145, Leander Rd., Brixton Hill, S.W.2. [5145

1913 Triumph, 3½h.p., 3-speed hub, lamps, wicker sidecar, in perfect order; a bargain, £36/10.—H. E. Ellis, 17, Staines Rd., Sunbury, Middlesex. [4841

TRIUMPH Combination, 3-speed Sturmey, hand clutch, lamps, electric horn, disc wheels, coachbuilt sidecar; £40.—37, Arlington Rd., Surbiton. [4900

1914 Triumph 3-speed and Coachbuilt Sidecar, new lamps, new Binks, and Easting wind screen, splendid condition; £45.—H. Wright, Arlesey, Beds. [4116

TRIUMPH Combination, renovated model, feather-weight sidecar, with screen, licence paid; £65.—West London Garage, Kenley St., Princes Rd., W.14. [4922

1914 4h.p. Triumph C.B. Combination, 3 speeds, clutch, new tyres and belt, Tan-Sad, tax paid, all on; any trial; £55.—16, Crimscott St., Bermondsey, S.E.1. [4670

JUNIOR Triumph, 1919, lamps, Klaxon, spare belt, plugs, and tube, tools complete, enamel and plating as new; £56; appointment.—7, Balloch Rd., Catford. [4374

3½h.p. Triumph, good condition, N.S.U. 2-speed, clutch (hub), pedal start, new tyre, belt, licensed; trial; £36.—E.B., 14, Gordon Rd., High Wycombe, Bucks. [4830

BRAND New 1921 Triumph, ridden half a dozen times, lamps, Cowey, etc., tax and insurance, long pipe; first cheque £100 secures.—Goulden, 14, Sutton St., Hull. [2506

1920 4h.p. Triumph, splendid condition throughout, 80 gns.; 1917 4h.p. Triumph, perfect condition throughout, £65.—Baines, 166, Belgrave Gate, Leicester. [X0975

TRIUMPH 4h.p. Countershaft Combination, all accessories; £65.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [4888

1919 (late) 4h.p. Triumph, Model H, lamps, horn, licensed, in excellent condition; £75.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0834

TRIUMPH Combination, 3-speed, clutch, etc., lighting set, etc., licensed, smart coachbuilt sidecar; bargain, £48.—Blackmore, 767, Romford Rd., Manor Park, London, E. [4981

TRIUMPH, 1918, 3-speed, clutch, K.S., lamps, horn, good tyres, new appearance, easy starter; £62; exchange Douglas combination.—Lawson, 8, Athenlay Rd., Nunhead, S.E.15. [4862

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End, Croydon. 'Phone: 2624. [1346

TRIUMPH 4h.p. Countershaft, 1917, with 1921 sidecar, Cameo screen, Tan-Sad, all lamps, tax paid; 70 gns.; any trial.—'Phone: Waltham Cross 299.—Biss, 44, Sun St., Waltham Abbey. [4810

1920 4h.p. Triumph and Sidecar, lamps, horn, licensed, in very good condition, speedometer; £93.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0831

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0382

TRIUMPH Combination, 1914, excellent condition, C.B. sidecar, lamps, horn, pillion seat, speedometer, accessories, recently overhauled, tax paid; £55.—16, Birchwood Mansions, Muswell Hill, N.10. [4985

TRIUMPH, countershaft, 1915 engine, new Sturmey Archer gear box, new sporting sidecar, all accessories, as new, registered Sept., not done 1,000 miles; 35 gns.—T. Fairclough, Park Rd., Adlington, Lancs. [4385

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TRIUMPH, sporting lot, modern frame, B.S.A. engine, Philipson, large copper exhaust, specially tuned, very hot; £38/10, bargain.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5133

COMBINATION Worth Seeing.—1919 Triumph, splendid condition, Henderson Aero sidecar (coach-built), all accessories, disc wheels; £120, or near offer. —86, Culverden Rd., Balham, S.W.12. [3710

1921 Triumph, all chain, electric lighting (Wates), Klaxon, purchased 21st. July, insurance; first offer over 100 gns.; view by appointment.—P., Old Manor House, Hailsham, nr. Eastbourne. [4701

MODEL H. Triumph, late 1919, engine No. 65248 0T0, frame No. 304861, and Millford sidecar, lamps, horn, etc., 2 new tyres and belt, excellent condition; any trial.—Bussey, Dunston, Norwich. [4464

TRIUMPH, countershaft, and Swan C.B. sidecar, exceptional condition, completely overhauled, lamps, wind screen, hood, many spares, etc.; £70 for quick sale.—Tiltman, 3, Randolph Rd., Maida Vale, W.9. [4994

1913-14 3½h.p. Triumph Combination, 3-speed, hand clutch, kick start, electric lamps, horn, speedometer, excellent condition; £50.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607, Southport. [X0841

TRIUMPH 1920 Model H., Dunhill Limousette sidecar, hood, screen, mat, electric light, Bonniksen, Lucas horn, Tan-Sad, spare chain, belt, tyres, valves, etc., insured £160; tax paid; £105.—Clarke 1, Balfour Rd., Acton. [4638

1918 Triumph, 1921 bulbous back sidecar, Easting, lamps (electric side and tail), car Klaxon, 3in. tyres, fully equipped, all spares, tax and insurance paid, condition as new; £93.—Dean, 98, Ullswater Rd., Palmers Green, N. [4955

1921 Triumph-Montgomery, renovated, electric lighting, wind screen, speedometer, luggage grid, horn, tools, all tyres and belt new, mechanically perfect, 90 m.p.g. guaranteed, insured; nearest £125.—9, Fauconberg Rd., Chiswick. [4604

NEW Triumph Motor Cycles.—Chain and belt models, £105; all-chain drive models, £115; combinations, £145; Baby Triumphs, £65; extended payments and exchanges arranged.—Wauchope's, 9, Shoe Lane, London. [5104

1919 (late) 4h.p. Triumph Combination, 3-speed, etc lamps, horn, licensed, screen, luggage grid, petrol tin carrier, exceptionally good condition; £93.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. 'Phone: 607 Southport. [X0835

£95.—Triumph 4h.p., 1919, fully equipped, speedometer, overhauled by makers August, and fitted with new Millford coach sidecar and Easting at cost £50; guaranteed perfect; any trial; insured August, 1922.—Shires, 80, Armley Ridge Rd., Leeds. [X0942

WANTED, purchasers for any model of new 1921 Triumph motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0646

TRIUMPH 4h.p., 3-speed countershaft, large bulbous Sandum sidecar, Easting, removable child's seat, spring footboards, speedometer, completely equipped, accessories and spares, 2 new tyres, splendid condition, smart appearance; £95; purchasing larger make.—82, Woodgrange Av., North Finchley. [5141

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TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3990

TRIUMPH Spares sent per return from stock. Call, writer, or 'phone 4042.—G. H. Tucker, Redcliffe Hill, Bristol. [2291

TRIUMPH Parts.—Every part, any year, in stock; new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X0923

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Trump.

4h.p. Trump-Jap, 3 speeds, and kick start (hub), lamps, horn, tax paid, good condition, reliable, powerful; £29/10.—93, Ormerod Rd., Burnley. [X0940

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VELOCETTE, 1921, 2-speed model, quite new; approval anywhere; 50 gns.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4823

ASTOUNDING Offer of a few new slightly showroom soiled Velocette 1921 models at enormous reductions: Model D.2, 2¼h.p., 2-speed, internal expanding brakes to both wheels, mechanical lubrication, all latest improvements, £55; Model D.3, 3-speed, £62; Model D.L.2, lady's open frame, £55; easy payments only 4% extra. Write for our special end of season clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [5081

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Verus.

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

Villiers.

VILLIERS 2¼h.p., 2-stroke, Albion 2-speed, excellent condition, tyres nearly new; £35, or near.—Bassindale, Green Road, Hall Green, Birmingham. [4728

Vindec.

VINDEC, special J.A.P. 6h.p. 1917 combination, C.B., 3-speed Sturmey countershaft, guaranteed mechanically perfect, nice lot; £85.—W. Richardson, 75, Battle Rd., Belvedere, Kent. [4685

Wilkin.

£95.—1921 4h.p. Wilkin-Blackburne, 3-speed S.A. gear, clutch, kick start, all-chain drive, T.T. bars, long exhaust, Dunlop extra heavy tyres, tools, etc.; the above machine specially built for competition work, slightly shop-soiled, but otherwise brand new and unregistered.—Slater, Highfields, South Elmsall, Yorks. [4448

Wolf.

WOLF-J.A.P. 4h.p., 1916-17, countershaft, clutch, K.S., equipped; £55; exchange cheaper machine and cash.—28, Bourne Rd., Bexley. [5144

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler

1920 Wooler, 1921-2 improvements, perfect engine, powerful, Cowey horn, speedometer, lamps; £65. —16, Pickwick Rd., Dulwich Village. [4896

WOOLER, 1920, 3h.p., mechanical condition first-class, fully equipped; bargain, £45.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

1920 Wooler 2¾h.p. Touring, variable gear, electric and acetylene lighting, speedometer, horn, tools, etc., tax paid, insurance, perfect condition throughout; £70, or near offer.—Box 1,899, c/o *The Motor Cycle.* [4895

Zenith.

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

1914 Zenith, 90 bore, will do over 70 m.p.h.; bargain, £42.—Ross, 86, High Rd., Lee. [4482

1920 Zenith Combination, well equipped; £87.—24, Balliol Rd., North Kensington. [4851

ZENITH-BRADSHAWS in stock, immediate delivery; £118.—Caeco, 1, Sidney St., Cambridge. [5059

SPORTS Zenith, 3½h.p. twin J.A.P., fully equipped; £65.—Hearn, Liverpool Rd., Burscough. [5030

ZENITH 1920 6h.p. Sports, lamps, speedometer, like new; £78.—Clark, 7, Exhibition Rd., S.W.7. [5064

1915 5-6h.p. C.S. Zenith Combination, new aluminium sidecar; bargain, £65.—Ross, 86, High Rd., Lee. [4480

8h.p. Zenith Countershaft Model, K.S., all on, very fast, low mileage, as new; £80.—Flynn, 39, Essex Rd., London, N.1. [4906

ALLAN GRUZELIER for new or second-hand Zenith models immediately. — 168, Regent St., W. Regent 205. [4366

1920 8h.p. Zenith Motor Cycle and Combination, like new; £105, or offer.—Seen at 32, Chester Mews, Belgrave Sq., S.W.1. [4320

1921 Zenith 8h.p. Sports Solo, all on, tax, insured, hardly soiled.—Knight, Upper Tooting Rd., S.W. 'Phone: Streatham 2390. [4416

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [0711

1921 Zenith 8h.p. Sports Solo, all on, tax, insured, slightly used; 90 gns.—Knight, Upper Tooting Rd., S.W. 'Phone: Streatham 2390. [4415

ZENITH, 5h.p., 1921 (July), countershaft, hand clutch, kick starter, fully equipped; £105; exchange lightweight.—Dr. Warren, Ponders End. [4972

ZENITH-GRADUA 1914 8h.p. Sports Combination, clutch, Canoelet sidecar, tax paid, perfect running order; real bargain, £48.—77, Highbury Hill, N.5. [5203a

£105.—1921 8h.p. Zenith, countershaft model, practically new, insurance, accessories; sidecar, £10. —Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [4015

ZENITH 6-8h.p. Gradua Combination, 1919, magnificent turnout; trial, appointment by letter; £110, or nearest.—Box Villa, 157, Maybank Rd., South Woodford. [3883

1920 8h.p. Clutch Zenith and Sidecar, in perfect condition, fitted Lucas lamps, T.T. bars; will consider a late model solo and cash, or will give cash and above for G.N.—Letter, Newbold, 23, Melrose Rd., West Hill, Wandsworth. [3362

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Zenith.

ZENITH Cycle and Sidecar, 1916, 8-10h.p., ball bearings, clutch, kick starter, Gradua gear; bargain; seen by appointment.—J.W.D., 74, Lancaster Gate, London, W. [4465

ZENITH, shop-soiled only, brand new 1921 5h.p. model; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X0892

ZENITH, 1921, 8h.p., Gradua gear, fitted to 1921 Gloria sidecar, wind screen, perfect; absolute bargain, £160, or near offer.—Fincham, 59, Queen's Rd., Dalston. [4376

ZENITH 8h.p., countershaft model, 1915, Rennoc sidecar, electric lighting, in good condition throughout; £78.—Sumner, 70, Camden Mews, Camden Rd., N.W. [4694

1920 Sports Zenith, discs, electric lamps, speedometer, knee-grips, special engine, long separate exhaust, fast and powerful, perfect, and as new; £80.—Baxter, Eden Vale, Morecambe. [X0902

ZENITH-BRADSHAW and all models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [4783

ZENITH-GRADUA 1919 6h.p., 770 c.c., good froot and oversize back tyre, Lucas lamps, speedometer, tax paid, fast aod reliable; £70; any trial.—Swainson, 54, Sidney St., Cambridge. [4754

1921 Competition Zenith Combination, 8h.p., o.h.v. (90 bore), specially built, lavishly equipped, insured, genuine racing machine, 80 m.p.h. solo, 65 sidecar, new, perfect; deliver anywhere; sacrifice £165, cost £200.—70, Station Rd., Harborne, Birmingham. [4902

1921 8h.p. Zenith Combination de Luxe, clutch, countershaft, kick start model, electric lighting, speedometer, discs, all on, condition as new; cost £216 March, 1921; accept £128; exchange, lower power considered.—254, Portobello Rd., North Kensington, London. 5123

1921 8h.p. Model H. Zenith Combination, clutch, kick starter, Millford, Easting, lamps, F.R.S. streamline, Tan-Sad, accessories, condition as new, sporty appearance, fast, fully insured; bargain, £150.—W. Stock, A.M.I.E.E., Chief Engineer, Electricity Works, Hindhead. [5202

Ladies' Motor Cycles.

F.O.C.H. have 2¾h.p. Douglas, lady's model, new condition, licensed.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [4589

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

1918 New Imperial, ladies' model, 2¾h.p., clutch, kick starter, etc., excellent condition; £38.—Peall, 143, Upper Clapton Rd., N.E. [4342

LADY'S Douglas, 3-speed, foot clutch, kick start, all black, lamps, horn, not ridden for 2 years, has since had complete overhaul at Douglas works, perfect condition; £75.—Ranken, 11, Spence St., Edinburgh. [4461

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Miscellaneous.

2¾h.p. 2-stroke, Anzac, Druids, practically new engine; £18.—13, New St., Wellington, Salop. [X0951

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths Motories, Halifax.

BARGAINS.—New 4½h.p. Quadrant and sidecar, £125; new 7h.p. Ariel combination.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, £85; 1921 4½h.p Ariel, £110; 1921 7h.p. Ariel, £125.—Booths Motories, Halifax.

BARGAINS.—1921 Rudge Multi, run 50 miles, £75/10; J.E.S. motor set, for cycle, £10/5; 3h.p. twio Humber, 3-speed, £18/15.—Booths Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10; 3½h.p. N.S.U., £12/10; 3h.p. Enfield, 2 speeds, £29/15; 6h.p. Chater-Lea, Grade gear, £21/15.—Booths Motories, Halifax.

BARGAINS.—8h.p. Premier and sidecar, £65/10; 3½h.p. free engine Triumph, £26/10; 3½h.p. P and M., 1914, £39/15.—Booths Motories, Halifax.

BARGAINS.—4h.p. 1917 3-speed Douglas, £59/15; 4h.p. 1920 3-speed Douglas, £85/15; 1915 2¾h.p. Douglas, £37/15; 1917 Douglas, £55.—Booths Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths Motories, Portland Place, Halifax. Tel.: 1062. [3301

HALIFAX.—50 second-hand motor cycles and combinations. Offers wanted. Get list. Cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [4597

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PULLEY

AND GEAR COMBINED.

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WE thank the numerous competitors for their efforts in our recent competition, and regret that owing to the very large number of replies we have received, we are unable to announce the result until the issue of "The Motor Cycle" of OCTOBER 27th.

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LONGMAN Bros.—1919 Triumph combination, absolutely perfect condition; £85.

LONGMAN Bros.—1920 5-6h.p. James combination, magnificently equipped, used very little; £110.

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ALLBER.—Douglas 1916 2¾h.p., 2 speeds, good tyres, accessories, tax paid, in really good order; £40.

ALLBER.—Sun-Villiers 2¾h.p., 2-stroke, good tyres, speedometer, lamps, horn, tax paid, in excellent condition; £27/10.

ALLBER.—Levis 2½h.p., 2-stroke, 2 speeds, all accessories, tax paid, in good order; £32/10.

ALLBER.—Calcott 3h.p., fitted all accessories, tax paid, new condition; £27.

ALLBER.—Alldays Allon 1920 3h.p., 2 speeds, clutch, kick starter, original tyres, tax paid, in splendid condition; £45.

ALLBER.—Humber 2¾h.p. twin, 3 speeds, clutch, etc., new rear tyre, complete, in fairly good order, needs minor adjustments; £18/10 to clear.

ALLBER.—F.N. 2½h.p., 2 speeds, clutch, shaft drive, good order, tax paid; £23.

ALLBER.—Indian 1916 8-6h.p., 3 speeds, clutch, kick starter, all lamps, horn, tools, etc., T.T. model, very fast; £49.

ALLBER.—P. and M. combination, 1917, 3½h.p., 2 speeds, clutch, kick starter, new cast aluminium chain cases and foot plates, all accessories, good order, tax paid; £48/10.

ALLBER.—Indian combination, 1916, 7-9h.p., 3 speeds, clutch, kick starter, electric lighting, good tyres, all accessories, tax paid; £65.

ALLBER.—Humber combination, 4h.p., 2 speeds, handle starting, coach sidecar, all accessories, tax paid, in good condition recently overhauled; £40. [4944

RUDGE 3½h.p., with all accessories, brand new; also Douglas 2¾h.p., perfect condition; both models 1921, and have kick starter.—Write, Barrena, 13, Abinger Rd., W.4. [4642

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [3183

JAMES (about 4½h.p.) Combination, 2-speed, kick starter; £50, or exchange good solo. Also Antoine 3½h.p., 2-speed, free engine, wants connecting rod; quick sale, £15.—Box 6,857, c/o *The Motor Cycle.* [4355

TRIUMPH 1914 4h.p. Combination, 3-speed, clutch, pedal start, tax paid, trial, 52 gns.; Rudge Multi combination, splendid condition, overhauled, trial, bargain, £60; after 6.—17, Chatto Rd., Battersea Rise, S.W.11. [4966

4h.p. Douglas Combination, 6h.p. Clyno combination, 4¼h.p. Lincoln-Elk combination, 3½h.p. Rudge combination, 4h.p. 1920 Bradbury combination; take lightweights or older combinations in part exchange.—57, Kenbury St., Camberwell, London. [4750

3½h.p. Triumph Motor Cycle, requires slight adjustments, to clear £10; Enfield 2¾h.p., 2 speeds, running order, £18; O.K. 1917 motor cycle, less power unit, to clear £15.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [5119

TRIUMPH 1921, Montgomery sidecar, luxuriously equipped, every detail, as new, £100; Sunbeam twin combination, like new, £100; Triumph, free engine model, in the pink, £27; and several lightweights from £20 to £50, all in good order.—Bunting's Motor Exchange, Wealdstone. [5116

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F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [4591

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MEBES and Mehes, the Original Light Car Specialists, invite reasonable offers for the following shop-soiled, but otherwise new motor cycles, as they are relinquishing this part of their business in favour of light cars: Beardmore-Precision 3½h.p.; Wooler 2¾h.p., variable gear; Rover touring model, 3½h.p., 3-speed, clutch; Bat 6h.p. Model 4, clutch, 3-speed; L.M.C. 6h.p. suspension-frame model, clutch, 3-speed; L.M.C. 6h.p., rigid frame, clutch, 3-speed; L.M.C. 3½h.p., clutch, 3-speed; also 6h.p. L.M.C. combination, fully equipped, used for demonstration only; and one Elite model Henderson sidecar and one spring-frame Henderson sidecar, both new, shop-soiled only.—144, Gt. Portland St., W.1. 'Phone: Langham 2230. [4502

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STANDARD Touring G.N. Car, week-end £5, full week £10; no extras.—Below.

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LATEST Models Motor Cycles and Combinations for hire, any period.—Fowler and Brigden, 130, Euston Rd. Museum 4827. [0708

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WANTED, 1920 B.S.A. combination or solo, cheap.—37, Arlington Rd., Surbiton. [4641

ROVER 3½h.p., 3-speed, and clutch, not earlier than 1916.—Box 6,939, c/o *The Motor Cycle*. [4617

WANTED, cheap, Triumph, clutch model preferred; must be cheap.—King, Egrove, Oxford. [X0931

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WANTED, good solo motor cycle, spot cash; no dealers; reliable make.—Townsend, 5, Gloucester Villas, Ashford, Middlesex. [4337

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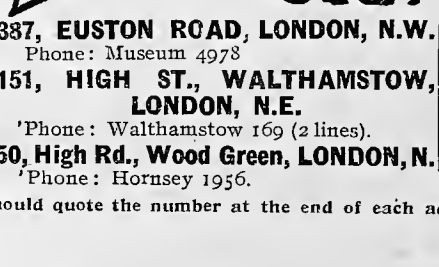

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SIDECAR, coachbuilt body, new; sacrifice £10/10. —57, Kenbury St., Camberwell, London. [4753

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BARGAIN; good light C.B. sidecar, complete with side door; £6/10.—Searles Stores, Southborough. [5041

SWAN Sports Sidecar off Zenith, black, red ribs, all fittings, heavy Dunlop; offers?—Denham, Epsom. [4990

MONTGOMERY Chassis, with coachbuilt body and apron; £5/10.—Apply, Crown Garage, Weyoridge. [4530

SIDECAR, 4-point, screen, hood, suit powerful machine, splendid condition; £18.—Doe, 5, Truro St., N.W.5. [4635

1920 Metal Sidecar, mileage 50; listed £37/10; evenings; £15.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X0954

SIDECAR, C.B., May, 1921, 4-point, perfect, lamp, mascot, apron; £19, or offer.—152, Trentham St., Southfields, S.W. [4695

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COACHBUILT Sidecar, perfect condition, red, strong chassis, 26×2½ heavy Dunlop; to clear £10.—Hambro Lodge, Datchet, Bucks. [4531

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UNDERSLUNG Sidecar, art cane, new chassis and tyre, right shape body; £8/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4059

SIDECAR, 4-point, Triumph fittings, good tyre, coachbuilt body, wind screen, electric lamp, ride away, complete; £6/10.—Write, Vanstone, 22, Baskerville Rd., S.W.18. [4708

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MORGAN, 1920, G.P., 10h.p., w.c., hood, screen, and electric; £145.—Dawe, c/o Dental Surgery, 216, Portobello Rd., North Kensington, W. [4743

1920 De Luxe Morgan, water-cooled, fully equipped, very fast; £145.—Hillier, 1, Thorpe Mews, Cambridge Gardens, Ladbroke Grove, W.10. [4843

1921 Sporting 2-seater, 8-10h.p. J.A.P., water-cooled, very smart and economical; sell £175, or combination and cash.—179, Torridon Rd., Catford. [4391

A.C. Sociables, modern, fully equipped, mechanically sound, good appearance, from £55 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W.1. [3425

MORGAN De Luxe; £85; a.c., hood, screen, lamps, tax paid, perfect; any trial; sacrifice; motor cycle part.—257, Cavendish Rd., Balham, S.W.12. [4970

G.N., 1921, dynamo model, mileage 2,000; cost £275, sacrifice £167.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

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A.V. Monocar, 1919, electric light, discs, aluminium body, hot-looking lot, overhauled; any trial; best offer over £70, bargain.—76, Cromwell Rd., Luton. [4893

B.S.A. 1914 2-seater, Silent Knight engine, D.A. and electric light, guaranteed mechanically sound; £170; accept combination part exchange.—121, Rosebery Av., E.C.1. [4649

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CROUCH Cycle Car, 1914, 3 speeds and reverse, good running order, smart looking; £75.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [5120

1920 (September) Aero Morgan, special 10h.p. M.A.G. engine, electrically equipped, hood and screen; £150.—Hillier, 1, Thorpe Mews, Cambridge Gardens, Ladbroke Grove, W.10. [4842

VICTOR 1915 Cycle Car, 2-cyl., water cooled, 2 speeds and reverse, fast and quiet 2-seater, lamps and horn; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [4052

CARDEN-J.A.P., 8h.p., 1919, 3-speed, and kick from seat, single-seater and dickey, nice condition; £65, or exchange solo and cash; N. London; Scott preferred.—Box 6,875, c/o *The Motor Cycle.* [4385

33 GNS.—Chater-Lea 2-seater, 2 speeds, reverse, hood, screen, differential, running but wants little attention; motor cycle exchange considered.—20, Treen Av., Hoggers Corner, Barnes, S.W.13. [4976

A.V. Monocar, late 1919, 6h.p., discs, electric light, hood, horn, insurance, tax paid, overhauled last week, rebushed and 2 new tyres fitted very fast; £75, or nearest offer.—Doyle, 22, Stanway Rd., Coventry. [X0984

LATE 1920 Morgan De Luxe, water-cooled, electric side lights, Lucas head lights, 2 spare chains, spare tube, full kit of tools, perfect condition, paintwork as new.—Baines, 166, Belgrave Gate, Leicester. [X0977

TAMPLIN 2-seater Cycle Car, late 1920, 8h.p. J.A.P., good condition, mileage 1,000, fast, comfortable, economical; nearest £90, or exchange good solo or combination.—Stanley, 82, Manorhouse Rd., Newcastle-on-Tyne. [4578

GRAHAME-WHITE (new) 2-seater Buckboard, 2-speed, clutch, kick starter, 2 brakes, Palmers, done 100 miles, excellent condition, licensed; any trial; cost £105, as new; £50; private owner.—89, East Hill, Wandsworth. [4667

CARDEN 2-seater, late 1921, hood, screen, clock, speedometer, spare wheel (unused), electric, beautiful outfit, insured, and tax paid; £110.—13, Grenfell Rd., Notting Hill (Latimer Rd. Station, Metropolitan). [5024

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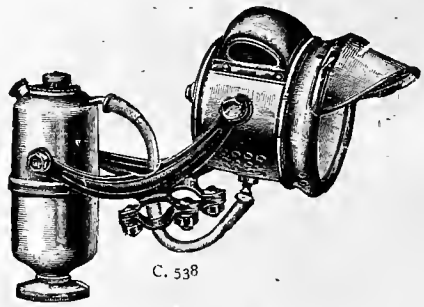

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2¾h.p. Siegle, o.h.v., 67×85, complete magneto, carburetter, controls; £12/10; write particulars.—37, St. Luke's Rd., Maidstone. [4399

ENGINE, 2¾h.p., long stroke, E.I.C., B. and B., adjustable tappets and pulley, beautiful condition; £9/10.—Decourcy, Frankfort St., Birmingham. [4720

NEW Blackburne 4h.p. Engine, complete with Amac carburetter and Thomson-Bennett magneto; bargain, £23; approval against cash.—Bastone's, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [5128

BROLER 2-stroke Engines.—One of our many testimonials: "My combination pulls like a 5h.p. twin. Liveridge and Meriden are easy top gear climbs (5½ to 1)." You can travel 5 to 50 m.p.h. and as long as you like on Brolers.—Brooks, Traeler and Cox, Narborough, Leicester. [X0538

HEPPELTHWAITE'S, Engine Specialists.—6h.p. De Dion w.c. unit, £10; 4½h.p. Precision unit, £10; 6h.p. twin Premier unit, crank case damaged, £9; 4h.p. o.h.v. J.A.P., £9, unit; 3½h.p. Fafnir, £3; 3½h.p. Rex, a.i.v., £3; 2½h.p. Peugeot, £2/10; White and Poppe, less cylinder and piston, £2; 4½hp. Precision cylinder, 37/6; rear Rex cylinder, 30/-; 2¼h.p. Minerva, £3/10; P. and M., a.i.v., £3; others. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [4631

ENGINES.

INDIAN.—A few Powerplus 7-9h.p. engines at the remarkably low price of £15/15 each.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. 'Phone: Hampstead 2767. [4800

J.A.P. Engines. J.A.P. Engines. J.A.P. Engines.—I have the largest stock of J.A.P. engines and parts in England; over 30 engines always in stock to select from, and the price: 5h.p. twins, £17/10; 8h.p., fitted with new pistons and 1921 cylinders, £20; and 8h.p. at £18/10. Parts: 8h.p. J.A.P. crank cases, 50/- pair; 5h.p. crank cases, 40/- pair; 8h.p. cam wheels, complete, 15/- each; valves complete, 4/- each; valve guides, 3/6 each; tappet guides, 2/6 each; exhaust valve and inlet cap, 4/- each; tappets complete, 2/6 each; cam levers, inlet and exhaust, 4/- each; gudgeon pins, 5/- each; and all parts for J.A.P. engines. Stamp for reply.—Hawkins, 455, York Rd., Wandsworth. [3665

IGNITION, LIGHTING, ETC.

H.B.I.

H.B. Ignition Co. carry large stocks of new and second-hand magnetos. Thomson-Bennett 42, 45, 50, 55, and 180°, single and twin.

H.B. Specialise in T.B. for fixing on Triumph, P.M., B.S.A., J.A.P., Douglas, etc., £2/10, postage 1/6. C.A.V. clock twin, for 2¾h.p. Douglas, etc., £2/15.

H.B. will take your old magneto in payment.

H.B. sends all magnetos on approval against cash. Every magneto dispatched carry H.B. 12 months' guarantee

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RELIANCE Magneto Repairing Co. for repairs and new magnetos.—See below.

RELIANCE guarantee to return your magneto within 3 days, and if necessary 24 hours, with a written guarantee for 12 months.

RELIANCE test every magneto after repair under all running conditions, and, as we contract for many of the largest concerns, you need have no hesitation in placing your repairs and orders with us.

RELIANCE manufacture and stock spares for Thomson-Bennett, E.I.C., Splitdorf, U.H., Bosch, Dixie, etc.; special line genuine platinum screws for every make, 12/- per pair.

RELIANCE will be pleased to give advice free of charge upon any question concerning ignition troubles, as we place our long-standing experience at your disposal, and old and new customers may be certain of getting the usual promptness and courtesy that we have always endeavoured to give.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1.

RELIANCE Magneto Repairing Co., 283, St. John St., E.C.1, for new and second-hand magnetos.—See below.

THOMSON-BENNETT Magnetos, waterproof, variable ignition. These magnetos leave us in perfect condition, and carry our guarantee to either replace or refund cash if found unsatisfactory. Single-cyls., clock or anti, suit any machine, 55/-; 45, 48, 50, 55, 180 deg., for J.A.P., Clyno, Douglas, etc., 55/-.—See below.

C.A.V. Magnetos, brand new, single and twin-cyl., ideal for Douglas, Levis, Calthorpe, O.K., or any lightweight, single or 180° twin, 55/-.

E.I.C. Magnetos, absolutely brand new, not shop soiled, ready to fit on Triumph, P. and M., B.S.A., Norton, Sunbeam, etc., £4; the above are genuine E.I.C. standard fitting magnetos.

BOSCH D.A.L. Magnetos, soiled only, otherwise as new, 1-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; powerful spark at low speed. All the above magnetos are waterproof, variable ignition, and guaranteed 12 months; postage 1/6.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [1071

LIGHTING. Lighting. Lighting. Lighting. Lighting. Lighting. Lighting.—Below.

LIGHTING Sets, electric, comprising of 4 volt 20 amp. accumulator, new, in case, head light, tail lamp, switch, and wiring, £1/17/6 per set.—Below.

LIGHTING.—Head lamp and generators, 17/- pair; only 200 left, ex-W.D. stock.—Below.

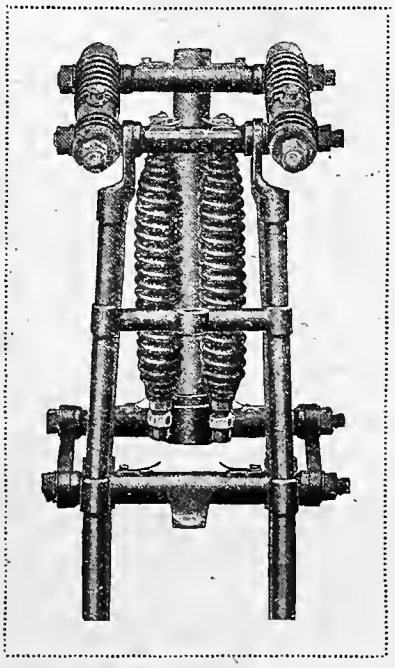
LIGHTING.—Accumulator, 4 volt 20 amp., new, in case, 14/- each; tail lamp, switch and wire, 10/-; head lamp, 16/- each; postage extra on above.—Motor Cycle Accessories Co., 868a, Old Kent Rd., S.E. [5189

P. and M. Magneto, guaranteed complete, sprocket, chain, and new plug, £2/5/6.—Below.

MAGNETOS for all machines from £2, postage extra.—Motor Cycle Accessories Co., 868a, Old Kent Rd., S.E. [5179

M-L Singles 30/-, Thomson-Bennett 40/-; carriage 1/6.—84, Greenside Rd., Croydon. [4660

The BRAMPTON Bi-Flex SPRING FORK



Have you noticed the large number of successful Motor Cycles in all speed and reliability trials, that are fitted with the BRAMPTON BI-FLEX? Here are a few reasons why:—

THE exclusive double-action principle on which the "BRAMPTON" Bi-Flex Spring Fork is designed facilitates an independent and simultaneous movement of the wheel in the direction of the lines of force produced by *horizontal and vertical shocks*, whilst the successful combination and arrangement of the springs, acting in compression, respond to the slightest vibratory movement or the irregularities of the worst road surfaces with masterly effectiveness.

Another feature which has contributed to make The "BRAMPTON" Bi-Flex Spring Fork famous, and so universally popular with riders, is the simplicity and efficiency of the patent adjusting arrangement of the links and rocker bars, by means of which lateral instability is entirely eliminated.

Measurement form and descriptive booklet illustrating models for Motor Cycles from 2¼ h.p. upwards free on request, applications for which are invited.

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IGNITION, LIGHTING, ETC.

K.L.G. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 59, Queen St., Wolverhampton. [5031

DYNAMOS, 6 v. 8 amp., cut-out, Lucas, third brush control; £5 each.—Jenner, 165, Church St., Mitcham. [4070

ELECTRIC Lighting Set, head lamp and tail; offers, or exchange for acetylene set.—Turner, Bidborough, Kent. [4331

LUCAS Dynamo Lighting Sets, complete, from £7 each.—Dept. H.I., Leslie Dixon and Co., 9, Colonial Av., Minories, E.1. [0709

C.A.V. Magnetos.—Extraordinary bargains. Brand new 180°, twin or single, approval against cash, 38/6, carriage free.—Langfords, 37, Cricklewood Broadway, N.W.2. [4848

LUCAS E3 Dynamo, switchbox, cables, head, side, tail lamps, accumulator, £14; Lucas electric horn, push, and wires, 35/- (new).—60, Baker St., Sparkhill, Birmingham. (D) [4501

GOVERNMENT Surplus Unused Magnetos.—Having purchased the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; special long driving spindles for Rudge, 10/- extra; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

GOVERNMENT Surplus New Plugs in boxes.—A.C. (Titan), 1/6; K.L.G., type F7, detachable, 2/6.—Below.

HIGH Tension Wire, new, unperished, 9mm. 5d. per yard, 25 yard coil 8/6; 7mm., 4d. per yard, 25 yard coil 6/-; 5mm., 3d. per yard, 25 yard coil 4/-; 3mm., 2d. per yard, 25 yard coil 2/-.—Below.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d. See other goods under Parts and Accessories.—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London [4421

MAGNETOS by C.A.V.'s, Bosch, and Thomson-Bennett, 50% below cost; see last or next week's issue of this paper.—Vale Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3. [0700

JEBRON, registered 291298, greatly superior to platinum, for blades, screws, etc., cures misfiring; Jebron screws, fit Bosch mags., 10/6 pair; old screws, any make, Jebronised, 4/9 each, return post.

JEBRON, the pioneer motor contact, registered March, 1907, and March, 1921; hundreds of unsolicited testimonials.—Jebron, 38, Herbert Rd., Woolwich, S.E.18. [0001

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [2284

HEPPELTHWAITE'S.—Bosch 6-cyl., 37/6; single Bosch, enclosed, £3; lightweight, enclosed, 55/-; Dixie, 38/6; Ruthardt, 38/6; Bosch open type, 30/-; trembler coils, 5/-.—19, Wilcox Rd., South Lambeth, London, S.W.8. [4633

MOTORISTS and Motor Cyclists.—Don't buy new plugs. Fouled and choked plugs renewed by my process are good as new. I save you 4/3 on every plug. Plugs renewed 9d. per plug.—A. Smith, 35, Barnwell Rd., Brixton, S.W.2. [5205

MAGNETO Repairs.—Send your magneto to Palmer's Garage, Tooting. Reply paid, quotation telegraphed on receipt. Quick, efficient repair guaranteed in from 2 to 6 days, usually within 24 hours.—Palmer's Garage, Tooting. [4162

MAGNETOS.—Thomson-Bennett, clock or anti clockwise, 42, 45, 50, 55, 180°, and single-cyl. 4-stroke, 50/-; 2-stroke, 45/-; variable ignition, new, waterproof, guaranteed; write for illustrated particulars.—Super Power Co., 81, Northside, Clapham, S.W.4. [5061

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Euston, London. [6015

IGNITION, LIGHTING, ETC.

U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. AI, BI, AO, KBI, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [2764

MAGNETO and Dynamo Repairs Service, also self-starters, batteries, and general electrical equipment are speedily and thoroughly repaired by the Rumbaken Repairs and Spares Service, all work returned indistinguishable from new. Spare parts for every known make.—Connecticut Service Station.

THERE is a Service Depot in every large town. Call to-day for a quotation. Head Office and Works, Derby St., Cheetham, Manchester; Manchester town depot, 288, Deansgate; London depot, 115, Gt. Portland St., W.1; Leeds depot, 52, Woodhouse Lane; Liverpool depot, 65, Renshaw St.; Birmingham depot, 192, Corporation St.; Bristol depot, 14, Colston St.; Paris depot, 40, Rue Brunel. [0258

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2381

FOR Immediate Disposal. — Thomson-Bennett, C.A.V., all degrees, single and twin, leads, and variable ignition, for all machines, £2/12/6, includes postage; Bosch £3, postage extra, 1/6. We forward immediately all magnetos on approval against cash. Money refunded if dissatisfied.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, London, S.W.9. [5213

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos; Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approval A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [0263

TYRES.

HERBERT ROBINSON, Ltd., Green St., Cambridge.

GREAT Reductions in motor covers and tubes; brand new and guaranteed; money refunded if tyres not approved of.

24×2 Dunlop Heavy, 34/6; tubes, 7/6.—Robinson's.

24×2¼ Dunlop Heavy, 36/3; tubes, 8/-.—Robinson's.

26×2 Dunlop Heavy, 36/6; tubes, 8/-; Wood-Milne, 25/-; combination, 44/-; clearance tubes, 4/6.—Robinson's.

26×2¼ Dunlop Heavy, 37/3; tubes, 8/3; Dunlop extra heavy, 55/3; tubes, 9/6; Bates heavy, 45/-; Palmer, 30/-; Wood-Milne combination, 35/6; Beldam combination, 35/6; Matchless, 20/-; Pedley, 20/-; clearance tubes, 4/6.—Robinson's.

26×2⅜ Dunlop Heavy, 41/6; extra heavy, 49/6; tubes, 9/-; Palmer, 35/-; Avon studded, 30/-; Dunlop clearance, heavy, 30/-; extra heavy, 34/-; John Bull, 48/6; Moseley, 30/-; Bates, 50/-; Hutchinson passenger, 30/-; clearance tubes, 6/-.—Robinson's.

26×2½ to Fit 2¼ Dunlop Heavy, 46/-; extra heavy, 55/3; tubes, 9/6; John Bull, 48/6; new tubes, 6/6; clearance tubes, 4/6.—Robinson's.

28×3 Avon Extra Heavy, 50/-; tubes, 6/6.—Robinson's.

29×3½ Dunlop, to fit American rims; £65.—Robinson's.

650×65 Avon Extra Heavy, special bargain price, 42/6; tubes, 6/6; Dunlop heavy, 46/9; extra heavy, 53/3; Dunlop tubes, 10/-.—Robinson's.

700×800 Dunlop Heavy, 46/9; extra heavy, 53/3; tubes, 10/6.—Robinson's.

HERBERT ROBINSON, Ltd., Green St., Cambridge. [5090

6/6 Only is the cost of repairing that damaged tyre of your's.—Below.

SEND Your Tyre by post to-day. We guarantee a thoroughly sound job.—Below.

OLD Covers Retreaded with rubber studs, made equal to new again, 12/6, 15/6, 20/-, and 25/-.—Below.

POST To-day to Phœnix Tyre Repairing Co., 224, Sherlock St., Birmingham. [X0919

BASTONE'S for Covers and Tubes; no better or cheaper house.—See displayed adverts. [2344

THE Difference between a good retread and a bad one is its mileage; try us; watch results.—Melton Rubber Works, Melton Mowbray. [0636

KEMPSHALL New Clearance, 26×2½×2¼ 30/-, 26×2 22/6, 26×2¼ 27/6.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton. [5215

OUR RE-CONDITIONED

DOUGLAS

MOTOR CYCLES

55 Guineas

Or £15 down, and 12 instalments of £3:18:4

They are the standard W.D. 2¾ h.p. 2-speed machines completely rebuilt.

Practically indistinguishable from new. Over 50% new parts, including new tyres, belt, chain, carburetter, etc. Fully guaranteed for 3 months. Over 500 already supplied to all parts of the country.

Supplied with bags, tools, and pump, or completely equipped with lamps and horn, 3 Guineas extra.

Special Terms to Trade.

DOUGLAS FRAMES

2¾ h.p. and 4 h.p.

RENOVATED, STOVE ENAMELLED, TESTED.

£5-10-0

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Carriage Extra.

Write for full list of surplus Douglas parts.

CRABTREE & SON, LTD.,

Motor Engineers, WISBECH.

TYRES.

ON Account of reduction in the price of tyres, the undermentioned prices are reduced by 10%.

24×2 Hutchinson Rubber-studded 22/3.

24×2¼ Clincher de Luxe Rubber-stud Heavy 26/-.

26×2 Hutchinson Brooklands R.S. 26/5, Palmer cord heavy 34/6.

26×2¼ Dunlop Heavy 36/-, Macintosh chain 32/3, Bates special heavy 34/9, Palmer cord heavy 34/9, Palmer cord 34/9, Rom combination 41/9, Avon combination 38/9, Avon Sunstone 32/9, Wood-Milne combination 46/-, Beldam combination 35/-.

26×2⅜ Palmer Cord Heavy 35/3, Clincher de Luxe extra heavy 27/9, Palmer cord 35/9, Dunlop heavy 35/9, Dunlop extra heavy 41/-, Avon tricar 32/9, Hutchinson passenger R.S. 32/9.

26×2½×2¼ Avon Rubber-studded 24/6, Avon heavy rubber 29/6, Hutchinson rubber-studded 31/-.

26×2½ Rom Combination 45/-, Macintosh chain 35/9, Hutchinson rubber-studded T.T. 33/-, Dunlop heavy 45/-, Avon Sunstone 42/6, Wood-Milne extra strong 34/6, Wood-Milne special 31/7.

650×65 Wood-Milne Extra Strong 40/-, Palmer cord (light car pattern) 41/6, heavy rubber non-skid.

650×65 (for Voiturette rims) Dunlop Steel-studded 47/6, Dunlop 3-ribbed 45/-, Dunlop grooved 42/6, Burnett grooved 30/-.

26×3 (for 650×65 rims, equivalent to 700×80 for 650×65 rims) Englebert Touring Rubber-studded 30/-, ditto passenger ditto 32/6, ditto superior reinforced 37/6.

700×75 (to fit 650×65 rims) Hutchinson Small Car 3-ribbed 55/-.

700×80 (to fit 650×65) Wood-Milne Extra Strong 45/-.

28×3 (to fit American rims) Dunlop Heavy 45/-, Clincher de Luxe extra heavy 45/-, Wood-Milne extra strong 32/6, ditto 3-ply 28/-.

28×3 (to fit 2½ rims) Dunlop Extra Heavy 50/-, Dunlop heavy 45/-.

NEW Tubes, in all sizes, 7/- each, butt-end 6d. extra; tubes with one small vulcanised patch by manufacturers, otherwise quite new, 5/6.

THE Above Lines are sent 7 days on approval, and forward passenger train, carriage paid.

REMEMBER, the reputation and guarantee of Emanuel's is behind all we sell.

H. EMANUEL and Co., Tyre Factors, 27, Belgrade Rd., Stoke Newington, N.16. Stores: 37a, Balls Pond Rd., Dalston, London, N. Tel.: Dalston 3161. [0732

SCOTTISH Readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 47, Carrick St., Glasgow. Lists post free. [1654

A FEW Real Bargains for Scottish Readers, surplus Government, etc., covers and tubes. Write for list.—McArthur-Hill, 47, Carrick St., Glasgow. [1653

TRY Our 3,000 mile retread. Repairs of every description. High-class workmanship guaranteed. Return carriage paid.—Buxton Vulcanising Co., Buxton, Derbyshire. [4255

BURST Motor Cycle Tyres, chafed beads, remoulded, made perfect, tube vulcanising, butt-ends fitted, retreading; send for list.—Melton Mowbray Rubber Works, Melton Mowbray. [0347

ECONOMIC Tyre Co.—Special offer of Wood-Milne Keygrip covers, new and in perfect condition, at 50% off list prices; all goods carriage paid on approval against remittance.

ECONOMIC.—Wood-Milne 26×2 heavy, 25/-; extra heavy, 30/-; 26×2¼ heavy, 26/10; extra heavy, 34/-.

ECONOMIC.—Wood-Milne 26×2½ heavy, 31/10; extra heavy, 36/-; 28×2½ (American), extra heavy, 40/4.

ECONOMIC.—Wood-Milne 650×65 heavy, 32/-; 700×80 heavy, 43/6; extra heavy, 46/6.

ECONOMIC.—The following are W.D. clearance, new, and in perfect condition.

ECONOMIC.—26×2¼ Bates special heavy, 33/-; Clincher de Luxe, extra heavy, 33/9.

ECONOMIC.—26×2⅜ Bates special heavy No. 1, 34/6; No. 2, 36/6; Clincher de Luxe heavy, 30/-; Hutchinson passenger, 32/6; Tourist Trophy, 30/-; all oversize for 2¼ rims.

ECONOMIC.—26×2½×2¼ Clincher de Luxe heavy, 35/-; listed £2/17/6.

ECONOMIC 24×2¼ (oversize 2in. rims), Clincher de Luxe heavy, 27/6; listed 45/-.

ECONOMIC.—Fully guaranteed Dunlop rubber stud, 24×2, 26/3; 24×2¼, 29/-; 26×2, 28/9; 26×2¼, 30/-.

ECONOMIC Tyre Co., 314, New Cross Rd., S.E.14. 'Phone: New Cross 1393. [9228

HOMERTON Bargains.—New Avon or Michelin steel-studded covers, W.D., 700×65 35/- each; new Beldam clearance covers, all sizes, 30/- each (except 28×3 and 650×65, 40/- each, 700×80 50/- each).—Homerton Rubber Works, Brooksby's Walk, Homerton, E.9. [0331

TYRES.

CENTRAL Garage.—Buy your tyres at the right price. We have the finest selection of covers in London, and, what is more, we give free with every order a portable vulcaniser.

26×2¼ Dunlop Rubber-studded 31/6, Wood-Milne H. 25/-, E.H. 30/-, Palmer cord heavy 31/-, Goodyear E.H. 30/-, Bates 31/-.

26×2⅜ Dunlop Rubber-studded H. 36/-, E.H. 42/6, Palmer cord E.H. 34/-, Clincher E.H. 27/-, Avon H. 30/-, Moseley H. 29/-, Hutchinson T.T. 29/-, or Passenger 32/6, Bates 31/6.

26×2½×2¼ Dunlop E.H. 45/-, Clincher E.H. 30/-, Avon H. 25/-, or E.H. 30/-, Hutchinson T.T. 37/6.

26×2½ Wood-Milne H. 30/-, or E.H. 35/-, 26×3×2½ Dunlop rubber-studded heavy 45/-, 26×3 Wood-Milne H. 32/6, E.H. 40/-.

28×2½ (to fit American rims) Dunlop extra heavy 45/-, Wood-Milne H. 40/-, 28×3 Dunlop rubber E.H. 47/6, Wood-Milne E.H. 30/-, Kempshall 30/-.

650×65 Goodyear E.H. 30/-, Wood-Milne H. 32/-, Dunlop grooved voiturette 47/6, Burnett for voiturette 30/-, Dunlop steel-stud 47/6.

700×80 Wood-Milne E.H. 45/-, International grooved 55/-, Englebert touring 32/-, passenger 34/-, or super-reinforced 42/-, these Englebert covers are real fine, are marked 26×3, but are quite suitable for 650×65 rims; tubes of all sizes at 6/6 each.

WE have a special line of Palmer cord tyres, 26in., for 2in. or 2¼in. rims, which we can supply at the exceptional price of 24/6, or, with tube, 30/-; only a few left; orders executed in strict rotation.

ANY of the Above Covers will be sent on approval against cash, and money will be willingly refunded if you are not satisfied. Please include 1/6 for carriage, and make all cheque and Post Orders payable to The Central Garage, 302, London Rd., Thornton Heath. [4967

CLINCHER de Luxe Heavy Covers, 26×2½×2¼in., half list prices, guaranteed new, not W.D. or clearance; 30/- each; carriage paid.—Crystal Garage, 86, Church Rd., Upper Norwood, S.E.19. [3082

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Bromwich. [6068

26×2½ New Beaded Covers, 24/-; new best quality tubes, 24×2¼ 5/-, 26×2 6/-, 26×2¼ 6/6, 26×2½ 7/6, 26×2½×2¼ 8/-, 26×3 9/-, 700×80 9/6, 750×75 10/-, 28×3 10/6; new rubber belts, 6ft. 2in.×1in., 10/6; 15in. inflators, 2/3; sent approval, carriage paid, receipt remittance.—Palmer,s Garage, Tooting, S.W. [5118

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TANKS for B.S.A., new, 42/6; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [X8993

TANK for Triumph, new, 42/-; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [X8992

TANKS Re-enamelled from 10/6.—Bright and Hayles, 78, Church St., Camberwell, London. [4937

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COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied, extra capacity.—Hearsall Works, Coventry. [7464

B.B.F. Co., Melbourne Rd., Coventry. 'Phone: No. 1965. Petrol tanks of any description made and repaired; trade enquiries solicited; work guaranteed. [X9730

TANKS Re-enamelled to Pattern. High-class work only.—D. Jenkins and Sons, 6, Richard St., Atkinson St., Deansgate, Manchester. Established 25 years. [3601

TANKS Re-enamelled Makers' Colours, design, and transfer, first-class work, prompt return.—Donald, Enamellers to the Trade, 138, Glover St., Deritend, Birmingham. [X0946

DOUGLAS 4h.p. Tanks, brand new, unused, plated filler and unions fitted, latest type (round edges); £2/18 each.—1a Works, Paradise Rd., Green Lanes, Highbury, N.5. [4826

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TRIUMPH Riders.—We are supplying a special large 2½ gallon tank for this machine; old tank taken in part payment; write for full particulars.—Forfield Motors, Forfield Place, Leamington Spa. [X0990

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FINEST Carbide, cwt. lots 23/6, f.o.r., c.w.o.; packed in lb. tins, gross or half gross lots, 6/9 per dozen.—Sports Depot, Denby Dale, Huddersfield. [4435

CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 30/-, ½-cwt. 18/-, 28 lb. 10/6; drums free.—Young, Importer, Misterton, Somerset. [7180

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CARBIDE.—Immediate delivery of all sizes in 1 lb., 2 lb., and 6 lb. lever lid tins and 2 cwt. drums, labelled or plain for retailers' own labels, quality guaranteed, and all standard sizes supplied by the cheapest firm in the trade.—The Premier Lamp and Engineering Co., Ltd., Moorfield Works, Armley, Leeds. [5312

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MOTOR Cycle Manufacturers.—The owner of Patent relating to Spring Roller Motor Cycle Leg Shields, adaptable to any design machine, desires to negotiate with any firm for the sale of patent rights or the granting of licence to manufacture under Royalty.—Box 6,941, c/o *The Motor Cycle.* [4671

PATENT AGENTS.

J. E. S. LOCKWOOD, 3, New St., Birmingham. 'Phone: 5816 C. Patents guide free. [9057

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

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FLETCHER WILSON, of Coventry, Chartered Patent Agent and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

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AGENCIES.

AGENCY wanted for cars, commercial vehicles, motor cycles, etc., in Rotherham district.—R. Jenkins and Co., Ltd., Engineers and Boiler Makers, Wortley Rd., Rotherham. [3697

THE Mohawk Cycle Co., Ltd., require sole agents for their celebrated motor cycles in districts where they are not already represented.—Write for lists and terms to Mohawk Cycle Co., Ltd., Alexandra Rd., Hornsey, N.8. [2505

CONSULTING ENGINEERS.

AUTOMOBILE Engineer and Draughtsman.—Designs, working drawings, opinions on inventions, drawings, tracings, and prints, valuations.—C. K. Shepherd, Queen's College, Paradise St., Birmingham. [3699

GENERAL TRADE.

TO Manufacturers.—Machine work of all description wanted.—Brewster, Sparhawk St., Bury St. Edmund's. [4839

MOTOR and Cycle Traders Only.—Trade guide and catalogue, 1,000 selling line, at right trade prices; postage 6d.—Persens Co., Burton-on-Trent. [1917

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R., Wimbledon L. and S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [4165

SITUATIONS WANTED.

SALESMAN seeks position, 4 years' experience, all-round rider and driver, good education.—A., 2, Hopedale Rd., Charlton, S.E. [4534

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

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ROYS, Ltd., effect insurances of all kinds. Enquiries invited.—170, Gt. Portland St., London. [0055

£5/15 Covers "All Risks" for Morgans or similar three-wheeler.—Ernest Bass, 40, Chancery Lane, W.C.2. [0005

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application. The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

HOTELS AND APARTMENTS.

YOUR Maiden Aunt will be charmed with the Old Barn Teahouse, Stock's Green, Hildenborough, beyond Sevenoaks. [4442

WANTED.

REX Front Forks, about 1910.—Bradstone Road Garage, Bradstone Rd., Folkestone. [4511

SMALL Light Engine, mag., etc., about 1½h.p., any type.—36, Whyke, Chichester. [4333

WANTED, forked connecting rod, for 7-9h.p. Peugeot. —Alcock, Rosslyn, Mill Hill, N.W.7. [4960

3-SPEED Gear Box, K.S.; wheel with belt rim, 26×2⅜.—Cooke, 24, Duffield Rd., Derby. [4729

£8 for chain belt gear, suitable 5-6h.p.—Particulars, 17, Springfield Av., Horfield, Bristol. [4538

WATSONIAN Sidecar, State where seen in London district.—Box 6,926, c/o *The Motor Cycle*. [4496

TRIUMPH Spare Parts, large quantities; good prices given.—35, Hackford Rd., Brixton. [5172

WANTED, surplus from manufacturers and garages. —Grove, 18, Fore St., Edmonton, London. [4211

THREE Schebler Carburetters, suitable for Harleys, cheap.—1, Bellingham Terrace, Catford. [4771

WANTED, front cylinder head, 1913, 7-9h.p. Indian. Ashton's Motor Works, Caerphilly, Cardiff. [4339

MORGAN, old, w.c., wanted, cheap, or exchange W.D. Triumph and cash.—R., 92, Romford Rd., Stratford. 4957

WANTED, Enfield sidecar chassis and front forks, fit 1914 machine.—Parsons, 41, Chase Court Gardens, Enfield. [4515

INCOMPLETE P. and M.'s or Parts, W.D. spares, bankrupt stocks, etc.—Inman, Durham Rd., Seaforth, Liverpool. [3641

PREMIER 3½h.p. Cylinder, second-hand, good condition, 1912, or later.—Shuttleworth's, Motors, Keighley, Yorks. [3861

ENGINE-SHAFT Gear for 5-6h.p. Rex; also sidecar body, cheap; paintwork immaterial.—Laurel Farm, Headington, Oxford. [5045

PREMIER and Triumph Parts, new or second-hand; also complete machines if cheap.—Jack Ward, 11, Radford Rd., Leamington Spa. [X0926

WANTED, second-hand Morgans, in good condition, not earlier 1919.—Rey's, 378-384, Euston Rd., N.W. 'Phone: Museum 6436. [4948

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

A.C. Sociable or Morgan Runabout wanted for cash; must be fairly modern and cheap.—Particulars to 24, Riffel Rd., Willesden Green, London, N.W. [4407

THE MOTOR CYCLE

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THIS space will be occupied each week with copies of letters from Policy holders who have made claims. Original letters may be inspected.

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WANTED, A.J.S. parts, any condition, rear sprocket and brake complete, spare wheel and brackets, sidecar luggage carrier.—71, Twilley St., Wandsworth. [4652

SUNBEAM Gear Box, slight repair not objected, Sunbeam front wheel brake, T.T. bars, countershaft covers wanted.—395, Yardley Rd., South Yardley, Birmingham. [X0884

ENGINES, 4-cyl., 2-cyl., and 1-cyl., air or water-cooled; also gear boxes, spring forks, hub gears, cycle cars, and parts; state price.—19, Wilcox Rd., South Lambeth, London, S.W.8. [3094

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

EXCHANGE.

10h.p. 4-cyl. 3-wheeler for Indian, or sell cheap.—17, Heaton Rd., Mitcham. [4761

HUMBER 3½h.p., 2-speed, for Autoglider; sell £30. —Hirst, 91, Falsgrave, Scarborough. [4975

EXCHANGE 5-6h.p. Rudge Combination for 4h.p. Douglas Solo.—Knight, Holt, Wilts. [4610

MORGAN 1920 G.P. for motor cycle and cash; sell £155.—Barnes, 50, High St., Hull. [5058

EXCHANGE Cycle Car Parts for Lightweight, or sell £30.—11, Vaughan Rd., Harrow. [4343

1914 4h.p. T.T. Triumph, for old big twin, any condition.—212, Vallance Rd., Bethnal Green. [4780

6h.p. Zenith-Gradua, T.T., very fast 'bus, perfect condition, for piano.—Edgar Wroe, Wombwell. [4433

EXCHANGE 4½h.p. James, 2-speed, sports model, for 2-stroke.—27, Corinne Rd., Tufnell Park. [5178

SPORTING 1920 2-seater Light Car for combination, or sell.—21, Hartington Rd., W. Ealing. [4705

8h.p. J.A.P. Combination, sporty, sound, for 4h.p. solo or piano; sell £45.—11, Harriet Mews, S.W. [4579

£40.—3½h.p. Triumph, perfect; level, higher power, Zenith, Indian preferred.—Bowers, Swanmore. [4528

TOOLS, chest of carpenter's, full kit, for lightweight motor cycle.—Lennard, 25, Charlesworth St., N.7. [4673

1917 7-9h.p. Harley Combination for solo or cash, or sell cheap.—145, Liverpool Rd., Islington. [4881

1919 Sunbeam, value £95, for lightweight or Ford. —Brewster, Sparhawk St., Bury St. Edmund's. [4838

EXCHANGE Vindec, 2-speed, 2-stroke, for £20 and good push cycle.—40, Replingham, Southfields, S.W.18. [4997

HENDERSON 10h.p. Combination, for less power, Rudge preferred.—Thompson, 12, Trinity Rd., Balham. [4661

CLEMENT TALBOT 2-seater, twin; exchange combination, small van, or sell.—51, Brighton Rd., Surbiton. [4777

INDIAN 5-6h.p., 1915, and sidecar, wants overhaul; exchange late lightweight and cash.—130, High St., Harlesden. [4834

4-SEATER Touring Body, off Decanville; exchange van body, suitable 20h.p., or sell.—51, Brighton Rd., Surbiton. [4778

BABY Triumph, new condition, and £10 cash, for combination; sell 48 gns.—6, Victoria Parade, Ashton, Preston. [4734

PILLION Seat, new, cost 70/-; exchange binoculars, aneroid, anything useful.—Denbigh, Osborne Gardens, Monkseaton. [X0845

LIST 50 Car Bargains Free.—Combinations, motor cycles, etc., part exchange.—Douglas S. Cox, West Norwood. See Cars. [3842

TRIUMPH, countershaft, offered with cash for A.J.S. (combination 7h.p. preferred).—The Denne, Hardwick Rd., Reigate. [4527

SPLENDID 35-gn. Gramophone, nearly new; exchange motor cycle, cash either way.—Box 81, c/o *The Motor Cycle*. [4844

1914 4h.p. New Hudson Coachbuilt Combination, perfect order, for Scott, solo preferred.—Page, Colston, Hucclecote, Glos. [4397

EXCHANGE 1-ton Karrier lorry for motor cycle and cash.—E. Giddens, Ullesthorpe, near Lutterworth, Leicestershire. [X0799

EXCHANGE 2-speed Coachbuilt Combination and good typewriter for 1 ton motor lorry.—Box 74, c/o *The Motor Cycle*. [X0913

BRAND New Triumph Touring Bars; exchange for copper exhaust to fit 1920 Triumph.—Clayton, Upholland, near Wigan. [4521

ARIEL 1917 3½h.p. Combination, accessories, perfect condition; £55; exchange lightweight.—9, Mecklenburgh St., W.C.1. [4869

TRIUMPH 3½h.p., 2-speed, overhauled, new tyres; £30; lightweight wanted, cash adjustment.—121, Acton Lane, London, W.4. [4860

1920 Scott and Millford Skiff sidecar, for 1915 or later Scott combination, any condition, and cash. —34, Heslington Rd., York. [4494

THE MOTOR CYCLE

ESTABLISHED IN 1903

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Which Type Makes the Best Sporting Machine?

An interesting discussion is proceeding in our pages as to which is the world's best solo machine. The debate, however, deals with makes and not types, and, as an enthusiastic owner is always ready to defend his own mount as the ideal, even if he has not sampled more than two other machines in his whole experience, allowances must be made for some of the resultant opinions. At the same time, in view of the great prominence of "sports models" in the majority of 1922 programmes, it would be useful to discuss which is the best type of sporting solo motor cycle.

It certainly cannot be said to-day that only a machine of 500 c.c. or over may rightfully claim to cater for the soloist who takes a pride in the liveliness and speed of his possession; indeed, there are one or two super-efficient 250 c.c. lightweights already on the market which cause one instinctively to wonder if anything heavier is not superfluous and will not in the near future be confined solely to sidecar haulage. Then just one step higher up the scale, we have a select band of 350 c.c. "thoroughbreds" that competition has proved very little inferior to 500 c.c. machines when matched under equal conditions.

Of course, there can be no doubt that it will be very difficult to oust the so-called "3½"—usually a single—from being the first favourite of the clubman and his like, but the matter is further complicated by signs of a distinct revival of the British sporting big twin—a type that its devotees claim has a fascination not associated with anything else on two wheels.

While a cursory consideration of the subject may incline one to a decision in favour of the smaller machines—mainly on account of their proportionately higher performances—it may also be argued that only the larger singles and big twins are really suited for trouble-free and comfortable fast touring on present-day roads. For instance, a very large proportion of sports models are sadly undertyred. Larger tyres on the genuine lightweights (although they are by no means the only offenders) would cause a considerable loss in liveliness. Here, then, the heavyweight school scores a distinct point.

Finally, it will be said that we have disregarded price. We have, purposely. As in the discussion regarding the "best" make of machine, it would be preferable to find the ideal type of sporting machine irrespective of cost.

The Transport Ministry.

The recent resignation of the Minister of Transport is an event on which at present no explanatory light has been shed; meanwhile, the Ministry carries on with its Parliamentary Under Secretary as its temporary head. Meanwhile, also, the beneficent effects of the Ministry's work, which were to result upon the increased and heavy taxation of motor vehicles, remain unrealised. True, in a desultory kind of way, a few signposts have been labelled "A" or "B" to designate main or secondary roads, but perhaps the most fitting commentary on this particular branch of the scheme is the surface of Watling Street, one of the most important roads in England, linking London with the important centres of the North-west. The condition of this road, with its long straight stretches and Class A signposts, is abominable in many places.

In the unification of sign and warning posts also little appears to have been attempted, although here and there the new hieroglyphic warnings are to be seen, but "private carriage drive" signs still flourish. It must not be forgotten, however, that many dangerous corners have been eliminated.

It is not known whether the resignation of the Minister of Transport will result in the winding up of the Ministry, but motorists are wondering what use will be made of the £2,000,000 surplus of taxation over the amount that the new licence scheme was estimated to yield.

An Index to the advertisements in this issue will be found on the page facing the back cover.

Our Roads at Night.

AFTER the last B.M.C.R.C. meeting at Brooklands, I pobbled along the Portsmouth Road, marvelling at the chaos of our laws and the consequent dangers resulting therefrom. There were lots of cyclists about—some with rear lamps and some without. The time was that awkward quarter of an hour when it has grown much too dark to see an unlighted vehicle (if the evening be gloomy), but when the law does not compel vehicles to bear lights. The traffic procession included lots of cars with powerful head lamps; some of these cars switched on dimmers or switched off head lamps as they met me, others carried on as they were. Intermixed with the stream were innumerable motor cycles mounting dazzling lights, which they could neither dim nor switch off. A more ridiculous medley of inconsistencies and perils could hardly be imagined.

So it came About.

THE nastiest of many nasty moments occurred as follows: As everybody knows, miles of the Portsmouth Road are just wide enough for two single-breadth streams of traffic, with, perhaps, squeezing space for a solitary cyclist next each kerb; and the car driver who can gauge his nearside clearance to a foot when he has a right-hand steering wheel is rare. We had all just emerged from a regular mix-up (due to an unlit Ford lorry producing a bulge in the double stream) when a large car dashed up towards me and my followers. This large car was running on two tiny side lamps and two enormous head lamps. As it neared us, the driver—from a mistaken sense of courtesy—switched off his head lamps. When he saw that neither I nor my followers imitated his example (*I* couldn't), he switched them on again, and, of course, blinded us. Luckily, I had the sense to tread on everything, and stop till he was past, simultaneously flinging up my arm to prevent the people behind from ramming me in the bustle. When the dazzle had passed, I sighted a meek cyclist just in front of me, wearing a dun suit, riding a cycle on which no plating showed, and devoid of a tail lamp. (Incidentally, he had no head lamp either.) When I take out a push-bike, I am most careful to carry a rear lamp in my own interests; and nothing would induce me to pedal on crowded roads without this protection. Busy highways are grossly unsafe at night until the dazzle problem is solved, and even then logic demands a return to universal tail lamps, or, at any rate, to universal coloured reflex mirrors. Finally, the D.O.R.A. lighting-up times were far more sensible than the "hour after sunset" business.

Dimming Head Lamps.

I DO not know what motor cyclists as a class think of the dim-and-switch-off business. It is obviously at best nothing more than a temporary compromise until the dazzle bother meets with a sensible solution. At present it can hardly be judged on its merits, because it is nowhere practised with consistency. Many car drivers regard the dodge as dangerous, and blaze ahead on full lamp power, probably because their side lamps are too weak to show up the road in the sudden contrast created by switching off two enormous head lamps. Others switch off or dim as they approach another vehicle, but instantly restore full lamp power if their compliment is not reciprocated. The result is that we get the most absurd oscillations between dazzle and darkness. Up comes 2,000 c.p. He suddenly dims to 2 c.p. You don't respond. He savagely turns on 2,000 c.p. once more. No human optic can instantaneously adjust itself to these terrific variations. We motor cyclists are an integral factor in the trouble, because the majority of our lamps cannot be dimmed or switched off.

The Super Cycle Car.

HISTORY repeats itself. When a particular notion makes good in the motor industry, its success creates a fresh jumping-off point for other designers, and the followers always turn out something more complicated and expensive than the original. Eve began with a figleaf, and Mrs. Ixion is now trying to wheedle the cost of a baby two-stroke out of me for her dressmaker's bill. So the sidecar devotees wondered whether the 1921 achievements of the 8 h.p. Rover would sire a fleet of four-wheeled 1922 cycle cars. The expected offspring are materialising; but most of them are going to cost nearer £300 than £200. Does the 8 h.p. Rover represent rock-bottom in its class, as the Morgan appears to do in another class?

Special Engines.

AT the last B.M.C.R.C. meeting, I heard loud words emanating from a gesticulating little knot of notabilities, and, pushing in to the fringe of the crowd, I heard various cynics accusing sundry manufacturers of racing with specially built engines alleged to have cost £500 apiece. The manufacturers were defending themselves heartily, but nobody confounded the hecklers more than W. H. Wells of the Indian wigwam. The riders were just parading for the 1,000 c.c. scratch championship. "W.H.W." bent down for a minute over the two engines entered by his firm. Then he rose to his full height and remarked defiantly, "The numbers of these two engines are

Occasional Comments.—

M 14 and M 149. They are absolutely standard in every particular. To prove this, any of you can have the engines immediately after the race at ordinary list price!" Quoth the unabashed cynics, "Ah, yes, and you will take the cams and pistons out before delivery," or words to that effect. To which the Big Chief retorted that the purchasers could take the engines out of the frames that very afternoon on the track; but the frames he would not sell, as they were admittedly special.

I think this kind of offer is a very sound advertisement, and I wonder that other firms who win speed competitions with standard stuff do not follow suit. Incidentally, such a practice might ultimately protect local club meets from providing a field day for a solitary star engine, unpurchasable for less than the National Debt, brought down by train or lorry.

A Fine Sports 'Bus.

I DO not often borrow a mount, but when a pal acquired a new Zenith-Bradshaw, I could not resist.

The hardier kind of motor cyclist is fond of asserting that genuine sports mounts are extinct, and that "Slaughtered by the Sidecar" ought to be their epitaph. Perhaps this type of rider would refuse the title of sports 'bus to a 500 c.c. machine with a 6½ bottom gear, even if it were minus a kick-starter and clutch. But personally I regard this particular Zenith model as one that fully deserves the honourable title. When I begged the loan of it, my interest centred solely around the engine. Bradshaw usually turns out "something different," and, as one who felt disappointed that his first post-war engine was only 400 c.c., I longed to try one of his flat twins with something of a thump to it. This new engine is going to make good. It sneaks along silently at 5 m.p.h. on top, will probably do better than 60 m.p.h. all out, and accelerates like a shell from the muzzle if you lower the gear and "tread on everything," as the poet said. Best of all, you catch yourself gazing madly round for the speedometer or a milestone and the oil drip, only to remember that at last a wise man has produced a motor cycle which lubricates itself as automatically as any car. There is no valve rattle either. Up to about 25 m.p.h. the hiss of the Amac carburetter was quite distinctly audible above the exhaust and all the rotary and reciprocating noises; and I never knew before that an Amac carburetter made any noise at all. But a little road work shows that the Bradshaw engine and the Gradua gear fit each other like Charlie Chaplin and the famous Kid. It would be a sin to part them—they are made for each other; and Barnes has built a nice, little machine with beautiful steering round the engine.

The Eclipse as We Saw It.

SUNDAY night, October 16th, 1921. Ten o'clock. Papa is scraping the piston ring grooves of his baby two-stroke.

Small son (in awed tones): "Daddy, whatever's the matter with the moon?"

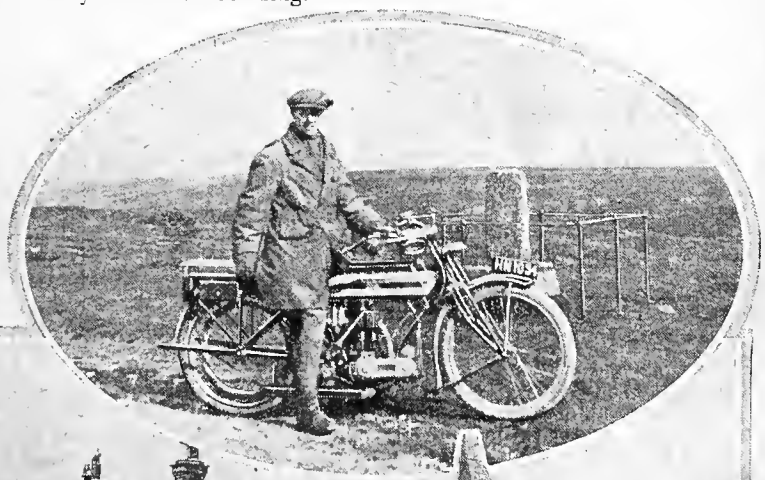
Daddy (after a hasty glance): "Its port side wants decarbonising."

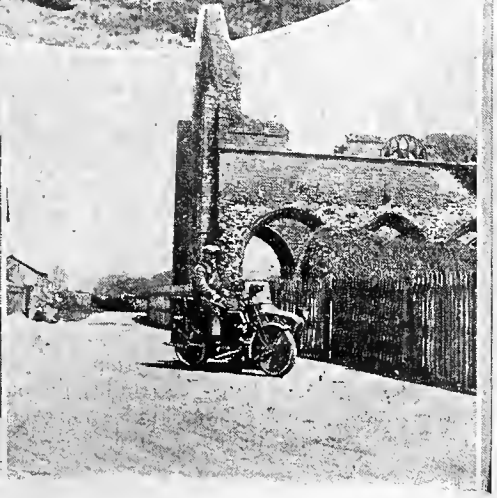
RELICS OF OLDEN DAYS.

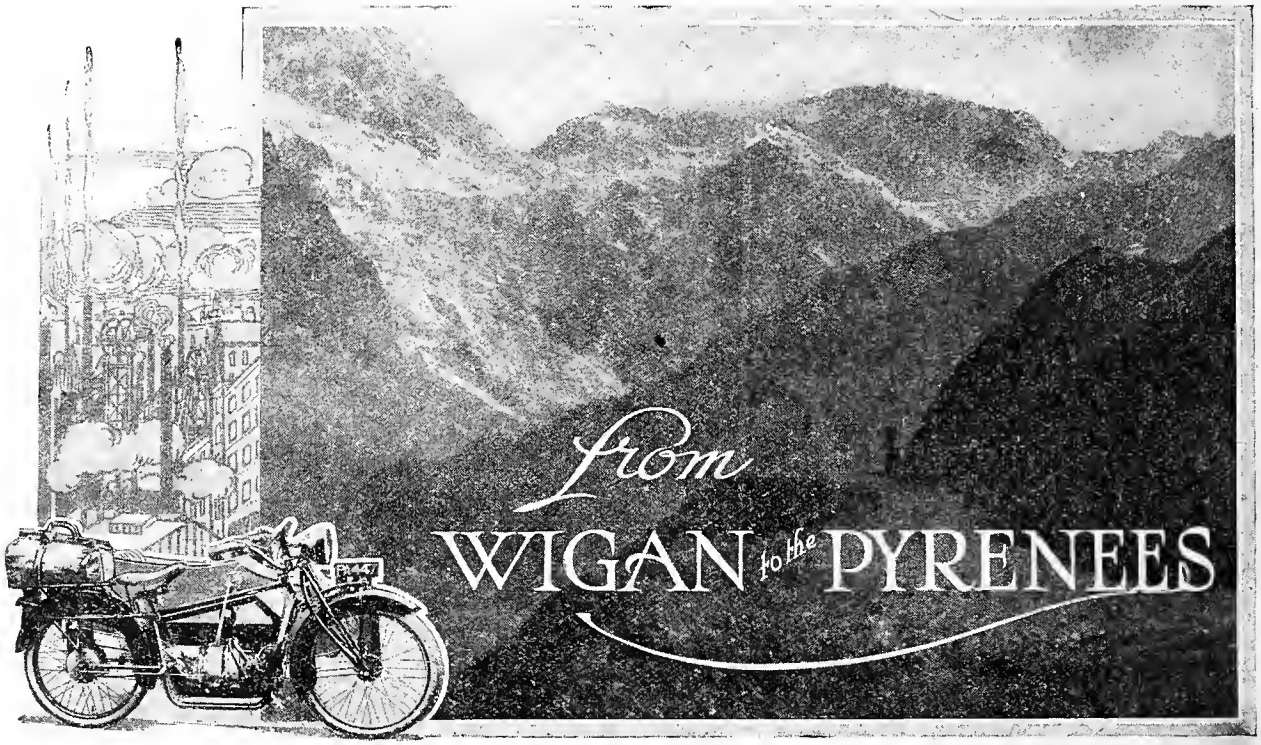
(Top) Beyond the Triumph rider may be seen the stone marking the spot where King James of Scotland met the English monarch to decide the boundary between the two kingdoms.

(Left) An old gateway in Rye known as the Land Gate, and dated 1360, a relic even in the days when Rye was a thriving seaport.

(Right) New Abbey ruins, a few miles from Dumfries. Both the sidecars depicted are 1921 A.J.S. models.







A Rambling Tour from the North of England, through the Heart of France to he Borders of Spain.

By "A GENTLEMAN WITH A SPANNER."

IT was during one of the celebrated wet Sundays of last summer that the idea struck us, and we decided to get to a warmer and drier climate than England for our holidays this year. The idea once started, our plans went on apace; I was able to get away for a clear three weeks, so we decided to go southwards through France in that time as far as we could.

All hands were then turned on to the machine—an A.B.C. with coachbuilt sidecar; my luggage was put on the carrier and the passenger's on a grid at the rear of the sidecar. The back of the seat was filled with our coats, while on the floor I stowed a large camera, a spare tin of petrol, and another of oil. Plenty of space was found under the seat for our spares—a magneto, two spare leaves for the rear springs, a valve, and a spare inner tube. The remainder of the space was taken up by packets of chocolate and beef lozenges, which despairing relatives thrust on us, being convinced we should be stranded at the top of the mountains. The chocolate we ate on the way from Wigan to Southampton, and the beef lozenges, I believe, were enjoyed by Sopwith's repair department on our return!

A Favourable Crossing.

The route Southampton-Le Havre was chosen for our crossing, one reason being that it is the cheapest, the other that one gains 200 miles on one's journey to the south. The sea was kind—not even a ripple—and one morning in early summer we set foot in France.

There was very little difficulty in getting away. The A.A. representative obtained petrol for us, and soon had the outfit passed by the Customs, so that within an hour of arrival we were *en route* for Rouen, where we met Bartlett. He will be remembered by all who frequented Brooklands in pre-war days. He is the agent for the French A.B.C. in Rouen, and had one there with which he had been lowering several hill-climb records. After a look round the old town, we headed south. The roads soon improved, and we made good time to Evreux, where we spent the night, starting next morning for Tours—a run of 138 miles. We made good time; gone were the pot-holes of the day before, and over mile after mile of smooth straight road the speedometer needle hovered round about 35. Lunch was taken at Chartres, a fine old town with a perfect cathedral, which we visited.

Where Good Roads Do Exist.

Once south of the Loire we found excellent roads, and from this point onwards only about twenty miles of poor road in the next 2,000. We ran on to Limoges through very pretty country, and saw our first indication of the approaching south, for all signs of horses disappeared, and we found oxen everywhere in their stead. The ox-carts are one of the drawbacks of the roads, they are always on their wrong side, and the only means of directing the oxen is by prodding them with a stick! The wheels of the carts, too, have large nails hammered into them, which seem to distribute themselves freely on the road, for our only punctures were due to these.

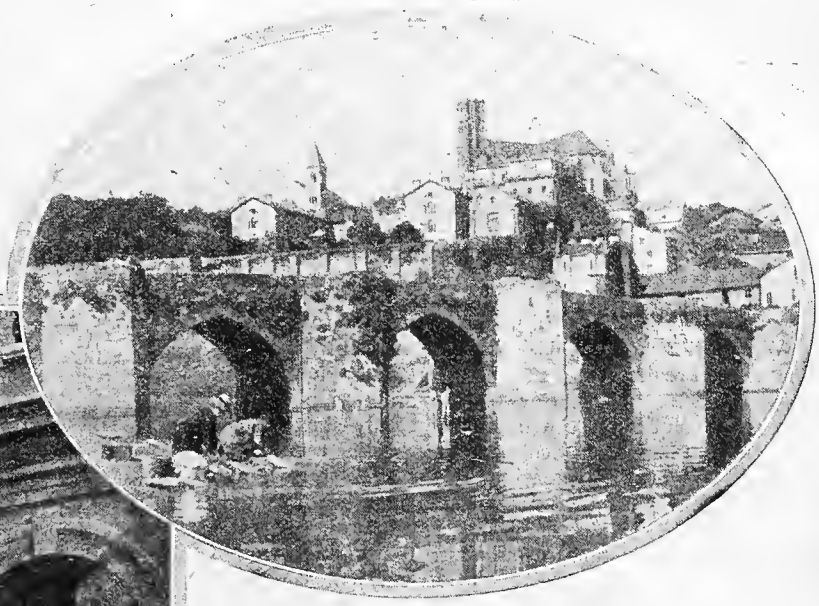
From Wigan to the Pyrenees.—

From Limoges we ambled through the Cevennes to Castres, spending a night at Aurillac on the way. All this part of France is very lovely, and we would not have hurried even if the roads had permitted, which they did not. The surface was always excellent, but the road at times is at an altitude of about 5,000ft., and hairpin bends are frequent. It is quite a common occurrence in this part of the country to have to drop down two or three thousand feet into a valley, and promptly climb up again. The country is very wild, the only inhabitants clustering around the few small villages. Traffic on the roads is practically non-existent; the first car we saw after Limoges was the Toulouse 'bus near Castres.

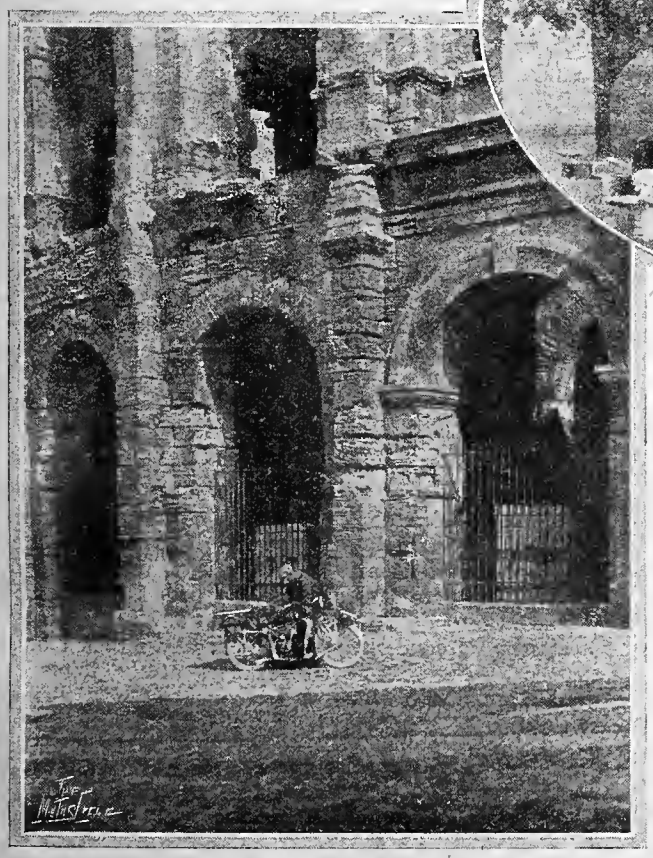
Old World Surroundings.

Carcassonne, which we reached next morning, is unique. The *Cité* dates from the fifth century, and is the most perfect example of a mediæval fortress in Europe. The French always take care of their old places, and the *Cité* looks to-day as it did in 480 A.D. Some idea of the size may be obtained from the walls, which are 1,600 yards round. At Carcassonne, too, I, as mechanic, had to get to work. I had come over with plain rubber tyres, and spent a somewhat warm afternoon changing over the back tyre with the sidecar tyre. The tread of the back tyre would, apparently, only last a thousand miles, and I strongly recommend others to use a steel-studded tyre for their back wheels. The engine was still running perfectly, and all that was done to it was tappet adjustment. Before leaving England, the original adjustment had been scrapped and two lock nuts substituted, which were found to keep their place much better.

After two days of Carcassonne, we were tempted by the deep brown of the contours on the map to try the crossing of the Pyrenees. On leaving Carcassonne, the sunny weather was also left behind, and we started off in heavy rain, and after about twenty miles found the mountains towering above us. The road was narrow and the surface very slippery with the rain; gradients averaging about 1 in 6 enabled an easy climb to be made on second gear at about eighteen to twenty miles an hour. Considering that the whole outfit, ourselves included, weighed 7½ cwt., we were quite pleased with the performance. The climb is about thirty miles long, although only the last seven or eight are really severe, but we found our engine at the top quite cool, and there were never signs of bottom gear being required.



The old bridge and cathedral at Limoges.



Where French bull-fighting takes place—the arena at Arles.

We had now got to an altitude of 5,500 feet, and were in bright sunshine above the clouds. Here we had a run of some fifteen miles along the plateau to Bourg-Madame, right on the Spanish frontier. After a brief stop to photograph the kilo post and feed the bicycle, we pushed on into the mountains. A rare old climb! The road goes up to 7,000 feet, and one looks over the practically abrupt sides of the hill to see the road one has left far down below. However, our climb was rewarded: at the top of the pass I was able to slip into neutral and coast down the last ten miles to Ax.

Ax is quite a cheery little place, but pretty cold, being at an altitude of nearly 2,500 feet. It is a favourite summer resort of the people of Barcelona. This we found to our cost, as we found none there who could speak French; however, by mixing our French with a little ancient Latin, we concocted a language which seemed to be more or less understood,

From Wigan to the Pyrenees.—

Having meandered about the South of France, exploring where fancy led, we found that time was now getting on, so at last we had to head north again. The run up to Blois, passing through Clermont Farrand, was good, and Blois appeared to be a delightful old spot. Here stands one of the old Royal Châteaux of France; it is perfectly preserved, and the walls in all the rooms richly decorated. In one room only have the decorations been stripped, this being done during the revolution. From Blois we crossed our old tracks at Vendôme and headed for Caen, and found this road to be much better than the one we had come down by.

From Caen we progressed by easy stages back again to Le Havre, which we reached again after three weeks and two days: when we arrived at Southampton we learned that the weather was still unbroken in England, but we did not regret our trip on that account, anyway!

Our total mileage worked out at 2,306 miles, and at the end the engine was pulling as well as ever. Our petrol consumption gave us an average for the whole trip of 79 m.p.g. Our only troubles were punctures, caused in every case by nails from the ox-carts; the next time I shall fit a nail-catcher.

In conclusion, I would advise anyone wanting a cheap tour to visit France. Transportation can be left entirely in the hands of the A.A. Freight charges for getting a sidecar across are by no means excessive, and, once there, living is cheap, for the hotels are always inexpensive and clean, and one is always sure of excellent food. Our bills for dinner, plus wine, room, and breakfast, averaged under 10s. each. Language, too, need be no bar; we found the magic word to be "*vin*"!

SOME NOTES ON EASY STARTING.

A Few Hints to the Novice on Starting his Engine.

NOTHING so disgusts a novice with motor cycles as the hot and exhausting efforts demanded from him when his engine becomes difficult to start; yet the cause is always traceable.

The first essential is that the engine turns freely, whether the rider is push starting or operating a kick-starter. If the engine is stiff, the magneto spark will be poor, as will be the suction on the jet. An injection of petrol will free the piston.

Intelligent Application of the Starter.

When the novice has satisfied himself that his engine is really free to turn, it must be understood that no kick-starter rotates an engine through several revolutions. An engine can only start on the firing stroke, which occupies half of a revolution. But allowing for the gearing of the kick-starter, and the fact that a tired and ignorant rider perhaps only uses part of the starter range at each dig or kick, some attempts to start up only turn the engine through one revolution; and that revolution may consist of the exhaust and inlet strokes, and not include a firing stroke at all! The next dig may include the firing stroke; but, on the other hand, the rider may wearily turn the crankshaft a little further in preparing for his next dig, and so miss the firing stroke again on his next attempt. Care is therefore needed in setting the kick-starter, so that its downward movement commences just before the compression stroke, and is continued to include the firing stroke. Equal care is needed to drop the valve early enough; otherwise pure air is sucked in, and the engine does not fire when the spark occurs.

Middle Gear for a Running Start.

Similarly in the push-and-run start, the weak user of a heavy machine cannot push his mount over several compression strokes on a high gear; in fact, his efforts will usually result in the machine stopping with the piston at the top of the compression stroke. But if his engine is properly free, and he engages the lower gear of two or the middle gear of three, he can run the machine fast enough to carry it over once or twice.

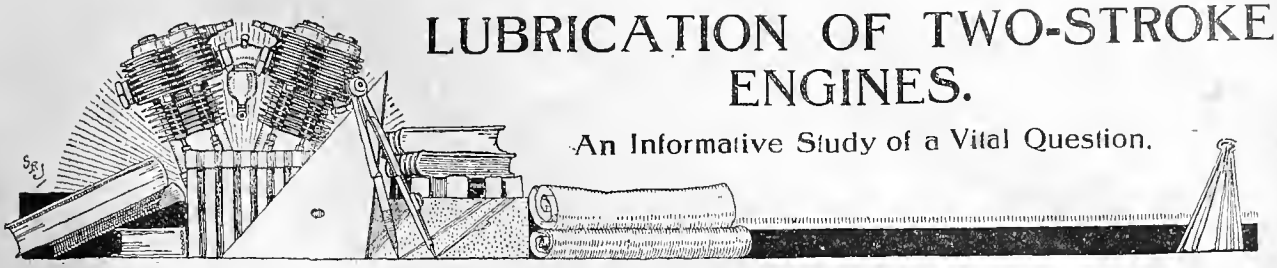
Having cleared away these elementary difficulties, we can now consider the case of an "ungummed" engine, which will not start when the kick-starter is sensibly operated, or when it is pushed along quickly.

The ignition is the commonest culprit, and in most cases the sparking plug is the faulty item. The novice often handles his carburetter rather stupidly, or uses too much oil. Both blunders accumulate carbon inside the combustion chamber, and this carbon fouls the interior insulation of the sparking plug. The weak spark generated in attempts to start the engine does not relish the leap across a wide gap at the sparking plug points, and the current may find an easier road along the film of carbon inside the hollow end of the plug. So the next step is to see that the inside of the plug is perfectly clean, and that the gap is not too wide and not too narrow.

When the plug is right, the spark may still prove unsatisfactory. In this event, the next step is to see whether the platinum points of the magneto contact breaker are breaking; possibly the rocker arm is inclined to stick in its bush, which should be cleaned and reamered out very gently by a pencil rolled out of a strip of emery paper. If the gap is correct and the break smart, see that the meeting faces of the platinum points are clean, smooth, and bright.

Carburetter Troubles.

If the source of the starting trouble has not yet been identified, the carburation must come under suspicion. It is highly improbable that the carburetter adjustment is to blame, and there is no need to fiddle about with spare jets or with the petrol level. Nor will a little tendency to "flood" do any harm, so far as starting is concerned; it is generally rather a help than otherwise. It is air leakages at the joints of the inlet pipe with which we are concerned now. They can always be countered by petrol injections or liberal flooding, but if they are caulked, these tiresome little attentions should cease to be needed. A whole catalogue of dodges for discovering air leaks will be found in the new edition of "Hints and Tips," published by the proprietors of *The Motor Cycle*. ROAD RIDER.



LUBRICATION OF TWO-STROKE ENGINES.

An Informative Study of a Vital Question.

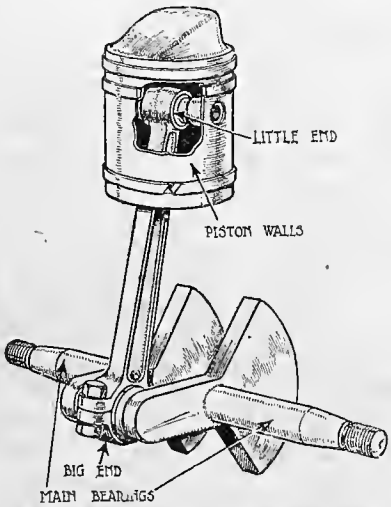
IN connection with the lubrication of motor cycle engines there are many points of considerable interest which are frequently neglected or misunderstood. Especially is this the case with two-stroke engines, where, in addition to the usual functions, the oil is subjected to a washing action by the petrol vapour. This fact necessitates considerable care in the selection of lubricants, if the best results are to be obtained.

Choosing a Suitable Oil.

There are three classes of oils on the market, viz.: Vegetable (leading example, castor oil), mineral or hydrocarbon (mainly the heavy residues from paraffin and shale oil distillation), and compound (a blend of the above two).

The consideration that should most strongly influence our choice is that "all the main bearings of a crank case induction two-stroke are exposed to the detergent or washing action of the fuel vapour," so that no matter how well an oil may resist high temperatures or maintain the spheroidity of its particles under great pressure, if it is liable to be washed or carried away by the fuel, its value vanishes. Presuming other qualities to be equal, the criterion of judgment then becomes the degree of solubility of the oil in the fuel vapour. Viewed from this standpoint, vegetable oils carry the day as against mineral. Were it not for the fact that some engines are still lubricated by the petroil system, one could recommend vegetable oils always. With this system they are difficult to use in practice, as they separate out in the tank and lead to carburetter troubles. The requirements are best met by a compound oil, which dissolves just sufficiently in the fuel to pass through the jet regularly, but separates out rapidly under subsequent atomisation. Vegetable oils are imperative where paraffin is used.

Mineral oils, being of the same nature as the fuel itself, combine with it, and are washed away far more rapidly. Granted that this easier and more complete solubility renders them the most convenient to use with a petroil system, and avoids separating-out trouble, this very fact militates against their lubricating value, inasmuch as they do not separate out fast enough in the induction pipes and crank case, and are liable to vaporise against the hot piston top, thus forming part of the explosive charge. For four-stroke engines mineral oils are quite in place.



Working parts of a two-stroke single cylinder engine. Although simple in construction and having but few parts, it is essential that adequate supplies of oil be led to the various points indicated.

Where Oil is Wanted.

Having fixed upon our oil, let us consider separately the four places where it is called for: (1.) The main journal bearings. (2.) The big end. (3.) The small end. (4.) The piston.

With all these, we find again that "crank case induction" is the devil amongst the tailors, and forms a disagreeably complicating factor. Whether we deliver the oil mixed with the fuel through the carburetter or direct to the bearings in its natural state, crank case induction tends to suck them dry. In direct-feed systems, if one increases the feed to counteract this, the oil consumption becomes alarmingly heavy; if one reduces, the consequent dry bearings wear rapidly.

The Main Journals.

The foregoing drives us to the conclusion that roller bearings, despite their rattling and compression losing tendencies, are the most suitable for the above duty. With these a further bush or washer is necessary to hold compression. I have often thought that a reversal of the usual system of placing the phosphor bronze bush on the outside would be beneficial, as, were the roller bearing to occupy this position, it would be practically free from crank case suction, and its useful life would be enormously lengthened. This would also seem to emphasise the advantage of single bearing engines with one side entirely closed as the Scott, Velocette, and Sun.

Big End Bearings.

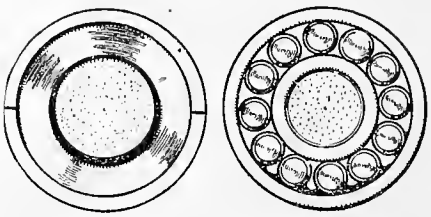
Again, we are given a bearing subjected to a most irregular thrust, which is continuously whirled through one of the most cleansing vapours known to science. Roller bearings, from the fact that they will run practically denuded of lubricant, are again the only answer to the problem of big end lubrication under conditions of present-day design. Their lubrication might be further improved by receiving oil through a hollow connecting rod as a further extension of the system indicated below.

These are, as at present constructed, by far the most difficult to lubricate. I am under the impression that they very rarely do get lubricated, but are dry for nine-tenths of their life, which life is altogether disproportionate to the life of four-stroke bearings and pins. I have taken gudgeon pins out of two-stroke engines which I know have never run really hot, and have found them blue and scaled, the bush

Lubrication of Two-stroke Engines—

having a peculiar rough feel inside altogether unlike a worn bush which has been well lubricated. A great deal of the much-discussed two-stroke rattle is, I am convinced, owing to this state of dryness.

The universal adoption of gudgeon pins fixed in the connecting rod and oscillating in the piston itself would improve matters, as this type receives oil direct on to the bearing from the cylinder walls.



(Left) A plain bearing in which the journal (shaft) rotates in a bush. Contact between the large frictional areas is prevented by "floating" the shaft upon an oil film. (Right) Roller bearings require less lubrication, as contact between the parts is in the nature of rolling lines instead of rubbing surfaces.

Oiling the Piston.

Piston lubrication, where this is directly through the cylinder walls, is fairly satisfactory. It is difficult to assist, as in four-stroke practice, with extra rings, grooves, etc., to distribute the oil, as, the piston functioning also as a slide valve, there is risk of forming communications between the ports.

By slight modification to existing design, it might be possible to arrange for oil to be mechanically pumped to a hole in the cylinder wall, which would remain always covered by the piston, lead being made by means of grooves or slots to a hollow gudgeon or connecting rod through which the oil would be forced, thus lubricating the small and big end bearing. The surplus from the cylinder walls could be led to the side journals, as in present practice. It might be possible to put a groove round the cylinder itself, missing the ports.

Quantity Regulation: Load the Deciding Factor.

Having arranged that the oil actually gets where one wants it, there remains the problem of its correct proportioning for the load. This brings us to a consideration of interconnection of throttle and lubrication control (graduation by engine speed—whereby, as engine speed rises, supply is increased—obviously fails, for high speed does not necessarily imply big load).

Present-day Systems.

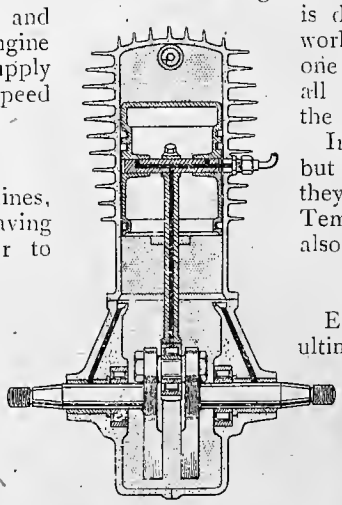
These have, upon the majority of machines, not advanced far beyond the stage of leaving it to the discretion of the rider either to flood or to starve his engine:

We have to consider three systems:

Petroil.
Direct drip feed.
Positive mechanical feed.

Petroil.

In this system the lubricant is mixed with the fuel in the tank, passing through the carburetter, separating out when inside the crank case. The proportion of oil to fuel varies between one to ten and one to sixteen. The governing rule should be load carried and average speed it is intended to maintain; as these two rise, so the proportion of oil should increase. For continuous town work the smallest proportion possible if avoidance of four-stroking is desired. It may strike one as peculiar that all the engines which use the system successfully are of the type which have their induction pipes adjacent to the exhaust, as the Triumph, Connaught, or Royal Enfield. The explanation is that the extra heat thus attained for the mixture separates out the lighter fraction of the mixed fuel more quickly—a mild cracking process, in fact. Engines of this type will all four-stroke until warm, owing to this cause.



A suggested lubrication scheme for a two-stroke engine. Oil is fed by mechanical pump to a drilled gudgeon pin which is secured in the connecting rod end. An oil-way leads directly to the roller bearing big end, while the surplus lubricant from the cylinder walls is caught and led by ducts to the main bearing compression retaining bushes. The main-shaft roller bearings receive oil from the crank case

Drip Feed.

This system, as far as the tank and drip mechanism is concerned, is identical with four-stroke practice. Oil is fed by pressure, gravity, or suction-controlled drip to the crank case or any part of the cylinder below the highest point reached by the bottom of the piston. The higher this point is taken, the suction upon the drip is shorter in its dwell but more sudden and violent in its action. It is not quite similar in its effect as feeding oil to the inlet pipe. But wherever it is placed, one cannot get rid of an inherent and fatal defect—the fact that crank case suction does not decrease proportionately with the closing of the throttle, but has the effect of increasing if the road speed be maintained, as in light and downhill running. If the throttle barrel be at all a good fit, it is possible, whilst obtaining a braking effect, to exercise the whole of the crank case suction upon the drip with fatal four-stroking results. When the throttle is again opened to meet the call of a heavy load, the rate of feed returns to the minimum for which it was set; in consequence, unless what amounts to over-oiling for 80% of the running time is practised, there is danger of starving the engine when it is worked hard during the other 20%, unless one is prepared to mess with the oil control all the time. Even then one cannot adjust the feed against the ever-varying suction.

Interconnection with throttle might assist, but these drips have a setting below which they work very erratically or not at all. Temperature and varying thicknesses of oil also affect them enormously.

Mechanical.

Every indication points to this being the ultimate system. At the moment of writing there have only been submitted to practical test in the hand of the general riding public two machines embodying it—the Precision and the Velocette.

For the thousands of machines at present in the hands of owners, the new Best and Lloyd mechanical pump should be a very great boon. I had experience some eighteen months ago upon an early experimental model, and was struck with its economy. It seems to attain the much desired consummation: it is positive, it is almost throttle controlled, it is unaffected by crank case suction, and stops and starts automatically.

Lubrication of Two-stroke Engines.—

On no other type of engine is mechanical lubrication so essential as on a two-stroke, as it is so intimately bound up with carburation.

Possibilities.

A possibly simple system might be the combination of petroil and mechanical, in which the oil could be pumped to the float chamber to mix there with the fuel. It would give all the advantages of the petroil system without its most serious disadvantages.

An alternative might be to feed the oil through the carburetter from the air side of the throttle, where it would not be exposed to the inverse action of crank case suction. The feed could be controlled by means similar to the fuel control on the B. and B. needle valve carburetter. In types of carburetters having separate gas-making arrangements, as the Claudel, Cox-Atmos, and single-lever Amac, in which high air speed is used, this should be easy, as suction would have to be relied upon to bring the oil to the carburetter, for, were it fed by gravity, the flow would not cease automatically as soon as the machine was stopped.

To Reduce Running Costs.

In view of the fact that there are thousands of two-strokes running to the complete satisfaction of their owners, my strictures on present-day lubrication may seem to be a call to paint the lily; but, in considering that we are a much poorer nation than we were, and that the bulk of the ownership of motor cycles has passed from the *jeunesse dorée* to the higher grade workman and lower middle class family man, may I make this plea to manufacturers to design and produce more for low running costs than for the winning of cups and medals by climbing stone staircases?

V. C. RAYNER.

Eighty Miles an Hour up 1 in 15.

The Power Output Required.

NOT long ago, as reported in *The Motor Cycle*, George Dance rode a 3½ h.p. Sunbeam up Penkridge Bank, a hill on Cannock Chase, not far from Rugeley, at about 80 m.p.h.

This was a notable performance, although Penkridge Bank is not a steep hill, for it is not so very long ago that 80 m.p.h. was just exceeded by a motor cycle with an engine under 500 c.c. even on the level. This was, I believe, when H. R. Davies covered a flying kilometre on a 2¾ h.p. A.J.S. on October 19th, 1920, and won the Godfrey Cup for being the first to attain a speed of 80 m.p.h. on a machine having an engine capacity not exceeding 350 c.c.

Now we speak of the Sunbeam ridden by Dance as being 3½ h.p., but, in view of the power developed by present-day motor cycle engines, I think that it is quite time we dropped the use of the nominal horse-power rating and called an engine by its size or by some rating which at least gave an approximation of the power that can be attained.

It is not, of course, every 500 c.c. machine that will equal the power of Dance's Sunbeam, and possibly it is not desirable that it should be so. Longer life will result from a more moderate power output.

The Probable Horse-power.

A few simple calculations will show with a fair degree of accuracy the horse-power developed by the 3½ h.p. (I use the term under protest) Sunbeam on this occasion. Penkridge Bank is said to have a gradient of 1 in 15, and, for the sake of example, I estimate the weight of Dance and his machine at 400 lb., and 80 m.p.h. = $117\frac{1}{3}$ feet per second. Therefore the power required for raising the weight must be

$$\frac{400 \times 117\frac{1}{3}}{15 \times 550} = \frac{256}{45} = 5.68 \text{ h.p.}$$

Not very excessive certainly, but the power required to raise the weight is only a small part of the whole, and there is more to come.

Air-resistance increases approximately with the square of the speed, and, consequently, the power required to overcome it varies with the cube of the speed, for, not only is the resistance greater as the speed rises, but it is overcome much more quickly.

The Eiffel constant for air resistance is .003, but this is for flat surfaces, and the constant for a motor cyclist on his machine is probably much less, and I will take it as .002 and estimate the surface exposed to air resistance as 5 sq. ft. The formula then is $R = .002\,Av^2$, where R = air resistance, A = area of surface, and v^2 = velocity in m.p.h., and we get

$$R = \frac{2 \times 5 \times 80 \times 80}{1{,}000} = 64 \text{ lb.},$$

and the horse-power will be

$$\frac{64 \times 117\frac{1}{3}}{550} = 13.65 \text{ h.p.}$$

(550 being the constant for horse-power, *i.e.*, 550 ft.-lb. per second). The horse-power, therefore, which is required to overcome the air resistance is more than double that needed for lifting purposes.

One thing more is required before we can get at the total horse-power, and that is the tractive resistance. Penkridge Bank having a good surface will have a low resistance, say 50 lb. per ton, which gives the required h.p. as

$$\frac{50 \times 400 \times 117\frac{1}{3}}{2{,}240 \times 55} = \frac{40}{21} = 1.9 \text{ h.p.}$$

And the total is $5.68 + 13.65 + 1.9 = 21.23$ h.p.—a very respectable power output for a "3½ h.p." engine.

I do not suggest that the Sunbeam should be called the 21¼ h.p. Sunbeam, nor even the 10-30 h.p. Sunbeam, but that it should be given the horse-power at a moderate number of "revs." (say, 2,000 r.p.m.) as its rating, or alternatively that it should be called by its capacity or the capacity of its class in A.C.U. competitions, *e.g.*, the 500 c.c. Sunbeam. PENOLVER.

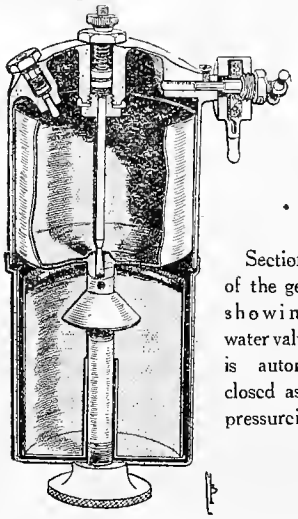
THE 200 MILE RACE FOR LIGHT CARS.

To-morrow's issue of our parent journal "The Autocar" contains a graphic illustrated description of last Saturday's great 200 mile race for small cars. This event approximates to the 500 mile race for motor cycles held in July last.

Improvements to the Low Lighting Set.

Modifications to the Generator, now marketed as with Lamp Complete.

CONSIDERABLE improvement has been made in the design of the Low motor cycle lamp set, which includes the Low generator. This latter, though the principle of working is the same as when last described in *The Motor Cycle*, is far more symmetrical in design, and its weight has been reduced to 12 oz. The illustration gives a general idea of the neatness of the set, while the sectional drawing shows the generator.



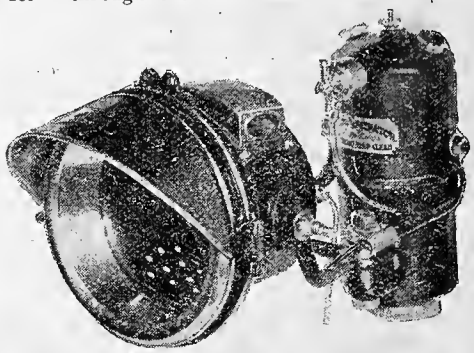
Sectional view of the generator, showing the water valve which is automatically closed as the gas pressure increases

The carbide is held in an inner container shaped rather like a carbide tin, and refills can be carried all ready for use on the machine. When the lid has been removed the water valve is turned on by unscrewing the milled nut on the top and pressing down the valve with the finger. The moment water dripping over the cone-shaped water distributer in the container attacks the carbide, gas is formed, but when the pressure exceeds a certain determined figure the water valve is automatically sealed, and any egress of gas is prevented by the rubber non-return valve at the top of the needle valve stem. The container is now ready for use and cannot leak, but in the case of any excessive pressure being generated, this is got rid of through the safety valve. On opening the gas control valve, gas, of course, flows through the burner, and when the pressure inside the generator falls, the water valve again opens and more gas is generated. The internal carbide container has a porous lining, which absorbs the gas contained in the reservoir.

Lamp Bracket as Gas Passage.

It is worthy of note that no rubber tube is used between the lamp and generator, a brass pipe being substituted; a union for a tail light is also provided.

On leaving the generator the gas passes through the hollow lamp bracket, then through the transverse tubular member,



Outwardly the Low lighting set differs little from a conventional acetylene lamp.

in which the filter is situated, and from there direct to the burner. This transverse member is provided with a screw at both ends, and when removed the filter can be cleaned or replaced. This equipment is marketed (at £4 10s. for the outfit) by the Low Generator and Engineering Co., Ltd., Alperton, Middlesex, and should appeal to those who look askance at the high price of electric lighting sets. By the Low system the troubles usually associated with acetylene when used intermittently are negligible.

BELT GRIP IN WET WEATHER.

Erusa—a New and Very Satisfactory Preparation for Preventing Belt Slip.

THE only disadvantage of chain-cum-belt and all-belt transmission is the tendency to slip in wet weather. But for this, all-chain drive would not have taken first place in the favour of motor cyclists generally. The present writer owns a big twin family sidecar with chain-cum-belt transmission, which has given every satisfaction for the past eighteen months; but during the wet weather of last winter average speeds on long journeys fell short of the planned schedule solely on account of slight belt slip.

Outweighing the Disadvantages.

The advantages of final belt drive, however, have always outweighed the disadvantages, for which reason the machine has been retained; but, after last winter's experience, it was decided to try the various preparations for preventing slip, and for weeks several samples of these have reposed on the writer's table awaiting the wonderfully fine weather to break. It was finally decided, however, to try the preparations under artificial conditions.

By tightening the primary chain, the belt was slacked off until it was impossible to get under way without extraneous assistance, thus creating the trouble which many sidecarists experience after a machine has been standing for some time at the kerb in the rain, or has passed over a stretch of rain-flooded Tarmac.

The preparation to be tested is known as Erusa, and is a liquid very like treacle, which, it is intended, should be applied to the sides of the belt in little dabs about six inches apart. I have always run the belt moderately slack (permitted on my machine by the somewhat long pulley centres), and have acquired the habit of carelessly dropping in the clutch in consequence

Positive as a Chain.

After dressing the belt as per directions I started up the engine, very doubtful that the application of the liquid could make up for the sagging belt. Greatly to my surprise, on letting in the clutch, I stopped my engine, showing that the drive was more positive than I had ever had it. More warily the next time, I gradually applied the clutch, and, with full load of three persons, got under way in a manner that suggested chain transmission.

After readjusting the front chain, and so tightening the belt a little, I took the outfit to a watersplash, and traversed it without sign of slip in the transmission.

Without doubt this Erusa is a useful preparation to all who use belt drive, and apparently lasts about three weeks before re-dressing is necessary. The sample will soon be used up, for other members of *The Motor Cycle* staff are trying it, and finding it good now that the wet weather is here. The makers of Erusa are Messrs. Thomas and Bishop, Ltd., 28, County Chambers, Corporation Street, Birmingham. VEDETTE.

SMALL CARS.

Motor cyclists interested in small cars should read "The Autocar," the parent journal of "The Motor Cycle."

Light, medium, and large cars are adequately covered in its pages. No artificial division of light cars from other types is attempted, or, indeed, is necessary, since the principles of design are identical and the interests of users, whether concerning questions of upkeep, taxation, roads, service or future development, are undivided and common to all.

Thus, "The Autocar"—the pioneer and the largest of all motor journals—forms the only complete record of the automobile movement, by embracing the interests of motorists in general.

Every Friday - - Price 4d.

Current Chat

Times to Light Lamps.

Oct. 27th	... ...	5.43 p.m.
,, 29th	... ...	5.39 ,,
,, 31st	... ...	5.35 ,,
Nov. 2nd	... ...	5.31 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Sir Harold Bowden.

Sir Harold Bowden, Bart., head of the Raleigh Cycle Co., Ltd., has been elected president of the British Cycle and Motor Cycle Manufacturers' Union.

Oil in Western Australia.

The discovery of distinct traces of mineral oil in the Kimberley district of Western Australia is reported. Leases covering 100,000 square miles have already been applied for.

Belgian Grand Prix in 1922.

We learn that the Belgian Motor Cycle Federation has decided to organise an International Grand Prix for 1922. There will be two classes, 350 c.c. and 500 c.c., the latter class having to cover at least 450 kilometres.

£10 Reward.

A reward of £10 is offered for the recovery of a stolen 6 h.p. Enfield two-seated sidecar outfit—registered number XA 5,502, engine number 64,531. The machine was stolen while the owner and his family were taking tea at the top of a roadside bank near Hayes.

The Compulsory Cut-out?

From the *Macclesfield Courier and Herald:* Edward Clifford Pegg, grocer, Stockport, was summoned for riding a motor cycle at Poynton on September 15th without a proper cut-out or expansion chamber. Sergeant McFall said he was in London Road, and heard the machine making a very excessive noise. Defendant said the "muffles" of his machine blew off, and he put it in his pocket. Fined ten shillings.

That Rear Number Plate.

In the case of an obscured rear number plate at South Shields recently, a rather unusual point occurred. The defendants were a father and son, the latter on the pillion and obscuring the rear numbers. The alleged offence occurred after dark; and, the defending solicitor successfully contended, as only the front number plate was legally required to be illuminated, the covering of the back one was immaterial. The case was dismissed.

Special Features.

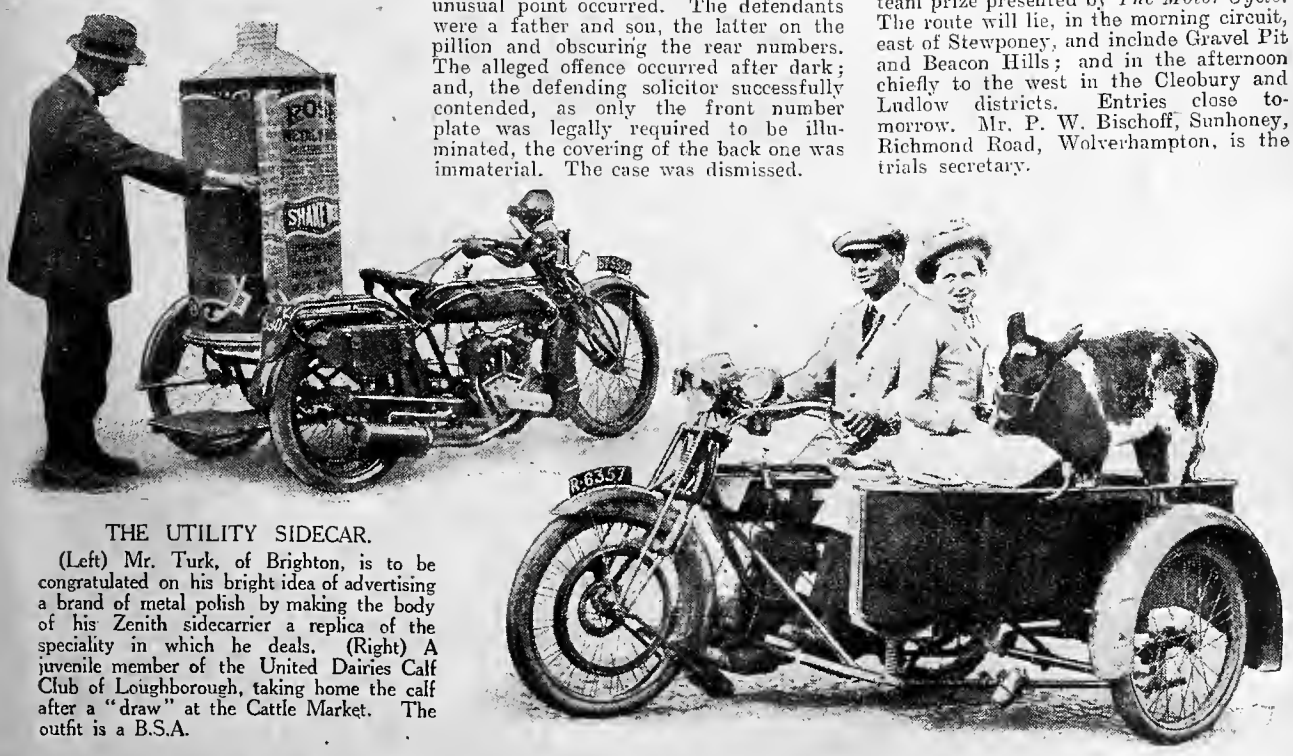
FROM WIGAN TO THE PYRENEES.
TWO-STROKE LUBRICATION.
1922 MODELS.

Sidecar Chars-a-bancs for Police.

Powerful motor cycles, with sidecars able to carry four policemen, if necessary, are now part of the equipment of all the Paris police stations. It is anticipated that their presence in the streets will act as a deterrent to would-be infringers of the speed limit. Then, again, the perpetrators of many armed robberies have recently escaped by using motor cars, and there has been no means until now of overtaking them. The sidecars will be used also in transporting victims of street accidents to the hospitals.—*Reuter.*

Important Forthcoming Trial.

Excepting the Christmas holiday events, the West Midland open trial on Saturday, November 5th, will be the last big competition of the year, and should attract a good entry. There are two special awards: a private owner's prize presented by Norton Motors, Ltd., and a team prize presented by *The Motor Cycle.* The route will lie, in the morning circuit, east of Stewponey, and include Gravel Pit and Beacon Hills; and in the afternoon chiefly to the west in the Cleobury and Ludlow districts. Entries close tomorrow. Mr. P. W. Bischoff, Sunhoney, Richmond Road, Wolverhampton, is the trials secretary.



THE UTILITY SIDECAR.

(Left) Mr. Turk, of Brighton, is to be congratulated on his bright idea of advertising a brand of metal polish by making the body of his Zenith sidecarrier a replica of the speciality in which he deals. (Right) A juvenile member of the United Dairies Calf Club of Loughborough, taking home the calf after a "draw" at the Cattle Market. The outfit is a B.S.A.

Road Tests of New Models.

SPECIFICATION.

ENGINE: Villiers two-stroke, 70 × 70 mm. (269 c.c.)
LUBRICATION: Drip feed.
MAGNETO: Villiers flywheel.
WHEELS: 26 × 2½in.
CARBURETTER: Amac two-lever.
GEAR BOX: Burman two-speed.
TRANSMISSION: ¼in. chain and ¾in. belt.
FRAME: Spring.
MAKERS: P.V. Motor Cycles, Ltd., Perry Vale, Forest Hill, London, S.E.23.

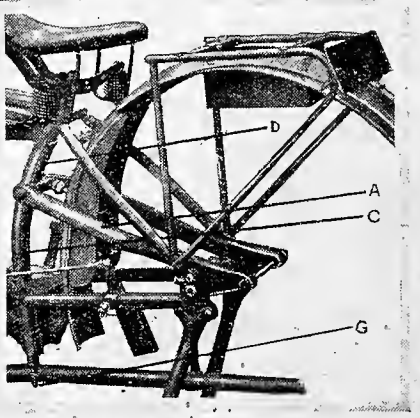
THE P.V. was a pioneer amongst lightweight spring frames, and the detail improvements which have been made were incorporated more to facilitate the adjustment and long wearing qualities of the mechanism than to increase its efficiency.

The construction of the springing system, which the makers claim eliminates all lateral play, is exceptionally simple. The rear wheel is carried in a fork which is pivoted at the rear fork end lugs of the chain stays; this fork terminates in a peg which passes through a slot in the saddle tube and engages with a cylindrical fibre block. (The strength of the saddle tube is considerably reduced, but this is compensated by the use of heavier gauge tubing and lugs.) A coil spring is located above and below the fibre block, the upper one acting as a recoil spring.

Accessibility of Main Spring.

The main spring can be removed and another fitted with ease, merely by taking out the plug at the bottom of the saddle pillar tube.

The machine which we were to take upon test was equipped with a 2½ h.p. Villiers engine.



Details of the P.V. spring frame:
(A) The floating member
(C) Housing for the coil springs
(D) The cover concealing the slot in the saddl tube
(G) Adjustment for the springs

A preliminary inspection of the controls and equipment completed, which latter we would say was more adequate than that supplied with many new machines, the engine was started, and, engaging the clutch, the machine took up the drive sweetly, and rapidly accelerated on but a small movement of the throttle.

Although scorned by a number of "big twin" speedmen, there are many points in favour of the two-stroke lightweight, notably smoothness of torque and ease and simplicity of control.

Value of a Good Clutch.

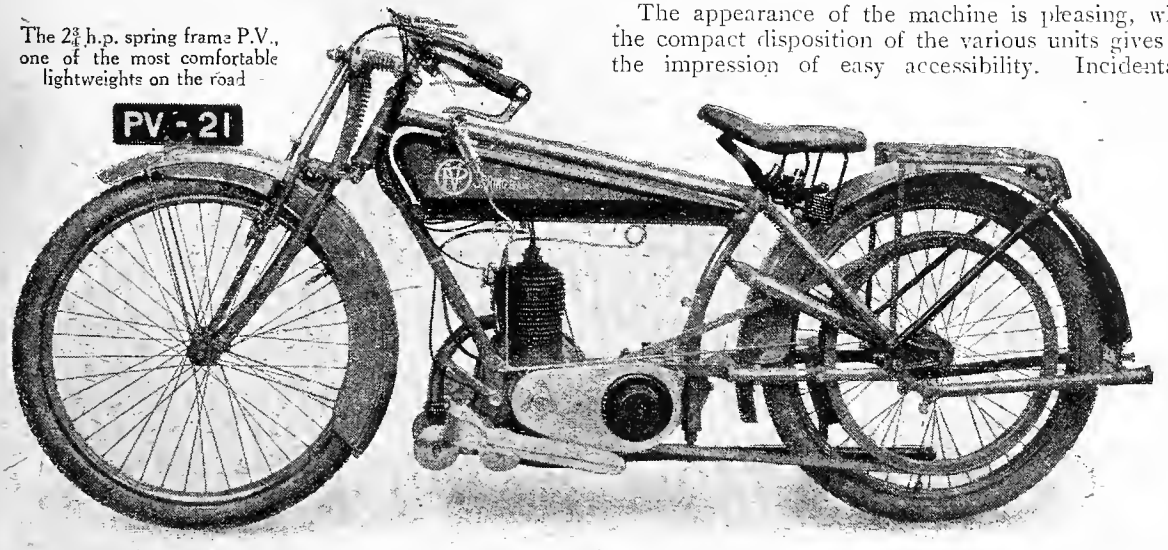
Negotiating traffic in the South-west of London without constantly changing down necessitates much work for the clutch, and if it is sensitive to the slightest movement of the finger, as we found was the case with the Burman, much time and inconvenience are saved. So far as the two-speed box is concerned, when once out of the dense traffic, the lower gear may be regarded as a superfluous luxury.

Happy to leave the London streets well in the rear, the long strip of road from the Metropolis towards

Road Tests of New Models.—

Guildford and the coast instinctively encouraged a wider throttle opening. A "B. and B." carburetter is fitted, and with both air and throttle barrels wide open the machine had a remarkable turn of speed for its engine capacity.

When one has traversed a bad piece of road many times, a definite channel, where the most violent road shocks can be avoided, is instinctively chosen. The ability to disregard this chosen route without the anticipated jolting in the saddle most effectively demonstrates the efficiency of a spring frame. This was our experience with the P.V. The rear springing is most effective, whilst it is not, as in many designs, too sensitive. It has the added merit of being quite simple.



The 2¾ h.p. spring frame P.V., one of the most comfortable lightweights on the road

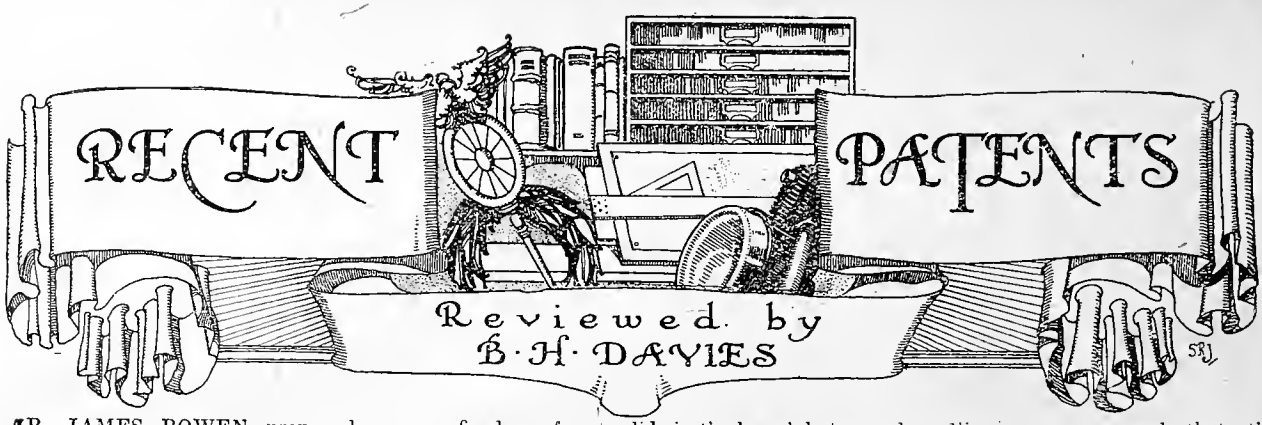
Later, turning left off the main Portsmouth Road, and ascending the famous Newlands Corner, which has a gradient of about 1 in 9, we again found no necessity to change to the lower gear, although a corner at the bottom of the hill reduces one's speed considerably; the engine accelerated rapidly, and, halting at the top to make an inspection, we found it exceptionally cool.

The appearance of the machine is pleasing, whilst the compact disposition of the various units gives one the impression of easy accessibility. Incidentally, petrol consumption was in the neighbourhood of 70 to 80 m.p.g.

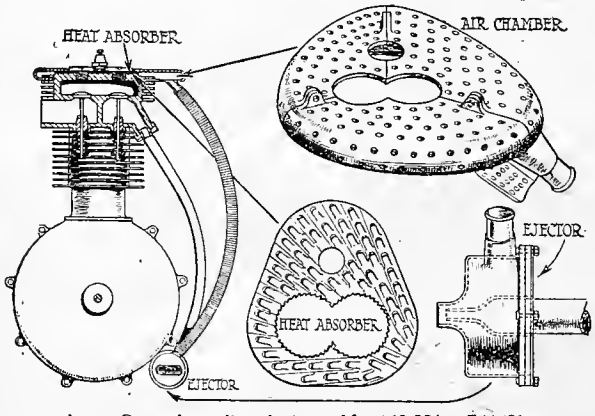
Other models manufactured by P.V. Motor Cycles, Ltd., and all embodying the same springing system, are a special ladies' model with a cut-away tank, a 2¾ h.p. J.A.P.-engined model, and a 5-6 h.p. J.A.P.-engined dual-purpose mount, equipped with a P.V. spring frame and a sidecar.

VIEWING THE ECLIPSE.

The night of the recent eclipse of the moon was ideal for a moonlight run by motor cycle, and the above illustration, taken by flashlight, shows Basingstoke motor cyclists who took advantage of a run out in the clearer acountry air to observe the phenomenon



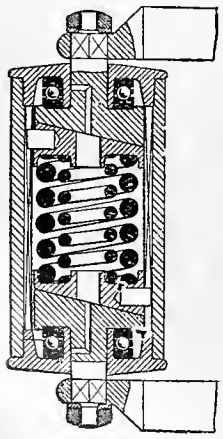
MR. JAMES BOWEN propounds a somewhat unusual method of air-cooling the cylinder head. His cylinder is apparently of cast iron, innocent of any finning on the head, to which a copper washer is attached. This washer is ribbed and tongued in such a fashion that all the air currents concentrate towards one corner. The washer is enclosed in a hollow and perforated aluminium air box, through which a current of air is induced by means of a special pipe coupled to an ejector nozzle operated by the exhaust gases. This system might conceivably be inferior to standard practice at high road speeds, but should improve the cooling when the engine is pulling a heavy load on a very low gear.



James Bowen's cooling device. No. 160,926. 7/4/21.

Coil Springs.

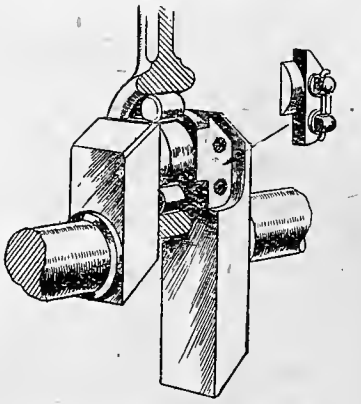
The spring shown in the accompanying sketch lends itself to a variety of uses, and can easily be adapted to the front forks or rear frame of a motor cycle. The two "oblique washers," between which the coiled springs are confined, are free to slide in the barrel, but are prevented by keys or feathers from rotating. The two outer discs or washers are free to rotate when a load is put upon their respective shanks, projecting from the ends of the barrel. As the inner washers cannot rotate, the coiled springs are compressed. The intention is evidently to obtain a cam action upon both ends of the springs, and so to get a big spring action in return for a very limited motion of the levers. I find it difficult to believe that the device would work smoothly or prove durable.



John Arthur's springing device. No 161,054. 30/3/21

Big End Assembling.

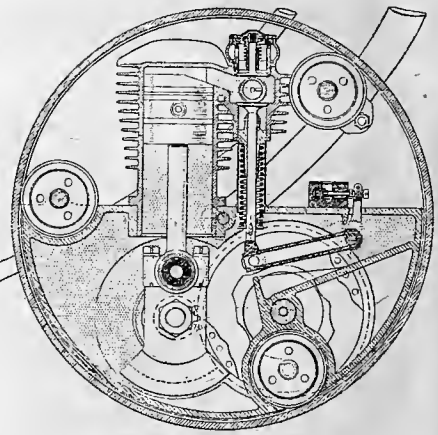
Mr. Granville Bradshaw, like most small men, is of an extremely jovial disposition. His best friends say that nothing ever depresses him except the announcement of a new patent for assembling a roller bearing big end. He is responsible for the pioneer patent in a long list, and his original specification was not drafted widely enough to give him what every inventor dreams of — a master patent over some article which is in common use. So a cloud will once more pass over his features when he studies the Tyler Apparatus Co.'s roller bearing big end shown herewith. By careful calculation the various angles, chamfers, and radii are so arranged that the connecting rod can be threaded into position over a one-piece crankshaft, and yet have no more than the correct fraction of side play when it arrives on the crank pin. No cheek plates are needed, and the rollers are inserted *via* a recess machined in the opposite crank cheek. This recess is afterwards filled by a locking plate, which abuts against a flange, and is finally secured by two locking screws and a wire.



Tyler and Simpson's roller bearing. No. 159,276. 20/2/21.

A French Motor Wheel.

Messieurs Burlat and Renaudin reside at Impasse St. Alban in the city of Lyons. I sincerely hope there is nothing prophetic about the first word of their postal address, but I have lived to see many motor wheels invented and few succeed. Their wheel, so to speak, is mostly hub, for the power unit, etc., are carried inside the hub. A small crankshaft pinion drives a much larger pinion, which in turn operates an enormous clock spring. This clock spring "stretches at the explosion, and relaxes during the other three movements," thus providing a practically constant torque! (What further need have we of multi-cylinder engines?) Anyhow, the drive, thus smoothed out, finally arrives at internal teeth cut on the inside of the hub. The hub and wheel are centred by rollers and suitable tracks. The motor is prevented from rotating round the fixed wheel spindle "by the rigidity of the mudguard," assisted by a special strut.

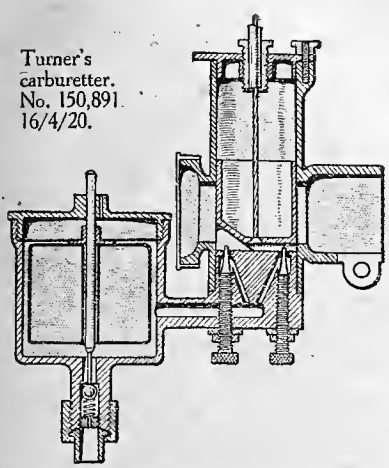


Burlat and Renaudin's motor wheel. No. 139,767. 10/3/21.

Recent Patents.—

Simplicity in Carburetter Design.

Mr. E. R. Turner's motor cycle carburetter is extremely simple, and admits of very rapid tuning. The first element of novelty is to be noted in the petrol inlet to the float chamber, where the almost universal needle valve is scrapped in favour of a spring ball, opened by a guide spindle, which carries the weight of the float when the chamber empties. The spraying chamber consists of a straight through tube, in the lower side of which two jets are drilled, and rendered adjustable by means of threaded needles.

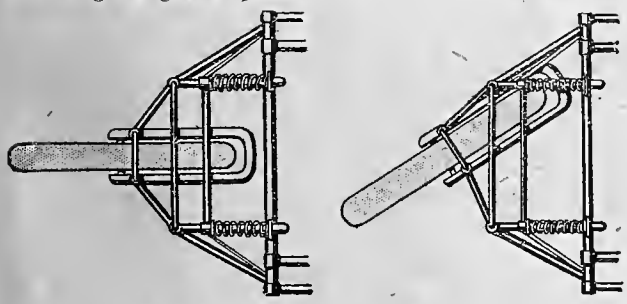


Turner's carburetter. No. 150,891. 16/4/20.

The jet nearest the engine is the pilot, and the base of the throttle is shaped to concentrate a fierce depression about this jet. No extra air is provided. Riders who have expended much time in trying to obtain power, economy, and even acceleration from vaporisers equipped with three jets and three choke tubes will wonder whether Mr Turner has not put up with a little crudity in his desire to evolve a really simple one-lever carburetter.

The Question of Forks.

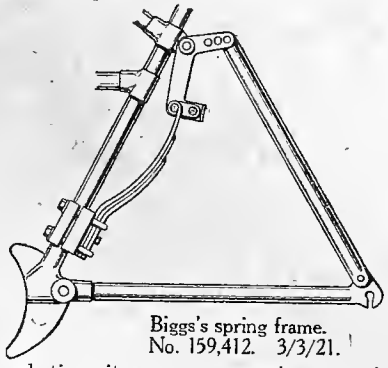
For some unknown reason Mr. W. G. Bell nourishes a violent objection to the ordinary steering fork, which is certainly shared by the designers of the Ner-a-car and by those responsible for some now obsolete models of the James and Zenith motor bicycles. His specification contains hints which suggest that he is contemplating a tricar of the two-wheel astern type. However that may be, the two sketches indicate how he thinks the steering of such a vehicle ought to be arranged. May he prove successful in convincing the general public.



Bell's steering device. No. 159,633. 7/3/21.

Rear Springing.

Mr. A. J. Biggs's spring frame is of the type which employs a single leaf spring to restrain the oscillations of a hinged rear frame, and his specification rather implies that he has thoughts of

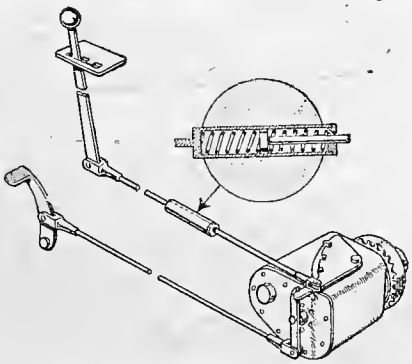


Biggs's spring frame. No. 159,412. 3/3/21.

marketing it as a conversion set for springing existing rigid frames. It embodies a bell crank and shackle beneath the saddle-pillar

Effortless Gear Changing.

Of course, I cannot say how Mr L E. Fowler's gear-shifting mechanism works in practice, but it sounds like one of those beautiful dreams which never come true. The rider swears off the actual labour of gear changing for the rest of his life, just as a toper swears off beer when the Salvation Army gets hold of him. On starting out with bottom gear engaged, he puts the gear



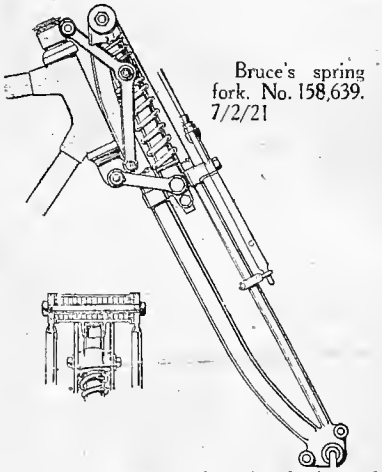
Fowler's gear change. No. 150,070. 27/7/20.

lever in the second gear notch. Nothing happens at the moment. But when the rider considers the time opportune for a change-up, he momentarily depresses his clutch pedal. No sound is heard, but the engine reduces its revolutions, and the machine increases its speed. A similar manœuvre translates him on to top gear. Top once reached, he puts his gear lever in notch 2—notch 1 if he is competing in a freak trial. Top gear remains engaged, but the lower gear may be instantly obtained at any moment simply by the merest tickle of the clutch pedal.

This miracle is performed as follows: The gear in engagement is locked by a trigger, which can only be freed by a lever connected to the clutch pedal. The gear lever cannot unlock this trigger, and movement of the gear lever from one notch to another, therefore, effects no gear change provided the clutch pedal is not touched. But the gear lever connections include a spring box, and the movement of the gear lever compresses one of two powerful springs—one for "up," the other for "down." The instant the clutch pedal is depressed, the locking trigger is freed, and the compressed spring pulls the selected gear into action.

A Fork Design.

Mr. W. A. Bruce's springing device is applicable to either forks or a saddle carrier The fork stem is attached to the steering stem at two points. The lower attachment is a pair of links, while the upper attachment is a trunnion

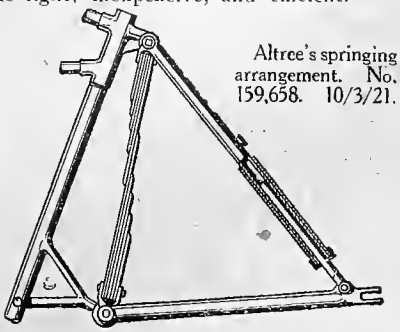


Bruce's spring fork. No. 158,639. 7/2/21

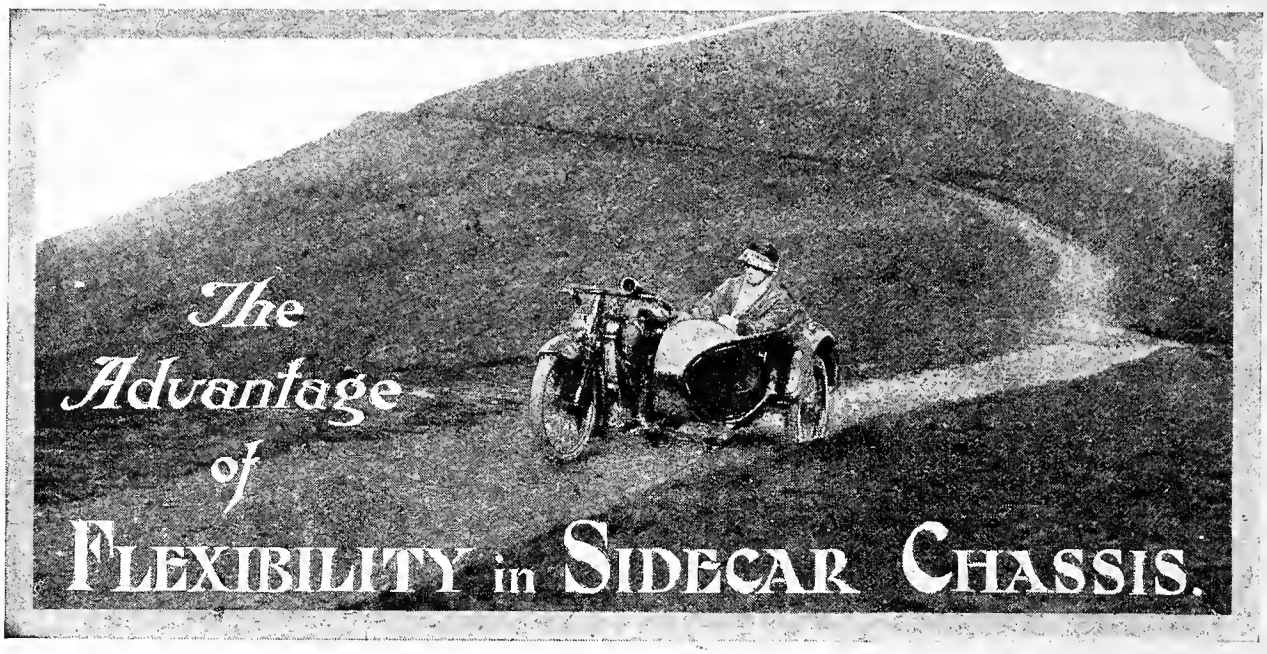
mounted at the apex of a rigidly braced triangle. Main and rebound springs are fitted above and below this trunnion.

Frame Springing.

Mr. A. Alltree, who has designed many motor cycle gear boxes, is now turning his attention to spring frames. The sketch is really self-explanatory. When the rear wheel passes over a bump, the pivoted chain stays swing upwards, and the pivoted down stays telescope. These actions are resisted by the opposed pressure of the thin ends of the two leaf springs shown. The leaf springs are held in register by any form of clip or pin which does not prevent them from sliding over each other, and may be encased in a metal or leather sheath. The design is light, inexpensive, and efficient.



Altree's springing arrangement. No. 159,658. 10/3/21.

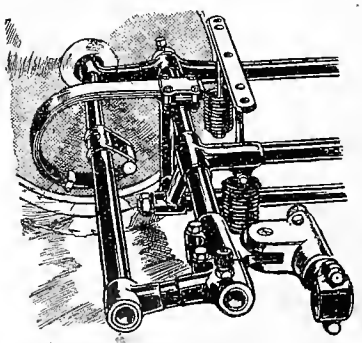


The Advantage of FLEXIBILITY in SIDECAR CHASSIS.

How Spring-wheeled Sidecars may Ease Driving Strain and Shocks to the Motor Cycle Frame.

IN a recent issue, "Wharfedale" wrote at some length on the subject of sidecar connections and evinced a marked leaning towards the advocation of a certain amount of flexibility between the sidecar and its propelling attachment.

The present writer is also in agreement with that idea, and has long maintained in his own immediate circle that a semi-flexibly connected sidecar, or a sidecar with spring wheel, would take away the majority of those unpleasant side shocks which mar sidecar driving wherever the roads tend to roughness. As an assistance in cornering, moreover, an attachment which permits the motor cycle to make slight departures from the vertical, provided its alignment is unimpaired on a straight road, should be advantageous. This question of facility in cornering was indeed of special moment, for most of the writer's mileage is accomplished with nothing more than a small bag and a photographic outfit in the sidecar to act as ballast.

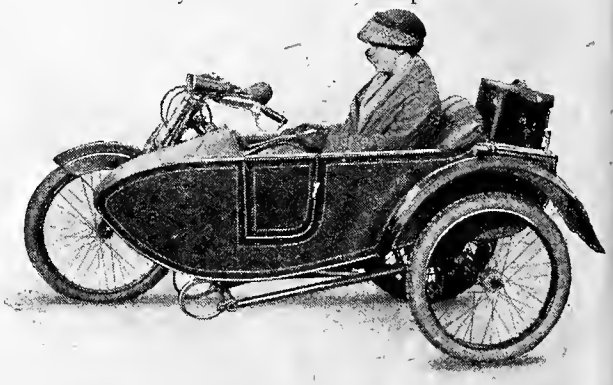


Swinging spring-controlled axle of the Sheffield-Henderson sidecar. Adjustment is effected by extending the leaf spring.

Choice fell upon a Henderson spring frame model for attachment to a Scott machine, and after having the sidecar fitted at the works of Henderson Motors, Ltd., at Sheffield, it was run for some 500 miles, when delivery of a 1921 4¼ h.p. B.S.A. was obtained, and with new connections promptly supplied the sidecar was transferred.

On the Scott machine, perhaps in part owing to the long connections up to the head lug of the machine and also to the slight inherent "whippiness" of the Scott frame, the steering with a passenger was rather heavy, but ridden empty the freedom from shocks transmitted from the sidecar wheel was remarkable, and the machine steered and felt almost as unfettered as a solo machine. The same remarks apply to its use on the B.S.A., only the steering is much better.

With this type of sidecar it becomes very essential to line up carefully and with a distinct *outward* lean of the cycle as the weight of the passenger naturally depresses the spring of the floating axle, but an adjustment is provided for varying weights. For those who travel chiefly with light loads such a sidecar is admirable. The working of the floating axle is easily noted when driving, and it is obviously saving chassis and frame from all major shocks. Incidentally, the opinion of "expert passengers" is that the comfort of this Henderson body illustrated is unsurpassed. H.S.



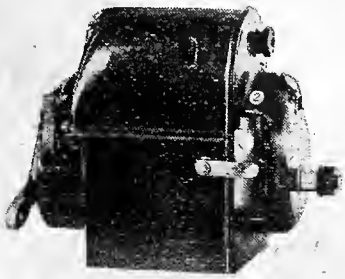
Graceful body lines; comfort and luggage capacity are also features.

A SWISS MAGNETO.

The Scintilla, a Simple High-tension Machine Embodying Rotating Magnets and a Stationary Winding.

THE Scintilla magneto, which is not as yet well known in this country, is an interesting piece of mechanism, as it works on a principle which is quite different from that employed in the average magneto machine.

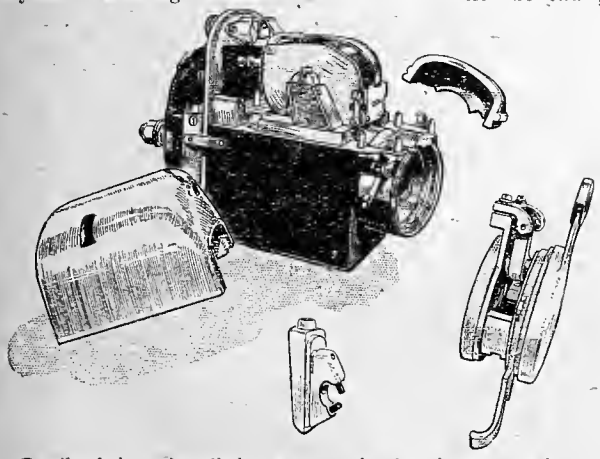
Its performances on motor bicycles on the Continent have been remarkably good. For instance, practically all the Motosacoches which did so well in this year's International Six Days Trial were equipped with it, as were also two New Imperials. The magneto itself is of Swiss manufacture, and is made at Soleure.



The Scintilla magneto for twin-cylinder motor cycles.

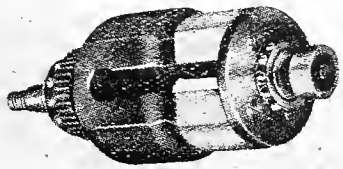
Non-rotating Contact Breaker.

The contact breaker of all models is interchangeable and it does not rotate; the component parts are very robust. A bayonet fastening allows the contact breaker to be instantly removed for adjustment, and the platinum points may be inspected by removing a small aluminium cover held by spring clips, while the end plate carrying the spark advance lever is held into position by a central screw, which, if loosened, allows the lever to be placed in eight different positions; a powerful spring returns the contact breaker to its retarded position



Details of the twin-cylinder magneto, showing the cover, twin brush holder, and contact breaker.

Unlike magnetos of the rotating armature type, the windings do not rotate between the magnets, and even the usual type of polar inductor layout is substituted by a rotating magnet, thus dispensing with the more conventional rotor revolving between the poles of a stationary horseshoe magnet; the armature windings are carried above the rotating magnet in the case of the single-cylinder pattern. The chief differences between the single-cylinder pattern and that suitable for twin-cylinder motor bicycles are in the contact breaker and the distributer. The type for twin-cylinder motor cycles has a slip ring and two carbon brushes in each brush holder, one of which collects the current from the armature, and the other transfers it through the segment on the slip ring to the sparking plug.



The revolving magnet with laminated pole shoes.

With the single-cylinder type the high-tension current passes direct to the plug terminal, and no slip ring is employed, and there are thus no sliding contacts or air gaps in the circuits.

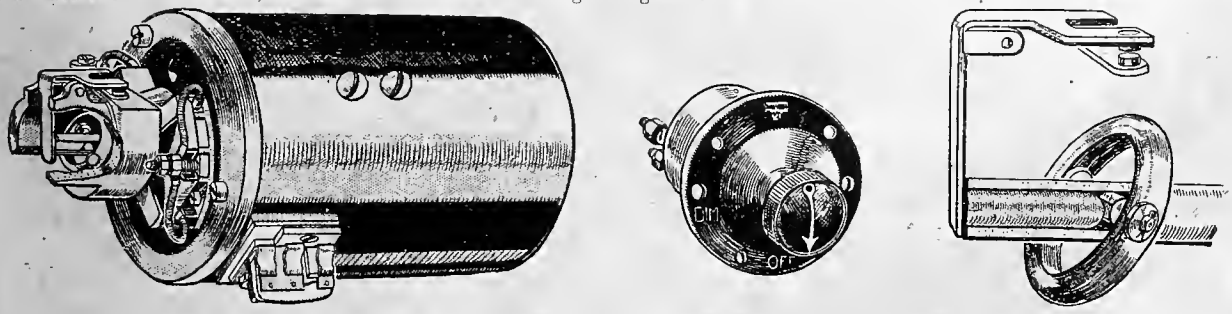
Cut-out Switches as Standard.

Every Scintilla magneto is provided with an earth terminal for the purpose of switching off the magneto: in the case of twin-cylinder models this is situated on the driving side, and in the case of single-cylinder models it is placed adjacent to the high-tension terminal. The magnetos are beautifully finished, while the working parts are of robust construction. They are handled in Great Britain by Scintilla Magnetos, Ltd., Trafalgar House, Waterloo Place, London, S.W.1.

A Dynamo with a Mechanical Charging Switch.

New Smith Generator with Centrifugal Cut-out.

THE accompanying sketch shows the general arrangement of the commutator and the four brushes, which are held in pairs on the new Smith lighting dynamo which will be seen at the Olympia Motor Cycle Show. The automatic cut-out is a most novel feature, since it is controlled entirely by centrifugal action. The armature shaft is drilled, and inside accommodates a small push-rod, which, at one end, comes in contact with a rocker arm, and at the other with a flat on a cross spindle, which carries the governing ring. This ring lies at an angle of approximately 45° when the armature is stationary, but when the speed of this shaft reaches 950 r.p.m. the ring swings until it is at right angles to the armature, and in consequence the full diameter of the governer spindle abuts on the end of the push rod, and so forces it outwardly and operates the rocker arm, making contact between the studs at the top of the casting and joining up the charging circuit. This device cuts out again when the armature speed drops below 950 r.p.m.



Details of the Smith dynamo, showing commutator, lamp and dimming switch, and automatic switch gear

Which is the World's Best Solo Machine?

Should Value for Money be Considered? Fascinating Belt Drive.

DESPITE the fact that almost invariably a proud owner's present mount is, in his opinion, undoubtedly the world's best machine, some very interesting views have arisen from our readers' efforts to decide the premier solo motor cycle.

In the letter from Mr. A. Arnold, initiating the discussion, the 3½ h.p. Sunbeam was mentioned, and since then the following names have been put forward by various enthusiasts: 3½ h.p. Rudge, 3½ h.p. Lea-Francis, 4 h.p. Triumph (twice), Scott, Stanger, 3½ h.p. Norton (twice), and the 3½ h.p. Sunbeam (for the second time).

This week brings a further large batch of letters and several additional aspirants to the title.

Power-weight ratios, according to "Otazenithing" (Croydon), must be taken into account. He writes:

"The Rolls-Royce has a very large engine, which gives great liveliness and speed, both on the level and on hills. Now, although the 3½ h.p. Sunbeam is a very fine machine, it is burdened as regards weight with a gear box, chain cases, and many other doubtless excellent features in their way, which, however, militate against the aforementioned Rolls-Royce liveliness. Regarded from this standpoint, has not the Zenith a good claim to the title? This machine is very comfortable, not at all unwieldy, has a high power-to-weight ratio, and, with its smooth, silent drive, incorporating the incomparable gear with no power-absorbing gear box, should be hard to beat."

Variable Gears.

Somewhat similar opinions are held by "C.G.E.S." (Croydon):

"I think those who know both types of gears well will agree with me that the variable gear is unequalled for solo riding. The Rudge and Zenith are both admirable solo mounts.

"I have a 5 h.p. Sports Zenith-Gradua, and for silence, speed, and reliability I would not change it for any other solo 'bus. It is a joy to handle."

An American mediumweight twin is the ideal of "Satisfied" (Southport):

"For a solo machine of all-round excellence, I think that my mount, an electrically equipped Indian Scout, would require some beating. Personally, I have not noticed the 'appalling splutter' to which Mr. Norman Williams refers. On the contrary, I find the engine most flexible and smooth running, and possessed of remarkable powers of acceleration. The finish is excellent, and the machine most reliable in all ways. Usual disclaimer."

Mr. Graham Haynes cannot decide between the claims of the small twin and two famous singles:

"For all-round and everyday purposes, nothing can equal the following three for reliability, silence, durability, and value for money, etc. They are the 3½ h.p. Lea-Francis, 3½ h.p. Sunbeam, and 4 h.p. Triumph. They absolutely come out top of the lot."

A Dutch correspondent, writing from the Hague, gives his choice in his *nom-de-plume*, "Raleigh":

"Neither finish nor torque (especially when unable to run slowly and using too much petrol) alone will make a machine good.

"Torque and balance, spring frame, interchangeable wheels, and chain cases are the first necessities before it will be possible to compare a motor cycle with any car at all.

"The get-at-ableness is another interesting point for the owner-driver. Now we have at last one such machine. For me every other mount is dead. I am sorry."

That price should not be considered is the view of "S.K.C." (Belfast):

"In my opinion, for either tourists or speed men, the Norton is second to none.

"I notice that Mr. H. M. Main Clark points out that the price of the 3½ h.p. Rudge-Multi is a large factor in its favour, but then the 3½ h.p. single-speed Norton's revised price is £80.

"The 16H Norton is as comfortable as anybody can desire, and as for power and speed, well, everybody knows what the Norton can do."

"T.B. 5623" (Waterloo) also thinks that value for money should not be considered:

"I have read with interest the names of the motor cycles which your readers give as being two-wheeled Rolls-Royces, and they have occasioned me no surprise whatever, with the exception of the machine chosen by Mr. H. M. Main Clark, viz., the Rudge. I admit that this machine is certainly very fast on the level, but still I do not think that anyone will say that it shines on freak hills.

"It is not my intention to run down the Rudge, but I should like to know why Mr. Main Clark should mention this machine when he possesses a Sunbeam. A Rolls-Royce is not cheap, so I fail to see that price has anything to do with the choice of 'the world's best solo machine.' One has to pay for luxuries."

Running economy is named by Mr. John W. Parr as a desirable feature:

"I have owned and ridden many makes of machines, but none of them can come up to the 1921 3½ h.p. Ariel for reliability, durability, economy, and all-round excellence. Usual disclaimer."

Dr. G. R. Harland replies to the question directly:

"I do not know, as I have not ridden all of the many makes. I have owned sixteen motor cycles, including Humbers, Triumphs, P. and M.'s, Douglases, Indians, Royal Enfields, and Velocettes. My present two mounts are A.B.C.'s, and I should like to say that in my opinion they are incomparably the best of the lot; they are fast, quiet, very comfortable, extremely easy to start, they never in the least overheat."

A Two-stroke Favoured.

"Ivy Three" (Olton) tabulates his reasons for choosing the machine of that name:

"(1.) Low initial first cost, low weight, and perfect finish.

"(2.) Extraordinary reliability in every branch of the sport, and possessing extreme simplicity.

"(3.) Silence without loss of power.

"(4.) Low petrol consumption, and, therefore, cheap upkeep.

"(5.) Ability to take a sidecar if required.

"(6.) Speed when necessary without vibration.

"I am the proud owner of an Ivy Three, and, without any special tuning whatever, am obtaining 105½ m.p.g."

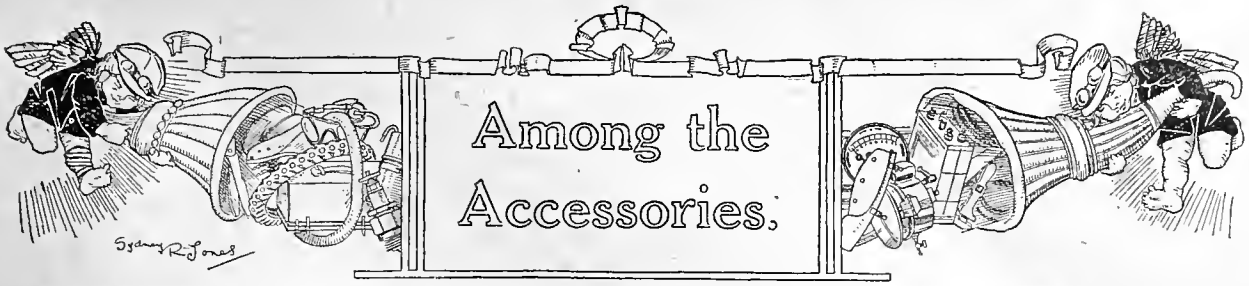
An earlier letter from "—Umph" is backed up by "Tri" (Wallasey):

"His remarks about monotonous reliability, superb detail design and finish, and revelling in being neglected, etc., are not exaggerated in the least. The Triumph is, without a doubt, 'it.' Usual disclaimer."

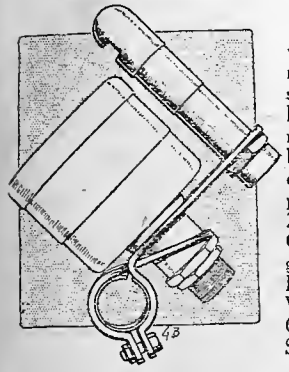
Few of the machines already mentioned stand up to Irish roads, according to Mr. J. W. Wallace. He continues:

"Seemingly, none of your correspondents have taken into consideration the cost of maintenance for each machine. I have ridden nearly all the leading makes of motor cycles from 1910 to the present date, and may candidly say that among the lot I have never found anything to be compared with the 'old contemptible,' the trusty Triumph, for solo work, reliability, comfort, and, principally, design. I am at present the proud owner of a 1920 C.S. Triumph, on which I travel about twenty miles per day, and this machine has cost me nothing in repairs (tyres and tubes not included) up to the present.

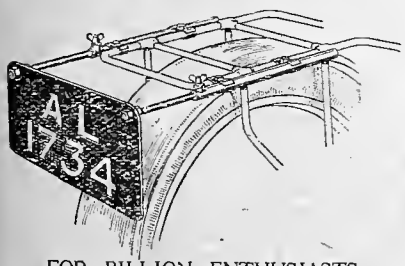
"The war has proved to us that the trusty Triumph is the world's best all-round motor cycle, for reliability at any rate."



SPEEDOMETER LIGHTING.

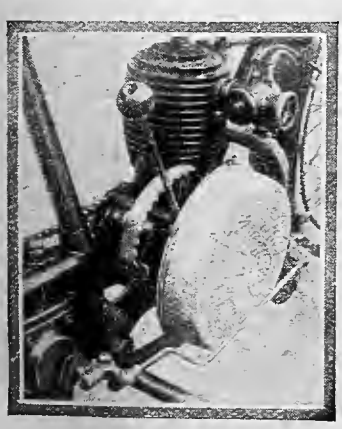


Efficient and very neat, this new Cowey speedometer lamp is operated merely by pressure on the top portion. Price 20s. (The Cowey Engineering Co., Ltd., Archer Works, Kew Gardens, Surrey.)



FOR PILLION ENTHUSIASTS.

To avoid being obscured by a pillion passenger's coat, etc., this patented number-plate is extensible to the rear, being mounted on telescopic rods, clipped to the carrier. (Richard B. Higgins, 43 Freehold Street, Spring Bank, Hull.)

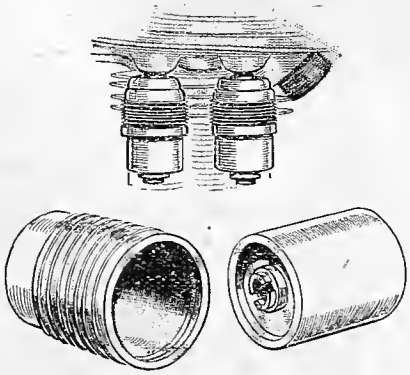


POSITIVE MAGNETO CONTROL.

On the Villiers flywheel magneto, the control lever is sometimes very "free"; the quadrant illustrated, sold by Read Bros., 4, Goods Station Road, Tunbridge Wells, provides a range of positive stops between full advance and full retard.

Improved Valve Attachments.

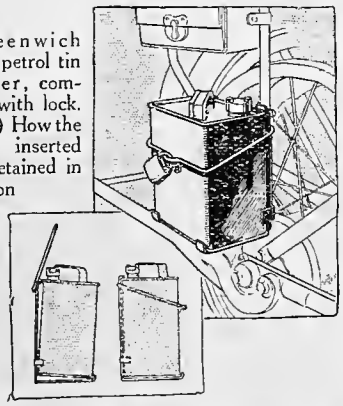
SINCE the F.E.W. valve protectors were first produced, several modifications have been introduced. The reciprocating sleeve is now lubricated by an annular felt washer inside the stationary upper portion; the device is also more easily fitted, a special valve spring clip being provided. The manufacturers are F.E.W. Patents Co., 217, Gordon Road, Peckham, London, S.E.15.



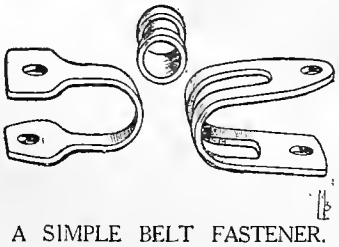
The latest type F.E.W. valve lubricator shown dismantled. The upper sketch depicts the protectors on a Triumph engine

For Carrying Spare Petrol.

SEVERAL readers have commented recently in the correspondence columns of *The Motor Cycle* on the difficulty of carrying a spare supply of fuel in the ordinary two-gallon tin. The Greenwich carrier, which is made by Duffett Bros., 78, Great Jackson Street, Manchester, together with the special tin, provides a safe means of storing an ample supply of petrol for emergency use. It is quickly detachable and rattle-proof.

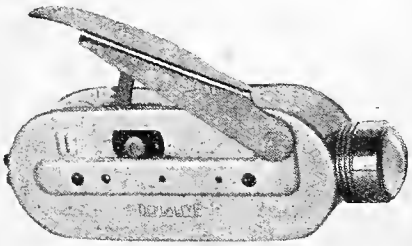


Greenwich spare petrol tin carrier, complete with lock. (Inset) How the tin is inserted and retained in position



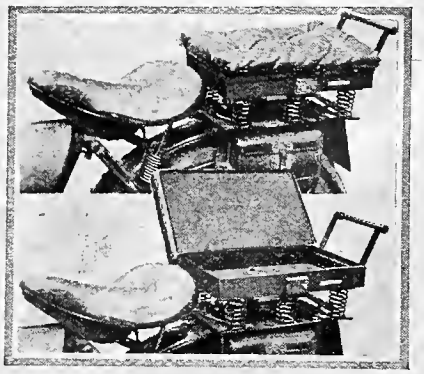
A SIMPLE BELT FASTENER.

Designed by a well-known competition rider, J. S. Holroyd, of Holroyd Motors, 6, Warwick Street, Regent Street, London, W.1, this simple belt fastener consists of only three main parts, incidentally providing a very short gap between the two ends of the belt.



NEAT LEVER-OPERATED LAMP.

No refills are necessary for the Deklalite inspection lamp, current being supplied directly from a dynamo operated by the hand-lever. Price 25s. 6d. (Dekla, Ltd., Dekla House, 168, Great Hampton Street, Birmingham.)



DUAL-PURPOSE PILLION SEAT.

Spare belts or tools may be carried with safety in the locked compartment of the Box pillion seat, access to which is gained by hinging the cushioned lid. The price is 42s. (The Box Pillion Seat Co., 42, Earl Street, Coventry.)

SILENT OVERHEAD VALVE GEAR.

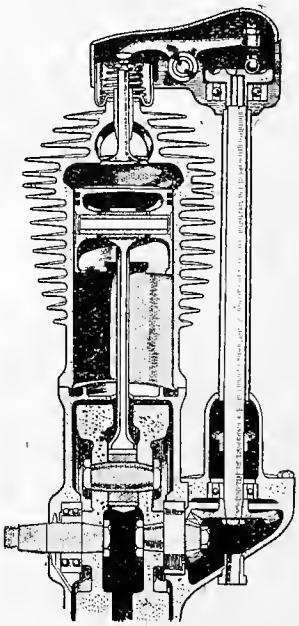
One Face Cam driven by a Vertical Shaft operates Both Valves.

MANY new types of overhead valve engines have appeared within the last few months, but most of them have adhered to the practice of applying push rods, tappets, and internal or external cams.

The efficiency of this type of valve operating mechanism has been proved in competition, but there are many points on which it is open to improvement, and these the designer of the engine under review has set out to eliminate.

On the Newson engine, as it is called, a bevel-driven shaft rotates a circular face cam housed in a chamber above the cylinder head. A small bevel on the crankshaft drives a 2 to 1 pinion bolted to the tapered end of the vertical shaft, whilst keyed to the latter is another bevel, which drives a Thomson-Bennett magneto accessibly mounted on an aluminium plate cast integrally with the bevel housing. A ball bearing is located at either extremity of the shaft, the top one forming the base for the circular cam. Here another "eliminating" feature is found, since both valve rockers are operated from the same cam.

Friction is reduced by the use of a ball fixed beneath the rocker and lying in the cam channel. The axis of the rockers is provided with oil-retaining slots, whilst the lubrication of the bevels and shaft is effected by the oil vapour forced up the casting by the pressure in the crank case.



Sectional drawing of the Newson engine, showing clearly the main details of the valve gear.

Conical valve springs are used, the cotter pins being retained by means of recessed spring cups. The valve lifter is simple in the extreme. A small lever and cam are located in a boss in the valve box, the cam lying directly beneath a small tongue on the rocker.

$1\frac{3}{8}$in. valves with a .4in. lift are used, and the $1\frac{1}{4}$in. diameter of the straight through induction and exhaust port is adequate to ensure the efficient and unobstructed passage of the gas. A cast iron cylinder, having a bore and stroke of 63×80 mm. (248 c.c.), is held to the crank case by four long bolts, which also retain the valve box in position.

The crankshaft and the 7in internal flywheels follow standard practice. A somewhat novel piston, however, is incorporated. It is of the slipper type, and narrow, deep rings of the aero engine variety are used. $\frac{5}{16}$in. roller bearings are fitted to the big end, whilst oil grooves fed from the crank case encircle the crankshaft.

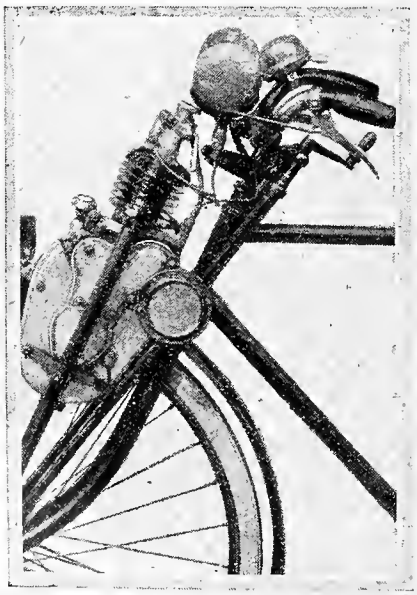
Incorporated in a neat lightweight frame under the name of the Reyre-Newson, this power unit has already enjoyed success in various speed events.

The designer is Mr. S. C Newson, of 32, Eastbourne Street, Stamford Hill, London, N.15.

A SIMPLE MOTOR ATTACHMENT.

The Cyclotracteur, a French Production, arranged for Front Wheel Friction Drive.

AS the motor attachment forms a very important link between the pedal cycle and the lightweight motor cycle, a new fitment of this description will possibly interest those of our readers who are considering mechanical propulsion for the first time.



Simplicity is the keynote of the Cyclotracteur. The engine is a 50×55 mm. four-stroke, and the transmission friction drive on to the front tyre.

The Cyclotracteur, which is of French origin, was exhibited at the Paris Show with a large number of similar auxiliary attachments, and attracted considerable attention.

A single-cylinder engine of 50×55 mm. bore and stroke is suspended in a V shaped tubular frame, the converging ends of which are fitted into the front wheel hub spindle, whilst the long arm of the frame is attached to the head of the cycle frame. An automatic inlet valve is used, whilst the exhaust is mechanically operated. Petrol sufficient for a fifty-mile run is carried in a circular tank clipped to the handle-bars, adequate lubrication being effected by a small gear oil pump in the crank case sump.

Friction drive on to the front tyre propels the machine; and, by the use of a handle and telescopic tubes, the whole unit can be lifted, and contact between the friction roller and tyre is broken. A floatless carburetter supplies the mixture, which is regulated by a lever on the carburetter body. The jet is fed from an automatic valve in the barrel. Ignition is by a small magneto, driven by a pinion engaging with the cam wheel.

The attachment can be fitted to any bicycle, and is a distinctly neat device.

Sole distribution in the British Empire is in the hands of the British Motor Cab Co., Ltd., 1 and 3, Brixton Road, London, S.W.9.

The Cyclotracteur—a French motor attachment fitted to a lady's bicycle. Its neat appearance is an asset from a lady's point of view.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

HEAD LAMP DIMMING ETIQUETTE.

Sir,—If the owners of cars with bright lights are just recognised when they switch off while we motor cyclists are passing, I think it would help matters a great deal; it only needs a wave of the hand. My idea is that if they know it is appreciated they will continue to switch their lights off and give people with the small lights a "look in."

REG. GREEN.

COMPARATIVE INSURANCE RISKS.

Sir,—May I ventilate a grievance with reference to insurance? The various companies seem to think that speed is proportional to horse-power. As the owner of an 8 h.p. sidecar outfit, I am charged 50% more than the owner of a 3½ h.p. outfit. If it is desired to average 20 m.p.h. over hilly country the latter has to travel up to 30 m.p.h. on the level and down hill in order to make up for going up hill at 8 or 10 m.p.h. A powerful engine enables the driver to maintain a steady 20 m.p.h. Which involves the most risk?

H. S. LITTLE.

SEATING ACCOMMODATION ON CYCLE CARS.

Sir,—Under "Cycle Cars Under Test," you describe a test of the Tamplin. Perhaps my own experience may be interesting to you.

SEATING.—The back seat is uncomfortable, and is really more of a dickey. Passenger's legs cramped; windscreen gives no protection to the passenger.

BRAKES.—Foot brake, good; side brake, difficult to operate without moving the passenger's legs.

No ratchet. If left on a hill, gear has to be engaged.

Owing to short steering lock, turning the car round is quite a business.

I can fully endorse all "Benedict" says regarding speed and power.

R.P.

Charing, Kent.

GARAGE TROUBLES.

Sir,—My son was "demobbed" in March, 1920, and we started a garage. We have a good many customers among labourers, fine fellows, honest and hard-working. But we had a tradesman customer who ran up a bill for over £15. He came in with his motor cycle with a broken valve. The engine was dismantled and examined, and found all right. The customer came early next morning and took the machine to another garage, and refused to pay his account till two days before the case would have come into court. A second customer paid a monthly account of £15 to £20 regularly enough till the end of the season. He let one bill run a fortnight, then paid, but a final account twelve months' old is still outstanding. Another customer has not yet settled 1920 accounts. This is only a small garage, and not an old-established one either.

COUNTRY GARAGE.

Norfolk.

A CATECHISM FOR POTENTIAL CYCLE CARISTS.

Sir,—At the forthcoming show there will be hundreds of sidecar owners buzzing round the cycle car stands, like bees round a hive, and wondering whether this season they will not scrap the sidecar outfit and go in for something more comfortable.

Well, if they do they will get the comfort all right, but before deciding let me advise them to ask themselves the following questions? If the answer is in the affirmative, let them go in for the cycle car, or at the later show a three-wheeler.

1. Are you *absolutely and utterly certain* that you will never want to take three up?
2. Are you quite prepared to lay out an initial cost of close on £300? Remember insurance, tax, garage, and delivery charges are all about double.
3. Are you prepared to stand a depreciation of close on £70 for the season?
4. Are you prepared to pay car charges for any repairs, overhauls, etc., and also car charges for accessories and spares?

The writer thoughtlessly embarked on a runabout last season, and now regrets a much depleted bank balance.

Edinburgh. THREE-WHEELER.

BRITISH MACHINES IN SWITZERLAND.

Sir,—During a two months' walking tour from one end of Switzerland to the other, I noticed the following machines, placing them approximately in the order of their frequency: Motosacoche, Condor, Indian, Enfield, Douglas, Triumph, Scott, A.J.S., Henderson, New Hudson, Moto-Rêve, B.S.A., Clyno, James, N.U.T., and Zenith. Two Triumphs I met on top of the Gurka Pass (about 8,000ft.), and, according to their riders, they had had no trouble coming up. The total number of British machines must very nearly have equalled that of the Motosacoches.

Montreux. D. L. GALBREATH.

GERMAN MAGNETOS AGAIN.

Sir,—Recently, in a large motor shop in a well-known South Coast town, I was shown the latest thing in light-weights. I was particularly interested in it, as I own an elderly, but extremely active machine of the same type myself. My machine, being one of the earliest made, has a Bosch magneto, because in those days the makers had a stock of these magnetos, and had to use them up. The Bosch magneto, as everyone very well knows, was a German magneto, and a very efficient electrical machine.

I have frequently read articles stating that, in the last few years, British electrical firms have produced magnetos equally good as, or even better than, the Bosch or any other German magneto.

I also remember reading, shortly after the Armistice, an advertisement headed "No Trading with Germany," under which were subscribed the names of several firms (chiefly motor cars and motor cycle manufacturers) who thereby pledged themselves not to deal with the (at that time) enemy nations.

Hence, I was astonished to observe on this latest model of a representative British machine that the magneto was tallied "Robert Bosch," and underneath, "Made in Germany."

I commented upon this to the proprietor of the shop, who evinced no surprise; but remarked that it was a well-known fact that German magnetos were being fitted this year to that particular model.

I am still astonished that such should be the case. One reads every day about the black outlook of trade for us, with the German rate of exchange, and the people working fourteen hours per day all helping the Germans to undersell us, and yet here is one of the best known motor cycle firms dealing direct. I feel sure I am not the only one of your readers who would like to know *what about it?*

C. T. NULHALL.

WHERE DO THE TAXES GO?

Sir,—The time is drawing near when we will require to renew our licences. Are we to be fleeced in the same outrageous fashion again?

Excepting the unwarranted, and unwelcome attention we get from the police everywhere, I should like to know what the motorist of to-day gets for his money.

For my contribution to the State, I get mauled to death in riding the present-day "roads." One would not mind paying if the money went on the roads, but it does not.

I think I speak the opinion of the majority of motorists when I suggest that the clubs and motoring associations of this country would be much better employed, and more valued, if they would confine their energies and attention to the question of taxation, which is out of all reason, than to useless trials, which serve no purpose whatever.

Stoke-on-Trent. ZENITH.

COLLECTING FRICTIONAL ELECTRICITY!

Sir,—My question in regard to the alleged "frictional electricity" collected by a certain spark intensifier has elicited quite a number of replies from various correspondents.

That of "J.L.," in your issue of the 6th inst., is very unconvincing. That of Mr. W. C. Wingfield is certainly ingenious; but, as far as I can see, would hardly account for the alleged increase in power.

Why does "Southerner" want a Wimshurst and condenser when a common or garden magneto is quite effective?

Some correspondents adopt the attitude of "try it and see the benefit"; but, unfortunately, I am one of those strangely constituted individuals who require the reason, for reason there must be. Moreover, I must see the reason for the benefit before I try such a gadget.

"Radio" tells me that, owing to the higher e.m.f. built up, a quicker discharge will take place—"a sharper and quicker spark," to quote his words. I would remind him that the rate of flow of electric current is constant where the capacity of the circuit is the same, so a voltage increase can make no difference; and, moreover, the spark will occur immediately a sufficient e.m.f. has been built up to spark the gap.

In any case, a greater advantage would be obtained by increasing the plug gap than by fitting an extra gap in series, for if the magneto would spark across the two in series it would certainly spark across an increased plug gap, and in this case a greater area of spark would be exposed to the mixture—a most decided advantage, particularly in the case of such engines as a flat twin.

It is a fallacy greatly existent among motor cyclists that a small gap gives easy starting. A gap of $\frac{3}{32}$in. to $\frac{1}{16}$in. on a bad starter will often end this trouble, particularly where the trouble is due to imperfect carburation when cold.

Revenons à nos moutons: the arguments in favour of the spark gap in series with the plug are not good enough, and some of the statements and claims made on its behalf in an advertisement in a *very* prominent daily paper are an insult to the intelligence of the motoring public.

L. W. E. HARTLEY.

Sir,—Being very much interested in the present discussion, I would like to add my little quota. In the first place, I would like to say that the title given by your correspondent, "Frictional Electricity," conveys an erroneous impression regarding the condition of affairs when an auxiliary gap is used between the plug and magneto.

For very many years I have studied and experimented in the generation of X-rays, especially with the influence machine, as opposed to the same rays generated with an induction coil, and I found, along with one or two other experimenters on the same subject, that a series of small spark gaps, made up in the form of what are known as choke coils, placed between the electrodes of the influence machine and the X-ray tube, produced X-rays of a much more penetrative power, and were excellent for radiography, but were not so suitable for visual work owing to their intermittent sparking.

Now, I take it that these spark gaps, as described above, have their counterpart in the auxiliary gap as used with a motor engine plug and magneto, therefore their function to me appears to be to create a higher dielectric valve of the gas formed within the cylinder, *added to which* is the dielectric value of the air, thereby raising the potential of the energy required before a spark can occur. Thus, the higher this dielectric value can be raised before a spark occurs the higher the potential, but the point to which the potential may be raised is dependent upon the dielectric strength (or resistance to leakage) of the generator itself.

In conclusion, the writer would like to add a fact of his own observation in connection with the phenomena of high potential currents, *i.e.*, that a series of small air spaces between the electrodes of the secondary and the primary spark gap are much more efficient in producing a higher potential than one large spark gap, hence the reason why the plug joints as used in a motor engine cannot be separated more and obtain the same result as with the auxiliary gap.

Finally, it would be well if your readers would understand that the magneto is an induction machine, and that there is no frictional electricity in connection with it in producing the secondary current. FREEMAN LEE, D.B.O.A.

[The heading under which this correspondence has appeared is a quotation from Mr. Hartley's original letter enquiring the advantages of a spark-gap.—ED.]

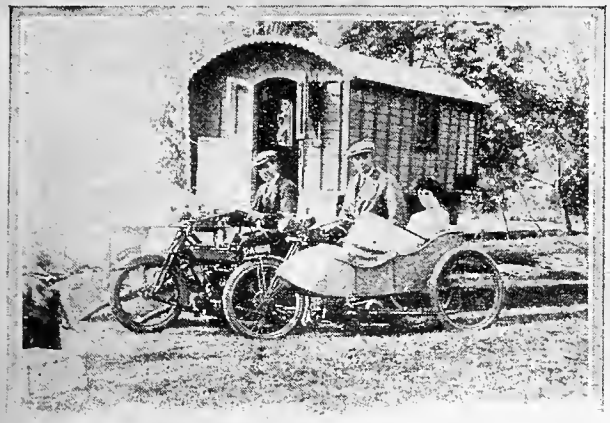
Sir,—As an electrical engineer and motor cyclist, I have been interested in the letters in recent numbers of *The Motor Cycle* under the above heading dealing with extra spark gaps. Your correspondents seem, however, to miss the point, which is that the length of the extra spark gap, the magneto, and the plug should be suited to one another. If this is so, the result should be a more intense spark at the plug points, and an oiled up plug or a plug shorted by carbon, etc., would be automatically cured. On the other hand, an extra strain would be put on the insulation of the magnet's high-tension winding.

Consider what happens when the break in the primary or low-tension winding occurs. We break a highly inductive circuit, the collapse of the flux causes a rapid rise in potential in the secondary circuit, and, consequently, at the plug points, where the electrical strain increases until the insulation of the air between the points or electrodes breaks down and a spark passes.

Suppose an oiled up plug, or one the electrodes of which are bridged by carbon, the insulation resistance between the electrodes is low instead of very high; as the potential in the winding starts to rise, a current starts to flow across the electrodes *via* the oil or carbon, the energy in the secondary (high-tension) winding is gradually dissipated and no spark is produced.

Now suppose an extra spark gap to be in circuit, remembering the plug is oiled up or bridged by carbon, and thus offers a low resistance, the potential rises at the electrodes of the extra gap, a spark passes, which means a sudden rush of current, which burns out the fault at the sparking plug electrodes, and so cures an oiled up, etc., plug.

A decorated A.J.S. sidecar that obtained a prize in the recent carnival held at Wrexham. The owner is Mr. B. Jones, of the North Wales Motor Exchange.



With a sidecar as "tender," this caravan made a capital place of abode during the past remarkable summer. The photograph was taken on the banks of Loch Eck by Mr. R. Hay, of Dunoon.

When the plug is O.K. we have two spark gaps in circuit, and a greater rise in potential must occur before a spark passes than when there is only one gap (the plug). Hence, the extra strain on the magneto insulation, and when the spark does pass it is thus more intense.

May I apologise for being "long winded," but I have tried to make things clear to the non-electrical reader.

H. W. BARCLAY.

EXORBITANT HOTEL CHARGES.

Sir,—While out motoring the other afternoon we called at a large hotel in the Midlands, which is apparently a well-known rendezvous for motorists, and ordered tea, bread and butter, and cakes. Our total consumption was four small cups of tea—all we could extract from the pot, as we discovered on adding hot water, the latter experiment apparently not intended, as we had to ask for hot water—four small pieces of bread and butter, which we concluded had been left over from the previous week-end, and three chocolate-coated biscuits, size one mouthful. The milk was curdled, and the charge was 8s.

If this is not a case of profiteering, may I ask what is, and I should also like to know the cost of a substantial meal? Perhaps one of your readers could inform me, as I do not feel inclined to try the experiment.

I consider you will be doing your readers an invaluable service by publishing this as a warning to the unsuspecting riders who, like myself, cannot afford such excessive charges.

DISGUSTED.

SANS CARBURETTER.

Sir,—Permit me to offer a few suggestions *re* the mysterious behaviour of "Puzzled's" 1920 4 h.p. Triumph. I should imagine that his piston is somewhat "sloppy," and the rings are of a poor fit, or, quite possibly, his cylinder is very badly scored. This would naturally allow the paraffin to escape through into the combustion chamber, where, once compressed, it is very easily fired.

(a) Regarding the distance "Puzzled" could travel on a crank case full of paraffin, I do not think he would do many miles before the engine "seized up," as there would be no means of lubrication, which in this case is thrown up by the flywheels from the crank case, now that oil is replaced by paraffin.

(b) I should certainly retain my carburetter if I were "Puzzled," as he will no doubt find to his cost that feeding the engine with paraffin in this manner is a "wash-out" in the case of the 4 h.p. Triumph. L. R. TANNER, JUN.

Sir,—In reference to the strange occurrence mentioned by "Puzzled" in his letter, I beg to forward my humble solution of this matter and to answer his questions.

On kicking over his engine, pressure would be exerted on the paraffin in the crank case on the induction and firing strokes. This would tend to vaporise the paraffin, a means of egress being afforded to it by the piston ring slots and any "sloppiness" in the piston generally. His magneto, presumably, being good, an explosion would occur, the pressure on the piston top during the firing stroke preventing any paraffin gas passing into the cylinder. The engine would then function in the ordinary way until the paraffin was exhausted. As the heat increased, so, I presume, would the efficiency of the engine.

(a) It is doubtful if enough power would be generated to drive the machine along the road. In any case, it would certainly only "rev. over" until the bearings seized up, paraffin being distinctly the reverse of a good lubricant.

(b) I should advise "Puzzled" to keep his carburetter and not to wash out his engine with paraffin again while it was assembled. New engines especially have a tendency to run into a solid mass when so treated. Paraffin penetrates to places in a few moments which would not be reached by oil in half an hour. CHARLES A. EXLEY.

TOOL KITS—PHEW!

Sir,—I had the pleasure of sending "Ubique's" article on "Tool Kits" to the agent who supplied me with a new outfit this year, merely to confirm all the nasty things I have said to him on the subject. I also sent him the following, and declined to be responsible for consequential damages (if any) as a result of his reading it. "Ubique's" article brought it up, and he is entirely to blame.

PARADISE LOST.

A motor cycle tool,
As a general rule,
Is considered the ointment's fly;
And none but a curate
Could really endure it,
And avoid words not heard on high.

Out in the motor shed,
Where you are skinned and bled,
Screwdrivers neither drive nor screw;
No insulating tape
There could prevent escape,
Language of a sulphurous brew.

Pliers are made to do
When spanners laugh at you,
Amidst oil, and petrol, and gore;
The cursing mechanic
Becomes more satanic,
Till brimstone's his lot evermore.

Gateshead. CU 1218.

SUMMARY OF CORRESPONDENCE.

"Dad" complains of the danger of loose horses on the Lincolnshire roads. He also asks who is responsible for keeping danger signs unobscured by foliage, etc.

"R.S.B." considers that all signposts should be illuminated at night.

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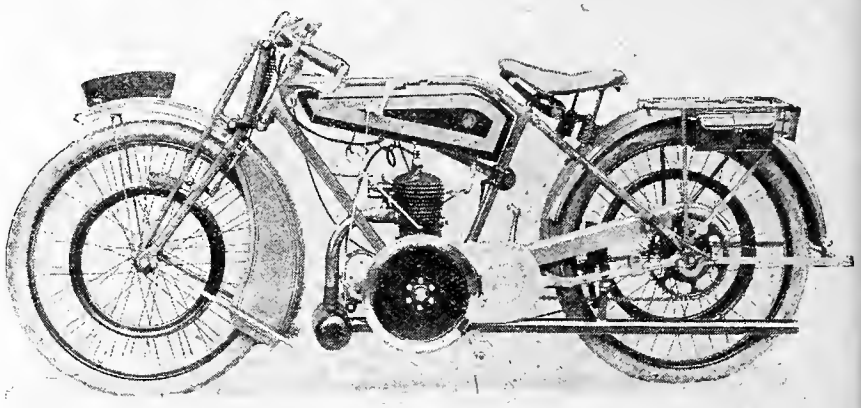
NEW MODELS.

Ivy Modifications.

Redesigned Cylinder for Sidecar Work.

NO very great changes will take place in the 1922 Ivy models. A neat little dummy belt rim brake will be added to the front wheel, the tank will be slightly modified, though it will retain the distinctive Ivy outline, the spring forks will be slightly altered to conform with the type of fork associated with the name of Brampton, and a new cylinder will be fitted to passenger machines.

This cylinder is an imposing casting with long deep ribs and an increased cooling area for the head. Its introduction is due to the fact that the manufacturers considered their standard cylinder more suitable for solo and sporting work, and rather on the high efficiency side for towing heavy loads. The new casting has been designed for general all-round performance, and a considerable improvement in pulling at low speeds is claimed. From our own experience, we are aware that slow pulling was always a commendable feature of Ivy engines, so that the new design should be remarkable in this respect.

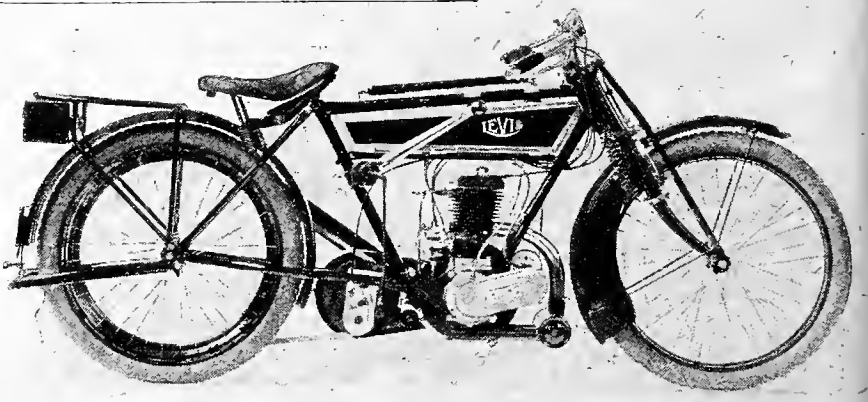


The latest sports model 3 h.p. Ivy, although unaltered in its general appearance, has been improved in several minor parts.

The 1922 Levis Programme.

Gear Boxes now Optional on Both Models.

VERY little alteration will be made to the popular little 211 c.c. Levis in the near future. All essentials remain unchanged, but a few minor details have been cleaned up. A very smart little machine will, however, be staged at Olympia embodying the 247 c.c. engine. Having a bore and stroke of 67×70 mm., this engine is the T.T. power unit modified for touring purposes. It has plain bearings throughout, and all the well-known Levis features are retained. It will be fitted in a new frame with sloping top tube, the tank being carried on substantial platforms brazed to the duplex detachable lower rails; 24×2¼in. tyres are fitted. A feature of this new type will be that the single-geared model may be converted to a two-speed machine without structural alteration. The sloping tank contains 1¾ gallon of fuel, and just over half a gallon of oil. Malleable lugs have been discarded wherever possible in favour of steel stampings. The price of the 247 c.c. machine with single gear is £56, while that of the 211 c.c. machine is £48. In each case £10 is charged for a two-speed gear box with chain and belt drive and clutch; while a kick-starter may be added if desired for a further charge of £2.

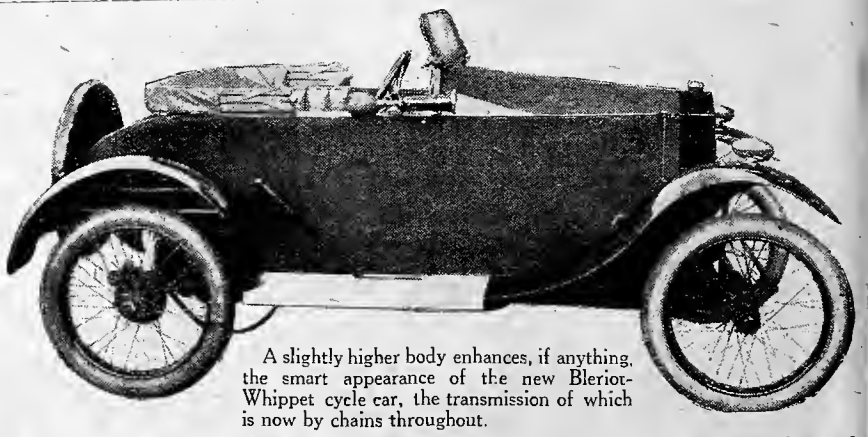


Entirely new frame design has made a most attractive 2½ h.p. Levis.

Bleriot-Whippet now Chain-driven.

Improvements in Bodywork and Transmission.

VARIABLE pulleys and final belt drive have been abandoned in the Blériot-Whippet cycle car in favour of an orthodox three-speed and reverse gear box and all-chain transmission. There are several other detail improvements for 1922, including a body 2½in. higher than this year's type. The magneto is now placed at the rear of the 8 h.p. Blackburne engine, while the standard equipment includes a combined lighting set, hood, screen, and spare wheel. The price of the little vehicle, which is made by the Air Navigation and Eng. Co., Ltd., Addlestone, is £198.



A slightly higher body enhances, if anything, the smart appearance of the new Bleriot-Whippet cycle car, the transmission of which is now by chains throughout.

An O.H.V. Sporting Triumph.

Four-valve 499 c.c. Engine Tested in the T.T. now Incorporated in a Solo Mount, fitted with 26 × 3in. Tyres, and Adequate Mudguarding and Silencing Arrangements.

CONSIDERING that the model upon which the Triumph reputation has been chiefly built is essentially a dual-purpose mount, it is a wonderful testimonial to its qualities that so many consider it to be the ideal solo machine. It is only natural, therefore, that the announcement of a sporting o.h.v. 3½ h.p. Triumph, exclusively for solo use, should arouse widespread interest. We are now able to give full details of the new model, which, as anticipated, is fitted with the Ricardo design of engine.

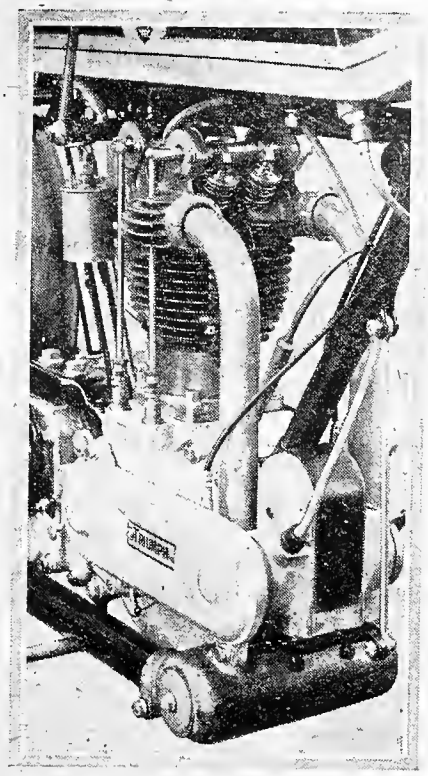
Used in the Big Speed Events.

This engine, as used in the T.T. Triumph, was first fully described and illustrated in *The Motor Cycle* of June 2nd, but as nearly five months' testing in the big speed events has resulted in several important modifications, its general features are recapitulated.

Four inclined overhead valves are disposed in the hemispherical and detachable cylinder head, which has lugs cast on it for the rocker gear. Cowls are situated behind the two exhaust valve stems to assist cooling, while the radiating fins have been designed with a view to most efficient heat dispersion. With this in view one of the lower cylinder fins also acts as an anchorage for the holding-down bolts. Both the head and the cylinder can be detached without removing the engine from the frame.

Masked Inlet Valves.

The inlet valves are "masked"—that is, they have recessed seatings so that the effect of a very quick lift is produced. One-piece nickel steel rockers are carried in dustproof ball bearings, and there are two exhaust pipes extending to a neat silencer with detachable ends and an unrestricted tail pipe. Each valve has two concentric springs, a split taper screwed collar locating the spring cups. The timing gear now resembles the standard Triumph design very closely, including, of course, the useful decompressor.



Cowls have been fitted behind the exhaust valve stems. This view also shows the disposition of the twin exhaust pipes and the neat detachable silencer. Both the cylinder and the head are of cast-iron

Both the cylinder and the head are now of cast iron, but a slipper type Ricardo aluminium piston and light reciprocating parts generally are employed; the capacity is 499 c.c. (80.94 × 97 mm. bore and stroke). Apart from a flat base to the crank case, the lower half of the engine follows standard Triumph practice, mainly if not exactly. The usual semi-automatic carburetter is fitted.

Although the power unit deserves very complete consideration, there are several points about the bicycle parts, etc., of the new model which may interest the average reader to an even greater extent.

Designed for Hard Use.

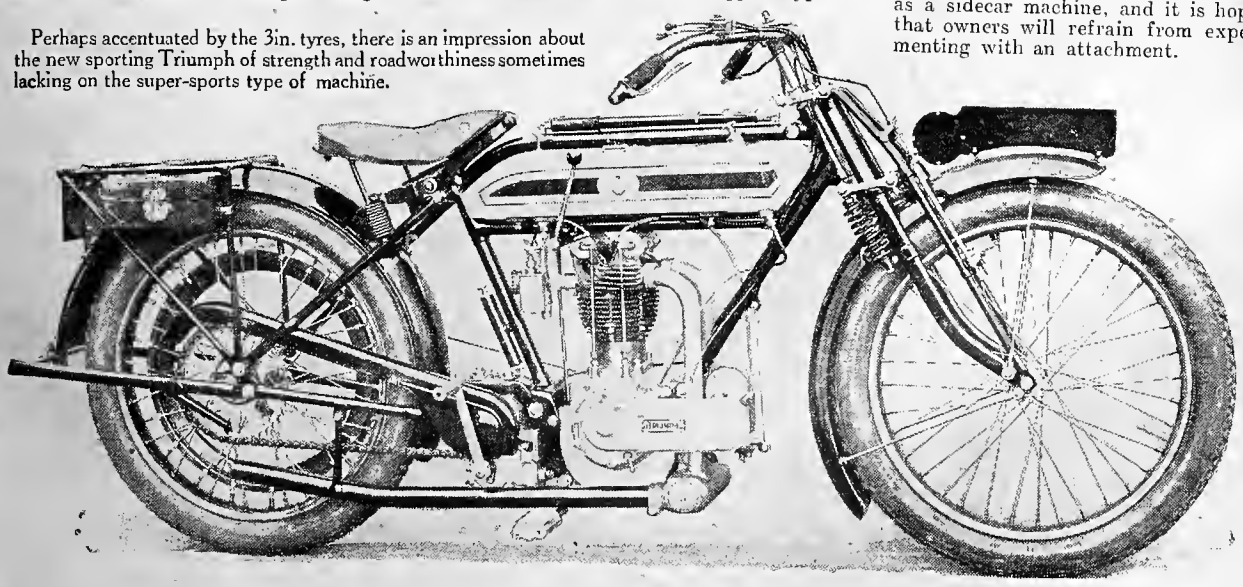
It is apparent at a glance that the machine has been designed for hard use, and not solely for occasional participation in a speed event by an owner who takes it there in a lorry! Dunlop Magnum 26 × 3in. tyres on round base rims, reasonable mudguarding, and a comfortable saddle are points that will be doubly appreciated on a sports model, while the oil-bath primary transmission, spring drive, and Triumph three-speed gear box have already proved their convenience and reliability. The gear and transmission, by the way, are quite standard, excepting the ratios—4.23, 7.02, and 11.72 to 1.

Improved controllability at high speeds is gained by fitting W.D. type handlebars, Druid forks, and the footrest arm behind the crank case, and thus almost directly underneath the rider. The rear brake pedal is enormously long, and extends conveniently downward to within an inch or two of the footrest.

The approximate weight is 240 lb., and the price, as announced some weeks ago, £120. Deliveries will commence after the Show.

Finally, it must be specially emphasised that, although this model, like all Triumph productions, is of very sturdy and robust construction, it is not intended as a sidecar machine, and it is hoped that owners will refrain from experimenting with an attachment.

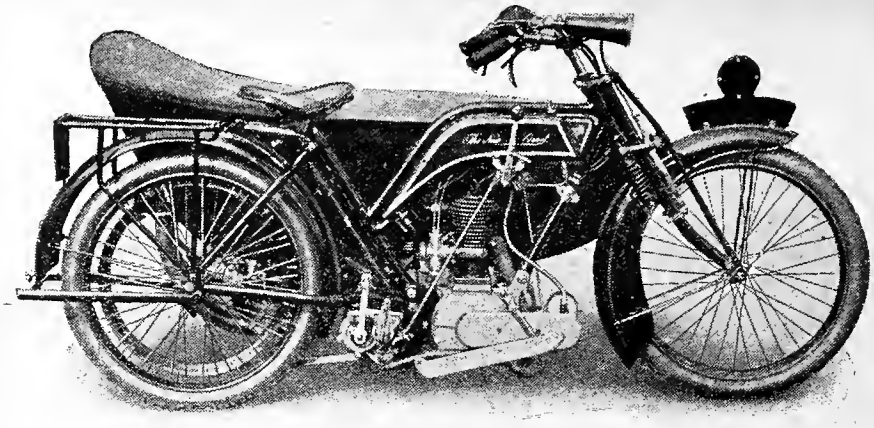
Perhaps accentuated by the 3in. tyres, there is an impression about the new sporting Triumph of strength and roadworthiness sometimes lacking on the super-sports type of machine.



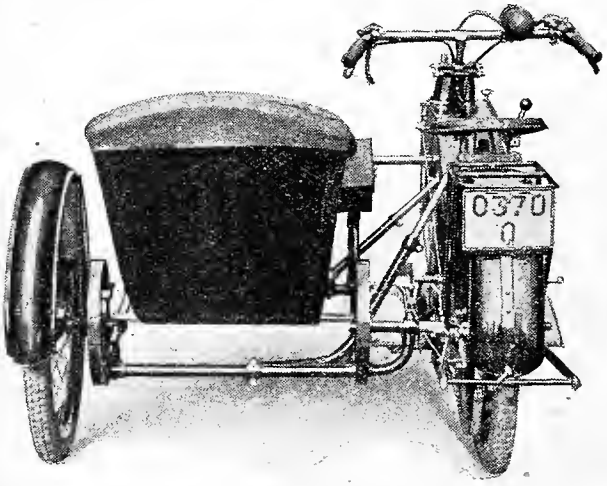
A Lady's Sidecar Outfit.

Open Frame and Protected Transmission are Features of the New Comet.

FITTED with a Climax engine of 70×76 mm. bore and stroke (292 c.c.) and a two-speed Albion gear box, with clutch and kick starter, the latest model New Comet is specially intended for ladies' use. A semi-open frame and well-guarded transmission are features that will appeal to the fair sex, while the absence of an outside flywheel obviates another possible chance of damage to skirts and long coats.



Clean lines and sturdy construction characterise the lady's model lightweight New Comet. 24 × 2¼in. tyres are fitted.



Rear view of the New Comet, showing the tool box on the side member of the sidecar chassis and the wide rear guard.

Aluminium foot plates, Druid forks, 24in. × 2¼in. Dunlop tyres and excellent mudguarding are included in the specification. Attached to this neat little machine is a light, but sturdy, coach-built sidecar, suspended on C springs at the rear and coil springs in front. The chassis is somewhat unusual, and a straight tube, parallel with the cycle frame, extends from the dropped axle to the head of the machine, where it is fixed to a short horizontal bar. The toolbag is mounted on the long side member. After a few miles on the road we are in a position to state that this little outfit is admirably suited for run-about purposes or for shopping trips. The plucky little engine will pull its full load up reasonable hills on top gear, and low gear is sufficient for all normal work.

Some Good Performances.

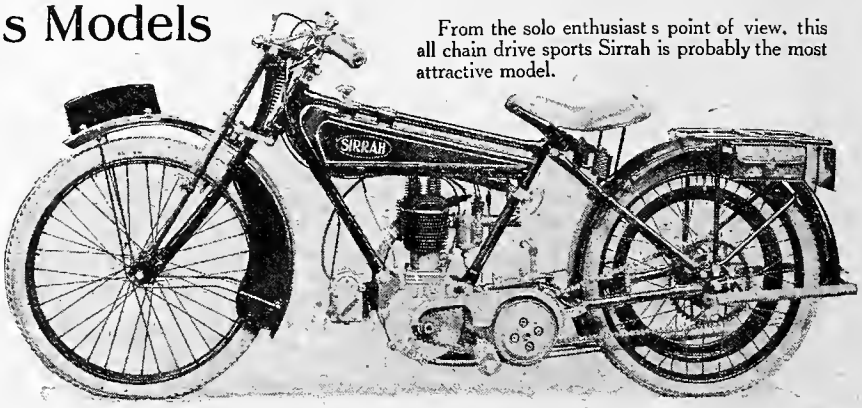
It will be recalled that the Climax engined New Comet has several sidecar records to its credit, which proves the power and reliability of the engine, one of the main features of which is the fact that, unlike the majority of two-strokes, inside flywheels are fitted. This accounts for the absence of "ring," so noticeable with most outside flywheel engines. Smooth running and silence are good features of the little outfit, while the finish of the outfit is in black enamel relieved with gold lines, the tank being decorated accordingly. The primary driving chain is enclosed in a polished aluminium case, which also enhances the appearance, and at 87 guineas complete the proposition is quite attractive.

Sirrah and Verus Models for 1922.

All Classes catered for. T.T., Touring, and Sidecar Machines

THERE are few firms who make a wider range of models than Alfred Wiseman, Ltd., Glover Street, Birmingham. In addition to the deservedly familiar Verus, this concern is responsible for the lesser-known, but nevertheless popular, Sirrah lightweight. It may come as a surprise to many that during this year 250 Sirrah machines of one model alone were sold.

For 1922 the Sirrah range is being extended to include almost every type between the single-speed lightweight and a 5-6 h.p. J.A.P.-engined twin with all-chain drive and 26×3in. Dunlop Magnum tyres. Intended as a double-purpose mount, the latter machine is most attractive, both in specification and appearance, and its very short wheelbase should ensure its popularity as a solo mount as well as with a sidecar.



From the solo enthusiast's point of view, this all chain drive sports Sirrah is probably the most attractive model.

Massive but clean mudguards (8in. in front), a saddle tank, Brampton forks, a Webb front brake, Sturmey three-speed gear box, and final chain drive through an Enfield cush hub are the salient features of the specification; but it must also be mentioned that the frame is particularly neat and strong, and has survived nearly a year's severe road testing.

At the other end of the scale, the Sirrah two-stroke has a Union (70×76 mm.=293 c.c.) engine, and when fitted with a gear box (Burman), either a plain two-speed or a two-speed with clutch and kick-starter may be supplied. Footboards or footrests are optional. This model, like all its namesakes, will sell at a very competitive price, but not at the expense of finish and general quality.

Coming to the larger lightweights, there is a choice of belt or chain drive, of 2¾ h.p. Blackburne, or 2½ h.p. and

"BP"

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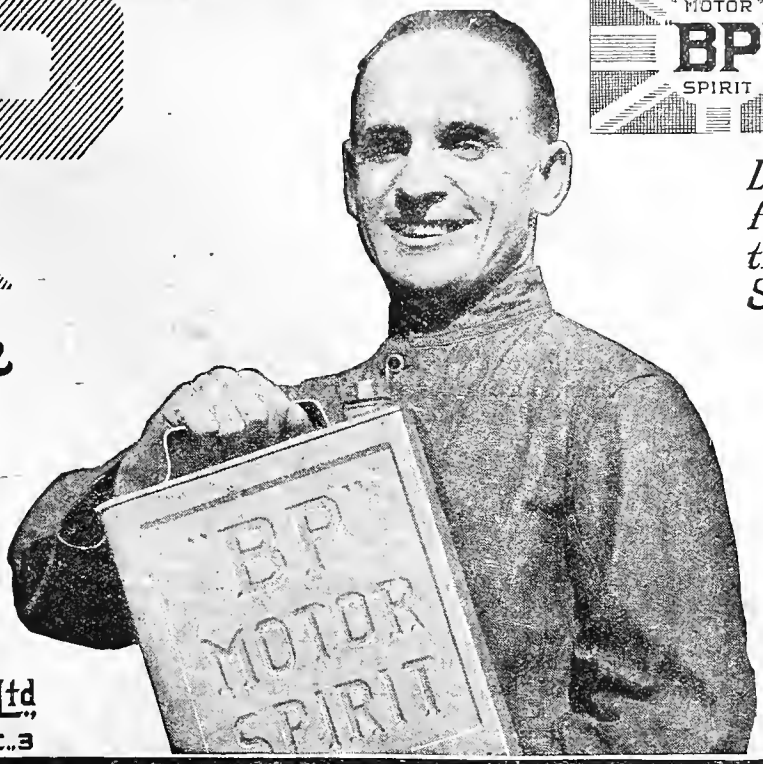

"Best Possible — that's all!"

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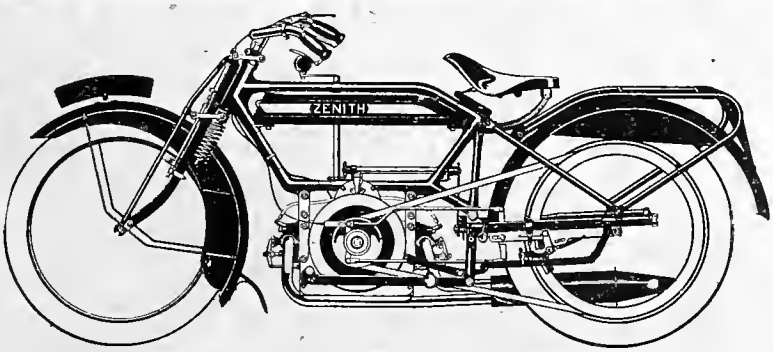

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3½ h.p.

Horizontally opposed oil-cooled engine of : perfected design. :

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Grindlay SIDECARS.

AN UNPRECEDENTED OFFER!

A limited number of the famous "Grindlay Model-de-Luxe" Sidecar, noted for its efficiently sprung wheel, and cantilever body springing, and without a doubt the most comfortable sidecar on the road, are now being offered at the special price of

£34 **(Usual price £39)**

This price includes 26" × 2½" Heavy motor cycle Tyre, (or 28" × 3"), four point connections to suit any machine, coverall apron, and coachfinished in any of the following colours: Grey, Black, Mauve, Green, or Khaki, lined to match. Only a limited number are available, so if you require a high-class sidecar at a genuine bargain price, book your order now.

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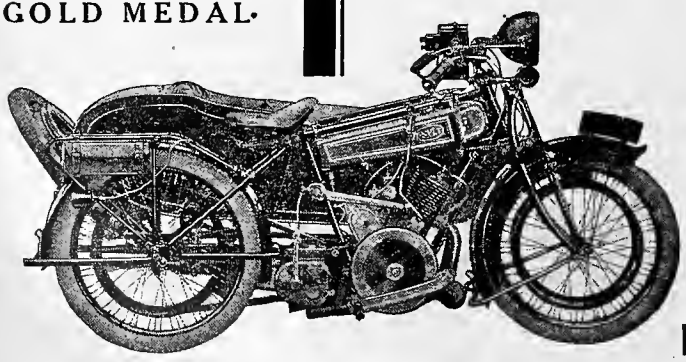
DUNELT
TWO-STROKE

A.C U 6 Days Trial
The only 4½ h.p. DUNELT Combination to enter in the above trial secured
GOLD MEDAL.

DUNELT 4½ h.p. interchangeable Wheel Combination, complete with Spare Wheel and special Electric Lighting Set



Announcement re PRICES!

After carefully considering the question of "DUNELT" prices for 1922, we confidently announce that we shall be able to make substantial reductions at the Olympia Show. However, in order to take the fullest advantage of the falling market, we have decided not to fix our next year's prices until then.

Meanwhile, on and after Oct. 10th, we are prepared to execute orders at our 1922 PRICES and we will guarantee to refund the difference between our present and our 1922 prices on all machines sold between October 10th and the end of November.

Therefore you can confidently order NOW, with the assurance that whatever reduction is made will be refunded to you. Write for Catalogue and address of nearest agent.

Dunford & Elliott (Sheffield), Ltd.,
BATH STREET, BIRMINGHAM.

New Models.—

$2\frac{3}{4}$ h.p. J.A.P. engines, including a promising sports model with one of the latter power units.

Only advance details are available of the 1922 Verus machines, which are intended for the man who likes the very finest quality, refined detail work, and luxurious finish.

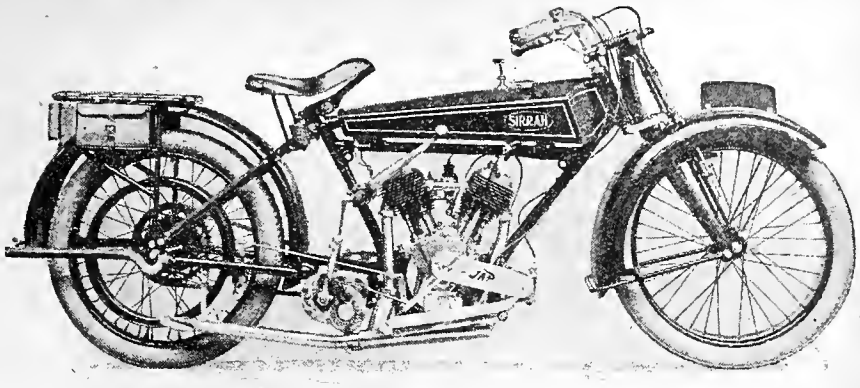
A 5-6 h.p. Twin.

The twin, which will be fitted with a 5-6 h.p. Blackburne engine, will be an out-and-out luxury mount, such details as silencer and chain cases being of cast aluminium. Incidentally, the silencer is a form of semi-streamlined rectangular box of pleasing appearance.

All-chain drive through a Sturmey three-speed to an Enfield cush hub, Brampton forks, a Webb front brake, and Dunlop Magnum tyres also figure in this specification. A Lucas Magdyno lighting set may be added if required.

Perhaps the most interesting Verus, however, will be the $2\frac{1}{4}$ h.p. J.A.P.-engined sports mount, with all-chain drive and a three-speed Burman gear box. 24in. wheels are fitted, and everything else is in proportion. Aluminum chain covers and a Webb front brake are two of its refinements. The similar 350 c.c. J.A.P. is used in another model with 26in. wheels, but otherwise almost identical. Flat handle-bars are, of course, standard.

Finally, there is a $2\frac{3}{4}$ h.p. Blackburne lightweight with, however, only a two-speed box.



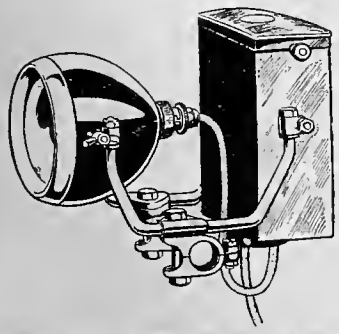
Although this view shows all the main details of the 5-6 h.p. machine, the final production model will have a much neater frame, approximately 10in. shorter.

Villiers Innovations.

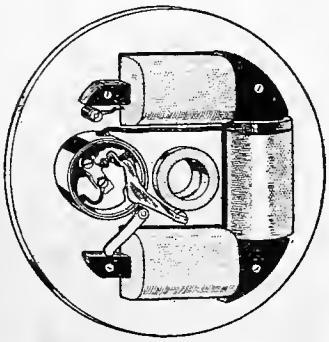
Flywheel Lighting Set and Engine Shaft Clutch.

ANY new features introduced by the Villiers Co., probably the largest manufacturers of two-stroke engines in the country, are of peculiar interest. Undoubtedly, the most important innovation for 1922 is a lighting set combined with the now well-known flywheel magneto. This is a particularly simple and effective arrangement, which has the merit of saving much weight and a subsidiary drive. The flywheel magneto has undergone minor refinements only, but a modified arrangement of contact breaker and condenser render the device absolutely waterproof even without the sheet metal flywheel cover.

By a simple but clever arrangement of parts, the laminated pole shoes of the ignition device are so laid out that anyone with the slightest knowledge of mechanics can add the two coils and connections which convert the machine into a combined lighting and ignition apparatus.



Head lamp and battery case of Villiers lighting set. The switch is located below the battery box



Back plate of the Villiers ignition and lighting set, showing new contact breaker, and the arrangement of ignition and lighting coils.

Current is led directly to the lamp, without any intermediate accumulator, but a large dry battery capable of producing twenty hours light is supplied for use when the machine is standing. A single switch is utilised for the battery and lamps.

In practice, the lamp can be lit mechanically so long as the engine is revolving fast enough to fire, and at under 12 m.p.h. the light thus produced is brighter than that given off by a $4\frac{1}{2}$ volt battery. A four-volt .3 amp. head lamp bulb is used, and, after careful experiment, it has been found that the selected type will withstand the highest voltage given off by the lighting set without burning out. A four-volt .5 amp. bulb is fitted to the tail lamp; both bulbs, which have bayonet caps, are wired in series.

The whole lighting and ignition device is constructed by the Villiers Co., only the most suitable material being employed throughout, and after erection each set receives a thorough bench test. A detail which is evidence of a practical designer is the fact that the switch lies underneath the battery box, where it is kept dry and is out of the immediate vision of meddlesome urchins.

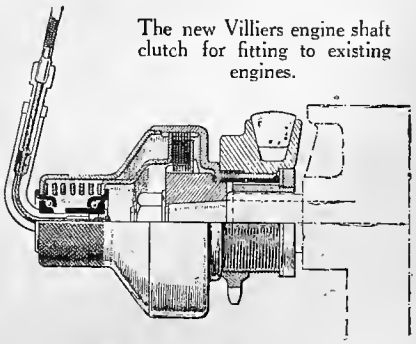
One other modification consists in grinding away three sections of the taper flywheel fixing, which, by intensifying the pressure and providing space for any possible oil film, has prevented slip without necessitating the use of a key.

A Multi-plate Clutch.

An item which is of considerable interest to riders of single-geared machines is the optional inclusion of an engine-shaft clutch. Six steel and six bronze plates are housed in an extension of the belt pulley in such a manner as to form a very small and light clutch. The operation is ingenious, and there is no end thrust on the engine-shaft even when the clutch is withdrawn, the thrust being taken between the cable and casing of the Bowden operating gear, and ball races being used between these points. In practice, the cable of the operating mechanism is fixed and the outer case moves.

As regards the engine itself, the only alteration of any importance lies in the method adopted for obviating piston slap. To effect this very desirable end, the centre of the gudgeon pin has been offset to a slight degree so as to coincide exactly with the centre of gravity of the piston. It is claimed that the results obtained from this modification are excellent, and that rattle has been to all intents and purposes eliminated thereby.

The new Villiers engine shaft clutch for fitting to existing engines.

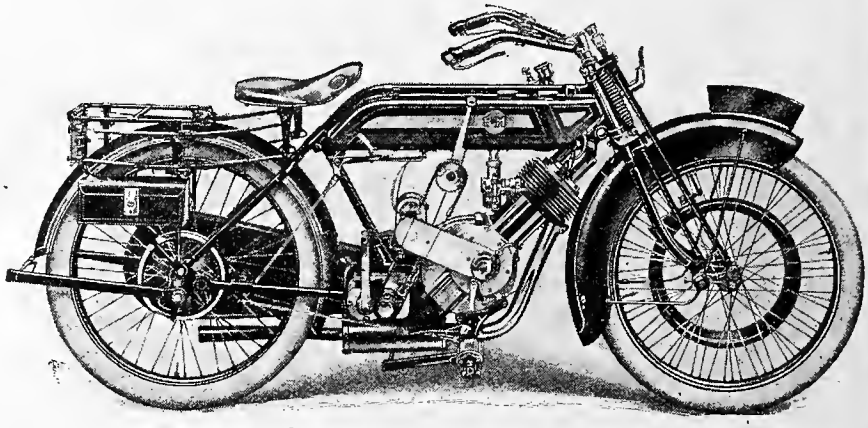


In conclusion, we may say that the light given off by the new lighting set is most satisfactory, and the makers are to be congratulated on their productions.

The 1922 Four-speed P. and M.

Increased Engine Size, Simplified Lubrication, Improved Mudguarding, and General Refinement of Detail.

THE policy of Phelon and Moore, Ltd., of Cleckheaton, Yorkshire, has been a year by year improvement of an originally excellent layout; startling modifications have always been avoided, unless they were proved necessary and practical by test. This year, however, the innovations for 1922 are considerable. In the first place, reference must be made to the four-speed gear box, first described in *The Motor Cycle* of August 25, 1921, page 729. A team equipped with these competed in the A.C.U. Six Days Trials with considerable success, and since this gear was described the change speed lever has been considerably simplified in design. It will be remembered that two speeds are given by the well-known selective clutch gear, and two additional gears by a dog clutch gear box. The standard gear ratios are 5.3, 7.8, 12, and 18 to 1, but higher gear ratios can, of course, be supplied for a machine used exclusively as a solo mount.

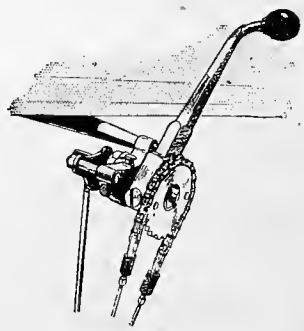


The 1922 model P. and M., which is now fitted with a four-speed gear box and a larger engine having a cubical capacity of 555 c.c. A Brooks cantilever spring saddle is fitted as standard.

Lengthened Stroke.

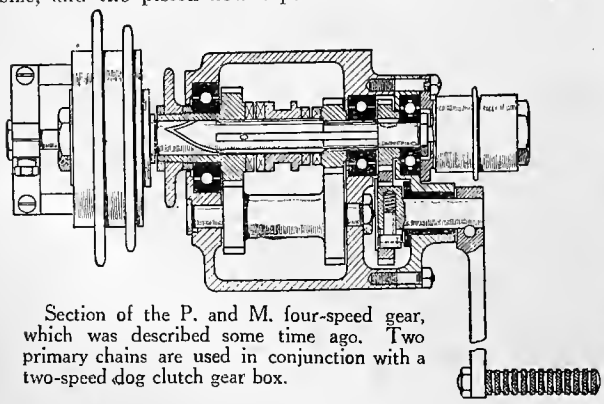
So far as the engine is concerned considerable alterations have been made. It has been realised that the P. and M. is, and will be, largely used for sidecar work, and the engine size has consequently been increased to 84.1×100 mm. (555 c.c.). The cylinder casting will revert to the old pattern, with radiating fins at right angles to the centre line of the cylinder; the fins, however, are considerably deeper, and they are now cast on the cylinder head, increasing the cooling surface. More room is also available above the cylinder head for cooling purposes, while the frame lug adjacent to the cylinder also has been removed, increasing the air space. The engine is now absolutely oil-tight, and has an exceptionally clean appearance, while the timing case is circular and contains a new and simplified timing gear, there being only two gear wheels, of which the larger carries the double cam for inlet and exhaust valves, with a small half-compression cam between them, which is brought into operation by an eccentrically mounted tongue worked by a small lever on the outside of the timing case. The heel of this tongue also works the exhaust independently of the half-compression device.

The crank case has been increased in size, and the piston now dips down into it, receiving oil thrown up from the flywheels. A Best mechanical pump driven off the camshaft delivers oil through a sight-feed on the tank to the engine, and the pipes now pass through the tank, and are hidden from view. The valve rocker spindles are supported at both ends, and the whole timing gear is a very fine piece of design. Clip-on spring protectors are fitted to the valve springs.



The new change-speed lever.

Modifications in the transmission have also been effected. The front chain case is of aluminium, while the rear case has been much simplified.



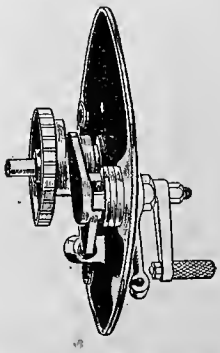
Section of the P. and M. four-speed gear, which was described some time ago. Two primary chains are used in conjunction with a two-speed dog clutch gear box.

The frame is composed exclusively of round tubes, and is exceedingly light; and, though the machine weighs about 12 lb. more than the 1921 model, the sidecar with which it is fitted is 25 lb. lighter, making the total weight of the outfit considerably less than the previous model. The ratchet hand brake is retained, but has been moved to the off side of the machine. The same brake can also be applied by means of a pedal working independently of the ratchet lever, while the front rim brake now has the shoe reversed, and has been made more powerful. The front guard is in one piece with its valances, and is well splayed out at the rear.

Fully Equipped.

The equipment of the machine is particularly complete. A Brooks B600 cantilever saddle is fitted, while the lighting outfit consists of Lucas acetylene lamps, the head and tail lamps being supplied by one generator for the side lamp, and a licence holder is also provided. Points of convenience and appearance have been well studied, as the control wires pass through the handle-bars, and the new tank holds two gallons of petrol and 3¼ pints of oil. The ground clearance is 10in. from the crank case, and 5½in. from the footrests.

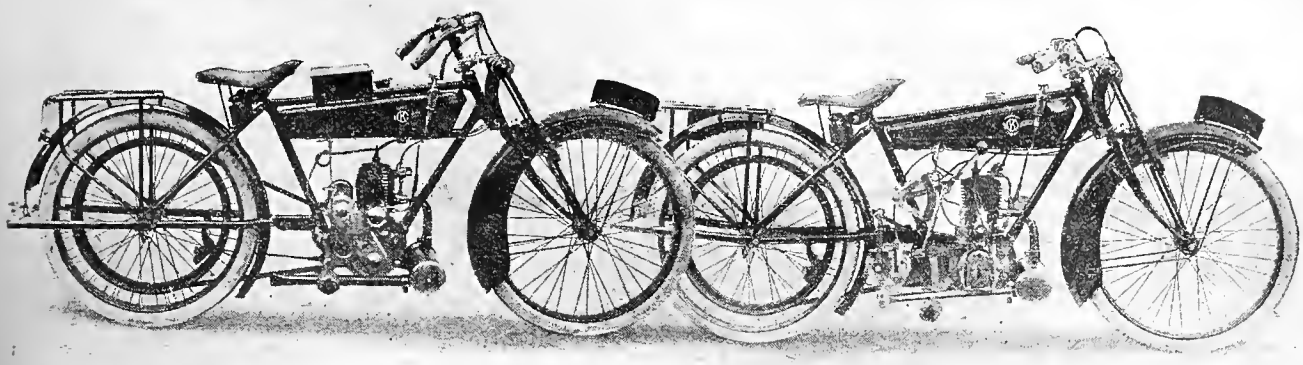
The sidecar is, of course, produced by the makers, and is considerably improved in construction and bodywork. Lugs incorporated in the motor cycle frame serve as points of attachment for the chassis connections, and the latter do not require adjustment to attain good alignment. Now that the capacity of the engine is increased in conjunction with the four speeds, the outfit should be capable of going anywhere.



Details of the decompressor device of the new P. and M. engine.

Solo and Sidecar O.K.'s.

A Three-speed All-chain Sports Model added to the Range.



(Left) Perhaps the most popular of the O.K. range is this single-geared lightweight, which may now be fitted with the makers' own engine.
(Right) A similar model, with an Albion three-speed gear box.

THE makers of the O.K. Junior machines (Humphries and Dawes, Ltd.) must rank among the pioneers of the lightweight sidecar movement; and as one of the little O.K. outfits gained special mention in the judges' report of the Six Days Trials, considerable interest centres in the details of the 1922 edition of this model.

An O.K. engine, which has a bore and stroke of 70×76 mm. (292 c.c.), only will be fitted to the sidecar outfit, and, with an Albion three-speed gear box with clutch and kick-starter, it makes an economical, handy, and capable little passenger machine. It sells complete at £96 12s. An identical model without the sidecar is priced at £71 8s.; while an entirely new departure for next year will be a three-speed all-chain drive sports machine, also with an O.K. engine, which is listed at £69 6s.

The extremely popular £45 5s. single-geared O.K. has not been altered to any appreciable extent, although an O.K. or Villiers engine is optional. Fitted with an Albion two-speed box and final belt drive, the price is £60 18s., or with three-speed clutch and kick-starter, £65 2s.

All the models are fitted with the well-known and most efficient O.K. front fork, which allows great freedom of movement to the wheel. It will be remembered that last year the springs were strengthened by the addition of another leaf. This has proved most satisfactory.

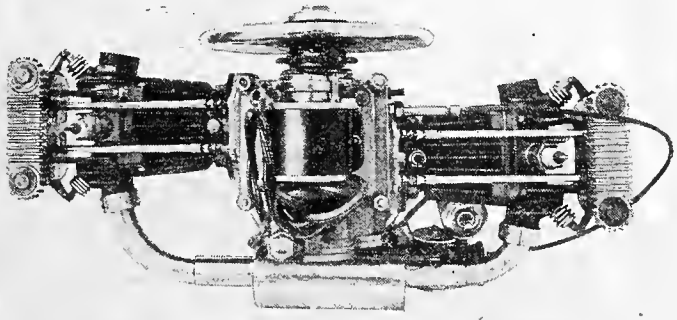
Excellent finish and a pleasing appearance are undeniable features of the O.K. range.

New 6 h.p. Douglas Sidecar Outfit.

All 1921 Models Retained, with Minor Improvements.

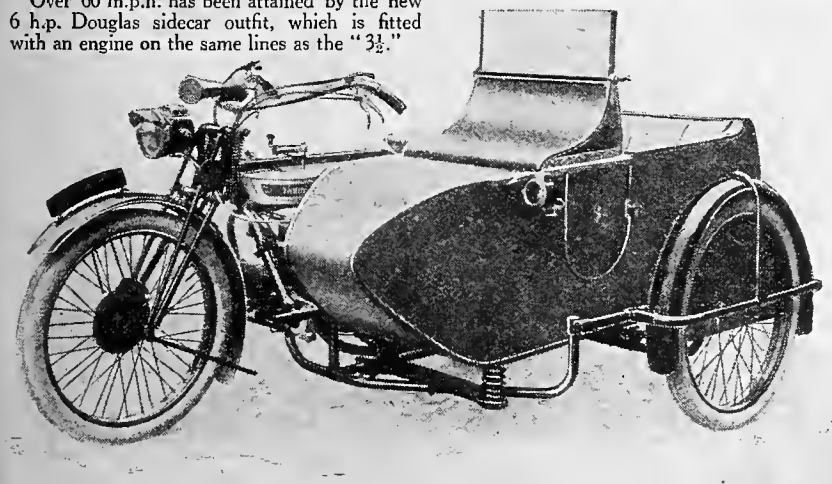
A SIDECAR outfit which, it is claimed, will exceed 60 m.p.h., is the chief addition to the Douglas range of motor cycles for 1922. Although new to the public, this machine has been on the road for many months, and we have heard very good accounts of it from various sources. We have also seen it perform when in its "hush, hush" disguise, and long ago we had formed the opinion that, when marketed, it would be a worthy addition to the short list of really fast machines produced in this country.

Having a bore of 83 mm. and a stroke of 68 mm., the piston displacement of this new engine is 733 c.c. From these figures it will be seen that the power unit is a development of the speedy 3½ h.p. sports model, the bore and stroke of which are 68 mm.



The flat twin 6 h.p. Douglas, of 733 c.c. The overhead valve rockers are lubricated by a wick system enclosed in an aluminium box.

Over 60 m.p.h. has been attained by the new 6 h.p. Douglas sidecar outfit, which is fitted with an engine on the same lines as the "3½."



An o.h.v. 6 h.p. Twin.

The new 6 h.p. unit embodies the overhead valve arrangement, now well-known as a feature of the smaller machine, and which, it will be recalled, includes a unique system of wick lubrication for the rockers contained in aluminium boxes over the cylinder heads. All bearings in the engine are of the ball or roller type, the cylinder heads are detachable, and the connecting rods are of H section with double row roller big ends. A special heated induction system is also incorporated.

Two shock absorbers are fitted, the first on the engine shaft, and the second inter-

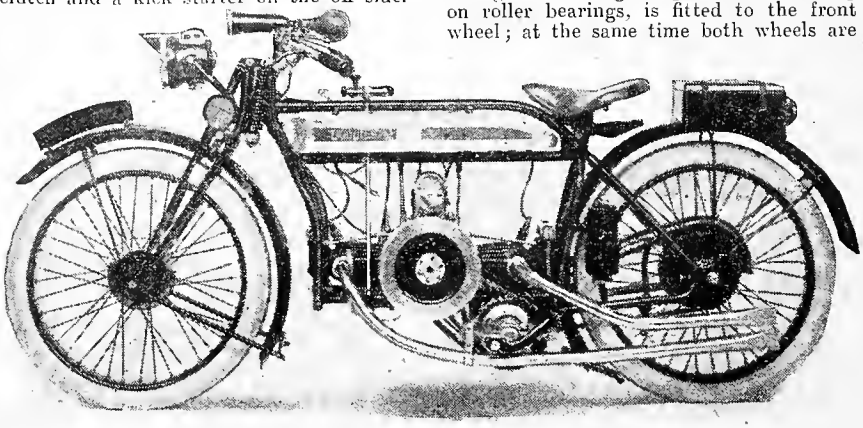
New Models.—

posed in the rear hub. $\frac{5}{8} \times \frac{1}{4}$in. Renold chains transmit the power *via* the Douglas three-speed gear box, which embodies the clutch and a kick starter on the off side.

Incorporated with the rear shock absorber is a very powerful internal expanding brake, operated from the right-hand foot pedal. A Douglas patent V shoe brake, acting on a wedge-shaped drum running on roller bearings, is fitted to the front wheel; at the same time both wheels are quickly detachable and interchangeable by removing the knock-out spindle. Light car type rims are used with specially large oversize tyres. Aluminium footboards of a very handsome design are fitted, and an extremely rigid tool box is carried as on the $3\frac{1}{2}$ h.p. o.h.v., *i.e.*, on the mudguard, instead of on the more usual carrier, which is not fitted.

Finished in the Douglas blue, the sidecar equipment includes apron, windscreen, dash, etc.; and the complete outfit, fully equipped with lamps, generator, horn, and licence card holder, is £165.

Embodying minor improvements only, the other and well-known models of the Douglas range will be marketed next year at prices which show a substantial reduction over the 1921 figures. The 4 h.p. outfit will be offered at £135 and at £110 solo, fully equipped. The 1922 $3\frac{1}{2}$ h.p. sports model is £130; the $2\frac{3}{4}$ h.p., with three speeds, clutch, and kick starter, £90; and the ever popular little $2\frac{3}{4}$ h.p., with plain two-speed, at £75, also fully equipped. This is surely the most comprehensive range of flat twins imaginable, embodying, as it does, four different engines.



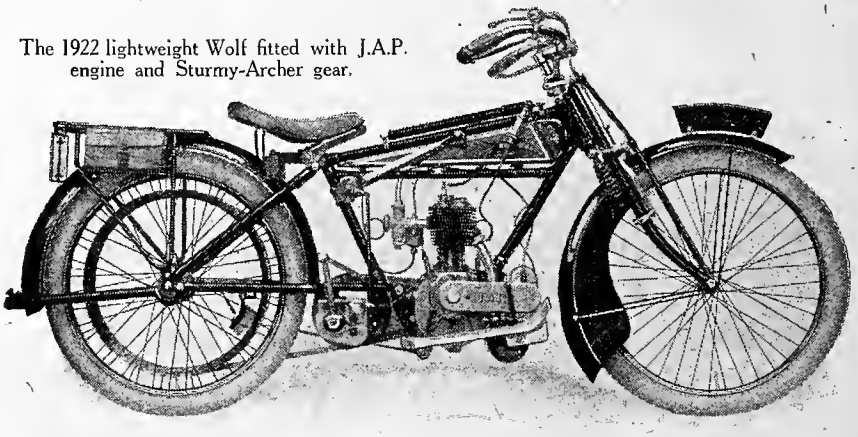
The $3\frac{1}{2}$ h.p. Sports Model Douglas. Observe that the tool-box is carried on the mudguard in the absence of a carrier. It is sold equipped with lighting set and horn.

Few Changes in Wolf Models.

Dual Purpose, Medium-weight Solo and Two-stroke Lightweights.

LITTLE modification has been deemed necessary in the products of the Wulfruna Co., of Wolverhampton. With regard to machines already listed by this firm, the chief alteration lies in the adoption of a sloping top tube, with tank to match, which will be supplied as an alternative to the dropped top tube frame if required. Minor modifications have taken place, but the all-black models fitted with 4 h.p. Blackburne or $2\frac{3}{4}$ h.p. Blackburne engines still retain their main features. Taking the former as typical, it will be remembered that Druid forks, B. and B. carburetter, Sturmey-Archer gear, $26 \times 2\frac{1}{2}$in. Dunlop tyres, and straight chain stays, are incorporated. Wider guards are now fitted; the forks have been altered to suit. One new model will be fitted with the 350 c.c. J.A.P. engine, and another new model (which is not yet quite finished) will have a Villiers engine fitted in a neat loop frame. This will retail at thirty-eight guineas, with direct belt drive. All the countershaft models have chain and belt drive.

The 1922 lightweight Wolf fitted with J.A.P. engine and Sturmy-Archer gear.

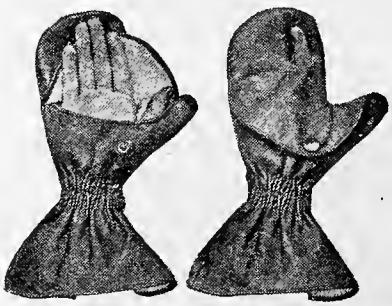


PREPARING THE MACHINE FOR WINTER.

THE wise rider who keeps his machine until the spring, rather than sells it in the autumn, takes care at this season of the year to prepare it in such a way that it shall not suffer from use in the wet weather nor from the ill effects of standing in an oft-times damp or exposed shelter.

Such preparations are simple, and need not occupy more than one or two evenings or an afternoon at the week-end. First, the machine should be cleaned down thoroughly, removing all mud, dust, and oil. The bright parts may then be cleaned with metal polish, while the appearance of the frame and tank can be enhanced to an extraordinary degree by treatment with one of the special wax polishes now so popular for furniture. After these preliminaries, two methods are open to preserve the condition of the machine until spring-cleaning time comes. The first and simplest—and in some ways the most effective—is to brush over the whole of the bright parts, the lower portion of the frame, the wheels, and the mudguards, with a thin cream of grease dissolved in petrol. The alternative is to carry this treatment out in the same way, omitting the larger plated parts, which may be coated with a transparent lacquer.

By either method the machine will remain in good order under the worst accumulations of winter mud.

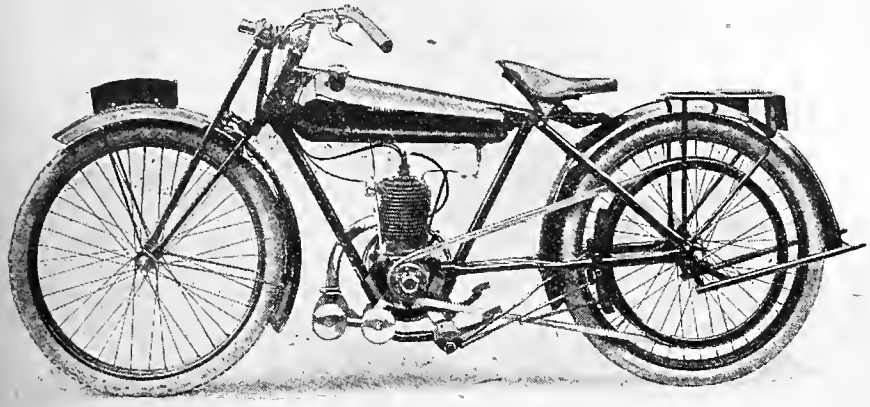


ADAPTABLE GAUNTLET GLOVES.
An excellent design by Messrs. Dunhills, Ltd.

To Club Secretaries about to plan their winter programme: see "Club News" page for particulars of "The Motor Cycle" film.

A New Sparkbrook Lightweight.

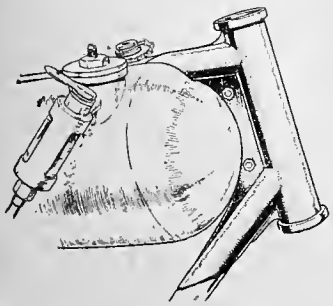
Villiers Engine, Loop Frame, and Pressed Steel Lugs.



A light and reasonably priced two-stroke—the Spark, a machine fitted with Villiers engine and flywheel magneto.

ONE of the most interesting lightweights which has yet been produced is the latest model Sparkbrook, to be known as the "Spark."

Primarily intended to be produced in quantities at a low figure, it is the frame construction which rivets attention. At first sight it would appear that a loop frame of normal construction is employed, but a closer scrutiny reveals many unusual features. To begin with, pressed sheet steel lugs are used throughout. Even the head lug, a particularly fine piece of work, is a one-piece pressing, welded at the edges of the webs. The main frame consists of the head, tank rail, and a loop member, to which stout pressed steel engine bearer plates are brazed. Bolted to the rear engine bearer plates are the chain stays, the back stays being detachable from both chain stays and seat tube. These stays have flattened ends, but are reinforced where the swaging takes place by stout inner liners of steel tube.



Head lug, tank fixing, and lubrication details.

Quite an unusual feature is incorporated in the stand, for this is so arranged that the light tubular legs receive the minimum bending stresses, since they lie directly between the chain stay and the ground when the machine is raised.

Two sheet steel straps position the legs, and one of these lies on either side of the rear fork-end lug, taking a bearing on the outside of the retaining bolt boss and not on the bolt itself. The front fork is of the well-known Triumph type in so far as it is pivoted at the bottom of the head lug, but plain bearings are employed on the pivots, a feature which is emphasised by the designer, who claims that the slight amount of friction at this point is beneficial in its damping action.

Planned for Production.

Both compression and rebound springs are fitted at the top of the fork, and the amount of pressure is adjustable. Before leaving the frame it should be mentioned that each side of the chain stays, back stays, and spring forks is identical, and this simplifies replacements as well as lowering production costs.

Footrests are carried from the engine plates, and on the cross-bar are mounted a pair of brake pedals, one on each side of the machine. These pedals operate Ferodo shoes in the belt rim, one being placed above the chain stay and one below.

All brake gear is arranged in such a manner as to clear a gear box and primary chain should such a device be fitted. The brake shoes also are interchangeable, and a single return spring suffices for both brakes.

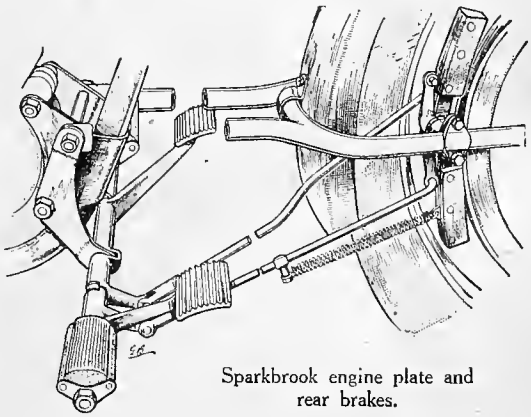
Again composed of pressings, the tank is of tubular section, with a recess along the top to fit snugly round the tank rail; projecting lugs are formed at each end, which bolt up to the steel webs of the head and seat-pillar lugs.

Before joining up the two tank pressings, a steel bottle is inserted, and this serves to contain lubricating oil. The cap of this bottle is screwed down on to a leather washer, so as to be absolutely air-tight, and carries a ball non-return valve and an adapter to suit a normal tyre pump. A tap and sight-feed arrangement are fitted to the neck of the bottle. Thus, after filling up with oil, a few strokes of the tyre pump will supply sufficient pressure to empty the tank of oil gradually when the tap is turned on. It has been found in practice that the oil compartment is so completely air-tight that, even after several days, or even weeks, no diminution of pressure is traceable.

Low Price.

Fitted with the well-known Villiers two-stroke engine and flywheel magneto, the little machine will sell at thirty-eight guineas, with direct belt drive. At this attractive price the machine is thoroughly well equipped, $26 \times 2\frac{1}{4}$in. Dunlop tyres being fitted. Sensible mudguards, a sturdy little carrier, and good quality saddle are included in the specification, and the finish is black, with Sparkbrook green tank and flywheel cover.

The well-known Sparkbrook lightweight models will continue to be sold either with single gear, two-speed, or two-speed and kick starter; and, in addition, a new model fitted with the 350 c.c. J.A.P. engine and a three-speed gear will be listed.



Sparkbrook engine plate and rear brakes.

200 MILES AT SPEED.

THE 200 Mile Race at Brooklands last week-end showed that the 1,100 c.c. four-wheelers have not yet attained the speeds of the 1,000 c.c. solo motor cycles. In the 500 mile motor cycle race last July the 200 mile record was broken on a 7-9 h.p. machine, the average speed being 74.34 m.p.h. In Saturday's race the fastest four-wheeled cycle car, with a 90° overhead valve twin cylinder engine of 1,100 c.c. capacity, averaged 71.54 m.p.h.

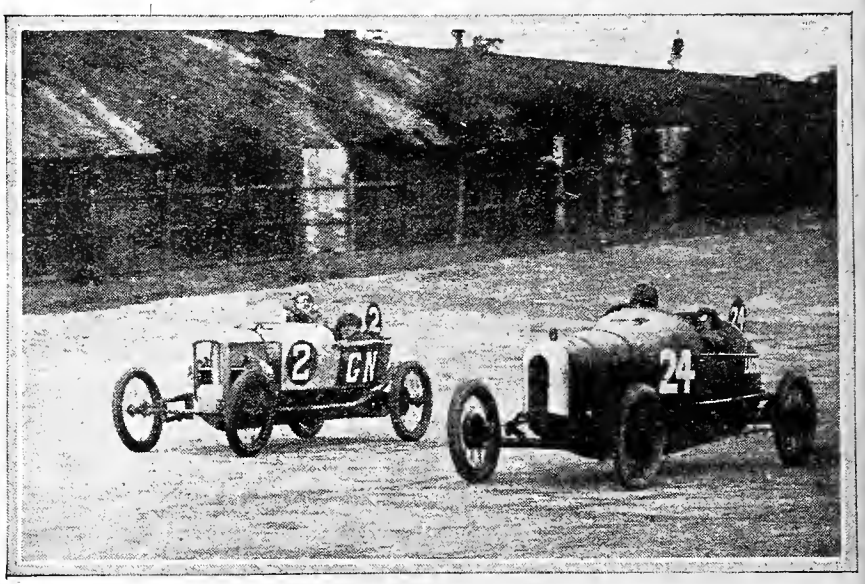
It was unfortunate in this race that the other machines of cycle car type did not approach the speed of the winner, as, of course, the old saying that "one swallow does not make a summer" holds good, and it must be recollected that the winning cycle car was a highly specialised machine specially designed for events of this kind.

Average of 71.54 m.p.h. for 200 Miles.

G.N. Cycle Car's Success in Great Race at Brooklands.

HUNDREDS of motor cyclists were intermingled with the record crowd at Brooklands last Saturday, the occasion being the magnificently organised 200 miles race of the Junior Car Club. The event was divided into two classes, (1) for 1,500 c.c. cars and (2) 1,100 c.c. cycle cars. A graphic description, with many exclusive illustrations, appears in to-morrow's issue of *The Autocar*. The race started at noon. Taking the lead in the 1,100 c.c. class from the start, a Morgan with water-cooled J.A.P. engine having side-by-side valves and driven by E. B. Ware led for nineteen laps at a very hot pace. On the twentieth circuit he retired with a broken propeller-shaft. This let Fraser Nash on a twin-cylinder four valve G.N. into the leading place temporarily, as he was hotly pursued by Lombard (the cycle car Grand Prix winner) on a four-cylinder Salmson and Phillips on a four-cylinder water-cooled Deemster, who alternately led at intervals up till the fortieth lap. Lombard, who won the half-distance prize, made one mistake, which cost him several minutes. Near his depot he suddenly decided to pull up for replenishments, and, applying his brakes violently, caused the car to skid suddenly and ram the depots, which buckled his front wheels. No other damage being done, the wheels were changed and the race continued, but this unexpected incident robbed the 1,100 c.c. class of much interest.

Nash continued his regular lap speeds of about 72 m.p.h.; and, taking the lead at forty laps, never lost it again, accomplishing a non-stop run, his time being 2h. 49m. 24⅖s. for the seventy-three Brooklands laps, *i.e.*, 201 miles 1,728 yards—an average of 71.54 m.p.h. Second to finish was André Lombard on the Salmson in 2h. 56m. 23⅕s.; and third, W. H. J. Phillips (Deemster) in 3h. 0m. 40s. Nash told us that he used six gallons of petrol on his G.N., and two and a half gallons of oil during the race. Except for the engine, which has four overhead valves operated by an overhead camshaft driven by bevel gearing, the winning G.N. is of standard type. His final lap was at the rate of 77.45 m.p.h.



A. G. Fraser Nash (8.7 G.N.), winner of the 1,100 c.c. class, overtaking W. H. Oates (10 Lagonda) in the 200 miles light car race at Brooklands. Nash's speed was 71.54 m.p.h.

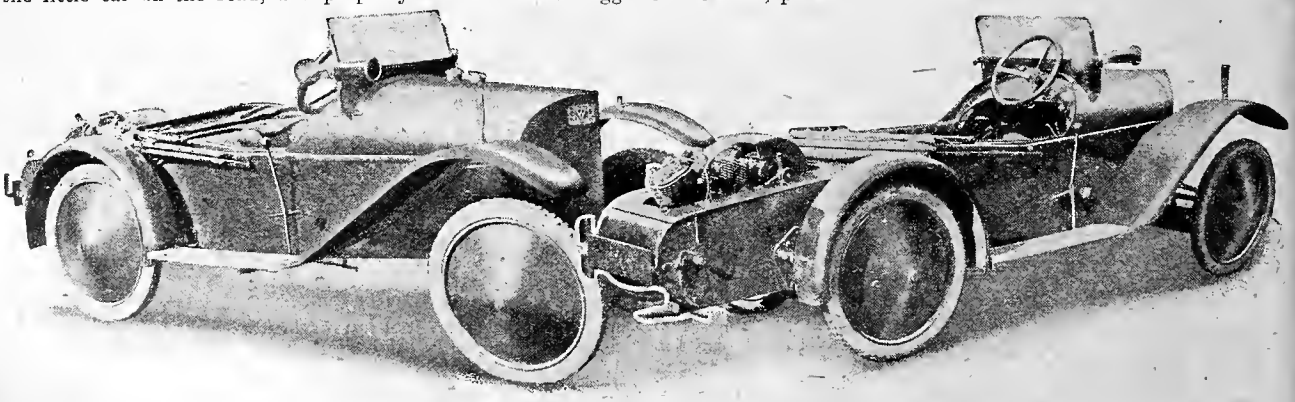
A Coventry-Premier was fourth in 3h. 38m. 3s., and an A.V. but 4⅕s. slower.

The 1,500 c.c. class was won by H. O. D. Segrave on a Talbot-Darracq at 88.82 m.p.h., second and third positions being occupied by small cars of the same make driven by K. Lee-Guinness and Malcolm Campbell respectively. Detailed results will be found in *The Autocar* Buyers' Guide Number on sale all over the country to-morrow (Friday).

A Four-wheeled Sidecar Substitute.

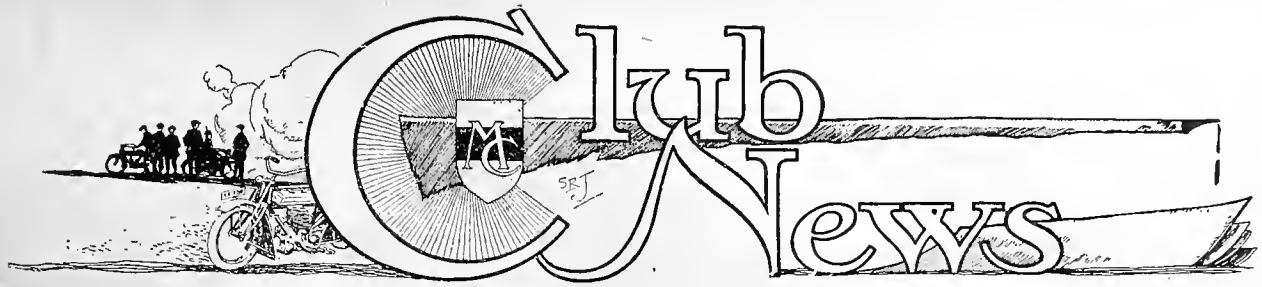
FOR a long time past Messrs. Ward and Avey, of Teddington, the manufacturers of the A.V. monocar, have been experimenting with a two-seated cycle car, but forebore to make any public announcement until the design had been thoroughly tested, and production was actually in progress. We have now tried the little car on the road, and prophesy that at the extremely low figure of £155 it should prove a sturdy rival to the sidecar.

In general specification the machine bears a strong family resemblance to the A.V. monocar, but the track has been widened sufficiently to accommodate a body 30in. wide, which, in conjunction with an 8in. stagger of the seats, permits two average people to be carried in real comfort. The engine is an 8 h.p. J.A.P. mounted at the rear, and additional cooling is provided by a rotary-blower, driven by belt. Buyers may choose between a three-speed Sturmey-Archer gear box or the firm's own epicyclic gear, which affords only two forward speeds, but has a reverse.



The new two-seated A.V. runabout, which has a slightly wider track than the monocar.

Ackermann steering has now been adopted and the shock absorber improved.



Sutton Coldfield and North Birmingham A.C.

On Saturday the club will hold a closed reliability trial for the Sutton and Shell Cups (for best solo and sidecar performances respectively).

Blackpool and Fylde M.C.

A most successful dance and prize distribution was held at the Savoy Hydro on a recent Friday evening. The annual general meeting of the club will be held on November 4th.

Worcester and District M.C.C.

Next Saturday a closed sporting trial will be held for the President's Cup, the Eric Williams Cup, and other awards. The route will cover some new ground in Wales.

Oxford University M.C.C.

Reorganisation is taking place, and a new secretary, the Rev. M. P. Sargent, St. Edward's School, Oxford, has been appointed. Novices as well as experts will be catered for in future; and, as a start, handicap speed trials will be held on Saturday next.

Hinckley and District M.C.C.

Although rather late in the year, the recent formation of a club as above has met with distinct success. The membership approaches forty, and a programme for 1922 is being commenced upon immediately. Mr. H. A. Gutteridge, 72, Rugby Road, Hinckley, has been appointed hon. secretary and treasurer.

South Birmingham M.C.C.

To-morrow the club is entertaining the delegates of the fourteen affiliated motor cycle clubs of the A.C.U. Midland Centre; and, in connection with this function, a smoking concert will be held to which all club members and friends are invited, ladies especially. It will be held at 7.30 p.m., at the club's headquarters, the Mermaid Hotel, Stratford Road, Sparkbrook.

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates after the Olympia Motor Cycle Show.

Week-end Club Events

Oct. 29.—Worcester and District M.C.C. Sporting Trial.
Oct. 29.—North London M.C.C. Theatre Night.
Oct. 29.—Stourbridge and District M.C.C. Paper-chase and Social Evening.
Oct. 29.—Sutton Coldfield and North Birmingham A.C. Closed Reliability Trial.
Oct. 30.—Barrow and District M.C. Speed Trials.
Oct. 30.—Halifax and District M.C.C. Run to Brown Cow.
Oct. 30.—Rochester, Chatham, and District M.C. and L.C.C. Run to Mayfield.
Oct. 30.—Birmingham University M.C.C. Reliability Trial.

Exeter M.C. and J.C.C.

With the object of raising funds for the ensuing year, the club is holding a novel fuel consumption guessing competition next Saturday. A 4 h.p. solo machine will be driven from a certain point at approximately 20 m.p.h., with exactly one pint of petrol in the tank. The competitors' task is to estimate the exact distance the machine will run.

Bradford M.C. and L.C.C.

There were twenty solo and fourteen sidecar entries for the annual hill-climb for the Dyson Shield, which was held on Tong Hill on the 15th inst. Each class was run on the knock-out principle on handicap, the winner of each class then competing in the final for the shield, which, with gold medal, is held for one year. No final was necessary this year as H. Langman, the well-known Scott rider, won both classes. The semi-finals and finals in the classes were as follows:

SOLO.—H. Langman (3¾ Scott) beat H. Askham (4 Norton); A. Mercer (3¾ Scott) beat H. Holmes (3 A.B.C.); H. Longman (3¾ Scott) beat A. Mercer (3¾ Scott).

SIDECARS.—G. Townsend (3½ P. and M. sc.) beat W. Backhouse (3½ Triumph sc.); H. Langman (3¾ Scott sc.) beat H. Holmes (3 A.B.C. sc.); H. Langman (3¾ Scott sc.) beat G. Townsend (3½ P. and M.).

Ilkley M.C. and L.C.C.

A large number of spectators followed with interest the speed trials held on the 15th inst. It was a most successful event, with a good number of entries, held in perfect weather conditions, and along a fine road surface, the course being a third of a mile. Two Scott riders (C. P. Wood and H. Langman) both achieved a speed of 83.33 m.p.h.; and C. P. Wood had been placed first on taking the aggregate speeds in the various events in which the two riders had taken part. Since the decision had been announced, however, there had been further conversation on the subject, and it had been mutually agreed that C. P. Wood should take the cup and gold medal for the best improvement on handicap time, and that H. Langman should take the Sellars gold medal for the fastest time. The results, rendered specially interesting by the inclusion of all speeds, are as follows:

SOLO MACHINES.

350 c.c.—1 and bronze medal, J. Stansfield (2¼ Edmund), 56.07 m.p.h.; 2, L. A. Runton (2¼ Velocette), 54.05 m.p.h.

550 c.c.—1 and silver medal, C. P. Wood (3½ Scott), 83.33 m.p.h.; 2 and bronze medal, H. Langman (3¾ Scott), 78.94 m.p.h.; 3, A. Jackson (3½ Norton), 73.17 m.p.h.; 4, A. Fieldhouse (3½ Norton), 73.17 m.p.h.; 5, H. W. Sellers (3½ Sunbeam) and J. Duxbury (3¾ Scott), 65.21 m.p.h.; 6, J. H. Holmes (3¾ Scott), 62.5 m.p.h.; 7, W. Backhouse (3½ Triumph), 60 m.p.h.; 8, J. Midgley (3½ Triumph), 56.07 m.p.h.; 9, E. C. Caswell (3½ Triumph), 55.05 m.p.h.

750 c.c.—1 and bronze medal, C. P. Wood (3½ Scott) and H. Langman (3¾ Scott), 81.08 m.p.h.; 2, A. Jackson (3½ Norton), 73.17 m.p.h.; 3, A. Fieldhouse (3½ Norton), 69.77 m.p.h.; 4, H. W. Sellers (3½ Sunbeam), 68.96 m.p.h.

1,000 c.c.—1 and bronze medal, H. Langman (3¾ Scott), 83.33 m.p.h.; 2, C. P. Wood (3½ Scott), 82.19 m.p.h.; 3, A. Jackson (3½ Norton), 72.28 m.p.h.; 4, W. Bradley (7-9 Indian), 63.16 m.p.h.

SIDECARS.

1 and bronze medal, H. Langman (3¾ Scott) 68.18 m.p.h.; 2, J. N. Longfield (7-9 Indian sc.), 65.21 m.p.h.

ON AXE EDGE, NEAR BUXTON.
J. Whalley (2¾ h.p. Massey-Arran) in the recent Stockport and District M.C. Open hill-climb. Whalley, it will be recalled, came very near to winning this year's Junior T.T. race.

Club News--

Surbiton and District M.C.C.

F. C. Townshend (8 Zenith) and R. H. Chaplin (3 A.B.C.) are now announced as additional gold medallists in the Sopwith Cup Trial described last week. R. S. Spikins (3 A.B.C.) made a non-stop run.

Cumberland County M.C.C.

A series of interesting lectures, all starting at 8 p.m., at the Crown and Mitre Hotel, Carlisle, will be held on November 5th, November 25th, December 17th, January 14th, and February 11th The first, on the subject of "Road Traffic,' will be given by Mr E. H. Spence, with Mr. W. T. Carr, M.P., in the chair.

Midland Cycling and Athletic Club.

Results of the one-day trial, described last week, were very promptly announced last Thursday. W. B Gibb (3½ Douglas) gained the premier award—the M.C. and A.C. Trophy—and, as anticipated in our report of the event, B. Kershaw (2¼ New Imperial) won the "Gowch' Trophy for the best performance by a 350 c.c. machine. Other awards were:

JORDISON TROPHY (best passenger machine).—L. J. Cave (8 G.N.).

"TRADER" TROPHY (best solo machine over 500 c.c.).—Cliff Atcherley (4 Triumph).

"B.N." BOWL (best solo machine over 350 c.c. and under 500 c.c.).—W. B. Gibb (3½ Douglas).

BEST CLUB PERFORMANCE on a solo machine.—J. Doherty (2¼ Levis).

BEST CLUB PERFORMANCE on a passenger machine.—L. Newey (8 Ariel sc.).

WINNING TEAM.—T. F. Blumfield (6 Ariel), C. Atcherley (4 Triumph), and J. Doherty (2¼ Levis).

GOLD CENTRE MEDALS.—As above, and F. Morgan (2¾ Cotton), G. Masoo (2½ Connaught), A. Milner (2½ O.K.), G. Butcher (3½ Sunbeam), T. Richards (4 Triumph), A. Rollason (3½ Ariel), H. F. S. Morgan (8 Morgan), F. H. Brown (4 Rex sc.), F. C. Parkes (2½ Sun V.T.S.), and J. Walker (6-7 B.S.A.).

SILVER MEDALS.—E. Neal (2½ Metro-Tyler), A. King-Smith (2¼ Morris), E. F. Goodman (2¼ Velocette), G. F. Povey (2¼ Velocette), W. L. Handley (2½ O.K.), J. Lidstone (2¼ James), M. Bishop (2½ Sun V.T.S.), C. L. Sprosen (2½ Connaught), G. Hill (2½ Diamond), F. Begley (4 Indian), R. Duke (4 Triumph), W. Danskin (3½ Rudge), F. Sibley (3½ Rudge), W. T. Woodcock (3½ Ariel), F. A. Watson (3½ Sunbeam sc.), B. Bladder (8 New Imperial sc.), W. H. Carr (8 Morgan), R. Beasley (3½ Sunbeam sc.), and S. Lewis (6 B.S.A. sc.).

As S. W. Lewis's name did not appear on the official programme, we inadvertently omitted to credit his 6 h p. B.S.A. sidecar with a clean ascent of Bussage Hill.

Taunton and District M.C. and L.C.C.

The second trial to Land's End this season was held on Saturday, October 8th, and from every point of view was an unqualified success. The weather was glorious, and, with two exceptions, all the competitors reached Land's End. A new freak hill, Warren Hill, was discovered near Honiton, and a deviation was made from the main road to include this hill, and also a couple of water-splashes immediately preceding it. A feature of the run was the admirable way in which a 2½ h.p. O.K. and sidecar negotiated the hill after 6 h.p. outfits had failed. The performance of this miniature outfit was considered to be the gem of the trial. A 2½ h.p. Cedos and sidecar also covered the route. Awards are announced as follows:

TRADERS' CUP.—Cup and first-class certificate, G. L. Morrish (3½ Sunbeam). First-class certificate, 100% marks, I. F. Anderson (2½ Connaught). Second-class certificate, 90%, S. H. Crowhurst (3½ Martinsyde), 295; P. V. Hare (3½ Douglas), 205; F. Skinner (6 Martinsyde and sc.), 280; and D. Merson (2½ Ready), 270. Third-class certificate, F. Gardner (3¼ Scott), 255; S. Goodman (3½ Sunbeam), 230.

CHALLENGE BOWL.—The Autumn challenge bowl, value £15 15s., presented by Mr. F. Hewins, and silver medal. In this competition five competitors tied: V. Tucker (3½ Norton), F G. Vincent (3½ Sunbeam), G. L. Morrish (3½ Sunbeam), C. G. Clapshaw (4 Douglas), and J. Eddy (4½ Excelsior).

TEAM CHALLENGE CUP.—Challenge cup for teams, presented by Mr. H. T. Kite. The Taunton team, consisting of P. V. Hare (3½ Douglas), S. W. Easton (3 A.B.C.) and F. Heal (4 Norton sc.), 895 marks.

Lightweight Machines.—1 (equal), I. F. Anderson (2½ Connaught) and W. L. Handley (2½ O.K.), 300 marks each; 2 (equal), J. Wraight (2½ O.K.) and D. Merson (2½ Ready), 290 marks each.

Solo, over 350 c.c.—1, S. W. Easton (3 A.B.C.); 2, S. H. Crowhurst (3½ Martinsyde).

Sidecars.—1, J. Eddy (4½ Excelsior sc.), 300; 2, L. S. Potter (6 Martinsyde sc.), 300.

Last Open Hill-climb of 1921.

Keenly Contested Event of the Stockport Club at Axe Edge.

SEVERAL well-known riders attended the last open hill-climb of 1921, the Stockport and District M.C. event on Axe Edge on Saturday, the 15th inst.

H. W. Hassall (3½ Norton) made fastest time of the day, winning all the four classes which he had entered. E. Searle (3½ Sheffield-Henderson) and C. P. Wood (3½ Scott) were usually second and third respectively in the "general" solo classes. Other conspicuously successful riders were: G. Cowley (3½ Norton sc), F. Hatton (3½ Douglas sc.), J. C. Nichols (2¼ Omega), and E. W. Wilkinson (3½ Sunbeam).

SIDECAR CLASSES.

550 c.c., GENERAL.—1, G. E. Cowley (3½ Norton sc.) 2, E. Searle (3½ Sheffield-Henderson sc.).

550 c.c., EXPERTS BARRED.—1, F. Hatton (3½ Douglas sc.); 2, B. Caldwell (3½ Norton sc.).

750 c.c., GENERAL.—1, G. E. Cowley (3½ Norton sc.); 2, P. Platt (6 Bradbury sc.).

750 c.c., EXPERT BARRED.—1, F. Hatton (3½ Douglas sc.); 2, P. Platt (6 Bradbury sc.).

1,000 c.c., GENERAL.—1, G. E. Cowley (3½ Norton sc.); 2, E. Searle (3½ Sheffield-Henderson sc.).

1,000 c.c., EXPERTS BARRED.—1, P. Platt (6 Bradbury sc.); 2, F. Hatton (3½ Douglas sc.).

UNLIMITED GENERAL.—1, E. Searle (3½ Sheffield-Henderson sc.); 2, G. E. Cowley (3½ Norton sc.).

UNLIMITED, EXPERTS BARRED.—1, S. Brown (10 Reading-Standard sc.); 2, P. Platt (6 Bradbury sc.).

SOLO CLASSES.

250 c.c., GENERAL.—1, J. C. Nichols (2¼ Omega); 2, N. B. Newton (2¼ New Imperial).

250 c.c., EXPERTS BARRED.—1, J C. Nichols (2¼ Omega); 2, N. B. Newton (2¼ New Imperial) and R. Taylor (2¼ Levis) tied.

350 c.c., GENERAL.—1, J. Whalley (2¾ Massey-Arran); 2, B. Watts (2¾ Dot).

350 c.c., EXPERT BARRED.—1, B. Watts (2¾ Dot); 2, J. Whalley (2¾ Massey-Arran).

400 c.c., GENERAL.—1, J. Whalley (2¾ Massey-Arran); 2, B. Watts (2¾ Dot).

400 c.c., EXPERTS BARRED.—1, J. Whalley (2¾ Massey-Arran) and B. Watts (2¾ Dot) tied; 3, E. Bates (3 A.B.C.).

550 c.c., GENERAL.—1, H. W. Hassall (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson).

550 c.c. EXPERTS BARRED.—1, F. Hatton (3½ Douglas); 2, B. Watts (2¾ Dot).

750 c.c., GENERAL.—1, H. W. Hassall (3½ Norton); 2, G. E. Cowley (3½ Norton).

750 c.c., EXPERTS BARRED.—1, E. W. Wilkinson (3½ Sunbeam); 2, F. Hatton (3½ Douglas).

1,000 c.c., GENERAL.—1, H. W. Hassall (3½ Norton); 2, E. Searle (3½ Sheffield-Henderson).

1,000 c.c., EXPERTS BARRED.—1, F. Hatton (3½ Douglas); 2, C. Waterhouse (3½ Sunbeam).

UNLIMITED, GENERAL.—1, H. W. Hassall (3½ Norton); 2, C. P. Wood (3½ Scott).

UNLIMITED, EXPERTS BARRED.—1, E. W Wilkinson (3½ Sunbeam); 2, F. Hatton (3½ Douglas).

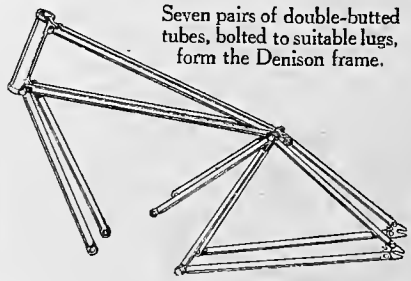
HILL-CLIMB FOR SECOND-HAND MACHINES.

IN connection with the Glass Automobile Show of second-hand vehicles at Manchester, which opens on November 5th, Sir Robert Peacock, M.V.O., the Chief Constable of the city, has given permission for a hill-climb test of the vehicles entered to take place on Stoney Brow, close to the City Hall. The trial of the first cars and motor cycles will take place on October 29th; later entries will undergo their hill test as they arrive on October 31st, November 1st, 2nd, and 3rd. There will be no hill-climbing on November 4th; but vehicles arriving after this day will be tested and examined. Mr. William Glass, the organiser of the exhibition, has transferred his offices to the City Hall, Manchester.

SIMPLICITY IN FRAME CONSTRUCTION.

SEVERAL makers have lately been considering the merits of a frame construction eliminating brazing. The design illustrated (provisional patent 9,216, 30/3/20) attains this end in rather a novel manner, and at the same time is perfectly triangulated.

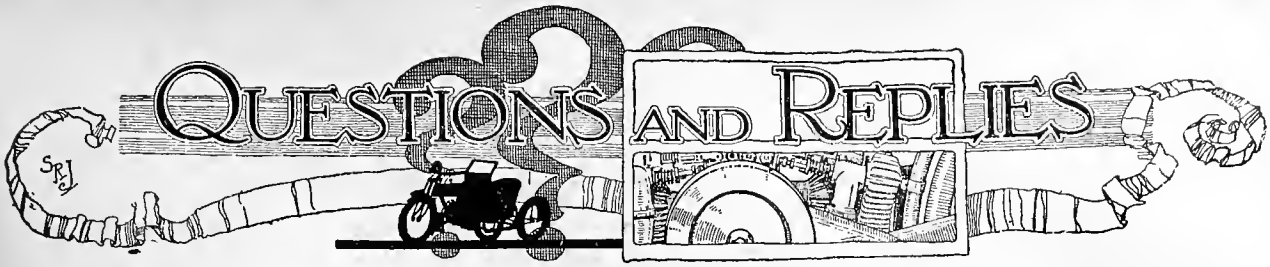
Seven pairs of double-butted tubes of D section are simply bolted together with suitable lugs at the steering head and rear fork ends. Engine plates are dispensed with, the engine being attached directly to the frame by means of bolts through three transverse lugs cast on the crank case in suitable positions, the crank case, of course, giving rigidity to the whole.



Seven pairs of double-butted tubes, bolted to suitable lugs, form the Denison frame.

There are five pairs of tubes connected to a common transverse bolt just below the saddle, but should any slackness occur at this point the rider is at once warned by movement in the seat-pillar, which is mounted in a clip, which is tightened by the same bolt.

Mr. C. Denison, 29, Oddfellow Street, Blackpool, is the designer of this interesting frame layout.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

SILENCERS AND THE LAW.

Is it legally necessary actually to have an exhaust box or silencer, or is a long exhaust pipe past the back hub allowed by itself, such as is fitted to many "sports models"?—E.H.B.

The regulations regarding silencers are rather vague. The legal requirement is that a machine shall be reasonably silent (it being specified that the exhaust gases shall pass through an expansion chamber or other "suitable apparatus"). In many cases, however, the fitting of a long exhaust-pipe alone is regarded as an infringement of these regulations, and numerous riders have been successfully prosecuted by the police on this account, even though their machines were fairly quiet.

MAGNETO QUESTIONS.

A Thomson-Bennett twin magneto in my possession gives a good spark when it is off the machine, but when I put it on the engine I get practically no spark at the plug, and if I put my hand on the cylinder or armature driving spindle a shock is felt. I have cleaned every part and adjusted the platinum points etc. In the aluminium base plate of the magneto there is a carbon brush rubbing on one end of the armature, independent of the one on the platinum points, and the two rubbing on the distributer ring. I should be very glad if you could tell me the cause of my trouble; also, if you could explain the working of the magneto; also if it is possible to alter a 50° magneto to a 60°, and the best way of doing it.—F.A.C.

It is very difficult to tell you the cause of the trouble without actually subjecting the magneto to test. We suspect, however, that there is a fault in the winding, and it would be best to send it to the makers and allow them to test it for you. An explanation of the working of the magneto cannot possibly be given in a short space, and we would suggest that you obtain "Motor Cycles and How to Manage Them," which contains a most complete chapter devoted to high-tension ignition. "Magnetos" (by A. P. Young), also issued by our publishers, deals still more fully with the subject. It may be possible to alter the magneto as you suggest, but it would be best to obtain the makers' advice on this point.

REPAIRING A TANK.

How does one mend a hole (not a split) in the top of the petrol tank without having the tank down? The machine is a B.S.A., and the leak occurs round the petrol tap on top of the tank, as the securing collar has become unsoldered. —L.R.O.

It will be necessary to resolder the collar of the petrol valve, and if you intend doing this without removing the tank from the frame, you must take particular care that all petrol and petrol vapour is withdrawn before commencing operations, otherwise you may cause an explosion, with possibly disastrous results, not only to the tank, but to yourself.

Important Dates.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Sat., Nov. 5th—Midland Centre A.C.U. Open Reliability Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

Oversize Tyres.

Some time ago in an article by one of your staff, the writer mentioned that he had fitted a 28×3in. tyre to the rear wheel. The tyre makers do not recommend the fitting of this size, and the largest they quote for this rim is 26×2½in. for 2¼in. rim. Will you please say whether (1) In your opinion it is satisfactory to fit a 28×3in to these rims, and (2) whether there is any danger of this tyre coming adrift?—F.J.C

(1.) It is quite satisfactory to fit such a tyre—in fact, several members of our staff have followed the practice, which was initiated by D.R.'s during the war, and have obtained every satisfaction. (2.) There appears to be no danger of the tyre coming adrift, but security bolts are advisable.

RESPONSIBILITY OF INNKEEPERS.

(1.) When on a tour and stopping at an hotel for the night, if the motor cycle is handed over to the person in charge of the hotel garage, is the proprietor responsible for theft of the machine or not? (2.) What is a good means of securing the motor cycle from theft on ordinary occasions?—E.M.

(1.) If a person actually becomes the guest of an innkeeper, the latter (under the Innkeepers' Act) becomes responsible for the guest's personal property up to the value of £30; this amount does not include carriages (which includes motor cycles, of course), and the innkeeper's liability as regards these is unlimited. In many cases, however, you will find that hotel garages are under separate proprietorship, and the garage usually disclaims responsibility for loss by fire or theft. (2.) The best means of securing the machine is to lock either the wheels or the gear control mechanism with a suitable locking device, such as most accessory dealers can supply. In some cases it is possible to put the machine out of action by removing the high-tension wire or an essential part of the contact breaker, etc.

MISFIRING OF TWIN-CYLINDER.

At times my 5-6 h.p Clyno will fire quite all right on both cylinders, then sometimes the front one will stop, leaving the back firing alone, and *vice versa*. I have it timed back piston on top, exhaust valve just closing with magneto (Dixie) just breaking. Is the timing correct? What do you suggest is the cause of the trouble? I find the engine runs on both cylinders much better if I run without any air.—W.L.

We do not quite follow the method by which you have timed your engine. The exhaust valve should be just closing when the piston reaches the top of the exhaust stroke and one full revolution after this point (that is, at the top of the compression stroke) the contact breaker points should be just separating when the ignition control is two-thirds retarded. Perhaps there is some structural defect of the magneto, which your letter does not make clear; but, if closing the extra air eliminates the misfiring to a degree, we suspect that there are bad air leaks at either or all of the following points: Inlet valve guides, valve caps, and induction pipe joints.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"E.D." (Farnham).—5 h.p. N.U.T.: Speed, consumption, comfort, reliability (including Magdyno equipment), solo and sidecar; also similar experiences of Indian Scout.

"T.K.T." (Bootle).—4¼ h.p. B.S.A.: Chain drive, climbing, power, reliability, speed, consumption and tyre life.

"L.W.E.H." (Bexley Heath).—Wates electric conversion set for acetylene lamps: Light given, duration of light on one charge, life of cells, convenience and accessibility of cells for recharging; retention of acid.

"G.E.S." (Shirley).—28×3in. tyres and Cox Atmos carburetter on 4 h.p. Triumph.

"R.J.S." (Oxford).—Economy effected by W.S.R. adapter on Amac fitted to a 3½ h.p. single.

"C.C.T." (Elgin).—W.S.R. and Bowden extra air on 7 h.p. James, or similar machine.

"G.N." (Leicester). — Beardmore-Precision spring frame: Climbing, consumption, gear handling, effect of pillion rider.

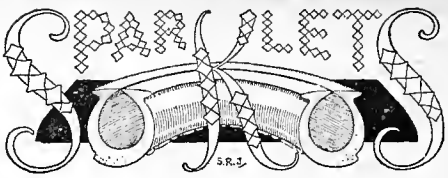
RECOMMENDED ROUTES.

OWER TO DORCHESTER.—T.G.

Ower, Cadnam, Ringwood, Wimborne, Bere Regis, Dorchester.

LONDON TO SOUTHSEA.—D.A.K.

Hammersmith Broadway, Kingston-on-Thames, Esher, Ripley, Guildford, Godalming, Milford, Hindhead, Liphook, Petersfield, Horndean, Cosham, Portsmouth, Southsea.



Found on the Road.

A rear stand was found near the "Cat and Fiddle" (Macclesfield-Buxton road), on October 9th, by Mr. W. Riseley, 25, Turnock Street, Macclesfield.

Coulson-B. Machines and Spares.

Coulson-B. machines and spare parts are being handled by Mr. R. C. Empson, of 15, Woodstock Street, London, W.1. It is understood that parts will shortly be manufactured in Birmingham.

Trials Amendments.

In the recent Reigate, Redhill and District M.C.C. consumption test the following corrections have been received: First sidecar E. P. Duplock (8 Sunbeam sc.), and first solo machine R. Green (3½ Sunbeam).

G. Baxter, who gained the highest marking on points in the N.W. London M.C.C. gymkhana, on the 1st inst., rode a 6 h.p. Martinsyde sidecar.

Prices for 1922.

Royal Ruby prices for the Olympia Show and the next year are announced as follows: 2¾ h.p. sports model, £75; ditto, touring model, £77 10s.; 3 h.p. spring frame, £99 10s.; 2¾ h.p. sports sidecar outfit (three-speed), £100; 3 h.p. light touring outfit (three-speed), £115; 8 h.p. spring frame outfit with Easting and spare wheel, £185.

Record-breaking Equipment.

On the last occasion on which Victor Horsman broke the fifty miles and one hour record on a 3½ h.p. Norton he used a Sturmey-Archer gear box.

The Bedelia Again.

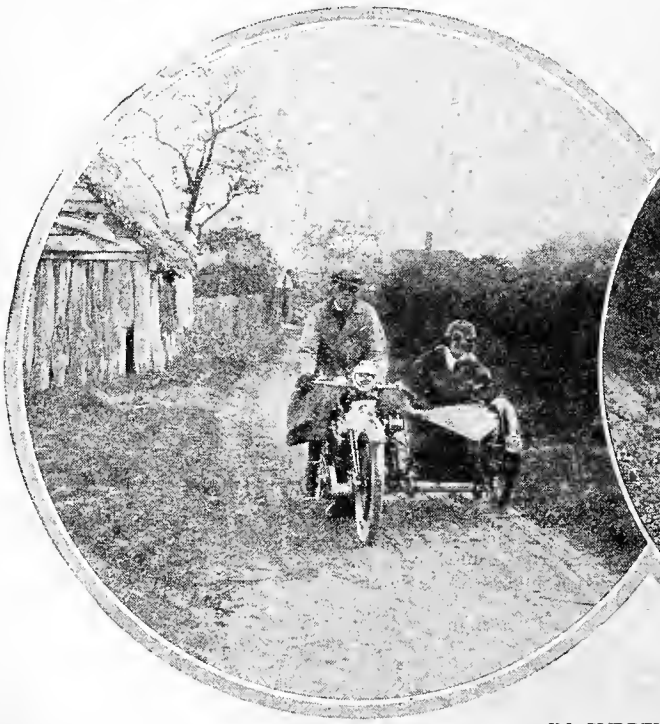
The sole agency for the British Empire of the Bedelia cycle car has been secured by Palmer's Garage, 183-199, High Street, Tooting, London, S.W.17.

A Belgian Champion.

Our Belgian contemporary *La Motocyclette* awards a "Brassard of Honour" for the best trade rider in the country; it is awarded to the one gaining the highest aggregate number of points to the various speed tests and reliability trials throughout the year. For 1921 the award has been made to M. Antoine, of Liège, who rides a Triumph. This rider's latest success was at a combined hill-climb and speed test at Hainaut, where he attained a speed of 77 m.p.h.

Ex-W.D. Tyres.

In order that we might see for ourselves the condition of ex-W.D. and cheap clearance line tyres, we were invited by a large wholesale firm, which distributes these covers throughout the trade, to inspect its stock. We found several thousand motor cycle covers of all sizes, makes, and types carefully stored in darkened rooms. Most of the stock had come from the R.A.S.C. Tyre Depot at Camden Town, while others were clearance stocks of manufacturers who had given up the making of motor cycle covers. We handled and examined a great number of these covers selected at random, and gained the impression that many real bargains could be obtained among stock of this nature.



IN SURREY LANES.

Competitors in the Surbiton and District M.C.C. Sopwith Cup Trial (described last week). (Left) W. H. D. Steer (8 Zenith sidecar) on Bexley Hill. (Right) Another scene on Bexley Hill. W. R. Preston (3½ Sunbeam), followed by J. L. Boxall on a 3 h.p. A.B.C.

- Practical Insurance -

— An Interesting Scheme —

IT is the common experience of motor cyclists at some time or other to find their machines out of action. In the majority of cases the cause is trivial in itself and could be instantly rectified if one only had the necessary spare part.

What is more aggravating, in response to your S.O.S. call than to receive from an agent either a note of regret that he has not the part in stock or a polite request for cash in advance.

YOU WANT THE GOODS. NOT EXCUSES OR REQUESTS FOR CASH.

For many years Godfrey's have placed a service organisation at the disposal of its customers which obviates these irritating delays and which, if we can judge from an ever-growing testimonial file, gives entire satisfaction.

Briefly it is this: you enter your name and address on our spare parts register and open a Deposit Account with us. The minimum deposit is 10/-, but larger amounts can be sent if desired. There are no conditions whatever and any deposit is returnable in full on request.

Against your name on the register is entered particulars of your machine and a number. The advantage of this is that in any telegram, telephone message, or letter, applying for spare parts, and giving the name and number, we can identify the machine they are required for and send the right parts at once.

Where possible the registered customer is supplied with a priced spare part list, so that for expensive replacements he can remit the exact amount with his order, whilst for small requirements the order is executed against the Deposit Account whether it exceeds it in value or not. **Efficient and immediate service rather than a red tape adherence to rules being the essence of the scheme.**

It is obviously impossible for the individual rider to guard against any and every emergency by carrying replacements for every part of his machine, but this is precisely the business of one of the departments of Godfrey's. In the course of a long experience we have identified to a very large extent the nature and proportion of spares it is essential to carry to ensure an efficient Spare Parts Service Depot.

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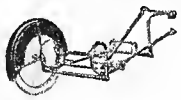
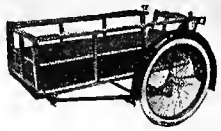

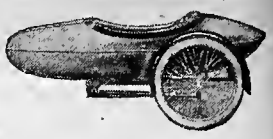

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Monarch Model	£26 0 0	Monarch	£31 10 0
R34 "	£25 0 0	R34	£30 9 0
Tourist "	£22 0 0	Tourist	£27 6 0
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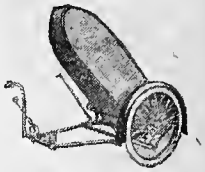
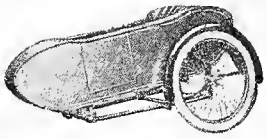

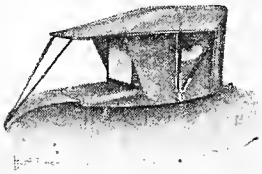
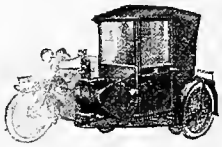
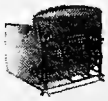
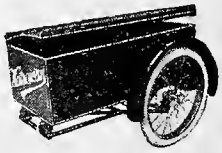
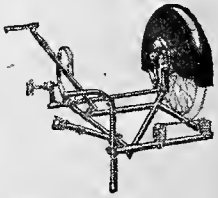

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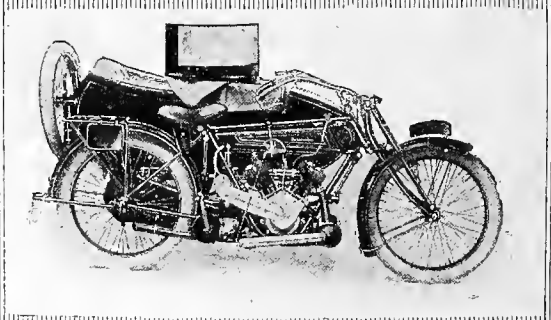

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26×2¼	1	15	3	2	5	6
26×2¼	2	1	6	2	7	6
26×2½	2	5	9	2	14	0
26×3	2	10	3	2	16	9
28×3	2	13	6	3	0	9

Also 26×3in. ccr. fitting.

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—"IMPY," care of *The Motor Cycle.*

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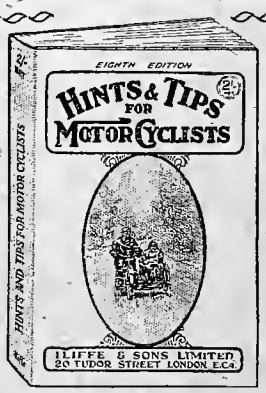

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ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor, and each party to the transaction pays carriage one way. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½ %. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., perfect, lamps, horn, speedometer; £70.—24, Geraldine Rd., Chiswick. [5981

A.B.C., brand new, only run 20 miles, K.S., tax paid; £85.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [5655

EASTERN GARAGE

If you are considering the purchase of a Motor Cycle, write for our stock list of slightly

SHOP-SOILED 1921 MODELS

You will be amazed at the low prices at which we are offering such first-class makes as

ARIEL
B.S.A
LEVIS
MARTINSYDE
MATCHLESS
NEW IMPERIAL
ROYAL ENFIELD
TRIUMPH

Our selection of

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also embrace some exceptional bargains. All have been most carefully overhauled, and are guaranteed.

Settlement for any machine can, if desired be made by

DEFERRED PAYMENTS

The minimum deposit accepted is one-quarter of the purchase price, and the balance (to which 7½% is added) can be spread over twelve monthly instalments.

Eastern Garage Co.,
Official Repairers to R.A.C., A.C.U., A.A. & M.U.,
418, Romford Rd., Forest Gate, E.7.

Telephone—490 East Ham.
Telegrams—"Egaraco, London."

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., 1920, horn, lamps, speedometer, tyres good, perfect condition; £75.—Vickers, Fotheringhay, Peterborough. (P) [5628

1920 A.B.C., T.T., Lucas lamp and horn, Bonniksen speedometer, complete, and perfect; £80.—Hutchinson, Boroughbridge. [5779

A.B.C. 1921 Solo Model, tax paid, very fine order; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6036

A.B.C. 1920 Combination, dynamo model, with Swan sporting sidecar, fully equipped, including speedometer and licence; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4818

A.J.S.

2¾h.p. A.J.S. in stock, £95; 7h.p. A.J.S. in 3 days, £195.—Cross, Agent, Rotherham. [X1283

A.J.S. Motors.—Make appointment at Olympia with Geo. Merrick, 174, Listerhills, Bradford. [4577

1914 6h.p. A.J.S. and Milford sidecar, complete, lamps, etc.; £90.—Cross, Agent, Rotherham. [X1284

DAN GUY, Weymouth.—1921 7h.p. A.J.S. combination, £195; 2¾h.p. 2-speed A.J.S., £95; from stock. [0687

1921 (May) 2¾h.p. A.J.S., perfect condition, unpunctured, mileage 500; £83.—26, Wanderers' Av., Wolverhampton. [5637

A.J.S. Combination, 1920, 6h.p., Lucas lamps, horn, speedometer, hood, insurance, as new; £145.—179, Torridon Rd., Catford. [5820

A.J.S. 2¾h.p., 2 speeds, clutch, overhauled by makers July, new chain and tyres, speedometer; £45.—28, Portland St., Leamington Spa. [X1293

A.J.S. 1919 6h.p. Combination, Tan-Sad, Klaxon, speedometer, perfect condition, insurance May; £140.—61, Worrall Rd., Sheffield. [5311

1920 A.J.S. Combination, hood, screen, spare wheel, acetylene and electric lighting sets; £130.—Ness, 225, Wimborne Rd., Bournemouth. [5914

A.J.S. 2¾h.p. 1916 Sports, 3-speed, clutch, spare racing cams, valves, and sprockets; £53.—Holland, 183, Chester Rd., Macclesfield, Cheshire. [X1265

A.J.S. Combination, dynamo lighting, electric horn, hood, screen, speedometer, many spares, as new; £165.—Ratcliffe Bros., 200, Gt. Portland St., W. [6150

1919 A.J.S. Combination, good condition, electric lighting, good accessories; any trial, Cambridge district; £130.—A.J.S., 11, Carlyle Rd., Cambridge. [5538

1919 A.J.S. 6h.p. Combination, spare wheel, wind screen, lamps, etc.; a remarkable bargain, 115 gns. —Julian, 84, Broad St., Reading. 'Phone: 1024. [5489

A.J.S. Combination, 1914, in perfect running order, recently overhauled, lamps, wind screen, hood, etc.; £90.—Apply, A. Smith, Commercial Sq., Haywards Heath. [5363

1921 2¾h.p. A.J.S. Sports Model, new August, electric lamps, Bonniksen, etc., done 800 miles, unscratched; offers.—Eadington, Alderley Edge, Cheshire. [5921

1920 A.J.S. Combination, Lucas dynamo lighting, spare wheel, speedometer, Tan-Sad, wind screen, spares, mileage 2,700; £165, close offer.—153, Knollys Rd., Streatham. [5577

A.J.S. 1921 7h.p. Combination, latest model, brand new, slightly shop-soiled, interchangeable wheels and spare; bargain, list price £195, special price £175; exchanges entertained.—Below.

A.J.S., 1921, 2¾h.p., sports model, 3 speeds, clutch, the ideal lightweight, very special offer, fully equipped; £88/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

1920 6h.p. A.J.S. Combination, fitted wind screen, hood, side curtains, spare wheel, horn, handle-bar muffs, electric lighting, cover for machine; £125.—Dentist, 194, Tufnell Park Rd., Holloway. [5552

A.J.S. 6h.p. (Nov., 1919) Combination, all 1920 improvements added, complete with spare wheel, lamps, horn, Bonniksen speedometer, spring saddle pillar, 5,000 miles only, excellent condition, recently completely overhauled; £130.—Brown, Optician, Weymouth. [5315

WANTED, purchasers for any model of new 1921 A.J.S. motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0649

1920 A.J.S. 6h.p. Combination, lavish supply spares, Cowey horn, speedometer, Low generator, Binks carburetter, hood, spare wheel, only owner-driven, small mileage with greatest care, beautiful condition, licensed and insured; cost £265, sell £150.—'Phone: Museum 1717 morning.—Write, Gilman, 27, Glenmore Rd., Hampstead, N.W.3. [5696

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3983

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

Alecto.

ALECTOS.—I still have a few left for disposal at £60, all on; 3½h.p. 2-speed, clutch, kick starter, lamps, horn, tools, etc., brand new; £60, listed at £87/10, less accessories.—Arthur G. Daw, 114, Brixton Hill, S.W.2. [5905

Alldays.

ALLDAYS, 3½h.p., free engine, good condition; £20.—17, Heaton Rd., Mitcham. [5677

£27/10; 2¾h.p. Alldays 2-stroke, fully equipped, take 2 anywhere.—Evers, Neuton Rd., Burton-on-Trent. [5772

ALLDAYS Allon, 1920, excellent condition, fully equipped; any trial; £50, or near.—128, Offord Rd., Barnsbury, N.1. [5478

1919 Alldays Allon 2¾h.p., 2-speed, clutch, good condition, including nearly new Tan-Sad; £35 or near offer.—Green, Pontlaen, Chirk, Denbighshire. [5425

ALLDAYS Matchless Combination, 1914, 4h.p., 3-speed, lamps, coachbuilt sidecar, tax paid, excellent condition; £44.—13, Crooklog, Bexley Heath, S.E. [5727

1921 Alldays Allon, nearly new, medium weight combination, 2 speeds, clutch, kick start, fully equipped; £75; offers; exchange.—19, Richmond Terrace, Clapham Rd., S.W.8. 'Phone: Latchmere 4290. [5816

American X.

£90.—American X Combination, 7-9h.p., in good running order, all accessories, etc., tax paid.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [5122

AMERICAN X 7-9h.p., 1920, dynamo model, speedometer, Tan-Sad, mileage under 2,000, carefully used and in splendid condition; £95, or near offer.—53, Tilehurst Rd., Reading. [X1196

1920 7-9h.p. American X. Combination, complete with lamps, horn, disc wheels, Easting wind screen, and licence, done about 2,000 miles, in perfect condition; what offers?—Dann, Crosskeys, Mon. [X1211

Anglian.

£16.—Anglian lightweight, 2½h.p., single speed, only needs timing, lamps on.—11, Highland St., Poplar. [5273

Ariel.

ARIEL 3½h.p., good condition; £26.—7, Carnaby St., Regent St., W. [5569

DAN GUY Weymouth.—1921 3½h.p. Ariel combination; 135; from stock. [0638

1920 Ariel 3½h.p. Combination, fully equipped; £75.—Cox, 67, Deanville Rd., Clapham. [5720

ARIEL 3½h.p., 3-speed countershaft combination, splendid condition; £75.—49, South Lambeth Rd., S.W.8. [6083

ARIEL.—All models, cash or gradual payments. Spares supplied from stock. — West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £155; no extra charge for easy payments. [6074

1920 Ariel 3½h.p., equipped, perfect condition, mileage 1,500, £85; Watford speedometer, trip, new drive, £2/15.—Beaumont, Heathfield Rd., Golcar, Huddersfield. [5731

1922 Ariel and Sidecar, 4½h.p., chain drive, Lucas Magdyno lighting outfit, electric horn, tax paid, brand new; cost £171, accept £150.—Apply, Lloyd and Son, Lewes. [5236

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

ARIEL 1921 3½h.p., 3-speed solo model; list price £100, usual makers' guarantee given, imperceptibly soiled; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6037

Ascot.

3h.p. Ascot, mechanical valves, good order, low, complete except mag.; particulars stamp; £7/10.—4, Yewtree Rd., Beckenham, Kent. [5785

Aster.

£18; 3h.p. Aster, in good condition; push bike part.—8, Wyke St., Hedon Rd., Hull. [5822

CLEARANCE BARGAINS!!

YOUR GREATEST MONEY-SAVING OPPORTUNITY.

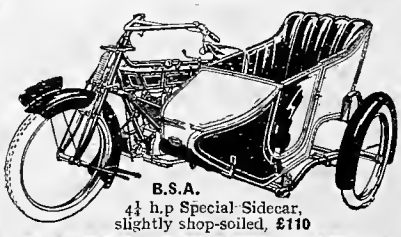
P. J. EVANS

NEW MOTOR CYCLES

Slightly Shop-soiled, at

REAL BARGAIN PRICES!

- ¶ **B.S.A.** "K2," with special sidecar..... **£125**
- ¶ **B.S.A.** "K," with B.S.A. sidecar **£115**
- ¶ **B.S.A.** "K," 4½ h.p., with special coachbuilt sidecar **£110**
- ¶ **B.S.A.** 4½ h.p. "K" solo **£88**
- ¶ **CALTHORPE** 2½ h.p., 2-stroke, single-speed **£38**
- ¶ **CALTHORPE** 3 h.p. combination, with "Maglita" set **£95**
- ¶ **CONNAUGHT** 2½ h.p., single-speed **£36**
- ¶ **ENFIELD** 8 h.p. comb., list price £160 .... **£133**
- ¶ **ENFIELD** 8 h.p. combination, with Lucas "Magdyno" lighting **£158**
- ¶ **ENFIELD** 2½ h.p., 2-stroke, list price £65.. **£58**
- ¶ **EDMUND** 2¾ h.p. Blackburne, with spring frame, Burman 2-speed gear, hand control clutch, kickstart. List price £98 ..... **£85**
- ¶ **EDMUND** ditto with J.A.P. engine..... **£72**
- ¶ **HUMBER** 4½ h.p. model, solo..... **£100**
- ¶ **HUMBER** ditto. combination..... **£135**
- ¶ **MASSEY-ARRAN** 2¾ h.p. J.A.P. engine .. **£65**
- ¶ **MASSEY-ARRAN** 2¾ h.p. Blackburne (with discs) **£82-10**
- ¶ **NORTON** 3½ h.p., with Sports sidecar and Lucas "Magdyno" lighting set **£165**
- ¶ **ROVER** 3½ h.p. 3-speed motor cycle, complete with Rover sidecar **£105**
- ¶ **ROVER** 3½ h.p. 3-speed motor cycle with special sidecar **£120**
- ¶ **ROVER** 3½ h.p. single-speed T.T. model .. **£82**



B.S.A.
4½ h.p Special Sidecar,
slightly shop-soiled, £110

¶ DON'T DELAY, CALL WRITE, OR 'PHONE NOW!

THE BIRMINGHAM HOUSE FOR MOTORISTS

81-91, John Bright Street

'Phone: Mid. 2910

'Grams: 'Lytcar, B'ham

MOTOR CYCLES FOR SALE.

Bat.

1920 8h.p. Bat 3-speed Combination, lamps, etc., perfect; £90.—Lee, Vellore, Station Rd., Llanishen, Glam. [5230

BAT-J.A.P., sporting, o.h.v. twin, Bosch, all on; after 6; £80, or offer.—25, Northborough Rd., Norbury. [5330

BAT 6h.p. 1920 Sporting Combination, fully equipped, perfect order; £70.—Underhill, 13, Cross St., Southport. [5466

5-6h.p. Bat-Jap Combination. 3-speed clutch, kick starter, lamps, hooter, speedometer; £80.—Gall, Bawdeswell, East Dereham, Norfolk. [5264

BAT Combination, 6-8h.p., Cowey, Easting, Lucas, very fine outfit, licensed; trial by appointment; £75.—Prior, 21, Ireton Rd., Colchester. [5739

1914 Bat-Jap Motor Cycle, 7-9h.p., coachbuilt sidecar, 3-speed, 2 new tyres, stored during war, tax paid, powerful; appointment.—L. Bawldwin, Chinnor Rd., Thame, Oxon. [5482

1920 6h.p. 3-speed Bat, with Henderson sidecar, all lamps, D.A. cylinder, Cowey horn and speedometer; sidecar screen, tax paid, perfect; £95.—7, Norwood Rd., Herne Hill, S.E.24. [5750

BAT-J.A.P. 1914 8h.p. Countershaft, Sturmey-Archer 3-speed, sporting aluminium sidecar, fully equipped, tax paid; £70.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [5599

Beardmore.

BEARDMORE-PRECISION, 1921, spring frame, speedometer, all accessories, numerous spares; £60.—Collier, Sunnyhurst, East St., Farnham. [5400

BEARDMORE-PRECISION, spring frame model, listed £85, new June, 1921, very little used; bargain, £70.—H. Gammon, Glendower, The Wych, Ct. Malvern. [5890

Blackburne.

BLACKBURNE 4h.p. Combination, brand new, cash £138, or £30 down and 12 payments of £9/11/6.—Below.

BLACKBURNE 8h.p. Combination, brand new; cash £155, or £35 down and 12 payments of £10/12/6.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [2898

2¾h.p. Blackburne engine, Burman 2-speed, purchased new June last, 5,000 miles, fast, splendid condition; £85, offers.—Box 6,969, c/o *The Motor Cycle.* (D) [5248

BLACKBURNE 1920 4h.p. Combination, K.S., S.A. 3-speed, speedometer, horn, screen, spares, tax; £90, offer.—Stevenson, Coombe Crags, Low Row, Carlisle. [X1261

BLACKBURNE 1920 8h.p. Combination, Swan sidecar, fully equipped and licensed, very fine order; £130.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6038

BLACKBURNE-WILKIN Combination, 1920, 4h.p. Blackburne, S.A., 3 speeds, clutch, kick starter, all-chain, Binks, Lucas Magdyno lighting, perfect; cost £190, sacrifice £85.—63, Solon Rd., Brixton. [5925

1920 4h.p. Blackburne and Montgomery Sidecar, Lucas dynamo, speedometer, special shock absorber, spares, perfect condition; £100.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6008

SPECIAL Super-tuned 2¾h.p. Blackburne, in specially-built racing frame, 48in. wheelbase, 60 m.p.h. guaranteed, electric lighting, horn, tax, etc., 2-speed Enfield gear with spare sprocket, Hutchinson tyres, winner of hill-climb; bargain, £65.—Box 6,937, c/o *The Motor Cycle.* (D) [4615

BLACKBURNE, 8h.p., 1921, with Volta sidecar de luxe, winner smart machine competition, illustrated "Motor Cycling" October 12th, magnificent and lavishly equipped outfit, electric lighting, Bonnikksen, insured, etc., mileage under 1,000, tyres unpunctured, sidecar fitted turned aluminium dash with instruments, etc.; purchaser will secure an outfit to be envied at an absolute bargain price, first £185 accepted; owner buying car; photos and further details sent; seen week-ends or appointment.—F.V., 12, Grange Rd., Gunnersbury, W.4. [5903

Bradbury.

BRADBURY, 4h.p., 2-speed; smart appearance, perfect, licensed; £22.—17, Heaton Rd., Mitcham. [5676

BRADBURY 4h.p. Combination, 1920, fully equipped; £70.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [6146

BRADBURY 4h.p. Combination, 3-speed, fully equipped, tax paid; £45.—Speechley, 86, Churchfield Rd., Acton, W.3. [5511

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Bradbury, 1921, shop-soiled only; reduced to £75; easy terms arranged. [6071

3½h.p. Bradbury, 1914, with cane sidecar, complete in perfect running order; any trial; owner requires cash.—Phœnix Garage, Church St., Lee, S.E.13. [5429

BRADBURY 1921 6h.p. Combination, as new £115; exchange.—Newnham Motor Co., 223 Hammersmith Rd., W.6. 'Phone: Hammersmith 80 [5865

 All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue.
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Douglas.

HERBERT ROBINSON, Ltd., 32-35, Green St., Cambridge. T.A.: Bicycles. Tel.: 995.—Below.

DOUGLAS 1922 3½h.p. Sports Model, overhead valves, all-chain drive, clutch and kick starter, specially designed for speed, best quality horn, lamps, and licence holder, etc.; £130.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 2¾h.p., 2-speed, best quality lamps, horn, licence holder, etc.; £75; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 2¾h.p., 3-speed, clutch, and kick starter, best quality lamps, horn, licence holder, etc.; £90; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge.

DOUGLAS 1922 4h.p. Solo, best quality lamps, horn, licence holder, etc., £110; combination, £135; delivery from stock; exchanges.—Herbert Robinson, Ltd., Green St., Cambridge. [5092

DOUGLAS 4½h.p., solo, 1921, all on, mileage under 200, perfect; 100 gns.—Dr. Heiser, Bath Rd., Colnbrook. [5475

DOUGLAS 2¾h.p., 1913, single speed, lamps, etc., perfect, tax paid; £33.—13, Crooklog, Bexley Heath, S.E. [5730

2¾h.p. Douglas, 2-speed, all on, just overhauled; £38, or nearest offer.—Swift, Jun., 6, St. Thomas St., Scarborough. [5431

DOUGLAS 2¾h.p., 2-speed, fully equipped, Tan-Sad; £23.—Easton, 24, Webbs Rd., Battersea Rise, S.W.11. [5390

2¾h.p. 1916 Douglas Bosch, Amac, lamps, horn, pump, tax paid; £35.—C. Houlston, 558, King's Rd., Fulham. [5817

1916 Douglas, 2¾h.p., 2-speed, fully equipped, licensed; real bargain, £32/10.—59, Aytoun Rd., Brixton. [5898

DOUGLAS 2¾h.p., 1916, 2-speed, not W.D., lamp set, etc., fine condition; £34.—Snow, Laurel St., Dalston, E.8. [6118

1918 4h.p. Douglas, 3-speed, kick start, as new; £55.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5252

DOUGLAS 3½h.p., 1919, spring frame combination, splendid condition; £85, or near offer.—2, Emanuel Av., Acton, W.3. [5578

1920 4h.p. Douglas Combination, spares, unused, excellent order; offers; after 5.—Monckton, 307, Clifton Rd., Rugby. [X1192

2¾h.p. Douglas, 2 speeds, clutch, and kick starter, taxed, splendid condition; £35.—6, Mortimer Rd., Notting Hill, W.11. [5222

£45.—2¾h.p. Douglas, 2-speed, excellent condition, footboards, long exhaust, little used.—Probert, Woolstanwood, Crewe. [5483

1912 Douglas 2¾h.p., 2-speed, tax paid, Binks. Bosch, perfect running order; £26.—32, Birmingham Rd., Stratford-on-Avon. [X1199

DOUGLAS 4h.p. Combination, fine order, just overhauled, tax paid; £75, or near offer.—25, High St. North, Dunstable. [4932

1919 4h.p. Douglas Combination, very good condition; £67/10—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5257

1918-1919 4h.p. Douglas Combination, lamps, horn, etc.; £75, or offer; after 6.—21, Upper Charles St., Goswell Rd., E.C.1. [5545

1919 Douglas, 2-speed, in excellent condition, fully equipped, special engine; £55.—Ratcliffe Bros., 200, Gt. Portland St., W. [6152

1921 Douglas, 2¾h.p., perfect, mileage negligible, fully equipped, licensed; 58 gns.—Fersfield, Westbury Rd., New Malden. [5902

LATE 1920 4h.p. Douglas, with 1921 new Douglas sidecar, lavishly equipped; £88; insured.—24, Balliol Rd., North Kensington. [5686

1920 Douglas, 3-speed clutch model, lamps, horn, licensed, new condition, original tyres; £70.—Sunningdale Motors, Ltd., Berkshire. [5464

DOUGLAS 2¾h.p., 2-speed, etc., excellent order, electric lighting set, motor suit, etc.; £30.—68, Gloucester Rd., Regent's Park, N.W. [5804

1919 Douglas, 2¾h.p., 2-speed, fully equipped, pillion, new tyres, indistinguishable from new; £52.—1, Norwood Rd., Herne Hill, S.E.24. [5748

4h.p. 1921 Douglas Combination, done about 200 miles; £120; would exchange for lightweight and cash.—Grimes, 18, Bruton Place, Bond St., W.1. [5976

1919 Douglas 2¾h.p., condition absolutely equal new, complete lighting set, guaranteed perfect; £43.—Maton, 37, Canterbury Rd., Dalston, N.1. [6134

DOUGLAS 1917 2¾h.p., new condition throughout; 40 gns.; exchange 1918 Triumph, cash adjustment.—30, Crystal Palace Park Rd., Sydenham. [5670

DOUGLAS Spares per return post. Order from the prompt firm on the spot. We pay postage.—G. H. Tucker, Redcliffe Hill, Bristol. 'Phone: 4042. [5994

BAMBERS OF SOUTHPORT.

CASH, EXCHANGES, EASY PAYMENTS

THESE PRICES WILL SAVE YOU POUNDS

SOLO.

1921 3½ h.p. SUNBEAM, as new £115
1921 2½ h.p. FEDERAL, 2-sp. £43
1921 2¾ h.p. VERUS-BLACKBURNE.. .. .. .. £65
1920 5-6 h.p. ZENITH £75
1920 3½ h.p. P. & M. £70
1920 2¾ h.p. DOUGLAS, 3-sp. £70
1920 2½ h.p. METRO-TYLER £58
1919-20 4 h.p. TRIUMPH .. £74
1919 2¾ h.p. DOUGLAS .. £60
1919 3½ h.p. NORTON .. £63
1915 5-6 h.p. INDIAN £50
1915 2¾ h.p. DOUGLAS, dynamo lighting £43

COMBINATIONS.

1921 8 h.p. ENFIELD Comb. £128
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4h.p. Douglas Combination, late 1918, electric lighting, luggage carrier, new chain and belt, and spare ditto, all tyres practically new, recently decarbonised; 80 gns.—63b, Drayton Gardens, S.W.10. [5829

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1921 Royal Enfield 2¼h.p., all on, insured; £50, or offer.—88, Eleanor Rd., Hackney. [5579

1921 Enfield 2-stroke; £45.—59, Palfrey Place, Dorset Rd, Clapham Rd., S.W.8. [5585

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1916 Enfield 3h.p. Twin, 2 speeds, kick; must sell; 35 gns.—53, Swaffield Rd., Wandsworth. [5722

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1918 Enfield Combination, equipped, not W.D.; £95; must sell.—R., 7, Thornbury Rd., Clapham Park, S.W.2. [5716

ROYAL ENFIELD, 1916, 3h.p., fully equipped, in splendid condition; £45.—23, Sydney Rd., Enfield, N. [6103

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1921 8h.p. Enfield Combination, dynamo lighting, lavishly equipped; £135.—24, Balliol Rd., North Kensington. [5687

ENFIELD 1917 3h.p. M.A.G. engine, 2-speed, licensed, complete as new; trial; £37.—Rogerson, Newtown, Wigan. [X1287

ENFIELD Combination, 1917, fully equipped, 700x 80 tyres, perfect condition; trial; £88.—144, Estcourt Rd., Fulham. [5576

1919 8h.p. Royal Enfield Combination, dynamo lighting, speedometer, splendid condition; £120.—The Morris Garages, Oxford. [5487

FOR Sale, Royal Enfield twin 2¾h.p., kick starter, 2-speed (1914), running order; on approval; £35.—T. Ager, Sudbury, Suffolk. [5271

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LATE 1920 8h.p. Enfield Magdyno Combination, Binks, perfect throughout, to be drawn for.—All particulars, Hughes, 74, Malpas Rd., S.E.4. [600

ENFIELD 2-stroke, 1919, sell £40, or exchange combination, not earlier than 1916, with cash adjustment.—99, Lancaster St., Newington Causeway, S.E.1 [555

ENFIELD 1921 Lightweight, 2-speed, very slightly soiled; £50.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [604

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1921, shop soiled only; reduced to £155; easy terms, no extra charge. [607

ENFIELD 1914 6h.p. Combination, fully equipped, new condition; £70; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X123

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1921 Enfield Combination, dynamo lighting, speedometer and horn, in exceptionally nice order; £150; easy payments if desired.—Harrods' Motor Cycle Dept., 118, Brompton Rd., London. [553

ENFIELD 3h.p., 1917, 2 speeds, clutch, kick starter, Bosch, Amac, lamps, engine recently overhauled by makers, excellent order, running well; nearest £48.—Davy, Rosemont, Pomphlett, Plymouth. [526

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1921 8h.p. Enfield Combination, Tan-Sad, Eastings luggage grid, tools, etc., tax paid, 3 lockers, as new; this machine only been run in; £120, nearest any trial; must sell.—18, Marlborough Rd., Old Kew Rd., S.E.1. [576

1921 8h.p. Enfield Combination, speedometer, lamps, horn, Triplex wind screen, spare cover and tube, tax paid, fully insured till next April, condition perfect; owner going abroad; trial runs; gift, £130 cash.—Kearns, Monkton Combe School, Bath. [589

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7-9h.p. Harley Combination, not W.D., large sidecar, screen, lamps, and horn, splendid condition; bargain, £78.—97, Longhurst Rd., Lewisham, S.E.13. [5886

1915 7-9h.p. Harley Combination, dynamo lighting, as new, £75; 1919 7-9h.p. Harley, as new, £65.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5253

HARLEY-DAVIDSON 7-9h.p. 1918 Sports Combination, all extras, speedometer, 2 gas cyls., perfect condition; £105.—Skilton, 2, Lime Tree Terrace, Pitt St., Peckham. [6080

1920 7-9h.p. Harley-Davidson and Montgomery sidecar, fully equipped, electric lights and horn, perfect condition, Tan-Sad; price £125.—75, Cleave Rd., Gillingham, Kent. [5377

HARLEY Combination, late 1919, with Lucas dynamo lighting, hood, screen, speedometer; £125.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5859

HARLEY-DAVIDSON 7-9h.p. Combination, 1919, P.H. lamps, unscratched, original tyres, guaranteed perfect; £110.—Eves, c/o Healey Royle, Wills Mews, Wills Rd., Shepherd's Bush. [6114

1915 Harley-Davidson and sidecar, Bosch mag., electric lamps, rear drive speedometer, Easting, aluminium discs, splendid condition; any trial; £98.—Selway, 69, Chetwynd Rd., London, N.W.5. [5630

HARLEY Combination, late 1919, electric model. Henderson Elite sidecar, Cameo, aluminium discs; £125; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5858

HARLEY-DAVIDSON, 1916-17, 7-9h.p., speed model, as new, special sports engine, clutch; bargain, £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

HARLEY-DAVIDSON 1919-20 Combination, Tan-Sad, complete Lucas dynamo lighting, all tyres good, smart appearance, mechanically perfect; £120.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [6093

HARLEY-DAVIDSON 1920, 7-9h.p. Combination electric lighting, hood, screen, side wings; cost £272, accept £150; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1229

1919 Harley and H.D. Sports R33 Sidecar, complete, electric light, Bosch mag., special exhaust, new tyres, etc., very attractive and fast, guaranteed; any trial or examination; bargain, £125.—Seen at Hay Ford, Duncan St., Islington. [5561

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HARLEY-DAVIDSON 1918 Coachbuilt 7-9h.p. Combination, magneto model, fast, 3 speeds, kick start, foot and hand clutch, splendid condition and appearance, guaranteed perfect, hood, wind screen, lamps, tools, aluminium discs; trial any time; bargain, £95.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney, London. [5694

HARLEY-DAVIDSON 7-9h.p. Electric Model, late 1920, only done 1,400 miles, fitted with large bulbous back sidecar, beautifully upholstered, fully equipped with horn, speedometer, lamps, screen, Tan-Sad, etc., and licence paid; absolute bargain, £155; only wants seeing.—Bastone's, 228, Pentonville Rd., King's Cross, London, N.1. [4263

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1921 Henderson, 4-cyl., dynamo lighting, Brookes cantilever saddle, many special fitments, nearly new; cost £230, sacrifice £150.—32, Victoria Rd., Sheffield. [5467

1918 10h.p. Henderson and beautiful sidecar, in almost new condition; this cycle only wants seeing; must sell; £115; open to expert examination.—Apply, 205, Brondesbury Park, Willesden Green, N.W. [5366

HENDERSON Combination, 1920, fully equipped, sporting sidecar, long plated exhaust, whole outfit very smart and in condition nearly new; £148 10; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6061

HENDERSON, 1921 (May), Model K, 4-cyl., 3-speed, 2-seater sidecar (Millford), acetylene lamps, horn, tools, in perfect condition throughout; £185; exchange lower power combination.—203, Newland Av., Hull. [X1253

HENDERSON, late 1920, dynamo lighting, Swan sidecar, Auster triplex screen, also Easting, Arc discs, 65 m.p.g., 76 m.p.h. Brooklands, special engine, no overhaul required, condition tyres, enamel, very good, insured to April, 1922; given away at £140; photo.—H.M. Inspector of Taxes, King's Lynn, Norfolk. [5607

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Humber.

HUMBER 2½h.p., exceptionally good condition, taxed; £16.—Halkes, Waddington, Lincoln. [X1254

1920½ Humber 4½h.p. Flat Twin Combination, practically new; £125.—14, Claremont Hill, Shrewsbury. [5924

HUMBER 3½h.p. Coachbuilt Combination, 2-speed, splendid order throughout, tax paid; £28.—Speechley, 86, Churchfield Rd., Acton, W.3. [5644

HUMBER 3½h.p. Coachbuilt Combination, 3-speed, clutch, kick starter, good condition, engine just overhauled; bargain, £38.—4, Austin Waye, Uxbridge. [5669

1921 4½h.p. Flat Twin Humber Motor Cycle, all-chain drive, demonstration motor cycle; first cheque secures, 97 gns.—Johnsons' Motor Works, King's Lynn. [5759

1911 Humber 3½h.p., S.A. 3-speed, clutch, overhauled, good running order; £28/10, or good Auto-Wheel part.—Jordan, Steeple Ashton, Trowbridge. [5734

HUMBER Combination, in beautiful condition, smart coachbuilt sidecar, 2-speed, clutch, handle start, tax paid, etc., only needs seeing; £45, or near.—Motorist, 769, Romford Rd., Manor Park, London, E. [5880

1921 Humber Flat Twin, Grindlay sidecar, Tan-Sad, wind screen, Gamage accumulator lighting set, licensed to Christmas, 10 months' insurance, not ridden 500 miles, as new; £145.—Wilkins, 110, Yardley Rd., Acocks Green, Birmingham. [X1273

HUMBER Motor Cycles.—The Layton Garages, sole agents for Humber motor cycles, can give delivery of the new flat twin speed model, and guarantee 75 m.p.h.; this motor cycle at £100 will be the best flat twin bargain of 1922.—Enquiries invited and treated with every courtesy.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity. [6030

1921 4½h.p. Flat Twin Humber Combination, all-black model, perfect running order, complete with Lucas acetylene lamps, Cowey horn and reflector, Smith's trip speedometer, Tan-Sad pillion, spares include two chains, 2 valves and springs, 2 piston rings, 1 front fork spring, third party insurance, done 3,000 miles; cost £215, sell £150, or nearest offer.—Box 7,052, c/o *The Motor Cycle.* [6022

Indian.

FOR Sale, Indian and sidecar, 1914; what offer?—Robinson, Vicarage, Wantage. [5974

SPLENDID Indian Motor Bicycle, good order; £28.—Adlam, Church Rd., Overton, Hants. [5474

1916 Indian 5-6h.p., 3-speed, perfect condition; £40.—Baines, 166, Belgrave Gate, Leicester. [X1318

INDIAN 7-9h.p., clutch model; £28; splendid order throughout.—Speechley, 86, Churchfield Rd., Acton, W.3. [5513

MOTOR CYCLES FOR SALE.

Indian.

1919 7-9h.p. Indian, 3-speed, clutch and K.S.; exchange for 1914 5-6h.p. F.N. and cash.—49, Red Lion St., W.C.1. [6002

INDIAN Combination (June, 1920), mileage 3,000, excellent condition; £125.—Reade, 214, High Rd., Wood Green, London. [5452

INDIAN Combination, 1916, in perfect condition; £75. — Full particulars, apply, Owner, 14, Ormiston Rd., S.E.10. [5420

INDIAN, 1919, 7-9h.p., spring frame, 3-speed, Powerplus; bargain, £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. [0072

1916 Indian 5-6h.p., 3-speed, K.S., clutch, all on, sound, fast machine; £60.—Harding, 1, Commercial Sq., Haywards Heath. [5568

INDIAN Scout 4h.p., 1920, fully equipped, speedometer, etc., insured, lovely machine; what offers? —30, Mornington Rd., Wanstead, E.11. [5412

1914 5-6h.p. Indian, 2-speed, lamps, horn, tax paid, very good condition; £30.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5787

1914 Indian Combination, 2-speed, kick starter, clutch, disc wheels; offers or exchange 3½h.p. single.—35, Church Rd., Upper Norwood. [5806

INDIAN Scout, 1921 (April), dynamo lighting, speedometer, ammeter, electric horn, perfect condition; £110.—43, Freezywater, Waltham Cross. [5851

1920 Indian Scout Combination for sale, just overhauled lamps, speedometer, private owner; £90, or near offer.—Abery, Porchester Mews, Bayswater. [5565

1919 Indian 7-9h.p. Combination, electric lighting, 2 horns, hood, screen, child's seat, insurance, tax paid, splendid condition; £110.—179, Henley Rd., Ilford. [5469

INDIAN 1919 Powerplus Combination, dynamo lighting, ammeter, rear drive speedometer, Cameo screen, etc.; £95.—Dixon Bros., 172, Brownill Rd., Catford. [5298

INDIAN 1920 Powerplus Combination, fully equipped and licence paid; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6043

1919 7h.p. Indian Powerplus, 3-speed, solo, excellent condition; £53.—Edwards, 80, Harrington Rd., South Kensington. Deferred payments and exchanges. [6010

1920 Indian Powerplus Combination, electrically equipped, special Millford sidecar, perfect condition, many spares; offers, please.—Hancock, Manor Rd., St. Albans. [5290

INDIAN 1920 Combination, mileage under 5,000, wind screen, absolutely sound, licence and insurance; £125; seen in town.—7, St. John's Park, Blackheath, S.E.3. [5314

T.T. Indian 7-9h.p., 1915, thoroughly overhauled and re-enamelled, fully equipped, speedometer, licence paid; a bargain, £35.—E. Talbot, Minshull Hall, Middlewich, Cheshire. [5345

1919 Indian 7-9h.p. Powerplus, licensed, speedometer, dynamo electric lighting, complete, and in excellent order; £70, or nearest offer.—Box 6,787, c/o *The Motor Cycle.* [3672

1915 Indian 7-9h.p. Racing Cluch Model, perfect condition, tyres as new, electric lamps; £65, or exchange lightweight and cash or combination.—80, High St., Bexley. [6125

£48, absolute gift.—1914 7-9h.p. Indian c.b. combination, spring frame, pillion seat, 2-speed, luggage carrier, Amac carburetter, guaranteed order.—44, Chapel St., Marylebone. [5617

INDIAN 1920 7-9h.p., electric, Swan sporting sidecar, choice of two bodies, under 7,000 miles; nearest £125; private owner.—Culver, Crouch End Motor Co., Coleridge Rd., Crouch End. [5743

INDIAN Scout, late 1920, electric light, extra lamp, speedometer, excellent condition, only done 4,000 miles; £110; can be seen at London or Portsmouth.—Box 6,887, c/o *The Motor Cycle.* [4426

INDIAN 7-9h.p., 1921, Montgomery sidecar, fully fully equipped, in new condition, insured; sell 85 gns., or exchange 2-speed 2-stroke and cash.—28, Frederick Rd. Custom House, E.16. [5795

1921 7-9h.p. Indian Powerplus Combination, electrically equipped, horn, speedometer, as new; £165; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 248, Deansgate, Manchester. [X1225

1921 Indian Scout, electrical model, de luxe sidecar, combination, cost £211 Easter last, tax, insurance paid, spares; bargain, £120.—Carter, Lyncombe Sunnyside, Wyke Regis, Weymouth. [5783

ABSOLUTELY the finest bargain for money is undoubtedly the Silent Indian, fully equipped at £175; and the Rolls-Royce of solos, the Indian Scout, less electric equipment, but with rear drive speedometer, £120. Let me have your order now; delivery immediately.—'Phone: 943.—Horswill, 42, Bridge St., Chester.

WHY have your Indians butchered for reliable overhauling. Send or 'phone 943 Chester. Over 10 years' experience with Indians.—Horswill, 42, Bridge St., Chester. [3490

For handle-bar, number-plate, and sidecar fitting; in solid brass, in brass or with plated finish.
Price 10/6. Postage 6d.

Two Sidecar Bargains.

Speedy Model Sidecar, sound construction, suitable up to 4 h.p. machines, strong underslung chassis, with enclosed, wheel, 4 point suspension, complete with apron and tyre ....
Price £25 List Price £28 10s

Douglas chassis, reconditioned, stove-enamelled, with new springs, and mudguard, and No. 1 Touring Model Burlington Sidecar Body, with Storm Apron and New Tyre .....
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Convert your clutch into Foot as well as Hand-Control. A neat pedal, finished in dull plate, and so designed that it can be fitted in a few moments by an amateur. Its effect is to convert the standard machine into a Foot and Hand Operative Clutch Model. Price **4/-**. Postage 4d.
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Piston Rings, **1/6**; Inlet Valves, complete **4/-**; Exhaust Valves, complete, **8/-**; Rear Wheel Spindle, with Cones, **5/-**; Front Wheel Spindle, with Cones **4/-**; Wheel Cups, **8d.**; Tool Kits, **18/6**; Rear Stands, **22/6**; Oil Squirt, **3/-** T.T. Handle-bars, with grips, new, **15/-**; Renolds Chains, 50 links, **15/-**.
Armoured Tool-bags with strap fastenings and clips, for Triumph, **7/6.**

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'Phone: Brixton 2417.
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MOTOR CYCLES FOR SALE.

Indian.

1920 Indian Combination, De Luxe bulbous sidecar, dynamo lighting, electrical and mechanical horns, speedometer, under 3,000, as new; any trial; £96.—Drayton, 16, Jessamy Rd., Weybridge. [5891

MAGNIFICENT 1920½ Indian 7-9h.p. Combination, dynamo, amp., speedometer, as new, practically unscratched, used only week-ends; trial; £135.—Oatley, 65, Wendover Rd., Harlesden, N.W.10. [5531

1919 7-9h.p. Indian Combination, fully equipped, £85; 1916 5-6h.p. Indian combination, fully equipped, £65; positively best value obtainable.—Crewford Garage, Stock Orchard St., Caledonian Rd., N.7. [5282

INDIAN 7-9h.p. 1916 Combination, Mills-Fulford sidecar, fitted with Easting screen, hood, etc., electric and acetylene lighting, spares, etc., in splendid condition; price £100.—Apply, Fielding, Bishop's Tachbrook, Leamington Spa. [X1276

1920 Indian 7-9h.p. Combination, Easting, electric lighting, horn, speedometer, spare cover, tax paid, insurance till May, mileage under 5,000, owner appointed abroad; £125, or near offer.—Besnat, Prospect Villa, Minster, Sheerness. [5274

INDIAN 1919 Powerplus Combination, complete with genuine Indian sidecar, dynamo lighting, speedometer, Cameo screen, etc., mechanical condition guaranteed, appearance and tyres good; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6044

WANTED, purchasers for any model of new 1921 Indian motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0655

1919-1920 Sporting 7-9h.p. Indian, T.T., 3-speed, K.S., clutch, in new condition throughout, re-enamelled and plated, discs, 8 v. electric lighting, lighted car head lamp, mechanical horn, new Bosch, new Palmer tyre, cut-out, takes English plugs, spares; any trial; £95, tax paid; exchange—G.P. Morgan, or new 3½h.p. sports solo, cash adjustment.—Martin Lax, 171, Hilton Rd., Leeds. [5386

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3989

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1599

Invicta.

1920 Invicta, Villiers engine, single speed, very little used and in splendid order; £40; easy payments if desired.—Harrods' Motor Cycle Dept., 118, Brompton Rd., London. [5544

1920 Invicta 3½h.p. Combination, powerful, Abingdon King Dick engine, just overhauled, condition nearly new, Sturmey 3-speed, Cameo screen, Paragon folding sidecar chassis, enabling passage through 36in. doorway, speedometer, luggage grid, Tao-Sad, lamps, front new, tools, Dunlop Magnum unpunctured; £100, or near offer; tax paid, insurance to July.—7, Ethelbert Terrace, Margate. [5786

Ivy.

IVY 2½h.p., all-purpose, discs, splendid condition, cheap.—49, Brondesbury Rd., Kilburn, N.W.6. [5655

IVY Three, May, 1921, Sturmey 2-speed, clutch, kick start, lamps, horn, accessories, spares, perfect; £61 —Byworth, 4, Mead Rd., Uxbridge. [5211

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0717

James.

DAN GUY, Weymouth.—1921 4¼h.p. James Combination from stock; price £155. [0689

JAMES 4¼h.p., all on, Binks, 1914, good condition, bargain, £32.—18, Deansfield Rd., Eltham, S.E. [5577

JAMES Motor Cycles, new or second-hand; spares and repairs.—W. Whitby and Son, 7, The Vale, Acton, W.3. [5661

1916 4¼h.p. James Combination with Mills-Fulford sidecar and extra child's seat, all on, licence, £80.—Sandums, 336, Gray's Inn Rd., W.C.1. [0777

£40.—James 4¼h.p., in good condition. Bosch magneto, B. and B. carburetter, Grado-multi gear, kick start; any trial.—Rosebank, Chertsey Rd., Addlestone Moor, Surrey. [5311

1920 6h.p. James de Luxe Combination, Stewart trip, P. and H. lamps, Easting, luggage grid, good tyres, insurance, spares; £135.—Reid, 40, Forest Hill Rd., Dulwich. [5777

1919 5-6h.p. James Combination, repainted maker's colours, speedometer, luggage grid, electric lighting, tyres good, new chains; a bargain, £100.—D. Watt, Sylvana, Winton Rd., Farnham. [5433

JAMES 4¼h.p. Combination, 1915, Canoelet, Tao-Sad, luggage grid, Cowey, Lucas lamps and horn, excellent condition throughout; £78; trial.—33, St. John's Av., Harlesden, N.W.10. [5661

MOTOR CYCLES FOR SALE.

James.

JAMES 1920 6h.p. Combination, fully equipped, speedometer, Easting, as new; £120; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1230

JAMES 1918 6h.p. Combination, dynamo lighting, and full equipment, mileage less than 2,000, almost new condition; £105.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6045

JAMES Combinations, all types, from £50 to £150, many bargains in stock. James spare parts for 1½h.p. and 5-6h.p. models, 1913-1921.—W. Whithy and Son, James Specialists, 7, The Vale, Acton, W.3. 'Phone: Chiswick 1513. [5666

J.E.S.

J.E.S., 1½h.p. 1918, appearance as new, splendid goer, tax paid; £20.—Prout, Canon St., Taunton. [5919

J.E.S., 1920, 2½h.p., good condition, licensed; £60, or near offer; after 5 p.m.—61, Dongola Rd., Tottenham, N.15. [5893

Lea-Francis.

LEA-FRANCIS Combination, twin J.A.P., countershaft, perfect; £50.—Jackson, Castle Rd., Kenilworth. [X1281

LEA-FRANCIS, 3½h.p. twin M.A.G., 3-speed, clutch, kick starter; price £100, list price £125, sacrifice.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

Levis.

DAN GUY, Weymouth.—Levis 1921 models in stock; £60. [0554

LEVIS Popular Model, 1921, licence, perfect; £38.—2, Chudleigh Rd., Ladywell, S.E. [5438

LEVIS Popular, 1916, splendid order, runs like new; £23.—34, Manchester Rd., Swindon. [5849

LEVIS 1921, 2-speed, fully equipped and equal new; £50—132, High Rd., East Finchley. [6082

2¼h.p. Levis, 1916, lamps, horn, discs; £28.—A. Barber, College Rd., Hextable, Kent. [5437

1919 Levis, 2-speed, all-chain drive, tax and insurance paid; £35.—H. Rock, Cradley, Staffs. [X1291

LEVIS 2¾h.p., 2-stroke, splendid order throughout; £26.—Speechley, 86, Churchfield Rd., Acton, W.3. [5646

LEVIS, 2½h.p., 2-speed; £28.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5863

LEVIS Popular, perfect, powerful, easy starter, carry 2; honest bargain, £36, near offer.—92, High St., Wandsworth. [5872

LEVIS, enamelled, plated, completely overhauled, every mechanical part renewed, tax paid; bargain, £32.—White, Brighton Rd., Addlestone, Surrey. [5821

LEVIS, 1917, 2¼h.p., registered, discs, T.T. bars, variable jet, straight exhaust, running and appearance excellent; £35; after 7.—Hughes, 379, Euston Rd., N.W. [5606

LEVIS 2¾h.p., 2-speed, powerful, speedy, 110 m.p.g., lamps, mirror, discs, enamelled violet, tax paid; £39. Before 7, after by appointment.—Fowler, 12, Broadway, Streatham. [5744

1921 Levis 2¼h.p., popular model, very little used, and complete with accessories; £45; easy payments if desired.—Harrods' Motor Cycle Dept., 118, Brompton Rd., London. [5541

LEVIS 1921½ Sports Model S, 2¼h.p., 2-speed, clutch, perfectly run in, unscratched, £20 spares; £60, or exchange Blackburne-engined machine; photo.—White, Notts Rd., Loughborough. [X1212

Marloe.

MARLOE, 2¾h.p. Blackburne, brand new, countershaft; cash £68/10, or £14 down and 12 payments of £5.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [5132

Martinsyde.

MARTINSYDE, just delivered, unregistered; £125.—Box 98, c/o *The Motor Cycle*. [6026

MARTINSYDE Combination, 1921, shop-soiled, makers' guarantee; £130.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [6155

MARTINSYDE 6h.p. Combination, new Ang., mileage 300, absolutely as new, Lucas lamps, Klaxon, Tan-Sad; £120, or offer.—Jones, 2, Cambridge Crescent, Watford. [X1270

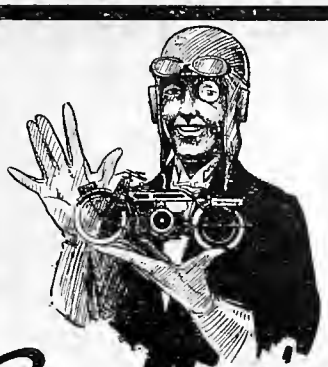
1920 6h.p. Martinsyde Combination, lamps, horn, screen, indistinguishable from new; £105.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6007

Matchless.

BRAND New 1921 Matchless, M.A.G. engine; £152. 24, Balliol Rd., North Kensington. [5692

1919 Matchless Combination; £90.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [5584

1920 Matchless Combination, fully equipped; bargain, £110.—Ratcliffe Bros., 200, Gt. Portland St., W. [6151



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Engine parts: Cylinders, front only, **£1 15s.**; Pistons, complete, **12/-**; Piston Rings, **1/6**; Gudgeon Pins, **1/3**; Big End Bushes, **3/-**; Small End Bushes, **2/-**; Exhaust Lifter Links, **7/6** per set; Timing Slide Ball Race, **12/-**; Cam Wheel and Intermediate Wheel Studs, **3/-** each; Rocker Arm Studs, **2/6**; Intermediate Wheels, **5/-**; Valve Guides, **2/-**; Tappets, complete, **3/-**; Tappet Guides, **2/6**; Fly-wheel Sprockets, 16, 17 and 18 T, **3/9**; Exhaust and Inlet Valves complete, **4/-** each; Silencers, complete with Unions, **17/6**; End Plates, **9d.**; Carburetter Gauze, **4d.**; Gauze Washer, **6d.**; Amac Jets, No. 26, **2d.**

2¾ h.p. "Douglas" Tank, **£2 15s.**; Oil Pump Plunger, complete, **4/6**; Petrol Filter and Tap combined, **3/6**; Drain Tap, **2/-**; Tank Caps, glass or plain, **2/-**; Drip-feed Needle Valves, **4/-**.

Frame Parts: Frame, **£7**; Mudguards, **12/-** per pair; Rear Stands, **12/6**; Stand Bolts, **6d.**; Rear Stand Clips, **1/6**; Front Stands, **4/-**; Clips, **1/-**; Frame Races, **1/-**; Belt Rims, not drilled, **12/6**; Wheel Rims front, **7/6**; Rear, **8/6**; Carriers, **17/6**; Saddles **£1 10s.**; Footboards, **12/6** per pair; Handle-bars, semi T.T., **15/-**.

Front Fork Blades shop-soiled, **25/-**; Front Fork Springs, plated, **2/6**; Fork Spindles long, **1/9**; short, **1/6**; Spindle Nuts **4d.**; Front Brake, complete with lever and cable, **15/6**; Head Locking Rings, **1/6**.

2¾ h.p. "Douglas" Gear Box original aluminium halves, but fitted throughout with new Ball Races and Gears **£5**; Pulleys, **6/-**; Chain Wheels **7/-**; L.H. Chain Wheel Nuts, **8d.**; Adjustable Clamp for Gear Rod, **4/-**; Ball Races, large, **7/6**; small, **5/6**; All other parts in stock.

Special Deep Armoured Toolbag with clips, **9/6**.

Carriage on all Spares extra.

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MOTOR CYCLES FOR SALE.

Matchless.

MATCHLESS, brand new, unregistered 1921 standard combination; sacrifice £148.—9, West Heath Av., Golder's Green. [6067

1921 New Standard Model H Matchless Combination, M.A.G. engine; end of season bargain, 150 gns.—Ross, 86, High Rd., Lee, S.E. [1708

MATCHLESS Combination, Model H., July, 1921, M.A.G., lamps, tools, insurance; £165, bargain.—"Culbreen," Sheerwater Av., W. Byfleet. [5411

MATCHLESS.—Still a few 1921 shop-soiled models; standard £160, 2-seater £165, Magdyno £20 extra.—Maudes', London, Exeter, and Walsall. [X1330

JULY, 1921, Matchless combination, M.A.G., Magdyno, done 1,500 miles; £175; owner returning Africa.—Larkfield Grange, Rawdon, Leeds. [5435

SHEFFIELD Agent for Matchless. All models in stock. Sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

MATCHLESS, 1921 model, M.A.G. engine, sports sidecar, etc., excellent condition; £130.—Packman, 86, Bournbrook Rd., Bournbrook, Birmingham. [X1266

MATCHLESS, 1921½ (August), H2, fully equipped, guaranteed as new; cost nearly £200, sacrifice 147 gns.—Hynard, Farmer, Eynsford, Kent, or 'phone Paddington 5788. [5939

MATCHLESS Combination for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5853

1921 Matchless Brand New Bargains.—Standard combination, £160; 2-seater combination, £165; sports combination, £150; Magdyno lighting £18 extra.—Below.

1922 8h.p. Matchless Sports Solo, in stock; £130.—Edwards, 50, Harrington Rd., South Kensington. [6016

1921 Matchless Combination, Magdyno lighting, spare wheel, etc., brand new, unused, unregistered, must sell; £158.—41, Madrid Rd., Barnes. Deferred payments and exchanges. [6009

MATCHLESS 1921 Combination, 2-seater sidecar, Magdyno, hood, 2 screens, speedometer, spare wheel, luggage grid, etc., practically new; bargain, £165.—23, Gt. Queen St., Kingsway. Regent 3198. [5993

MATCHLESS 1919 Victory Model, fully equipped, including Cameo wind screen, Tan-Sad patent leaf-spring saddle, recently completely overhauled by Colliers; £110.—Outlands, Ashwood Rd., Woking. [5319

MATCHLESS 1920 Combination, M.A.G. engine, Easting screen, lamps, exceptional condition; £125; exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5857

MATCHLESS 1920 Combination, M.A.G., Lucas lamps, hood, screen, speedometer, perfect condition; £127; exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5856

MATCHLESS Combination, Model H., complete with lamps, spare wheel, speedometer, almost new, tax paid, insured, splendid condition; any trial; £160, or offer.—Shackleford, Post Office, Streatham Rd., Mitcham. [5359

1921 Matchless H. Combination, dynamo lighting, hood, screen, spare wheel, speedometer and pillion, insured and tax paid; all at £186; guaranteed running order.—Apply, "Hop Pole," Gambia St., Blackfriars, London. [5477

MATCHLESS New 1921 Standard Combination, straight from works, £160; sports combination, £150; 2-seater, £165; new solo Model J, £130.—Agents, R. B. Clark and Co., 7, Exhibition Rd., South Kensington. [5067

MATCHLESS Combination, 1920, Lucas lighting, spare wheel, new wind screen, M.A.G. engine, splendid condition; any trial; absolute bargain, owner going abroad, £120.—P.C., 2, Hanbury St., Spitalfields, E.1. [X1217

1920 7-9h.p. Matchless Combination, spring frame, Magdyno electric lighting, hood, screen, spare wheel and chain, speedometer and all accessories; any trial; written guarantee given; £140.—44, Richmond Rd., Thornton Heath. [5272

MATCHLESS, 1921, 8h.p. M.A.G. engine, 2-seater sidecar, speedometer, compressed acetylene lamps, Tan-Sad, watch, all extras, outfit like new; £135; seen any time.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5786

MATCHLESS, 1921, special offer, brand new, slightly shop-soiled, free delivery; sports combination £150, standard combination £160, family combination £165.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

135 GNS.; exchange cheaper machine and cash.—Matchless 1920 combination, Model H, Magdyno, hood, screen, luggage grid, spare wheel, speedometer, smart turnout, fast, any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [4802

WANTED, purchasers for any model of new 1921 Matchless motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0651

MOTOR CYCLES FOR SALE.

Matchless.

1921 Matchless, shop-soiled showroom models, standard; £160; don't miss this chance.—Knight, Upper Tooting Rd., S.W. 'Phone: Streatham 2390. [5281

MATCHLESS 1921, M.A.G. 8h.p., completely equipped, including Easting wind screen, Lucas lamps and horn, detachable wheels and spare wheel, almost new condition; indisputable bargain at the cash price of £155.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. T.A.: Integrity, Oxford. [6031

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

SAM E. CLAPHAM, Motors, Greenwich. 'Phone: 751.—The premier Matchless agent. Can offer some exceptional bargains in new and second-hand 1921 models at end of season prices. Get in touch with Sam E. Clapham and secure one. Place your orders now for 1922 models with the agent. Note address: Sam E. Clapham, Motors, 27, Stockwell St., Greenwich, S.E.10. [3179

1921 Matchless, H2, M.A.G., 2-seater Combination, new Aug. 24th, Lucas Magdyno lighting, trip speedometer, horn, hood, side curtains, step, spare wheel, tyre unused, mileage under 2,500, recently decarbonised, carefully run in, whole combination in execellent condition, deliver 50 miles; cost £233 (receipts shown); accept £180; owner leaving country November; genuine.—M., 21, Alexandra Rd., Worthing. [5338

MATCHLESS Combination, Sept., 1919, as new, not run 2,000, 8h.p., 3 speeds, overhauled last May, replated and stove enamelled black, with gold lines, Easting screen, sidecar mat, Tan-Sad with back and footrests, Cowey trip speedometer, watch, Lucas horn, F.R.S. electric lighting set with 3 lamps, polished aluminium footboards, interchangeable wheels with spare, tyres nearly new, tax paid; seen and tried any time; nearest £125.—73, High St., Merton, S.W. [5555

Spare Parts:

TASSELL, 1a, Bloomfield Rd., Plumstead, for anything Matchless at the right price. [6144

Metro

METRO-TYLER, 4h.p., 3-speed, Blackburne engine, special competition machine, £80; also some second-hand lightweights, guaranteed.—The Metro-Tyler Co., Ltd., Banister Rd., Kilburn Lane, W.10. [5899

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

Monarch

MONARCH 1920, 6h.p. J.A.P., Sturmey-Archer 3-speed, Millford sidecar, fully equipped, practically as new; £100.—Bunting's Motor Exchange, Wealdstone. [5969

New Hudson.

2¾h.p. New Hudson, 3-speed, clutch, tax paid; £25, or offer. After 6.—1, Tankerville Rd., Streatham. [5551

£37/10; 4h.p. New Hudson combination, 3-speed, coach sidecar, ride away; offers.—Evers, Nenton Rd., Burton-on-Trent. [5770

£45.—New Hudson 2¼h.p. De Luxe, 2-speed, 1920½, lamps, horn, very low mileage, as new.—Taylor, 42, Nolton St., Bridgend, Glam. [5303

NEW HUDSON-J.A.P. 3½h.p. Coachbuilt Combination, 3-speed, clutch, hood, screen, excellent condition, licence; 50 gns.—128, Brockley Rise, S.E.23. [5476

NEW HUDSON 1920 Model De Luxe Lightweight, completely equipped and almost new; £37/10.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4825

NEW HUDSON 1914 Big Six Combination, hub gear, not used during war, excellent condition and appearance, 3 new tyres and spare, all on; £70.—Smith, 44, South Bar, Banbury. [X0945

NEW HUDSON Lightweights, all models, on view; Popular, 50 gns.; de luxe, 65 gns.; Ace, 75 gns. Spares for 2¼h.p., 3½h.p., and 6h.p. machines stocked. Catalogues and any information by return.—New Hudson Depot, 45, Gray's Inn Rd., Holborn, W.C.2. [4094

1920 6h.p. Twin New Hudson Combination, tax paid, Easting screen, Smith speedometer, Lucas and F.R.S. lamps, legshields, horn and luggage grid, splendid condition; first cheque secures; bargain, £75; no offers.—Seen 336, Gray's Inn Rd., W.C.1. 'Phone: Museum 3427. [0732

New Imperial.

1920 New Imperial 8h.p. J.A.P. Combination; £85.—9, Church Rd., Willesden. [5708

NEW IMPERIAL, 2¾h.p. J.A.P., countershaft, 1920; £42/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6064

1921 New Imperial-Jap, 2-speed, clutch, and kick start, beautifully equipped; £50.—24, Balliol Rd., North Kensington. [5691

STILL FURTHER REDUCTIONS

Original Makers' Prices. £	s.		Ours. £	s.
186	4	**ENFIELD** 8 h.p. 2-seater, dynamo lighting	163	0
186	4	**ENFIELD** 2-seater, dynamo lighting	159	0
185	0	**MATCHLESS** Combination	157	0
215	0	**MATCHLESS** 8 h.p. 2-seater, dynamo	182	0
160	0	**ROYAL ENFIELD** 8 h.p. Combination	135	0
155	0	**JAMES** 4¼ h.p. Combination	129	0
155	0	**P. & M.** 3½ h.p. Combination	120	0
165	0	**ARIEL** 6-7 h.p. Combination	140	0
250	0	**CLYNO** Combination	165	0
155	0	**AMERICAN EXCELSIOR** 7-9 h.p. Combination	135	0
168	0	**NEW IMPERIAL** 8 h.p. and Swan sidecar	130	0
145	0	**TRIUMPH "H"** 4 h.p., and Gloria sidecar	135	0
213	0	**MORGAN** Family Model, fully equipped, tax free	195	0
115	0	**ZENITH** 5 h.p.	99	10

SECOND-HAND.

1921	**LEVIS** Popular, as new	42	10
1920	**ENFIELD** Combination, "All on," as new	115	0
1920	**ENFIELD** Combination, "All on"	112	10
1920	**HARLEY-DAVIDSON**, H.-D. sidecar, aluminium discs, electric equipment, speedometer, as new	145	0
1920	**HARLEY-DAVIDSON** and H.D. sidecar, acetylene lighting, nicely equipped	140	0
1920	**HARLEY-DAVIDSON** and H.D. sidecar discs, electric equipment, speedometer	150	0
1916	**B.S.A.** all chain and sidecar	68	0
1916	**DOUGLAS** 2¾ h.p. "All on" (5)	50	0
1920	**DOUGLAS** Combination, "All on"	75	0
1920	**A.J.S.** Combination, every accessory	125	0
1920	**MORGAN** Family Model, as new	175	0

AND MANY OTHERS.

LATEST PREMIER RUN-ABOUT IN STOCK, £250

151, HIGH ST., WALTHAMSTOW, LONDON, N.E.
'Phone: Walthamstow 169 (2 lines).

50, High Rd., Wood Green, LONDON, N.
'Phone: Hornsey 1956.

387, EUSTON ROAD, LONDON, N.W.
'Phone: Museum 4978.

MOTOR CYCLES FOR SALE.

New Imperial.

2¾h.p. New Imperial-Jap, 1914, 2-speed, good condition, lamps, horn, tax paid; £32, or offer.—86, Denmark Rd., Camberwell. [5343

NEW IMPERIAL, 1921, 3-speed, 1922 J.A.P. engine, 350 c.c., exceptionally fast; 69 gns.—Clark, 7, Exhibition Rd., S.W.7. [6060

NEW IMPERIAL 2½h.p., 2-speed, lamps, horn, newly overhauled, splendid condition; sacrifice £35.—Box 7,054, c/o *The Motor Cycle.* [6024

NEW IMPERIAL, 1920, 2¾h.p. J.A.P., clutch, kick start, self-lubricating, tax paid, perfect condition £55.—Noakes, Princes Villa, Little Sandhurst, Berks. [5896

NEW IMPERIAL 8h.p., December, 1919, Millford sidecar, Eastings, speedometer, Tan-Sad, and Lucas lighting set, mechanically sound; £105.—47, Voltaire Rd., Clapham. [5535

1920 2¾h.p. New Imperial, 2-speed, K.S., lamps etc., excellent condition; £44.—Edwards, 56, Harrington Rd., South Kensington. Deferred payments and exchanges. [6000

NEW IMPERIAL, 2¾h.p. J.A.P., 1918, 2 speed, kick start, hand clutch, Tan-Sad, P. and H. lamps, Klaxon, accessories; any trial; £47.—4, Fairbourne Rd., Tottenham. [5271

1920 New Imperial 8h.p. Combination, Easting wind screen, speedometer, just completely overhauled, no reasonable offer refused.—Shephard, 30, West Heath Drive, Golders Green, N.W.11. [5341

LATE 1918 2¾h.p. New Imperial, kick starter, clutch, Senspray, accessories, beautiful condition, tax paid, any trial; £40, or nearest offer; must sell, going to India.—168, Clapham Park Rd., S.W.4. [5444

Norton.

PREMIER Motor Co. for Nortons.

LATEST Improved Models for immediate delivery, 1922 reduced prices.

BIG 4, chain drive, £120; Model 16H., 3½h.p., speed, T.T., chain-drive, £115; Model 9, 3½h.p., belt drive, £80. Write for revised price list. Easy payments only 4% extra. Buy your machine direct from the Norton specialists, The Premier Motor Co., Aston Rd., Birmingham. [0833

DAN GUY, Weymouth.—Norton Big 4 combination £177; sports model, £132; from stock. [0616

NORTON 3½h.p., 3-speed, countershaft; £75; exchange lightweight and cash.—49, Well St., Hackney. [5400

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0772

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4. 4h.p. Norton and sidecar, 1920, tax paid; £77, easy terms arranged. [6000

NORTON B.S., 3-speed, new Sept., 1920, perfect condition, winner several firsts in speed competitions, what offers?—Everson, Wollescote. [5242

SUPER Nortons, 1920 T.T., £68; 1916 B.R.S., £55; Baby Levis, £30; Diamond-Jap and Morgan wanted.—Manning, Weybourne, Farnham. [5660

1921 Norton 16H., Lucas lamps, horn, etc., fully licensed, beautiful condition; great bargain; gns.—Julian, 84, Broad St., Reading. 'Phone: 1020. [5434

1921 T.T. Norton, perfect condition, spring frame, Tan-Sad, lamps, silencer, mudshields; any examination; £78.—Boulton, Highfield, Westbury, Wilts. [5838

BROOKLANDS Special 1920 Norton, Lucas lamps, Bonniksen, fully equipped, 70 m.p.h. guaranteed, £73, offer.—Morris, 81, Huntingdon Rd., Coventry. [X1223

NORTON (Oct.) 1920 T.T., fully equipped, perfect condition, run 800 miles; £70, or best offer; owner buying car.—S. H. Beesley, St. James Mill, Northampton. [5800

1920 Big Four Norton and sidecar, original tyres, still good, equipped, and insured, splendid order; Home Counties district; £110, or near.—Box 99, c/o *The Motor Cycle.* [5700

NORTON, 1922 models now for delivery at reduced prices; deferred payments or exchanges arranged.—Maudes', 100, Gt. Portland St., London, and Walsall Garage, Walsall. [X1311

1921 (Sept.) 3½h.p. Norton, model No. 9, fully equipped, as new; £75; deferred payments desired.—Parker's, Bradshawgate, Bolton; also 2, Deansgate, Manchester. [X1311

HALIFAX.—New Norton models: 3½h.p. sports £80, 3½h.p. 3-speed £115, Big Four 3-speed £120, reduced prices; exchanges quoted.—Motor Exchange, Horton St., Halifax. [5

NORTON Spares per return. We carry huge stock. A trial will convince. All goods sent carriage paid.—G. H. Tucker, the Norton Rider Agent, Redcliffe Hill, Bristol. 'Phone: 4042. [5

NORTON 1921 3½h.p., 3-speed sports model, fully equipped and licensed, fine condition, very fast, cost £140, offered at £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity. [6

MOTOR CYCLES FOR SALE.

Norton.

NORTON 1921 Big Four with sporting sidecar, Lucas Magdyno lighting, Lucas horn, Cowey speedometer, oversized tyres, as new; £160; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1232

NORTON, 1920 (Sept.), tools, Tan-Sad, lamps, Klaxon, mirror, speedometer, licence, nearly new heavy Dunlop back tyre, perfect condition; owner requires lighter machine; no other reason for selling; nearest £100; Hereford.—Box 7,042, c/o *The Motor Cycle*. [5521

WANTED, purchasers for any model of new 1921 Norton motor cycles and combinations, for immediate delivery. Your present machine taken in part exchange; full market value allowed; distance no object.—R. Bamber and Co., Ltd., 2, Eastbank St., Southport. Tel.: 607. [0644

N.S.U.

5-6h.p. N.S.U., spring forks, Brooks, minus power unit; best offer.—Aubrey, Town Hall, Elgin. [5229

N.U.T.

1920 3½h.p. N.U.T., Lucas dynamo lighting, Apollo horn, Tan-Sad; £85.—Woods, St. Ronans, Worthing. [5933

N.U.T., 3½h.p., Lucas Magdyno, condition shop-soiled; cash offer, or cheaper machine and cash.—47, Hamilton Rd., Reading. [5595

N.U.T., 1920, 3½h.p., Magdyno, lavishly equipped, and almost new; £96.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6046

N.U.T.—Sole agents for nine counties, sub-agents being appointed under attractive conditions. No finding contracts asked. Specially attractive discounts to agents stocking one machine.—Maudes' Motor Mart, London, Exeter, and Walsall. [X1329

O.K.

O.K. 2½h.p., 2-speed, splendid condition; trial.—14 Belmont St., Whittington Moor, Chesterfield. [5443

O.K. 2½h.p. 4-stroke, 2-speed, equipped, tax paid, good condition; £20.—54, Dalmeny Rd., Tufnell Park, N.7. [5885

O.K. Junior 2½h.p., 2-speed, lamps, tax paid, perfect throughout; £30.—13, Crooklog, Bexley Heath, S.E. [5728

O.K. Junior, 4-stroke, 2 speeds, C.S., lamps, excellent condition; £20.—Lowe, 4, Carlton Terrace, Childs Hill, N.W.2. [5649

Orbit.

SPECIAL Competition 1921 Orbit, 2¾h.p., 2-speed; bargain, £40.—Highdene, Ridgeway, Enfield. [5444

P. and M.

1921 Shop-soiled P. and M. Combination; special clearance price £150.—The Morris Garages, Oxford. [5488

1916 Phelon-Moore, 2-speed, enamelled, good condition, licensed; trial; £29.—Rogerson, Newtown, Wigan. [X1288

P. and M. Combination, 1918, perfect condition, taxed, accessories; £65.—50, Haverstock Hill, N.W.3. [5718

£40.—Renovated R.A.F. late model P. and M., perfect, fully equipped, insurance.—King, Egrove Farm, Oxford. [X1253

1918 P. and M. 3½h.p., 2-speed, lamps, tax, fast and reliable; any trial; 48 gns.—22, Fort St., Spitalfields, E.1. [6115

N.O.C.H. have a 1919 P. and M., fully equipped; £56, bargain.—5, Heath St., Hampstead (near Hampstead Tube Station). [5502

VAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. P. and M. combination, 1920, tax paid; £95; easy terms arranged. [6069

P. and M., 1921, all accessories, licence paid, excellent condition, very little running; £95.—Arnett, 6, Queen's Rd., Doncaster. [5433

P. and M. 3½h.p. Combination, makers' colours, perfect condition, accessories, £62; solo, £48.—62b, Highgate Rd., Kentish Town, N.W.5. [5614

1920 P. and M., as new, only ridden 300 miles, fully equipped and insured; bargain, £80.—4, Croslands Park, Barrow-in-Furness. [5418

P. and M., 1916, speedometer and all accessories, perfectly sound and reliable machine; £45.—4, Archmont Rd., Wallington, Surrey. (P) [6160

1919 P. and M. Combination, coach sidecar, all accessories, Cameo, taxed, perfect condition; £67, offer.—Courage, Elcot, Kintbury, Berks. [5408

P. and M. 1918 Combination, fine condition throughout, 3 lamps, Easting, rug, watch, tax paid; seen London; owner's ill-health; £56/10.—Write, Box 6,997, c/o *The Motor Cycle*. [5333

P. and M., 1921, 3½h.p., standard model, list price £115, very slightly showroom soiled, usual makers' guarantee given; £90.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [X0587

P. and M. Combination, complete, perfect condition, new sidecar (cost £27), bulbous back, enclosing cot for child, with hood, side curtains, screen, tax paid; trial; £85.—100, Clonmore St., Southfields, S.W. [5225

MANUFACTURERS OF
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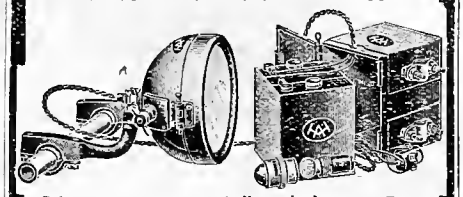
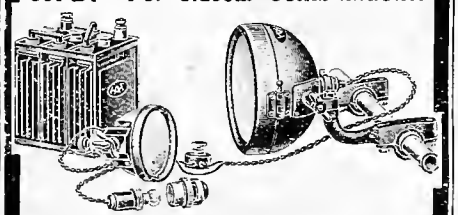
POWERFUL LONG RANGE LAMPS.

Set A1—For Solo Machines.



Price as illustrated (less bulbs and wire) £6 7 6

Set B1—For Sidecar Combinations.



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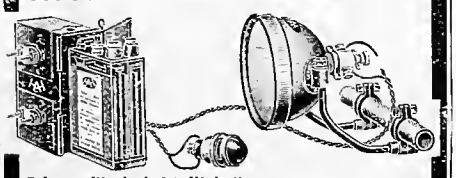
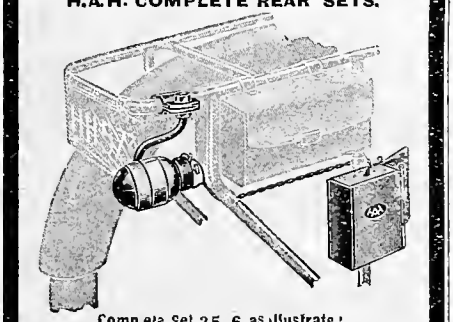
Set C1—For Medium Solo Machines.



Price as illustrated (with bulbs—less wire) £3 15 0
H.A.H. COMPLETE REAR SETS.



Complete Set 25 6 as illustrated.

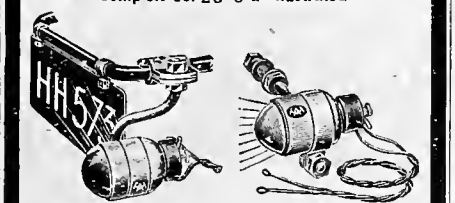


Fig. 573, Rear Lamp. 7 6 each.

Fig. 560, Side Lamp, 7/6 each.

Postage extra on the above.

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Tunstall Road, CROYDON, Eng.
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MOTOR CYCLES FOR SALE.

P. and M.

P. and M., 1919, not W.D., fully equipped; £66.—Ratcliffe Bros., 200, Gt. Portland St., W. [6147

1921 3½h.p. P. and M. Combination, Lucas equipment, demonstration model, mileage 100, absolutely as new; £115.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6013

P. and M., 1921, 3½h.p., standard model, list price £115, very slightly shop-soiled; usual makers' guarantee given; £90. — The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6047

SEPT., 1920, P. and M. combination, mechanical lubrication, hand brake, electric lighting, horn, and licence, splendid condition, small mileage; £100; extended payments arranged.—The Layton Garages, London Rd., Bicester. [6053

P.M. 3½h.p., 1919, 2-speed, kick start, complete outfit, new Tan-Sad and chains. Best lubrication, mechanical horn, 2 brakes, excellent condition, little used, sound, reliable bargain; any trial; £55, near offer.—91, Tootbill, Loughborough. [5777

Paragon.

1920 £28 Paragon, 2-speed, spring frame, fully equipped, good tyres, flywheel damaged; exchanges.—181, Neuton Rd., Burton-on-Trent. [5764

Pierce-Arrow.

PIERCE-ARROW Racing Machine, big single, 5h.p., clutch, Binks, taxed; £45; photo 6d.—Halkes, Waddington, Lincoln. [X1256

Precision.

PRECISION 2½h.p., 1914, M-L waterproof, new belt and piston, engine rebushed, lamps, reliable; £20, lowest.—88, High Rd., East Finchley. 5560

Premier.

£30.—Premier; bargain; 2½h.p., excellent condition.—Apply after 6.30, 67, Lawrie Park Rd., Sydenham. [5833

1913 Premier 3½h.p., 3-speed, free engine; £20.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5258

PREMIER Combination, 1914, 4h.p., 3-speed, clutch, best offer accepted; trial 2-5 p.m. Saturday.—Lee, 239, Balham High Rd., S.W. [5447

PREMIER 3½h.p. Combination, fitted with brand new 2-speed gear, running order; £38.—Dixon Bros, 172, Brownhill Rd., Catford. [5299

£25.—Premier 3½h.p., T.T. model, new mag. and cylinder, £10 new parts, lamps, licence, etc.; £25; exchanges.—63, Solon Rd., Brixton. [5930

PREMIER 4h.p., fitted late Triumph engine, 3-speed, countershaft, K.S.; exchange lightweight, sell £40, offers.—Corliss, Wellington St., Long Eaton. [X1268

1916 4h.p. Premier Combination, 3 speeds, countershaft, all on, tax paid, excellent condition, any trial; best reasonable offer.—Pearce, Island Cottage, Ufton, Reading, Berks. [5803

PREMIER Combination, 1911, 3½h.p., Brampton variable gear, Bosch, Amac, good condition, running well now, tyres nearly new, tax paid; £35.—Rev. Thorp, Cossington, Bridgwater. [5627

Spare Parts:

PREMIER Parts.—Write the specialists, enclosing stamped envelope for immediate reply.—Forfield Motors, Forfield Place, Leamington Spa. [X1314

P.V.

P.V., 3h.p. J.A.P. twin, spring frame, 1913, motor cycle in good condition and first-rate running order, engine overhauled by J.A.P. Co. to cost of £9 in May, little running since, N.S.U. 2-speed gear; £35.—G. Morrison, Fife Arms, Braemar. [6158

Quadrant.

£85.—1921 4½h.p. Quadrant, special o.h.i.v. engine used competition only, as new.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [4016

Spare Parts:

FOR all Quadrant Spares and Repairs, The Clifford Wilson Manufacturing Co., Quadrant Sole Wholesale Distributers, 177, Westminster Bridge Rd., London, S.E.1. Hop. 210. [4020

Raleigh.

PREMIER Motor Co. for Raleighs.

SPECIAL Offer of new Raleigh solo 5-6h.p., spring frame, chain drive, slightly showroom soiled, £125; easy payments 4% extra; second-hand 1921 Raleigh sidecar to match, £20.—Sole Birmingham agents, The Premier Motor Co., Aston Rd., Birmingham. [0626

RALEIGH 2¾h.p. and 3h.p. Models from £68; earliest deliveries from the Raleigh specialists; cash, exchange, or deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5852

RALEIGH 5-6h.p. Combination, new August, all lamps, watch, mirror, Bluemel adjustable screen, tax, insurance paid, equal new; exchange entertained; £170, cost £220.—Atkinson, Brook Nook, Outwood Lane, Horsforth, Leeds. [X1259

MOTOR CYCLES FOR SALE.

Reading-Standard.

READING-STANDARD Combination, June, 1920, electric lighting, 2 horns, speedometer, K.S., Easting wind screen, tax paid, good condition; £90, or first nearest offer.—Penfold, Arundel. Tel.: 12. [5436

Rex

1920 8h.p. Standard Rex Combination, 3-speed Sturmey-Archer, speedometer, electric lighting, mileage 2,000; £90.—The Morris Garages, Oxford. [5485

6h.p. Rex Coachbuilt Combination, Sturmey 3-speed, clutch, kick start, screen, electric light, good order, tax paid; £50, or near offer.—6, Exeter Rd., Cedars Av., Walthamstow. [5227

REX Twin, 6-8h.p. and C.B. sidecar, 2-speed, handle start, well tyred, tax paid; any trial; sell, £52, or exchange good solo with gears.—Cunningham, 35, Cardiff Rd., Luton, Beds. [5834

Rover.

ROVER 1918 5h.p. Twin, 3-speed, K.S., also sidecar.—Offers to Box 7,053, c/o *The Motor Cycle.* [6023

1914 Rover 3-speed Combination, excellent order; a bargain, £55, or will sell separate.—Brearley, Swaffham, Norfolk. [5350

1912 Rover M.C., with sidecar, 3½h.p., clutch, splendid running order; £35.—Coney, Victoria Rd., Farnborough, Hants. [5373

1920 Rover Combination, Swan sporting sidecar, screen, lamps, tools, etc., complete; £85, or offer.—10, Gt. Church Lane, Hammersmith. [5958

ROVER 3½h.p. Combination, 1918, all accessories, tax paid; no reasonable offer refused.—Seen at Saunders Garage, High St., Hampstead. [4503

1913 Rover 3½h.p., 3-speed hub, speedometer, lamps, licensed, exceptional condition; £38.—A. J. Slatter, 3, Cliff Terrace, St. John's, S.E.8. [5711

ROVER 3½h.p., 1919, 3-speed, clutch, etc., recently repainted, as good as new; best offer over £70 secures.—J. Snell, Cloakham, Axminster. [5287

£58.—1913-1914 3½h.p. Rover combination, 3-speed, K.S., just overhauled, tax paid, only wants seeing.—8, Half Moon Lane, Herne Hill, S.E.24. [5746

ROVER 1921 6h.p. Combination, fully equipped, as new; cash or exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5864

ROVER, 1920, 6h.p. J.A.P., exceptionally good condition, with brand new sidecar; bargain, £85; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6060

ROVER Combination, 3½h.p., 1913, 3 speed, clutch, recently overhauled, lamps, tools, speedometer; any trial; £70; seen by appointment only.—9, East Bank, Stamford Hill. [5276

1914 3½h.p. Rover, 3-speed and clutch, footboards, tax paid, the whole in excellent condition mechanically and otherwise, been very carefully used; £35 cash.—62, New St., Woodbridge, Suffolk. [6090

1919 5-6h.p. Rover Combination, beautiful condition, recently overhauled, enclosed chain drive, Triplex screen, hood, speedometer, accessories, ideal double-purpose outfit; £100, or nearest.—Lewis, 39, Hartfield Rd., Wimbledon. [5474

Royal Pilot.

3h.p. Royal Pilot, mag., Amac, tax paid, good tyres, perfect running order; £10.—32, Birmingham Rd., Stratford-on-Avon. [X1198

Royal Ruby.

OFFERS Invited for brand new 1920 shop-soiled 3h.p. Royal Ruby.—The Morris Garages, Oxford. [5484

ROYAL RUBY 2½h.p., splendid running order, good appearance; £40.—Pearson, Shaftesbury, Dorset. [5668

29 GNS.—1919 Royal Ruby 2-stroke, 2-speed, well equipped.—20, Treen Av., Hoggers Corner, Barnes. [5936

LATE 1920 3h.p. Royal Ruby, 2-speed, spring frame, T.T. bars, recently overhauled by makers; 75 gns.; seller buying combination; Burnley district.—Box 6,971, *The Motor Cycle.* [5250

ROYAL RUBY 8h.p. Combination, brand new, lamps, horn, wind screen, speedometer, Tan-Sad, Miller tyres; bargain, £120.—Woodard, 3, Eldon Villas, Brownlow Rd., Church End, Finchley. [5612

Rudge.

I.O.M. Rudge Multi, exceptionally fast, fine appearance; £35.—105, Belmont Rd., Maidenhead. [5318

RUDGE Multi, late 1919, all on, fast, excellent condition; £50.—19, Montpelier, Hyde Park, Leeds. [5836

RUDGE Multi, 5-6h.p., hand clutch, new back wheel, re-enamelled; £45.—408, Essex Rd., Islington. [5876

1920 Rudge Multi 3½h.p., with Swan sidecar, excellent running order, lamps, horn, belt, tyres; owner abroad; £70.—P. G. Baldwin, Willowfield, Halifax. [5364

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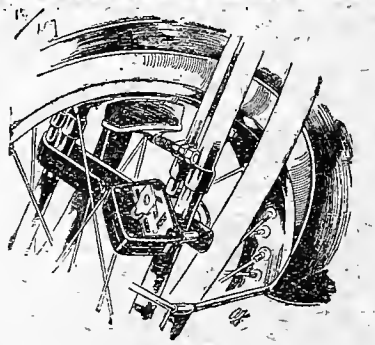

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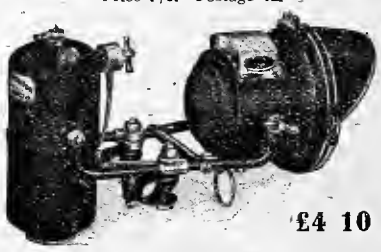

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Rudge.

RUDGE Multi Combination, equal to new; exchange Harley or Morgan, or sell £90.—65, Davy St., Ferrybill. [5631

£27/10 Rudge Multi, lamps, fast, new tyre, bell, ride away.—Argyle Lodge, Neuton Rd., Burton-on-Trent. [5781

1920 5-6h.p. Rudge Multi Combination; exchange for lightweight and cash.—Avondale, Park Rd., Chilwell, Notts. [5400

£40.—1915 Rudge Multi, 3½h.p., and sporting side car, tax paid, equipped.—Ritchie, 92, Calbourne Rd., Balham. [5600

1920 Rudge Multi 3½h.p., new February, 1921, lamps, etc., tax paid; £65.—Bragg, 64, Vicarage Rd., Smethwick. [5300

RUDGE Multi, late 1920, clutch, as new; sacrifice £58/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6060

RUDGE 3-speed Coachbuilt Combination; can be seen running; £35, or offer.—636, Harrow Rd., Paddington, W.10. [5850

£30.—Rudge Multi, hand clutch, kick start, license, lamps, smart, good condition.—5, Addison Av., Holland Park, W.11. [6110

RUDGE Multi 5-6h.p. Combination, thoroughly overhauled, and Easting wind screen; any test; £60.—92, York Rd., London. [5681

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Rudge Multi, Isle of Man model; £8 easy terms or exchange. [6090

1921 3½h.p. Rudge Multi, perfect condition, tyres, belt, and appearance as new; any trial; £65.—Richards, Chepstows, Mont. [5290

RUDGE 5-6h.p. Combination, 1921, electric light, Easting screen, many extras; £95.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [6100

RUDGE Multi 1921 3½h.p., T.T. model, pedal start, just delivered from Rudge Works; £85.—1, Crooklog, Bexley Heath, S.E. [5700

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0300

RUDGE Multi, 1920, I.O.M., splendid condition, new back tyre and belt, lamps; £55; after 6, 28, Minford Gardens, Shepherds Bush. [6100

1915 Rudge Multi, 3½h.p., sporting wicker sidecar, engine just overhauled, good condition; £50.—W.K.W., 74, Station Rd., Redhill, Surrey. [5950

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Rudge I.O.M., 1921, electric lighting, tax paid; £75; easy terms no extra charge. [6090

RUDGE Multi, coachbuilt sidecar, wind screen, accessories, new tyres, perfect condition; nearly £55.—North, 32, Mackeson Rd., Hampstead. [6100

T.T. I.O.M. Rudge Multi, 1919, 3½h.p., speedometer, all accessories, standard and overlap cams, many spares, excellent condition; £60.—Stevens, East View, Mackenzie St., Slough. [5150

RUDGE Multi, 1921, brand new, slightly shop-soiled, 3½h.p., T.T. model; special price £78/10.—E. Ltd., 15-16, Bishopsgate Av., Camomile St., E.C. 'Phone: Avenue 5548. [0100

T.T. Rudge, 3½h.p., long copper exhaust, new enamelled and overhauled, smart appearance, exceptionally fast; 38 gns; ride away.—29, Lichfield St., Charing Cross, London. [6

1920 3½h.p. Rudge Multi T.T. Model, unscratched perfect, small mileage, all accessories, spare racing piston and cam; £66, or offers.—Davis, 40, Grove, Sherron, near Chester. [5

RUDGE Coachbuilt Combination, splendid condition, new Binks, fully equipped; trial; sell £55, exchange for higher power.—176, Harbour Lane, Milnrow, Rochdale. [X1

1920 3½h.p. Rudge and 35-gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect, £78.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [

SPECIALLY Tuned Late 1920 3½h.p. I.O.M. Rudge Multi, overlap cams, fast, but docile, electric lighting, horn, licensed, insured, condition guaranteed, trial; £68, near offer.—Write, Shaw, 33, Malwood Rd., Balham, S.W.12. [

RUDGE Multi, 1920, 3½h.p., and Canoelet sidecar, completely equipped with lamps, horn, speedometer, licence paid; small mileage; £80.—Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [

RUDGE Multi, 5-6h.p. C.B. Combination, little used, splendid condition mechanically and appearance, Easting, Klaxon, mirror, Stewart, gas lighting, Lucas King head and generator, pillion seat, spare valves, etc.; £80; home Saturday.—Taylor, 32, Dunstans Rd., East Dulwich. [X

1919 Rudge Multi 3½h.p., Smith speedometer, Miller head light, Klaxon, many spares, including connecting rod, bearings, rings, valves, springs, in first-class condition, £75; also Spurr lightweight side car, almost new, Cameo wind screen, Coverall apron, £18; owner gone abroad.—Pearson, The Downs, Ashtead, Surrey.

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20 Scott, excellent condition, mileage about 2,000; £85 secures.—21, Norman Rd., Wrexham. [5265

COTT Combination, 1915, overhauled, new gear chains, Cameo; £65.—Tonge, Holmesfield, Sheffield. [5751

COTT 1920 (late) Combination, Binks electric light, perfect condition; £100.—Wigfall, Infirmary Rd., Sheffield. [X1076

COTT, late 1920, semi-T.T. bars, Lucas fittings, splendid condition; offers.—Berrington, 22, Beaumont St., W.1. [5597

6 GNS.—Late Scott combination, perfect running order, electric lamps.—20, Treen Av., Hoggers Corner, Barnes. [5935

110.—1920 Scott combination, thoroughly overhauled, in splendid condition; any trial.—Crawley, Catteris, Cambs. [5291

.O.C.H. have 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [5500

COTT, 1920 solo, 3¾h.p., tax paid, unpunctured, perfect condition, full equipment; 80 gns., or offer. Green 14a, Balham Hill, S.W. [5226

3h.p. Scott, bargain, 1920 model, as new, condition 4 perfect, only done about 200 miles; best offer ierest £80.—Athol Motor Garage, Ltd., Douglas, I.M. [5245

COTT Combination, 1914 cycle, 1921 sidecar, Low generator, all lamps, Cowey, Binks, Bluemel Green, horn, insured; £80.—Hetherington, 12, Hill Rd., Bolton. [5427

95.—1921 Scott, as new, not run 1,000 miles, licence paid, lamps, horn, etc.; cost £140; great snip.—Baker, Redcliffe Hill, Bristol. 'Phone: 4042. [5996

COTT 1920 3¾h.p. Combination, fully equipped, Easting screen, as new; £90; deferred payments desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1231

COTT Combination, 1916, splendid condition, lamps, wind screen, purple outfit, very pretty; owner wants cash badly; £60, or near offer.—W.F., Hanbury St., Spitalfields, E.1. [X1218

COTT 1921 3¾h.p. Touring Model, shop-soiled only; to-day's price £130, clearance price £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1235

COTT 1921 3½h.p. Squirrel Model, fastest 3½h.p. model in the city of Oxford, guaranteed kilo speed m.p.h.; offers invited.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 Oxford. [6034

COTT, November, 1919, stored 12 months, only run 4,000 miles, full Lucas equipment, in excellent condition and perfect running order, licence paid; owner bought car; bargain, £78.—Hunt, Llanbarth, Abergavenny. [5419

COTT, 1921, 500 c.c., Squirrel Model.—J. W. Tolladay, winner of the 500 c.c. handicap at Brooklands, September 17th, 1921, offers his reserve machine, with guaranteed speed over the kilo. of m.p.h.; offers invited.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4821

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HE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Caswell Hill, London, N.10. [0731

Sun.

UN-VILLIERS 1920 2¾h.p., condition as new; £32, offer; seen appointment; tax paid, insured. Robertson, 20, Hardinges Lane, Penge, S.E.20. [5823

921 Sun-Vitesse, single speed, very little used, and complete with accessories; £39; easy paymnets desired.—Harrods' Motor Cycle Dept., 118, Brompton Rd., London. [5542

Sunbeam.

UNBEAM 1921 3½h.p. Touring, new; £130.—Forrester, Graham's Rd., Falkirk. [X1237

916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Topham, Yorks. [0714

BRAND New Sunbeam Sports, fully equipped, tax paid; reasonable offer accepted.—Box 7,037, c/o *The Motor Cycle.* [5493

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1914 Sunbeam 3½h.p., completely overhauled makers 1919, accessories; £55, or near offer.—Mozley, Haslemere, Surrey. [5288

SUNBEAM 8h.p. Double-seater Combination, spare wheel, hood, screen, side curtains; snip, £140.—15, Sedgwick Rd., Leyton. [5217

1921 Sports Sunbeam, unscratched; £120; exchange N.U.T. or Triumph and cash.—36, Grappenhall Rd., Stocktonheath, Warrington. [5615

HALIFAX.—New Sunbeam 3½h.p. Touring; 135 gns., reduced price; exchanges quoted.—Motor Exchange, Horton St., Halifax. [5494

SUNBEAM 3½h.p. 1920¾ Combination, lamps, horn, etc., perfect; £128, or exchange solo and cash.—W. Ayers, Garage, Kensington Palace, W.8. [5827

SUNBEAM Combination, 6h.p., Bowser tandem sidecar, hood, wind screen, all accessories, excellent condition; £150.—Wood, 10, Station Rd., Horley. [5326

SUNBEAM and Sidecar, 1918 3½h.p., many extras, electric lighting, specially constructed mudshields, tool kit, etc.; £90.—Lubbock, Peterhouse, Cambridge. [5537

SUNBEAM 1915 3½h.p., 3-speed, clutch, kick start, all-chain, fully equipped, long exhaust, tax paid; £48; exchange.—1, Albert Cottages, Marlborough Rd., Old Kent Rd., S.E.1. [5441

1921 (Sept.) 3½h.p. Sports Sunbeam, fully equipped, shop-soiled only; £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1227

SUNBEAM Combination, 1914, 3-speed, Canoelet sidecar, in splendid order; bargain, £62/10.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [5600

SUNBEAM 3½h.p. Combination, latest type leaf spring forks, Lucas lamps, Klaxon, screen; £135.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5861

SUNBEAM Combination, 1919, Sunbeam sidecar, 3-speed and reverse, all chain drive, lamps and horn; £85.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: 2813. [5602

1921 Sunbeam, T.T. model, mileage under 1,000, enamel and plating unscratched, Cowey horn, aluminium number plates, perfect, fast, silent; £134.—Lavin, Old House, Sonning, Berks. [3207

SUNBEAM 1921 3½h.p., Lucas Magdyno, Bonniksen Cowey horn, absolutely perfect condition, insured; any trial London; £130, or near.—Box 7,047, c/o *The Motor Cycle.* [5557

SUNBEAM 1921 3½h.p., 3-speed model, fully equipped and licensed, small mileage, equal to new; price £115.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6033

2¾h.p. Sunbeam, very fast solo machine, been stored to 1919, in excellent running order, been thoroughly overhauled mechanically, new tyres and tubes; £50; Preston district.—Box 7,051, c/o *The Motor Cycle.* [6021

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ERIC WILLIAMS will dispose of his 1920 Tourist Trophy Sunbeam, on which he has so successfully competed in leading open competitions; with acetylene lighting, £130, or with new M-L Magdyno lighting set, £150.—Apply, Eric Williams, Worcester. [5949

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T.D.C. 2¾h.p., 2-stroke, 2-speed, accessories; £30.—26, Norbury Crescent, Norbury, S.W.16. [5953

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CROSS, Rotherham, can deliver any model Triumph from stock at list prices. [X1285

TRIUMPH, T.T., 1913; £22.—1, Springfield Park Crescent, Catford, S.E.6. [5712

£25.—Triumph, free engine, in sound preservation.—76, Dalling Rd., Hammersmith. [5705

1920 Triumph Combination, accessories, as new; £100.—106, Sydney Rd., Raynes Park. [5719

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Triumph.

TRIUMPH Combination, 3-speed; £40.—59, Palfrey Place, Dorset Rd., Clapham Rd., S.W.8. [5583

3½h.p. Triumph, tax, clutch hub; ride away; £25 lowest.—40, Foulser Rd., Upper Tooting. [5378

TRIUMPH 3½h.p., 1912, clutch, in good condition; £28, or offer.—Seen at 267, High St., Bow, S.E.1. [5556

1912 Triumph M.C., 3½h.p., clutch, perfect condition; £25.—Coney, Victoria Rd., Farnborough, Hants. [5374

LATE 1920 Countershaft Triumph, equipped regardless; £74.—24, Balliol Rd., North Kensington. [5690

TRIUMPH, countershaft model, perfect condition; any reasonable offer.—6, Blackfriars, Chelmsford. [5651

4h.p. Countershaft Triumph, excellent condition and appearance; £56.—75, High St., Witney, Oxon. [5895

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

DAN CUY, Weymouth.—1921 Triumph, all-chain combination, £175; Baby 2-stroke, £70; from stock. [0623

1922 Trinmphs, in stock, current prices.—Arthur G. G. Daw, Triumph Agent, 114, Brixton Hill, S.W.2. [5910

TRIUMPH C.S. Combination, Dunbill sidecar, fully equipped, tax paid, done 100 miles; £110.—Below.

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COUNTERSHAFT Triumph, renovated, new engine and gear box; £75.—Below.

TRIUMPH W.D. Machines, fully renovated, only a few left at £65; do not miss this opportunity.—Hackford Eng. Co., 33, Hackford Rd., Brixton, S.W. [6138

TRIUMPH, drop frame; £33; exchange Douglas, Levis, etc.—Simpson, Orchard Rd., Sunbury-on-Thames. [5457

1920 Triumph, Model H, countershaft, well equipped, as good as new; £75.—17, St. Charles Sq., W.10. [2759

3½h.p. Triumph, 2-speed N.S.U., splendid condition, ride away; £25.—Springfield, Old Rd. East, Gravesend. [5415

TRIUMPH, 1918 countershaft, 3-speeds, clutch, kick start; bargain, £60.—118, Hither Green Lane, Lewisham. [6100

1913 3½h.p. Triumph, 3-speed, splendid order; £32.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5256

TRIUMPH, 1914, 3-speed, accessories, perfect condition; £40, near offer.—Polhill, Rosemead, Waltham Abbey. [6113

TRIUMPH 1914 Racing Model, 3-speed, clutch; £38, or near offer.—E. Stone, 24, West St., Carshalton, Surrey. [5647

4h.p. Triumph, just overhauled, with new Paragon folding sidecar, tax paid; £65.—Saunders Garage, Parade, Colders Green. [5393

TRIUMPH Coachbuilt Combination, 3-speed, fully equipped, tax paid; £45.—Speechley, 86, Churchfield Rd., Acton, W.3. [5512

1919 4h.p. Triumph, discs, all accessories, not W.D.; £70, or offer.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [5656

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. 1913 Triumph, all accessories, tax paid; £40; easy terms arranged. [6070

BABY Triumph, 1921, perfect condition, lamps, tax, and insurance, done 300 miles only; £56.—11a, Lyndhurst Rd., Hampstead. [5781

TRIUMPH 3½h.p., Philipson pulley, new Binks, lamp, tax, etc.; any trial; £20.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [5658

TRIUMPH 1919 Combination, Gloria with luggage carrier, lamps, Klaxon, just completely overhauled; £95.—Spratling, Kenwood, Malvern. [5339

3½h.p. Triumph, Watsonian sporting sidecar, 3-speed clutch, overhauled by Triumph, lamps, tools.—Hunt, 113, Packington St., Islington. [5589

3½h.p. Triumph, drop frame, tank, new cylinder, carburetter, valves, tyres; £35, bargain not to be missed.—46, High Rd., Balham, S.W. [5434

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼h.p. Triumph Junior, tax paid, fully insured, all accessories; £55; easy terms arranged. [6077

TRIUMPH 1919¾, countershaft, first-class condition, lamps, horn, tools, spares, insured, tax paid, long steel exhaust; £75.—Fuller, Grocer, Malton. [5735

TRIUMPH C.B. Combination, 4h.p., eng. 51561, countershaft, 3 speeds, K.S., Easting, all on, tax paid; 73 gns.—22, Estelle Rd., London, N.W.3. [5894

TRIUMPH 2¼h.p., new June, 1920, little used; owner in India; equipped, licensed; £50; stored London.—Write, E., Rosemary, Heath End, Farnham. [6135

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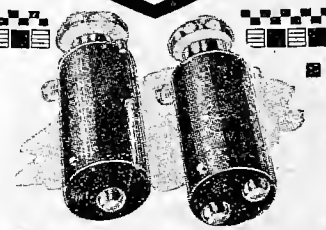

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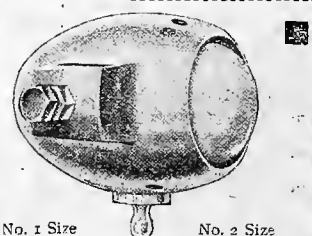
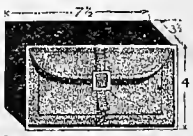
To convert bayonet to screw in bulb.
Single or Double Pole, 2/- each, post free.



No. 1 Size 3½"×2¼" — No. 2 Size 4½"×2¾"
STADIUM SIDECAR LAMPS
Cast aluminium. Highly polished.
Manufactured in two sizes.
No. 1 Size 3/9 Carriage Paid 4/6 No. 2 Size



METAL CASED TOOL BAGS.
Leather front. 2 clips supplied with each bag.
Best value obtainable.
CARR. PAID 5/9

Turner's Stores
The MOTOR CYCLISTS' ACCESSORY HOUSE
180-1-2, Railway Approach, SHEPHERD'S BUSH, W.12 'Phone Western 6177

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 4h.p., speedometer, battery, dynamo lighting, Swan sporting sidecar, all on; £105; after 6 p.m.—25, Clock House Rd., Beckenham, Kent. [663

1919 (guaranteed date) 4h.p. Triumph Combination not W.D. model, complete, in good condition £75.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [525

1914 Triumph and Canoelet Coachbuilt Sidecar, speed, clutch and kick start, Easting screen speedometer, lamps, etc.; £60.—85, Delherg Rd., Brixton, S.W.2. [553

1918 Triumph and Sandum Sidecar, Easting, etc excellent condition; £68.—Edwards, 50, Harrington Rd., South Kensington. Deferred payment and exchanges. [601

TRIUMPH Combination, 1916, renovated, 3-speed clutch, large Swan coachbuilt, Easting, speedometer, horn, lamps, tools; £65.—Drennan, 25, Elm Rd., Clapham, S.W.4. [588

TRIUMPH 1918 Combination, C.B. sidecar, engine rebushed August last, all accessories, Tan-Sad, Easting, tyres nearly new, spares; £80.—Teesdale, 1 Lyndhurst Drive, Leyton. [554

TRIUMPH, something exceptionally good, fitted B.S.A. engine, long copper exhaust, exceptionally fast and smart; soip, £38/10.—Goad, 122, Maida Vale 'Phone: Hampstead 1353. [606

CROYDON Agent for Triumph motor cycles. All models in stock ready for immediate delivery.—Moore's Presto Motor Works, Ltd., 145, North End Croydon. 'Phone: 2624. [134

BRAND New Countershaft Triumph, unridden and unregistered; first cheque for £85 secures.—and B. Motors, 16, King's College Rd., Hampstead mins. Swiss Cottage, M.E.T.). [612

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0365

£35.—1912 Triumph, clutch model, discs, long exhaust, lamps, watch, Bonniksen speedometer engine rebushed, new wings, etc.—Write, O. S. Rook Atlantis, Buckhurst Hill, Essex. [531

1921 Triumph, all-chain drive and sidecar, Eostin wind screen, electric lighting set, horn, licenso property of officer ordered back to India; £105.—Sunningdale Motors, Ltd., Berkshire. [549

TRIUMPH 1918 4h.p., 3-speed, K.S., engine N 54597; any examination, trial; lamps, horn Tan-Sad, knee grips, accessories; £65.—Appointment C. Ellis, 12, Euston Av., Watford. [61

TRIUMPH, 1920, 4h.p., original tyres and bel speedometer, Tan-Sad, knee grips, Lucas hor lamps, tools, beautiful condition; £90.—Watchmaker 605, Garratt Lane, Tooting, S.W.18. [555

A BARGAIN.—Triumph 1919 combination, Eastin screen, leg shields, new tyres and spares, guaranteed in good order; owner must sell owing to illne £77/10.—Bennett, c/o Tulse Hill Garage, 6-12, Tul Hill, S.W.2. [53

1918 4h.p. Triumph Combination; £67/10; Canoel sporting sidecar, complete with lamps, tool horn, apron, luggage grid, etc., tax paid, new tyr good running order.—60, Hanger Lane, Ealing, W.5. [524

1920 4h.p. Countershaft Triumph, Lucas lamp Cowey trip speedometer, discs, Tan-Sad, kne grips, Klaxon, insurance and licence paid, conditio as new; £100.—47, Evington Valley Rd., Leiceste [557

TRIUMPH 1921 Combination, fully equipped wi lamps and horn, usual makers' guarante exceptional bargain, £125.—The Layton Garages, 3 Holywell St., Oxford. 'Phone: 581. T.A.: Integrit Oxford. [604

TRIUMPH 1911-12 3½h.p., Bosch P. and lamp set, horn, tax paid for year, tyres and bel nearly new, in perfect condition throughout, smar and very fast; £21.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [54

TRIUMPH, 1921, special model, brand new, 2 plu side by side, simultaneous spark, highly polish aluminium crank, chain, timing cases, cylinder ba nickel-plated, absolutely first-class machine; £115 Colonial Motors, 104a, Finchley Rd. Hampstead 782 [601

WANTED, purchasers for any model of new 19 Triumph motor cycles and combinations. I immediate delivery. Your present machine taken part exchange; full market value allowed; distance object.—R. Bamber and Co., Ltd., 2, Eastbank S Southport. Tel.: 607. [06

ADVERTISED a fortnight ago at £102, now duced to £95.—1921 chain-drive Triumph (Ma carefully run in, solo gears, T.T. bars, tuned recen by Triumph Co. for competition, large Lucas lam new 28×3 tyre, new spare chain, valve, etc., insu till June, 1922 for £140.—Maclennan, 53, Micklet Rd., Coventry. [X12

1920 4h.p. Triumph, 3-speed, clutch and kick start with coachbuilt sidecar, P. and H. head lamp generator, Lucas rear, electric sidecar lamp, Klax horn, Cowey speedometer, new back tyre, tax paid, surance, machine in perfect running order; trial given; owner going abroad; price £96.—Young, 41, R ston Rd., Hornsey. [55

MOTOR CYCLES FOR SALE.

Triumph.

1917 Countershaft Triumph, recently overhauled, nickel plated exhaust, T.T. bars, speedometer and Klaxon, any examination or trial; £55.—Seaton, Shrublands Rd., Berkhamsted. [5807

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3990

TRIUMPH Parts.—Every part, any year, in stock; new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X1313

Velocette.

1920 Velocette, electric lighting, Bonniksen speedometer, spare handle-bars; £45.—Milner, Kennels, Ct. Packington, Coventry. [X1206

VELOCETTE, 1921, 2-speed model, quite new; approval anywhere; 50 gns.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: Oxford 581. [4823

VELOCETTE 1919 Lightweight, 2-speed, fully equipped, good condition; £35.—The Layton Garages, 30 Holywell St., Oxford. 'Phone: Oxford 581. [4822

VELOCETTE 1921 2-speed Model, 2 only, brand new and with usual guarantee; list price £65; offered for cash at £55 each.—The Layton Garages, 30, Holywell St., Oxford. [6035

Verus.

1921 Verus-Blackburne 2¾h.p., 2-speed, K.S.; £68.—The Morris Garages, Oxford. [5486

1920 Verus-Blackburne 4h.p., Sturmey 3-speed, fully equipped, as new; £85.—63, Stewart Rd., Bournemouth. [5267

1920 2¾h.p. Verus, 2-speed, K.S., clutch, splendid condition, all on; £70, or nearest.—Fisher, 15, Popplewick Lane, Hucknall, Notts. [5421

VERUS, 1920, 2½h.p., 2-speed, clutch and kick start; £39.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5865

1920 2¾h.p. Verus-Blackburne, aluminium discs, enamelled black, tax paid; £70.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0656

VERUS 2¾h.p., overhead valve, Blackburne engine, lamps, horn, licensed, guaranteed 60 m.p.h., 1921, 3 months old; £100, delivered anywhere in U.K.—Brown, 124, Stanley St., Aberdeen. [5519

VERUS, 2¾h.p. Blackburne, late 1920, 2-speed, K.S., clutch, ridden about 450 miles, indistinguishable from new; £68, or nearest.—68, High Lane, Chorlton-cum-Hardy, Manchester. [5375

VERUS-BLACKBURNE, 1920, 2¾h.p., 3-speed, special engine with side valve head, and also separate overhead valve head and gear for competition, exceptionally fine condition; £75.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6050

Williamson.

WILLIAMSON, 8-10h.p. water-cooled Douglas, double-seater sidecar, new condition, splendid hiring or family outfit; offers.—7, Fitzroy Av., Ebbw Vale, Mon. [X1246

SPORTING 8h.p. Williamson Combination, water-cooled, 2-speed C.S., clutch, 3 lamps, 2 generators, good tyres, recently overhauled, 50 miles trial; £75, or offer.—20, Blandford Rd., Beckenham. [5327

Wolf.

1921 Wolf 2½h.p., Sturmey 2-speed, kick, nearly new; £45.—63, Stewart Rd., Bournemouth. [5269

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. [0508

Wooler.

WOOLER 2¾h.p. 2-stroke, variable gear, spring frame; bargain, £35.—Ness, 225, Wimborne Rd., Bournemouth. [5915

1920 Wooler, new October, spring frame, plating perfect, covers unpunctured, excellent condition; ride 30 miles to show; 55 gns.; exchange with cash combination.—43, Gordon Rd., Camberley. [5239

X.L.

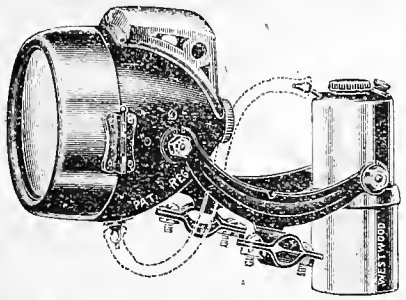
X.L. Motor Cycles.—Immediate delivery from stock of the latest masterpiece of motor cycle engineering production. We cordially invite your inspection.—Sole District Agents: White, Holmes, and Co., Ltd., Princes Garage, Down Place, King Street, Hammersmith, W.6 (opposite Palace of Varieties). [5470

Zenith.

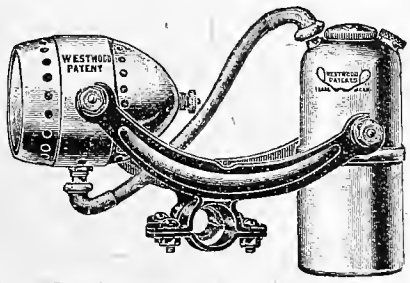
ZENITH 1920 6h.p. Sports, lamps, speedometer, like new; £78.—Clark, 7, Exhibition Rd., S.W.7. [5064

ZENITH, 5h.p., 1917, K.S., Swan sidecar, all on, like new; £75.—13, Westmoorland Rd., Barnes. [5590

"WESTWOOD" ACETYLENE SETS



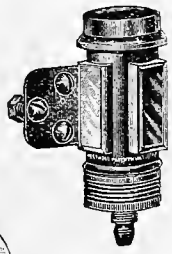
No. 40/1 for Heavyweight Solos, 37/-
No 40/2 With Large Generator, 45/-

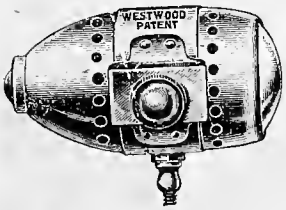


No 204 for Lightweights. Price 30/-

ROYAL RUBY. *List No.* 19/3. Price 4/- each.

TAIL LAMP *List No.* 19/1. Price 5/6 each.



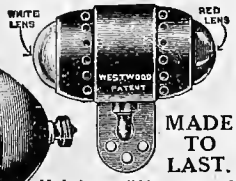


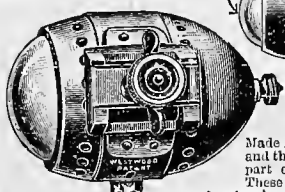
"IDEAL" SIDECAR LAMP.

Similar in construction to 19/4 Lamp, but having 1¾in. diameter lens, and also Ruby Lens in rear. List No. 205. Price **8/6** each. Plated finish.

SIDE LAMP. *List No.* 19/4. Price 16/- each. Right or left fitting

SIDECAR LAMP. *List No.* 19/2. Price 6/- each.





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Made from solid brass, turned and threaded at joints. Every part of solid construction. These lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on, and are absolutely rustless.

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MOTOR CYCLES FOR SALE.

Zenith.

BRADSHAW-ZENITH.—1922 models for immediate delivery; £118.

WHY Wait for the Show, when you can buy next year's model to-day?

YOU Want the Best Motor Cycle, and you want it at the right price. Then come and obtain it without delay from

ALAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1. Regent 205. [5515

DAN GUY, Weymouth.—Zenith agent, early delivery all models. [0556

ZENITH 6h.p., countershaft model, 1920 pattern, new, and fully guaranteed; £110.

ZENITH 8h.p., countershaft model, fitted with De Luxe sidecar, acetylene lighting with D.A. outfit, electric lighting, 3 horns, mirror, clock, speedometer, only run 800 miles; price to clear, £140.

ZENITH 8h.p., 1919 model, delivered 1920, fitted with sporting sidecar; price to clear, £75.—Motorists' Advisory Agency, Ltd., 89, Wigmore St., W. [6018

ZENITH Model D, shop-soiled; list £131, our price £115.—Ratcliffe Bros., 200, Gt. Portland St., W. [6156

1920 Zenith Combination, well equipped; £85; unscratched.—24, Balliol Rd., North Kensington. [5683

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [0711

ZENITH Combination, 1915, 4h.p. J.A.P., Bosch; trial willingly; £35; after 5.30.—Rule, 34, Gaskarth Rd., Balham, S.W.12. [5417

6h.p. Zenith Coachbuilt Combination, new tubes, covers, belt, bush, licensed, lamp, horn; £75.—Bateson, Gayhurst, Foxcombe Hill, Oxford. [5278

ZENITH 1921 5h.p. Model, shop-soiled only; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1228

ZENITH 5h.p., 1917, electric lighting, C.A.V. 7in. headlight, re-enamelled and replated in May, excellent condition; £75.—18, Chesilton Rd., Fulham. [5673

1912 Zenith Combination, 3½h.p. J.A.P. engine, perfect condition, all on; any trial; bargain, £38/10.—Edwards, 105, High St., Colliers Wood, S.W.19. [5888

ZENITH Cycle and Sidecar, 1916, 8-10h.p., ball bearings, clutch, kick starter, Gradua gear; bargain; seen by appointment.—J.W.D., 74, Lancaster Gate, London, W. [4465

SPECIAL 90 mm. bore twin Zenith, side valve, 2½ to 1 top gear, condition and appearance excellent, fully equipped; £65; seen London.—Box 6,968, c/o *The Motor Cycle.* [5247

ZENITH, 1921, 5h.p., sports model, licence paid, very slightly used; £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6052

ZENITH-BRADSHAW and all models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5855

ZENITH 3½h.p. Countershaft Model, kick start, clutch, with coachbuilt sidecar, very nice order; £59.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [5860

1920 6h.p. Zenith Sporting Combination, top-hole condition throughout, electric outfit, speedometer, wind screen, all accessories, tax paid; £110.—35, Eton Av., Hampstead. 'Phone: Hampstead 2542. [5384

ZENITH, 1921, 5h.p., sports model, complete with lamps, horn, and speedometer, licence paid, perfect condition; £95.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6051

ZENITH 1920 8h.p. Countershaft Combination, special sidecar, hood, screen, electric lighting, speedometer, tools, etc., mileage 3,000, in absolutely new condition; £120.—5, Bolingbroke Grove, Wandsworth Common, S.W. 'Phone: Kensington 7276. [5284

1922 Model 5h.p. Clutch Zenith, all enclosed chain from countershaft, which is now silent, improved mudguarding, leaf spring saddle, new type handlebars with rubber grips; a delightful mount, either solo or sidecar. This particular machine has been used once, over the Sopwith Cup course, gaining a silver medal. It is absolutely new and guaranteed. The list price today is £131; the bargain price of this machine is £115.—Alan Gruzelier, Ulster Chambers, 168, Regent St., W.1. Regent 205. [5516

Ladies' Motor Cycles.

F.O.C.H. have 2¾h.p. Douglas, lady's model, new condition, licensed.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [5503

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

MOTOR CYCLES FOR SALE.

Miscellaneous.

LONGMAN, 17, Bond St., Ealing, have the following exceptional autumn bargains:

LONGMAN Bros.—P.M. combination, about 1918, absolutely perfect, smart, and guaranteed; £55.

LONGMAN Bros.—I.O.M. Rudge Multi, brand new, shop-soiled; £75.

LONGMAN Bros.—Brand new Triumph, shop-soiled; £100.

LONGMAN Bros.—1919 Triumph combination, absolutely perfect condition; £85.

LONGMAN Bros.—1920 5-6h.p. James combination, magnificently equipped, used very little; £110.

LONGMAN Bros.—1920 Harley-Davidson sporting combination, electric model, special machine; any trial; very fast; £135.

LONGMAN Bros. can always supply your wants and give you service second to none. Write, 'phone, or call.—Tel.: 689 Ealing. 4960

L.M.C. Motor Cycle, 3½h.p., 2-speed, free engine, tax paid, ride 50 miles to purchaser; £50.—Below.

REX 6h.p. Combination, engine just overhauled, requires just tuning up; £20; first cash secures; offers entertained.—Moore, Sunnyhurst, Simonstone, Burnley. [5413

WANDSWORTH Motor Exchange.—Great bargains. Fine selection motor cycles, combinations; autumn prices.—Below.

WANDSWORTH.—Easy terms. The only firm to give immediate delivery on first deposit.—Below.

WANDSWORTH.—1920 Kenilworth Cyclette, 1¼ h.p., lamps, licensed, as new; 25 gns.; easy terms.

WANDSWORTH.—1920 T.D.C. de Luxe, 2¼h.p., lamps, licensed, little beauty; 35 gns.; easy terms.

WANDSWORTH.—1921 Triumph coachbuilt combination, 4h.p., 3 speeds, unscratched; 115 gns.; easy terms.

WANDSWORTH.—1918 O.K., 2¾h.p. J.A.P., 2 speeds, lamps; only 42 gns.; easy terms.

WANDSWORTH.—1917 Douglas 2¾h.p. twin, 2 speeds, lamps, licensed; 42 gns.; easy terms.

WANDSWORTH.—1916 Velocette 2-stroke, 2 speeds, lamps; very cheap, 29 gns.; easy terms.

WANDSWORTH.—1915 Zenith, 4h.p. J.A.P., Gradua gear, nice order; 45 gns.; easy terms.

WANDSWORTH.—1916 Zenith, 4h.p. J.A.P., Gradua gear, disc wheels; offers; easy terms.

WANDSWORTH.—Triumph (late) 3½h.p., 3 speeds, clutch, fine machine; 46 gns.; easy terms.

WANDSWORTH.—Humber with sidecar, 3½h.p., 2 speeds, drive away; 36 gns.; easy terms.

WANDSWORTH.—Rex coachbuilt combination, 5 h.p. twin, 2 speeds; only 39 gns.; easy terms.

WANDSWORTH.—Rex combination, 6h.p. twin, Bosch, 2 speeds, lamps; 45 gns.; easy terms.

WANDSWORTH.—Premier splendid coachbuilt combination, 3½h.p., 3 speeds, clutch; 49 gns.; easy terms.

WANDSWORTH.—Alldays Matchless coachbuilt combination, 3 speeds, countershaft, lamps; 62 gns.; easy terms.

WANDSWORTH.—Vindec combination, 3½h.p., 2 speeds, complete, drive away; 26 gns.; easy terms.

WANDSWORTH. — Minerva 3½h.p., waterproof Bosch, dropped frame, newly enamelled; 25 gns.; easy terms.

WANDSWORTH.—F.N. 4½h.p., 4 cyls., mag., shaft drive, drive away; 24 gns.; easy terms.

WANDSWORTH.—Motosacoche 2½h.p., mag., variable gear, licensed, runs splendidly; 23 gns.; easy terms.

WANDSWORTH.—Rex 5h.p. twin, mag., 2 speeds, wants attention; gift, 15 gns.—Below.

WANDSWORTH.—Scott 3¾h.p. twin, water cooled, 2 speeds, drive away; 35 gns.; easy terms.

WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4586. [5697

NEW Motor Cycles.—We can supply any make of new machine, and we are prepared to make a liberal allowance for your old machine, not earlier than 1914 models. All enquiries will be dealt with without delay.—D. and S. Autocar Co., 33, The Parade, Golder's Green. [5347

4h.p. Calthorpe and Sidecar, Precision engine, 2-speed gear box, £27/10; Humber and sidecar, 2-speed, £35; Campion lightweight 2-speed gear box, £22; Connaught lightweight, good running order, £15; several others.—Bunting's Motor Exchange, Wealdstone. [5968

LIGHTWEIGHT Motor Cycle, 2¾h.p. Triumph engine, 2-speed, lamps, horn, speedometer, toolbags, footboards, B. and B. pilot jet carburetter. M-L mag., in good going order; a bargain, £18/10, or offer.—L. C. Mather, 171, Stafford Rd., Wallington, Surrey. [5325

THE MOTOR CYCLE

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Testimony

THIS space will be occupied each week with copies of letters from Policy holders who have made claims. Original letters may be inspected.

Sir,

I beg to acknowledge your letter.....and to thank you for the promptness with which the matter has been settled.

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MOTOR CYCLES FOR SALE.

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omega Quadrants; exchanges entertained. — Booth Motories, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10; 1919 6h.p. James combination, lamps, speedometer, £89/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 2 speeds, clutch, kick starter, lamps, speedometer, £42/10/6; free engine Triumph, £22/10/6.—Booths' Motories, Halifax.

BARGAINS.—1916 G.W.K. light car, detachable wheels, £139/10/6; 1920 Williamson combination, dynamo lighting, £115/10/6.—Booths' Motories, Halifax.

BARGAINS.—8h.p. Premier combination, £55/10/; 1914 P. and M., £35/10/6; late model two N.S.U., speed gear, £19/10/6.—Booths' Motories, Halifax.

BARGAINS.—Harley-Davidson combination, mileage 300, £130/10/6; 1921 Rudge Multi, £85; another £75/10/6, like new.—Booths' Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10/6; 3½h.p. N.S.U., 12/10/6; 3h.p. Enfield, speed gear, £29/10/; 8h.p. Peugeot, Grado gear, £19/19/6.—Booths' Motories, Halifax.

BARGAINS.—5h.p. 1921 shop-soiled Quadrant combination, £115/10/6; 1917 4h.p. Douglas, £59/15/6; 1915 Douglas, £35/17/6.—Booths' Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 3-speed Omega, £51/10; 1921 new O.K., £38/1; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths' Motories, Portland Place, Halifax. Tel.: 1062. [55

HALIFAX.—50 second-hand motor cycles and combinations. Offers wanted. Get list. Cash or exchange.—Halifax Motor Exchange, Horton St., Halifax. [54

IF Wishing to Buy (for cash or easy payments), sell or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [37

3½h.p. Triumph Motor Cycle, requires slight adjustments, to clear £10; Enfield 2¾h.p., 2 speed, running order, £18; O.K. 1917 motor cycle, less power unit, to clear £16.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [51

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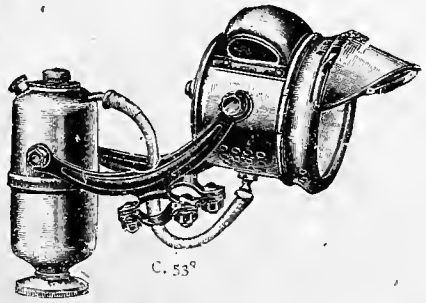

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PREMIER.—For sale, super Premier runabout, 1921, nearly new condition, electric lighting, tax paid.—lifford, Barnwood Cottage, Gloucester. [5355

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COVENTRY Premier, 1922, 4-wheel model; £250; immediate delivery; cash or deferred payments.—atcliffe Bros., 200, Gt. Portland St., W [0730

8h.p. Humberette, a.c., recently overhauled, new tyres, Stepney, lamps, in fine condition; £100, ear offer.—Box 7,050, c/o *The Motor Cycle*. [5636

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A.C. Sociables, modern, fully equipped, mechanically sound, good appearance, from £55 to £85; trial.—9, Allsop St., Upper Baker St., London, N.W.1. [5425

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Wood-Milne Heavy	30/-
Wood-Milne Extra Heavy	35/-
28×3 American Rims.	
Dunlop Extra Heavy	45/-
Wood-Milne Extra Heavy	30/-
Rom Combination	55/-
28×3 for 28×2½.	
Dunlop Extra Heavy	45/-
28×2½ for 2½ Rims.	
Dunlop Extra Heavy	45/-
Dunlop Heavy	40/-
26×3 for 26×2½ Rims.	
Dunlop Combination	65/-
Dunlop Extra Heavy	45/-
Dunlop Heavy	37/6
Wood-Milne Heavy	30/-
26×2½ for 2½ Rims.	
Dunlop Heavy	36/-
Wood-Milne Extra Heavy	32/-
Wood-Milne Heavy	29/-
26×2¼×2¼.	
Clincher Extra Heavy	32/6
Extra Heavy Studded	30/-
Heavy Studded	25/-
26×2⅜	
Dunlop Extra Heavy	40/-
Dunlop Heavy	34/6
Palmer Cord Heavy	34/6
Clincher Extra Heavy	28/6
Avon Heavy Rubber-studded	30/-
Wood-Milne Extra Heavy	30/-
Hutchinson T.T.	27/6
Hutchinson Passenger	32/6
26×2¼.	
Dunlop Heavy	31/-
Palmer Cord Heavy	31/-
Wood-Milne Extra Heavy	30/-
Wood-Milne Heavy	23/-
Avon Sunstone	30/-
Goodyear Diamond	30/-
Bates Extra Heavy	31/-
26×2.	
Palmer Cord Heavy	30/-
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TUBES. All sizes and makes. 7/6 each.

When ordering, please write distinctly.

IGNITION, LIGHTING, ETC.

COMPLETE Lighting Set, ½h.p. engine, dynamo, switchboard; £25, offers.—Pope, 31, May Rd., Gillingham, Kent. [5358

LUCAS Dynamo Lighting Sets, complete, from £7 each.—Dept. H.L., Leslie Dixon and Co., 9, Colonial Av., Minories, E.1. [0709

C.A.V. Magnetos.—Extraordinary bargains. Brand new 180°, twin or single, approval against cash, 38/6, carriage free.—Langfords, 37, Cricklewood Broadway, N.W.2. [5811

LUCAS E3 Dynamo, switchbox, cables, head, side, tail lamps, accumulator, £14; Lucas electric horn, push, and wires, 35/- (new).—60, Baker St., Sparkhill, Birmingham. (D) [4501

GOVERNMENT Surplus Unused Magnetos.—Having purchased the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; special long driving spindles for Rudge, 10/- extra; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

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HIGH Tension Wire, new, unperished, 9mm. 5d. per yard, 25 yard coil 8/6; 7mm., 4d. per yard, 25 yard coil 6/-; 5mm., 3d. per yard, 25 yard coil 4/-; 3mm., 2d. per yard, 25 yard coil 2/-.—Below.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d. See other goods under Parts and Accessories.—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London [442

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

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MAGNETO and Dynamo Repairs Service, also self-starters, batteries, and general electrical equipment are speedily and thoroughly repaired by the Runbaken Repairs and Spares Service, all work returned indistinguishable from new. Spare parts for every known make.—Connecticut Service Station.

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U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. AI, BI, AO, KBI, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [2764

NISCO, Ignition Specialists to the trade. Actual manufacturers of spare parts for magnetos, dynamos, etc. Repairs to all makes of magnetos, car lighting equipment, electrical and scientific instruments. All work guaranteed.—National Ignition and Supplies Co., Pugh Works, Shirley Rd., Addiscombe, Croydon. 'Phone: 435 Croydon. [2381

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THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Ensroad, London. [6015

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TYRES.

REPAIRS.—Below are prices for retreading and repairing covers and tubes.—Below.

5/- is the cost of repairing your damaged cover (carriage extra).—Below.

1/6 each is the cost of repairing damaged tubes (carriage extra).—Below.

OLD Covers made equal to new again, with rubber-studded treads.—Below.

ALL 26in. Sizes, light 12/6, medium 15/6, heavy 17/6, extra heavy, 20/-.—Below.

650×65, 28×5, and 700×80, heavy 20/-, extra heavy 25/-.—Below.

SEND Your Tyres, by post or rail, to Phœnix Tyre Repairing Co., 224, Sherlock St., Birmingham. [X1311

ON Account of reduction in the price of tyres, the undermentioned prices are reduced by 10%.

24×2 Hutchinson Rubber-studded 22/3.

24×2¼ Clincher de Luxe Rubber-stud Heavy 26/-.

26×2 Hutchinson Brooklands R.S. 26/5, Palmer cord heavy 34/6.

26×2¼ Dunlop Heavy 36/-, Macintosh chain 32/3, Bates special heavy 34/9, Palmer cord heavy 34/9, Palmer cord 34/9, Rom combination 41/9, Avon combination 38/9, Avon Sunstone 32/9, Wood-Milne combination 46/-, Beldam combination 35/-.

26×2⅜ Palmer Cord Heavy 35/3, Clincher de Luxe extra heavy 27/9, Palmer cord 35/9, Dunlop heavy 35/9, Dunlop extra heavy 41/-, Avon tricar 32/9, Hutchinson passenger R.S. 32/9.

26×2½×2¼ Avon Rubber-studded 24/6, Avon heavy rubber 29/6, Hutchinson rubber-studded 31/-.

26×2½ Rom Combination 45/-, Macintosh chain 35/9, Hutchinson rubber-studded T.T. 33/-, Dunlop heavy 45/-, Avon Sunstone 42/6, Wood-Milne extra strong 34/6, Wood-Milne special 31/7.

650×65 Wood-Milne Extra Strong 40/-, Palmer cord (light car pattern) 41/6, heavy rubber non-skid.

650×65 (for Voiturette rims) Dunlop Steel-studded 47/6, Dunlop 3-ribbed 45/-, Dunlop grooved 42/6, Burnett grooved 30/-.

26×3 (for 650×65 rims, equivalent to 700×80 for 650×65 rims) Englebert Touring Rubber-studded 30/-, ditto passenger ditto 32/6, ditto superior reinforced 37/6.

700×75 (to fit 650×65 rims) Hutchinson Small Car 3-ribbed 55/-.

700×80 (to fit 650×65) Wood-Milne Extra Strong 45/-.

28×3 (to fit American rims) Dunlop Heavy 45/-, Clincher de Luxe extra heavy 45/-, Wood-Milne extra strong 32/6, ditto 3-ply 28/-.

28×3 (to fit 2½ rims) Dunlop Extra Heavy 50/-. Dunlop heavy 45/-.

NEW Tubes, in all sizes, 7/- each, butt-end 6d. extra; tubes with one small vulcanised patch by manufacturers, otherwise quite new, 5/6.

THE Above Lines are sent 7 days on approval, and forward passenger train, carriage paid.

REMEMBER, the reputation and guarantee of Emanuel's is behind all we sell.

H. EMANUEL and Co., Tyre Factors, 27, Belgrade Rd., Stoke Newington, N.16. Stores: 37a, Balls Pond Rd., Dalston, London, N. Tel.: Dalston 3161. [0722

MOTOR Cycle Tyres on Easy Terms, standard makes; list post free.—J. G. Graves, Ltd., Sheffield. [0589

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MISS DOOLEY.—New 28×3 Palmer endless tubes, 5/- each; new Dunlop butt ended, 28×3 and 26×3, 5/- each; new Dunlop endless, 28×3, 6/- each; new 26×3×2½ Moseley tubes, 5/- each.—Please apply to Miss E. Dooley, 33, Killyon Rd., Clapham, S.W.8. [6087

26×2½ New Beaded Covers, 24/-; new best quality tubes, 24×2¼ 5/-, 26×2 6/-, 26×2¼ 6/6, 26×2½ 7/6, 26×2½×2¼ 8/-, 26×3 9/-, 700×80 9/6, 750×75 10/-, 28×3 10/6; new rubber belts, 6ft. 2in.×1in., 10/6; 15in. inflators, 2/3; sent approval, carriage paid, receipt remittance.—Palmer,s Garage, Tooting, S.W. [5983

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Any machine or combination may be had on

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Deposits from ⅕th of Purchase Price secures delivery.

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ECONOMIC.—26×2 Wood-Milne extra strong, 26×2¼ Bates special W.D., 31/6; Wood extra strong, 30/-.

ECONOMIC.—26×2⅜ Bates special heavy, Hutchinson Passenger W.D., 30/-; Trophy, 29/-.

ECONOMIC.—26×2½×2¼ Clincher de Luxe 30/-; Avon rubber-stud extra heavy, 30/-.

ECONOMIC.—650×65 Goodyear clearance, Wood-Milne special, 30/-; 700×80 Wood special, 40/-; extra strong, 42/6.

ECONOMIC.—Fully guaranteed Dunlop rubb 24×2 22/6, 24×2¼ 24/9, 26×2 24/6, 25/9.

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THE Difference between a good retread and one is its mileage; try us; watch results.— Rubber Works, Melton Mowbray.

TRY Our 3,000 mile retread. Repairs of description. High-class workmanship guar Return carriage paid.—Buxton Vulcanising Co., Derbyshire.

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26×2½×2¼ Dunlop E.H. 45/-, Clincher E.H Avon H. 25/-, or E.H. 30/-, Hutchins 37/6.

26×2½ Wood-Milne H. 30/-, or E.H. 35/-. 2½ Dunlop rubber-studded heavy 45/-. Wood-Milne H. 32/6, E.H. 40/-.

28×2½ (to fit American rims) Dunlop extra 45/-, Wood-Milne H. 40/-, 28×3 Dunlop E.H. 47/6, Wood-Milne E.H. 30/-, Kempshall

650×65 Goodyear E.H. 30/-, Wood-Milne H Dunlop grooved voiturette 47/6, for voiturette 30/-, Dunlop steel-stud 47/6.

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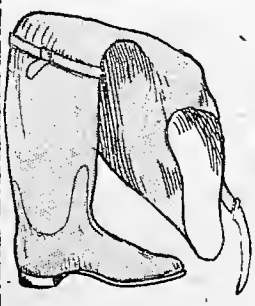

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"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R., Wimbledon L. and S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [5984

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

MOTOR Cycle and Cycle Business wanted, Kent, Surrey, or Sussex, with living accommodation; total ingoing about £600.—Russell, 16, Station Rd., East Grinstead. [5234

HOTELS AND APARTMENTS

YOUR Maiden Aunt will becharmed with the Old Barn Teahouse, Stock's Green, Hildenborough, beyond Sevenoaks. [4442

WANTED.

WANTED, fork stem for 1911 Triumph.—Edge, 53, Bridge St., Bolton. [X1159

SCOTT Engine and gear, good condition.—Davies, 59, Piccadilly, Manchester. [5241

WANTED, 2-speed Roc wheel, or low gear wheels.—Aldridge, 2a, Mote Rd., Maidstone. [5295

OLD Covers, 30×3, 30×3½, and 760×90; best prices given.—Hercules Tyre Co., Northampton. [5946

3½h.p. Sunbeam Parts wanted; forks and other parts.—Snow, Laurel St., Dalston, E.8. [6121

WANTED, surplus from manufacturers and garages. —Grove, 18, Fore St., Edmonton, London. [4211

WANTED.

WANTED, racing car, also another, cheap for cash.—J. Daniels, jun., 8, Crowhurst Rd., S.W.9. [5972

REMY Generator, off Harley, wanted, cheap; also 20in. steering wheel.—40, Wheathill Rd., S.E. [5774

WANTED, Scott crank case. State condition, lowest price.—3, Lansdowne Villas, Harlington, Middlesex. [5293

WANTED, motor cycle parts, engines, etc., any make; cheap.—23, Jupiter Terrace, Well Hall, S.E.9. [5680

WANTED, 3½h.p. Fafnir, 75 mm. 4557 cylinder and piston, new or second-hand.—Davis, 14, Maughan St., Blyth. [5365

SCOTT 1911 Crank Case, or engine, 1911 or later; good condition essential.—40, Frodingham Rd., Scunthorpe. [5738

INCOMPLETE P. and M.'s or Parts, W.D. spares, bankrupt stocks, etc.—Inman, Durham Rd., Seaforth, Liverpool. [3641

WANTED, for spot cash, motor cycles and light cars; best prices paid.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [5251

SCOTT Radiator wanted, not earlier pattern than 1912; approval, deposit.—E. W. Mason, 1, Osborne Rd., Southampton. [5409

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

WANTED, second-hand Morgans, in good condition, not earlier 1919.—Rey's, 378-384, Euston Rd., N.W. 'Phone: Museum 6436. [4948

ALBION Plain 2-speed Gear, complete with controls, sprocket wheel sound; cheap.—Bromfield, East Hill House, Charles St., Herne Bay. [5550

WANTED, late combination or runabout, dynamo lighting preferred, 6h.p. or over; no dealers.—30, York Rd. S. Farnborough, Hants. [5426

A.C. Sociable or Morgan Runabout wanted for cash; must be fairly modern and cheap.—Particulars to 24, Riffel Rd., Willesden Green, London, N.W. [4407

3½h.p. Premier Engine or parts, any condition; state particulars, lowest for cash. Also 1912 6h.p. Rex.—Advertiser, 5, Tavistock St., Leamington Spa. [5270

£2,000 Cash Waiting for quantities of motor cycle parts and accessories.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [6112

WANTED, 3-wheel motor scooter, new or second-hand, good seat for elderly person; lowest cash price.—Crowther, 8, Sackville St., Ravensthorpe, Dewsbury. [5370

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

EXCHANGE.

MOTOR Scooter, for lathe, or sell £20.—S. Jackson, 158, Halifax Rd., Todmorden. [X1176

MORGAN, good condition, and cash for Baby Peugeot.—Downing, 24, Union St., Ryde. [5237

£21, or exchange, 5-6h.p. L.M.C. twin, a.i.v., 2-speed.—143, Lowe St., Wolverhampton. [5381

7-9h.p. Indian 3-speed Combination, for Morgan, or sell.—33, St. Stephen's Rd., Bow, E. [5439

N.S.U. 2-speed C.B. Combination; exchange solo big twin, speeds.—434, Fulham Rd., S.W. [5588

DOUGLAS Combination for lightweight and cash, or sell £80.—Jeanes, Crowthorne, Berks. [5391

1920 N.U.T. (see under N.U.T.) for Zenith or Scott.—Woods, St. Ronans, Worthing. [5934

EXCHANGE Zenith (see For Sale) for spring frame solo.—13, Westmoorland Rd., Barnes. [5592

£160.—Motor launch, exchange for good combination.—Ogilvie, 275, Crow Rd., Glasgow, W. [5416

6-8h.p. Combination (£85) for light car, about same price.—A. Edge, 53, Bridge St., Bolton. [X1158

A.J.S. 1920 Combination (as new), for Douglas or similar and cash.—59, High St., Clapham, S.W. [5847

8h.p. Chater-Jap Combination, perfect, level for good solo; sell £40.—36, Commerce Rd., Wood Green. [5734

B.S.A. 1919 4¼h.p. All-chain Combination for motor van suitable baker.—20, St. John's Rd., East Ham, E. [5356

EXCHANGE specially tuned 1914 Triumph for I.O.M. Rudge.—5, Park Terrace, Headingley, Leeds. [5313

EXCHANGE Humber 4-cyl. Van for combination, or sell £65.—Speechley, 86, Churchfield Rd., Acton, W.3. [5645

1919 Indian 7-9h.p., perfect condition, for late Sunbeam or Norton, or sell.—Price, Ashby, Scunthorpe. [5235

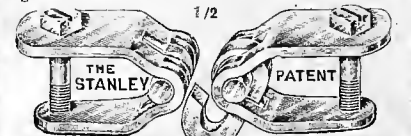
RUDGE Multi, 1921, speedometer, etc., for countershaft Norton or Triumph.—82, Caledonian Rd., N.1. [5878

STANLEY BELTS AND FASTENERS.

MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

A BOX OF STANLEY SPARES is a complete belt equipment outfit—the best and cheapest insurance you can effect against belt trouble on the road. It contains:

The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins



The STANLEY SPARE LINK which is the best belt length adjuster yet invented. Saves time, trouble & money. Saves the cost of a new belt.

The STANLEY SHIELD, which protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. 9d.

STANLEY ADJUSTING HOOKS, for adjusting the length of your belt in one second. Set of 3, 6d.
"Never be without a box of Stanley Spares."

Price 3/6 post free. Send size of belt when ordering.

The LION FASTENER, guaranteed for 5,000 miles—11d.

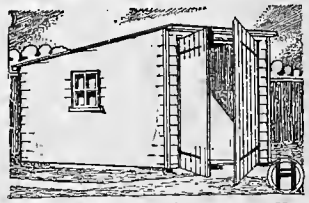
Our Goods are World-renowned for their Reliability.
A STANLEY FASTENER free with each belt.

Belt Punches 1/10
Adjustable Punches 2/4

Perft.	
5/8"	1/6
3/4"	1/9
7/8"	2/-
1"	2/4
1⅛"	2/10

Stanley Motor Belts & Fasteners
BRITISH THROUGHOUT
(STANLEY WEBB, inventor of the Original Hook Belt Fastener and other Practical Belt Aids.)
BROMLEY, KENT. 'Phone: 806 Bromley

EXCELLENT M.C. HOMES.



The last word in Motor Cycle Combination Houses made in Matching and Weather Boarding. Prices now reduced. 4 sizes. In stock. The Best is eventually Cheapest.

E. B. HAWTHORN & CO.,
Sole Makers of Better Built Buildings in Timber,
60, London Works, READING.

EXCHANGE.

£10 Cash and hot stuff T.T. Rover for best 3½-4h.p. countershaft offered.—Sealey, Princes Av., Wat ford. [583

POWERFUL Ship's Glass; £3/10; exchang brazing lamp, vice.—Bacon, Bellevue, St. George Bristol. [563

KINGSBURY 2¾h.p., 2-speed, practically new, wit cash, for Norton, Triumph.—3, Kildowan Rd. Goodmayes. [571

1919 2¾h.p. Douglas, 2-speed, good condition, fo I.O.M. Rudge Multi.—S. Martin, Tarrant St Arundel. [567

SPECIAL o.h.v. J.A.P. Sporting Solo; exchange 1911 1914 Scott; sell £36.—1, Elsiedene Rd., Winch more Hill. [555

POTTERY, 2,000 pieces, exchange for combinatio or light car.—Brace, 66, Fenchurch St., E.C Bank 624. [609

1919 2½h.p. Clyno, 2-speed and cash for mor power or combination.—181, Neuton Rd., Bu ton-on-Trent. [576

TRIUMPH, fixed gear, cash, for 4h.p. Triumph speed countershaft.—Tapscott, Mill Hill, Ston house, Glos. [531

EXCHANGE Auto-wheel, complete, for typewrite first-class order; or sell £8/10. — Cowlishaw Methwold. [594

O.K. 4-stroke, M.A.G., Albion 2-speed, new cond tion, and cash, for heavier machine.—63, Solo Rd., Brixton. [593

FURNITURE Manufacturer will exchange new goo for motor cycle, good machine.—Box 7,026, c *The Motor Cycle.* [533

4h.p. 1920 Triumph, 3-speed, perfect order, for Scot wanting overhaul, and cash.—Stebbings, Attl borough, Norfolk. [594

2¾h.p. Precision Engine, complete unit, for 3½h. Triumph ditto, or sell £12/10.—Lyndale, Bal clava Rd., Surbiton. [57

LIST 50 Car Bargains Free.—Combinations, mot cycles, etc., part exchange.—Douglas S. Cox, We Norwood. See Cars. [38

P. and M. Combination, perfect order, for lightweig motor cycle, or Ford chassis.—Marsh, Cippenha Green, near Slough. [53

PREMIER 4h.p. Twin, 2-speed, clutch, valve £4 for lower power, cash adjustment.—150, Garrs Lane, Wandsworth. [57

ALLDAYS 12h.p. 2-seater, new condition, u scratched, for 2-seater or water-cooled Morgan 63, Solon Rd., Brixton. [59

1911 Douglas, smart but wants timing, and lad cycle, for higher power or 2-stroke.—J. Newm Alderholt, near Salisbury. [52

G.N. Popular, July, 1921, done 1,000, fully equipp for late Morgan or combination and cash.— Wadbrough Rd., Sheffield. [X12

DELAGE 2-seater, 1913, 10.4h.p.; any expert amination and trial; for first-class combination Ashley, Probus, Cornwall. [52

DOUGLAS 2¾h.p., 1916, also 1919 sidec Triumph preferred.—Thompson, 32, Clare Rd., Kentish Town, N.W. [56

EXCHANGE 2-speed Twin Coachbuilt Combinat and new scooter for good Ford ton lorry.— 96, c/o *The Motor Cycle.* [X1

8-10h.p. w.c. J.A.P. Chassis, perfect, for good c bination, or two solo machines.—J.A.P., 150, A and Park Rd., Twickenham. [5

£15 and 22in. Chater-Lea Speediron, 1920 £10), for best make motor cycle offered.— Moore Park Rd., Fulham. [5

NEW Raleigh, 5-6h.p., unridden, for lower po and cash, or sell £128; cost £147.—W. Ay Garage, Kensington Palace, W.8. [5

1916 Premier, solo, countershaft, perfect, £40 off for Douglas or Villiers, flywheel mag.— Meeting House Lane, Peckham. [5

1918 Renovated Countershaft Triumph, equip taxed; exchange lightweight and cash, £65.—1, Othello St., Liverpool. [5

1920 2½h.p. T.T. 2-speed New Comet, 5 gold m winner, for higher power or cycle car.—F Hobson, Hill Lodge, Welwyn, Herts. [5

1921 2½h.p. 2-speed Federal-Villiers, complete F.R.S. lamp, etc., as new, for heavier machine sell.—Box 6,970, c/o *The Motor Cycle.* [5

WANTED, Morgan or good 3-wheeler, for 1920 countershaft Zenith combination, fully equip —Glover, 4, Trinity Rd., Sheerness. [5

DOUGLAS, 1919, for 2-stroke and cash; Omega 1919, 2-speed, ditto, cash for combinati Evers, Neuton Rd., Burton-on-Trent. [5

1920 4h.p. Coulson B., 2-speed, fully equip original tyres; any trial; exchange good com tion.—Burrow, Colaton Raleigh, Devon. [

1921 Burney Cycle Car, 8h.p. Blackburne, 3-s and reverse, for solo and cash.—45, Sum field Crescent, Edgbaston, Birmingham. [

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
Telegrams: "Motorcycle, Coventry."
Telephone: 10, Coventry (5 lines).

ADVERTISING AND PUBLISHING OFFICES: 20, Tudor St., London, E.C.4
Telegrams: "Cyclist, Fleet, London."
Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings Navigation Street, Birmingham.
Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Quarterly Licences for Motor Cycles.

As a result of continued agitation, the Ministry of Transport has, it is understood, agreed to issue quarterly licences for motor cycles in 1922. This decision will considerably ease the burden of taxation so far as users of the most economical type of motor vehicle are concerned, and form interesting reading to motor cyclists. As a matter of fact, the refusal of the Transport Ministry to grant quarterly licences for motor cycles when the new scheme of taxation was introduced has always remained unaccountable. Whilst acceding to the plea of organisations representing car owners who have all through 1921 been able to obtain quarterly licenses at a figure a little above one-quarter the amount of the yearly rate, motor cyclists had to pay the full tax, no matter when they registered their machines prior to October 1st. Abundant proof has been furnished to the authorities that this ruling adversely affected trade in motor cycles toward the end of the summer, and no doubt the decision is due to the pressure brought to bear from various quarters.

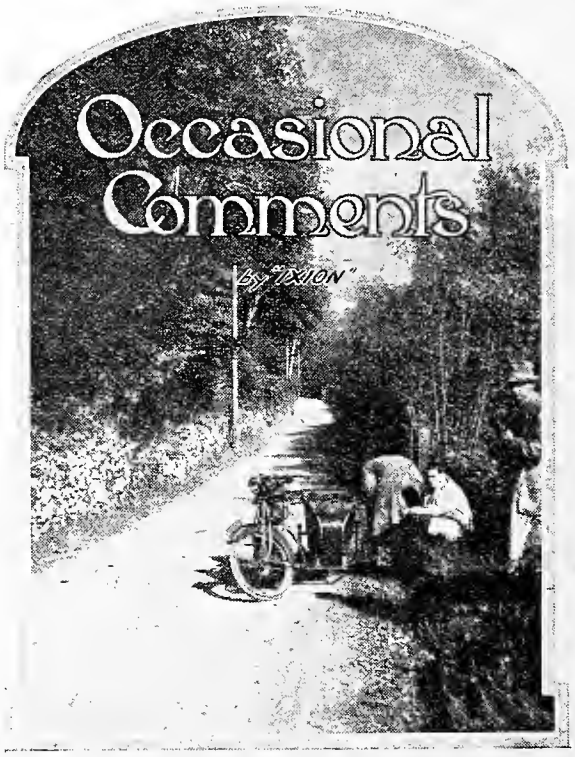
New regulations are shortly to be issued by the Ministry of Transport concerning these short-period licences, says *The Autocar*, and in view of the further concessions which are to be granted to car owners, it is sincerely to be hoped that at least equal concessions will be provided for motor cyclists. For instance, a sliding scale of taxation is proposed. Licences expiring on December 31st, if taken out in March, will cost 90% of the full annual figure, in April 80%, in May 70%, and in June 60%. After September the quarterly rate will apply.

This announcement would indicate that the Transport Ministry has no intention of abandoning car and motor cycle taxes in favour of a petrol tax—which is still urged as the most fair and equitable system, since the tax payable is proportional to the use made of the roads. But we may repeat the remark in our last issue that, if the return shows a £2,000,000 surplus over estimate, is it not time that a reduction of taxes was made, and so assist the expansion of the movement and thereby brighten trade to the extent that thousands of unemployed may be absorbed by the various factories all over the country?

The Status of the Three-wheeler.

Apart from its present score in the matter of taxation, the three-wheeler has in the past served a useful purpose as a link between the motor cycle—the cheapest form of travel—and the rather more expensive light car. At the moment prices are in a state of flux, but will have settled down to a more stable basis by the time that the Motor Cycle Show at Olympia opens its doors. We shall then be able to see whether the three-wheeler is to retain its former status or whether it is to develop on more ambitious lines. Long ago the forecar was the favoured form of three-wheeler, but in course of time it developed from the simplest form of passenger motor cycle into a fully equipped car on three wheels (termed a tricar) selling at a comparatively high price. As a result it disappeared, and gave place to the simple three-wheeler which has justly enjoyed a very considerable vogue. At the moment the three-wheeler shows signs of following in the footsteps of its prototype—the forecar—and passing from the stage of a link between the motor cycle and light car to a very highly-developed and equipped three-wheeled car. As a consequence the general run of prices has risen until they are above those of the cheaper four-wheelers and equivalent to those of some moderate-priced light cars which offer the same equipment. It would appear, therefore, that the three-wheeler is tending to over-development—a state of affairs much to be regretted, since in its lighter and less elaborate forms the three-wheeled runabout is a machine of strong appeal and high performance.

An index to the advertisements in this issue will be found on the page facing the back cover.



A Relic.

TIDYING up my garage the other day (one *has* to, when the Wood-Milne tyre pump gets lost on the bench), I came across an eloquent relic of bygone days. It consisted of a small leather case about 6 × 4in. containing half a dozen handy tools. I was its original inventor. I pointed out to the trade about fifteen years ago that a motor cycle stopped every few miles, and that it was a great nuisance having to unlash the main toolkit; why not carry knife, screwdriver, belt punch, and a few other handy oddments in one's side pocket? The trade responded nobly, and somebody—Reg. Samson, I fancy—went one better by designing a special motor cyclist's belt with sewn holsters for containing the necessary kit.

Nowadays one goes from Coventry to Edinburgh, round the Scottish Six Days, and back home again, without opening the tool kit.

The Experimental Engine.

JONES designed it. All the crack power units of the day were going to be back numbers. At last it was ready for demonstration to a few trusted friends. We gathered round. The new engine was mounted in a four-wheeled chassis—unkind critics have remarked before now that a four-wheeled chassis makes an admirable roadside bench in emergencies. Jones started it up, and dismounted to commence his potted lecture on the merits of the engine. The revolutions varied from 200 to 2,000 per minute on a constant throttle opening. Yes. You have guessed right. It was a multi-cylinder two-stroke.

Jones is now redesigning its induction system

From a Reader.

"DEAR Ixion,—

"As you seem to be taking an intelligent interest in stands just now, why don't you clamour for a gadget which sidecar men have always wanted. You must have noticed that when you are detaching your sidecar from your motor cycle, it generally jams for about a quarter of an hour. Then you get ratty, clump it with a coal hammer, and it tumbles off, scarring its glossy coachwork, abrading your shins, and generally playing the goat. Why doesn't somebody evolve a neat hinged prop which would enable the sidecar to remain gracefully poised on its own wheel and the suggested leg when the decree nisi becomes absolute? The sidecar could then remain on its leg until remarriage became due."

There may be something in the suggestion. Anyhow, I am willing to testify that there is nothing so unhandy as a divorced sidecar, unless it be a machine gun tripod.

The Super Saddle.

THOUGH spring frames gain very little ground, the "comfort movement" progresses apace, and our spring frame campaign of the last few years has fathered two comfort gadgets which nobody foresaw when the whole trade first commenced its experiments. The first is the oversize tyre, which may ultimately become the standard size tyre. The second is the super saddle. Of the two alternatives to a spring frame, I should give my vote for the oversize tyre if one was limited to either dodge exclusively; for it is undeniable that when rear wheel shocks are intercepted by a big, flabby tyre or a scaffolding of springs under the saddle, the front fork promptly confesses to crimes of which it was previously unsuspected. The oversize tyre goes far to soften the acerbity of an imperfect fork. But, of course, the trouble about the big tyre is that you cannot put it on to every machine. If the rims will accept a walloping tyre, it by no means follows that the mudguards, brake work, and other obstacles will clear. Given a good fork, a pair of big tyres, and a super saddle, nobody need clamour for additional comfort. On the other hand, it is probable that a really well-designed spring frame would afford similar comfort at a lower weight, and usually at reduced cost.

Why not Overtyre?

SEVERAL kind friends have written to point out that the real cure for the puncture nuisance is to overtyre. I quite agree. My winter mount has electric lighting, legshields, and 3in. tyres, all of which I regard as essential elements in a November-to-March mount. Several credible witnesses assert that a pair of 3in. tyres will run two whole seasons on an average 500 c.c. machine without puncturing. The last pair of 3in. tyres which I mounted on a 3½ h.p. ran 5,000 odd miles before I sold it, and were never re-inflated, whilst their ribbed treads showed no signs of abrasion. Oversize tyres may therefore be regarded from three standpoints. First they are a genuine cash economy. Second, they compete with spring frames for comfort. Third, they go far towards eliminating tyre stops.

Direct Steering.

I HAVE received most woebegone letters during the last few months from readers who have purchased direct-steering cycle cars after previous experience with geared-steering cars, and who consider the simpler method totally unsafe. This idea is a pure illusion. Direct steering is as accurate and safe as any other type, for all practical purposes. I have covered many, many thousands of miles with it

Occasional Comments.—

and quite admit that the change from one form of steering to another is trying at the outset, and even apt to alarm the timid. But the contrast is not insuperable, and a very few days' practice will put a driver quite at his ease with the simpler type. He should conduct his early experiments in a roomy place where traffic is light, keep a firm grip on the wheel, and take his corners cautiously.

Would You Believe It?

ON opening one of my letters yesterday, thick blue fumes poured out of the envelope as soon as it was slit. The fumes emanated from the sulphurous comments a reader had annexed to a letter received from somebody who had advertised that he wanted to buy a certain make of motor cycle. The advertiser's reply ran:

> "I thank you for offer of your motor cycle, but I have decided that *my horse* will be the best for me through the winter."

A Sidcot Suit.

A CORRESPONDENT wants to know what a Sidcot suit is. It is like a revolver—a handy thing on special occasions, but you do not want it every day Actually it is what the tailors call an "aviation suit," and is designed to achieve the impossible, *i.e.*, keep you warm in December at altitudes of 25,000ft. and speeds of 100 m.p.h. It is externally constructed of waterproofed twill, lined with fleece and other cosy materials, and makes you look like a hybrid. It follows that a Sidcot suit is just the goods for a London-Exeter or for any other motor cycle expedition on which warmth is of far more account than appearance; but it is not, of course, quite the dress in which you would go to declare your income and past moral character to Mabel's papa. The disposal merchants have not sold them all yet, and the ardent motor cyclist can still pick one up at much under the original price which the R.A.F. paid for them. It is odd how war relics come in handy. When I test an 8 h.p. sidecar at night this winter I shall be clad in a helmet and Sidcot suit—both made for the R.A.F.—gum boots designed for the much-enduring infantry, Triplex goggles (M.T. pattern), and a pair of mitts originally ordered for the Archangel field force.

Why not Velocipede?

A CORRESPONDENT who enjoyed a classical education suggests that if cyclists dislike the term "pushbike" they should adopt the one and only word in our language which properly belongs to them, to wit, "velocipede," by which name all pedal cycles were known in his father's young days. I think he is not on the surest ground. It is, of course, ridiculous for cyclists to claim the plain word "bicycle," which means "two-wheeler," and contains no implications about the source of power used for propulsion. But "velocipede" only means "swift foot," and says nothing about wheels of any kind. I fear my verdict must still be cast in favour of "pushbike."

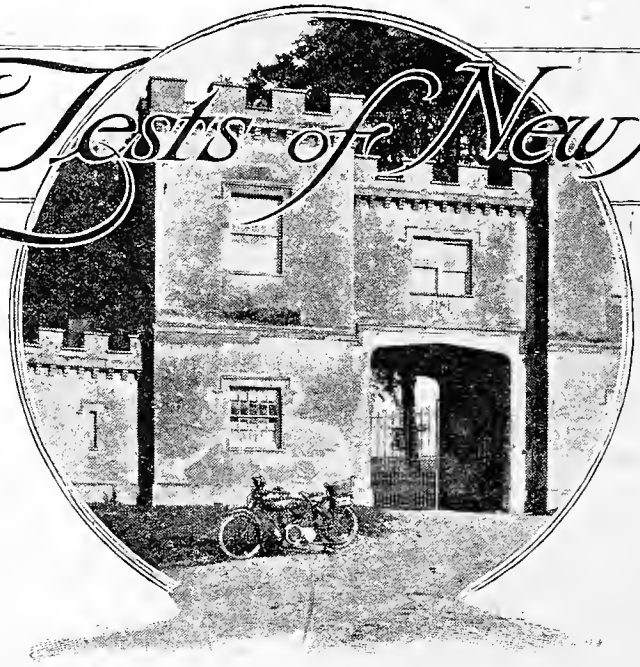
Thanks to the Drought?

I MUST never say another word against belts. Has anybody ever run a brand new belt for seven months without touching it? My baby two-stroke took the road on March 23rd last with a new ¾in. Dunlop belt, which is still running without attention. I cannot give the mileage, as I cannot afford to adorn a potterbus with six-guinea accessories, but the little 'bus goes out nearly every day, and thinks nothing of a sixty-mile spin. The belt, of course, figures in a combined drive, and is not direct.

THE DORSET ARMS, NEAR TONBRIDGE.

Many a motor cyclist would pass by this inn thinking that it was a private house but for the quaint sign, which at once catches the eye. For the rider who carries a camera it is worth while stopping at, as the building is over four hundred years old.

Road Tests of New Models



THE 5 H.P. V TWIN TWO-STROKE STANGER.

MUCH may be said in favour of the twin-cylinder two-stroke engine for motor cycles. Having the torque of a "four," and yet, withal, very simple, it is not surprising that much interest has been aroused by the advent of the only V twin two-stroke on the market, the 5 h.p. Stanger. (This machine was briefly described in *The Motor Cycle* of June 9th, 1921.) It has now reached a more advanced stage in production.

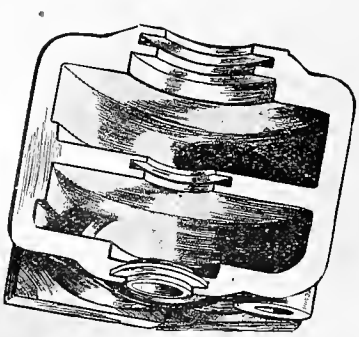
We were particularly impressed by the excellent workmanship noticeable in all the internal parts of the engine. The cylinders, which are interchangeable, are of the three-port pattern, are highly finished as regards their interior, and have neatly cast radiating fins. The cylinders are offset, but, notwithstanding this fact, the crank journals are only 1½in. apart. The crank case is in two separate compartments, each being compression tight, and a special washer abutting against each ball bearing on each external side is rendered compression tight by an oil seal. The centre bush is in two halves, and there is a greaser underneath the crank case so that grease can be forced on to the crankshaft through four holes cut in the bush referred to. The crankshaft runs on double rows of Skefko ball bearings. The connecting rods possess roller bearings, the rollers being introduced through a slot in the crank, thus enabling the connecting rod to stay in position and each roller to be fitted into place singly. Two "keeps," made out of one piece, then separated and secured by split pins, serve to hold the rollers in place.

SPECIFICATION.

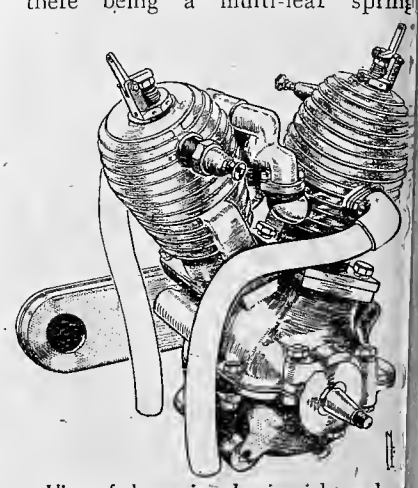
ENGINE: Stanger, 70 × 70 mm. (538 c.c.), V twin two-stroke.
LUBRICATION: Petroil. *MAGNETO: E.I.C.*
CARBURETTER: Senspray.
GEAR BOX: Sturmey-Archer three-speed.
TRANSMISSION: Chain-cum-belt.
WHEELS: 26 × 2¼in. *FORKS: Bramplon.*
FRAME: Stanger sprung. *WEIGHT: 230 lb.*
PRICE: £112 10s. *MAKERS: The Stanger Engine Co., 13, Steele Road, Tottenham, London, N.17.*

The pistons are more or less of standard design, but are beautifully finished, and carry two pinned rings at the top and one at the bottom. The method of securing the gudgeon pin is worthy of mention. This is held by two headless split pins, which repose in a groove cut in the piston; they are retained in place by being expanded in the centre. Considerable thought has been exercised in the design of the inlet pipes, which are so arranged that they distribute the mixture equally to the two cylinders. Although the cylinders are set at 45°, a 180° magneto is fitted, giving equal firing intervals, the crank angle being 135°. The exhaust box is of excellent construction, consisting of two large expansion chambers terminating in a final exit pipe.

The frame is symmetrical in design, and has the rear portion sprung, there being a multi-leaf spring anchored in a box immediately under the saddle. There are two bell cranks working on hardened steel pins at the rear of the chain stay and a stirrup connecting these to the lower parts of the spring. All moving parts are supplied with grease cups of sensible dimensions.



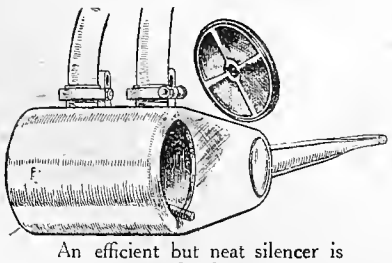
The crank case of the Stanger V-twin two-stroke engine.



View of the engine showing inlet and exhaust arrangements

Road Tests of New Models—

The other week-end one of these machines was placed at our disposal by the Stanger Engine Co. The Tottenham High Road is not an ideal place to attempt experience with a new mount, but the surface, though execrable, was dry, and we first of all noticed the comfortable way in which the machine throttled down while negotiating the heavy traffic, which lasted for several miles. It is a noteworthy feature of the Stanger that, while we would not like to say that four-stroking at low speeds is entirely absent, it is much less marked than on other two-strokes we have tried, and would probably be a good deal less if a modern single-lever carburetter were fitted. The machine is particularly sensitive to spark advance, and it is absolutely essential to keep the lever retarded when starting; and it is also advisable to retard on a hill. The first hill of any consequence came after leaving Enfield Town, and was climbed in excellent style, notwithstanding the fact that there were several checks caused by traffic, and at no time was it impossible to regain 30 m.p.h. on the gradient on top gear. Power and acceleration were admirable. We also found that the machine steered well, and there is no doubt that the spring frame added largely towards comfort over rough roads.



An efficient but neat silencer is fitted.

Capable Hill-climbing.

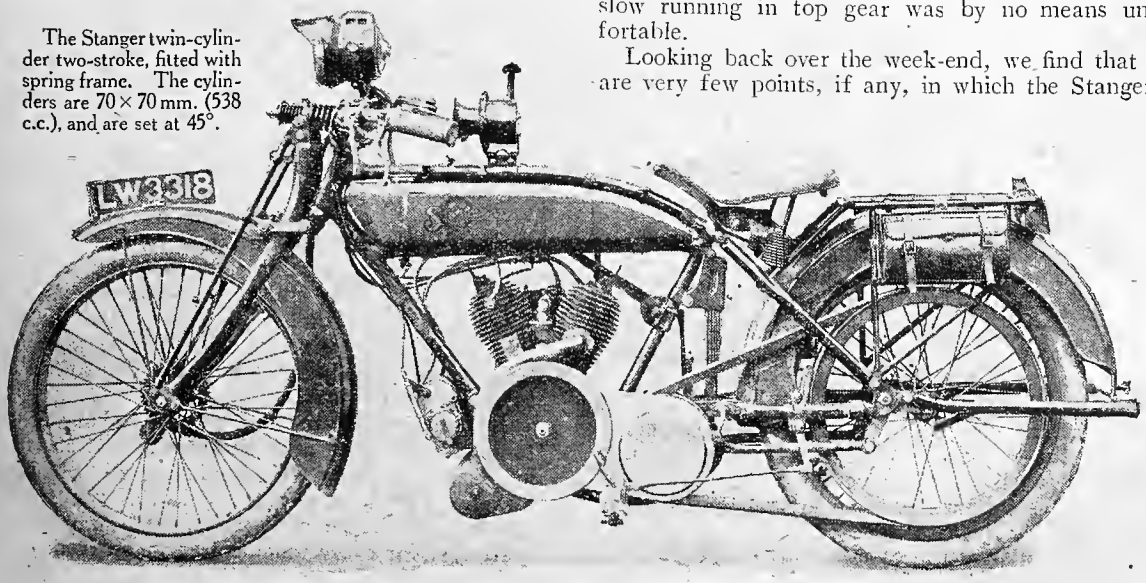
Our destination was reached that evening with no further trouble than a nipped tube, which necessitated the final stage being covered in the dark. The London side of Ridge Hill was taken with the greatest ease and on about half throttle, and the remainder of the journey was finished without incident in a curious half-light, which rendered the lamp of very little use. The following day an excursion was made into the country to test the hill-climbing powers of the machine, and it was taken to a gradient near Dunstable known as Chaul End, a little hill hidden away in the Chilterns with a gradient of about 1 in 5. During this trip a basket was strapped to the carrier, and in it reposed our favourite terrier, adding about 10 lb. to the weight of the machine. The hill was descended, and a stop was made at the bottom for a photograph. A restart was made on the gradient on first speed, the engine accelerated, and the change was made into second on the steepest portion, but to our surprise the engine picked up without a falter, and finished the climb at about 20 m.p.h. The new Stanger is most comfortable, and impressed us very favourably from every point. It appeared, however, to be slightly under geared, but, notwithstanding, it attained a speed of 40 m.p.h. on the level without any attempt at letting it "all out."

Perhaps the machine's most attractive feature is the delightfully even torque of the engine; it is scarcely possible to distinguish the separate explosions at speeds above 20 m.p.h. This fact, too, combined with a comfortable riding position, makes it very stable on greasy roads or wet city streets.

Slow Running on Top Gear.

At the end of the trial it was driven back to Tottenham, and on reaching Enfield an extremely dense fog was encountered. This necessitated driving at times on second speed below 10 m.p.h. and on top speed from 15 to 12 m.p.h., and, unpleasant though it was, it served to show what the Stanger would do at slow speeds. As before mentioned, although it would not be right to say that four-stroking was entirely absent, it was certainly far less noticeable than in any two-stroke we have yet tried, and the slow running in top gear was by no means uncomfortable.

Looking back over the week-end, we find that there are very few points, if any, in which the Stanger can be criticised. It is unconventional but by no means freakish, and a machine which, in our opinion, deserves to be more widely known and to enjoy increasing popularity. The Stanger two-stroke has appeared several times in reliability trials during the past season, and on each occasion has acquitted itself remarkably well.



The Stanger twin-cylinder two-stroke, fitted with spring frame. The cylinders are 70 × 70 mm. (538 c.c.), and are set at 45°.

VALVE PORT PROPORTIONS.

A Technical Discussion of the Relations between Valve Sizes and Gas Velocities.

ALTHOUGH it is common knowledge that the valves of an internal combustion engine need have as large a port opening as possible, there is another matter that is not so well understood, this being the ratio of the inlet port dimensions to those of the exhaust port.

In a well designed modern engine the ports are made as large as the design will allow. Although the reason for this policy is well-known, a brief explanation of the effect of valve port size upon engine efficiency will allow what follows to be more easily understood.

Advantages of Large Valve Ports.

Dealing first with the inlet port—supposing the engine to be running very slowly, there is plenty of time for the gas to flow through the induction pipe into the cylinder which can receive the maximum charge of gas. When the engine is running quickly there is less time for the cylinder to fill, and the gas has to travel more rapidly in the induction system in order properly to fill the cylinder. Unfortunately, the speed of the gas does not increase in proportion to the increase of piston speed, on account of the resistance of the pipes, valve port, etc., which restrict the passage of the gas. Thus, in the case of the inlet valve, large port dimensions offer less resistance to the passage of the gas and a fuller charge is obtained.

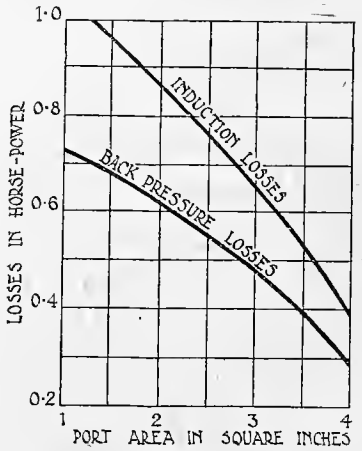


Fig. 1.

In the case of the exhaust the effects of size are similar, but here any resistance to the passage of the gas leads to back pressure upon the piston during the exhaust stroke.

From this it will be seen that increase of the inlet port dimensions results in a better charge being obtained in the cylinder, while increase of the exhaust port dimensions leads to reduction of back pressure by allowing the exhaust gases to escape more easily.

Relation Between Induction and Exhaust.

A little consideration will make it clear that there is a kind of relation between the losses caused by resistances at the inlet and at the exhaust ports and passages; for example, the effects of resistance either at the inlet or exhaust may be measured in terms of horse-power, and for a given loss in power due to restricted inlet, an equal loss in power could be obtained by a suitable restriction of the exhaust. Now it will be obvious that an equal increase or reduction of both valve dimensions would not necessarily cause an equal increase or reduction of efficiency.

Supposing the valve port areas, both inlet and exhaust, of a given engine, to be increased by equal amounts, it may happen that at a high speed the increase of power due to the increase of inlet area may be about, say, 1 h.p., while that due to the increased exhaust area may be only about ½ h.p.; in a case of different engine design, size, running speed, or of a different amount of port area increase, the results may be totally different—in fact, the effects of modifying the valve areas depend much upon design factors.

The foregoing has shown that the gain of power due to high volumetric efficiency and reduced back-pressure depends not only upon the size and lift of the valves, but also upon the size of the inlet in relation to the exhaust.

How Maximum Efficiency is Obtainable.

In view of the necessity of making the valves as large as possible, they are usually allowed to take up all the available space in order to give each port as large an area as possible. This means that the space is divided up between the inlet and the exhaust ports, and, therefore, any increase in the area of one means a decrease in that of the other. From this it will be clear that reducing the area of one port allows a corresponding increase of that of the other, and the decrease in power due to the reduction of one port may not be so great as the increase in power due to the increase in area of the other port.

It is impossible to eliminate all volume losses due to inlet restriction at high speeds, and it is equally impossible entirely to eliminate all back-pressure losses. The best way to deal with the situation is to eliminate the larger losses as much as possible.

Now, if for every unit of area taken from one port, an equal unit of area may be added to the other, it is possible in most cases for the one valve port to be made larger than the other, with beneficial results, the larger area being allotted to the valve port which will show the greatest reduction in resistance, measured in terms of horse-power.

To take an example: supposing a reduction of ½ a square inch in the exhaust valve area causes a loss

Valve Port Proportions.—

of, say, ¼ h.p.—if the corresponding increase of inlet area only causes an increase of ⅛ h.p., the proportions will be wrong, because they will result in a total loss of ⅛ h.p. If, however, the gain of power due to the increased inlet area equalled ¾ h.p., it will be obvious that, after deducting the increased ¼ h.p.

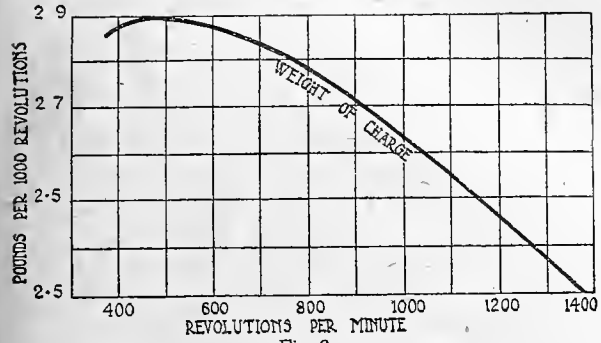


Fig. 2

loss at the exhaust, there would still be about ½ h.p. to the good.

This principle may be still further explained by reference to fig. 1, which helps to show how the losses increase as the valve areas are decreased.

How the Losses Vary.

The graph, which is merely explanatory, is drawn to represent curves of horse-power losses due to exhaust back-pressure and imperfect charging, the curves indicating the manner in which the losses are reduced or increased by varying the valve areas.

According to the figure, the exhaust losses are much less than the inlet losses for the valve areas from 1 to 4 square inches. It is evident, therefore, that any smaller area, such as 1 square inch, would have a greater effect upon the inlet losses than upon the exhaust. This may be proved by making a few investigations in regard to various sizes of valve ports, by the use of the graph.

It has already been mentioned that the losses under discussion mount up at a rapidly increasing rate as the engine speed is increased. This has the effect of complicating the matter of valve port sizes still further, because the losses, in changing their valve with variations of speed, do not both change their value at the same rate, so that the relation between inlet and exhaust is changed whenever the speed is varied to any extent.

Fig. 2 shows an actual graph of volumetric efficiency taken from an engine after being properly warmed up by running. It will be seen that the amount of charge, and, therefore, the drop below maximum volumetric efficiency, falls rapidly as the speed is increased. Now this loss of volume means a loss of a certain amount of horse-power.

This loss of power due to imperfect induction at high speeds is accompanied by a loss of power due to increased back-pressure at the exhaust, this loss also increasing with increase of speed, as indicated in fig. 3, which shows an actual curve of mean pressure at the exhaust of an engine.

There are several points about figs. 2 and 3 which may be explained here. It will be noted that both the induction and exhaust losses increase at a varying rate as the speed increases, and, therefore, the relations between the inlet and exhaust losses are continually varying. Now it has already been explained that to get maximum results at high speed the valve areas should have a certain relation to each other. Of course, the valve areas are fixed, and, therefore, suit only one set of relations between the exhaust and inlet losses, and as the relations change with variations of speed the valve proportions become less suitable.

How Compromise may be Obtained.

The greatest effect of good valve design is always found at high engine speeds, and the benefits of a correct ratio between the respective areas of inlet and exhaust ports are likewise found more at high speed, so that it is essential to design the valves and ports to suit the speeds at which it is intended that the engine should normally run.

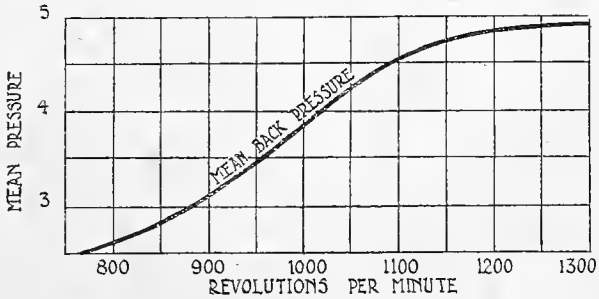


Fig. 3.

Of course, large numbers of engines have the ports all the same size, but this is usually to cheapen production by avoiding the use of two different patterns of valve. When there is plenty of reserve power, or when a suitable range of gear ratios is available, this is not so important a matter, but for cases where the engine is desired to give its utmost power at high engine speeds, the careful designing of the valves is of first importance. H. GEORGE HARLEY.

THIS YEAR'S LONDON-EXETER-LONDON RUN.

PARTICULARS and entry forms are now ready for the seventh London-Exeter-London run, open to members of the Motor Cycling Club. It will be held on Monday and Tuesday, December 26th and 27th. The following is a brief *résumé* of the regulations. The start will be from the Bridge House Hotel, Staines, on Monday evening, December 26th, at eight o'clock.

The route will be Staines, Bagshot, Basingstoke, Salisbury, Shaftesbury, Yeovil, Chard, Honiton, Sidmouth, Peak Hill, Exeter. The return journey will be Trow Hill, Lyme Regis, Bridport, Dorchester, Blandford, and Salisbury.

Gold medals will be awarded to competitors who are not more than fifteen minutes early nor more than ten minutes late at any point on the journey, and who make non-stop ascents of Chard and Trow hills. Silver medals will be awarded to competitors who are not more than fifteen minutes early at any point, and who complete the journey in twenty-one and a quarter hours. Entries cost £2.

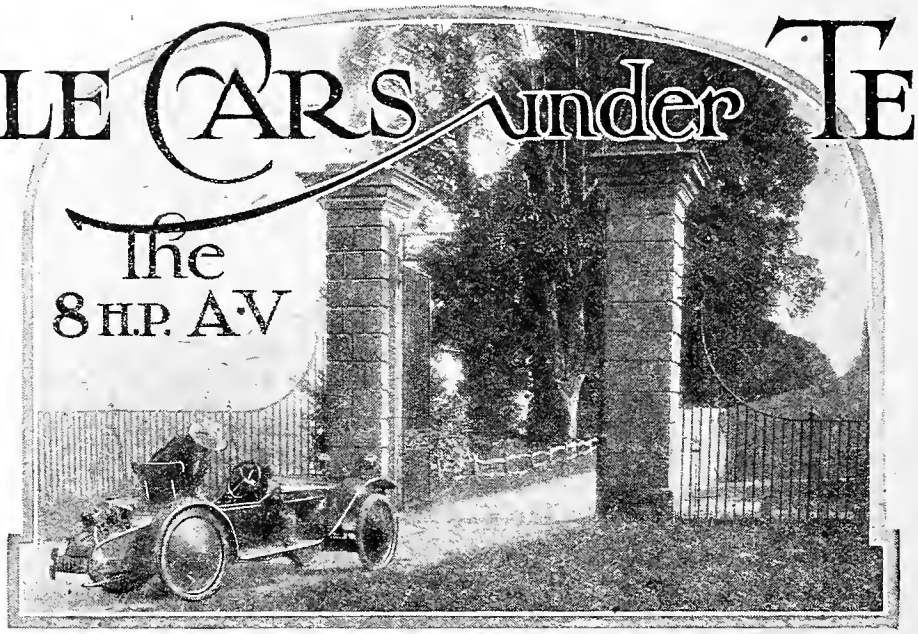
Intending competitors who are not members of the M.C.C. must apply to the secretary, Mr. Southcomb May, 34, Gower Place, London, W.C.1, for an application form, which must be completed and returned to him, together with membership fees, not later than Monday, November 21st. Particulars regarding the trial can be obtained from the trials hon. secretary, Mr. F. T. Bidlake, 85, North End Road, Golders Green, London, N.W.1. Entries close on Dec. 7th.

CYCLE CARS under TEST

The 8 H.P. A.V

A Small Four-wheeler on Motor Cycle Lines.

A Monocar with Dickey Seat.



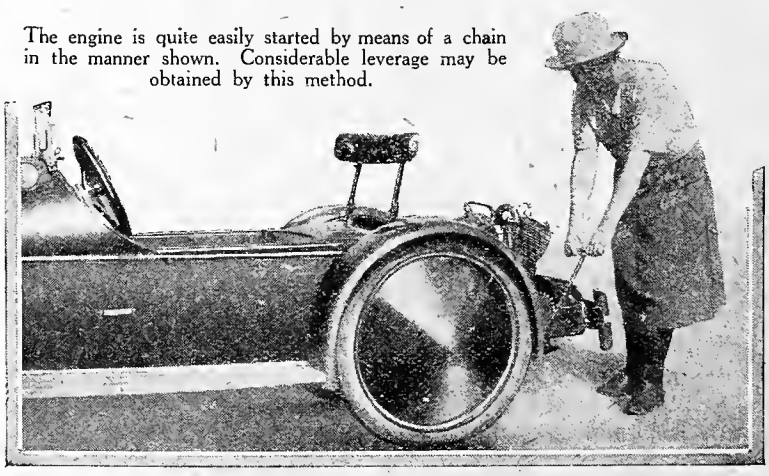
SPECIFICATION.

ENGINE: 8 h.p. J.A.P., 85·5 × 85 mm. (986 c.c.)
GEAR BOX: Two-speed epicyclic, on engine shaft.
TYRES: 26 × 2¼in.
BRAKES: V drums, with Ferodo shoes.
WEIGHT: 540 lb.
TRACK: 30in.
WHEELBASE: 7ft.
TRANSMISSION: One chain to back axle.
LUBRICATION: Drip feed.
CARBURETTER: Claudel automatic.

THE "narrow track" type of cycle car originated with the Bedelia in France, and is represented in this country by the Tamplin and the A.V. monocar. Motor cyclists as a class are prone to imagine that such vehicles are inherently unstable except upon the best roads; it is fancied that a broad track alone allows a machine to sit the road comfortably. The suspicion may be true in some cases, but I was surprised and delighted to find during a week's trial that the A.V. is perfectly steady even upon bad roads. I drove it at all sorts of speeds over all kinds of surface, and it holds the road far better than the average motor bicycle. Provided reasonable caution is observed on corners, it is absolutely safe, and it further affords a surprising degree of comfort. Its road-holding and suspension put it as high up in the cycle car class as the famous Bugatti stands in the small car sphere.

The machine which I have been driving has done 3,000 miles, and is a monocar with a dickey on the top of the body behind the driver, the passenger's feet resting on the near side running board. No reverse is fitted, and the two-speed gear is of the epicyclic type with Ford control, viz., a single pedal with three positions—right down, low gear; half-way up, neutral; and right up, top gear. This gear did not appeal to me in the least. The absence of a reverse is tiresome in lane and town work; the gear appears to embody a great deal of friction on the low ratio; the gap between the ratios is so wide that the engine generally knocks badly when picking up after a change to top, a knock accentuated in my case by one slack-fitting piston, and very heavy foot pressure is required to keep low gear engaged on full throttle up a steep hill. The friction of the gear is probably responsible for the rather heavy fuel consumption.

The machine is a monocar to its marrow, and the dickey must be regarded as purely casual accommodation, like the folding seats in a big car. Its occupant is practically devoid of protec-

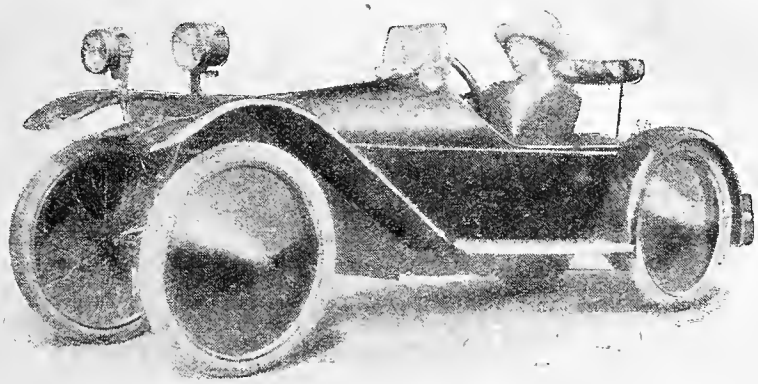


The engine is quite easily started by means of a chain in the manner shown. Considerable leverage may be obtained by this method.

Cycle Cars under Test—

tion from the weather, perched up like a parrot on a stand above the tiny aeroplane windscreen. No hood is provided, and the second seat is only fit for a short-distance passenger in fine, warm weather. An alternative pattern of car is made in which two staggered seats accommodate two people in real comfort, and the "duocar" model should always be ordered where two is the usual load. I understand that a family model is in preparation for next year, accommodating two adults and two children inside the body.

Engine starting is perfectly easy, being performed by a handle, chain and sprocket at the rear of the machine. With the engine warm, one pull always suffices; a doping and one pull always succeed with everything cold. There are two petty drawbacks which one must put up with on a four-wheeler sold at the price of a motor bicycle—the hand-grip is in a very exposed position, and gets very dirty, whilst one must dismount to restart the engine in the event of an accidental stop.



The 8 h.p. A.V. monocar used for the road test. The sporting yet graceful body design is an attractive feature of the little car.

The engine is either a 6 h.p. or 8 h.p. J.A.P. V twin, and runs very sweetly at low and moderate throttle openings on the high gear. On low gear and in free engine there is necessarily a good deal of vibration. It is doubtful whether an engine carried at the tail of the machine keeps quite so cool as is practicable in the Morgan or Tamplin positions; with a passenger occupying the dickey, the power unit is probably rather too much screened from cooling draughts. But all the knocking which I was able to provoke was ascribable to the loose fit of one piston, or to the wide gap between the gear ratios.

Lubrication and Controllability.

Lubrication is by drip from a conveniently situated sight feed. This simple method is probably the best available for cycle car work, as the oiling can be nicely adapted to the work in hand. Care must be taken to shut the tap when the machine is stopped, as the feed is by gravity, and the entire contents of the tank can drain into the engine if the tap is left open.

Braking presents no anxiety, as the low gear—as on the Ford car—always acts as a powerful reserve to the two useful brakes.

The controls comprise switch, throttle, spark lever (all mounted on the body); side brake lever (inside body on left); brake pedal (left); gear and clutch pedal (Ford type on the right); gear lever (outside body on the right, employed solely to lock the gear positively in neutral when the car is at rest). On the road the machine is absurdly simple to drive, being controlled exclusively by the right hand and foot. One finger is kept on the throttle lever of the automatic Claudel-Hobson carburetter, whilst the right foot controls the gear pedal, which will serve as a brake in all ordinary circumstances. It is perhaps rather a pity that the clutch and brake pedal positions do not correspond with car practice.

Hill-climbing is excellent. The machine's compass on the top gear roughly covers all gradients which a £500 small car can climb on its top and middle gears. Low gear is very seldom requisitioned, and will apparently take two people anywhere.

The speed is comparable to that of a 500 c.c. motor bicycle. No speedometer was fitted, but 45 m.p.h. is easily attained in a very short distance on the flat, and on a slightly falling road the little car maintained just under 55 m.p.h. for a full mile. Petrol consumption worked out at 41 m.p.g. over sharply undulating roads, and the oil feed was at the rate of 900 m.p.g., which is a shade more than a sidecar outfit of similar c.c. would require.

Tyre Accessibility.

The wheels are non-detachable, but it is naturally a very easy job to insert a new tube, while to change a cover is not much more difficult.

To sum up, the substitution of a gear box for the present epicyclic two-speed will convert the A.V. into an extraordinarily attractive little monocar. I cannot understand why a good fleet of these very capable machines has not been entered in any Six Days Trial. They are exactly what a number of riders are looking for, as they are safer on grease than a two-wheeler, provide more comfort than the average motor bicycle, and offer good weather protection. I have the pleasantest memories of my week's trial, and look forward to sampling the later models.

BENEDICT.

A 67 FEET JUMP FOR THE FILMS.

GUS MARTIN, a well-known Los Angeles motor cyclist, recently made a blood-curdling leap of 67 feet in mid-air for a firm of film producers.

The scenario called for the rider to dash down a steep hill, about 300 feet long, shoot up a short incline with a 10 foot rise, and leap a gulch 37 feet wide and 30 feet deep.

Dashing down the hill wide open in second gear at forty-five miles an hour, the rider gracefully sailed high in air as he reached the end of the up-grade take-off, and cleared the chasm under him by a big margin, sitting his machine steadily and easily in a semi-upright position. As the machine lost momentum in the air, it started downward in a nose-dive, and crashed to the ground, front end first, and then lunged forward in gigantic somersaults. The plucky rider rapidly recovered from the shock, and so far has suffered no ill-effects from his leap.

Measurements taken showed that Martin had made a leap of 67 feet from the take-off to the point where the machine first landed, and that it had travelled a total distance of 97 feet before it came to a stop.

THREE PROBLEMS.

Knotty Questions on Mysterious Troubles and Noises.

OCCASIONALLY our "Queries" Editor has problems submitted which, on the data supplied, are apparently insoluble.

It is in the hope that some of our readers with long experiences of the makes mentioned may be able to suggest a cure that we print the following posers.

Unaccountable Valve Trouble.

A puzzling valve defect is "Mechanic's" trouble. He writes as follows:

"I have considerable trouble with the valves (especially the exhaust) of my 4½ h.p. flat twin Humber. They do not always seat properly. When I take them out, there are plenty of signs of blowing past the seatings.

"The valves are dead true, and a perfect fit in their seatings and sleeves, and the tappets are properly adjusted. The strange thing is that the machine will go perfectly for half a mile, then commence misfiring, then go right again, and so on.

"I may add that new valve springs and pockets have just been fitted, but still the blowing back continues."

Changes in an Exhaust Note.

"Mechanovice" (Watlington) has experienced a very curious phenomenon. He writes:

"My lightweight has a 2¾ h.p. Union two-stroke engine. After about five miles' steady running the exhaust takes on an altogether different note, a low, musical throb, in contrast to its previously resonant 'crackle.' The change takes place quite suddenly, and continues for the rest of the journey; but this is what puzzles me most, the changed exhaust note is accompanied by a noticeable increase of power. I am quite certain of this, and have proved it to my own satisfaction on several occasions by the change taking place at the foot of a slight hill, when, without altering the position of the controls in any way, the speed will remain just as high as on the level, the machine accelerating quite remarkably on reaching the top. If the engine is allowed to cool down, the exhaust note regains its former character, and does not alter till at least five miles have been covered—occasionally seven or eight. I can quite understand that there is some change in the working conditions of the engine, which does not take place until everything is thoroughly warmed up. Exactly what it is I should be most interested to learn. Incidentally, I am troubled with a great deal of four-stroking. I have tried two carburetters and many different jets, but with no improvement. The engine has just been taken down and appears perfect in every way."

Locating an Objectionable Noise.

"Chainman" (Gloucester) is also in difficulties regarding noise, but in this case it is of the unwanted variety:

"Some two months ago I took delivery of a big single and sidecar with all-chain drive and Sturmey gear box. The engine is delightful and seems to run perfectly at all times when it is in neutral—dead slow, or speeded up, or when doing any work; but immediately I run light, or the outfit drives the engine, a most objectionable rumble commences, which seems at times to tend to pull the machine up, and at other times it causes a distinct vibration.

"I rode up to the makers, whose tester, after a short ride, said the noise was not in the engine but in the gear box. I went to the Sturmey-Archer Co., and, without a moment's hesitation, they fitted a new 'inside.' The noise, however, continues.

"The piston, rings, cylinder, and big and little ends seem perfect, and all the chains are well cared for and at proper tension. I put it down to a loose bearing in the timing case, so took that down, but all the bearings were well oiled, and as firm as thieves. I have not very much time available for working on the machine, and do not want to have to take the whole engine down to examine the main bearings. Filling the gear box with oil and flooding the engine with it makes no difference.

"Considering the care with which these particular engines are built up, run, taken down, examined, and rebuilt, I cannot think that either of the main bearings is loose in its housing. I have been riding many years, and have ridden and examined most of the best English makes, and have had many cases of revolving and dry bearings, but the noise has always been somewhat higher in pitch than this deep rumbling. I cannot 'feel' the fault anywhere.

"The Ferodo inset clutch does not slip."

TESTING A VALVE.

VALVES are very vital components in the motor cycle engine, and although valve breakages are rarer nowadays than in the past, these occurrences are by no means unknown. With o.h.v. engines the consequences are usually serious.

Several factors go to make a really good valve; the mere fact that it is made of "stainless steel" does not ensure, as some people fondly imagine, that it will be thoroughly successful. The heat treatment of the metal must be right, the design must be right, and the workmanship must be flawlessly accurate.

These considerations were all kept in mind when Messrs. Pattison and Hobourn, Ltd., of Shakleton Road Works, Coventry, decided to market a valve that could be guaranteed indefinitely, and an examination and "test" of a P.H. valve seems to indicate that they have attained their objective.

We quote the word "test" because, of all the many and varied accessories *The Motor Cycle* has officially tested, an unbreakable valve is assuredly the most difficult of which to form a true and reliable opinion. This particular valve was fitted to the exhaust of a staff 4 h.p. Triumph, which once during its career had broken a standard valve. The consequent replacement, however, was still almost as new after another 3,000 miles; and, therefore, after a further 4,000 miles with the P.H., it would be unfair to infer that the latter is superior to the Triumph standard article.

It is certainly as good, however, both in workmanship and "life," as the best standard valve, and considerably more satisfactory than the valves on another staff machine of the same make, which on two occasions stretched about 3/32in. after 3,000 miles' running.

Briefly, then, its virtues are negative ones, *i.e.*, it is still as new after a strenuous 4,000 miles, and there seems no reason why it should not last out the life of the engine without much attention (it has had none so far).

Much more conclusive proof of its virtues is supplied by the fact that it was used, so we are informed, in the racing Triumphs this year, and also in the Crouch car which has been meeting with such success at Brooklands in the hands of J. Cocker.

Two models of the P.H. valve, one for ordinary touring and the other for track use, can be supplied to fit any make of motor cycle.

A HALF-DAY WITH THE CUMBRIAN HILL MEN.

Sporting Freak Hill-climb of the Cumberland M.C.C. Successful Lightweights.

A large number of spectators watched the sport on Old Garth Hill. R. L. Williamson makes a good climb on his 4 h.p. Norton.

Nearing the summit: F. R. Anderson, who, on a 2¾ h p. A.J.S., made a successful ascent.

THE enthusiasm of the members of the Cumberland M.C.C. must be almost unsurpassed anywhere.

They are favoured in having the most beautiful bit of Britain for their playground, and there is scarcely a mountain height in all Lakeland that has not echoed with the hum of their engines. Nearly a fortnight ago the final rally of the year was organised by the Western Section, and over two hundred members and friends gathered at the famous Castle Inn, just north of Bassenthwaite Water and in full view of grand old Skiddaw, clothed in all the purple and golden glory of a perfect autumn.

Eagerness for First Honours.

Far aloft snowy summits were first harbingers of oncoming winter, and the keen nip in the air made one thankful that the run was to be a short one. Everybody was anxious to have first shot at the hill of the day. This was the old pack-horse way up Whinlatter Pass from near Thornthwaite. Its existence as a splendid test hill was first mentioned in *The Motor Cycle*, following the earliest sidecar ascent, which was made in the autumn of 1919 by Mary Riley on an 8 h.p. Enfield. The main features of the Old Garth Hill were its length of threequarters of a mile and a lower grassy hairpin, followed by a long, steady curly climb over rough surfaces on gradients of 1 in 4 and 1 in 5. There were morasses at the finish on the new road, but few got thus far.

After the deluge of the previous day the grassy parts of the hill were in very bad condition. The "racers" achieved little advantage, for traffic was quickly blocked on the first corner. Then the serious work of the day began. The crowds of spectators realised by painful experience that it was wiser to give the riders more elbow room. It was a fine experience to stand higher up the hill, with shapely Skiddaw towering snow-capped across the vale, and down through the gloom of underlying larches spy the hill-climbers dart one by one upon the opposing gradient. Many failed quite low down through choosing the turfy surface in preference to the stony way. Considering the very "sporting state" of the hill, the successes were astonishing.

Notable Sidecar Ascents.

One of the earliest solo machines to make a clean ascent was the 4 h.p. Norton, ably ridden by R. L. Williamson, the vice-captain of the Cumberland club. The first sidecar up was a 4 h.p. Triumph, driven by J. Pape, of Wigton. The passenger spent little time in the sidecar. A notable feature of the day was the very steady and quiet climb made by Jack Bennett, the treasurer of the club, on a 3½ h.p. Sunbeam. Perhaps the star performance, however, was that of J. Tiffen on a small 2¼ h.p. Velocette and sidecar. Success was achieved at the first attempt, but during a later ascent Master W. F. Tiffen, in the sidecar, was surprised to see his father flung off on to the hillside. The little fellow amused the spectators by shouting "Hurry up, daddy, she's getting away!"

British Singles to the Fore.

The scarcity of American machines was as noticeable as the preponderance of 4 h.p. Triumphs. All the latter did splendidly, and those ridden by J. Peak, E. J. and A. Marley, J. Tweddle, J. M. Renny, and S. Ridge, were especially prominent. The two last-named each made five ascents, and like several others gave the spectators stirring times. Yet no one was damaged in the slightest by the plunging and bouncing machines. Much interest was shown in the perfect way H. Leslie Edmondson upheld his reputation and that of his 2¾ h.p. Coulson B. Probably his machine had the highest gear of all, 11 to 1, and the performance was speedy as well as spectacular. His brother John Edmondson stuck well to the 2¾ h.p. A.J.S., and on the upper part arrived speedily. The only other A.J.S. to achieve success was cleverly piloted by F. R. Anderson, and F. O. Huntrods on the 4 h.p. Norton showed that experience counts on the worst of hills. The end of a perfect sporting day was spent in jovial company at Castle Inn.

Rest and Be Thankful

A Famous Scottish Hill and Rendezvous for Glasgow Riders

THERE are few motor cyclists in Scotland who do not know the hill, Rest and be Thankful, either by hearsay or by bitter experience. There are many in England who know it as one of the toughest, trickiest, and yet most alluring hills in the British Isles, whether as an obstacle to uninterrupted touring or as a duly marked, checked, and beflagged test gradient. Gradients of 1 in 7 and 1 in 10 and a hair pin at the end of a three miles climb ought to make the reputation of any hill.

But the true peculiarity of the "Rest" is that it is not a freak hill, to which aspirants in motor mountaineering travel far, but a feature of a main road. It lies on the direct route from Glasgow to Oban; unless you care to dodge round less interesting country by way of Tyndrum and Dalmally, you must take the road through Glen Croe. It is a five mile climb from the shores of Loch Long to the stone on the summit (erected by military engineers) which bids the traveller "Rest and be Thankful," and from which, again, the road falls down towards Loch Fyne. A hard climb, a thorough test of man and mount—but very good fun

In Two Instalments.

That long climb is an epic in two instalments. The motor cyclist is first called upon to face, not far from the mouth of the glen, what is known affectionately as "the wee Rest." It is an awkward bit of hill. A left-hand turn leads on to a quarter of a mile of the world tilted at a gradient of 1 in 10, and there are some who fear it more than they do the cleaner "blind" up "the big Rest." Then, a mile further on, comes the real, the true hill. It sneers at you from a 1 in 7 eminence, lets your gasping machine recover on about 1 in 10, tortures you again with another stout spell of 1 in 7, eases off round a left-hand corner to 1 in 15, and completes the process with a nasty hairpin, fatal to him who would take it fast. This practical joke of Nature's is three and a half miles long.

So it is plain that if the Glen Croe road were not a main artery, the motor cycling enthusiasts of Scotland would yet be attracted to it, particularly since it lies within easy distance—forty miles to be precise—of Glasgow. And now that motor cycling is the sport of one half of Britain's youth and the dream of the other half, Rest and be Thankful, at any summer week-end, is a sight for the gods of the pastime. It is a sight when tests are being held and all the stars are there to twinkle up the hill at fifty-seven to the hour. But it is better when the amateur riders on their standard machines struggle up and, being up, look down critically on those who follow.

Free Entertainment.

Every yard of the long climb is visible from the summit, which is a sort of gallery to the amphitheatre of the Glen. A four-horse sidecar becomes visible as a moving speck, far below. The driver rushes gamely at the first 1 in 7 slope.

"He's sticking!" gasps the man who got up on a two-stroke.

"Not a bit! Not a bit of it!" another cries.

The click and subsequent purr of changed gears comes reassuringly from below. Another blind at another 1 in 7 section—

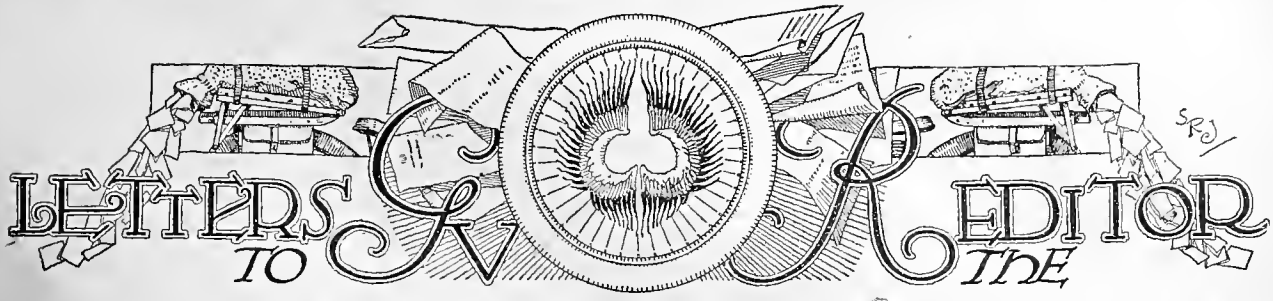
"He's sticking!" crows two-stroke.

"Wait a second," says another tensely.

If he is not sticking, he is not exactly flying. He creeps over the bridge—faces another hill—falters—recovers—splutters—tickles his carburetter—heaves forward—his passenger scrambles to the carrier—he jerks round the left-hand bend on to the easier 1 in 15—greatly relieved, the engine sings cheerfully. Shortly the 4 h.p. outfit is with us on the top.

"Took it like a fairy," says the rider, waving a proud hand towards his machine. He joins us in criticising the efforts of a seven-nine or a very worried light car. So it goes on till late afternoon, when, at last, we trolley off homewards, convinced that our own performances were the best of the day.

In point of strict fact, Rest and be Thankful presents very little difficulty to the modern machine, decently driven. The writer surmounted it recently on a fixed gear mount of dubious ancestry. But all the fun of motor cycling is in the driving, and all the technique of driving—the essentials, the errors, the excellences, the idiocies, and the ideals—are seen at their best or worst on a long and stubborn slope. That, with magnificent scenery thrown in, is why Rest and be Thankful is such an interesting hill. G.R.B.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—Noticing the amount of discussion as to the world's finest motor cycle, I have ventured to offer my opinion. I think that it is only natural that every nation should claim this title, and that it is a little narrow-minded to confine opinions to British machines alone. Why not take into consideration a few Continental and American machines? Also I consider that each machine has its purpose, either racing or touring. In my mind, the one great objection to a big single is the noise that it is liable to make. A. M. LEITCH.

[Opinions were not confined to machines of any particular nationality, although the majority of letters received specified British makes.—ED.]

Sir,—My only excuse for intervention in this correspondence, seeing that I seldom ride solo, is to express my entire concurrence with Mr. Norman Williams in his advocacy of the machine of even torque, but to dissent from his classification of the F.N. and Henderson as "complicated." In point of fact, both machines are delightfully simple; they are also simply delightful to drive. The Scott is no whit behind them either in distinctive merits, and I look with interest for the Stanger and Superb Four.

It would be difficult to ascertain the most popular machine in the world; it would be quite certain that that machine would not be the best, otherwise the goal of progress were well-nigh attained!

But it is easy for me (and others) to say what machines *we* like best, and I would make my choice every time from the small group that provide an engine with car-like torque.

Newbury. HENDERSON RIDER.

Sir,—I thoroughly agree with the opinion of "Tyke" as to the Scott being the best solo machine. Having ridden two machines of this make, one a pre-war model, I have yet to experience a serious mechanical breakdown of any kind, and the even pull of the twin two-stroke is a joy to experience, to say nothing of the remarkably long life of the chains and tyres, and almost silent hum of the exhaust.

It is possible to set the throttle lever in one position, and leave the machine to negotiate all hills and corners on the road without once touching this or the gear lever.

Another point, not mentioned by "Tyke," is the really excellent mudguarding on the machine.

It is astounding what gradients the Scott will negotiate on top gear ($4\frac{1}{4}$ to 1) without complaint from the engine, and only on hills of the most vile surface or dangerous corners is it necessary to have recourse to the low gear. I live in a hilly district, which abounds in freak hills, and have yet to find the machine which equals the Scott in taking one anywhere in absolute comfort. GREAT SCOTT.

Harrogate.

Sir,—I have read with interest letters from brother motor cyclists and their opinions as to the best motor cycle on the road. I do not think anyone can really say that this or that machine is the best on the road. No individual motor cyclist can speak for the whole community of motor cyclists.

A cigar, be it a threepenny one or a half-crown one, if the smoker likes it, is a good cigar; if he does not like it, then it is a bad cigar, so far as he personally is concerned.

The same, I think, applies to a motor cycle. I have had many; with one exception, they have all been good. I now have a $3\frac{1}{2}$ h.p. Rover solo. I have never had a better machine: it is most comfortable to ride, most reliable, goes anywhere and everywhere, climbs anything. I could not get better service, I imagine, from any other make, but I cannot say, or at least I do not say, that it is the best machine on the road. It suits me, and I am very fond of the 'bus, which is a 1920 model. It answers to my every whim, and in return I look after it as though it were a favourite child. I have just given it a new set of F.R.S. lamps and a Terry saddle. The latter article is certainly the most comfortable saddle I have had; it is a wonderful invention. My last ride on it was 160 miles in just over seven hours.

Kingsdown. MAJOR.

Sir,—I venture to suggest that, in my opinion, an ideal machine can never be one with a rigid frame. Doubtless many of your readers have never ridden anything else, and are more or less content; but I think it would be a very pleasing and eye-opening experience if they took, say, a 200-mile run on a spring-frame machine. On a long run, comfort is everything to the rider, especially under present road conditions.

The next point on an ideal machine should be accessibility to the engine and other working parts, and chains, etc., should be enclosed as much as possible.

For a solo mount, the Raleigh 5-6 h.p. spring-frame is ideal, and as near perfect as present-day experience can give.

For speed, power, hill-climbing, smooth running, cleanliness, and comfort, etc., I know of no other reliable machine on the market to compare.

Unfortunately, I am not the proud owner of one of these machines, but I have ridden some 3,000 miles this year on one, and I must say that it is everything that is ideal and unexcelled in any way, and as soon as I am able to afford a new mount, mine is a Raleigh. The usual disclaimer.

London, S.E. READER.

Sir,—I make no excuse for again butting into this discussion, which threatens to become a rather aimless eulogy of every machine on the market.

"Tyke's" letter, in the issue of October 20th, somewhat amuses me, particularly his closing statement: "These qualities outweigh the little extra attentions which these machines occasionally demand."

The "qualities," which I am not going to dispute, are (1) easy steering, (2) comfort, and (3) controllability. Now, to an entire novice, "Tyke's" Scott admittedly excels my Triumph in these points; but after a thousand or two miles road experience these two machines become equally satisfactory to their respective riders in both controllability and comfort.

One soon gets used to a machine, and that machine then becomes comfortable and controllable as a matter of course.

But one cannot get used to "little extra attentions"!

I am rather careful of my finger nails and dislike dirty hands; that is why (and I have ridden 75% of the machines mentioned so far in this controversy) I will buy another Triumph next year. —UMPH.

Coventry.

[We have received so many letters on this subject that we are able to include only a small selection this week. The letters which have been held over mention the Norton twice (particularly eulogising the courteous service of the makers), the Indian Scout twice (on account of its sweet running and flexible engine, large tyres, and handsome appearance), the Scott, the $2\frac{3}{4}$ h.p. Douglas, and the 4 h.p. Triumph.—ED.]

WHY DOES AN ENGINE ACCELERATE?

Sir,—The problem propounded by "Ixion" as to why an engine accelerates when the throttle is opened is one that must have puzzled most motor cyclists. Doubtless, some of your technical correspondents can give a convincing explanation. As an amateur I have often thought over the matter, and I have come to the conclusion that most of us tackle the problem from the wrong end. The matter is simplified by considering the meaning underlying the word "throttle." In common parlance, to "throttle" anything is to "get it by the throat." This affords a clue to its engineering application. It must be obvious that a petrol engine, unlike a lazy horse, needs no whipping to cause it to accelerate. From the moment it fires its every tendency is to increase its revolutions. Given unlimited access to the carburetter, it would reach its maximum in no time. Some method is necessary to check this tendency, and a throttle slide serves the purpose. To revert to the engine analogy, the engine is like a spirited horse wanting to be off. The throttle slide is the controlling rein. This explanation disposes of "Ixion's" second query, "What single factor produces the initial acceleration when the throttle is first opened wider?" The opening of the throttle merely allows the engine more rein to run.

So far so good; but I confess that while I can see some part of the reason for an engine's acceleration, I cannot see all of it. If water is pouring through a sluice and the sluice is partly closed less water goes through. But there can be no parallel between a sluice and a throttle slide, for the latter has no pressure of gas behind it. How, then, does the slide operate? When the engine sucks, it is supposed to fill the cylinder whether the opening it sucks through is small or large. But does it suck its fill, or is it always hungry for more? Judging from its behaviour when the throttle is opened wider it is in a constant state of starvation. Yet the jet and air openings remain unaltered, and the mixture is the same. The only conclusion is that the throttle slide does not allow the engine to suck all the gas it requires; hence its restricted "revs."

This opens up the whole subject of gas supply, and it would be interesting to have further information on this point. What happens when an engine is supplied with explosive gas from a container like an oxygen cylinder? Can the throttle be abolished and the engine speed be controlled by the container tap? Personally, having conducted a long series of experiments this summer with a variable jet and an extra air valve, I am of the opinion that a vast field of research is still open in this direction. The results are of extreme interest to me, and if deemed of sufficient interest to readers, I should be pleased to supply them. My only fear is that I am traversing ground already well-trodden by the technical experts. NENE-SIDER.

Northampton.

Sir,—Not having had much experience in driving motor cycles, one hesitates to answer "Ixion's" questions, my only excuse being that I have a degree for engineering, the course of study including heat engines, etc.

The whole phenomena depend on the great speed at which the gases rush into the cylinder. In the case of the $4\frac{1}{4}$ h.p. B.S.A. engine, turning over at 2,000 r.p.m. (corresponding speed of the machine $29\frac{4}{5}$ m.p.h.), the average piston speed is $14\frac{1}{2}$ m.p.h.

The area of the piston top is nine square inches nearly; so if the area of the inlet pipe between the cylinder and the carburetter is about one square inch, then the speed of the mixture in this pipe during induction must be in the region of $9 \times 14\frac{1}{2} = 130$ m.p.h.!

It is therefore obvious that any obstruction in the carburetter or inlet pipes will seriously affect the flow of gases. Hence the pains taken by speedmen to cut chunks off the cylinder ports wherever necessary.

Now, the engine does take in about the same charge, and a nearly full charge at that, whether the engine is going slowly on small throttle or fast on full throttle, but the point is that an engine—loaded—can only go slowly on small throttle, for if it did speed up by any chance, *e.g.*, a push behind, it would, when the push was ended, slow down again, for at the higher speed on the same throttle opening the cylinder could not get a full charge, due to the shorter time the valve is open.

Now, if the throttle were opened wider, the engine could draw a full charge of gas into its cylinder at the higher speed and smaller time of valve lift.

Consequently, the engine runs up to such a speed that the cylinder just fails to draw in a full charge of gas. That is the stable running position as explained above.

When the throttle is opened up the engine draws a full charge—quite full this time (unless over-heated)—the engine accelerates; the suction on the jet increases, due to the greater velocity of the air in the inlet pipe, giving a richer mixture, so the air lever has to be opened wider.

This gives the well-known result that for two-lever carburetters the air lever has to be freshly adjusted for every position of the throttle.

From this it would appear that the factor governing acceleration is: Size and lack of obstruction in the air supply path from atmosphere to cylinder.

Hence, acceleration will depend on valve diameter, valve lift, design of cylinder ports, etc., as well as jet size.

Lastly, a weak mixture burns more slowly than a correct mixture; hence, combustion may continue until the inlet valve opens, and the new charge of gas, also of slow-burning quality, is ignited. Thus, a state of pre-ignition exists, and knocking ensues. HONS. B.ENG.

Bootle.

ELIMINATING MECHANICAL NOISE.

Sir,—Can any reader tell us how to reduce the noise from the valve gear of a $3\frac{1}{2}$ h.p. Rudge-Multi? With a silent gearing I am sure Rudge riders could desire no more in the way of a sporting solo machine. Has anyone tried enclosing the overhead valve gear after the M.A.G. style? If so, with what result? MULTI GEAR.

South Norwood.

ALPINE PASSES.

Sir,—On page 438 of your issue of October 13th appears an illustration of the Stelvio Pass (9,041 feet), with a note that it was climbed before the war on single-geared machines.

If this letter catches the eye of any reader who has climbed the Stelvio it would be interesting to hear his experience.

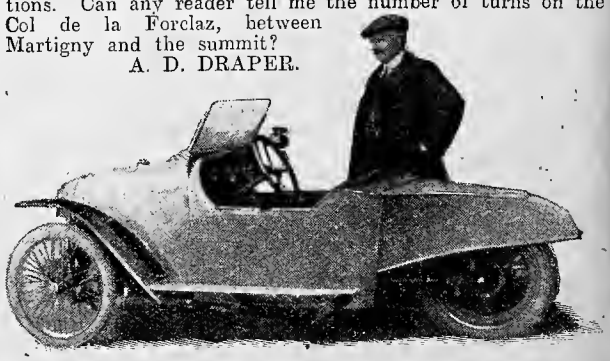
Old readers of *The Motor Cycle* may recall the name of Mr. Douglas Fawcett. If my memory serves me right, he was a pioneer of Alpine touring on a twin Bat (single-geared).

I should be interested to know whether the Stelvio is more severe than the Galibier (the highest main road in France, 8,530 feet). I have crossed the Galibier in both directions on a single-geared 6 h.p. Matchless-Jap. My companion's mount last year was a Lea-Francis, and this year a Rudge-Multi. We did not attempt non-stop climbs, and I had some assistance from my friend in re-starting, but no serious difficulty was experienced. This year we crossed from the north, climbing to the first tunnel with one stop. (I made a restart unassisted.) We stopped in the Valloire Valley at the foot of the "zigzags," leaving the stream, and once more below the final hairpins. The total rise is 6,201 feet, and the ruling gradient 1 in 10 on the lower portions and 1 in 8 towards the summit.

It is perhaps needless to say that the road is a wonderful piece of engineering—it is a real "surprise" climb on a gigantic scale.

Alpine touring deserves more attention from English riders, many of whom would not miss it if once they tasted its attractions. Can any reader tell me the number of turns on the Col de la Forclaz, between Martigny and the summit?

A. D. DRAPER.



A neat looking three-wheeled runabout designed and built by Mr. J. Jones, Sunderland. The transmission is by friction drive to countershaft, the final drive being a $1\frac{1}{2}$in. belt. An 8 h.p. air-cooled J.A.P. engine is fitted.

PRIVATE OWNERS' T.T. LAP RECORDS.

Sir,—I read with interest the letter by "Omega," headed "27.52 m.p.h.—A Private Owner's T.T. Lap Record," in your issue of October 20th. I went to the Isle of Man for the first time last June to see the T.T. Races, and took my 'bus, a "Big Four" Norton, across with me. I went for a run round the course on the evening of my arrival, and my time for the lap was 62m., an average speed of just over 36½ m.p.h. I could no doubt improve this time a little after knowledge of the course. Coming down the mountain road at a good "bat," I found Keppel Gate shut, and, as the evening light was failing, I did not notice it until I was quite close. However, I managed to pull up with an inch or two to spare.

Bishop's Castle. NORTON.

"ISSUED TO MEMBERS"—BUT NOT FREE.

Sir,—I am somewhat surprised to see that, according to a paragraph in the "Sparklets" page of your paper, the A.A. and M.U. handbook is "issued annually to members." I would point out to all those interested that upon applying for one of these I was informed that it would be forwarded to me upon receipt of 5s.

This appears to me to be a somewhat exorbitant charge for a book having a "considerable portion of it devoted to the advantages of membership and the services rendered."

Sudbury. ZENITH, DX 1997.

[Several other letters in the same strain have reached us, although in some cases the charge for the handbook is given as 2s. 6d. Perhaps the A.A. and M.U. will explain.—ED.]

WHAT IS A STANDARD MACHINE?

Sir,—In reply to "R.A.F." (London), as to what is a standard machine, is he trying to be funny or what? He should know as well as I do that a standard machine is one which anyone may buy, such as the Norton, and which is not made specially for racing. My son and I ride one each, and would not "swop" for any other make at present. They are absolutely standard, and I myself saw Mr. Hassall (that fine Norton rider) do the quarter-mile in 10s. (=90 m.p.h.) on my new 3½ h.p. standard Norton.

Regarding changing handle-bars, plugs, etc., this is mere piffle. J. H. WILKINSON.

Sir,—It is with great pleasure that I have seen this, to my mind, most important point brought into your correspondence columns, and I do not think it ought to finish in that place, but be brought forward by the A.C.U. into a definite definition and acted upon in all trials that are of any first-class importance, no matter the type—hill-climb, speed event, or reliability trial.

The non-standard machine should be made to compete in a definite "non-standard" class, and if its resultant performance is utilised for advertisement it should be definitely stated as being in that class.

We who are specially interested in organising trials realise perhaps more than anyone else this snag of non-standard machines competing against pure standard ones in the same class, and the difficulties that arise when a rider comes along with a machine that we all know, barring a smash up, will sweep the board, and its effect on entries.

I would therefore suggest that the definition be framed much on the following lines:

That a standard machine for the purpose of competition trial riding, no matter whether the resultant performance is used for advertisement or not, shall be a machine which can be bought direct from the manufacturer or from his duly authorised sales agent, and is listed at a definite price in that manufacturer's sales list, and is available for prompt delivery to the general buyer. Tyres, handle-bars, plugs, and carburetter could be excluded, as each individual has his own pet fancy on these, and would possibly alter to meet the special class of event he was competing in; also gear box, so long as it was the same make as supplied with the machine and the cycle manufacturer gave the option of open or close ratio gears. Also a rider would alter his timing in regard to late or early firing, but no alteration to cams, etc., would be allowable. A different make of magneto would be allowable so long as it was capable of being purchased in the ordinary way. For instance, a rider with a Magdyno for ordinary touring would be permitted to replace this with a C.A.V. or B.T.H. if he were competing in a speed event.

If this rough idea were acted upon and brought into a definite ruling by the A.C.U., I think it would prove of the greatest interest to the sporting side of the pastime. Such a definition as this would prevent all the special freak machines that now are going about the country in the hands of manufacturers' pet riders sweeping up everything in the prize list, as they would only be able to compete against machines of their own class, and leave the standard class to be won by a standard machine. As an instance, it would place the o.h.v. Blackburne, o.h.v. A.J.S., o.h.v. Sunbeam, and such like special engines and machines, which I as an ordinary buyer could not inspect and buy from an agent's stock, into a class of their own; but immediately they became on the general market they would come into the standard class.

I could enlarge further on this interesting subject, but before doing so await the comments of others interested.

Sheffield. ROTOM.

SUNDAY COMPETITIONS.

Sir,—As a reader of several years standing, I am taking this opportunity to congratulate you on your firm stand against Sunday trials.

The trouble seems to be that some motor cyclists do not look upon the matter in the right light. Sunday trials, as Sunday trials, are ethically as right as Sunday golf or tennis, as far as Sabbath-breaking is concerned. But neither tennis nor golf affects anyone but the players, whereas with regard to motor cycling the point is this: The "man-in-the-street" has a prejudice against motor cycles. He terms them noisy. Unfortunately enough, he is to a great extent right, for there are barely half a dozen makes that, as usually driven, are comparatively silent, even compared with a cheap car. Now, the "man-in-the-street" is no fool, and he realises that the motor cycle has come to stay; and so, during the week, he endures even speed trials without kicking, and confines himself to reading, with unconcealed pleasure, of the numbers of motor cyclists who have been run in and fined for infringing one or more of the many laws that a paternal Government has appointed for their confusion. But on Sunday, when he hopes for a little rest and quiet, and he hears the exhausts and valve rattle of twenty or thirty motor cycles on some trial, making the day hideous with their uproar, he gets really peeved. And when they continue, on and off, Sunday after Sunday, he is absolutely wild, and makes an outcry at the local town council, and does his best to have all trials, whether Sunday or weekday, prohibited. And he rouses the police, and they become officious, and start to set traps, to inspect licences, and to make themselves generally unpleasant.

Now, it is as hard to make the average Englishman part with a prejudice as it is to make the average Scot part with sixpence. Yet motor cyclists, as a class, seem to be making no effort to remove this prejudice against themselves; and a section, luckily small, seems to take a delight in strengthening it. Those who advocate and participate in Sunday trials should remember that they are enjoying themselves at the expense and to the discomfort of a large portion of that community in which they form so small a portion. Such behaviour, tending to bring the whole motor cycling fraternity into disrepute, is not sport; it becomes mere selfishness, and is justly condemned by all right-thinking motor cyclists.

Seacroft. SAMUEL ST. JOHN.

A WELL-PROTECTED SOLO MOUNT.

A French reader, M. A. Gustave Merlin, sends this photograph of his Indian motor cycle, showing how very thoroughly he has studied the problem of weather protection.

"AN EXTRA 20 M.P.G."—WITH EASE.

Sir,—I notice in a recent number of *The Autocar* that a correspondent obtains as high as 90 m.p.g. on a 1909 8 h.p. Rover car. By means of "fine steel wire up the jet" he manages to obtain this remarkable petrol consumption. When this attachment was fitted to a Triumph motor cycle jet an extra 20 m.p.g. without decreasing power was obtained.

As there are doubtless many like myself who have never before heard of this "economiser," it would be a favour if you could give publication to this letter, so that a full description may be obtained. SK 696.

Wick.

COSTS OF SPARES AND COMPONENTS.

Sir,—It may interest some of your readers to know that if they buy Villiers parts at the prices advertised in *The Motor Cycle* they can build an engine within a very few shillings of the price quoted by Messrs. Villiers for a complete engine. This is as it should be. L.A.P.

Norfolk.

Sir,—It is to be regretted that your correspondent "Pourquoi" cannot differentiate clearly between the consequent average higher price, which must be placed on all spare parts, due to the fact that there may be no call for a large number of items (which therefore subsequently become scrap), and the remanufacture of other parts for which the demand has been larger than was originally foreseen, and the production of which must be put in hand piecemeal from time to time, over a number of years, in consequently diminishing quantities. These two conditions are entirely independent, though concurrent.

I am sorry also that your correspondent translates my remarks respecting competition between makes in its narrowest sense.

In the first place, it should be well known that there are quite a number of standard components which are common to many of the machines on the market.

In the second place, it should hardly be necessary for me to explain that the competition in the sale of motor cycles to-day is exceedingly keen, and that the cost of spare and replacement parts is very often the factor which decides a customer in the choice of his ultimate purchase. Therefore the manufacturer is compelled, through this competition, to keep the cost of his spare and replacement parts as low as possible.

As my letter was written to explain some of the reasons for the alleged high cost of spares, and not as a polemical *tour de force* in subtleties of meaning of words and phrases, I am left cold if "Pourquoi" is unable to see how a bugbear may be cheerfully endured, or that a moral obligation and a recognised duty may be, and often are, one and the same thing.

A. ERNEST GELDER,
Managing Director, F.N. (England), Ltd.

SIDECAR CONNECTIONS.

Sir,—When "Wharfedale's" article on sidecar connections appeared I read it with unusual interest, and noted his general opinion that some kind of flexible connection should be used to reduce, as far as possible, shocks to the bicycle frame and sidecar chassis. I have also followed the subsequent correspondence.

Most motor car engineers ridicule the sidecar as an unmechanical device. It is, however, still with us, and so long as motor cycles are used will, in my opinion, remain as the handiest and lowest priced method of comfortably carrying a passenger, when the motor cyclist becomes tired of journeying alone.

My motor cycling experiences include most forms of sidecars—the so-called rigid type, the Montgomery hinged type (where the bicycle was partly balanced as well as steered), the spring wheel variety, the castor wheel design, the spring controlled steerable wheel, etc.

Suffering about a year ago from aches, brought on by sidecar jolts and fearing the sidecar or cycle connections might break, I provisionally protected a flexible joint or connection for sidecars, which you reviewed in *The Motor Cycle*. These are designed on the lines of the Hardy patent universal joint disc, and since the experimental models were made have been considerably improved. Two sidecars so fitted have been in constant use for about twelve months, and have proved quite successful. These flexible connections give the movement required, but it is only a small amount of movement, sufficient to absorb road and engine shocks, but not sufficient to interfere with the steering. The joints are situate about midway along the tubular members by which the sidecar frames are attached to bicycles.

Some designers find that one reason of cycle frame breakage is the provision of attachments that do not yield. The provision of lugs built into the frame appears to be a more thorough and neater method than clips, but their extra rigidity sometimes defeats the object desired, because of increased strain transferred to another point. Engine vibration also is sometimes the cause of cycle frame breakage.

My idea is that, as engine vibration and road shocks are almost impossible to eliminate on a low-priced machine like a sidecar outfit, one method to overcome the difficulty is to provide a flexible joint or joints between the cycle and sidecar, which allow a certain degree of elasticity without great complication and increase of manufacturing costs.

When my patent is adopted, the only alteration required is to cut the sidecar tubes and insert the flexible joint by brazing two disc carriers one at each end of the divided tube, and bolting the disc to the carriers.

Practically any degree of flexibility may be obtained by increasing or decreasing the diameter of the disc and number of plies of Hardy fabric. W. F. GREW.

SUMMARY OF CORRESPONDENCE.

"Enfield" (London, S.W.11) complains that the Motor Licence Department of the L.C.C. demanded a "statutory declaration made before a Commissioner of Oaths" before they would replace a lost licence card.

"Rover" (Oxford) wishes to thank the motorist who towed him into Leighton Buzzard, going three or four miles out of his way to do this.

A Durham correspondent calls attention to the inequality of fines inflicted on motor cyclists in his local police court. Dangerous driving at (according to the Mayor) "the most dangerous corner in the district" apparently costs five times as little as a similar offence at a, presumably, less dangerous spot.

Mr. Charles P. Ibotson states that he was recently fined 10s. at Windsor for insufficient illumination of his rear number plate, caused by dust on his rear lamp. It is worth recollecting that, as reported last week, a case in South Shields, in which the rear plate was entirely obscured, was dismissed on the ground that only one number plate need be illuminated at night.

Referring to a correspondent's reference some time ago to the state of the Liverpool-Ormskirk road, Mr. J. E. Sharrock reports that this road is now in good condition throughout.

"XA 6897" (Ilfracombe) complained of the stone-laying nuisance in Devonshire to the A.C.U., and asked, as he had twice broken his frame on roads under repair, if the county council could be summoned. The reply was in the negative. The Barnstaple-Ilfracombe road *via* Braunton is instanced by "XA 6897" as being in particularly vile condition.

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Issued in conjunction with *The Motor Cycle*.

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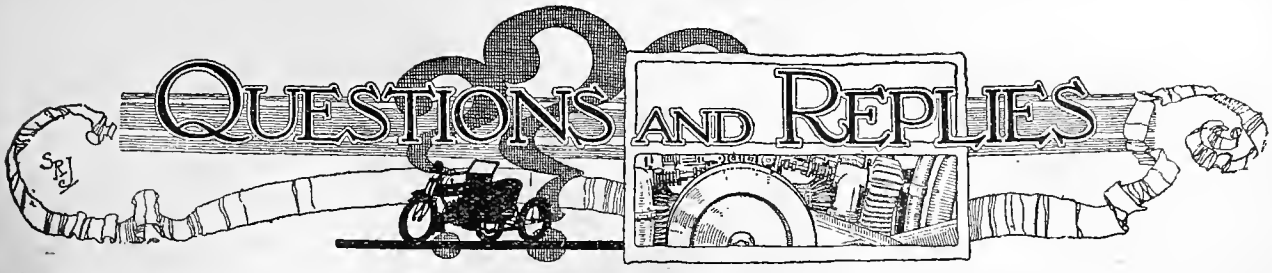


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

USING A CAR MAGNETO AS A DYNAMO

(1.) Is it possible to use a four-cylinder magneto for electrically lighting a motor cycle, running for just that purpose from the engine? (2.) If the above is possible, could you tell me where I could get the information as to utilising the magneto for this purpose?—J.C.N.

A four-cylinder magneto as it stands is not suitable for electric lighting. It would, however, be possible to convert such an instrument into a dynamo, but unless you are competent to deal with electrical apparatus we would advise you not to undertake the experiment.

SPEEDING UP A TOURING MOUNT.

I have recently taken delivery of a chain-drive Triumph, and should like to get 60 m.p.h. I have been thinking of having a Ricardo slipper piston and an Amac racing carburetter. Is it possible to get over the 60 m.p.h. mark without fitting a lighter piston? Will the fitting of a piston upset the balance of the engine? If unnecessary to alter the present piston, can you give me a few hints as to timing to get the desired result?—J.S.M.

You will have considerable difficulty in obtaining 60 m.p.h. without very considerable modifications. Though quite fast enough for all normal purposes, it is not designed as a high-speed mount, and in normal tune is capable of about 50 m.p.h. If you fit a Ricardo piston the engine will certainly have to be rebalanced.

DAMAGED FLYWHEEL KEY.

My 1914 two-stroke engine, since overhauling and re-bushing, has sheared five separate flywheel keys. I have tried three in one day, made of the best steel, and it has cut them all clean out.—J.W.

The trouble in the first case was no doubt due to the flywheel being insufficiently locked upon the engine-shaft, and the shearing of the first key has probably damaged either the keyway in the flywheel or the shaft itself. It is possible that the key was standing a little too high in its seating, thus preventing the flywheel bedding properly on to the taper of the shaft. Very few makers of two-stroke outside flywheel engine now fit keys, and your best plan would be to do away with the key in your own engine and to grind the flywheel on to the shaft.

A THANKLESS TASK.

A short time ago I had a mishap with my 1914 6 h.p. outfit, and the brake rim was bent and broken at the brazing. I have taken it to a repairer, who tried to obtain a new rim from the makers but was unsuccessful. He therefore straightened the rim and re-brazed it, but the result is not altogether satisfactory. Do you think the repairer should make a charge in these circumstances?—J.A.V.

It is extremely difficult to repair the brake or belt drum, and if the work which you had done was unsatisfactory, perhaps the repairer is not altogether to be blamed—apparently he endeavoured to do the best possible, a new rim not being obtainable.

Important Dates.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Sat., Nov. 5th—Midland Centre A.C.U. Open Reliability Trial.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

ASKING TOO MUCH.

(1.) Could you tell me whether I could fit a lightweight sidecar to my $2\frac{3}{4}$ h.p. flat twin Zenith without racking up the engine? (2.) Could it get up reasonable hills with the aid of the Gradua gear?—R.L.

The $2\frac{3}{4}$ h.p. flat twin Zenith should be capable of propelling a light sidecar under favourable conditions, but as it was not built for such work, it would be advisable to query the manufacturers regarding the strength of the frame for this purpose. It is hardly fair to attach a sidecar of any description to a machine designed purely as a solo mount. The range of the Gradua gear is not very wide, but the ratios should enable you to climb all ordinary main road hills with a sidecar.

TOP GEAR TOO LOW.

Can you give me a suitable gear ratio for my 4-5 h.p. twin sidecar outfit? At present it is too low with an eighteen tooth sprocket driven to thirty-eight on countershaft. The final drive is by a 6in. belt pulley to a 20in. drum on the back wheel. I propose raising the gear by putting a bigger sprocket on the engine, but I do not know the number of teeth suitable. The present gearing is very low, and makes the engine very hot owing to it racing.—I.S.

The present gear is 7 to 1, and this is much too low. A top gear of $5\frac{1}{4}$ to 1 should be satisfactory, and an engine sprocket with twenty-four teeth will give this approximately. The rule for calculating gear ratios is quite simple, and is as follows: Multiply the diameters or number of teeth of all the driving elements, and similarly multiply the driven elements; divide the former product into the latter to obtain the gear ratio.

NO POWER.

After running perfectly for three or four miles, my Levis engine tires and then stops, but in a few minutes it can be started, and will run perfectly again for a few more miles, only to "konk out" once more. When this happens the engine is too hot to touch (even though it be blowing a gale), but has no sign of seizure. It has a new Runbaken magneto (fixed ignition), timed 2 mm. before T.D.C. (points just opening), and I have decarbonised the engine and fitted new rings—gaps eight to ten-thousandths respectively top and bottom. Compression is good, and there are no air leaks. When running it will take full air. Petrol consumption seems excessive; jet 24. Have tried 22 unsuccessfully. B.B. top feed carburetter. I have thoroughly cleaned all ports, exhaust pipes, and silencer, and there is no stoppage in petrol pipe, jet, or carburetter.—T.L.

The ignition of your engine is apparently too far retarded. You might try setting the points to break with the piston 6 mm. before top dead centre. This should make a considerable difference to the power and consumption. It is possible also that the type of plugs you are using are not suited to the engine. The makers will inform you which is the most suitable in their experience.

HIGH CONSUMPTION OF TWO-STROKE.

As far as I can judge, the engine (Villiers) of my 2½ h.p. Overstone seems perfect. The timing is correct, the carburetter all right, the machine starts perfectly, goes well, and is in every way satisfactory, with one exception. I cannot get more than 25 m.p.g. out of it. The machine was only bought new in May of this year. Can you kindly suggest a remedy?—D.N.P.

You should obtain not less than 70 m.p.g. with your machine, but the details you give do not make clear the cause of the trouble. The following points, however, should receive attention: (1.) Reduce the size of the jet as much as possible. If the jet is too small, however, there will be a considerable amount of blow-back through the carburetter, and if this happens the jet size must be increased a little until cured. A variable jet adapter will help you considerably in carburetter tuning. (2.) Reduce the petrol level until there is slightly less than $\frac{1}{16}$in. play between the split pin on the float chamber needle and the top of the float. (3.) Keep the ignition well advanced. The spark should occur when the piston is on top dead centre with the ignition control fully retarded. (4.) Guard against leaks in the petrol pipe joints, transmission slip, or undue friction.

SUDDEN LOSS OF TUNE.

During a recent tour round Derbyshire on a 2¼ h.p. Enfield, when about five miles from Buxton, the engine stopped in the middle of a long hill, having previously climbed some serious hills without any trouble. The throttle was almost wide open, also the air lever. When I felt the engine stopping I closed down the air and worked the throttle, but without effect. I cleaned the plug and mounted again. The most I could get on second speed was about 12 m.p.h. still on the hill. The engine then began to backfire, loud short explosions, which appeared to come from the carburetter. After each explosion the machine appeared to go slightly quicker and then gather itself for another explosion. I gave plenty of petrol, but without any improvement. Also during this time the back wheel gave a jerk every few yards. On arriving at Buxton I took down the carburetter but found nothing amiss. On the return journey the engine gradually slowed down at the first hill, and I was compelled to change down into first speed. This happened at all the hills for about ten miles, when I began to feel a slight improvement; but I was only getting about half-speed even on the level. On arrival home I found I had used as much petrol on a forty-mile run as I had previously used on eighty miles. On pulling up to dismount I changed into free engine, and with the throttle open about a third and the air lever closed the engine stopped itself after about half a minute.—E.T.

Your trouble would appear to be due to one of two causes. Either the magneto timing has slipped, in which case you should reset the magneto so that the points are just about to break on full retard when the piston is on top dead centre; or you are suffering from pre-ignition due to an unsuitable plug. It would be worth your while to try another plug before making any further alterations.

CHOOSING A MOUNT.

Will you please let me know which is the simplest and best machine for light work? Easy starting and handling in traffic are needed, but not high speed. —G.H.B.

For obvious reasons, we are unable to recommend any particular machine in the way you require. The majority of the lightweight machines on the market at the present time will give you satisfactory service, and are quite capable of performing the work for which they are intended. We would advise you to obtain a copy of "Motor Cycles and How to Manage Them" from our publishers, and to read therein the chapters on choice of machines. You will then be in a better position to select the type which you require.

EXPANDING BRAKE AND CLUTCH LUBRICATION.

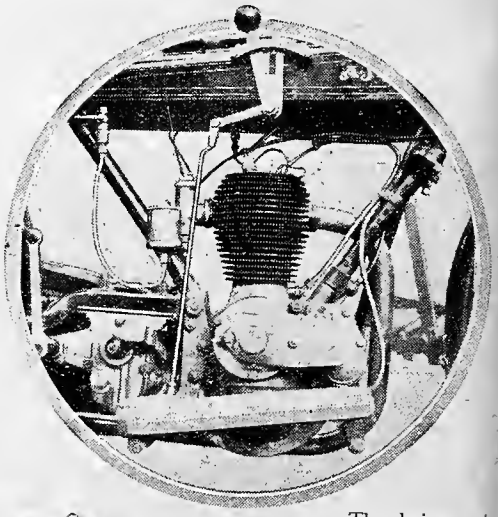
I have an old motor cycle which has a clutch of the type in which a band of phosphor-bronze expands into the steel drum of the belt wheel. Also the rear brake consists of two iron or steel shoes, which expand into a steel drum (after the fashion of the A.J.S. rear brake, which, however, is Ferodo-lined, whereas mine is metal-to-metal). Will you please tell me whether these should be lubricated, and, if so, with what? The machine is a 1911 6-7 h.p. Rex.—J.M.R.

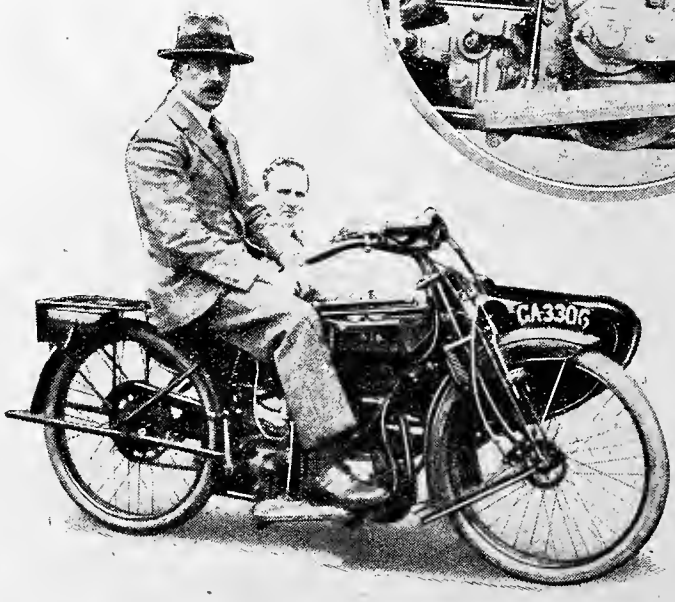
Phosphor-bronze brake or clutch drums do not require a great deal of lubrication, otherwise they tend to slip. Very thin oil, such as that used for pedal cycle bearings, is most suitable. It is possible that the shoes have enough metal in them to allow of turning down sufficiently to permit them being fitted with a modern friction lining, which requires no oiling.

FOUR-STROKING.

Having experienced some slight running defects in my James two-stroke, I shall be glad if you will put me right on the following: With magneto timed fully retarded, with piston at dead top, my machine misfires on the level, and four-strokes badly down gentle slopes and hills It is not excessive oiling, as I rarely give it enough to make it smoke. The only time it two-strokes perfectly is uphill (with the ignition anything from fully retard to one-third advance) and on the level with fully retard. The carburetter is an Amac (27 jet), the engine is sound, and there are no air leaks. I might say oiling it, no matter how little, tends to make it worse. The average speed is about 20 m.p.h.—TREBLIG.

We can only think that your methods of driving are at fault, especially as regards the control of the ignition. The magneto should be timed so that the contact breaker points are just separating when the piston is on top dead centre with the magneto control fully retarded When driving normally, the magneto control should be fully advanced, and it should only be retarded when hill-climbing at very slow speeds. You would find the handbook on "Two-stroke Motor Cycles," published by Iliffe and Sons Ltd. of considerable assistance to you, as it contains information both on the driving and maintenance of all two-stroke machines.





The designer of the Barr and Stroud sleeve valve engine, Mr. A. Douglas S. Barr, on the saddle of an A.J.S. lightweight, fitted with one of these units. (Inset) Showing the engine mounted in a 2¾ h.p. A.J.S. frame. The cubic capacity is 350 c.c., the bore and stroke being 70 × 90·5 mm.

RECOMMENDED ROUTES

NEWARK TO KIRKBY OVERBLOW (YORKS.).—F.T.S.

Tuxford, Retford, Bawtry, Doncaster, Wentbridge, Ferrybridge, Aberford, Wetherby, Spofforth, Harrogate.

WARRINGTON TO BRUTON (SOMERSET).—C.S.B.

Warrington, Weaverham, Tarporley, Whitchurch, Hodnet, Wellington, Bridgnorth, Kidderminster, Worcester, Tewkesbury, Gloucester, Berkeley Road, Filton, Bristol, Pensford, Binegar, Shepton Mallet, Evercreech, Bruton. Approximately 183 miles.

SLOUGH TO WARRINGTON.—C.S.B.

Slough, Farnham Royal, Beaconsfield, High Wycombe, Tetsworth, Holton, Heddington, Oxford, Deddington, Banbury, Gaydon, Warwick, Solihull, Birmingham, Sutton Coldfield, Watling Street (to Holyhead), Cannock, Stafford, Eccleshall, Market Drayton, Audlem, Nantwich, Middlewich, Northwich, Budworth, Warrington.

LEEDS TO PETERHEAD.—J.T.W.

Leeds, Otley, Ilkley, Skipton, Settle, Clapham, Kirkby Lonsdale, Kendal, Shap, Penrith, Carlisle, Gretna Green, Ecclefechan, Lockerbie, Beattock, Elvanfoot, Abington, Lanark, Carluke, Cumbernauld, Denny, Stirling, Dunblane, Auchterarder, Perth, Coupar Angus, Forfar, Brechin, Laurencekirk, Aberdeen, Peterhead.

BOLTON TO ASHINGTON.—H.H.F

Bolton, Astley Bridge, Belmont, Withnell, Hoghton, Walton-le-Dale, Preston, Broughton, Garstang, Galgate, Lancaster, Caton, Claughton, Hornby, Melling, Tunstall, Casterton, Sedbergh, Kirkby Stephen, Brough Sowerby, Brough, Bowes, Barnard Castle, Staindrop, Raby Castle, Bishop Auckland, Spennymoor, Durham, Newcastle-on-Tyne, Gosforth, Morpeth, Pegswood, Ashington. Approximately 161 miles.

PETERBOROUGH TO WIGAN.—J.B.

Peterborough, Alwalton, Elton, Oundle, Benefield, Upper Benefield, Great Weldon, Corby, Wilbarston, Dingley, Market Harborough, Lubenham, Theddingworth, Husbands Bosworth, North Kilworth, Lutterworth, Bitteswell, Ullesthorpe, Claybrooke, High Cross, Atherstone, Fazeley, Weeford, Lichfield, Rugeley, Stone, Woore, Nantwich, Tarporley, Cote Brook, Cuddington, Weaverham, Danesbury, Warrington, Wigan. Approximately 166 miles.

BROMLEY TO TORQUAY.—H.B.W.

Bromley, Bromley South Station, Hayes, Addington, Coombe Lane Station, Waddon Station, Wallington, Carshalton, Sutton, Cheam, Ewell, Epsom, Ashtead, Leatherhead, Great Bookham, Effingham, East Horsley, East Clandon, Merrow, Guildford, Hog's Back, Puttenham Corner, Farnham, Alton, Chawton, Alresford, Itchen, Stoke, King's Worthy, Winchester, Hursley, Romsey, Sherfield English, Whiteparish, Salisbury, Wilton, Shaftesbury, Sherborne, Yeovil, Chard, Yarcombe, Honiton, Fenny Bridges, Honiton Clyst, Exeter, Alphington, Kennford, Kingsteignton, Newton Abbot, (edge of) Kingskerswell, Torquay. Approximately 210 miles.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"J.W.C." (Brentwood).—Disc wheels on 4 h.p. Triumph ridden solo.

"H.C.S." (Mitcham).—Cox-Atmos carburetter on Scott with sidecar.

"V.P." (Longton).—Tamplin: Reliability, durability, upkeep, cornering, tyres, etc., over twelve months.

"G.L.S." (Croydon).—Metro-Tyler: Reliability, climbing, and petrol and oil consumption.

"F.E.D." (Norwich).—8 h.p. Matchless family outfit: Lateral rigidity of spring frame, quality of material, and life of engine parts.

"J.H." (Paisley).—Norton Big Four (solo and with sidecar): Speed, reliability, quality of material and durability, and climbing.

"J.A.S." (Salisbury).—3½ h.p. Norton with direct belt or Philipson pulley drive.

"J.S." (Dulwich).—Four-cylinder Henderson: General experiences.

"V.N.S" (Goole).—Dry battery lighting sets, using from three to four hours twice a week: Expense of upkeep, etc.

"H.H." (Denton).—3 h.p. Royal Ruby: Speed, comfort, reliability, consumption, acceleration, and control at speed.

"C.S." (India).—12 h.p. A.C.E., with sidecar: Consumption, detachability of back wheel, accessibility of carburetter, etc. 8 h.p. Matchless and sidecar and 8 h.p. Sunbeam, ditto: Speed, accessibility, ease of wheel changing, luggage capacity, etc.

"R.G.R." (Eton).—O.K. Junior, single-speed (Mark XI.): General experiences.

"E.R.S." (Northumberland).—Brough-Superior: Especially reliability of o.h.v. mechanism for hard riding on long journeys.

"G.G.H." (Higham Ferrers).—5 h.p. N.U.T.: Speed, consumption, and reliability (solo or sidecar), and same questions regarding the 4 h.p. Coulson-B.

"J.H.C." (London, N.16).—3⅜ h.p. Scott, 3½ h.p. P. and M., or 3½ h.p. Ariel (as solo machine): Reliability, climbing, saddle comfort, fork springing, and consumption.

Will the following readers forward full addresses so that replies may be sent to them?: "C.T.P." (Northwood) and "J.L.H." (Worthing).

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates, preferably in January or after.

SPARKLETS

A Competition Rider's Venture.

Motor cyclists in the Birmingham district who require expert assistance in tuning and repairs should note that G. E. Stobart, the well-known James competition rider, has established himself in business at 6, Minstead Road, Erdington.

Similarity of Names.

The N.W. London M.C.C. gymkhana took place at the Stag Lane Aerodrome, while the North London M.C.C. rally, which was held last month, was at Hendon Aerodrome. Some confusion as to the organisers of the two appears to have occurred.

Found on the Road.

An Avon inner tube, size 30×3½in., was picked up between Newtown and Caersws by Mr. J. Robinson, of the Widnes Foundry Co., Ltd. Widnes, on October 7th; while the secretary of the Sutton Coldfield Club (Mr. P. Mosedale, the Nook, Maney Hill Road, Sutton Coldfield) reports that a leather helmet was left behind on Penkridge Bank after the hill-climb on October 8th.

Speed Trials in Belgium.

During a recent meeting at Monfaign, near Liège, organised by the Belgian Motor Union, some excellent performances by Triumph machines over the flying kilometre were recorded. In the professional class (500 c.c.) M. Antoine covered the distance in 29⅖s. (76 m.p.h.), and in the 600 c.c. sidecar division of the same class M. Phillippart took 40⅖s. (54 m.p.h.). A Triumph was also first in the 600 c.c. amateur class, viz., M. Thys, 34⅕s. (65¼ m.p.h.).

At the same meeting a single-cylinder F.N. made fastest time in the 250 c.c. class, while against all comers the four-cylinder F.N. proved the winner.

Catalogues Received.

Butterfields, Ltd., Levis Works, Stechford, Birmingham: the seventh edition of "Driving Instructions and Useful Hints and Tips." A most complete handbook for users of Levis motor cycles.

Norton Motors, Ltd., Bracebridge Street, Birmingham: a booklet describing Norton models which are specially constructed for overseas use. These include the Big Four, the 3½ h.p. Sports model, and the *de luxe* sidecar outfit. Mr. J. L. Norton is at the present time in our overseas dominions studying motor cycle conditions.

Leopold Ward, A.C.G.I., B.Sc., Harmood Place, Chalk Farm, London, N.W.: "Some Notes on Experimental and Research Engineering": a small booklet dealing with several interesting motor cycle engines and other engineering appliances made by Mr. Ward. Some of these have been dealt with in *The Motor Cycle*.

Advance Details of 1922 Models.

The New Imperial Programme.

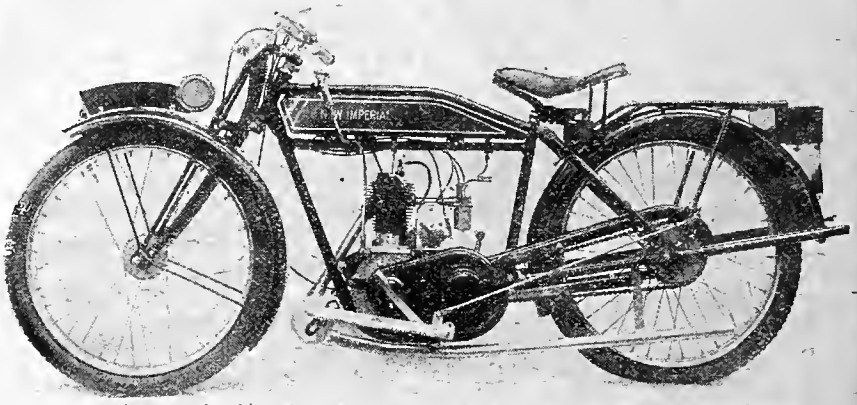
A Loop Frame Lightweight with Engine and Gear Unit Assembly.

As makers of lightweight motor cycles, New Imperial Cycles, Ltd., have had a wonderfully successful year. Perhaps the most outstanding success was the winning of *The Motor Cycle* Cup for the 250 c.c. Tourist Trophy, and in this respect it must be remembered that the firm have marketed their little T.T. model, and have also run it most successfully in reliability trials.

We ourselves have had some little road experience with the machine, and have found it thoroughly roadworthy and far from being a purely racing mount.

The A.C.U. Six Days Trials and the 500 Mile Race at Brooklands have added to the New Imperial laurels, and no fewer than thirty-five special trophies have been won, while gold medal awards are innumerable.

Similar machines to the Tourist Trophy type will be listed for 1922, but much interest will be concentrated on a modified type, which is the subject of the subjoined notes.

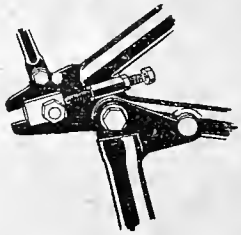


New points in the New Imperial are a loop frame, all-chain drive, and an internal expanding rear brake.

Novel Engine Mounting.

Driven by a New Imperial-Jap engine of 293 c.c., the engine is mounted on long bearer plates, on which are carried the magneto—directly behind the cylinder—and the three-speed gear box. Thus, the engine forms a unit with the main part of the transmission, and the whole can be detached from the loop frame by merely uncoupling the petrol and oil pipes and removing three accessible bolts. Many detail refinements are included in this unit. For instance, a breather is fitted to the gear box, and this has been found to obviate oil leaks almost entirely. A rubber return stop has been fitted to the kick-starter, and ball and roller bearings will be fitted to the engine.

The loop frame is a sturdy piece of construction, and is particularly rigid laterally, as we can testify from a short run. Transmission is by chain throughout, and an adjustable shock absorber is fitted on the engine-shaft. The primary chain is well protected by a metal guard, and a special guard protects both top and lower runs of the low speed chain without entirely enclosing it.



The rear spindle of the New Imperial is held in substantial steel blocks, and correct chain tension is effected by screw adjusters.

Very wide domed mudguards are fitted, and the spring forks have undergone slight modifications.

External expanding brakes are fitted to both wheels, that in the rear having aluminium shoes faced with Don friction fabric, the surface being ground true in position.

Rear chain adjustment is effected by screws carried in the fork end, and butting against solid steel blocks in which the spindle is carried.

The comfort of the rider has been carefully studied, and, in addition to a comfortable saddle, large aluminium footplates are fitted, and ingeniously arranged leg shields may be added. These shields are unusual in appearance, since they lie rather on the inside of the leg than to the front; but, in this position, they catch the mud which is not trapped by the front guard, and act as air deflectors to increase cylinder cooling: they do not interfere with the simple device for adjusting the footboards.

The valve gear of the engine is particularly silent, and a large aluminium muffler with long tail pipe effectively reduces the exhaust noise.

Altogether, this is one of the most completely fitted and practical lightweights which we have examined, and on the road it is fast, silent, and easy to control.

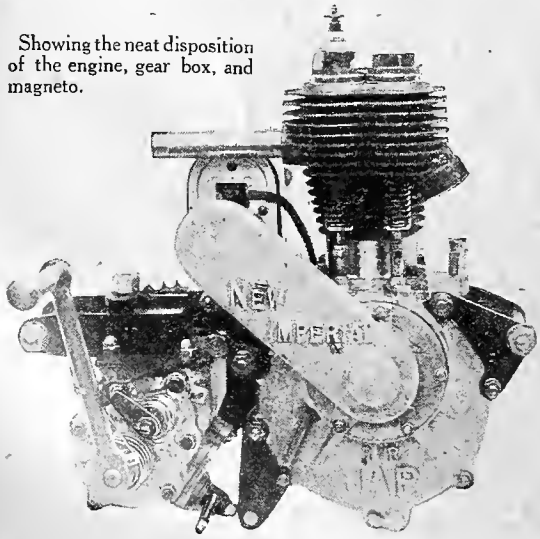
The standard machine is fitted with 26in. wheels. The tyre section is not yet finally settled; but a model will be made with 24in. wheels to suit ladies or short riders. Sports models fitted with 250 or 350 c.c. J.A.P. engines may be obtained, and these will have clutch but no kick-starter, and will be fitted with footrests, narrower guards, and lighter equipment. These models will be in addition to the chain and belt range.

Long plates carry the engine, gear box, and magneto on the loop frame New Imperial. Note the gear box breather, and rubber stop for the kick-starter.

It must not be forgotten that 8 h.p. passenger machines are a feature of the company's programme, though for 1922 only minor modifications, such as Timken roller bearing hubs and an ingenious sidecar standard have been incorporated.

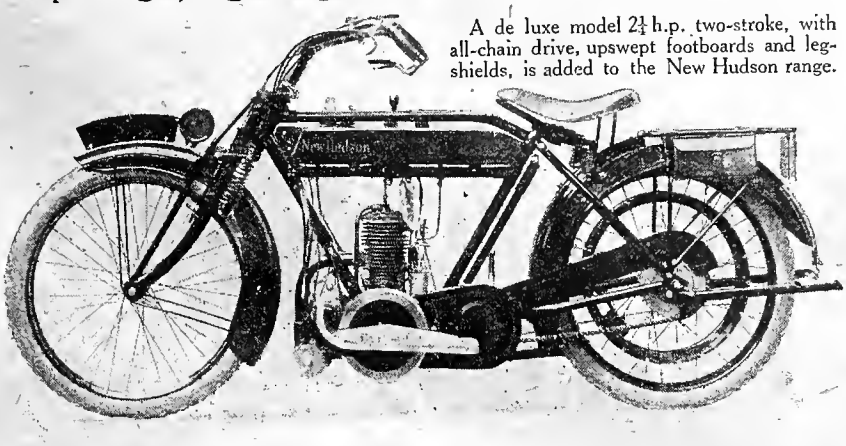
Nevertheless, an 8 h.p. sporting mount fitted with the latest type of side-by-side valve J.A.P. engine will supply the needs of the "big twin" speed enthusiast.

Showing the neat disposition of the engine, gear box, and magneto.



A Wide Range of New Hudson Models.

Water-cooled Three-wheeler, 4 h.p. Single, Lightweight Two-stroke with All-chain Drive.



A de luxe model 2¼ h.p. two-stroke, with all-chain drive, upswept footboards and leg-shields, is added to the New Hudson range.

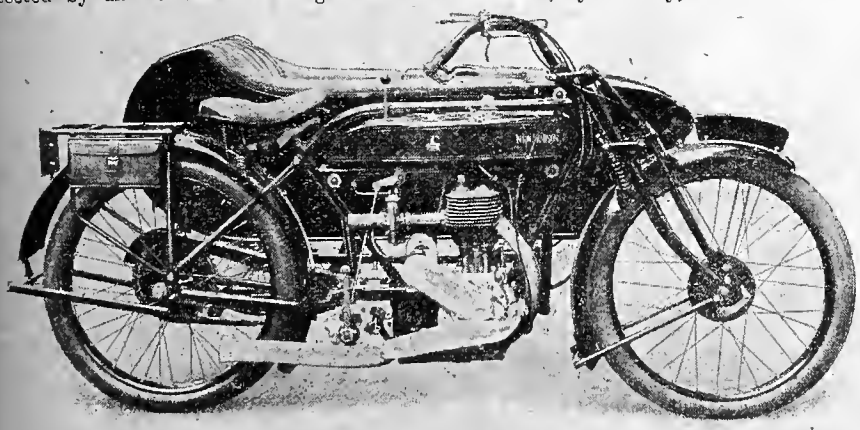
AT the last Olympia Motor Cycle Show something of a sensation was caused by the production of a beautifully finished three-wheeler by the New Hudson concern. This machine has now undergone several modifications, and, in its new form, has already proved itself on the road. The layout of the chassis is simple and workmanlike, and there is an atmosphere of solidity which seldom surrounds the normal light car, whether three or four-wheeled.

Carried on the frame by stout aluminium castings, a 10 h.p. water-cooled M.A.G. engine transmits its power through a single dry plate clutch to a three-speed and reverse gear box. A simple clutch stop is brought into action by a full depression of the pedal, and the propeller-shaft has a flexible joint arranged immediately in front of the gear box. In the rear portion of the gear box is a pair of bevels and a cross-shaft, and all the gear selector mechanism is protected by an aluminium housing. Final transmission is by chain. Channel steel side members, with two channel and two tubular cross members, comprise the frame, which is additionally cross-braced by intersecting tubes. Within the front channel cross member, and protected by its flanges, lies the rack and pinion steering gear, which is connected directly to the tie-rod immediately behind the steel tubular front axle. The rear tubular cross member forms a support for the back of the gear box, and also a pivot for the centre of the long cantilever rear springs. A tubular frame carries the rear wheel chain, tension being adjustable by means of eccentrics on the front end of the radius rods. The chassis is supported in front by quarter-elliptic springs.

Such is the bare specification of the New Hudson three-wheeler, but there are many interesting features which are well worthy of attention. For instance, the wheels, shod with 26×3in. Dunlop light car tyres, are quickly detachable and interchangeable. A permanent jack is incorporated in the rear frame, by means of which the rear wheel can be raised from the ground with the least possible delay. It should be mentioned, also, that, after removing the knock-out rear spindle, the wheel comes away, leaving the chain sprocket and brakes *in situ*. The brakes, by the way, both act on the rear chain ring, the hand brake being of the contracting type and the foot brake having expanding shoes.

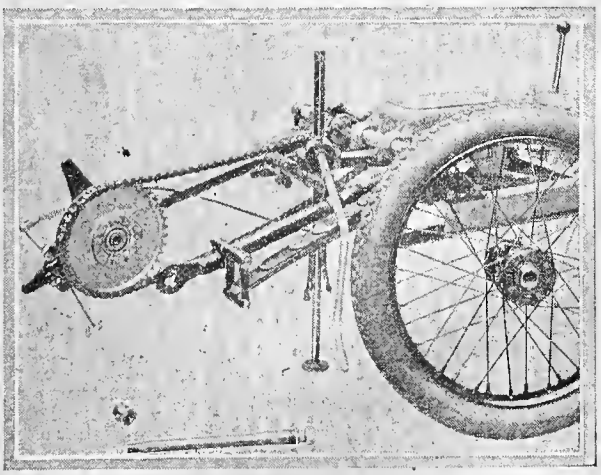
A spare-wheel is included in the specification, as also are a Lucas Magdyno, driven by bevel gear from the front of the engine, and a Cox-Atmos carburetter. Lubrication of hubs and other working parts is effected by means of a screw-in grease gun.

A deep and luxuriously upholstered body, with screen, hood, and good mudguards, is fitted to the very attractive vehicle, and a neat radiator admirably sets off the whole. It is a most elaborate model.



Internal expanding brakes, chain drive, with quick detachable rear wheel, leg-shields, and a very comfortable sidecar, are features of the 4 h.p. New Hudson outfit.

New Hudson, Ltd., are by no means newcomers to the passenger motor cycle world, so that peculiar interest attaches to their return to this field. The new 4 h.p. New Hudson has a single-cylinder engine of 87×100 mm. bore and stroke (594 c.c.). The side-by-side valves are operated by a single cam, and clear air spaces are left between the cylinder walls and gas ports. A two-ringed aluminium piston is fitted, and plain bearings are used throughout, special precautions being taken to avoid oil leakage. The transmission is by chain, a shock absorber being mounted on the engine-shaft, and a Sturmey-Archer three-speed box being fitted to the bottom bracket casting. The magneto is carried behind the cylinder, and draw-bolt adjustments are provided for tensioning both magneto and primary drive chains. A special arrangement of change speed mechanism is provided, the operating lever protruding through the tank in a convenient position. Aluminium footplates and sensible legshields are fitted, and the front chain is protected by a cast aluminium guard, which extends rearwards over the front end of the rear



A permanent jack is incorporated in the rear frame of the three-wheeler, and the brakes and chain are unaffected by the removal of the rear wheel. Interchangeable wheels, with a spare, are supplied.

Advance Details of 1922 Models.—

chain. A sheet metal extension protects the rear chain from mudguard drippings. Special provision has been made for quick detachment of the rear wheel, and very wide domed mudguards are fitted.

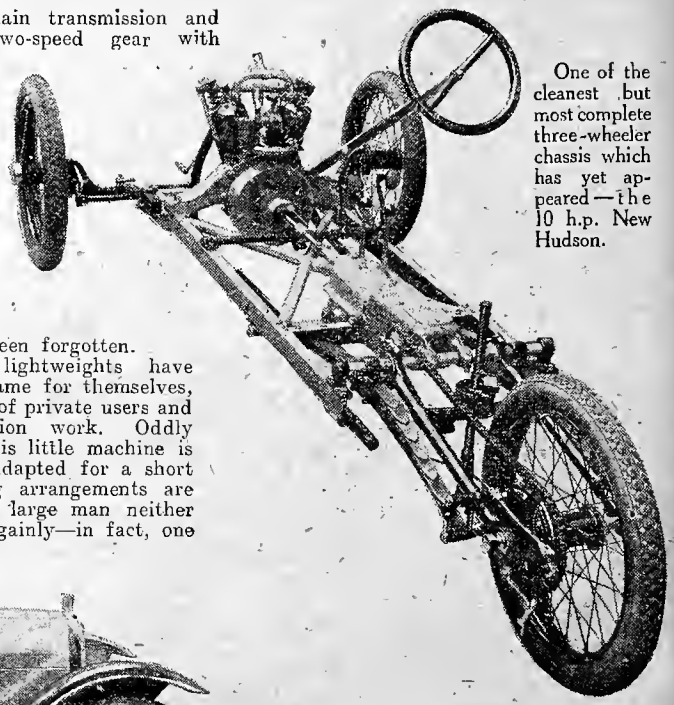
Attached to this very practical looking machine is a roomy coachbuilt sidecar, suspended on C springs, front and rear, from a rectangular chassis. The chassis is underslung, and is attached to the motor cycle at four points. A wide mudguard is mounted on the sidecar body. It is probable that 26×3in. tyres will be fitted all round, and the complete outfit is to sell at a very attractive figure.

A minor point, which, however, is not without importance, especially from an overseas point of view, is that a 6in. ground clearance is obtained. This end has been achieved without making the machine unduly high or ungainly.

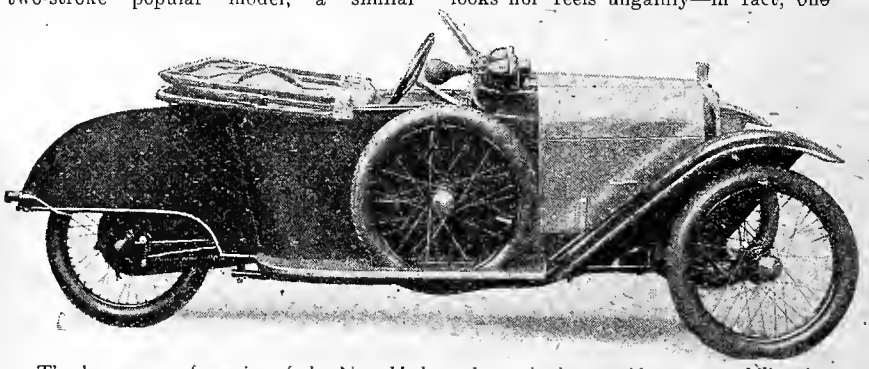
Lightweights.

In addition to the well-known 2¼ h.p. two-stroke popular model, a similar engine with all-chain transmission and Sturmey-Archer two-speed gear with clutch and kick-starter will be marketed. This little machine will be turned out with foot plates, legshields, air deflector to plug, and 24 × 2¼in. tyres. The specification should be ideal for the business man, since sensible mudguards have not been forgotten.

New Hudson lightweights have already made a name for themselves, both in the hands of private users and in open competition work. Oddly enough, though this little machine is particularly well adapted for a short rider, the seating arrangements are such that even a large man neither looks nor feels ungainly—in fact, one of the firm's best known riders is certainly taller than the average.



One of the cleanest but most complete three-wheeler chassis which has yet appeared—the 10 h.p. New Hudson.



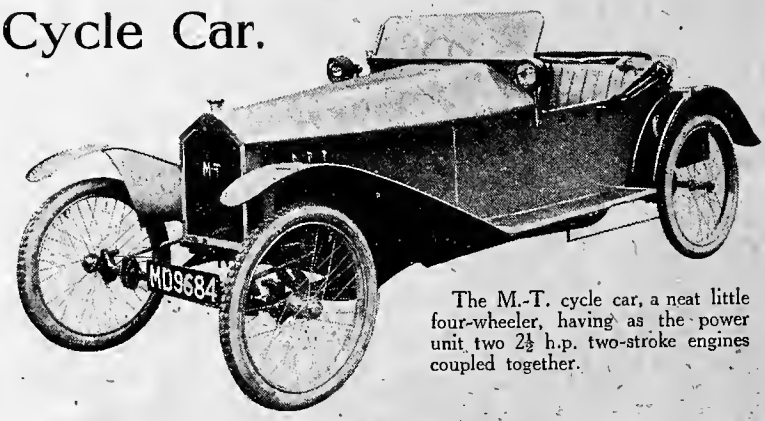
The low centre of gravity of the New Hudson three-wheeler provides great stability, but does not interfere with the ground clearance or smart appearance of the machine.

The popular model is similar to the *de luxe* type but has 24×2in. tyres, footrests instead of aluminium footboards, and no legshields are supplied. The same little three-port two-stroke engine of 62×70 mm. bore and stroke is fitted in each case, and this engine is built in the New Hudson works throughout.

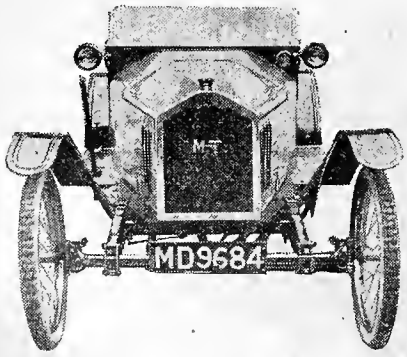
The Metro-Tyler Cycle Car.

A Lightweight Runabout driven by Two 2½ h.p. Engines.

A FOUR-WHEELER built on purely motor cycle lines is the £125 M.-T. cycle car, which is driven by two 2½ h.p. 70 × 70 mm. M.-T. two-stroke engines coupled together, with the crankshafts in line. This unit is fitted in a strengthened ash frame. The gear box is the well-known Sturmey-Archer incorporating three speeds and clutch, the starting mechanism being connected to a lever within reach of the driver so that the engine can be conveniently started from the seat. From the gear box to the live back axle the drive is by 1in. belt, while the axle runs on roller and thrust bearings situated in housings between the double-quarter elliptical springs, this method of springing being adopted for the front of the vehicle as well. The gear ratios are 5⅛, 8½, and 13 to 1, and it is hoped to incorporate a reverse in future models as an extra. The carburetter is a Zenith, and is controlled by the ordinary accelerator pedal.

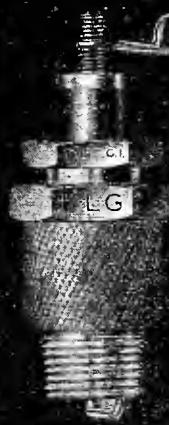


The M.-T. cycle car, a neat little four-wheeler, having as the power unit two 2½ h.p. two-stroke engines coupled together.



Double quarter elliptical springs are used for the front springing. The starting lever, it will be observed, can be operated from the driver's seat.

A roomy two-seater body is fitted provided with ample lockers. We had a short run on the machine, and found the steering, though direct, to be quite effective. The twin engines seemed to possess ample pulling power, and, starting by means of the side lever, was simplicity itself, the engines starting on the first pull over, nor were they unduly noisy.



SPARKING PLUGS

⅌ STANDARD K·L·G 'G' SERIES

Type G 1—for average engines—standard metric thread, 12 m/m reach.

Type G 2—for average engines—standard metric thread, 18 m/m. reach.

Type G 3—for American Cars taking A.L.A.M. threads, ½ in. reach.

Type G 4—for American Cars taking A.L.A.M. threads, ⅝ in. reach. Suitable for the latest 'Buick' Cars.

Type G 5—the popular 'Ford' model, and for American Cars taking ½ in. gas thread.

THE DESIGN OF THESE PLUGS INCORPORATES THE FOLLOWING NEW & UNIQUE ADVANTAGES-

A. The plug body and gland nut, which constitute the permanent portions of the plug, are treated by a special process before assembling which renders them rust-proof and absolutely obviates the not infrequent trouble caused by the plug "seizing" in the cylinder.

B. The central electrode and insulation can be readily removed from the plug by unscrewing the gland nut without the necessity of removing the plug body from the engine cylinder. This renders possible the inspection and thorough cleansing of the insulation.

C. Complete "centres" for renewals can be supplied and carried as spares. With ordinary care the original plug body and gland nut should last almost indefinitely.

RETAIL PRICE OF ALL 'G' TYPES IS 6/- EACH

SPARE INSULATED CENTRES 3/- EACH

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Why suffer the discomfort of Acetylene?
Convert your lighting to Electric for 45/-

Bother no longer with odorous and troublesome acetylene—just switch on and flood your path with brilliant Electric Light. You can equip your Cycle with new lamps or convert your existing Lamps to Electric with

WATES
ELECTRIC CONVERSION SETS

We feel that nothing we can say about them is such strong testimony as the unsolicited opinions of actual users which continually come to us. Here is one of them :—

"The solo lighting set you supplied to us a few weeks ago is acting splendidly and is a huge success."

Solo Lighting Sets. Conversion set with new tail lamp.....£2 : 5 : 0
Complete set with new head and tail lamp.....£4 : 0 : 0

Sidecar Combination Lighting Sets.
Conversion set with new side and tail lamp ..£3 : 15 : 0
Complete set with 5 inch head lamp.....£5 : 10 : 0
Complete set with 7 inch head lamp.....£6 : 5 : 0

In the Solo lighting sets, the accumulator case fits on the existing acetylene lamp brackets. The following lamp sets are all suitable for holding the accumulator case. These are not the only sets suitable for converting, but give an idea of what is required.

Powell and Hanmer Lamps, Nos. 127 H.B., 127 S.B., 128 H.B., 12 S.B., 125 H.B. Miller Lamps, Nos. 29 H., 31 H., 24 S., 22 H.; Lucas Lamps, Nos. 462, 341, 331

Why not write to-day for illustrated list giving prices of complete sets for Solo and Combination work, conversion sets for existing lamps, and our motor cycle electrical fittings ?

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EXCEPTIONAL ACCUMULATOR OFFER ! !
Hart or Peto and Radford Manufacture.
(In metal case with strap handle.)

4 Volts
12 amps. actual. 24 amps. ignition

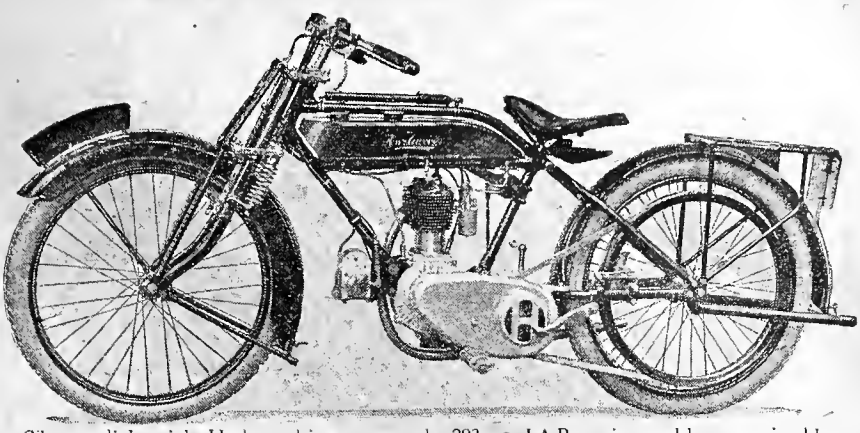
Quantity.	Price each.	Total price.
1	14/-	14/-
2	13/-	26/-
3	12/8	38/-
4	12/3	49/-
6	12/-	72/-

Size $5\frac{3}{4} \times 3\frac{1}{4} \times 3\frac{3}{4}$.
All above prices include free delivery

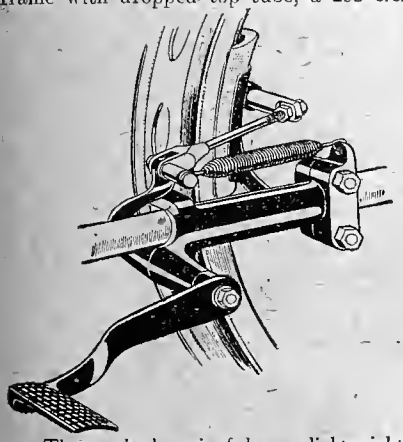
Hazlewood Introductions.

Sporting and Touring Lightweights. Passenger Machines mainly Unchanged.

A LIGHTWEIGHT will be added to the existing range of Hazlewood models for 1922. Carried in a frame with dropped top tube, a 293 c.c. J.A.P. engine drives the rear wheel through a two-speed Sturmey-Archer gear with clutch and kick starter, the final drive being by belt. Aluminium foot plates, a cast aluminium chain cover, B. and B. carburetter, and Best and Lloyd drip lubricator, are included in the specification. A sports model, with long exhaust pipe and footrests in place of footboards, is listed, and is fitted with a neat rear brake, the whole of which, with its operating pedal, can be readily removed, should tyre trouble necessitate the withdrawal of the rear wheel. This machine is listed at £70. A somewhat similar but more stoutly constructed machine will be marketed, and will carry a 4 h.p. J.A.P. engine and three-speed gear.



The new lightweight Hazlewood incorporates the 293 c.c. J.A.P. engine, and has a serviceable black finish.



The rear brake unit of the new lightweight Hazlewood is easily detachable to facilitate wheel removal.

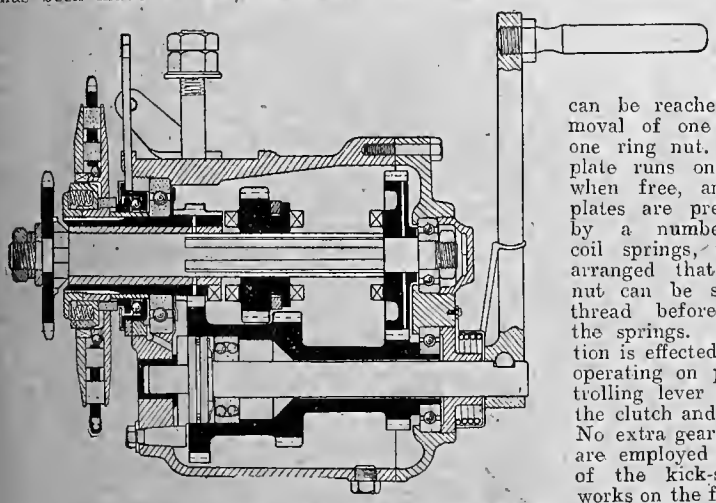
All Hazlewood models are fitted with wide Druid type forks, and mudguarding has received very special attention, being most efficient. The existing 6 h.p. model, with chain and belt drive, and the 8 h.p. type, with all chain drive, will be retained, but the latter will in future be fitted with an internal expanding rear brake.

The makers are Hazlewood's, Ltd., Coventry.

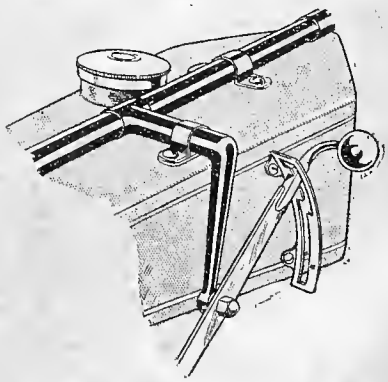
A Clutch Model Velocette.

Re-designed Gear Box now incorporates a Kick-starter.

UNCHANGED in its more characteristic features, the 1922 Velocette is, nevertheless, worthy of special attention, since a very considerable change has been made in the transmission. An entirely new gear box is now fitted, and includes a cork clutch and kick starter. The three-speed gear is a very ingenious piece of work. Both shafts run on ball bearings, and heavy pitch teeth are used. Top and low gears are engaged by dogs, but the middle gears are meshed as in normal car practice. It should be mentioned, however, that these gears are of the same pitch and width as employed by many 6 h.p. machines. An unusual feature lies in the fact that the final drive chain lies outside the clutch, the sprocket being locked to its shaft by face dogs. In spite of this, the clutch is extremely accessible, and can be reached by the removal of one hexagon and one ring nut. The middle plate runs on a ball race when free, and the outer plates are pressed together by a number of small coil springs, which are so arranged that the locking nut can be started on its thread before compressing the springs. Clutch operation is effected by face cams operating on pegs, the controlling lever lying between the clutch and the gear box. No extra gears or quadrants are employed in the design of the kick-starter, which works on the free-wheel principle, a roller being forced outwards into a groove by the action of a cam on the starter spindle. The action is positive; and, by means of an ingenious and simple arrangement of safety device, the roller is forced out of its groove in the case of a back-fire. A two-speed gear box of similar type may be supplied; but in this case a plain bearing layshaft is used. The two-speed gear supplied for the sports model, however, has ball bearings throughout, but no kick starter is fitted. Detail modifications have taken place in the chain guards to improve accessibility. Wider front forks have been adopted to avoid trapping the mudguard, and wider rear hub, forks, and mudguards are fitted. The new lightweight M-L magneto is to be standardised. Gear operation is now by means of a gate quadrant, and the spark advance lever incorporates a simple cork friction device.



Compact design and sturdy construction are the essential features of the three-speed Velocette gear box with clutch and kick-starter.

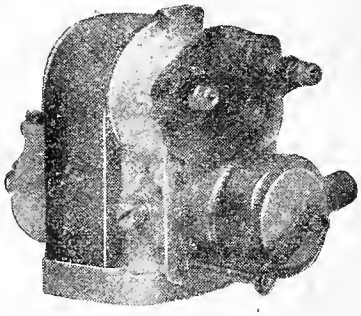


The gate quadrant is fitted on the front end of the tank.

B.T.H. Novelties.

Combined Lighting and Ignition Apparatus in Various Forms.

As far as concerns two-stroke engines, the B.T.H. Sparklight ignition and lighting set has already made its name; but until recent times the system of utilising the idle maximum point of the magneto has been confined mostly to that type of engine. The B.T.H. Co. has, however, just introduced a modified set for four-stroke engines.



The new B.T.H. Sparklight for four-strokes. Note the distributer box.

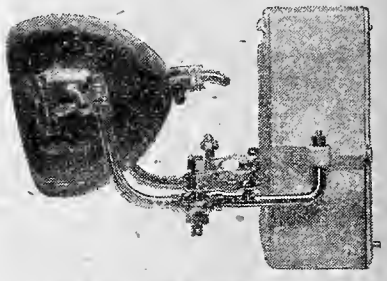
In this appliance, the magneto is driven at engine speed, and, consequently, gives a better spark for starting and at low speeds. The Sparklight collector attached in place of the contact breaker cover remains unaltered; but, since with this arrangement two sparks are generated where only one is needed, a simple distributer with two terminals has been added. By this means the waste spark is earthed, and the useful spark is led to the plug in the normal manner.

Prolonged Road Test.

The new system has been given a prolonged road testing and has proved thoroughly reliable. A four-volt twelve ampère battery is carried on the handlebar and a five watt head lamp bulb is employed.

The B.T.H. flywheel magneto and lighting set has been improved in detail, and will form a standard line for 1922. In addition, a mag-generator of interesting construction will be exhibited for the first time at Olympia.

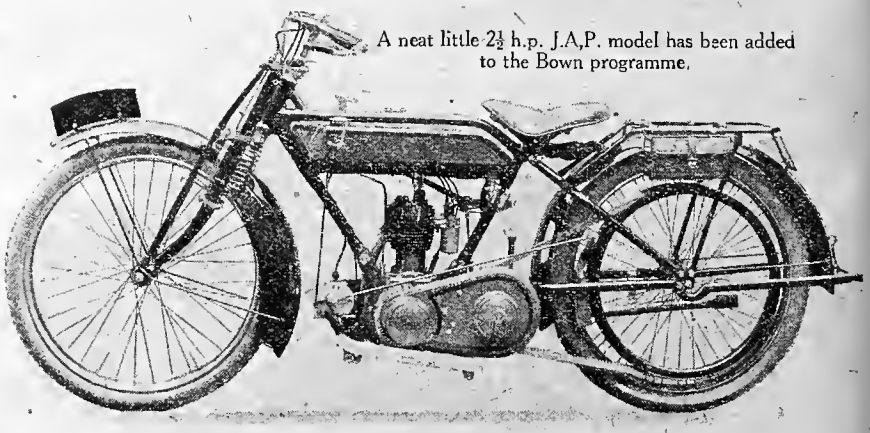
The magneto and dynamo of this set form separate units, which are dovetailed together; but, contrary to usual practice, it is the generator which is driven from the engine (at half engine speed in the case of motor cycles), and the magneto which is driven from the generator spindle. This system imposes less loading on the gears, which connect the two spindles, the driven gear in the B.T.H. set being of a special composition manufactured by the firm. A cut-out is embodied in the dynamo and Cobalt steel magnets are used for both ignition and lighting sets. An output of twenty watts is claimed at 1,200 r p.m. of the armature.



Head lamp and battery box of the B.T.H. Sparklight set. A 4 volt 12 amp battery and 5 watt bulb are used.

Bown Additions.

In addition to the $2\frac{3}{4}$ h.p. Blackburne and $2\frac{1}{2}$ h.p. Villiers models, Bowns, Ltd., will market a neat little touring machine fitted with the $2\frac{1}{2}$ h.p. J.A.P. engine (293 c.c.). An Albion two-speed gear with clutch and kick-starter is fitted, chain and belt drive being employed. Druid forks, M-L magneto, 26 × $2\frac{1}{4}$in. tyres, B. and B. carburetter, and an internal V brake are used, and all the fittings are of good quality. The rear forks of all models are now wider to prevent trapping of the guard. Lubrication of the engine is through a Best and Lloyd sight feed device, and the primary chain is well protected by a neat cover. A dropped top tube frame is retained, and the general appearance is good.

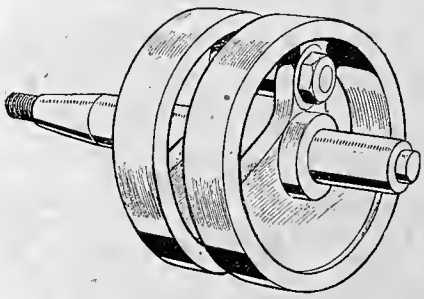


A neat little $2\frac{1}{2}$ h.p. J.A.P. model has been added to the Bown programme.

Liberty Engine Modifications.

Built-up Crankshaft of Unusual Design.

Steady progress is being made in the design of Liberty two-stroke engine manufactured by A. W. Wall, Ltd., of Tyseley, Birmingham, and several modifications are included in the design for 1922. The engine is of the normal three-port design, and is beautifully made, the crankshaft being a particularly fine piece of work. Each shaft and crank cheek is formed from a special steel forging, and is machined and ground until it takes the form of a miniature internal flywheel, complete with balance weight. Plain bearings are used on the main shaft, but the crank pin, which is utilised to bolt together the two sides of the shaft, is fitted with a roller bearing big end. The hollow gudgeon pin is carried rather high up in the piston, and is located endwise by the lower of two piston rings, the lower edge of the groove being bevelled off so as to trap the oil. The cylinder is well finned, and in practice has been found to cool very satisfactorily. Every engine is given a thorough bench test before it leaves the works. An Amac carburetter has been found to give excellent results.



The Liberty crankshaft is built up of two forgings. A roller bearing big end is used.

Naturally, an outside flywheel is also fitted. Besides the increased rigidity of the built-up form of crank construction, another advantage is that, by reducing the crank case volume, crank case pressure is increased.

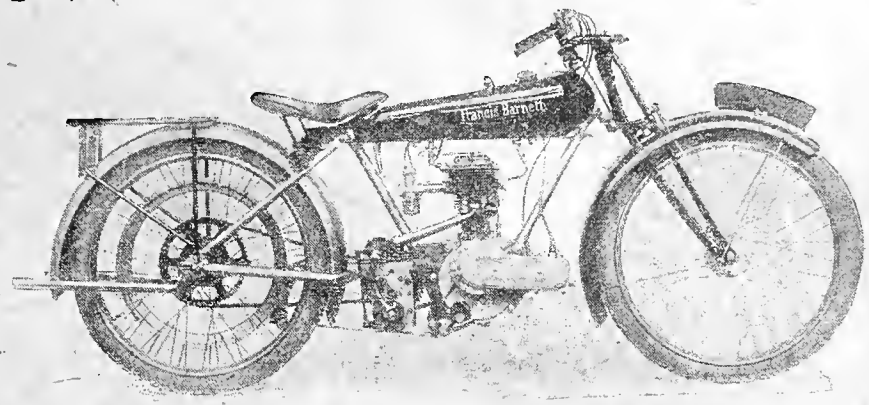
Piston of Liberty two-stroke, showing the lower ring groove. The ring acts as a gudgeon-pin keep.

The Reynolds runabout, which is manufactured by the same firm, and is, of course, fitted with the Liberty engine, will in future be fitted with 24in. wheels and all-chain drive. It is probable that further developments on interesting lines will take place in the near future, but for the moment our tongue is tied.

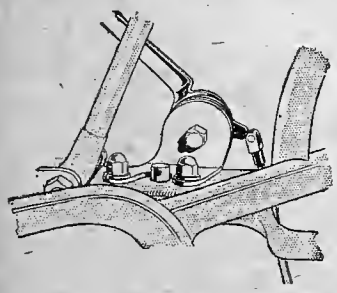
A Sporting Francis-Barnett.

2¾ h.p. J.A.P. Engine, Three-speed Gear Box, All-chain Drive.

ONE of the most attractive lightweight machines which will be exhibited at Olympia is the sports model Francis-Barnett. Incorporating the 350 c.c. J.A.P. engine, a three-speed lightweight Sturmey-Archer gear with clutch and kick-starter, all-chain drive, and an Enfield shock absorber, the whole machine weighs only 190 lb. Every detail has been carefully thought out, and though there may be other machines with a somewhat similar specification, it is in detail refinements, so dear to the heart of the enthusiast, that the Francis-Barnett excels. 26×2½in. extra heavy tyres covered by wide flat section guards, Brampton forks with a positive stop to prevent the handle-bars damaging the tank, and a stand which is particularly neat and strong help to make the machine serviceable. The tank is of the saddle type associated with the Francis-Barnett name, and all the control wires pass through the space between the two tank partitions, so that they are out of sight for the greater part of their length. The B. and B. carburetter and the new M-L lightweight magneto are part of the equipment.



The latest 2¾ h.p. Sports Model Francis-Barnett in an unfinished state. A 350 c.c. J.A.P. engine and three-speed lightweight Sturmey-Archer gear are fitted.



One of the many neat features of the Francis-Barnett is the fact that the change speed lever is mounted with the gear box. The unit is adjustable endwise by means of an eccentric operated by a projecting stud.

The operating lever of the Sturmey-Archer three-speed gear is mounted on the bottom bracket and secured by the same nuts as the gear box itself, so that when the primary chain is adjusted there is no need for adjustment of the gear control rod. It will be remembered that a positive chain adjustment is provided, the gear box being moved by an eccentric on the lower end of a stud which projects through the bottom bracket casting.

Footrests only are fitted, but these can be set in five different positions by merely slacking off a nut and replacing the locating peg in any one of a series of holes.

The finish, which, by the way, is excellent, is in black throughout, a minimum number of plated parts being used. A Webb front brake is fitted, and the rear brake is of the V type acting inside the groove of a dummy belt rim. It should be added that there are no clips on the machine except for handle-bar fittings.

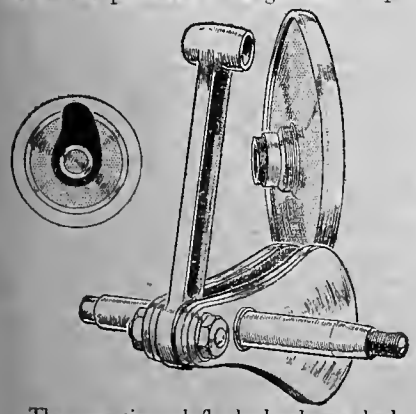
Blackburne Engines for 1922.

Four Singles and Four Twins to be offered Next Year.

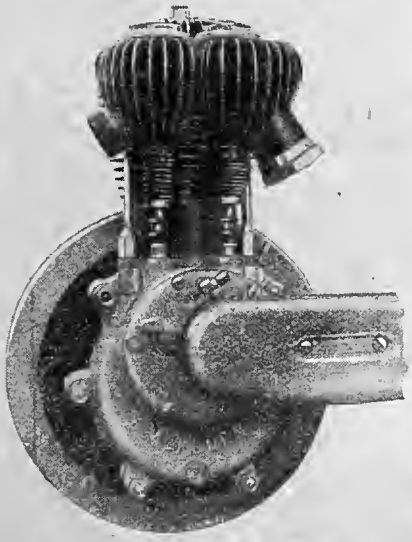
BLACKBURNE engines for 1922 will include at least two completely new models. These are the 4¼ h.p. and the 2¾ h.p. T.T. engines. The larger of these has a bore and stroke of 85×97 mm. (548 c.c.), and like all the latest pattern Blackburne engines the finish has been much improved, the crank case being sand-blasted, and the magneto and timing gear cases polished.

The chief improvements in this pattern lie in the provision of larger and deeper radiating fins, especially round the valve ports, a roller bearing big end, and a new cam and exhaust rocker. The new cam is so designed that it first lifts the valve gradually, then opens it rapidly, keeps it open a longer period than the old cam, and then allows it to close quickly; consequently, on account of the overlap, greater efficiency is obtained. The crankshaft is of the built-up variety, while the crank webs are steel stampings.

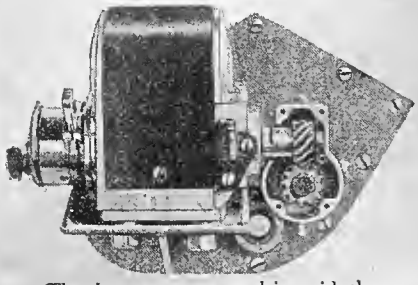
It is interesting to be able to record that the T.T. engine, with overhead valves, which came near to winning the Junior T.T., is to be placed on the market for the coming year. Since the classic event, however, it has undergone several modifications, one of these being the placing of the sprocket outside the flywheel, thus reducing the overhang and



The connecting rod, flywheel and cam wheel.



A feature of the new 4¼ h.p. Blackburne engine is the increased size of radiating fins round the valve ports.



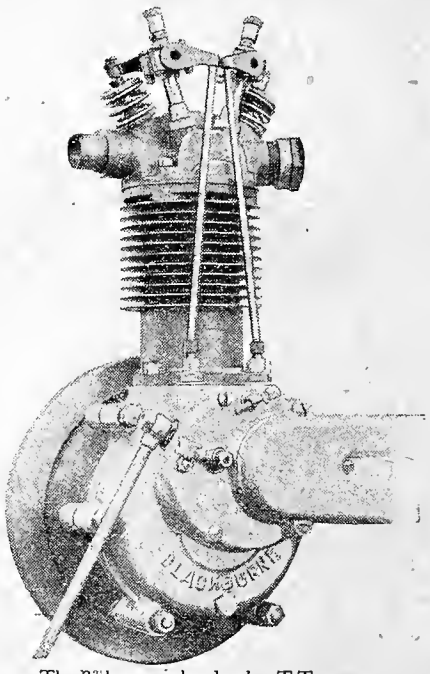
The skew gear magneto drive with the cover removed.

Advance Details of 1922 Models.—

bringing the flywheel nearer the crank case. This arrangement not only brings the sprocket 1½in. closer to the crank case, but considerably facilitates the enclosure of the chains. The new flywheel is lighter than the old pattern, has the inside of the mainshaft hole hollowed out, and the main bearing boss slightly chamfered.

The split hardened steel bushes for the o.h.v. rockers are mounted on supports screwed into the detachable head and secured by a lock-nut. In the case of the latest models, the main adjustment is effected by means of the usual adjustable tappet as found on side valve engines; but further adjustment can be obtained by means of the supports, which may be screwed or unscrewed, and then held by the lock-nut. No adjustment is now provided on the end of the rocker arm, which strikes the valve stem; but, following car practice, a cam pad is provided. The timing gear is the same as the standard 2¾ h.p. engine.

Great care is taken to prevent distortion in the Blackburne cylinders and other parts; and all castings, such as cylinders, pistons, and cylinder heads are normalised—that is to say, they are first rough machined, then put in an oven, and heated to 800° C. for two hours, and allowed to cool; the process is then repeated, and the cylinders are finally finished off.



The 2¾ h.p. overhead valve T.T. pattern, which will be placed on the market as a standard production.

The piston is of standard design, but is very light. The full range of 1922 engines consists of the following: The 2¾ h.p. standard model; the 2¾ h.p. T.T. pattern, as described above; the standard 4 h.p. and the 4¼ h.p. new type with roller big-end, previously referred to; the 5-6 h.p. twin, 71×88 mm., 696 c.c.; the 8 h.p., 85×88 mm., 998 c.c.; and the 10 h.p., air or water-cooled, 85×97 mm., 1,098 c.c. All Blackburne twin-cylinder engines have the cylinders set at 60°, and all may be fitted with the spiral drive magneto, and are suitable for motor cycles or cycle cars. Naturally, the well-known features of these engines—the detachable head and outside flywheel—are retained.

DUNELT REFINEMENTS.

NO radical changes will take place in next year's Dunelt models except in the matter of price. The shape of the tank will be modified for the sake of appearance, a longer and more conveniently placed brake pedal will be fitted, and the aluminium foot plates will be splayed outwards at the front so as to provide a more natural riding position. (This is a feature which might well be adopted by other manufacturers.) Detail alteration will take place in the steering head ball races, and purchasers will be offered the option of 28×3in. tyres at a slightly increased cost.

Raleigh Lightweights.

AS first announced in *The Motor Cycle* of September 22nd, when a full description of the new model was published, lightweight machines will form an important addition to the Raleigh programme for 1922.

The prices of the new models have now been fixed, and prove to be surprisingly moderate, the two-speed 2¾ h.p. machine (with a 348 c.c. engine) being only £68. A similar machine as a sports model, with a two-speed gear box, T.T. bars, and footrests in lieu of footboards, is listed at the same figure. These models with a three-speed box cost an extra £5.

In its third form, as a lightweight sidecar outfit, the price is £103 complete with sidecar. In this case the bore of the engine has been increased, bringing the capacity up to 400 c.c., rated at 3 h.p.

The luxurious 5-6 h.p. flat twin Raleigh, with spring frame, is, of course, retained, and may now be obtained either solo or as a *de luxe* or standard sidecar outfit. It has not been found necessary to make any modifications of note specially for the Show.

The Pioneer of Pneumatic Tyres.

Some Details of the Late Mr. J. B. Dunlop's Career.

MOTOR cyclists as a body will have learned with regret of the passing away of Mr. John Boyd Dunlop, which took place in Dublin on October 24th.

It is not unreasonable to say that high-speed road vehicles—cycles, motor cycles, and cars—not to mention aeroplanes, all owe their present popularity and success to the pneumatic tyres which Mr. Dunlop invented in 1887, and which made possible the successful application of the rapidly developed internal combustion engines to fast-moving machines.

The story of the Dunlop tyre is well known, its inception being the outcome of an effort to render the tricycle of the inventor's nine-year old son vibration free. Despite crude construction, the tyre, made of canvas solutioned to a flat rim, was successful, and it became popular amongst racing cyclists in the North of Ireland. The fame of the Dunlop tyre spread further afield, and many subsidiary patents were obtained, bought and fought over by those who were financially interested in the new tyres.

The late Mr. J. B. Dunlop.

Mr. Dunlop was a Scotsman, born in Ayr in 1839, and was educated at Edinburgh University. A veterinary surgeon by profession, he was not devoted to the cycle or motor industry very intimately other than as the inventor of the tyre which bore his name. He practised in Scotland before settling in Belfast, where he lived many years.

OFFICIAL TEST OF FALLOLITE.

On September 3rd the R.A.C. tested the Fallolite motor cycle head light, which contains an atmospheric acetylene burner the flame from which impinges on a pastille. In the certificate which is now issued, it is stated that the jet showed a consumption of 0.34 cubic foot of gas per hour. At an eye level of 4ft. any dazzling effect ceased at a distance of 253ft. from the lamp. A motor cyclist using this lamp when approaching a pedestrian so dressed as to be seen only with difficulty, would be able to pick him out at a distance of 127ft. provided he was within 4½ft. of the centre of the beam. It would not be posssible for a rider to see a pedestrian step into the roadway 30ft. wide.

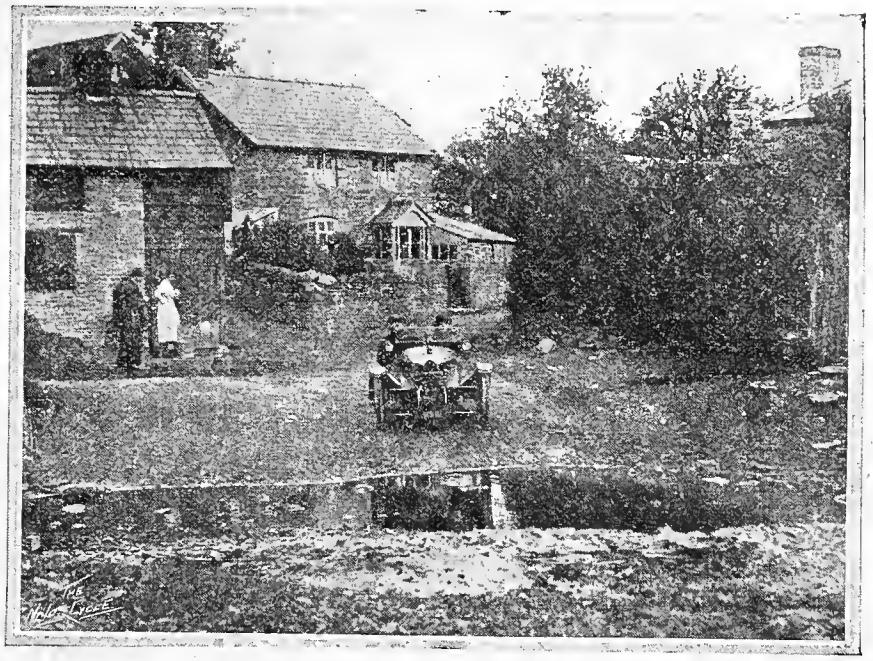
A MIXED FIELD ON THE WELSH BORDER.

Worcester Clubs Reliability Trial. Motor Cycles, Sidecars, Cycle Cars, and Cars Compete on Level Terms for President's Award.

ON Saturday, under fine weather conditions and over road surfaces which were mercifully dry, the Worcester and District M.C.C. and the Worcestershire Motor Club joined forces in a one day trial of 115 miles.

Eight checks were taken throughout the day, each check being complete in itself, *à la* Scottish Trials. The first thirty miles was over good main roads, *via* Bromyard and Leominster to Amestry, where, amidst typical Herefordshire scenery and the scent of cider apples, the competitors switched into winding ways and tortuous paths. At this point quite a stiff hill was encountered, but it was unobserved. Between Lingen and Presteigne was the first observed watersplash, and although this section of the route was avoidable, everyone elected to essay it on the chance of earning a bonus mark. They "had jam on," as the saying is, for the splash was only about 12in. wide, although a local press report forecasted it as being 35 yards long!

The next observed point was at Gladestry; everyone negotiated the splash and the subsequent gentle gradient following with greater or less ease except E. R. N. Main (8 Zenith), who suffered belt slip on the hill. P. Andrews, on a 4¼ h.p. B.S.A. sidecar, also had a slipping belt, but, despite a slow recovery on the hill, he did not actually stop.



The watersplash at Gladestry; J. L. Shaw (10 Morgan) approaching the water at a gentle pace in the Worcester Club's President's Cup Trial.

Passenger Machines Good.

Of the other machines, the Enfield sidecars were all good, while the Morgan team, Carr, Shaw, and Leeke, were up to form as usual. G. C. Rogers (3½ Sunbeam) just touched ground with a foot; he, Main, and J. A. Newman (3½ Douglas) were the only soloists, for J. Edkins (2½ Allon) had already retired.

From here onwards the going was rough and bumpy, but otherwise easy to Clyro, thence to Glasbury and an excellent lunch at the Three Cocks.

In the afternoon the great adventure was Trefadoc (near Hay), associated as the sting in the tail of the famous Two Days Worcester Club trial of last April.

On that occasion rain and hail made Trefadoc a terror, almost unclimbable; on Saturday it was as easy as rolling off a log. R. Brown (3½ Sunbeam sc.) was the first arrival, and he made light work of the ascent; Main (8 Zenith) just touched with his foot on one corner; P. Andrews (4¼ B.S.A. sc.) was troubled with a knocking engine and excessive belt slip; G. H. Leeke (10 Morgan) made a fast ascent, his back wheel tilting over to an extraordinary degree on the bends. W. J. Knight (8 Enfield sc.) almost skidded into the bank, but recovered well; S. W. Lewis (6 B.S.A. sc.) failed through clutch slip, although he evidently thought the wheel was spinning; B. Bladder (8 New Imperial sc.) was fast all the way up; J. A. Newman (3½ Douglas) pottered up the 1 in 4, whistling blithely, but N. Bacon (8 Enfield sc.), after being allowed a second attempt owing to being baulked, was again unsuccessful.

After Trefadoc the remaining forty-five miles was mostly main road running *via* Hereford back to Worcester.

The following started:

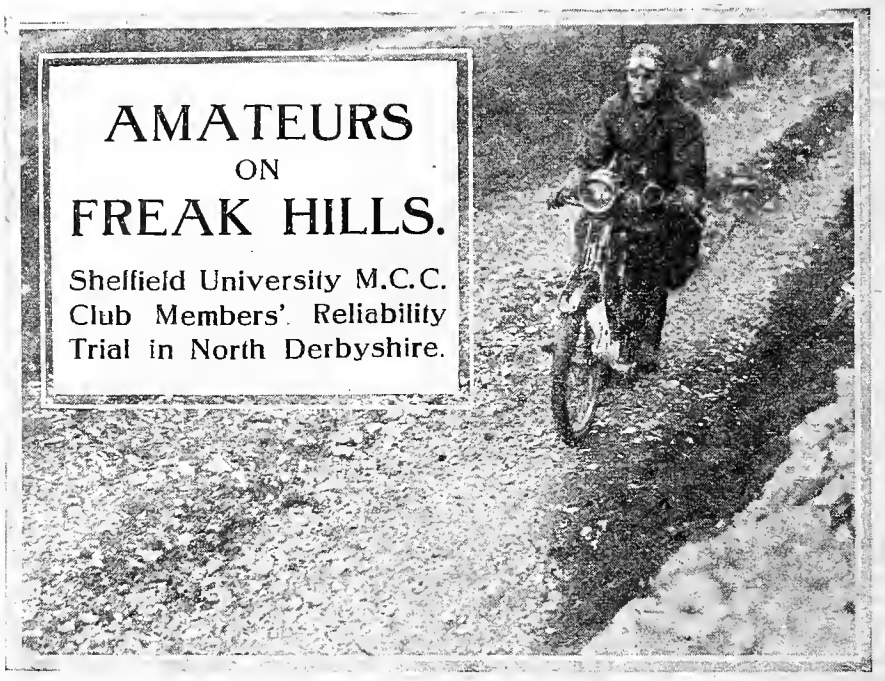
J. Edkins (2½ Allon)
R. Brown (3½ Sunbeam sc.)
G. H. Leeke (10 Morgan)
E. R. N. Main (8 Zenith)
W. A. Carr (10 Morgan)
J. M. Dosher (8 Enfield sc.)
N. Bacon (8 Enfield sc.)
W. J. Knight (8 Enfield sc.)
P. Andrews (4¼ B.S.A. sc.)
F. Morrall (4¼ B.S.A. sc.)
J. L. Shaw (10 Morgan)
G. C. Rogers (3½ Sunbeam)
B. Bladder (8 New Imperial sc.)
J. A. Newman (3½ Douglas)
S. W. Lewis (6 B.S.A. sc.)

Of these, only Edkins failed to finish, but Leeke, Morrall, Andrews, and Bacon were all late. Incidentally, seven cars started, and all finished except one.

On Trefadoc. S. W. Lewis (6 B.S.A. sidecar) on one of the lower bends; higher up a slipping clutch spoiled his ascent.

AMATEURS ON FREAK HILLS.

Sheffield University M.C.C. Club Members' Reliability Trial in North Derbyshire.



There are two ways of getting up Litton Slack; this is "Easy Litton," but H. Davies (3½ James) does not appear to agree with the qualification!

A TRIAL over difficult roads with all the riders the purest of amateurs, and many of them newcomers to competition riding, is always full of interest, and teaches more than many a duly sanctioned and officially supported open event.

Such a competition was held on Wednesday afternoon, the 26th of October, by the Sheffield University M.C.C., a "young" club which hopes to foster the best interests of the sport amongst present and ex-members of the University. Unfortunately, the entry of twenty-one was rather small, but still worse was the fact that seven of these failed to face the starter.

1914 Six Days Hills.

Briefly, the route consisted of a main road run of twenty-two miles from Sheffield *via* Baslow, Hassop, and Ashford to Taddington, near Buxton. Here commenced a circuit of sixteen and a half miles, to be completed three times, which included Miller's Dale, Litton Slack (the "easy" way, and not too easy at that!), Taddington, Cowdale, Kingsterndale, and Taddington again. The course consisted of winding lanes, which made speed impossible, but the surfaces throughout were dry; the bottom portion of Litton Slack was rather loose, but not so bad as in the summer. All reached the commencement of the first circuit except F. Adcock (2¾ Douglas), who had new (and too tight) piston rings, but H. E. Stone was delayed through losing the crank case drain plug of his 6-7 h.p. Ariel sidecar. Stone's fear of a seizure was confirmed after a village repair man had screwed a bolt into the hole, for the engine had become immovable while this was being done. After many efforts, some bright person unscrewed this temporary plug, when it was found that the engine once more revolved, and after filing down the bolt, so that it did not lock the flywheels, the driver and his passenger settled down to retrieve their lost time!

The easy way up Litton Slack involves some hard climbing on a loose, stony surface and two hairpin corners, one being fairly acute. C. F. Boothroyd (4 Norton) broke his throttle wire at the bottom, and was compelled to retire; while E. Banks (on an ancient 5-6 Indian), H. Woffenden (2¾ Royal Ruby), D. Bailey (2¾ A.J.S.), and H. Davies (3½ James) all used their feet to greater or less degree. Woffenden and Davies, however, had not studied their route blue prints, however, for both essayed the most difficult path up the Slack, the former realising his mistake too late, hesitating, and becoming lost; while the latter ploughed his lonely way up to the worst patch before "conking" ingloriously. Excellent climbs were made by H. A. Winterbottom (3½ Ariel), H. Soderberg (3½ Sunbeam sc.), and F. Nicol (2½ Sun-Vitesse).

On Cowdale only the unfortunate H. E. Stone failed to make a clean climb on the first circuit; and, after replacing a broken belt, he ascended well with his 6-7 h.p. Ariel sidecar; thus came the forebodings of the Jonahs to nought. E. Banks (5-6 Indian) retired here through a skid; while C. E. Jenkins (2½ Diamond) also withdrew, owing to slipped magneto timing. Good climbs on Cowdale, as on Litton, were made by Winterbottom, who was riding really well; Soderberg, who showed what a 3½ h.p. sidecar can do; and B. Wiggins, whose 3½ h.p. Norton toyed with the gradient. On the second and third circuits Bailey (2¾ A.J.S.) and Davies (3½ James) improved their form.

Several time checks were made on a schedule worked out to 3m. per mile for 500 c.c. and larger solos (20 m.p.h.), and 3½m. per mile for lightweights and sidecars (17.1 m.p.h.), and the results were as follows, the figures showing the marks lost.

GOLD MEDAL.—H. A. Winterbottom (3½ Ariel), 1 mark lost.

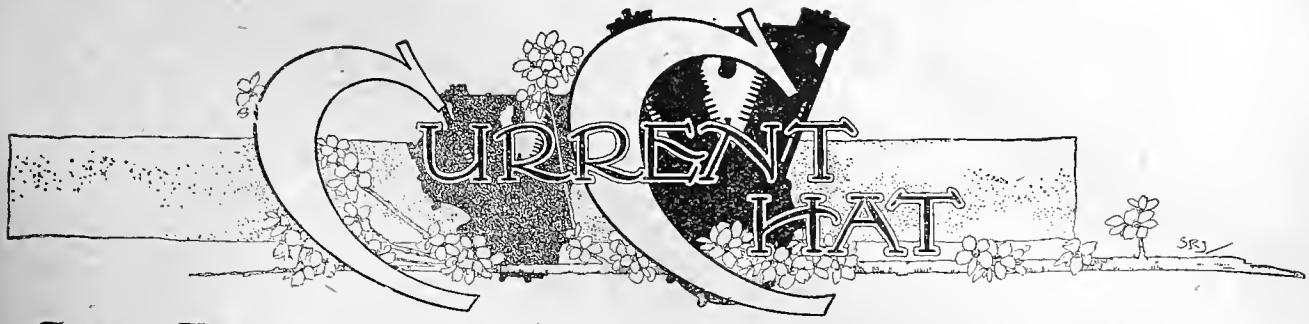
SILVER MEDAL.—H. Soderberg (3½ Sunbeam sc.), 6.

BRONZE MEDALS.—S. Nicol (2½ Sun-Vitesse), 8, and B. Wiggins (3½ Norton), 8.

The following also checked in at the finish: H. R. Handbidge (3½ Norton), 10; D. C. Bailey (2¾ A.J.S.), 11; H. Woffenden (2¾ Royal Ruby), 14; and H. Davies (3½ James), 124.

All the awards were presented by Mr. Dan Bradbury, the well-known Norton exponent, and an ex-member of the Sheffield University.

The top hairpin of "Easy Litton." E. Banks (5-6 Indian) taking it steadily.



Times to Light Lamps.

Nov.	3rd	... ...	5.29 p.m.
,,	5th	... ...	5.25 ,,
,,	7th	... ...	5.23 ,,
,,	9th	... ...	5.19 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

At Brooklands on Saturday.

Saturday's B.M.C.R.C. meeting at Brooklands, the last of the year and including a 500-750 c.c. solo championship, will start at 2 p.m.

Police Trap at Leatherhead.

We have received information of a police trap in the ten-mile limit at Leatherhead. An inspector waits to catch motor cyclists on Swan's Corner Bridge.

A Three-speed Scott.

It is not without interest that the makers of the Scott motor cycle are experimenting with a three-speed gear, which may be on view at Olympia fitted to the sidecar model.

The Late Kennedy Jones, M.P.

In the death of Kennedy Jones, Esq., M.P., the North London M.C.C. lose their president. The club was represented at the memorial service and at the funeral.

1922 Belgian Grand Prix.

We hear that preparations are already afoot for the 1922 Grand Prix race in Belgium, and that it is anticipated that the event will surpass anything that has been done so far in international races in that country. There may also be two international car races.

Show Banquet.

The banquet of the B.C.M.C.M.T.U., preparatory to the Show, has now been fixed for Friday, November 25th, at 7 p.m. in the Grand Hall, Hotel Cecil, Strand, London, W.C. A notable gathering is expected, and tickets can be obtained from the Union's offices (on receipt of remittance—one guinea) not later than November 19th.

More Records.

There is great activity at Brooklands at the present time, where several manufacturers are endeavouring to secure new records before the Show. On Thursday last H. R. Davies, riding a 2¾ h.p. A.J.S., beat the standing start ten miles record in Class B, which distance he covered in 8m. 21.8s., equalling 71.74 m.p.h. The next day he improved on this, his time being 8m. 20s. (72 m.p.h.).

Motor Taxation and the Roads.

Speaking at the annual dinner of the Taunton and District M.C. and L.C.C. last week, Mr. F. Wills, of Bridgwater, said he had been very much surprised to hear the county surveyor say that none of the money contributed by the motorists of Somerset in the way of taxes had yet returned for the use of the County Council. This question is exercising the minds of most motorists, who require to know how much of the £9,000,000 obtained from motorists in taxation has been spent on the construction of new, or the improvement of existing, roads.

QUARTERLY LICENCES FOR MOTOR CYCLISTS.

An announcement has been made to the effect that quarterly licences will be issued to motor cyclists dating from January next. An increased rate will have to be paid in respect of these short-time licences, but the exact amount is not yet obtainable.

The Ministry of Transport has decided to carry out this alteration, but up to the present moment the Order has not been issued to the public; consequently, any figures which have been published as regards the rates of the new short-period licences should be taken as inaccurate.

Justice?

A Staffordshire motor cyclist was summoned last week because it was claimed that his front number plate was not illuminated. The defendant maintained that his lamp was in such a position that the numbers would be adequately illuminated, and the Stipendiary intimated that he would examine it *if the motor cyclist would bring his machine upstairs.* Because he could not do so, the Stipendiary refused to examine it, and fined the defendant 15s.

The Belgian M.C.U. Championship.

The kilometre speed trial recently contested on the road from Diegbem to Nelsbroeck was a great success, and several Belgian records were obtained. The results are as follows: Private owners.—1, Cachy (Norton), 37⅘s., average speed 95 km.p.h. (59.4 m.p.h.). Trade riders (600 c.c. sidecars).—1, Brahem (Harley-Davidson), 25s., average speed 144 km.p.h. (90 m.p.h.); 2, Taymans (Excelsior). 1,000 c.c. sidecars.—1, Pierard (Excelsior), 34⅗s., average speed 104 km.p.h. (65 m.p.h.).

Special Features.

ADVANCE DETAILS OF 1922 MODELS
VALVE PORT PROPORTIONS.
ROAD TESTS

For the Convenience of Foreign Visitors.

Interpreters in most of the European languages will be available during the Motor Cycle Show at Olympia on application at the Exhibition offices.

French Petrol?

The borings for petroleum in the Department of the Ain, France, are being continued. To the south of Amberieu-en-Bugey, two companies are taking borings near the village of Vaux. Recently a large quantity of hydrocarbide gas was struck, and it is hoped that petroleum may be discovered shortly. Near the village of Torcieu, another company has struck a pocket of gas which produces 100,000 cubic metres per day.

Undergrads and Motor Cycles.

The conflicting claims of motor grease and B.A. degrees were the subject of a lively discussion, when the Cambridge Union Debating Society rejected by 170 votes to 113 a motion calling for a ban on the use of motor vehicles by undergraduates during term time.

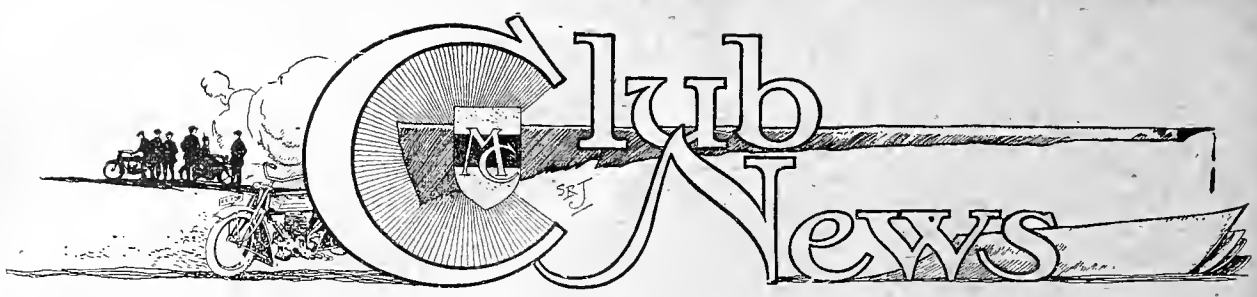
Mr. A. S. A. Frere-Reeves, proposing the motion, said motor cycling students read periodicals dealing with the sport instead of attending to lectures. Opposing the motion in a humorous speech, Mr. R. M. Simon "proved" that motor cycling was synonymous with knowledge.

Next Saturday's Open Trial.

Eighty entries have been received for the open trial next Saturday organised by the Midland Centre, A.C.U.

No fewer than twelve teams will compete for *The Motor Cycle* prize. These are as follows: New Imperial, A.J.S., Sunbeam solo, Sunbeam sidecar, Sunbeam (Birmingham), James, Ariel, Mr. Blumfield's Ariel team, Martinsyde, and Sun-Vitesse.

The start is from the Stewponey Hotel (between Wolverhampton and Kidderminster) at 9 a.m., and the first competitor is due back at 4.4 p.m., so that every rider up to time will finish in daylight. The chief points of interest will be Beacon Hill Hairpin (near Bromsgrove) and New Walton Hill (near Redditch) in the morning, and Flagstaff Hill (near the Hundred House), Farlow Bank, and High Oak Hill (near Kidderminster) in the afternoon. Non-skid devices will be in great demand if the weather is damp.



Redditch and District M.C.C.

The following amendments have been made in the published results of the trial on October 8th: H. Malins (8.7 G.N.), gold centre medal instead of silver medal; and C. Jenkins (4¼ B.S.A.), silver medal instead of bronze medal.

Central Cornwall M.C.

The club organised a reliability trial over a ninety-six mile course on Thursday last for all makes of cars and cycles. A start was made from St. Austell at two o'clock. There were several secret checks. The results were: 1, J. Ivey (7 A.J.S. sc.), 30 marks lost; 2, M. S. Aldham (Ford), 38 marks; 3, J. Kelly (4 Norton sc.), 39 marks.

Eastern Valley M.C.C.

At 7.30 p.m. on Thursday, November 17th, the club is holding a smoking concert at the Clarence Hotel, when all motor cyclists in the district are invited to be present. The annual dinner will take place on Thursday, December 15th.

Taunton and District M.C. and L.C.C.

Lieut.-Col. Dennis F. Boles presided at the annual dinner of the club on Saturday, October 22nd, and was supported by many of the leading residents of the town and surrounding district. The company numbered nearly one hundred members and friends, and a very enjoyable evening was spent. Representatives were present from a number of neighbouring clubs; and the president distributed the prizes won during the past season, which included four challenge cups and bowls.

Week-end Club Events

Nov. 5.—Cumberland County M.C.C. Lecture on Road Traffic.
Nov. 6.—Sheffield M.C.C. Run to Peak Forest. lands.

University College of North Wales M.C.C.

On Wednesday of last week the club opened the new session with a very successful petrol consumption trial over a course ending at the now famous "Screw Hill," where some of the members competed for the medal offered for the best ascent. In the petrol consumption test, competitors were issued with one quart of petrol, and started off in pairs on the twenty-seven mile run to Llithfaen, where those arriving had their remaining petrol measured. Results:

UNDER 480 c.c.—1 and gold medal, T. Lewis (2¾ Omega), 138 m.p.g.; 2 and silver medal, M. O. Williams (2¼ Levis), 110 m.p.g.; 3, W. H. Thomas (2¾ Francis Barnet), 104 m.p.g.

OVER 480 c.c.—1 and gold medal, T. E. D. Browne (3¾ Scott), 150 m.p.g.; 2 and silver medal, M. Griffith, capt. (3½ Sunbeam), 145 m.p.g.; 3, R. S. Evans (4¼ B.S.A.), 120 m.p.g.

On the hill the slippery and loose surface, the result of recent rains, accounted for a high percentage of failures, and strenuous efforts on the part of the helpers were called for. J. E. Edwards (3½ Sunbeam) carried off the club gold medal, and made a really splendid climb, coming up very slowly; and, in spite of ominous wheel slip at times, made a clean ascent without assistance. J. G. Phillips (3½ Norton) and W. S. Jones (4 Triumph) also made creditable ascents with but little assistance.

Widnes M.C.

The club held a successful reliability trial on October 22nd for the Ireland rose bowl, which has been presented by Mr. W. Ireland, the vice-president. As the first man started rain fell heavily, which made the course more difficult, and out of fourteen entries only four finished. Results:

1, A. J. Bailey (4 Norton sc.), 97 marks; 2, T. H. Sandland (4 Triumph), 95 marks; 3, W. Patterson (4 Blackburne), 81 marks.

North Wales M.C.C.

On Saturday last the club held a speed hill-climb at Pen-y-Ball, Holywell. The event was very well supported, there being over sixty entries. The provisional results are as below:

CLASS I., 350 c.c.—1, J. Cooke (2¾ New Scale); 2, W. Edwards (2¾ A.J.S.); 3, J. W. Jones (3 Ivy).

CLASS II., 500 c.c.—1, E. G. Bannard (3½ Norton), fastest time of the day, 36⅘s.; 2, G. F. Burns (3½ Sunbeam); 3, S. Ollerhead (3½ Norton).

CLASS III., 750 c.c.—1, E. G. Bannard (3½ Norton); 2, G. F. Burns (3½ Sunbeam); 3, S. Ollerhead (3½ Norton).

CLASS IV., 1,000 c.c.—1, E. G. Bannard (3½ Norton); 2, A. J. Brewin (8 Zenith); 3, G. F. Burns (3½ Sunbeam).

Cork and District M.C.C.

A very successful smoking concert was held on Wednesday last week, over seventy members and friends enjoying the excellent programme provided. The A.G.M. will be held on November 2nd, and it is hoped to arrange a winter programme, including, if possible, the exhibition of *The Motor Cycle* film. Fifteen new members handed in their names at the "smoker," which augurs well for next season.

SURPRISE BRAKE TEST IN MIDLAND TRIAL.
H. C. Collins (3½ Norton sidecar) nearing the second tape in the brake test included in last Saturday's closed trial of the Sutton Coldfield and N. Birmingham A.C. Trial for the Shell and Sutton Cups.

RELEASE OF "THE MOTOR CYCLE" FILM.

Arrangements have now been made to exhibit *The Motor Cycle* film in London during the week of the Motor Cycle Show at Olympia. It will be shown twice daily at the Polytechnic Cinema, Regent Street, W., commencing on Monday, November 28th. Further details regarding the times that it will appear and prices of admission, etc., will be published shortly.

Applications from the clubs are pouring in and dates are being allotted as quickly as possible. We hope to announce in an early issue the names of the clubs which have been fortunate (and enterprising) enough to secure early dates.

The length of the film as it stands at present is 1,767 feet, and occupies just thirty minutes' continuous running. Before release, however, it is hoped to add another 400 feet, including scenes from the recent 200 Miles Race for light cars.

PROP STANDS.

A Review of an Increasingly Popular Fitting on Solo Machines. By "Ixion."

SINCE motor cycles became popular, three methods of supporting a dismounted machine have been in vogue. Where the surroundings furnish no impromptu prop, as very frequently occurs, riders use the rear stand. The rear stand is essential for certain repair jobs, but is wholly unsuitable for a temporary support. It necessitates lifting the machine several inches, and many solo machines weigh 3 cwt., so that the physical effort is excessive. In hanling the machine up, the owner must grip the carrier, which is almost invariably very dirty. Thirdly, since the stand clip must be light, if it is to be disengaged easily, it often allows the stand to drop when the machine is in motion. Another method consists of propping the machine against a wall; in this position it is never too stable; it requires a little manœuvring into position; and some of the fittings will sooner or later get scraped and damaged by friction against the wall—control lever knobs, handle-bar grips, hooters, and the like. The third method—always employed when available by practised riders—takes the form of propping the machine by its footrest or footboard against the stone kerb of a street or the earthen kerb of a country road, viz., the edge of the turf bordering the macadam. As this last method is at once the easiest and the safest, it is naturally the most popular. You may often see a good roadman gauging the height of the road edge with his eye as he selects a place at which to pull up.

"Carry your Kerb with you."

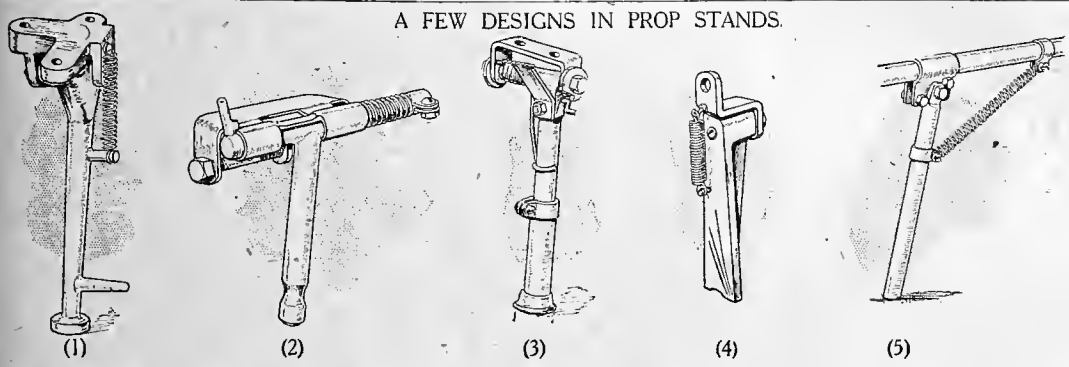
The inevitable popularity of the new "prop stands" is that they render the last method of supporting a dismounted machine universally available. They make a motor cycle, so to speak, "carry its own kerb with it," as a brief study of the several devices described herewith will indicate. They are of very varying merit, price, and weight. Some of them are still obviously crude, and as yet in the experimental stage. I have tried them all, and find that a good device of this kind is one of the most pleasing gadgets one can fit to a pet machine, especially if its daily work entails innumerable stoppages. A week after purchase many gadgets strike a thrifty buyer as having been pure extravagances. No rider who invests in a good prop stand will ever regret his expenditure, or dispense with such a fitting in future.

The stand manufactured by the Pressed Products Manufacturing Co., of North Wharf, West Ealing, is an aluminium casting and not a pressing, as their trading title might imply. It weighs 12 oz. and sells at 8s. 6d. The aluminium lug is attached to the near side footboard by three bolts, and the hinge is set at such an angle that the leg is vertical when in action. A novel feature is that the leg is non-telescopic, as the inventors consider there is a risk of a telescopic leg closing up when the weight comes upon it; so they prefer to prodnce legs of three different lengths, a range which fits all standard machines. As the illustration shows, the stand is toe-operated, a spring locking it on either side of a dead centre. My only criticism on this stand would be that aluminium is a somewhat brittle material from which to manufacture a prop.

The next stand illustrated herewith is produced by Mr. H. H. Bowland, of the Central Garage, Stockport, and weighs abont half a pound. It is screwed under the footboard at right angles to the wheel track, and, when it is in the inactive position, it protrudes about an inch from the side of the footboard. The operating trigger is too small for footwork, but a touch of the finger will push the prop down, and the trigger immediately springs into a lock. On restarting, the operation is less easy, as the rider must hold the machine up with one hand while the other hand pulls the trigger out of its notch against the action of a strong spring. A telescopic leg will be fitted to the production model.

A design commendable in many ways is that protected by Mr. A. H. D. Alltree, of 279, Wilmslow Road, Fallowfield, Manchester, which is already in production, and will soon be obtainable in various modifications to fit any standard footrest or footboard. Its tip protrudes slightly behind the tail of the footboard when the prop is out of action. On stopping, the rider depresses the prop with his toe, leans the machine over towards him, whereupon the weight of the 'bus locks the prop in action. When the rider is ready to proceed, he merely tilts the machine back to the vertical, when the prop instantly flies up. A safety catch, consisting of a tiny trigger and notched washer, is provided for use when the machine is to be left unattended for a long period. It should be observed that this stand is mounted as near the weight centre as possible, and also far out from the centre line of the wheel track. These two points are probably vital. It is as nearly automatic in use as a stand can be, one touch of the boot toe being the sole control required in the double action of applying and releasing it. I can detect no fault in it.

A FEW DESIGNS IN PROP STANDS.



(1) (2) (3) (4) (5)

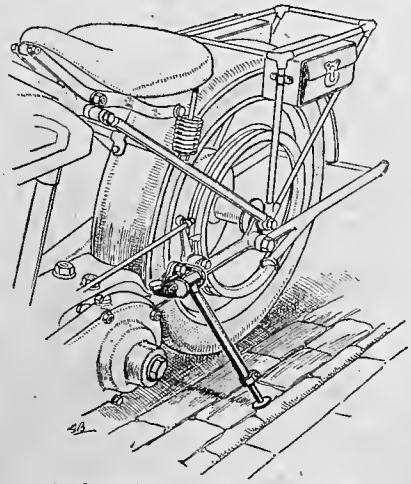
(1) A cast aluminium stand by the Pressed Steel Products Mfg. Co.

(2) The Bowland prop stand, weighing but half-a-pound.

(3) A commendable design, by A. H. D. Alltree.

(4) Marketed by the M.A.P. Co., this stand w ighs 4 oz. only.

(5) Designed by C. H. Morris, and simple in construction.



A telescopic stand, by Messrs. Taylor and Co., Southport.

Simple and Very Light.

The M.A.P. stand, marketed by the M.A.P. Co., of 24, Bullock Street, Birmingham, has now been on the market for some time. It weighs upwards of 4 oz., according to the length of its leg, and costs 5s. 6d. A touch of the toe knocks it down; another touch of the toe knocks it back again, and the spring pulls across a dead centre to hold it rigid when it is acting as a prop. It is plainly as light and simple as such a gadget can be. Perhaps it is almost too light for a very heavy mount, and the attachment may prove hardly strong enough for some ultra heavy machines. As the sketch indicates, it is held by a rectangular or L shaped bracket; a hole in one arm of

Prop Stands—

the L threads over a footboard bolt or footrest spindle, and the other arm of the L bears against the underside of the foot support.

Mr. C. H. Morris, of 83, St. James's Road, Oldbury, Birmingham, propounds an altogether different type. As the sketch indicates, it is cheap to manufacture, is put in action by a touch of the foot, and flies back when the weight of the machine is taken off it. The weight will be negligible. On the other hand, I question whether the chain stay is the proper point of attachment. The weight of the machine centres far in advance of this point, and a strong wind or any other violent impetus might cause the machine to pivot on the prop and fall over, with disastrous consequences to the footrests.

The stand shown at the bottom of the preceding page is made by Taylor's Garage, Southport. The telescopic leg is hinged to a split lug, which is readily bolted to the chain stay of a motor bicycle. On the T head of the leg is a notched collar, which may be locked by a small spring pedal in any of three positions, one being the "out of action" point, in which the leg lies snugly along the chain stay, whilst the other two notches give a choice of angle in the support position. I do not object to the weight of this stand, and the wide angle at which the leg swings out radially from the track makes for stability, in spite of the rearward mounting of the prop. But the operation is not ideal, for a foot and a hand are employed in utilising the stand. It weighs rather more than the majority, viz., 2 lb. 4 oz.

Young as this accessory still is, it is already becoming hedged in by patents, and engineers who are attracted by its possibilities will do well to enquire what principles are already protected. Several inventors have met a cool reception at the hands of motor cycle manufacturers; but I think the new gadget is going to be very popular in 1922, and that ultimately it will become part of the specification of most first-class mounts, for its conveniences are very real.

CLUB COLOURS.

Twelve More Examples of Flags Adopted by Motor Cycle Clubs.

SINCE we illustrated the club pennons of four well-known clubs in our issue for September 15th, we have received many letters from club secretaries, in which they state that the general adoption of the idea is supported by their members. On this page we are able to give illustrations of a dozen more club flags, and next year, no doubt, many more clubs will adopt the flag scheme.

The Best Size.

As a general rule, the flags measure about 9×5in., which is not so large as the familiar red flag which so many Indian riders sport. The flag of the Wallington and District M.C.C., however, is quite small (6×2½in.) and is made of silk. It has no lettering, but the black and white check is so distinctive that it is not necessary. This club extends the idea to its badge, which is a most artistic fitment finished in black and white enamels. The Taunton Club also has a badge in colours to match the flag; and again, both flag and badge are well carried out, the colours being red, white, and black.

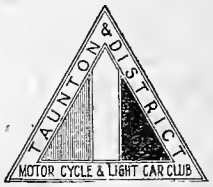
The Sheffield and Hallamshire Club favours black and gold. Incidentally, this club has had its colours for several years, and is one of the most enterprising clubs in the country. It has twice won *The Motor Cycle* Cup in the M.C.C. team trials, and advertises the fact on its notepaper. That shows the right spirit for a sporting club. It is an achievement to win an important event of this nature, for years past acknowledged to be the club championship, and it is not egotism to advertise the fact.

Apropos honours and club colours, those of our readers who know little of yacht racing may be interested to learn that yachts fly pennons to show how many successes they have to their credit. A reader suggests that this idea would be popular with club members. We are afraid, however, that a long string of flags would be difficult to fly aboard a motor cycle, but perhaps the scheme could be applied by having tiny pennons with which to decorate the machine on gala days. In any case, every keen motor cyclist would like to decorate his room with such emblems of success.

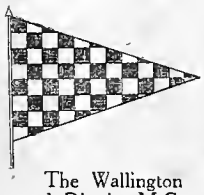
Out of all the flags we have so far illustrated, only two deviate from the triangle. The Marlow and District M.C.C. flag is one of these, being a swallow tail; while the Folkestone and District M.C.C. favours a rectangular flag 8×4in.

Undoubtedly the best position to fix the flag on the machine is the front number plate or mudguard; a suitable clip is not a difficult matter to evolve.

In the meantime club secretaries are asking where they can obtain flags to their order and design. We understand Messrs. Eccles and Sherar, of 6, Ann Street, Edinburgh, and also Messrs. Good and Son, King William Street, London, E.C., specialise in this class of bunting.

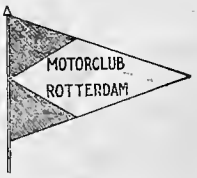


Some clubs have badges in enamels to match the flags. The Taunton club's badge is a triangle, with a red, white, and black centre, while the centre of the Wallington club's badge is a black and white check.



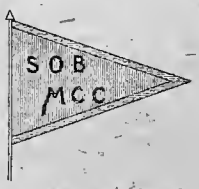
The Wallington and District M.C. and L.C.C. colours are black and white, without lettering.

Marlow and Dist M.C.C. Cardinal red with yellow letters.

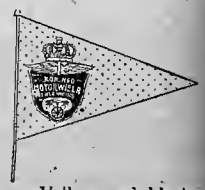


Rotterdam M.C.C. (Holland). Green and white, black lettering.

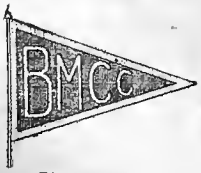
Ipswich and Dist. M.C.C. Red ground and yellow letters.



Claret, edged with royal blue are the colours of the Solihull Old Boys' M.C.C.

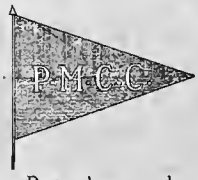


Yellow and black are the colours chosen by the Royal Dutch M.C



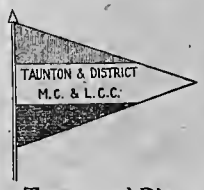
Black and gold have been chosen by the Builth Wells M.C.C.

The Sheffield and Hallamshire M.C. also favours black and gold.

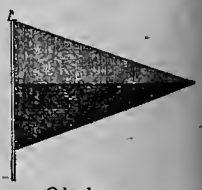


Peterborough M.C.C. Red and blue, with white lettering.

Folkestone and Dist. M.C.C. Dark blue with white device.



Taunton and Dist. M.C. and L.C.C. Red and white, black lettering.



Okehampton M.C.C. Another unlettered flag in red and black.

Motor Cycle Manufacturers

By Appointment to H.M. The King.

MIDLAND OPEN TRIAL

PHENOMENAL PERFORMANCE OF **MR. W. B. GIBB,** OF GLOUCESTER, ON HIS

Douglas

M.C. and A.C. TROPHY

FOR BEST PERFORMANCE OF THE DAY.

"BICYCLING NEWS" TROPHY

FOR BEST PERFORMANCE OF ANY M.C. and A.C. MEMBER

"Motor Cycling" says:—".....was very fast, but he was beaten by W. B. Gibb (3½ h.p. Douglas), who covered the 200 yards in 13 seconds from a standing start in bottom gear!"

W. B. Gibb

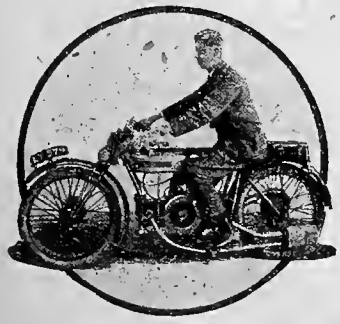
W. B. Gibb

This performance is really remarkable. There was only one Douglas among the 60 machines of all types; yet it carried off every prize for which it was eligible. It must be remembered that Mr. Gibb's machine was a standard 3½ h.p. Douglas, fitted with detachable, light car tyres, three-speed gear and clutch, and is the same machine on which he has won so many Hill Climbs, proving beyond all question that apart from its wonderful speed of 80 m.p.h., the Douglas is essentially a touring mount.

AXE EDGE HILL CLIMB.

5 FIRSTS FIRSTS FIRSTS FIRSTS FIRSTS AND **4** SECONDS SECONDS SECONDS SECONDS

In solo and sidecar classes were gained by Mr. Hatton, on a 3½ h.p. Douglas.



F. T. Hatton.

ITALIAN CHAMPIONSHIP, CIRCUIT OF THREE REGIONS.

(369 miles). (590 kilos).

ERNESTO GNESA .. .. FIRST.

This race was over a very arduous course, extremely long with mountain climbs, and not only did the Douglas win the 500 c.c., but it beat all the 1,000 c.c. machines in the TONALE HILL CLIMB, included in the race.

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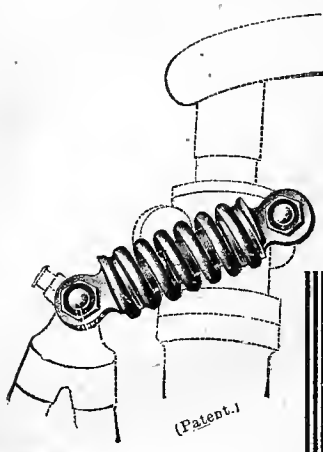

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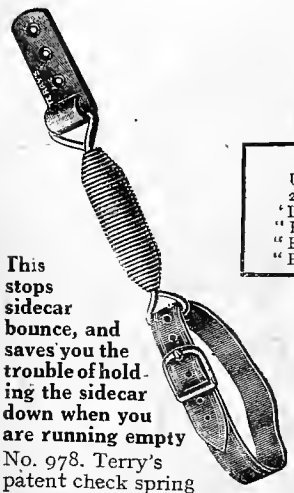

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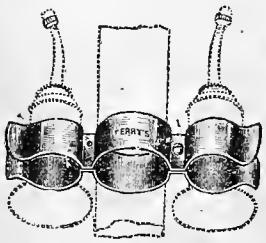

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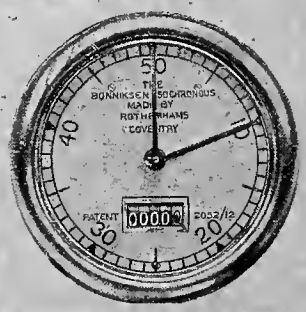

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2¾h.p. Douglas, tax, very fast and sporty; £25, or near offer.—40, Foulsey Rd., Upper Tooting, S.W. [649

2¾h.p. Douglas Combination, splendid condition, sporty, fully equipped; £55.—56, Ormeley Rd., Balham. [636

DOUGLAS 1917 2¾h.p., new condition throughout, equipped; 40 gns.—30, Crystal Palace Park Rd., Sydenham. [670

MANCHESTER.—2¾h.p. Douglas, 2-speed, 1918, tax paid, as new; £45.—12, Riversdale, Glebelands Rd., Sale. [X165

DOUGLAS 4h.p. Combination, fine order, just overhauled, tax paid; £75, or near offer.—25, High St. North, Dunstable. [493

1919 4h.p. Douglas Combination, mileage 1,500, Easting, speedometer, lamps, etc.; £90, near offer.—9, Fleet St., Torquay. [653

DOUGLAS 2¾h.p. T.T., 2-speed, lamp, horn, Dunlop, Bates, new tubes, any trial; £35.—Tolley, St. George's Rd., Aldershot. [617

DOUGLAS 2¾h.p., 1913, open frame model, first class condition, 2-speed; £28.—H. J. Marston, 50, Argyle St., Birkenhead. [639

DOUGLAS 1920 2¾h.p., 3-speed, fully equipped, tax paid, unpunctured, splendid condition; £65.—55, Goldsmith Av., Acton, W.3. [645

DOUGLAS 4h.p. Combination, lamps, horn, etc., tyres nearly new; £50.—Mylam, 197, London Rd., Croydon. 'Phone: 2379. [620

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DOUGLAS, 1918, 2¾h.p., 2 speeds, fully equipped, licence, splendid condition; £40.—1, Bowley Rd., Old Kent Rd., London, S.E. [858

1921 Douglas 2¾h.p., 2-speed, all on, speedometer, 8 months insurance; £78.—Evans, 20, Radford Rd. (top George Lane), Lewisham, S.E. [617

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£35.—Remaining four 2¾h.p. Douglases, renovated, shop-soiled; may be had for £35 nett each.—Pugh, Engineering Works, Shirley Rd., Addiscombe. [684

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VALVES for Harleys, unbreakable, nickel steel; 4/6; sent return post.—Coventry Motor Depot, Rosefield St., Leamington. [6561

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HAZLEWOOD-J.A.P. 2¾h.p., 3-speed, clutch, Bosch, B and B., accessories, just overhauled; nearest offer £42.—Laurisdene, Inverness Av., Westcliff. [6455

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1917 Humber Combination, 6h.p., w.c., 3-speed, flat twin, aluminium disc wheels, electric accumulator lighting, large head lamp, toolbox and luggage carrier, Tan-Sad, Easting wind screen, completely equipped in every way, tax paid; £100.—Gooding, Jubilee Works, George St., Croydon. [6374

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INDIAN 1919 Powerplus Combination, complete with Indian sidecar, dynamo lighting, speedometer, Cameo screen, etc., perfect condition; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6877

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1915 Indian 3½h.p. Twin, 3-speed, K.S., fully equipped, perfect, tax paid; £45.—Homac's, 243, Lower Clapton Rd., E.5. Dalston 2408. [6808

1919 Indian, 3-speed; £58/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6865

INDIAN Combination, 1919, powerplus, perfect, any trial; £70.—17, Heaton Rd., Mitcham. [6544

INDIAN, 1919, 7-9h.p., condition perfect, hardly used; £67.—406, Garratt Lane, Earlsfield, S.W. [6731

1916 5-6h.p. Indian, 3 speeds and clutch, lamp, and horn; any reasonable offer.—Jacobs, 665, Fulham Rd., S.W.6. [6196

INDIAN 7-9h.p., clutch model, splendid order throughout; £28.—Speechley, 86, Churchfield Rd., Acton, W.3. [6528

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INDIAN 1919 7-9h.p., spring frame, 3-speed, Powerplus twin, complete with many accessories; bargain, £60.—Below.

INDIAN 1919 7-9h.p., 3-speed, kick starter, Powerplus, lamps, horn, etc.; sacrifice, £65.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

INDIAN Combination (June, 1920), mileage 3,000, excellent condition; £125.—Reade, 214, High Rd., Wood Green, London. [5432

1919 Indian Combination, 7-9h.p., 1921 sidecar, all accessories, perfect condition; £120.—120, St. Asaph Rd., Brockley, S.E. [6221

7-9h.p. Indian Combination, 2-speed, K.S., new covers, lamps, etc.; trial; £55; week-ends, afternoon.—Smith, 293, Broadway, Bexley Heath. [6362

INDIAN Combination, 1914, 2-speed, kick starter, electric lamps, horn, speedometer, mileage 5,000; price £70.—75, Nantwich Rd., Crewe. [6268

INDIAN 7-9h.p. Combination, 1918, 3 speeds, clutch, K.S., new sidecar, accessories, tax, insured April; £90, offers.—D., 38, Sussex Rd., Harrow. [6623

1919 Powerplus Indian, 3-speed, clutch, spring frame, absolutely as new in every way; £64.—Ward, 51, Upper Richmond Rd., Putney. [6974

INDIAN 1918 7-9h.p. Combination, electric lights, spring frame, spares, tools, etc., mileage 5,000; £93, or offer.—120, Estcourt Rd., Wood Side, S.E.25. [6436

1919 7h.p. Indian Powerplus, 3-speed, solo, excellent condition; £53.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6010

INDIAN 7-9h.p. 1914 Hendee Special, 2-speed, clutch, spring frame combination, electric dynamo starter, lighting, Binks, speedometer; £75.—R. Tolley, The Green, Aldershot. [6170

INDIAN, 1919, with 1921 sidecar, electric lamps, Easting wind screen, condition perfect, smart appearance; cheap for quick sale, £120.—Warden, Hillmorton Paddox, Rugby. [X1628

INDIAN 1921 7-9h.p. Powerplus Combination, electrically equipped, horn, speedometer, as new; £165; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1606

LATE 1919 Indian Combination, 3-speed lamps, horn, wind screen, carrier, enamel and plating like new, £100, tax paid; 1915 3-speed, £50, owner bought car.—Leith House, Oakdale Rd., Weybridge. [6684

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SPARES (Indian), new or second-hand, all models.—Langford's, Indian Specialists, 37, Cricklewood Broadway, N.W.2. [6792

VALVES for Indians, unbreakable, nickel steel; 4/6; sent return post.—Coventry Motor Depot, Rosefield St., Leamington. 6560

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

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FOR Sale. James 3½h.p. 3-speed, folding sidecar; must sell; no reasonable offer refused.—75a, Ravensbury Rd., Earlsfield, S.W.18. [6416

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JAMES Combination, 4¼h.p., kick starter, 3-speed, all accessories, insurance and tax paid; £65, bargain.—Dryden, 1, Glyn Rd., Homerton, E. [X1583

1916 4¼h.p. James Combination with Mills-Fulford sidecar and extra child's seat, all on, licence; £80.—Sandunis, 336, Gray's Inn Rd., W.C.1. [0719

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JAMES 1920 5-6h.p. De Luxe Combination, Lucas dynamo lighting, excellent order, speedometer; £115.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6652

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JAMES 1918 6h.p. Combination, dynamo lighting, and full equipment, mileage less than 2,000, almost new condition; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6878

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LAGONDA, 3½h.p., Bosch, Mabon, pulley, clutch, good belt, tyres; £15.—Davey, Aveley, Essex. [6197

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LEA-FRANCIS, 1921, brand new, shop-soiled, 3½ h.p. twin M.A.G., 3-speed, clutch, kick starter, list price £125; price £97/10; cash only.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

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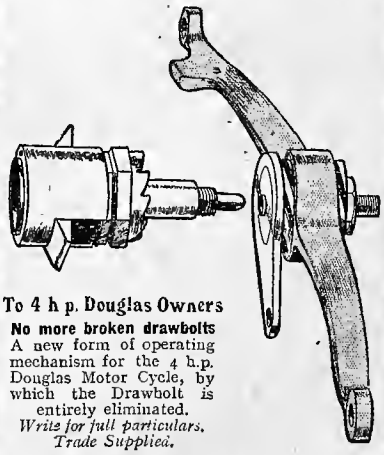

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MOTOR CYCLES FOR SALE.

Levis.

DAN GUY, Weymouth.—Levis 1921 models in stock, £60. [0554

LEVIS 1921, 2-speed, clutch, small mileage; offers.—151, Ramsden Rd., Balham. [6240

LEVIS Popular, nice order, accessories, licence; bargain, £25.—12, High St., Wandsworth. [6734

1920 Levis, perfect, smart, fully equipped, licensed; 30 gns.—Fersfield, Westbury Rd., New Malden. [6587

LEVIS 2¼h.p., splendid order throughout, tax paid; £26.—Speechley, 86, Churchfield Rd., Acton, W.3. [6532

LEVIS, 1920, unscratched, mileage 300, fully equipped; £38.—406, Garratt Lane, Earlsfield, S.W. [6731

LEVIS, 2¼h.p., 3-speed, splendid condition, fully equipped; £36.—1, Stanley Villas, Wolsey Rd., Hampton Hill. [6650

1918 (June) 2½h.p. Levis, 2 speeds (Enfield), lamps, horn, licence, etc., very powerful, and in perfect order; £34.—Maynard, 8, Silver St., Enfield. [6550

£30.—Levis 1916 2¼h.p., perfect order, little ridden, Dunlop belt, B. and B., spare saddle, tyre, plugs and belt.—Write first, T.E., 113, Brixton Rd., S.W.9. [6992

1920 Levis Popular, perfect, fully equipped, electric lighting, insurance; £38, near offer. — Write Park House, Branscombe Gardens, Winchmore Hill, N. [6815

SPECIAL Offer of a few slightly showroom soiled 250 c.c. T.T. model Levis motor cycles; list price £65, reduced to £55; makers' speed guarantee of 50 m.p.h. with each machine; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X1673

Lincoln-Elk.

12 GNS.—1912 Lincoln-Elk 3½h.p., equipped.—20, Treen Av., Hoggers Corner, Barnes. [6626

1915 4¼h.p. Lincoln-Elk 2-speed Coach Combination, hood and screen, good running order; £37/10, or near offer for quick sale.—Electro Co., Cardington Rd., Bedford. [X1600

Lloyd.

LLOYDS Motor Cycle, late model, 2½h.p., 4-stroke, accessories, very smart and fast, beautiful running machine; sacrifice, £25, cash needed.—Dental, 769, Romford Rd., Manor Park, London, E. [6424

L.M.C.

4¼h.p. L.M.C. and S.C., new 1920; price £75.—Wakely, 9, Victoria Rd., Feltham, Middlesex. [6636

Martinsyde.

1921 Martinsyde Combination, 3 weeks old (cost £160), done 50 miles; bargain, £115.—89, East Hill, Wandsworth. [6614

MARTINSYDE Combination, 1921, shop-soiled, makers' guarantee; £130.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [6787

1920 6h.p. Martinsyde Combination, lamps, horn, screen, indistinguishable from new; £105.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6000

MARTINSYDE 6h.p. Combination, wind screen, apron, mat, horn, electric lamps, accumulator, tax paid and insured, splendid condition; £115.—Bowers, 320, Broad St., Birmingham. [X1640

1921 (June) Martinsyde Combination, Lucas accumulator lighting set, horn, Cowey speedometer, storm apron, carefully used and in every respect a sound proposition; any trial given, any distance; £120; reasonable offers, or exchanges for good solo with cash entertained; fullest particulars on request.—Owner, 101, Speldhurst Rd., Bedford Park, London, W.4. [6632

Massey-Arran.

SPORTS Model Massey-Arran, 2¾h.p. Blackburne, speed Sturmey, disc wheels, pneumatic horn, complete tool kit, just run in, as new; £90.—Lieut. Smith, Rosewell, Midlothian. [6228

Matchless.

JULIANS of Reading have shop-soiled Matchless combination; £160. [6246

BRAND new Model H; £92.—Ward, 51, Upper Richmond Rd., Putney. [6977

MATCHLESS, brand new, unregistered 1921 standard combination; sacrifice £148.—9, West Heath Av., Golder's Green. [6010

1920 Matchless Combination, dynamo lighting, interchangeable wheels; solo considered; £140.—8, Dundee Rd., South Norwood. [6500

1921 New Standard Model H Matchless Combination, M.A.G. engine; end of season bargain, 150 gns.—Ross, 86, High Rd., Lee, S.E. [1710

1921 Matchless Combination, Magdyno, electric light, fully equipped, splendid condition; £155; bona fide.—Bush, 67, Royal Parade, Eastbourne. [6360

MATCHLESS 1920 H, Lucas Magdyno, spare wheel, Easting wind screen, quantity spares; £115, quick sale.—Box 7,176, c/o *The Motor Cycle*. [6860

MATCHLESS.—Still a few 1921 shop-soiled machines, standard £160, 2-seater £165, Magdyno £ extra.—Maudes', London, Exeter, and Walsall. [X16

MOTOR CYCLES FOR SALE.

Pearl.

1921 Pearl.—For sale, sporting motor cycle, 6h.p. J.A.P. engine, B.S.A. frame, 3-speed gear box, d spare parts; price £90, or nearest offer; owner going road.—Reginald G. Smith, 340, The Broadway, West endon, N.W.9. [6282

Peugeot.

h.p. Peugeot, running order, tax paid; £13/10.— 141, Framfield Rd., Hanwell. [6672

8 GNS.—1915 3½h.p. twin Peugeot, Claudel-Hobson single lever, Bosch enclosed, very fast sportg model.—20, Tieen Av., Hoggers Corner, Barnes. [6625

h.p. Twin Peugeot Coachbuilt Combination, hood, screen, speedometer, lamps, etc., tax paid, any ial; £35; would separate. — 135, Leighton Rd., alling, W.13. [6596

Premier.

PREMIER 3½h.p., 2-speed, good condition, licensed; £18.—17, Heatou Rd., Mitcham. [6545

PREMIER, 2¾h.p., 3 speeds, clutch, good order, licence, accessories; bargain, £17/10.—12, High t., Wandsworth. [6733

PREMIER, 3½h.p., and coachbuilt sidecar, 3-speed, new cylinder, piston, everything rebushed, all n, excellent condition, any trial; £58.—Haydon, Mill ottage, Aylesbury. [6588

Spare Parts:

PREMIER Spares and Repairs. — We are the specialists, late with the manufacturers; stamped nvelope for reply per return.—Forfield Motors, Forield Place, Leamington Spa. [X1648

Precision.

h.p. Precision Combination, 3 speeds, clutch, kick start, Easting wind screen, good condition.—Love, igh St., Chard. [6265

1914 3¾h.p. T.T. Precision, excellent condition, licence, fast machine; £26, offers.—49, High St., alton-on-Thames. [6473

Quadrant.

1912 4h.p. Quadrant, 3-speed gear, o.k. condition, recently overhauled; £36.—Bagley, Wright St., odnor, Derby. [6556

£19.—Quadrant 3½h.p., Bosch, B. and B., recently overhauled, lamps, horn, tax, ride away.—Woollard, 4, Minford Gardens, W.14. [6351

£75.—Quadrant 1921 5h.p. combination, accessories, insurance, tax paid, overhauled.—Clifford Wilson, 77, Westminster Bridge Rd., S.E.1. [6894

£95.—Quadrant 1921 o.v. 4½h.p. combination, used competitions only, new sidecar, guaranteed.—lifford Wilson, 177, Westminster Bridge Rd., S.E.1. [6895

Spare Parts:

FOR all Quadrant Spares and Repairs, The Clifford Wilson Manufacturing Co., Quadrant Sole Wholeale Distributers, 177, Westminster Bridge Rd., ondon, S.E.1. Hop. 210. [4020

Radco.

RADCO 2½h.p., 2-speed, 1920¾, new; £32.—Fairhurst, back Mesnes St., Wigan. [6987

1920 Radco, very good condition; reasonable offers considered.—West, 32, Wouldham St., Canning own, E. [6290

RADCO, in splendid condition, discs, electric lighting; seen any time; £20, or near.—58, West Green Rd., ottenham, N.15. [6621

Raleigh.

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RALEIGH Combination, sports model from Olympia Show, wind screen, horn, lamps (acetylene and lectric), tax paid, all tools, numerous spares, perfect rder; £135.—Bush, 50, Herbert St., Loughborough. [6291

RALEIGH 2¾h.p. and 3h.p. Models from £68; earliest deliveries from the Raleigh specialists; ash, exchange, deferred payments.—Newnham Motor o., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6646

WANTED, enquiries for the new Raleigh models, for which we are special agents. Particulars on request. Cash, exchange, deferred payments.—Newnham Motor. Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6660

THE New Raleigh 2¾h.p. 4-stroke Lightweight, 2-speed, with clutch and kick starter, at £68, is he best value offered the motor cyclist for the 1922 eason; orders now booking for January delivery.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [X1678

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B.S.A. 6 h.p. Light Twin Combination	£164	0
LEVIS Popular, 2¼ h.p.	£48	0
LEVIS, 2¼ h.p., 2-speed	£58	0
LEVIS, 2¼ h.p., 2-speed, and kick-starter	£60	0
MATCHLESS, 8 h.p., sports	£130	0
MATCHLESS 8 h.p. standard Combination	£170	0
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NEW IMPERIAL, 2¼ h.p., sports, 3-speed	£80	0
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QUADRANT, 4½ h.p., chain-cum-belt	£80	0
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REX 2½h.p., Dixie, B.B., spring forks, low, ride away; sacrifice 12 gns.—179, York Rd., Islington. [6178

REX 5-6h.p. Coachbuilt Combination, excellent condition, every accessory; £38; money wanted.—Ivy Cottage, High St., Beckenham. [6828

REX 6-8h.p., 2-seater sidecar, 1914, lamps, wind screen, 2-speed gear, good tyres; accept £57/10, or exchange piano.—277, Camberwell Rd., S.E. [6638

Rover.

1920 5-6h.p. Rover Combination, lamps; £80, or offers; any trial.—Hearn, Liverpool Rd., Burscough. [6525

1919 3½h.p. Rover, countershaft, excellent condition, tax and insurance paid; £70.—Pickering, 36, Gresham St., Coventry [X1520

ROVER 3½h.p., 1920, 3-speed and clutch, condition perfect, appearance as new; £80.—Andrews, Devonshire Garage, Buxton. [X1633

1916 3½h.p. Rover, clutch model, fully equipped, tax paid, in splendid condition; £26.—37, Arlington Rd., Surbiton. [6490

1914 3½h.p. Rover Combination, 3-speed, break on car Lucas lamps, little used, recently overhauled; £58.—Baron, Square, Barnstaple. [6605

1921 Special T.T. Rover, 3½h.p., Philipson, long plated exhaust, accessories, spares, insurance, very 'ot; £68.—38, Elmbourne Rd., Balham [6469

ROVER 3½h.p. Combination, 1918, all accessories, tax paid; no reasonable offer refused.—Seen at Saunders Garage, High St., Hampstead. [4503

£58.—1913-1914 3½h.p. Rover combination, 3-speed, K.S., just overhauled, tax paid, only wants seeing.—8, Half Moon Lane, Herne Hill, S.E.24. [6784

ROVER 1921 T.T. Speed Model, 3½h.p., complete with all accessories, condition perfect, very fast; £68.— H. J. Marston, 50, Argyle St., Birkenhead. [6392

1921 Rover T.T., Philipson and fixed pulleys, usual spares, small mileage; £80, or near offer.—c/o Deates, The Nook, Burgh Heath, near Epsom, Surrey. [6575

ROVER 1921 T.T., 75 m.p.h. model, used only 400 miles, and specially prepared for competition, fitted with hand controlled Philipson and knee-grips, licence paid.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581. T.A.: Integrity, Oxford. [6882

Royal Ruby.

24 GNS.—Royal Ruby 2-stroke, splendid condition; sacrifice.—Fisher, 24, Tremadoc Rd., S.W.4. [6604

1920 Royal Ruby 3h.p., 2-speed, kick starter, spring frame; £40.—Wessex Motors, Ltd., Catherine St., Salisbury. [6205

ROYAL RUBY 2¾h.p. Villiers, splendid condition, all accessories, discs; bargain, £25, or near offer.—34, Magdala Rd., N.19. [6242

ROYAL RUBY, 2¾h.p. J.A.P., 2-speed, kick start, clutch, E.I.C., Amac, lamps, tools, spares, good condition; £45, or near offer.—106, Seymour Rd., Harringay, N.6. [6379

Rudge.

50 m.p.h. Rudge, polished crank case, equipped; £22, or exchange.—Turpington, Bickley, Kent. [6503

1920 Rudge Multi, 5-6h.p., 40 gn. sidecar, Easting; trial; genuine; £75.—White, Lyndhurst, Loughton. [6467

RUDGE Multi 1921 3½h.p., I.O.M. model, brand new, shop-soiled, list price £85; accept £72/10. —Below.

RUDGE Multi, late 1920 combination, 3½h.p. I.O.M. model, machine in almost new condition; sacrifice, £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

£27/10.—Rudge Multi, lamps, fast, new tyre, belt; ride away.—Argyle Lodge, Newton Rd., Burton-on-Trent. [6538

RUDGE 3½h.p., 1916, 3-speed, I.O.M., T.T. bars, in perfect condition; £40.—Higgins, Dunmow Hill, Fleet, Hants. [6373

RUDGE Combination, kick start, splendid condition; £52; take lightweight part.—57, Kenbury St., Camberwell, London. [6749

56 GNS.—Rudge Multi, 1920, I.O.M., lamps, speedometer, insured, scarcely used.—Remington. Chalet, Sanderstead Hill, Croydon. [6942

1920 Rudge Multi, hand clutch, kick start, equal to new; £58/10. — Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [6864

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

RUDGE 5-6h.p. Combination, 1921, electric light, Easting wind screen, many extras; £95.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [6779

1920 Rudge Multi Combination, splendid condition, 2,000 miles, tax paid, insurance to July, 1922, lamps, horn, spares; £90.—Wren, Kimpton, Herts. [6510

MOTOR CYCLES FOR SALE.

Rudge.

1922 Rudge 3-speed 3½h.p., all-chain drive; we can give immediate delivery; price £100.—Percy and Co., 314, Euston Rd. Museum 1337. [6896

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge, I.O.M., 1921, electric lighting, tax paid; £75; easy terms no extra charge. [6444

3½h.p. Rudge Multi, tax paid, hand clutch, speedometer, excellent condition, tyres as new; bargain, £40.—125, Canal Rd., Mile End, E.3. [6559

RUDGE 3½h.p. T.T. Multi, 1921, complete with lamps, horn, licence, etc., condition as new; £65.—H. J. Marston, 50, Argyle St., Birkenhead. [6394

RUDGE Combination, 4-point sidecar, 3-speed, clutch, and pedal start, condition as new; £50.—J. Rhind and Co., Stone Place, Rusholme, Manchester. [6755

1914 Rudge Multi Combination, excellent condition, sidecar underslung, beautifully upholstered, lamps, tax, tyres, appearance as new; £52/10.—Harrington, 89, Wood St., Barnet. [6922

RUDGE Multi, I.O.M., 3½h.p., April, 1921, head and tail lamps, mechanical horn, speedometer, mileage 2,800, very fast machine, trial; £75.—Marshall, 32, Hampstead Rd., N.W.1. [6574

1920 3½h.p. Rudge and 35-gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect; £78.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6015

1921 (late) Rudge Multi, tax paid, cost £90 with accessories, will drop £25 to realise for Income Tax, perfect tune and condition, a real snip; Terry pillion seat, 30/-.—29, Alderbrook Rd., Clapham Common, S.W.12. [6377

RUDGE Multi Combination for sale, 1920 model, delivered March, 1921, 7-9h.p., wind screen, full equipment, mileage 5,000; price £130; can be seen any time for trial by appointment.—Brainsby's, Ltd., Broadway, Peterborough. [6246

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1920 Almost New Rudge Multi Coachbuilt Combination, 5-6h.p., Multi gear, clutch, kick starter, hood, screen, lamps, Klaxon, speedometer; sacrifice, 79 gns.; exchanges, easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [6762

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SCOTT 3½h.p., Binks carburetter, new chains and tyres; any trial; nearest £38.—Scott, Lorton, Cumb. (D) [6189

F.O.C.H. have a 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [6764

SCOTT 1920 3¾h.p. Combination, fully equipped, Easting screen, as new; £90; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1612

SCOTT 1921 3¾h.p. Touring Model, shop-soiled only; to-day's price £130, clearance price £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X1615

1920 Scott Combination, electric lamps, speedometer, etc., double pole ignition, sports and standard bars, Binks, very fast, guaranteed, tax paid; £85.—Homac's, 243, Lower Clapton Rd., E.5. Dalston 2408. [6811

SCOTT, November, 1919, stored 12 months, only run 4,000 miles, full Lucas equipment, in excellent condition and perfect running order, licence paid; owner bought car; bargain, £78.—Hunt, Llanwenarth, Abergavenny. [5419

1922 Scott, fitted with 500 c.c. T.T. engine, aluminium pistons, special gear box, Lucas 4-point magneto, also spare magneto, complete set of spare chains, several sprockets and jet, spare back wheel sprocket, many other spares, including Palmer cord tyre, 2 inner tubes, etc., only run in 3 trials, winner of 2 cups, exceptionally fast, guaranteed 100 miles per gallon, as new; accept 100 gns., bargain.—King, Rendella, Oxford Rd., Birkdale, Southport. [6292

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1916 2½h.p. Sun-Vitesse, 2-stroke, Senspray, Th[illegible] son-Bennett mag., complete with lamps, h[illegible] licence, etc.; £22/10.—Maynard, 8, Silver St., Enf[illegible] [61[illegible]

Sunbeam.

SUNBEAM 3½h.p., 3-speed, kick starter, Lu[illegible] lamps; £68.—Below.

1919 (Dec.) Sunbeam Combination, 8h.p., 3-sp[illegible] kick starter, Magdyno lighting, full equipm[illegible] spare wheel, splendid condition; £150.—Wessex Mot[illegible] Ltd., Catherine St., Salisbury. [6[illegible]

SUNBEAM Combination, 1919, lovely lot; barg[illegible] £90.—59, High St., Clapham, S.W.4. [6[illegible]

1916 3½h.p. 3-speed All-chain Sunbeam and Side[illegible] excellent order, 2 new tyres; £85.—C. Bar[illegible] Clapham, Yorks. [0[illegible]

SUNBEAM 1921 3½h.p. Touring Model, new lam[illegible] horn, speedometer, and spares; £135.—Ogle, [illegible] wyn, Herts. [6[illegible]

1919 Sunbeam Combination, speedometer, lam[illegible] perfect; hard up, £90, genuine.—7, Gibson [illegible] London, N.1. [6[illegible]

1915 3½h.p. Sunbeam Combination, newly pain[illegible] tax, etc.; giving away, 59 gns.—Ramsdens, [illegible] bell Av., Blackpool. [6[illegible]

SUNBEAM Combination, 3½h.p., Dec., 1919, [illegible] condition and appearance; £100.—Jones, [illegible] Culverden Rd., Balham [6[illegible]

HALIFAX.—New Sunbeam 3½h.p. Touring; [illegible] gns., reduced price; exchanges quoted.—M[illegible] Exchange, Horton St., Halifax. [illegible]

1919 3½h.p. Sunbeam, appearance and condition [illegible] new, fully equipped; any trial; bargain, £77 [illegible] —4, Elm Gardens, Hammersmith. [6[illegible]

1920 (late) 3½h.p. Sunbeam, in perfect order, [illegible] new, all on; first £100 secures, lowest, barga[illegible] R.W.C., 29, Fylde St., Moses Gate, near Bolton. [6[illegible]

LATE 1920 3½h.p. Sunbeam Combination, [illegible] equipped, electric lighting, carefully used; [illegible] trial; £130.—Nutburst, Petersham Av., Byfleet, Su[illegible] [6[illegible]

1920 3½h.p. Sunbeam, Grindlay sidecar, wind sc[illegible] Lucas, Binks, all accessories, tax paid, insur[illegible] splendid condition; £125.—44, Churchill Av., Cove[illegible] [XI[illegible]

SUNBEAM 3½h.p., Sept., 1920, first-rate condi[illegible] small mileage, speedometer, rear lamp, tyres [illegible] cellent; £120.—The Gables, 19, Foxgrove Rd., Bec[illegible] ham, Kent. [[illegible]

2¾h.p. 2-speed Sunbeam, kick start, hand clutch, [illegible] chains, overhauled, renewals makers, 1920, la[illegible] insurance £100, licensed, perfect order; £65.—Mo[illegible] 58, St. George's Sq., S.W.1. [X[illegible]

SUNBEAM, 1921 (September), 3½h.p., sports, [illegible] equipped, shop-soiled only; £130; deferred [illegible] ments if desired.—Parker's, Bradshawgate, Bolton; [illegible] 245, Deansgate, Manchester. [X[illegible]

SUNBEAM Combination, No. 1 sidecar, August, [illegible] mileage 1,500, not used for 6 months, unscrat[illegible] cost over £215, will accept £155; Birmingham dis[illegible] —Box 113, c/o *The Motor Cycle.* [X[illegible]

8h.p. 1921 Model Sunbeam Combination, Lucas [illegible] dyno, electric horn, spare wheel, Tan-Sad, sp[illegible] meter, hood, screen, perfect condition, engineer ow[illegible] £200.—Chilton, Crescent, Northwich, Cheshire. [[illegible]

1920 Sunbeam 3½h.p. Late Combination, [illegible] equipped, Cowey, Easting, etc., innumerable sp[illegible] low mileage, like new, 6 months' insurance left; [illegible] £140, near offer.—15, Jackson's Lane, Highgate, [illegible]

BRAND New 1921 Sunbeam Combination, sh[illegible] shop-soiled only; list price £162, offere[illegible] £150 for cash.—The Layton Garages, 30, Hol[illegible] St., Oxford. 'Phone: 581. T.A.: Integrity, Ox[illegible] [[illegible]

SUNBEAM, 1921, 3½h.p., special T.T., sports m[illegible] only run 300 miles, indistinguishable from [illegible] guaranteed perfect, licensed, and accessories com[illegible] £125; or without accessories, £115, genuine barg[illegible] Moss, Wem. [X[illegible]

SUNBEAM 8h.p. Combination, dynamo lighting, [illegible] wheel hood, wind screen, speedometer, spare [illegible] perfect condition; £170, or nearest offer; private o[illegible] Sir Malcolm Murray.—Can be seen at Pack's G[illegible] Sunningdale. [[illegible]

SUNBEAM 3½h.p., 1915-16, Mills-Fulford sid[illegible] electric lighting, whole machine in perfect [illegible] dition; accept cash £67/10.—Elce, Ltd., [illegible] Bishopsgate Av., Camomile St., E.C.3. 'Ph[illegible] Avenue 5548. [illegible]

1921 3½h.p. Sports Model Sunbeam, mileage [illegible] Jaeger speedometer and clock, a fast and [illegible] machine; £135; must sell; will accept lower fig[illegible] sold without instruments.—J. N. Macleod, Pem[illegible] College, Cambridge. [illegible]

1921 3½h.p. Sunbeam Sports Model, guarantee[illegible] fect in every respect, done 350 miles, [illegible] scratched, insured for £170, owner buying car sol[illegible] son for disposal; £120, with insurance policy.—A[illegible] McLung, North End Farm, Barrow-in-Furness. [illegible]

SUNBEAM 8h.p. 1919 Combination, Sunbeam si[illegible] complete lighting set, detachable wheels, [illegible] spare, screen, luggage grid, etc., in absolute [illegible] condition, equal new; exchange and cash cons[illegible] £130.—Maton, 37, Canterbury Rd., Dalston, N.1. [illegible]

MOTOR CYCLES FOR SALE.

Zenith.

.T. Zenith 1914-15 Coachbuilt Combination, 4h.p., Gradua gear, lamps, discs, overhauled, renovated est colours, sound; genuine bargain, first £37; exnge.—89, East Hill, Wandsworth. [6609

'ENITH-BRADSHAW and all Zenith Models for immediate delivery; cash, exchange, or deferred yments.—Newnham Motor Co., 223, Hammersmith l., W.6. 'Phone: Hammersmith 80. [6649

h.p. 1921 Sporting Zenith, fully insured, mileage 4,000, Binks carburetter, Cowey speedometer, eas lamps, separate generators, knee-grips, T.T. bars, new; £80.—Arnott, Garth, Monmouth. [6346

922 Zenith-Bradshaw in stock for immediate delivery; £118; cash, exchange, or extended payents.—Allen-Bennett Motor Co., Ltd., 9-10-11, Royal rade, London Rd., West Croydon. 'Phone: Croydon 50. [0734

h.p. Sporting Zenith, 1915, red enamel, discs, large exhaust, drilled pistons and connecting rods, new idle, magneto, and Binks, great speed, phenomenal w running, a sound machine; £60.—Hornsey Tavern, gh St., Hornsey (2-5 p.m.). [6687

921 Zenith Competition Combination, specially built, with 8-10h.p. o.h.v. (90 bore) racing A.P., 65 m.p.h., 80 m.p.h. solo, insured, lavish equipent, as new; would separate; £150, cost £200.—70, ation Rd., Harborne, Birmingham. [X1643

'ENITH 1920 8h.p., countershaft, kick start, clutch, combination de luxe, F.R.S. electric lighting, speeeter, discs, mileage 1,500, condition as new; £119, vest, or exchange lower power and cash.—Ayers, 254a, rtobello Rd., Notting Hill, London. 'Phone: 643 rk. [6869

920 8h.p. Zenith Countershaft Combination, almost indistinguishable from new, mileage 1,500, wey horn, speedometer, Easting, Lucas sets, discs, rror, Tan-sad, numerous accessories and spares, rth £240; sacrifice £140.—Box 7,189, c/o *The otor Cycle.* [6964

Ladies' Motor Cycles.

ADY'S Velocette, 1919, 2-speed, very fine order, fully equipped; £35.—Bunting's Motor Exchange, ealdstone. [6919

913 Lady's Douglas, 2-speed, splendid condition, good tyres, lamps; trial; £35.—Millard, 103, per Abbey, Belvedere. [6456

'RANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most table ladies' machine. Get list. [0724

OYAL RUBY 1917 Ladies' Model, 2¾h.p. J.A.P., h.b.c., kick, excellent condition; £40.—Tatton, ephone Exchange, Leek. 'Phone: 23. [X1408

ADY'S Douglas, Dec., 1915, 3-speed, clutch, etc., all-black, lamps, horn, not ridden for 2½ years, since had complete overhaul at Douglas works, like w.—Miss Ranken, 11, Spence St., Edinburgh. [6384

Miscellaneous.

HALIFAX.—Motor exchange, Horton exchange, Halifax. A.J.S. 1919 combination, £135; Ariel, h.p., 1920 combination, £97/10.—Below.

HALIFAX.—Ariel, 3½h.p., 1920, £84/10; 1920 Alecto, 3½h.p., 2-speed combination, £79/10.—low.

HALIFAX.—Alecto, 1920, 3½h.p., 2-speed, £60; 1921 Beardmore-Precision, 3½h.p., spring frame, 9/10.—Below.

HALIFAX.—B.S.A. 1915 4¼h.p. combination, £76/10; Bradbury 3½h.p. 3-speed combination, 9/10.—Below.

HALIFAX.—Chater-Lea 8h.p. combination, £85; Douglas, 1920, 2¾h.p., 3-speed, £75.—Below.

HALIFAX.—Enfield 6h.p. combination, £95; Edmund, 1920, 2¾h.p., spring frame, £65.—Below.

HALIFAX.—Excelsior, 1920, 2½h.p., 2-speed, £42/10; Harley, 1918, with 1920 Henderson ecar, £115.—Below.

HALIFAX.—Henderson 4-cyl. combination, £165; Humber 1914 3½h.p. combination, £49/10.—low.

HALIFAX.—Indian, 1918, 7-9h.p., 1920 sidecar, £105; Indian Scout, 1920, £105.—Below.

HALIFAX.—Norton Big Four, 1920, £99/10; O.K. 2¼h.p., 2-speed, £35.—Below.

HALIFAX.—Rex 6h.p. 2-speed combination, £49/10; Rudge 1920 7-9h.p. combination, £115. Below.

HALIFAX.—Scott 1920 3¾h.p. combination, 115; Triumph, 1913, handle-bar-controlled tch, £42/10.—Below.

HALIFAX.—Triumph 4h.p. 3-speed combination, £69/10; Peugeot, 7-9h.p., 2-speed, £37/10.—low.

HALIFAX.—Zenith-Gradua 6h.p. twin combination, £57/10; 8h.p. countershaft Zenith combination, 5; deferred payments quoted.—Halifax Motor Exange, Horton St., Halifax. [X1661

HALIFAX.—50 second-hand motor cycles and combinations. Offers wanted. Get list. Cash or exnge.—Halifax Motor Exchange, Horton St., Halifax. [5497

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down or

£100 outfit

for £20

down or

£150 outfit

for £30

down, and balance over 12 instalments (No extra charge for terms for 2 months, or liberal discounts allowed if account cleared in 4 or 6 months.)

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'Phone: Hornsey 1956.

387, EUSTON ROAD, LONDON, N.W.1
'Phone: Museum 4978.

151, HIGH ST., WALTHAMSTOW, LONDON, N.E.
'Phone: Walthamstow 169 (2 lines).

MOTOR CYCLES FOR SALE.

Miscellaneous.

TRIUMPH Combination, coachbuilt underslung sidecar, excellent running order; £42.—Below.

BRADBURY Combination, C.B., 2-speed countershaft, clutch and kick start; bargain, £50.—Below.

RUDGE Combination, 4-point sidecar, 3-speed, clutch and pedal start, condition as new; £50.—Below.

1920 Norton, 3-speed S.A. countershaft, clutch, kick start, fitted large new bulbous Sandham sidecar-wind screen, apron, lamps, tools, speedometer, etc., firstclass outfit; £125.—Below.

A.C. Sociable, 2-seater, wheel steering, lamps, wind screen, etc.; £40.—'Phone: 776 Rusholme.—J. Rhind and Co., Stone Place, Rusholme, Manchester. [6754

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths' Motories, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10; 1919 6h.p. James combination, lamps, speedometer, £89/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 2 speeds, clutch, kick starter, lamps, speedometer, £42/10/6; free engine Triumph, £22/10/6.—Booths' Motories, Halifax.

BARGAINS.—1916 G.W.K. light car, detachable wheels, £139/10/6; 1920 Williamson combination, dynamo lighting, £115/10/6.—Booths' Motories, Halifax.

BARGAINS.—8h.p. Premier combination, £55/10/6; 1914 P. and M., £35/10/6; late model twin N.S.U., speed gear, £19/10/6.—Booths' Motories, Halifax.

BARGAINS.—Harley-Davidson combination, mileage 300, £130/10/6; 1921 Rudge Multi, £85; another, £75/10/6, like new.—Booths' Motories, Halifax.

BARGAINS.—3h.p. Fafnir, £10/10/6; 3½h.p. N.S.U., 12/10/6; 3h.p. Enfield, speed gear, £29/10/6; 8h.p. Peugeot, Grado gear, £19/19/6.—Booths' Motories, Halifax.

BARGAINS.—5h.p. 1921 shop-soiled Quadrant combination, £115/10/6; 1917 4h.p. Douglas, £59/15/6; 1915 Douglas, £35/17/6.—Booths' Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths' Motories, Portland Place, Halifax. Tel.: 1062. [5529

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite Earlsfield Station, L.S.W. Ry.). 'Phone: Latchmere 4388. End of season bargains. Easy terms.

ALLBER.—Douglas 1916 2¾h.p., 2 speeds, good tyres, fully equipped, smart appearance, tax paid; £39.

ALLBER.—Sun-Villiers 2¾h.p. 2-stroke, speedometer, lamps, horn, etc., engine just overhauled, good appearance, tax paid; £27/10.

ALLBER.—Levis 2½h.p., 2-stroke, 2-speeds, all accessories, tax paid, good condition and running order; £32/10.

ALLBER.—Calcott 3h.p., fitted all accessories, condition as new, tax paid; bargain, £27.

ALLBER.—Humber 2¾h.p. twin, 3-speeds, in good order, needs a few adjustments; £18/10 to clear.

ALLBER.—F.N. 2½h.p., 2-speeds, clutch, shaft drive, good order, tax paid; £23.

ALLBER.—Indian 1916 5-6h.p., 3-speeds, clutch, kick starter, T.T. model, extra fast, acetylene lighting, all tools; £49.

ALLBER.—Douglas combination, 2¾h.p., 2-speeds, Watsonian sporting sidecar, complete with lamps, horn, tax paid; £42/10.

ALLBER.—Indian combination, 1916, 7-9h.p., 3-speeds, clutch, kick starter, electric lighting, good tyres, in splendid condition, tax paid; £60.

ALLBER.—Humber combination, 4h.p., 2-speeds, handle starting, coach sidecar, complete with lamps, horn, tax paid, in good condition; £38.

ALLBER.—Matchless combination, 1916, M.A.G. engine, 3-speeds, clutch, kick starter, good tyres, 1920 sidecar body, renovated as new; £69. [6761

2¾h.p. Wolf, 2-speed, 2-stroke, excellent top gear machine, £30; 3½h.p. Triumph, single gear, £25; lathe or w.c. engine taken in part payment.—Knapton, New St., Pudsey. [X1670

SAM E. CLAPHAM (Motors), Greenwich. 'Phone: 751.—Only a few bargains left now in new and second-hand motor cycles, secure one now.—Note address: 27, Stockwell St., Greenwich, S.E.10. [6807

SPECIAL Sporting 3½h.p. Twin Sunbeam, M.A.G. (photo. "The Motor Cycle, Aug. 25th), delivered June, unscratched, £100; 1914 3½h.p. Sunbeam, stored since 1917, £80; 1916 3½h.p. Brough and new metal sidecar, used one season only, £85; evenings.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X1638

MOTOR CYCLES FOR SALE.

Miscellaneous.

IF Wishing to Buy (for cash or easy payments), sell, or exchange motor cycle or combination, state requirements. Satisfaction guaranteed. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [6921

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices. Exchanges arranged. Any new cycle, combination, or car supplied, cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [6768

MEBES and Mebes, the Original Light Car Specialists, invite reasonable offers for the following shop-soiled, but otherwise new motor cycles, as they are relinquishing this part of their business in favour of light cars: Beardmore-Precision 3½h.p.; Wooler 2¾h.p., variable gear; Rover touring model, 3½h.p., 3-speed, clutch; Bat 6 p. Model 4, clutch, 3-speed; L.M.C. 6h.p. suspension-frame model, clutch, 3-speed; L.M.C. 6h.p., rigid frame, clutch, 3-speed; L.M.C. 3½h.p., clutch, 3-speed; also 6h.p. L.M.C. combination, fully equipped, used for demonstration only; and one Elite model Henderson sidecar and one spring-frame Henderson sidecar, both new, shop-soiled only.—144, Gt. Portland St., W.1. 'Phone: Langham 2230. [6304

BUTTERWORTHS', Butterworths', Butterworths' Autumn Clearance Sale now on.—Sunbeam combination, 1919, black and gold, Sunbeam sidecar, all lamps, and guaranteed, £78; Sunbeam combination, 1914, Canoelet sidecar, lovely lot electric lighting set, £58; Sunbeam solo, 1919, had little use, lamps, etc., all taxes paid; £69; Clyno 2-stroke lightweight, in splendid order and guaranteed, £25; overhead valve J.A.P. solo, cheap 'bus, £17, tax paid; Enfield 1915 twin 3h.p., 2-speed, clutch, £34; underslung sidecar, nice body, £6; Indian spares, Triumph spares, N.S.U. parts, J.A.P. connecting rods and pistons; welding plant, all complete, only been used twice, cost £40, sell £18; P. and M. cylinder, £1; pillion seats, 1 doz. speedometers, cycle car parts, a few good saddles. Give us a ring for your wants.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [6838

MOTOR CYCLES FOR HIRE.

LATEST Models Motor Cycles and Combinations for hire, any period.—Fowler and Brigden, 130, Euston Rd. Museum 4827. [0708

MOTOR CYCLES WANTED.

W. T. DUNN, Ltd., always buy.

FULL Market Value given for modern solos, combinations, and cycle cars. Call, write, or 'Phone Museum 5391.—W. T. Dunn, Ltd., 326, Euston Rd., London. [0332

LEVIS Wanted, complete, condition immaterial.—26, Portland St., Southport. [X1626

£30 for best 2¾h.p. Douglas.—R., 26, Plumstead Common Rd., Plumstead. [6283

2-STROKE Wanted; reasonable price.—Reggie, 65, Nottingham Rd., Alfreton. [6270

£25 cash for 2¾h.p. Douglas.—Particulars, Reed, 3, Park St., Pickering, Yorks. [6533

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WANTED, good motor cycle or combination; cash.—C.S., 14, Swaton Rd., Bow, E.3. [6955

WANTED, 2¾h.p. Douglas, not earlier 1913, not exceeding £30.—King, Egrove, Oxford. [X1632

WANTED, cheap motor cycle, good make, for cash.—Write, 14, Upham Park Rd., Chiswick. [6736

WANTED, modern lightweight, must be cheap, cash waiting.—1, Othello St., Liverpool. [5460

WANTED, modern lightweight, 2-speed and clutch.—Collard, 12, Station Parade, Muswell Hill. [6339

DOUGLAS 2¾h.p. 2-speed, or Levis, but must be cheap.—Box 7,110, c/o *The Motor Cycle*. [6172

LIGHTWEIGHT Wanted for £40, Enfield or Triumph preferred.—136, Dalmally Rd., Croydon. [6571

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0604

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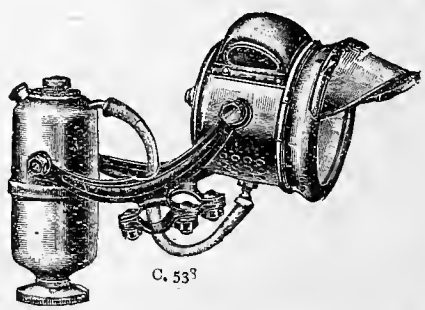

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HARLEY, Enfield, A.J.S., Morgan, spot cash. Mosedale, 30, Canterbury Rd., Kilburn, N.W. [6

WANTED, good solo or combination, good make, fancy prices, cash.—211, Garratt Lane, Wan worth. [6

WANTED, for spot cash, motor cycles, combinations, urgent.—W. Dawe, 216, Portobello R N. Kensington. [6

WANTED, good second-hand motor cycles and combinations; cash paid on sight.—Percy and 314, Euston Rd. Museum 1337. [4

WANTED, solo Triumph or B.S.A., also mod lightweight; cash waiting.—Goad, 122, Ma Vale. 'Phone: Hampstead 1353. [6

WANTED, sporting combination or solo; excha motor punt, 4½h.p., inboard, and cash, accesso perfect; photo.—3, Hillsboro' Rd., E. Dulwich. [6

MOTOR Cycles, solos and combination, all mak highest prices given; spot cash paid.—The T. B. Motor Co., Ltd., 372, Euston Rd., London, N.W. [5

CASH on Sight for new and second-hand mo cycles and combinations, any make or conditi —Call, write, or 'phone, Short and Glass, Ltd., 4 493, Upper Richmond Rd., East Sheen, S.W. 'Pho Richmond 2362 and 2363. [0

WANTED, for business purposes, four 8h.p. c binations, well-known make, new 1920-21, or sl soiled, or good second-hand. Tenders invited for s cash by Waterer and Sons, Estate Agents, 23, W miester Palace Gardens, Victoria St., S.W.1. [6

WANTED, any good motor cycle or combination, part exchange for any make of light car or c bination. Best possible price allowed.—Vivian—Ha and Lane, Ltd., 23-24, Woodstock St. (off Bleh St.), New Bond St., London, W.1. Tel.: Mayfair 6 [0

WANTED, for cash, motor cycles and combinati new or second-hand, any make. Be sure give us a call before selling elsewhere. Best pr paid.—Richmond Park Garage, 110, Upper Richm Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [6

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TRICYCLES FOR SALE.

INVALIDS' Tricycles and Motor Tricycles; catalo free.—Rayner, 10-12, George St., Blackpool. [5

ARGSON Hand- and Motor-propelled Tricycles, invalid and disabled.—Particulars, Argson Co., Ltd., 3, Kendalls Mews, George St., W.1. [2

TRICARS FOR SALE.

A.C. Tricar, wheel steering, hood, screen, spe meter, lamps, tools; £55, or nearest.—31, mington Av., Chiswick, W. [6

A.C. Sociable, thoroughly reliable, hood, scr lamps, speedometer, tyres and general condi excellent, licensed; £55.—Tudor House, Rivers Kingston-on-Thames. [6

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KINGSBURY Scooters and Spare Parts.—3, sington Mews, George St., W.1. [5

SKOOTAMOTA, new, licence paid, not run 40 mi £30.—Lemottee, Boxted, Colchester. [6

MOBILE Pup Scooter, good as new, tax paid; cost £45.—Aerials, Littleover, Derby. [X15

BRAND New Autoped Scooter, dynamo light 1½h.p.; £12/10.—Percy and Co., 314, Eu Rd., N.W.1. [5

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AUTO-WHEELS, new shod, perfect; £7/19/6; paid.—Aerials, Littleover, Derby. [X1

WALL B.S.A. Auto-wheel, perfect; £9, or offer Caledonia St., King's Cross. [6

AUTO-WHEEL, 1921, with B.S.A. cycle, per condition; £15.—1, Simpson's Rd., Bro Kent. [6

SIMPLEX Unit, 1921, brand new but shop-soi £16/10, or exchange motor cycle.—Spencer, T bridge. [X1

SIMPLEX Unit, 1¼h.p., on 24in. bicycle, spe made for it, all as new; £22.—133, Sloane Chelsea, S.W.1. [X1

B.S.A. Auto-Wheel, with licence, spare wheel, sprocket, plug; bargain, first £12 secures.—Wi son, Leslie St., St. Helen's, Auckland, Co. Durham [X1

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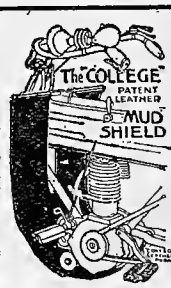

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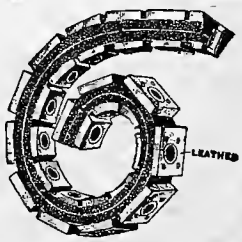

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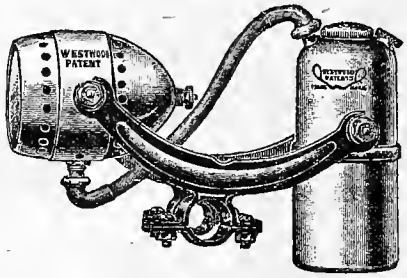

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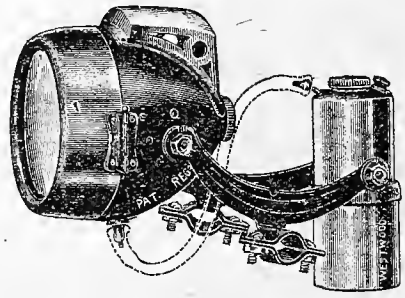

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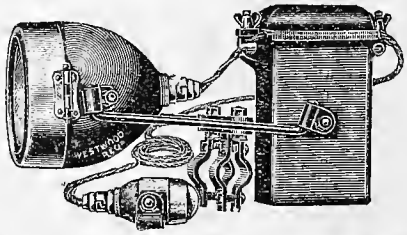

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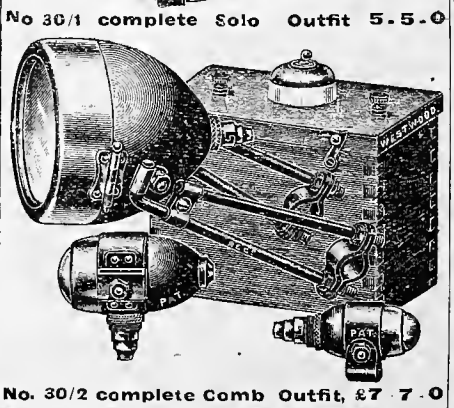

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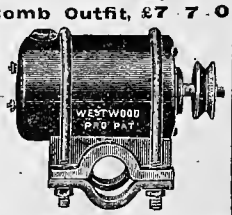

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700×80 Wood-Milne E.H. 45/-, International grooved 55/-, Englebert touring 32/-, passenger 34/-, or super-reinforced 42/-, these Englebert covers are real fine, are marked 26×3, but are quite suitable for 650×65 rims.

TUBES of all sizes from 6/6 each.

ANY of the Above Covers will be sent on approval against cash, and money will be willingly refunded if not satisfied. Please include 1/6 for carriage, and make all cheque and Post Orders payable to The Central Garage, 302, London Rd., Thornton Heath. [6831

TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours. retreads in 4 days.—The Motor Tyre Co., 86, High St., West Bromwich. [6068

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26×2½ New Beaded Covers, 24/-; new best quality tubes 24×2¼ 5/-, 26×2 6/-, 26×2¼ 6/6, 26×2½ 7/6, 26×2½×2¼ 8/-, 26×3 9/-, 700×80 9/6, 750×75 10/-, 28×3 10/6; new rubber belts, 6ft. 2in.×1in., 10/6; 15in. inflators, 2/3; sent approval, carriage paid, receipt remittance.—Palmer's Garage, Tooting, S.W. [6912

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TANKS for B.S.A., new, 42/6; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [X8993

TANKS Re-enamelled from 10/6.—Bright and Hayles, 78, Church St., Camberwell, London. [4937

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BELTS, 6ft. 5in.×1in., Dunlop, round top; 12/6 each. Excelsior Motor Co., Ltd., Tyseley, Birmingham. [6218

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CARBIDE, finest quality, giving 100 per cent. pure gas yield, all sizes; cwt. 30/-, ½-cwt. 18/-, 28 lb. 10/6; drums free.—Young, Importer, Misterton, Somerset. [7180

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WANTED, surplus from manufacturers and garages.—Grove, 18, Fore St., Edmonton, London. [4218

WANTED, Dixie magneto, single, twin; cheap.—McAllister, 69, High St., Rutherglen, Glasgow. [6355

WANTED, second-hand spring forks, light sidecar chassis.—Particulars, Trim, Shepton Beauchamp. [6397

WANTED, countershaft gear box, suit 4h.p. state make and price; complete.—Battersby, Holmfirth, York. [6347

WANTED, Scooter, Abbottsford, Skootamota, or Mobile Pup preferred.—Feltham, West Moors, Dorset. [6585

MORGAN Wanted, any type; reasonable price for immediate settlement.—Snow, Laurel St., Dalston, London. [6924

WANTED.

WANTED, scooter; exchange Barlock typewriter and Roneo duplicator.—Denbigh, Osborne Gardens, Monkseaton. [X1671

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INCOMPLETE P. and M.'s or Parts, W.D. spares, bankrupt stocks, etc.—Inman, Durham Rd., Seaforth, Liverpool. [3641

ENGINE, a.c., 4-cyl., or twin, magneto, carburetter, wheels, other parts for cyclecar.—Riley, Ogden, New Hey, Rochdale. [6364

SMALL Car or Motor Cycle, Jacobean pedestal gramophone, new, cash adjustment.—Box 7,179, c/o *The Motor Cycle.* [6871

WANTED, old engine, cheap.—Particulars and price, Advertiser, 1, Station Mansions, Station Rd., Church End, Finchley. [6380

WANTED, crank case for old pattern 2½h.p. Minerva engine clamped to down stay.—101, Brockley Rise, Forest Hill, S.E. [6476

WANTED, second-hand Morgans, in good condition, not earlier 1919.—A. P. Rey, 378-384, Euston Rd. 'Phone: Museum 6436. [6410

WANTED, 4¼h.p. James engine, also chain cases (late), any condition if cheap.—Reed, Lime Park Lodge, Herstmonceux, Sussex. [6669

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

F.N. 2-speed Gear and Shaft, for 4-cyl. model; 1921 Claudel-Hobson carburetter for sale, suit 3½ or 4h.p.—Box 119, c/o *The Motor Cycle.* [X1712

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WANTED, Howard cover for Matchless combination; new Howard solo cover offered in exchange.—Kirch, 47, Threadneedle St., E.C.2. [6264

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WANTED, gear box, 3-speed, clutch model, to suit about 1913 Alldays Matchless, right-hand chain drive.—A. Martin, Harthill Garage, Gildersome. [6385

A.C. Sociable or Morgan Runabout wanted for cash; must be fairly modern and cheap.—Particulars to 24, Riffel Rd., Willesden Green, London, N.W. [4407

£2,000 Cash Waiting for quantities of motor cycle parts and accessories.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [6112

WANTED, countershaft Triumph engine or crank case and flywheels, also bottom bracket stays for gear box.—Hole, 129, Park Lane, Carshalton. [6516

WHEELS, handle-bars, silencers, chain cases, forks, mudguards, stands, for 1917 8h.p. W.D. Matchless; also sidecar chassis.—Peters, 11, Osborne Rd., Birkenhead. [6322

£1,000 Waiting.—Motor cycle spares bankrupt stocks purchased, engines, gear boxes, any quantity.—Banister and Botten, 341, Upper St., London, N.1. 2480 North. [6723

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

ENGINES, 4-cyl., 2-cyl., and 1-cyl., air or water-cooled; also gear boxes, spring forks, hub gears, cycle cars, and parts; state price.—19, Wilcox Rd., South Lambeth, London, S.W.8. [3094

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1916 Maxwell 4-seater for Ford and cash.—1, Bellingham Terrace, Catford. [6702

NORTON 1920 Big Four for 3½h.p. 16H, or sell.—Lamb, 37, Arden St., Edinburgh. [X1569

VERUS 1919 2-stroke, 2-speed, lamps, discs, for heavier.—591, Foleshill Rd., Coventry. [X1667

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MOTOR Van, Unic, £65; exchange combination.—Allison, 50, Church Rd., Acton. Any trial. [6677

1921 Levis, good condition, and cash for combination, or good solo; sell £48—6, York Grove, Peckham. [6165

4-CYL. 2-speed Cycle Car, nearly complete, for good combination.—S., 5, Esplanade, South Farnborough. [6243

EXCHANGE 8h.p. Humberette for good solo or combination.—Amour, 73, Cumberland St., Darlington. [6367

MINERVA Engine, 3½h.p., for pulley gear, or with cash for gear box.—134, War Lane, Harborne. [X1645

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Tubes. 24×2¼, **4/6**; 24×2, **4/6**; 26×2¼, **5/6**; 26×2½, **5/9.**

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Soldering Apparatus. A combined soldering Iron and Blow-lamp. The most marvellous invention, solid brass, 10in. long, not a toy but a useful tool. No motorist should be without one. You can do your own soldering without any trouble, nipples to wire, and other small repairs to motor cycles. You will save time and expense. Only a limited quantity. Order now to save disappointment, as they can never be repeated again. **4/8,** post free. Original price, 10/6.

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Motor Cycles. 1 only **Alton** and 1 Sporting Model **Radco,** also one 2-speed Ditto. Brand new, unused; must be cleared. No reasonable offers will be refused.

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3½h.p. P. and M., 1919, for 2¾h.p. Diamond, Sunbeam, or A.J.S.—People, Chattie Hill, Stockbridge, Hants. [6263

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TRY Homac'a for Exchanges. Write for detailed list.—243, Lower Clapton Rd., E.5. Dalston 2408. [6815

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SMART Humberette, 2-seater, equipped, tax; sell, exchange solo, combination.—19, Streatley Rd., Kilburn. [6484

2¾h.p. Douglas, value £45, for heavier machine or combination.—Marks, 121, Acton Lane, Chiswick, W.4. [6820

ENFIELD 6h.p. Combination and cash for 8h.p. combination of popular make.—76, Bovill Rd., Forest Hill. [6665

SPECIAL Sporting 2-seater L.M. Car, for 1921 Sports Sunbeam or 1922 H Norton.—37, Eldon Rd., Blackburn. [X1581

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EXCHANGE 1920 L.J. light car for combination and cash, or sell £150—C.S., 14, Swaton Rd., Row. E.3. Tel.: E.3155. [6953

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WANTED, late combination, in exchange 1920 Bleriot-Whippett 2-seater, or sell.—31, The Drive, Roundhay, Leeds. [6586

HARLEY Combination, late model; exchange lower power and cash, or level for Morgan.—Snow, Laurel St., Dalston, E.8. [6948

CLYNO Combination, 2-speed, kick start, chain drive; £68; take older lot part.—57, Kenbury St., Camberwell, London. [6748

BROUGH 1919 T.T. 3-speed Sturmey countershaft, all accessories, perfect, for good Harley solo.—89, East Hill, Wandsworth. [6614

PILLION Seat, new, cost 70/-; exchange binoculars, barometer, anything useful.—Denbigh, Osborne Gardens, Monkseaton. [X1672

LIST 50 Car Bargains Free.—Combinations, motor cycles, etc., part exchange.—Douglas S. Cox, West Norwood. See Cars. [3842

ALLDAYS 12h.p. 4-seater, new condition, unscratched, for 2-seater or water-cooled Morgan.—63, Solon Rd., Brixton. [5932

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SCOTT Combination, lamps, hood, screen, speedometer, for lightweight and cash, sell £70.—78, Florence Rd., Southall. [6674

RUDGE Multi Combination and cash, for Harley, Enfield, A.J.S., Morgan.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [6451

MOTOR Cycle and Cash for Bebe Peugeot De Luxe 2-seater, 4-cyl., 8h.p., makers' overhaul.—Box 7,178, c/o *The Motor Cycle.* [6872

EXCHANGE 3½h.p. Sunbeam combination, new condition, for 1921 A.J.S., cash adjustment.—Woodward, Tower Rd., Heswall, Cheshire. [6275

1919 Harley Combination, in excellent condition, for Triumph 1920 combination, or similar, or Morgan, or sell £95.—60, Dyne Rd., Brondesbury. [6169

NEW 1920 4h.p. Douglas Combination, guaranted perfect, for late Morgan or higher power.—16, Queen's Parade, St. Augustine's, Bristol. [6676

3½h.p. Rudge-Multi, 1916, clutch, kick starter, new condition, and cash for Sunbeam, Norton, A.B.C., Morgan.—63, Solon Rd., Brixton. [6600

NORTON Sporting Combination, hub gears, clutch, perfect going order; £48; exchange good lightweight, Douglas preferred.—12, Timperley St., Widnes. [6269

EXCHANGE 5-6h.p. 2-speed combination, complete, good condition, for light car or 3-wheeler, must be wheel steering.—Box 117, c/o *The Motor Cycle.* [X1681

EXCHANGE Velocette, 1921, all accessories, insured £80, for late Triumph or any good make, cash adjustment.—Lincoln Stores, Lincoln Rd., Ponders End. [6458

1919 Special Indian, very low, T.T., 7-9h.p., Mag-dyno, new tyres, do 75, beautiful machine, absolutely perfect, for late American X.—89, East Hill, Wandsworth. [6615

16h.p. Darracq Touring Car, detachable wheels, dynamo lighting, one-man hood, low semi-sporting 4-seater body, in fine condition, for 2-seater, cash adjustment either way.—Foster, 170, Cardigan Rd., Leeds. [6209

EXCHANGE.

B.S.A. Combination, 4h.p., 3-speed, chain, lamps, etc., or Abingdon King Dick 6-7h.p. twin combination, for 2-seater or Ford.—Box 7,173, c/o *The Motor Cycle.* [6852

EXCHANGE 1919 Powerplus Combination, tip-top condition, for small car, lightweight motor cycle, cash either way.—A.E., Silverdale, Goodwin's Rd., King's Lynn [6690

INDIAN Scout, 1920, and Swan sporting sidecar, small mileage, for late Triumph combination or similar, or solo machine and cash.—Cheetham, Draper, Water Lane, Preston. [6365

EXCHANGE 10h.p. Enfield Alldays, 1918, 2-seater with dickey, for combination and cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6658

CALTHORPE 2-seater and dickey, 1916, repainted and overhauled, electric lights: exchange for new combination and cash, or sell £195; tax paid.—Fox, St. Helens, I.O.W. [6310

WANTED, Lea-Francis, Sunbeam, or cycle car; exchange 1920 Rudge Multi, I.O.M., fully equipped, equal new, cash adjustment.—Batchelor, 15, Princes Av., Finchley, N.3. [6272

EXCHANGE Indian 7-9h.p. Combination, mileage 2,000, dickey seat, Tau-Sad, Easting, everything as new, for lightweight and cash.—Collard, 12, Station Parade, Muswell Hill. [6338

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [6767

1918 Harley-Davidson combination, like new, electric light, speedometer, etc.; exchange lower power solo or combination, cash either way.—Evers, Newton Rd., Burton-on-Trent. [6543

HALIFAX.—New Airedale, Calthorpe, Lagonda, Coventry Premier, and Standard light cars, Norton, B.S.A., Sunbeam, and Douglas motor cycles; quick deliveries; liberal exchanges.—Halifax Motor Exchange, Horton St., Halifax. [X1658

EXCHANGE 1921 A.V. 2-seater, hood, screen, dynamo lighting, clock, speedometer, with good motor cycle combination, cash adjustment.—W., 20, Waldemar Avenue Mansions, Fulham. [6306

1921 (Aug.) 3½h.p. T.T. Rudge Multi, licensed, spares, accessories, guaranteed perfect, mileage under 500; exchange Scott, not earlier than 1919, or sell £75.—Box 7,156, c/o *The Motor Cycle.* [6397

EXCHANGE Brand New Rover 8h.p., latest model, for combination and cash; sell at new price, £220 plus carriage.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6657

1920½ Francis-Barnett, 2¾h.p. J.A.P., 2-speed S.A., kick, hand and foot clutch, speedometer, lamps, accessories, fast, and cash for 1920 3½h.p. twin.—Write Challis, 11, Allarthing Lane, Wandsworth. [6622

EXCHANGE 1919 11h.p. Lagonda Coupe, dynamo lighting, spare wheel, etc., for combination or Morgan and cash.—Newnham Motor Co., 223 Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6659

8h.p. Williamson Combination, water-cooled, excellent condition, will deliver by road within 50 miles of Manchester; exchange for 8-9h.p. car, age immaterial if in good order; will sell £95.—64, Moorland Rd., Stockport. [X1669

1921 8h.p. Enfield Combination, Vickers engine, hood, screen, side curtains, Tau-Sad, F.R.S. lamps, horn, mirror, in first-class condition, any trial, for Ford tonner or car; sell £130.—188, High St., Winsford, Cheshire. [X1624

EXCHANGE Bedford-Buick, 12-14h.p., 2-seater and dickey, 3-speed reverse, gate, Zenith, detachable rims, hood, screen, £60 worth repairs just complete, for recent 6-8h.p. combination; appointment.—27, Cathles Rd., Balham. [6321

EXCELLENT 3in. Screw-cutting Back Geared Bench Lathe (new), cost £20, gap, Cushman chuck, etc., and good half-plate stand D.E. camera, for 2-stroke that needs overhauling.—J. Chambers, 1, Sussex St., Regent Rd., Salford. [X1409

EXCHANGES a Speciality.—Motor cycles taken in part exchange for small and large 2 and 4-seaters; bargain prices. — Seabridge, Hansler Rd., East Dulwich. Hours 10-5.30, or appointment (not Sundays). Sydenham 2452. [4804

EXCHANGE handcart (new) £20 (suit joiner, builder, or other), portable forge (as new) £6, joiner's bench with vice 25/-, for motor cycle or W.D. dismantled Douglas or similar; forge for gear box.—Box 7,162, c/o *The Motor Cycle.* [6404

EXCHANGE 1914 Austin 2-3-seater with dickey, dynamo lighting, detachable wheels, speedometer, very nice condition, for combination or Morgan and cash; would accept late model light car, cash either way.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [6656

SPORTING Combination, 7-9h.p. Premier, just completely overhauled, replated, enamelled, 3-speed, clutch, wind screen, speedometer, lamps, luxurious C.B. sidecar, disc wheel, spares galore, fast, powerful and reliable; sell, or exchange Sunbeam or Blackburne or similar solo or combination.—Timber Hill Cottage, Caterham Valley. 'Phone: 188. [6276

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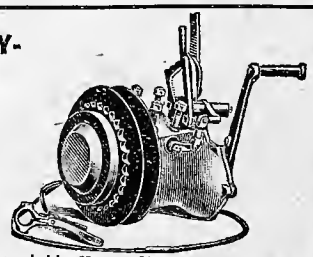

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HOTCHKISS Brougham, 16-20h.p., mechanically sound, is ready for the road; would make good taxi; may be seen and tried any time; £120, or would exchange for combination or motor cycle or Morgan.—Irwin Hanson, Lower Hall, Liversidge, Yorks. [6509

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STURMEY-ARCHER Countershaft Gears Overhauled, 10/-; parts at makers' prices.—Tavistock (below).

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	Clincher de Luxe Heavy	25/-
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26 × 2½ to fit 26 × 2¼	Clincher de Luxe Heavy	31/-
	Goodrich Safety Tread Ex. Heavy	36/-
	Hutchinson Tourist Trophy	31/-
26 × 2½	Michelin Fine Ribbed	18/-
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	Goodrich Safety Tread Ex. Heavy	35/-
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28 × 3 to fit 28 × 2½	Best British Make (Extra Heavy)	45/-
28 × 3	Best British Make (Extra Heavy)	45/-
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	Wood-Milne Extra Heavy	29/-
26 × 3 to fit 650 × 65	Goodrich Safety Tread (Ex. Heavy	48/-
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26 × 2½ × 2¾ Goodrich	"	7/6
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28 × 3 Goodrich	"	7/6
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HARLEY-DAVIDSON 7-9 h.p. Electric Model, late 1920, only done 1,400 miles, fitted with large bulbous back Sidecar, beautifully upholstered, fully equipped with horn, speedometer, lamps, screen, Tan-Sad, etc., and licence paid; absolute bargain **£140**

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Grade Multi Pulleys, with kick-starter, less control handle, and bracket and clip, **£4.**
Set of 4 Wheels, 26 × 2¼, with front and back axle, for cycle car, backs fitted with belt rim. Per set, **£5.**
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Bowden Magneto Control, each **11/-.**
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Lodge and K.L.G. Plugs (re-conditioned), **1/-** each.

Hours of Business, 9 till 6. Saturdays, 9 till 1

228, Pentonville Road, King's Cross, London, N.1.
Telephone—2481 North.
Telegrams—"Bastones, London."

REPAIRERS.

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depots, 57, Holborn Viaduct, London, E.C.1, and 157 and 158, Sloane St., London, S.W.1. Competent and satisfactory service assured. [5961

BEACH Engineering Co., 42, Earl St., Coventry.—Engines rebushed, cylinders reground, aluminium or O.I. pistons fitted from £2; connecting rods rebushed; valves 5/-, guides 3/6; pistons complete from 25/-, rings 2/-; valve caps 4/6; other repairs quoted for. [0593

ROC 2-speed Wheels, Humber, Rex, V.S., Matchless, and Campion-Jap, thoroughly overhauled; spares in stock; repairs recommended by manufacturers. When forwarding, leave outer cover—protects rim; Rex V pulleys.—Connolly, Carmellte Rd., Coventry. [X1716

N.S.U. Gears, N.S.U. Gears, N.S.U. Gears.—Butterworths' Garage can undertake the repair of these gears at short notice. Good stock of replacements always available. Send gear along to us.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [6839

CRITERION for Cylinder Grinding and New Pistons complete, every cylinder ground and perfect compression guaranteed; complete engine overhauls, practical efficiency guaranteed. — Criterion Motor Works, Criterion Mews, Fairbridge Rd., London, N.19. 'Phone: Hornsey 1147. [6244

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machinery of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Enfield Engineering Co., 31, Silver St., Enfield. [5150

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 14, Miller St., Camden Town, N.W. ('Phone Museum 2434), which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [0639

WHITE and Watson, Motor Cycle Repair Specialists. Douglas riders now is your opportunity. 2¾h.p. Douglas cylinders reground and fitted with two new pistons complete, and valves refaced, for £2 per pair. Other cylinders at the following rates: Up to 85 mm. 25/5, 70 mm. 29/-, 80 mm. 34/-, 85 mm. 37/-, and over 39/6; 2-strokes extra; aluminium pistons. Engine rebushed, rebalanced, and overhauled; gear boxes overhauled, and replacements machined.—White and Watson, 80, Belvedere Rd., S.E.1. [6437

WE Specialise in repairs to N.S.U. engines and N.S.U. engine-shaft gears; our enormous stock of N.S.U. spare parts (having acquired the company's entire stock-in-trade and patterns) enable us to supply to suit practically all N.S.U. models, including the earlier types, fitted with Eisemann L.T. mag., also for the 2h.p. N.S.U. engines fitted to 1913-14 O.K. machines. In ordering, it is important to submit old parts as pattern; trade enquiries invited.—Eagles and Co., Acton Hill Works, Spares Dept., 275, High St., Acton, London. [0355

FOR 13 Solid Years we have earned our daily bread by properly repairing motors. We are the oldest firm of motor repairers in the Midlands, and our experience is worth a lot to you. You run no experimental risks here. Specially selected men and specially selected machinery enable us to turn out work which is a pleasure to our clients and us. Cylinders rebored and ground to a glass finish. Pistons, rings, and bushes made that really fit. Engines overhauled; bodges rectified; satisfaction guaranteed. If we cannot please you, you are hopeless.—Tennant Engineering Co., 238, Bristol St., Birmingham, Official Repairers to the A.C.U. and R.A.C. [0047

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

LOOK Here!

AN Opportunity!

CLYNO 8h.p. Frame, complete, fitted with spring seat-pillar, Brampton biflex forks, tank complete with all fittings, including Best and Lloyd lubricator, 2 interchangeable wheels, back driving sprocket fitted with internal expanding brake complete, 3-speed gear box with hand control clutch, handle-bars, front and rear mudguards, front and rear stands; £30.

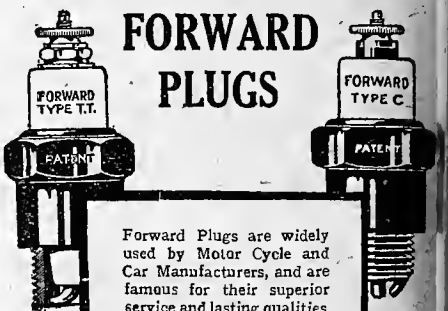
REMEMBER the above are all brand new and perfect parts; these would be ideal for the fitting of 8h.p. J.A.P. or similar engines; hundreds of other parts in stock.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [6833

INDIAN Front Forks, gear boxes, and engines, and all parts for same.—Below.

INDIAN Intake Domes, carburetters, magnetos clutches, kick starters.—Below.

INDIAN Carriers, chains, and guards, springs, sprockets; in fact, everything for 7-9h.p.; all parts absolutely new.—Dennis Accessories Stores, 89, Brixton Rd., London, Specialists in Indian Repairs. 'Phone: Brixton 3129. [1195

FORWARD PLUGS



Forward Plugs are widely used by Motor Cycle and Car Manufacturers, and are famous for their superior service and lasting qualities. They deliver full power to the engine, and stand up to years of hard service. Every insulator is tested for dielectric strength with a voltage from two or three times as high as the severest demands of actual use.

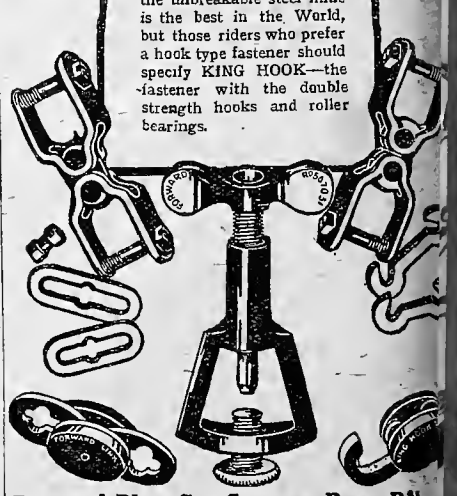
There is a special type of plug for every type of Motor — porcelain or mica insulators.

Send for list.

FORWARD STAND No. 242

OLYMPIA, Nov. 28th to Dec. 3rd.

The Forward Fastener with the unbreakable steel links is the best in the World, but those riders who prefer a hook type fastener should specify KING HOOK—the fastener with the double strength hooks and roller bearings.



Forward Plug Co., Summer Row, B'ham

Punkh

Read this Extract from E.M. BOXMORE:

"I have taken out several thorns without the tyres being deflated."

makes punctu trouble impossib and it preserves rubi

Send for Pamphlet and Pr

PRICES:
No. 1 size, **4/-**; post free,
No. 2 size, **7/-**; post free,

HARMEN'S (Motor Agen LTD.,
10, New Cavendish St.,

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
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Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings Navigation Street, Birmingham.
Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.; Canada, 23s. 10d.; other countries abroad, 28s. 2d. per annum.

Motor Cycle Number Plates.

IT is an open secret that the authorities are urging an amendment of the present regulations affecting the size of motor cycle number plates. It is unlikely, however, that the motor bicycle number plates will be altered, but in the case of heavy sidecar outfits and three-wheelers coming under the motor cycle definition, some alteration will, in all probability, be made. The matter is one the necessity of which is being impressed upon the Ministry. It appears that several provincial chief constables have complained to the Ministry of Transport that, after dark especially, the identification number of a fast heavyweight sidecar outfit or three-wheeler is practically illegible.

As our readers are aware, under the existing regulations any vehicle which weighs less than 3 cwt. may carry motor cycle number plates. By the old Act of 1903, vehicles which weigh more than 3 cwt. must use full-size number plates. Fortunately, this regulation has not been strictly or generally enforced up to the present, but proceedings have been taken against owners of heavyweight three-wheelers, and many of those have been compelled to use the larger size identification marks.

The present position is a little indefinite, but, owing to the pressure brought to bear by the police in various parts of the country, the Ministry of Transport is determined to do something to render the identification marks on the particular types of vehicles referred to more legible. Exactly what form these alterations will take has not yet been decided, but motor cyclists must be prepared for the introduction of a new form of legislation which will certainly entail the carrying of larger numbers, and may also probably entail the necessity for these to be illuminated at night.

As the law stands at present, vehicles registered as motor cycles may either have their front or back numbers illuminated, but it is considered by those in authority that the front number illumination is, generally speaking, ineffective, and we should not be at all surprised to find that all mechanically-driven vehicles, of whatever size or power, will have to have the tail light so arranged that the rear number plate is adequately illuminated.

While not wishing to appear hypercritical, we cannot help thinking that this particular phase of activity is one of those needlessly surviving pin-pricks from the days of the "red flag."

Quarterly Licences.

WE made reference, in the last issue of *The Motor Cycle*, to the fact that in the near future motor cycle licences may be taken out quarterly. As we then forecasted, these short-period licences will not be issued for less than three months, and at the rate of about one-third more than an exact quarter of the amount at present payable; for example, a motor cyclist taking out a licence for a machine on which the annual tax is £4 will have to pay £1 5s. for a quarterly licence, and a motor cyclist whose machine bears an annual tax of £2 10s. will pay 15s. This privilege has been enjoyed by car owners, of course, since the introduction of the new motor taxation regulations in 1921, and it has been very satisfactory to all affected by its provisions—new cars being ordered and delivered fairly evenly throughout the year, as prospective owners were not deterred by having to disburse an amount of tax disproportionate to the period covered by the payment.

There is no doubt that these short-period licences will be heartily appreciated by private owners, and that they will be a great boon to the motor cycle industry, as they would encourage the purchase of machines towards the end of the year, whereas at present the obligation to pay half the licence duty on a machine purchased at the Show must tend to influence would-be purchasers to wait until the New Year.

An Index to the advertisements in this issue will be found on the page facing the back cover.

Depreciation.

IN motoring papers and in trade circles it is rather assumed that universal poverty and heavy taxation are the chief obstacles to the revival of lively sales in the motor industry. I may be wrong, but the testimony of my acquaintances, coupled with my own experience, rather suggests that quite unparalleled depreciation is the worst evil of all. Taxes are certainly large, but they bear a very small proportion to the expenditure involved in commencing a motoring career, or in a change of motor. We may be poor, but quite a lot of us can still find the money for a car or a sidecar or a bicycle. What is holding up thousands of sales is the knowledge that, when a man puts down his money for a new motor, an enormous slab of it is instantly gone beyond recall. Should one wish to resell next mornnig, the loss on a new car may run into hundreds, and even on a modest bicycle it may tot up to £50 in extreme cases. Such depreciations are inevitable just now. Prices have been tumbling, and have accustomed buyers to ridiculous prices. Over-production has been rife. New models are being introduced, and rendering current patterns obsolete in a sentimental sense, if not from a practical standpoint.

And the Remedy.

A PERMANENT remedy can only come when prices are recognised to be stable, when design becomes less fluid, when supply and demand balance more evenly. At the moment, in view of the vast amount of unemployment, it is the obvious duty of any Britisher who needs a commodity, and can afford to buy it, to place his order instanter. That is his duty to the nation; and if everybody who is contemplating the purchase of some valuable commodity ultimately, did it at once, trade would revive very appreciably, and unemployment would shrivel quite a lot. His duty to himself is to buy very carefully. For example, my 1922 bicycle is being ordered this week. I shall carefully avoid all firms which are likely to make profound changes of design, firms which are likely to go out of business and those which do not enjoy the soundest technical reputation. I should regard myself as almost a criminal if I did not buy at once. I should regard myself as a fool if I bought rashly. I may sacrifice a pound or two by not making shift with my old 'bus for another year; but I can just afford a new one, and it will be my small contribution to improving the lot of many who are far worse off than myself. I appeal to all patriotic motor cyclists who have a cash balance to go to the Show *determined to buy*. When several million people are beset by a keen anxiety about their bread and butter, it is a crime for the wealthier classes to sit tight in the hope of saving a pound or two later on.

The Challenger Self-sealing Tube.

I DO not handle gadgets in these pages unless they are of special interest; and anything which tackles the universal puncture nuisance comes in that category. Therefore, a few weeks ago, I wrote in a vein of moderate encouragement about the Challenger self-sealing tube. A correspondent complained that his tubes of that make merely postponed the hour of repair, as the sealing was never absolute; and I gave his criticism equal prominence. Since then I took the tube out of my wheel, blew it up to a measured pressure, kept it in my den, and stabbed it daily with many sharp instruments, ranging from nails to the fat marlinspike on a Scout knife, which is a good ¼in. in diameter. At each stab the layer of mastic inside the double tread spat out a tiny dab of itself, and sealed the hole within three seconds and completely. Subject to the obvious drawbacks of its construction, I think there is no doubt that this tube is effective. It seals all medium-sized holes thoroughly, and it can be patched when a huge gash is sustained. On the other hand, there is a slight loss of resiliency, and a substantial increase in cost. Expenses would mount high in the case of a rider who is in the habit of destroying tubes at frequent intervals by riding covers to destruction, but few of us are such idiots as to do that; and, given reasonable attention to covers and fitting, the life of an inner tube resembles that of Methuselah.

Non-startitis.

THE other night I found myself in an impromptu rural garage where a small crowd had garaged their motors whilst they watched Charlie Chaplin in "A Dog's Life." A trio of the company spent about a quarter of an hour getting away. Jones had a single-geared belt-driver, which couldn't take the slope up to the road from cold. Smith had a chain-and-sprocket starter on his cycle car, and, despite wild leaps into the air, he couldn't get enough leverage to rouse a frozen engine swamped in gluey oil. Brown had an air-cooled car, the handle of which revolved

Occasional Comments.—

backwards at speed for umpteen revs. whenever anybody could pluck up the courage to tweak it. Not first-class propaganda for the year 1921, was it? A crowd of loungers was most unpleasantly impressed. In each case the root trouble was that the carburetters were too simple. One and the same setting was supposed to serve for (1) tickover, (2) starting from cold in summer, (3) starting from cold in winter, and (4) starting when warm in any weather. There is a marked tendency both in car and cycle carburetters to add extra controls for emergency use, such as mixture regulators, air stranglers, and the like. This is all to the good. In their absence a slight retuning of the carburetter should be performed when the cold months approach.

How not to do it.

BENZOLE Villa (my private address) is situate far from the madding crowd, partly because rents are low, partly to prevent the Editor from nabbing me for unwelcome stunts out of office hours. Not since I signed the lease has any motor cycle trial penetrated my rural fastness until the other week, when one of our premier clubs unearthed two or three of my pet pimples, and consequently defiled our secluded roads with yellow ochre, burnt oil, and horrid noises. Hodge, Mrs. Hodge, and perhaps even more particularly Miss Hodge and Master Hodge, were naturally excited. A day or two before, several bright knuts tacked cardboard arrows to some of our pet fruit trees, besides sampling the local malt and cider in the intervals of their exertions. Several of our bourgeois and knutty residents, who had thought tepidly of buying motor cycles, opined it wouldn't be half bad fun to watch "the motorists" clambering up the gamekeepers' paths and dried up rivulets which these lunatic invaders had mistaken for roads. Timid enquiries made by daring *habitués* of our several taps had elicited the haughty information that Saturday was the great day. Saturday dawned. The village took a holiday, and assembled themselves at various grandstands about 8 a.m. The first man arrived about 2.45 p.m., by which time the sightseers had grown weary, and had mostly tramped off to the pictures at Slushington, or were trying for the *n*th time whether a Government reject pick would make any impression on their calloused allotments.

When a club runs a trial in unfrequented areas, why does not its secretary at least placard the local pub, somewhat as follows:

200 MILE MOTOR CYCLE TRIAL FOR THE STIGGINS GOLD CUP.

THE RIDERS WILL CLIMB (?) SO-AND-SO HILL.

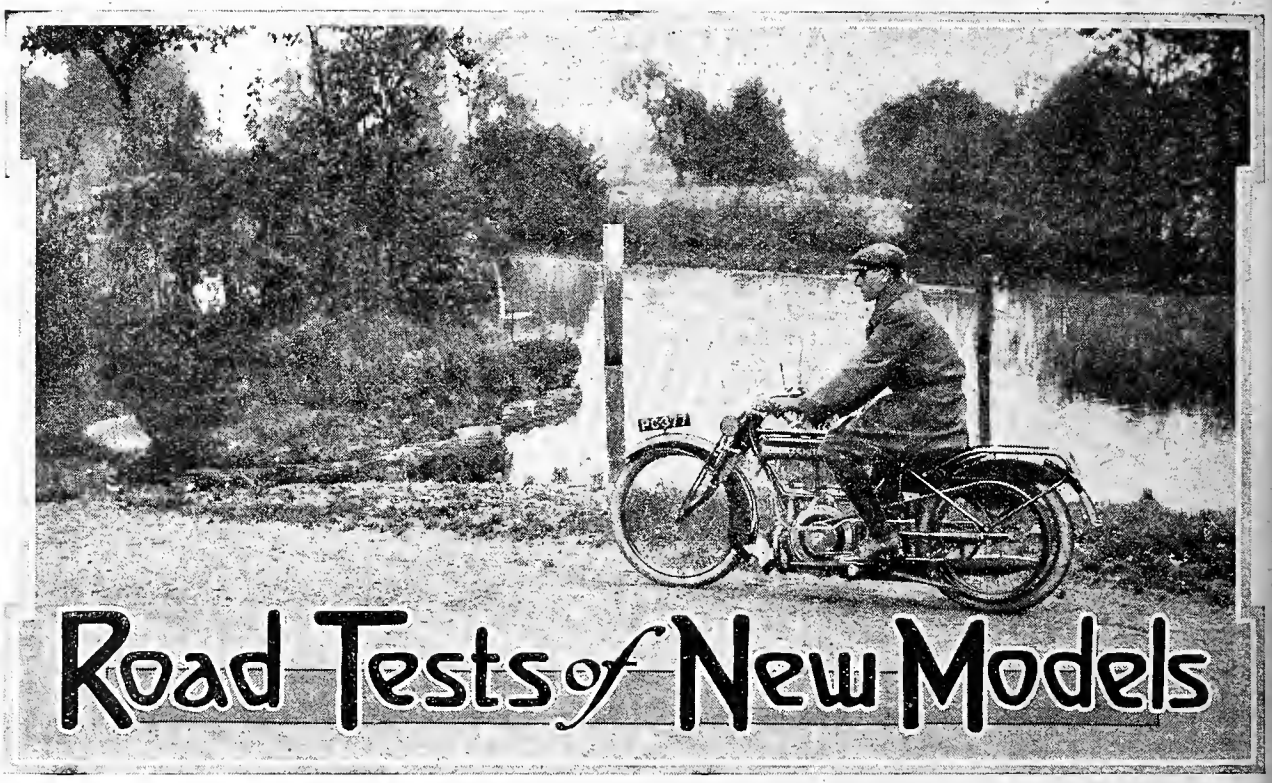
(Drown in this splash, slither down that precipice, etc., etc., at —— p.m.)

THE FOLLOWING ARE COMPETING, AMONGST OTHERS:

(Here mention any record-holders, race winners, etc., giving their numbers.)

HILL-CLIMBING IN CUMBERLAND.

A fine view from old Garth Hill, showing the snow-capped Skiddaw. The little 2¼ h.p. Velocette, with sidecar, made the star ascent at the Cumberland M.C.C. sporting half-day meeting described last week; it is seen just after passing the lower hairpin.



THE 500 c.c ZENITH-BRADSHAW.

THE Bradshaw-engined model of the famous Zenith was obviously staged in a somewhat unripe condition at the 1920 Olympia, and it has only lately reached its full bloom. But a week's trial of a brand new production model shows that a notable addition has been made to the list of first-class sporting mounts. We use the word "sporting" advisedly, because no good motor cyclist is likely to affix a sidecar or even to attempt unrestricted touring with a specification which employs belt drive and is limited to a bottom gear of about 6½ to 1. Taking these limitations for granted, it would be difficult to name a more delightful machine. Two remarkably distinctive features clamour for admiration before points common to more conventional designs are discussed. The first is the quite unusual mechanical silence. A variable pulley gear is, of course, as nearly silent as a transmission can be; in this case the silent drive is flanked by a notably quiet engine.

SPECIFICATION.

ENGINE: Bradshaw, o.h.v. flat twin, 68 × 68 mm. (494 c.c.)
LUBRICATION: Gear pump.
GEAR: Zenith-Gradua variable pulley.
TRANSMISSION: Belt. *FORKS: Druid.*
FRAME: Rigid. *TYRES: 26 × 2⅜ in.*

The Oil-cooling System.

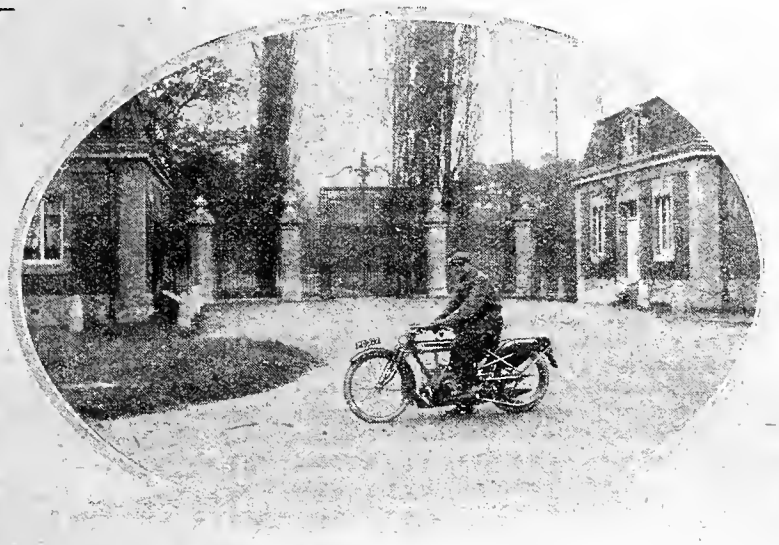
It would seem that oil-cooling may remove a reproach hitherto regarded as inalienable from air-cooled engines. No matter how carefully such engines have been designed and built, they have always emitted a tinny rattle, due to the resonance of a naked cylinder barrel. On water-cooled engines this resonance is dulled by the jacket. On oil-cooled engines it is damped almost out of existence by the triple barrier of the oil-mist, the air space, and the crank case wall. A similar silence is observable with the oil-cooled engine designed by Mr. Bradshaw for the new Belsize car. In the second place, the removal of all anxiety about lubrication is a great boon. The tank top carries no excrescences except the petrol filler cap; there is no hand pump, no sight feed, no visible oil pipe, and, consequently, no green stains. The only telltale consists of a rise-and-fall bobbin on the crank case; this betokens the action of a simple gear pump, with which no trouble need be apprehended. Provided the rider has verified the presence of sufficient oil in the crank case before leaving home, he can ride all day without any lubricating anxieties, and that is without a doubt a big consideration.

A Cool Running Engine.

In practice there do not appear to be any drawbacks to the new method of cooling an engine, by submerging its cylinder barrels in the crank case. Our test engine was brand new, and it kept cool enough to meet every test we could invent to torture it, including five miles of full throttle on bottom gear

Road Tests of New Models—

ahead of a following wind. We have known a few new engines which kept cooler, but it was impossible to make it pink or pre-ignite under the most brutal treatment. Neither could a plug be induced to soot up by wild scraps up steep hills, followed by cautious descents of the reverse incline with the throttle shut. This latter test was confirmed by the fact that the oil consumption was too trivial to admit of measurement in a week, signifying that very little oil enters the combustion chambers. The only criticisms which can be passed are that the outside of the crank case does not keep spotlessly clean, though the leakages are slow and small; and that the insides of the pistons are not easily reached for decarbonisation purposes. A much longer test would be required to verify the amount of oil which becomes charred on the interior of the pistons in prolonged running; the Zenith works' experience suggests that the engine will easily run for a season before the insides of the pistons need be exposed—the engine must be taken to pieces for this to be done, though the detachable heads permit the combustion chambers to be cleansed very rapidly and easily.



The belt transmission and the silent and smooth running engine make the flat twin Zenith-Bradshaw an ideal solo mount.

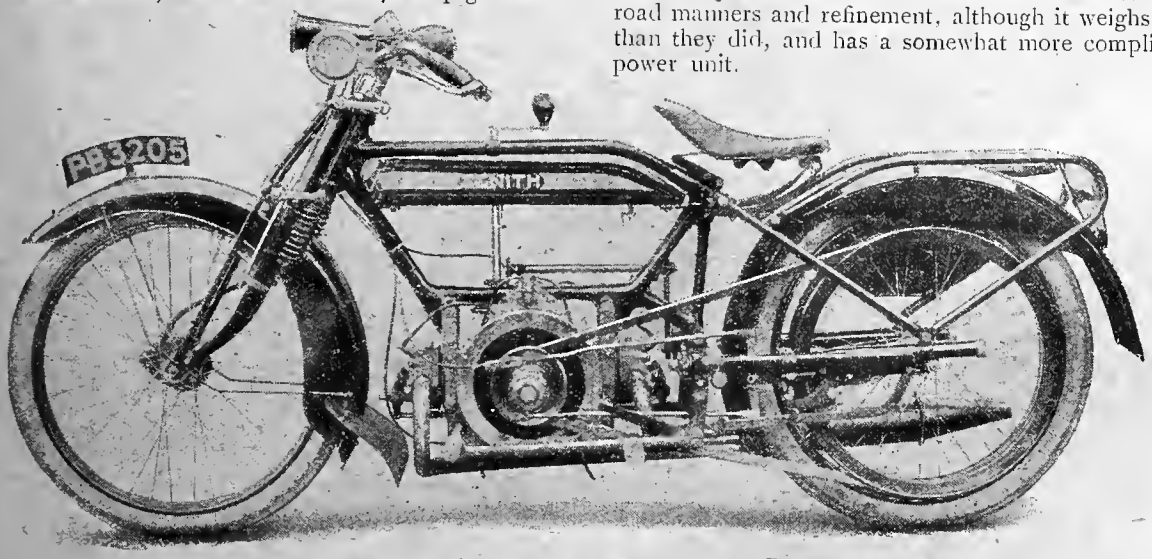
5 to 65 m.p.h. on "Top."

On the road the machine is simply charming. It starts up instantaneously, is capable of from 5 to 65 m.p.h. on top gear, evinces splendid acceleration on the lower ratios, and runs at about 72 m.p.g. when ruthlessly "hogged," greater economy being possible at a slower speed. With a 500 c.c. engine and a top gear of 3½ to 1, speed can be obtained without resorting to high revs., and a smoother running "hogbus" would be difficult to find. If revs. are utilised, as they must be up very steep hills when the bottom gear is higher than a conventional middle, no vibration arises, for the engine is well balanced. Many air-cooled engines emit a distressing mechanical scream when they are freely revved, but the crescendo of the exhaust remains the chief—indeed, almost the only—noise of the Zenith-Bradshaw, when it is being pushed.

With a 500 c.c. engine and a top gear of 3½ to 1, speed can be obtained without resorting to high revs., and a smoother running "hogbus" would be difficult to find.

A fast machine requires good steering, good springing, and good brakes. The new Zenith frame is excellently balanced, and we could not wring the least symptom of a wobble out of it at a speed estimated at 65 m.p.h. in the absence of a positive meter. The saddle is so well insulated by the makers' special spring mounting that jars from the rear wheel are only felt on really atrocious going.

Readers who lament the decease of the old-fashioned belt-driven sports mount should not fail to examine the Zenith-Bradshaw. It offers a better performance than its predecessors with a tremendous advance in road manners and refinement, although it weighs more than they did, and has a somewhat more complicated power unit.



The 3½ h.p. flat twin Zenith, fitted with the Bradshaw 500 c.c. oil-cooled engine.

100 MILES ROAD RACE IN SOUTH AFRICA.

Eastern Province M.C. Club's First Big Event under T.T. Conditions a Signal Success. Winner Averaged over 60 m.p.h.

THREE hours of thrills was the reward of the 10,000 spectators who distributed themselves all round the twenty-mile Kragga Kama circuit, near Port Elizabeth, to witness the Eastern Province M.C.C. 100 mile road race on October 3rd.

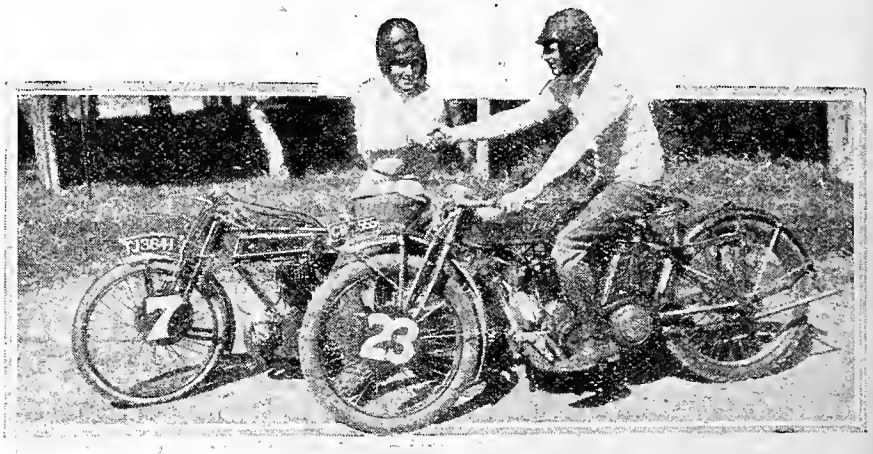
It was a handicap race, the limit man being Germon on a 211 c.c. Cedos, and the scratch L. Walsh on a 1,189 c.c. Indian, who retired with tyre troubles. The winner proved to be W. Wilson (7-9 Indian), who covered the course in 1h. 39m. 10s. = 60.5 m.p.h., with D. Brink (2¾ A.J.S.) second, 1h. 59m. 59s. = 50 m.p.h.

Five Twenty-mile Laps.

The race attracted entries from various centres of the Union, and was decided over a circular course of twenty miles, which the competitors had to traverse five times. The surface of the road, but for about a furlong of veldt, was perfect, but on some of the bends it was necessary to exercise the utmost skill in riding and controlling the machines to negotiate the course at speed. There were a few spills—fortunately, none of them serious—and the race was run off without a hitch.

There were twenty-two starters, as follows:

Rider and Machine.	C.C.	Handicap.
Germon (Cedos)	211	38 min.
Mayhew (A.B.C.)	400	15 "
V. D. Schyff (A.B.C.)	400	15 "
Pyott (A.B.C.)	400	15 "
Brink (A.J.S.)	348	17 "
Kruger (Triumph)	499	11 "
Seale (Triumph)	499	11 "
Bell (Scott)	528	9 "
Pashley (Scott)	532	9 "
Ball (Triumph)	550	9 "
Collett (B.S.A.)	557	9 "
Landry (Triumph)	499	11 "
Steers (Indian)	596	7 "
Paton (Indian)	596	7 "
Braybrooke (Norton)	499	11 "
Wild (Harley-D.)	989	2 "
Stroebel (Indian)	997	2 "
Brittan (Indian)	997	2 "
Peterson (Harley-D.)	989	2 "
Lilienfeld (Harley-D.)	989	2 "
Wilson (Indian)	997	2 "
Walsh (Indian Police)	1189	Scratch



THE VICTOR AND THE RUNNER-UP.

W. Wilson, winner of the race on a 7-9 h.p. Indian, and D. Brink, 2¾ h.p. A.J.S., congratulating each other after the strenuous ride. Both performances were notable—the average speed of the winner being 60.5 m.p.h., and that of Brink 50 m.p.h. The latter rode a side-by-side valve model.

The handicaps were allotted on power of machines and the competitors' performances during the past twelve months.

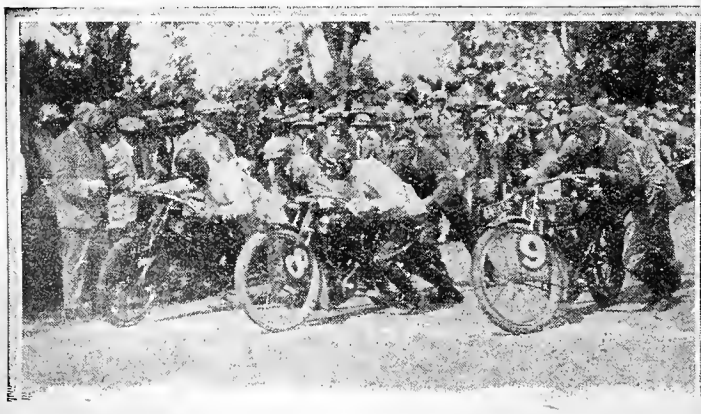
Germon on his 2¼ h.p. Cedos was the first man to get away, and was followed by the remaining competitors at intervals. The acceleration of the Scotts, A.B.C.'s, and A.J.S. was terrific, and pleased the crowd. Before the scratch man left, Germon had covered a lap, and arrived with his engine four-stroking very badly, and he abandoned the race. Walsh (8-10 Police Indian), the scratch man, was sent off, amidst cheers from the crowd, in pursuit of the field. Mayhew (A.B.C.) soon made his appearance, and had put up a very fast round. He was closely followed by Dr. Pyott (A.B.C.) and Brink (A.J.S.). The latter was going at a terrific speed, and was overhauling the earlier starters in fine style.

Wilson (7-9 Indian) had picked up several places, and roared past the depots at well over 70 m.p.h. Three men fell out during the first lap. Peterson (Harley) had a very narrow escape from being precipitated over the bridge at Frames Drift, and damaged his machine badly and was unable to continue. Brayebrooke (Norton) retired with a burst tank.

Good Racing.

By the end of the second lap the pace had begun to tell, and many of the machines were getting "tired." Mayhew (A.B.C.) was leading, while Brink (A.J.S.), Kruger (Triumph), Wilson (Indian), and Lilienfeld (Harley) were hot in pursuit. Walsh, the scratch man, after putting up a record lap, had the misfortune to have tyre trouble.

Mayhew put in at the depot after the third lap to replenish with petrol and kept his engine running. Some petrol was spilled on the machine and immedi



From left to right: D. Brink (2¾ A.J.S.), who came in second, J. L. Kruger (3½ Triumph), and L. T. Scale (3½ Triumph).

Two A.B.C. riders, L. E. Mayhew and I. H. van der Schyff. The former machine unfortunately caught fire on the third lap.

100 Mile Race in South Africa.—ately the whole outfit was enveloped in flames, which were fortunately extinguished after a short while with sand before much damage was done. Through this misfortune Mayhew was compelled to abandon the race.

Excitement grew tense when Brink (A.J.S.) started on the last lap with about a minute in hand from Wilson (Indian), while Lilienfeld was three minutes later, Ball and Kruger being close in attendance.

Ere long white flags waved frantically, the officials and police striving hard to keep back the dense crowds at the winning post. A speck hove into sight on the horizon, and the roar of Wilson's Indian became more and more loud, and in an instant he flashed over the winning line at well over 70 m.p.h. Brink (A.J.S.) had the misfortune to have a toss during the last lap, which impaired his chances of winning considerably. Much shaken, he pluckily remounted and continued the race, to finish second nearly four minutes after the winner. Lilienfeld followed three minutes later in third place.

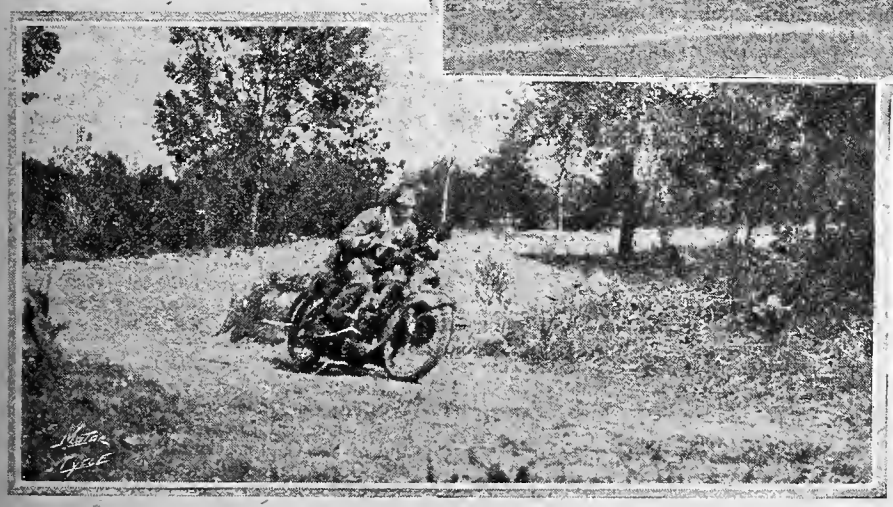
A Pre-war Machine.

One of the surprises of the race was the performance put up by Kruger, of Bloemfontein, on a seven-year-old Triumph, albeit of the racing breed. When he started away on his highly-geared single-speed mount it seemed as though the tortuous and hilly nature of one or two portions of the course would make his lack of a lower ratio fatal to any chance of success. Despite this disability, however, he rode a most creditable race, and actually was the fourth man to finish, although he had to be disqualified on account of taking in petrol otherwise than at his depot when he ran short. He had suffered a damaged hand in practising the previous day, and rode with it well swathed in bandages.

The following nine finished :

	Rider and Machine.	Start. min.	Time. h.	m.	s.
1.	W. Wilson (7-9 Indian)	2 ..	1	39	10
2.	D. Brink (2¾ A.J.S.)	17 ..	1	59	59
3.	E. Lilienfeld (7-9 Harley-D.)	2 ..	1	48	6
4.	A. C. Ball (3½ Triumph)	15 ..	2	25	35
5.	L. T. Seale (3½ Triumph) ...	15 ..	2	28	10
6.	F. Pashley (3¾ Scott)	15 ..	2	27	0
7.	N. Collett (4¼ B.S.A.)	15 ..	2	27	3
8.	E. W. Steers (5 Indian)	13 ..	2	44	5
9.	E. Landry (3½ Triumph) ...	14 ..	3	0	0

The fastest lap was made by the winner, who covered the course on his last circuit in 18m. 49s. = 63.8 m.p.h. Brink's (A.J.S.) fastest lap was his first, 22m. 55s. = 52.3 m.p.h.



IN THE 100 MILE HANDICAP RACE IN SOUTH AFRICA.

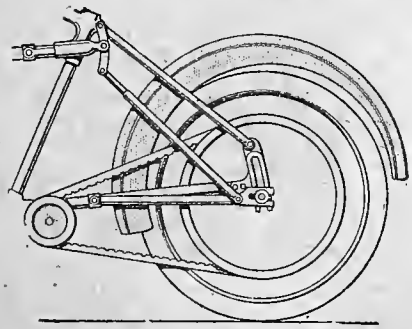
Except for a short distance the surface of the road was good, the worst portions being at certain corners. The illustration on the left depicts A. Pashley (Scott)—whose cornering incidentally was a feature of the race—on a bad stretch. A. Steers (4 Indian) is shown on the right also negotiating rough going at a bad corner.

SPRINGING WITH CONSTANT TRANSMISSION TENSION.

To maintain approximately constant transmission centres has satisfied most designers of motor cycle rear springing systems, but Whitelock's frame, which we illustrate, gives no variation whatsoever in belt or chain tension. This is attained by mounting the rear wheel axle in guides (of course, with suitable bearings), which are struck at a radius to the countershaft centre. Auxiliary rear stays pivoted at the rear of the gear box actually support the wheel, and, being horizontally slotted, allow it to follow the radius guides. These stays are in turn linked to another pair of auxiliary stays, which are controlled by enclosed spiral springs (or, alternatively, laminated springs).

The principle is certainly ingenious, and, if carefully carried out, particularly at the bearings for the axle, the design should certainly be worth trial.

Mr. A. Whitelock, 2, Carlton Terrace, Thirsk, Yorkshire, is the inventor.



Constant transmission tension is attained in this spring frame by carrying the wheel in a slotted guide, struck at a radius to the countershaft.

FACILITIES FOR A.C.U. MEMBERS AT OLYMPIA,

The Auto Cycle Union has made arrangements for the convenience of its members attending the Motor Cycle Exhibition at Olympia. The Princes Rooms will again be reserved for the exclusive use of A.C.U. members throughout the week, and will doubtless provide the much-appreciated facilities enjoyed by members of the Union in former years—the lounge, writing room, and cloakroom accommodation contained in them being much valued.

Ilkley M.C. and L.C.C. (Bingley Section).

There were 137 entries, including several well-known riders, for the thirty-four events in the gymkhana held on the 29th ult. Local charities benefited to the extent of over £5.

Uxbridge and District L.C. and M.C.C.

Something of a novelty in the form of a "village-finding competition" was held on October 30th. Results: 1, R. Strainge (2¾ Douglas); 2, R. Donaldson (3½ Norton).

Stourbridge and District M.C.C.

Taking the form of a paperchase, the last outdoor event of the year was held on Saturday, October 29th. The awards were given as follows: Gold medal, J. Bowyer (5-6 Rover sc.), 3m. error; silver medal, Miss Blackford (4 Norton sc), 5m. error.

The annual dinner will be held at headquarters on Saturday, November 19th, at 7.30 p.m. Prize distribution 9 p.m. Tickets are now available from the secretary, and it is hoped that all members will attend.

Hinckley and District M.C.C.

A very successful smoking concert in connection with the above club took place on Monday evening of last week in the Masonic Hall, Union Hotel, Hinckley. The attendance was good, and the musical programme was very much appreciated. Mr. K. S. Topping, hon. sec. of the East Midland Centre A.C.U., kindly took the chair, assisted by the Rev. J. M. Philpott, local consul A.C.U., the former giving a broad outline of the advantages of affiliation under the Auto Cycle Union, and the latter giving the details of the various schemes. Ten new members were enrolled.

Stalybridge and District M.C.

Speed trials were held on the 30th ult. over a quarter of a mile distance on a private road; but, on account of the short flying start, no exceptionally fast times were recorded. Fastest time of the day was made by B. Watts on a 2¾ h.p. Dot-Jap. There were sixty competitors. Results:

350 c.c. SOLO.

Flying Start.—1, B. Watts (2¾ Dot-Jap), 17⅝s.; 2, G. Porter (2¾ Excelsior), 22⅛s.

Standing Start.—1, B. Watts (2¾ Dot-Jap), 24⅞s.; 2, G. Porter (2¾ Excelsior), 31⅜s.

550 c.c. SOLO.

Flying Start.—1, B. Watts (2¾ Dot-Jap), 15s.; 2, H. Fellows (4 Triumph), and A. Margrave (4 Triumph), tied, 16s.

Standing Start.—1, B. Watts (2¾ Dot-Jap), 20s.; 2, E. Barnes (4 Triumph), 22s.

UNLIMITED SOLO.

Flying Start.—1, E. Barnes (4 Triumph), 15⅜s.; 2, A. Margrave (4 Triumph), 16s.

Standing Start.—1, B. Watts (2¾ Dot-Jap), 20⅝s.; 2, E. Barnes (4 Triumph), 21⅜s.

PRE-WAR MACHINES.

Flying Start.—1, J. W. Hamer (3½ Rudge), 17s.; 2, W. Hoyle (3½ Triumph), 17⅜s.

SLOW RACE. KNOCKOUT COMPETITION.

1, F. Wagstaffe (4 Humber sc.); 2, G. Topp (3½ Bradbury sc.).

Surrey M.C.C.

Provisional results of the recent speed trials are as under. The course was just under half a mile, and about twenty yards was allowed for a flying start. Fastest time of the day worked out at 55 m.p.h., this honour being shared by L. J. Mitchell (8 Zenith) and W. P. Wiltshire (8 J.A.P.). Results:

350 c.c. SOLO (Formula).—1, R. P. Robinson (2½ Wolf), 38.7 m.p.h.; 2, C. J. Feeny (2¼ Triumph), 34.7 m.p.h.

350-600 c.c. SOLO (Formula).—1, G. W. Ralph (3 A.B.C.), 48.6 m.p.h.; 2, G. H. Williams (3½ Rover), 47 m.p.h.

OVER 600 c.c. SOLO (Formula).—1, R. Hopkins (6 Matchless), 52.2 m.p.h.; 2, W. P. Wiltshire (8 J.A.P.), 54.2 m.p.h.

ANY MACHINE.—Formula: 1, G. W. Ralph (3 A.B.C.), 44.6 m.p.h.; 2, R. P. Robinson (2½ Wolf), 39.1 m.p.h. Time: L. J. Mitchell (8 Zenith), 55 m.p.h., and W. P. Wiltshire (8 J.A.P.), 55 m.p.h., tied; 3, T. G. Meeten (7-9 Rudge), 54.6 m.p.h.

1,500 c.c. PASSENGER MACHINES (Formula).—1, F. N. Edney (7 Indian sc.), 47.6 m.p.h.; 2, L. G. Wilson (6 Bradbury sc.), 33.8 m.p.h.

Barrow and District M.C.

Fastest time of the day at the club's recent hill-climb was made by H. Jackson (3½ Sunbeam) after a tie with J. G. Bethwaite (3½ Norton). There were 100 entries and about 1,000 spectators. Results:

CLASS 6.—1, S. A. Marks (2¼ Diamond); 2, L. S. Parker (2¼ Velocette); 3, W. B. Dall (2¼ Omega).

CLASS 7.—1, S. A. Marks (2¼ Diamond); 2, B. Hill (2¼ Velocette); 3, W. B. Dall (2¼ Omega).

CLASS 8.—1, J. Whalley (2¾ Massey-Arran); 2, S. A. Marks (2¼ Diamond); 3, B. Parkinson (2¾ Douglas).

CLASS 9.—1, B. Parkinson (2¾ Douglas).

CLASS 10.—1, H. Jackson (3½ Sunbeam); 2, I. G. Bethwaite (3½ Norton); 3, H. Baxter (3½ Norton).

CLASS 11.—1, H. Baxter (3½ Norton); 2, H. Jackson (3½ Sunbeam); 3, I. G. Bethwaite (3½ Norton).

CLASS 12.—1, H. Baxter (3½ Norton); 2, H. Jackson (3½ Sunbeam); 3, J. Whalley (2¾ Massey-Arran).

CLASS 14.—1, H. Jackson (3½ Sunbeam); 2, H. Baxter (3½ Norton); 3, A. Hawkins (4 Triumph).

CLASS 16.—1, M. Parkinson (2¼ Diamond); 2, J. Atkinson (2¼ Velocette); 3, W. B. Dall (2¼ Omega).

CLASS 17.—1, G. Roberts (3½ Norton); 2, W. MacKenzie (3½ Rover); 3, D. Channing (3½ Sunbeam).

CLASS 18.—1, W. MacKenzie (3½ Rover); 2, J. Morrison (3½ P. and M.).

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates, preferably in January or after.

Lewes and District M.C.C.

The club concluded its summer programme on October 23rd in the form of a hill-climb near the Dyke, Saddlescombe. Rain marred the competition, but the events were well competed for. Results:

350 c.c. CLASS.—1, E. Jenner (2¾ Royal Ruby), 24s.; 2, L. P. Greenwood and G. E. Stacey (both 2¼ Verus), tied, 26s.

TWO-STROKE CLASS.—1, Miss N. Dunford (2¼ Sirrah), 30⅛s.; 2, W. J. Hylands (2¼ Verus), 41⅜s.; 3, D. Stacey (2½ Sirrah), 46s.

600 c.c. CLASS.—1, C. Volk (3½ Sunbeam), 18s.; 2, W. H. Sheraton (3½ Norton), 22⅛s.; 3, E. Jenner (2¾ Royal Ruby), 23s.

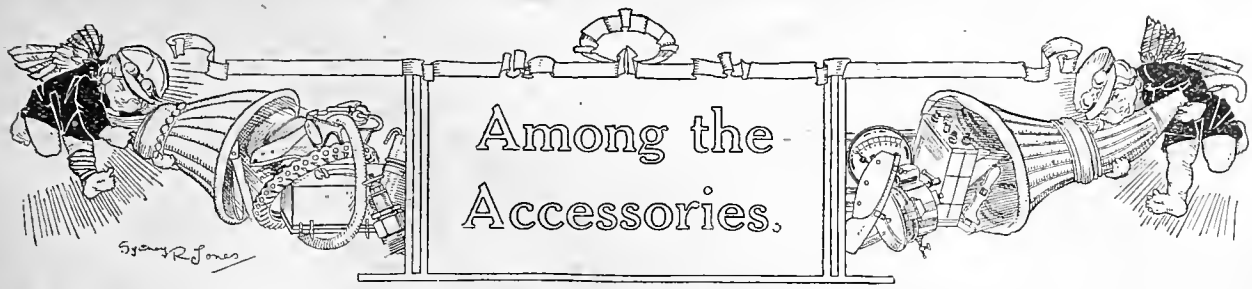
The special prize given by Messrs. J. B. Brooks and Co. for best supported class went to the winner of the 350 c.c. class.

Ilkley M.C. and L.C.C.

With four observed hills and two water-splashes over a sporting course in Wharfedale, Washburndale, and Nidderdale, the autumn reliability trial, held on October 23rd, produced some excellent riding. One of the observed hills was the famous (or infamous) Middle Tongue, in Nidderdale, which climbs from Bewerley to the top of Greenhow Hill, which probably has never before been included in any reliability trials for passenger machines. There was only one failure on this hill, and that with a solo machine. The water-splashes were made difficult on account of the heavy rains the previous day. Altogether, there were eleven checks, and so close was the competition that it was only by reference to the secret checks that the winner could be decided. The first place went to W. Moore (3¾ Scott), with an absolutely clean sheet. A. R. Naylor (3½ Sunbeam) was second (total error 45s.), and W. Bradley (7-9 Indian) was third, with a total error of 2m. 20s.

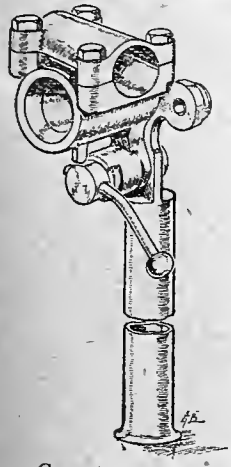
South-eastern Centre A.C.U.

Mr. E. Featherstone, treasurer of the Western Centre of the A.C.U., a member of the General Committee of the R.A.C., and of the Competitions Committee of the A.C.U., attended at Taunton on Saturday, October 22nd, to meet representatives of the local motor cycle clubs for the purpose of forming a South-western Centre of the A.C.U. Mr. C. C. Harvey, Exeter, presided, and representatives were present from five other clubs, whilst two other clubs sent proxies. Following an address by Mr. Featherstone, setting out the advantages of the A.C.U., and also that of a local centre, it was decided to form a South-western Centre, consisting of the following clubs: Bridgwater, Barnstaple, Exeter, Taunton, Tiverton, Yeovil, and Weston-super-Mare. The following officials were appointed for the local centre: Hon. secretary, Mr. Herbert T. Kite, Taunton; hon. treasurer, Mr. A. M. Knill, Exeter; chairman, Mr. W. E. Treloggen, Tiverton; and vice-chairman, Mr. A. J. Hill, Barnstaple. The delegate to the A.C.U. will be appointed at the first meeting of the Board of the Local Centre.



Quick Action Sidecar Stand.

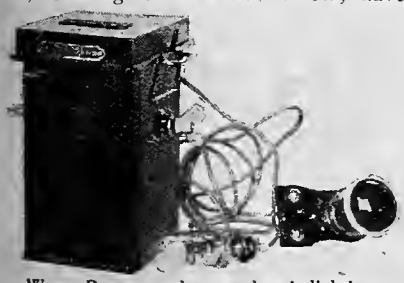
EVERY sidecar should possess a sidecar stand; but, unfortunately, there are many attachments at present on the market lacking this convenience. The Lyndon fitment is designed to fill this gap, and differs only from the conventional article in a very ingenious quick-action locking arrangement. When not in use, the prop is held firmly in the horizontal position, and a half-turn of the small tommy-bar allows it to drop into action as a stand, when it is again locked. Lyndon and Holt, 25, Windsor Street, Leamington, are the makers.



General arrangement of the bearing portion and locking device on the Lyndon sidecar stand.

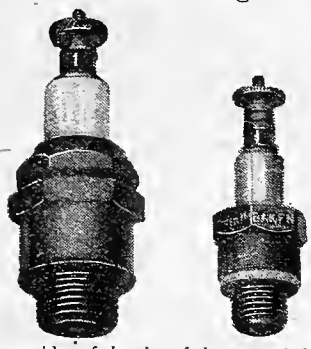
Acetylene to Electric Conversions.

THERE are a good many users of acetylene lamps who are not anxious to take the trouble of keeping these in order merely for the sake of a few short journeys in lighted streets; and for riders using their machines under such conditions, Messrs. Wates Bros., of 132, Charing Cross Road, W.C.2, have introduced a lighting set consisting of a bulb and holder suitable for inserting in place of the ordinary acetylene burner of the head lamp, a tail lamp, and an excellent battery in an acid-proof case intended to take the place of the acetylene generator. When much night riding is done, a spare accumulator is recommended.



Wates Bros. acetylene to electric lighting conversion set.

For Miniature Engines.

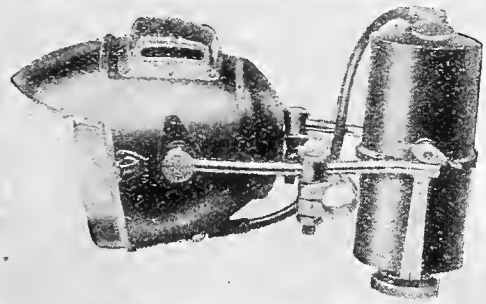


Some idea of the size of the new "baby" Runbaken plug for cycle attachment units may be gathered from the picture, which shows it alongside a standard plug. The price is 5s. 6d. (The Runbaken Magneto Co., Ltd., Cheetwood Lane, Manchester.)

Valve Grinding Made Easy.

Convenience of operation is the chief feature of the Jones valve grinding tool. The bevels are of gunmetal, and the spindle cast steel, hardened and tempered, and adjustable to different lengths. (A. J. W. Jones, 10, Springfield, Fentham Road, Erdington, Birmingham.)

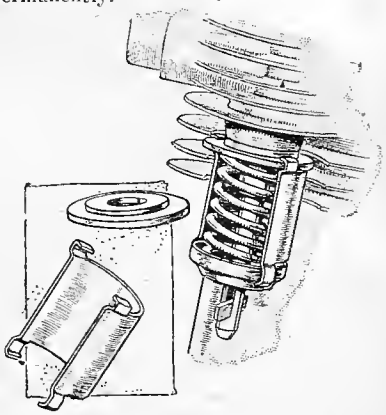
A Neat Acetylene Lighting Set.



Owing to its clean outline, the new F.R.S. "streamline" acetylene head lamp approaches an electric set in neatness. (F.R.S. Lamps, Beam Works, Vere Street, Birmingham.)

Facilitating Valve Removal.

VALVE or valve spring removal is made easy with the device shown above, which is to be marketed as the Stoakes valve spring cage and washer by E. Stoakes, 218, Soho Hill, Birmingham. The washer must be fitted permanently.

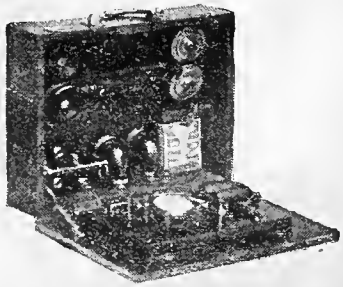


Stoakes's valve spring cage.

Electrical Timing Apparatus.

SPEED events are so popular with the clubs nowadays that a simple electrical timing apparatus, such as the one under review, will be of wide interest.

The apparatus is quite portable, and is carried in a polished mahogany lock-up case, only 11×9×3½in., which contains a starting and finishing device, telephones, and battery; it weighs 6 lb. complete. Timing is effected by a cotton thread stretched across the road, which the competitor breaks as he passes. The battery is an ordinary flash lamp type, and works both the timing instrument and the telephones quite well over a distance of a mile. An ordinary stop watch is used, but is not touched by hand throughout the competition. The apparatus is marketed by the Reader Electrical Co., 56, Northgate, Wakefield.



The Reader timing apparatus.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—I should very much like to endorse Mr. N. Williams's remarks regarding the Stanger as one of the world's best motor cycles.

I have just covered a distance of some 8,000 miles on a 5 h.p. Stanger spring frame model, and have not yet come across a machine that possesses the comfort of a Rolls-Royce that one has in a Stanger machine.

The running of the engine at all speeds is really wonderful, with excellent acceleration and truly marvellous climbing power; more so, that one cannot overheat the engine.

Apart from this wonderful engine, one has a rigid frame motor cycle with what appears to me to be car springing entirely, the rear wheel only being sprung, not the frame.

I, myself, drive a 1921 23 h.p. Renault limousine, and can honestly say that there is very little to choose in smoothness of running and springing. M. BARRETT.

Sir,—Relative to the question as to which is the best all-round solo motor cycle, I am surprised that the 4 h.p. flat twin Harley-Davidson has so far not received the attention it deserves.

I have owned well over thirty machines, amongst which were included the Raleigh, Douglas, Lea-Francis, Sunbeam, Triumph, Zenith, Scott, 7 h.p. F.N., A.J.S., B.S.A., Enfield, Humber, James, etc., but I have yet to discover a machine equal to the fascinating mount above mentioned. Except for inaccessibility it scores on the following points: Revolutions, flexibility, even torque, balance, reasonable speed, magnificent steering, comfort, 3in. tyres, a no-trouble enclosed transmission, three-speed gear box and engine mechanically lubricated, low riding position, twist grip controls, spare petrol compartment in tank, etc. I would, however, prefer the kick-starter on the right side of the machine, and the valve tappets better protected from the summer dust.

I rule out all single-cylinder and V twins on account of their uneven torque, the consequent vibration of them tiring the rider on a long ride even more than do the bumps of the road. The A.B.C. would doubtless find a soft spot in my heart if it were designed for 3in. tyres, as greasy tramlines are a serious menace to the soloist at night riding smaller tyres. I liked the Raleigh for some things, but the steering left much to be desired; also the lubrication system must take second place where the Harley is concerned. But I would that my pet incorporated the magnificent finish and the hand clutch of the Raleigh! Then it would be indeed "some" 'bus. VIC.

Hendon.

Sir,—Whatever may be the outcome of the present interesting discussion in *The Motor Cycle*, may I claim for the Beardmore-Precision the title of the second best machine in the world, by the consensus of opinion amongst the manufacturers themselves? For if you were to ask any maker which is the best machine, he would naturally say his own; but on being asked to name the second best he must say, in point of design coupled with all-round excellence, the spring-frame Beardmore-Precision.

Passing over the many excellent features of the engine (such as detachable cylinder head, automatic lubrication, and foolproof gear), look at the frame. The use of pressed steel is a thing which has been suggested in *The Motor Cycle* for many years. In the Beardmore it is in use to the fullest possible extent. Then it is almost acknowledged that ultimately we must have spring frames; and, in my opinion, the only design that can stand the test of time is the Beardmore, if only because of its simplicity, there being only one group of springs to each wheel.

I shall be satisfied for the present if you allow me my title for my favourite make. NULLI SECUNDUS.

Penicuik.

Sir,—For each individual owner to state off hand that *his* motor cycle is the best is rather an arbitrary way of settling the matter. Personally, I have owned a Norton, Douglas, 1920 Sunbeam, and presently shall have a 1921 sporting Sunbeam. For me to settle which of the machines I have mentioned as being the best motor cycle would be an arbitrary act on my part. The above machines are only four of the products of the motor cycle world. Once I have ridden every solo machine manufactured I will then consider myself in a position to say which is the best. A.B.C.

Wishaw.

Sir,—Mr. E. S. Badcoe's letter moves me to ask for a little of your space. He says, "It is sheer waste of time and space for a correspondent to state that he considers his 2⅞ h.p. Tink-a-ponk to be the world's best solo machine." Do not let us forget the word *solo*. Surely if the Tink-a-ponk will do all that can be reasonably asked of a solo machine, it has just as much claim to be considered as the 3½ h.p. Hogbus or the 7-9 h.p. Incinerator.

What are the requirements of a solo machine if it is to justify a claim to be the world's best? It must be reliable, capable of sustaining a good average speed, able to climb anything, economical in petrol, oil, and tyres, comfortable, easily controlled at all speeds on all surfaces, and of first-class materials and finish throughout. If a machine is capable of fulfilling these conditions, and will keep its tune a reasonable length of time, then I say that it is emphatically *not* a "waste of time and space" to consider its claims.

Now can the small machine fulfil these conditions? I can answer for one that does. Its cubical capacity is 220 c.c.; it is unfailingly reliable; it will *average* more than 30 m.p.h. all day; it will climb anything climbable (standard machines have climbed Applecross, the Screw Road, Alt-y-Bady, Park Rash—a sufficiently representative selection surely); ordinary petrol consumption, about 130 m.p.g.; and oil, 3,000 m.p.g. Tyres. I cannot give definite figures, but very light on them. Comfortable. I have ridden 325 miles between sunrise and sunset on one, when my biggest previous day for nearly a year was eighty-four miles. Control at speed and in grease, sand, stones, rocks, and grass, excellent. Materials and finish both unexceptionable.

As a solo touring machine, it at least cannot be "waste of time and space" considering its claims, which I hope Mr. Badcoe will now admit, as he obviously knew nothing previously of the capabilities of the standard three-speed Velocette.

Usual disclaimer. (REV.) J. M. PHILPOTT.

[Many of the letters which we continue to receive on this subject cover the same ground as others that have been already published, or in some cases where fresh names are mentioned, the arguments may well be summarised. For example, "16 H" (Notts.) reiterates the claims of the Norton with close gear ratios, Binks carburetter, and Ricardo piston, on the grounds of reliability, comfort, economy, finish, easy starting, speed, flexibility, and hill-climbing. The same machine is chosen by "EL 6196"

(Winchester), who, incidentally, calls attention to its accessibility compared with American designs. In the course of a very reasonable letter, Mr. A. Horneck admits his inability to state a definite opinion, but chooses the W.D. model 2¾ h.p. Douglas from among the machines he has tried. Two further Scott enthusiasts, Mr. H. R. Hardcastle and "Enthusiast" (South Mimms), repeat at length the claims of the twin two-stroke for recognition. In the case of two satisfied Sunbeam owners, Flight-Lt. A. D. Pryor and Mr. W. H. Fortington, their arguments are based on mileage figures and low running costs, as well as such qualities as absence of vibration and mechanical silence. Mr. H. de Main Clark replies to the critics of his choice of a Rudge, pointing out that, although he owns a Sunbeam himself, a friend on a Rudge-Multi leaves him well behind on hills which necessitate a change down on a three-speed gear machine. He also emphasises that the price of the Rudge includes a clutch. "Duzit" tabulates his reasons for considering that the 3½ h.p. o.h.v. Duzmo takes first place among solo mounts, and particularly sporting solo mounts. His chief points are safe steering at high speeds, very fine acceleration, and the standardisation of 26×3in. tyres and mechanical lubrication. Another Ariel rider, Mr. J. O. Crawford, is emphatic regarding the merits of the 3½ h.p. model as a solo machine. He instances all-round durability and reliability, power, speed, fuel economy, and controllability (helped by a dual hand and foot clutch control and a very sensitive throttle). Reliability, fair speed capabilities, comfort, finish and design, and price are "Jeglide's" summarised list of the qualities which, in his opinion, entitle the Beardmore-Precision to first consideration.—ED.]

LUBRICATION OF TWO-STROKE ENGINES.

Sir,—Mr. V. C. Rayner in his article on the above subject, resurrects the idea of controlling lubricant supply by means of interconnected throttle and oil control, asserting that systems of lubrication depending upon engine speed obviously fail, because they supply a possible excess at high engine speeds.

Would not the interconnected throttle and oil idea fail, by reason of either *(a)* having to supply a regular excess, or *(b)* a periodical serious shortage when most needed? Suppose a machine in hilly country—a gradient is met which calls for full throttle on top gear, and eventually demands a drop to bottom (most two-strokes have only two speeds), the throttle being, of course, simultaneously shut off to about one-third open, say, engine speed being very much increased, and cooling draught reduced considerably, both of which latter factors call for more oil, whereas the throttle opening allows bnt a meagre supply!

Lubrication, like most details of motor cycle construction, being a compromise, let us have the best compromise, which, in lubrication, must entail a slight excess at some time, to ensure a liberal supply when urgently needed. Load demands quality; consumption should govern supply. J.W.

Derby.

Sir,—In his very interesting article, Mr. V. C. Rayner raises a point which for some time I have been greatly interested in, *i.e.*, roller bearings *v.* plain bearings.

From experiments, I find that the plain bearing has a longer life than the roller bearing, and that the wear in the latter will increase in greater proportion than that of the former. I will endeavour to point out my reasons (which are probably well known to many):

The crank pin is running at the same number of revolutions per minute as the big end of the connecting rod, but the actual race in the rod being of larger diameter than that of the pin has greater surface speed.

From this, it is obvious that the rollers will be sliding on one surface or the other, however perfectly the bearing may be functioning.

I have personally fitted phosphor-bronze bearings to several machines of a prominent American make, and find them a great success as regards general wear, easy starting, slow tick-over, and acceleration.

On the other hand, there is a slight decrease in maximum speed; but that, as it is, is quite fast enough for anyone on the road.

My experiments have been essentially on big twins; but I think the same will apply to smaller engines, including two-strokes. N. A. BLOOMER.

"A CATECHISM FOR POTENTIAL CYCLE CARISTS."

Sir,—I was very pleased to read the interesting letter of "Three-wheeler" in *The Motor Cycle* of October 27th.

Our family consists of father, mother, son (12), and daughter (10). I have had several sidecars, and while on holiday last year on a 6 h.p. outfit, with four up, plus luggage, etc., we averaged 130 miles a day for the first four days, covering some of the ground mapped out for a previous trial in Wales, and during a fortnight covered over 1,000 miles.

This year we wished to get to Scotland. The questions of comfort and engine power (with the children a year older, and other little points only known to the family man) were considered. The result was that the proposed trip did not come off. The kiddies spent their holidays at different times and places from their parents.

However, the parents went for a tour, which included practically a week's stay at Coventry, and during that time the evergreen and burning question was, What can we find in the way of a small car suitable for our requirements and at a reasonable price? The answer, unfortunately, was "nothing."

Should a purchaser go in for a Rover, Coventry Premier, or other similar machine, he will find that each machine is only comfortable for two, although an improvised "dickey" could be made out of the tool-box. The nearest approach to a first-grade sidecar outfit would appear to be a two-seater Swift; but then the price was prohibitive.

The result is that I have not emulated "Three-wheeler," and he has my sympathy. I shall purchase a two-seater Matchless sidecar. Why?

1. Because there are only three wheels instead of four, consequently one tyre less.
2. Tax only £4, instead of £9 or £10.
3. The reserve of power is greater than in an 8 h.p. car.
4. Four up can travel in comfort.
5. About half charges are made for repairs, garage, insurance, accessories, etc., as compared with a car.

The carist will say that he can motor to tennis or go out to dinner without dressing up like a diver of the Stone Age; but, being out in all weathers, and having evening functions to attend, sometimes in evening dress, I have never yet caught cold, and have always arrived clean. At present, therefore, I remain as I am, a sidecarist and

Woking. FAMILY MAN.

PASSENGER MACHINES.—First Show Number of THE MOTOR CYCLE

NEXT THURSDAY'S issue of "THE MOTOR CYCLE," dated NOVEMBER 17th, will be devoted chiefly to Passenger Machines.

Of great interest to all motor cyclists, and to sidecar owners particularly, next week's enlarged issue—the first of the three Olympia Show Numbers—will contain much informative matter relating to all types of sidecar machines. Many special articles are in course of preparation, including:

ECONOMICAL MOTORING FOR TWO, not to mention the possibilities of transporting whole families at a cost less than railway fare for one.

THE MODERN RUNABOUT. COMFORT AND CONVENIENCE for passenger and driver.

NEXT YEAR'S SIDECAR OUTFITS. 1922 SIDECAR ATTACHMENTS. Etc., etc.

NEXT THURSDAY. 4d.

HEAD LAMP DIMMING ETIQUETTE.

Sir,—It is not possible for the average motor cyclist to dim his lamp, but when approaching a car which has lowered its lights for his benefit, it is quite simple for him to put his hand over the right-hand side of the lamp, thereby eliminating the glare from the driver of the car. It also shows the intention is good. MANNERS, PLEASE.

Buxton.

Sir,—My experience may be helpful to those who use head lamps that can be tilted, as with the Lucas, etc. When approaching a car with powerful lights I tried, as an experiment, the tilting downwards of my lamp, throwing the light on to the front wheel. Invariably, the approaching car has switched off while passing.

This leads me to believe that drivers leave head lights on from forgetfulness, rather than from want of courtesy, and the tilting down of my lamp is a reminder to which they respond. MOONSHINE.

Durham.

BRITISH MACHINES IN SWITZERLAND

Sir,—As a reader of your valuable weekly, I was greatly interested in the recent letter on British machines in Switzerland.

My friend and myself are just back from a tour through France and Switzerland. This is our fourth tour in Switzerland on motor cycles, on different makes each time, and must confess that the most enjoyable has been this last season on our 4 h.p. Triumphs. We covered exactly 2,500 miles without the slightest engine trouble. Our trip included the famous Swiss Six Days Trial. Of all the machines we have ridden here and abroad, we must say that the Triumphs are the most reliable.

FULLY EQUIPPED FOR A TOUR IN THE ALPS.

A reader's heavily-laden Triumph, snapped in a picturesque spot during a recent holiday in Switzerland. (See accompanying letter.)

ERNEST OGGIN.
MICHEL GENOUD.

EXPERIENCES WITH A SIDECAR SUBSTITUTE.

Sir,—I was glad to see the appreciation of the Scott Sociable in your correspondence columns recently.

As I took delivery of No. 1 last Easter, I may perhaps be allowed to give the experience of the first private owner.

Right at the start I had transmission trouble, perhaps due to my own clumsy handling; anyhow, heavier transmission was fitted, and since then I have had no involuntary stops, save for tyres and a choked petrol pipe, and my mileage approached 5,000. Petrol consumption (including oil), 70 m.p.g. at least, and the studs are still showing on the tyres.

The machine is as fast or faster than anything in its class, and will climb anywhere where the wheels will grip. The bevel is certainly on the noisy side; not, I think, due to the bevel itself, but to the Scott disc wheel, a beautifully light and strong structure which has the defects of its qualities and rings like a cut glass tumbler.

This trouble has apparently been successfully tackled, as recently I saw a later model, and the bevel was absolutely silent.

I think Mr. Scott made a great mistake is not entering a team for the Six Days. Technically, the "Crab" may be a sidecar; practically, I should be willing to go to the other extreme and enter it in competition with the most expensive four-cylinder light cars, as I maintain the machine does everything the light cars can do at half their initial outlay and upkeep, and would beat them on many points; certainly for comfort at speed on rough roads.

The Scott Sociable is delightfully light and easy to start, steer, and handle; gear changing is not a nicely calculated operation calling for double clutching, as on most cars. Tinkering is unnecessary. Preparation for a strenuous week-end consists of a turn to four grease cups and filling the fuel tank.

Up to now I am more than pleased with the machine; and I consider it to be one with a great future.

ERNEST CREIGHTON.

SIDECAR CONNECTIONS.

Sir,—Apparently, "Wharfedale's" remedy for an obvious fault is to try to transfer the danger elsewhere! That, in effect, is all that would happen, if one connection was made flexible, as suggested.

I am quite aware of the fact that relative movement (whip) of chassis members is always apparent on bad roads, and it is because I think that the stress of that whip should be equally distributed between all the connections that I differ from "Wharfedale" in his advocacy of one flexible connection. It is beyond my fallible comprehension to see why turning the rear fork connection in the manner suggested will help matters at all. The only apparent effect would be to make the connection itself more vulnerable!

I contend that rear fork fractures are due to several causes, one of which is the jar caused by the back wheel dropping into a pot-hole. Actual experience of unsprung pillion riding will amply demonstrate this point on a pot-holey road. The rear wheel, being most heavily loaded, causes most shock on bad roads, which is entirely transmitted to the back forks and connections. In such circumstances, what would happen to "Wharfedale's" flexible connection? Surely the obvious weakness is in the eye and bolt (both being further weakened by wear), which, being flexible, *i.e.*, not supported by the jaws of the yoke, take the shock entirely, causing fracture sooner or later.

The object of sidecar chassis designers should be to provide a perfectly rigid chassis, together with suitable attachment arms and fittings, which would ensure *(a)* no risk of malalignment or maladjustment, *(b)* that whip would be reduced to the absolute minimum—the Scott design, as before mentioned (and, despite "Wharfedale's" pitiful attempt to claim its allegiance!), being an excellent example. And where does one find more engineering ability than at the Scott works? With the type of design specified, every road shock, from either of the three wheels, will be, practically, equally distributed between all the connections, thereby eliminating existing non-distribution of stresses. Spring the sidecar wheel by all means, with due provision for permanent lateral rigidity, but there can be no compromise on the question of connections; either all or none must be flexible.

I must leave readers to judge which is more Gilbertian, "Wharfedale's" idea of flexibility, *i.e.*, by means of sloppily fitting rear connections (in original article), or my suggestion so to alter motor cycle design as to enable them to stand up to sidecar work—which only needs stronger section tubing with a ribbed liner! J. WILLEY.

TYRES, NEW, EXPERIENCES WITH!

Sir,—I recently purchased a 650×65 mm. extra heavy cover of a famous make at full list price. At about two hundred miles this tyre developed an ominous bulge on the side. I at once removed it, and found the fabric split in the exact line of the wearing of the canvas and the joint in the cover. The rubber outside was untouched, except a tiny nick where it had fouled some part of the machine owing to the bulge.

I returned the cover to the makers for their opinion. After a lot of irrelevant correspondence about the beads and rims and the cover blowing off the rims, which it never did, they decide that "this cover has been damaged by a cut received in the course of ordinary fair wear." They offer to repair it at their usual rates!

This sort of thing is going to make the cost of motor cycling prohibitive, and one can only think that the tyres supplied to competition riders are a different product altogether from those supplied to the public.

S. R. DRUITT.

EXPLAINING THE SPARK GAP.

Sir,—May one be permitted to chip in to the spark gap controversy?

Mr. Barclay sets out the pros and cons in a very lucid manner, and I agree with him that a spark gap, properly installed, may have certain advantages.

It has, however, certain marked disadvantages, and one which your correspondents seem to have left out of consideration is the fact that although an additional spark gap causes the voltage to build up to a high point before discharging, when the discharge does take place the energy is not all available at the sparking plug's points, some of it being dissipated at the points of the auxiliary gap.

The sum total is that an auxiliary spark gap enables one to carry on to some extent with a scrap plug, or defective lubrication. On a well designed motor cycle, fitted with a suitable plug, it has no advantages whatever.

Mr. Hartley, in his first letter, mentions that the makers of one of these gadgets claimed in an advertisement in the daily papers that the device collected frictional electricity from the engine. This claim, of course, is adjectival nonsense. I have no doubt the device would be successful in collecting quite a large quantity of "hot air."

In Mr. Hartley's second letter he seems to have run off the line a bit because he reminds "Radio" "that the rate of flow of electric current is constant where the capacity is the same." This is not so, and I would suggest that "Radio" forgets it again. (By the way, since current is the rate of flow, what is the rate of flow of current?)

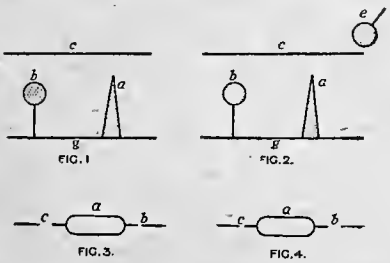
Also, his statement about two gaps in series is not quite in accordance with facts. The truth about gaps in series is very much as stated by Mr. Freeman Lee in his letter of the same date.

I agree with Mr. Hartley's last two paragraphs, and if he will take the trouble to look through the advertisement pages of almost any paper I think he will agree with me that there are still a large number of "flats" in existence, and an equally large number of persons selling—shall we say—"flat traps."

MATT. JENNISON.

Sir,—Having read with interest the letters of your correspondents *re* the merits of an extra gap in the circuit of an ignition system, I have been wondering whether anybody has thought of the following explanation as to why an extra gap improves the spark.

You are no doubt aware that in explaining the behaviour of the "somewhat" bigger sparks which occur in thunderstorms two terms are used, namely, "Steady Strain" and "Impulsive Rush." Although, perhaps comparison between a lightning discharge and the spark discharge in an ignition circuit may not be easy (irrespective of on a basis of dimension), I consider the explanation of lightning phenomena will go a long way to explain why an extra gap can *be made* beneficial to the plug gap. In experiments conducted by (I believe) Sir Oliver Lodge, he made use of apparatus represented by the enclosed diagrams. In fig. 1 *a* represents a church steeple, pointed; while *b* could be some flat topped building. Both *a* and *b* are electrically connected to the ground *g*. A piece of tinfoil *c* represents a cloud. On subjecting *g* and *c* to a steadily increasing potential difference, a spark always occurred between *c* and *a*, but not between *c* and *b*. Now turn to fig. 2. *c* was now electrically isolated, and an electrode *e*, representing another cloud, was introduced near *c*. *e* and *g* were now subjected to a steadily increasing potential difference. The result was to create a "steady strain" between the cloud *c* and the two ground objects *a* and *b*, up to a point when a spark occurred between *e* and *c*. The strain between *c* and *g* was now suddenly increased, and it was found that the resulting spark, in the form of an "impulsive rush," was as likely to strike *b* as *a*, although *b* was further away. And the experiment showed that where an impulsive rush existed the spark was both more uncertain and more damaging—more uncertain in that it did not behave in accordance with the usual rules of discharge surfaces and distances; damaging, in that what spark did occur occurred in the shortest possible time, thereby being hotter and more concentrated



The case of the magneto discharge is very similar except that only two gaps altogether need be considered. In fig. 3 *a* is that part of the magneto secondary circuit that lies between the external gap *a b* and the internal gap *a c*. At or after the moment when the interruption of the primary takes place the high-tension secondary is being built up, and a steady electrical strain is created between *c* and *a* in the same manner as between *c* and *g* in figs. 1 and 2. If now the gap *a b* is smaller than *a c*, a spark occurs more readily at *a b*, *a* is suddenly electrically overcharged, and the resultant "impulsive rush" at *a c*, the internal gap, creates a hot, destructive spark—destructive, that is, to anything that may lie in its path. If, on the other hand, the gap *a b* be greater than the gap *a c*, as in fig 4, a different state of affairs exists. In this case, when a spark occurs at *a b*, apart altogether from the large amount of energy which is dissipated at that point, due to the larger gap, and is, consequently, wasted to igniting the mixture, this spark takes place just too late to be of any value, because *a c*, being a smaller gap, discharges, almost simultaneously, any impulsive rush which exists in this case, serving to keep the spark burning at gap *a c* for a longer period than would otherwise be the case. In other words, the energy dissipated at *a c* is, in the latter case, not sufficiently concentrated. It must be borne in mind when considering this subject that it is the amount of energy discharged at the fraction of a second when the spark begins, rather than what subsequently follows, that matters. If you can concentrate most of the energy of the spark into actually breaking down insulation it does not matter what the character of the spark is once the insulation has been energetically overcome.

"Impulsive rush" does this to a marked degree in the case of the magneto if the external gap be smaller than the internal gap, although the result may be too uncertain to be of any practical value to the motorist.

W. H. MASSY.

SUMMARY OF CORRESPONDENCE.

On a recent tour from London to Eastbourne on a 4 h.p. standard Triumph sidecar, covering a distance of 320 miles (two up), "Ignoramus" averaged 92 m.p.g. He wishes to know if other Triumph owners can equal this.

Referring to the discussion on head lamp dimming, "OH 4634" points out that Messrs. Brown Bros. have, since 1911, marketed the Autoclipse lamp, which possesses a simple dimming device consisting of a dull metal disc, which may be lowered between the reflector and the flame.

Regarding the controversy about the Brough Superior engine, Mr. G. F. Randall opines that in general layout it is the same as the engine used by C. R. Collier in his match with Jake de Rosier on July 15th, 1911.

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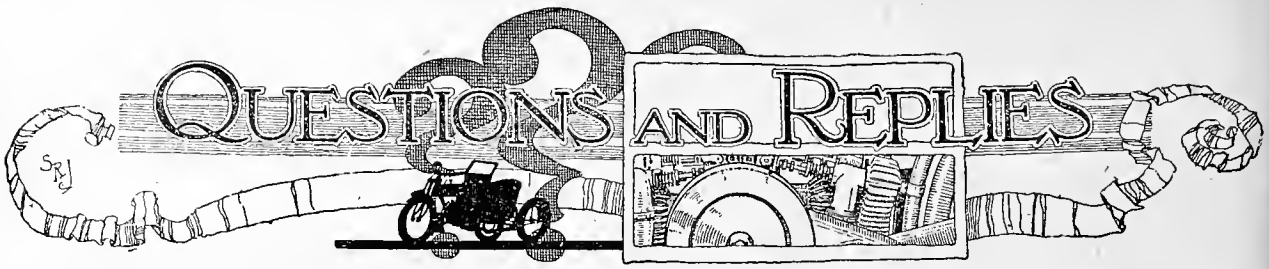


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C 4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

TAPPET CLEARANCES.

To get good results, how many thousandths of an inch clearance should there be in the tappets of my 4 h.p. 1921 Triumph? Kindly advise for inlet and exhaust.—E.M.R.

The clearance in the tappet of the 4 h.p. Triumph should be approximately ten thousandths exhaust and six to eight inlet.

SIDECAR FOR A LIGHTWEIGHT

Could you give me the name and address of the makers of a really light sporting sidecar which could be readily fixed to a 2¾ h.p. Douglas? Would the frame of the machine have to be altered in any way? What gear ratios would be most suitable for a moderately flat district, both my passenger and myself being lightweights?—D.H.M.

You would find any of the well-known lightweight sidecars suitable for your machine. We do not usually recommend sidecars for use with purely solo machines, but if you decide to fit a sidecar to your 2¾ h.p. Douglas we would recommend you to fit the smallest front sprocket obtainable from the manufacturers, since the gear ratio should be kept very low for sidecar work.

WEIGHT DISPOSITION OF SIDECAR BODY

Having read with much interest "Wharfedale's" recent article on "Sidecar Attachments," I would like your opinion as to the correct position of the sidecar body on the chassis. I notice that quite a majority of sidecars on the road have the body slung very forward, throwing the weight of the car and passenger on to the front connections and front frame of the cycle, with a tendency to twist the latter from back to front. Only recently I put the body of my sidecar back, so that the weight when loaded was more or less balanced over the axle, and was surprised to learn how much easier the whole machine ran; it was also easier to steer. Which do you consider the correct position for the sidecar body?—F.K.T.

Undoubtedly the best distribution of weight in a sidecar is that which balances most of the weight over the back axle. An example to which sidecars may be approximated is the horse-drawn dog cart, so laden that the shafts merely float in the harness of the horse—this ideal, of course, is difficult to obtain in a sidecar.

LOST POWER AFTER OVERHAUL.

My 2¾ h.p. T.D.C. has lost power and speed since an overhaul. I have had the brass main bearings turned up, as the rollers were subject to air leaks; also new piston rings. There are no air leaks, the spark is good, jet No. 26, compression better than before, also crank case suction. Timing points just breaking, piston 2 mm. from top dead centre, and fully retarded, yet the engine overheats. I have had it carefully run in, and it is now quite free. There is the same thickness of packing between the cylinder and the crank case as before, also the piston is on correctly. The exhaust is not blocked. The only difference is that I am running on one-third benzole and two-thirds petrol instead of all petrol, and still the engine refuses to take full air, and will not start from cold without having the air intake stopped up. I am using the same sparking plug, and the wheels are free.—S.L.

It is possible that your engine requires still further running in, and we should recommend you to advance the ignition point until the contacts break with the control fully retarded when the piston is on top dead centre.

THE WORCESTER CLUB'S PRESIDENT'S CUP TRIAL.

J. A. Newman (3½ Douglas) whistling cheerily on his way up Trefadoc. He was one of the winning team (Worcester Club).

SILENCING A SINGLE.

Several Triumph riders and myself would be glad to know of any method of completely silencing the exhaust of a Triumph, as the standard fitting is rather noisy.—B.H.B.

The only method of silencing the exhaust on a single-cylinder motor cycle is to fit an extra large silencer. In your case you might be able to fit a long exhaust pipe to your machine in place of the present pipe and silencer, and fit a large expansion box at the end similar to that used on the Zenith machines.

LIGHTING-UP TABLES.

Does your lighting-up time-table, as shown in *The Motor Cycle* each week, apply to Ayrshire, Scotland, as well as London? Is the lighting up time the same in both places?—E.M.R.

The times given in our lighting-up table are for London. For Ayrshire you may add roughly eighteen minutes to the time, plus about three minutes in March, six minutes in April, ten minutes in May, June, and July, six minutes in August, three minutes in September, six minutes in October, twelve minutes in November, fifteen minutes in December and January, and nine minutes in February. These figures are only approximate, and you would be well advised to get the local correction for latitude and longitude.

ADJUSTING WEIGHT OF NEW PISTON.

Having recently had my 3½ h.p. single-cylinder engine rebored and a new piston fitted, with resulting increase in power, I find that the engine vibrates badly, the rivets securing the throw pin to the flywheel shaking loose in less than 100 miles. On searching for the cause, I find that the new piston is two ounces heavier than the old one, which no doubt causes the vibration. Will you be good enough to inform me what additional weight should be added to the flywheels to compensate for the extra two ounces in the piston?—W.S.M.

Your best plan would be to endeavour to lighten the piston to the necessary amount, which will probably be a comparatively simple job; whereas to re-balance the engine would cause some difficulty, and you would have to add weight to the balance weights, and there is usually very little room to do this in an internal flywheel engine.

BROKEN SPOKES.

? An 8 h.p. sidecar outfit that is being used over very rough roads and with very heavy loads is continually breaking the spokes. I have had the rear wheel rebuilt with No. 9 spokes, but with very little better results. Can you give me the address of any wheel builders who would be able to construct a wheel either of the artillery pattern or with a solid disc in place of spokes? —G.M.N.

We do not know of anyone who will construct a wheel such as you require, as so far solid discs or artillery pattern wheels have not proved satisfactory on motor cycles. It certainly should not be necessary to have a wheel built with any heavier spokes than 9 gauge, and we can only think that the breakages result from faulty methods of driving or careless use of the clutch.

READERS' REPLIES.

28×3in. TYRES ON 26×2¼in. RIMS.

We notice in your "Questions and Replies" page of *The Motor Cycle* of the 27th ult., in reply to a correspondent, you say:

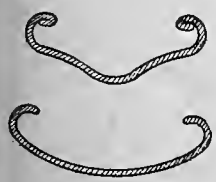
> "It is quite satisfactory to fit such a tyre" (28×3in. on a 26×2¼in. rim), and that several members of your staff have followed the practice, with every satisfaction.

That may be so, but there is, all the time, an element of risk both to tyre and rider; and, knowing you desire to be scrupulously accurate in these matters, a few facts and figures herewith appended may be of interest to your readers who may be tempted to do likewise.

The 26×2¼in. (D2) rim has a *circumference* of 71½in. The 28×3in. rim has a *circumference* of 73in. Difference, 1⅜in.

The 26×2¼in. (D2) has a *section* measurement of 1⅜in. The 28×3in. has a *section* measurement of 1⅝in. Difference, ¼in.

The sketch shows the 26×2¼in. section and the 28×3in. section rims, showing comparative depths under clinch. The 26×2¼in. (D2) rim, being much smaller in circumference, the 28×3in. tyre must be a very loose fit upon it, making it liable to creep and cut the bead. The 26×2¼in. (D2) rim being much narrower, there is not proper room for the extended flaps of a 28×3in. cover, making it difficult to get the cover on the rim. The space under the clinch of the 26×2¼in. (D2) rim is much less than the 28×3in.; consequently the larger bead of the latter tyre cannot go under the clinch of the 26×2¼in. (D2) rim, with the result that the bead never reaches its proper anchorage. From the above, it will be seen that there is an appreciable difference in sizes and fittings, and that there *is* sufficient reason why the Palmer Tyre, Ltd., does not recommend the fitting of a particular size tyre to a different size rim.—THE PALMER TYRE, LTD. (H. W. Weald).



[While agreeing with our correspondent's remarks about the appreciable differences in circumference and section of the two rims, the fact remains that there are to-day hundreds of 2"×3in. covers giving very satisfactory service on 26×2¼in. rims, and we have yet to find a case where excessive wear at the bead or rolling could be directly traced to this cause. We have several times experienced sudden punctures with these "oversize" covers, with no ill effects whatsoever; and on one occasion we rode fully five miles with an uninflated 28in. cover on a 26in. rear wheel. Until larger tyres are standardised, we consider that the fitting of these "unofficial" oversize covers is to be recommended as a very excellent compromise.—ED.]

CARBURETTER ADJUSTMENT.

Reference to "F.S." enquiry (October 20th) on the Binks carburetter for 2¾ h.p. Douglas, may I suggest that a leakage of petrol is taking place at the base of one or more of the jets, allowing petrol from the float chamber to enter the gas mixer without travelling through the jets? As "F.S." is only getting the ridiculous mileage of forty to the gallon, I would further suggest he temporarily stop up the jets with wax, and then endeavour to start the engine. I find the correct jets for a 2¾ h.p. Douglas are 000, 0, and 6.—A. C. ROBBINS.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"J.S.T." (Suckley).—Low acetylene lighting set.

"H.N." (Manchester).—2¾ h.p. Royal Ruby, sports model: Speed, climbing, and general running.

"H.E.W." (London, S.W.11).—5-6 h.p. Raleigh, solo and sidecar: Speed, acceleration, performance; ease of handling solo.

"G.G.G." (Glasgow).—2¾ h.p. Barr and Stroud engine, solo: general performances, reliability; if suitable for heavy frame and 2½in. tyres.

"W.S." (Perth).—7 h.p. F.N., with sidecar: Consumption, oil and petrol overheating, power and power maintenance, wear, breakages, transmission. How compared with Morgan Runabout?

"A.B." (Maidstone).—G.N. cycle car after 8,000 miles running; especially chain adjustments, springs, broken parts, and wheel bearings. Also possibility of better silencing.

Important Dates.

Fri., Nov. 4th, to Sat., Nov. 12th—Automobile Exhibition, Olympia and White City. (*See "The Autocar."*)

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec 31st.—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

SPARKLETS

A Change of Address.

X.L. Motors, Ltd., the makers of the X.L. machines recently reviewed in our pages, have now moved into new premises at 506, Ulster Chambers, 168, Regent Street, London, W.1.

A South London Works Trial.

On October 22nd, the employees of A. E. Parnacott's works held a successful half-day trial. Starting from Penge, the route included Whyteleaf, Succombs Hill, Sunningdale Hill, and Cudham Church Hill. W. R. Dickens (4 Douglas) and E. C. Anderson (2½ Ivy) made outstanding performances on the hills.

Plugs for all Engines.

The makers of Lodge sparking plugs (Lodge Plugs, Ltd., Rugby), having recently published lists of their products suitable for almost all types of engines, still find that users occasionally select the wrong type of plug for a particular engine; in all cases of doubt they offer advice on receipt of particulars regarding make and date of the engine in use.

71½ m.p.h. for 200 Miles.

The G.N. which won the 200 mile cycle car race at Brooklands was equipped with one of the new square-shaped 90° M-L magnetos having the special steel magnets recently described in our pages.

In Denmark.

A reliability trial organised by the Copenhagen M.C. recently incorporated a novel feature. The riders had to ride in pairs, each pair having to start and finish together. First prize was secured by two Wolf riders, who covered 880 kilometres (550 miles) in twenty-four hours without loss of marks. Dunlop tyres were used on both machines.

A Permanent Lighting-up Table.

An ivorine lighting-up table, suitable for fitting to the dashboards of sidecars or cycle cars, has been prepared by H. Taylor and Co., Ltd., 52, Sussex Place, South Kensington, London, S.W. It is being offered free to readers of *The Motor Cycle*.

Auto-wheel Parts.

The prices of spare parts for Auto-wheels have been reduced by 10%, and Auto-Wheels, Ltd., Russell Road, Kensington, London, W.14, carry a large stock, and can deliver immediately. Orders for spares, however, should include the number of the engine for which the parts are required.

Catalogues Received.

British Lighting and Ignition Co., Ltd., Adderley Park, Birmingham: List of the B.L.I.C. magnetos, several of which are suitable for motor cycle engines.

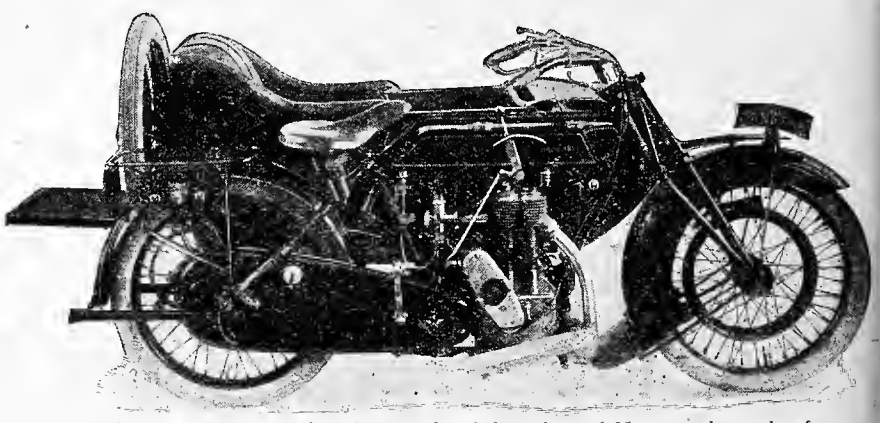
Advance Details of 1922 Models.

Two New Long Stroke Sunbeams.

A Big Single for Sidecar Work and a Special T.T. Machine added to Sunbeam Range, which now includes Five Distinct Models.

ONE year's T.T. model very often becomes a next year's sports model, but Messrs. John Marston, Ltd., have gone one better, and now offer to the public their 1922 T.T. motor cycle, which has an entirely new long stroke engine and a long wheelbase frame. This machine embodies all the lessons of past racing experience, and has been on the road for a considerable period in the hands of T. C. de la Hay and George Dance, who inform us that without the special tuning which every Tourist Trophy mount receives, it is several miles an hour faster than the machine which won the 1920 Senior T.T. and this year's French Grand Prix. That is the Sunbeam offering to speedmen for 1922.

There is, however, a large coterie of Sunbeam enthusiasts who drive sidecars, and who, up to the present, have had the choice of the 3½ h.p. outfit and the 8 h.p. J.A.P.-engined twin. A long-stroke 590 c.c. machine has now been introduced, which is a worthy addition to the big single sidecar outfits on the market.



A long stroke big single for sidecar work. It has a bore of 85 mm. and a stroke of 105 mm. = 596 c.c.

The Full Programme.

Every class of rider, save those who favour lightweights, is catered for in the 1922 Sunbeam range of five machines. These are briefly outlined below:

3½ h.p. T.T. model: new engine, longer wheelbase, no carrier or kick-starter. Price £136 10s.

3½ h.p. "Sports" model: as popular 1921 prototype, but with kick-starter. £136 10s.

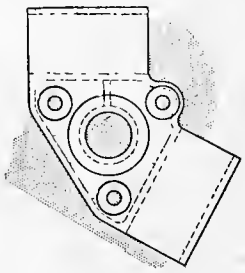
3½ h.p. "Standard" dual-purpose mount: similar to the current year's model, but with "belt rim" brakes, Druid type forks, and without interchangeable wheels. £126.

4¼ h.p. sidecar model: long-stroke engine, interchangeable wheels, Sunbeam leaf spring fork, internal expanding rear brake. £141 15s.

8 h.p. twin sidecar machine, with new type J.A.P. engine. £168.

The T.T. Model Described.

One's first impression of the new T.T. model conjures up the simile of the thoroughbred racehorse, as compared with the more robust hunter, to which the 1920 sports model approximates. There is something of that "slimness" which suggests speed in the slightly lengthened frame. The saddle position is lower, and the handle-bar, instead of being fixed at the head of the steering post, is carried on two brackets extending rearwards and downwards from the head clip. Thus the handle-bar is actually lower than the top of the head tube, which is fitted with a cap. The shape of the bar is particularly graceful, and the average rider will find on assuming a natural riding position that his hands drop on to the grips.



The detachable split sidecar connection lug, which grips the lower tank rail and the front down tube.

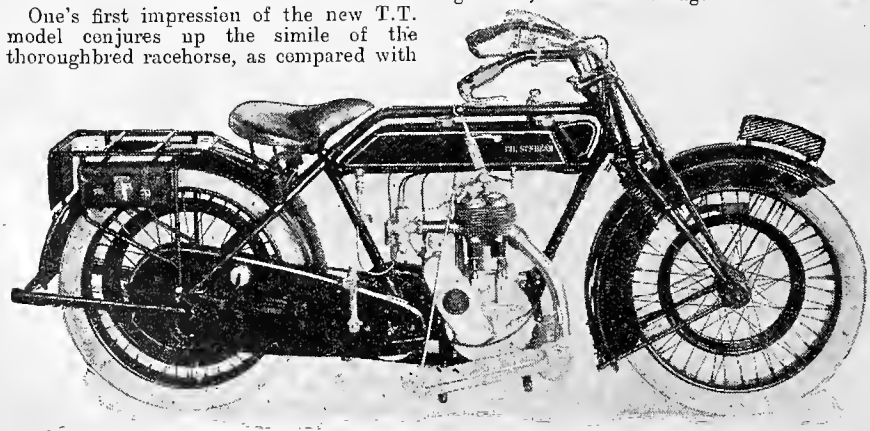
As before mentioned, the T.T. engine is a new design of the long-stroke type, the bore and stroke being 77 mm. and 105 mm. respectively (489 c.c.), and the compression ratio rather higher than is usually the case. The ports are designed to give an exceptionally big sweep, which brings both the induction and exhaust pipes lower down the cylinder than in the other models.

An aluminium single-ring piston is adopted, and this, in conjunction with the other light reciprocating parts, gives the engine remarkable acceleration. The transmission is by chain through a close ratio Sunbeam gear box without kick-starter; but the little oil bath is only fitted to the primary drive, the rear chain being protected only by a light guard.

As before mentioned, no carrier is fitted, so a place has been found for the tool-bag on the right side chain stay.

Another deviation from the design of the heavier models is that the drip-feed is omitted and a hand pump with two-way tap, which allows oil to be directed to the gear box or engine. The mud-guarding is light, being minus valances, and, altogether, the machine is a true sporting mount. It is capable of lapping Brooklands at 70 m.p.h., and is as flexible, as silent, and as docile as a modest tourist type. This we demonstrated for ourselves one day last week, when we spent an afternoon trying both the new models among the hills around Bridgnorth.

At 25 m.p.h., this T.T. mount, which has a straight through pipe, is quieter than companion machines fitted with the standard Sunbeam silencer.



The standard Sunbeam "3½" is now a dual purpose machine, a step between the "Sports" and the 4¼ h.p. sidecar models.

The Light Solo "3½."

The sports model of the current year remains practically unaltered, excepting that a kick-starter is now fitted. The gear box is of the close ratio type, and as in the case of all the Sunbeam sol

Advance Details of 1922 Models.—

mounts, Druid type forks and an aluminium piston are fitted.

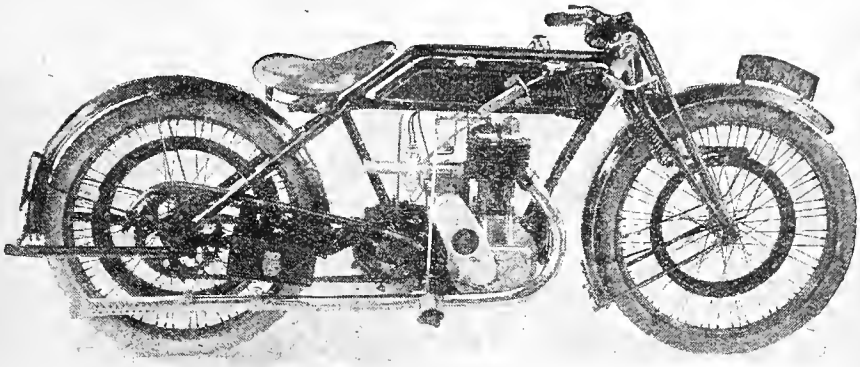
"No frills" is the keynote of the standard model, which is intended to meet the requirements of those who desire a dual-purpose mount. It has shoe brakes on both wheels, 650×65 mm. tyres, and, generally, may be regarded as a heavier edition of the light solo model. The wheels are not interchangeable. Druid type forks are fitted, and footboards form part of its specification. Two sidecars are offered as being suitable for this machine—a sporting type and a touring attachment.

New Sidecar "4¼."

Although the current 3½ h.p. model as a sidecar machine approximates in performance to the average mount with an engine of 600 c.c., Mr. Greenwood, the Sunbeam designer, has decided that 500 c.c. is scarcely large enough to satisfy the requirements of all who would own a single-cylinder Sunbeam. Some drivers require a fast machine, and are satisfied to travel moderately light, in order not to forfeit the acceleration powers and high maximum speeds of which the 3½ h.p. standard Sunbeams are capable. There are others who have families to provide transport for, or perhaps it is that their wives insist upon hoods, screens, and much luggage.

For this latter class of rider, the new 4¼ h.p. Sunbeam has been produced, and from our own experience with the machine we can say that it will fulfil its purpose in every way.

In general appearance, the new model closely resembles the 1920 standard. It has 650×65 mm. tyres, detachable wheels, internal expanding rear brake, leaf spring fork, wide mudguards, and all the appurtenances of the fully equipped sidecar outfit.



A new super Sports Model, with long-stroke engine of 77 × 105 mm. No carrier or kick-starter is fitted.

The cylinder, the dimensions of which are 85×105 mm. (596 c.c.), has a detachable head held down by three studs, but this feature is not intended so much to facilitate decarbonising as to prevent distortion of the cylinder barrel. The piston is of the cast iron type, with two rings. It will be seen that two bore and two stroke sizes are used in the Sunbeam single-cylinder range, 85 mm. bore being used on the 3½ h.p. standard and the 4¼ h.p. sidecar engines, the variation of capacity being obtained by the length of the stroke, as under:

	Bore and stroke.	Capacity c.c.
3½ h.p. T.T. engine ...	77×105 ...	489
3½ h.p. sports engine ...	85×88 ...	499
3½ h.p. standard engine	85×88 ...	499
4¼ h.p. sidecar engine ...	85×105 ...	596

On trying the new sidecar model on the road, we enjoyed a new experience in sidecaring. It was like driving a twin with the beat of a single. The comparatively low compression renders it almost as flexible as a twin, and, fully loaded, one may drive at speeds between 30 and 35 m.p.h. up hill and down dale for miles on end. The maximum speed is probably in the neighbourhood of 45 m.p.h., although our speedometer needle did not go beyond the 40 m.p.h. mark.

At all speeds the steering is delightfully light, and one may release the handle-bars without any tendency for the wheel to leave the direct track. During our short test, we visited several of the test sections of last Saturday's Midland Centre trial, including a deep watersplash, which all but submerged the engine. But this model is used to such tests, for during the past two years it has participated in many trials, which have helped to bring the machine to that stage of perfection when it shakes off the chrysalis shell of experiment and enters the market a thoroughly proved production.

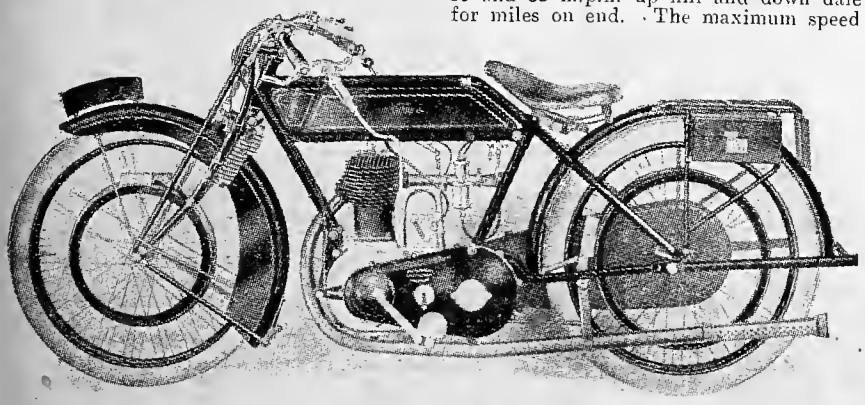
The 8 h.p. Model.

With the exception that the 8 h.p. twin Sunbeam will be fitted with the latest type of J.A.P. engine (described on page 574), this model practically remains unaltered.

Sidecar Improvements.

Several minor alterations have been made to the Sunbeam sidecar chassis. The current model has three-point attachment at the front by means of straight tubes, one from the footrest bolt and two from the front tube. The 1922 design eliminates the straight tubes, one tube only being used at the front, and this is curved, being attached to the cycle frame by a neat split lug, which grips the lower tank rail and the front down tube. A single bolt is used, but in order that the clip remains in place when the sidecar connection is withdrawn, three small bolts are embodied to retain the lug in position.

At the rear, also, a bent tube is used, connecting with the chassis at a point near the centre of the transverse member, instead of on the longitudinal member as hitherto.



The 1922 Sports model—similar to the 1921 type, but fitted with a kick-starter. The Sunbeam 85 × 88 mm. engine is retained.

A New Royal Ruby Lightweight.

IN addition to the well-known and well-tried spring frame, there are several points incorporated in the design of all the Royal Ruby models which deserve to be called distinctive.

Detail work has always received careful attention, and it has not been found necessary to make changes in the majority of the models. One entirely new type, however, has been introduced for next year—a spring frame 375 c.c. machine. conservatively rated at 3 h.p. Both engine and gear box—a three-speed with clutch and kick-starter—are of Royal Ruby manufacture, and the machine in the main follows the lines of the smaller-engined model of 1921.

This new model, with the well-known Royal Ruby spring frame, is sold as a solo mount at £90, or with a rigid frame and light sidecar at £105.

The older 2¾ h.p. (349 c.c.) rigid frame sports model is retained, and with sidecar sells at £95, at which figure it appears to be very excellent value.

The main modifications to the luxurious 8 h.p. sidecar outfit have been made in providing even greater comfort for the passenger and detail improvements to the sidecar. The spare wheel is now attached to the chassis instead of to the body; and a new tandem-seated sidecar is an important addition.

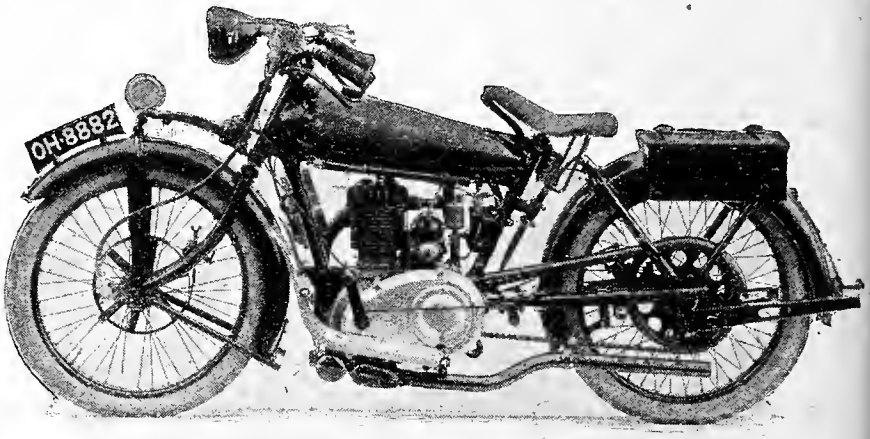
Beardmore-Precision Developments.

A 4¼ h.p. Four-stroke Single-cylinder. Unit Construction. Pump Lubrication.

THE 350 c.c. two-stroke Beardmore-Precision being now firmly established on the market, Mr. F. E. Baker has once again given his mind to the production of the big single four-stroke. In spite of the fact that the pre-war 4¼ h.p. Precision was sold overseas in greater quantities than at home, there are still many admirers of that popular engine in this country who have been looking forward to the appearance of a post-war Precision four-stroke.

Founded on the main essentials of the old "4¼," the new engine is a combination of the most up-to-date practice with the results of years of practical experience.

To begin with, the engine is lubricated automatically by a mechanical pump; and, though a simple supply adjuster is provided, once this has been set the driver is relieved of all further worries. Again, the engine, gear box, and magneto form a single unit, the crank case and gear box being cast together. At the same time, the two units are separated by the walls in such a manner that, but for the constructional advantages, they might as well be two entirely separate units. The mechanism of each is inspected through separate end plates, and no particles of foreign matter from one unit can affect the working of the other.

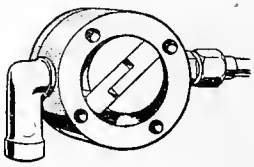


Transmission side of the new 4¼ h.p. Beardmore-Precision. Note the rear springing and upcurved footboards.

597 c.c. Cylinder Capacity.

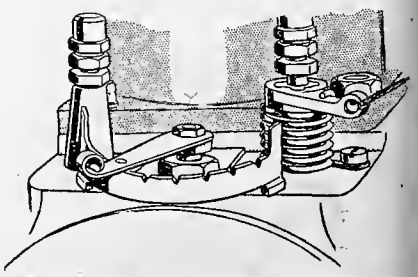
A cylinder of 89×96 mm. bore and stroke is bolted to the crank chamber in the normal way, but the side-by-side valves are mounted in a detachable cylinder head, which has radially disposed cooling fins, and is held down by four set pins.

Within the cylinder lies a slightly waisted cast iron piston with two top rings and one in the skirt which acts as a scraper; double row roller bearings are employed for the big end. Two ball bearings support the crankshaft on the drive side and one on the timing side, and the flywheels are notable for their large diameter and the fact that they are forged solid with their shafts, leaving only the crank pin to be assembled. A separate gear wheel, cam, and light rocker are employed to operate each of the adjustable tappets, and a subsidiary exhaust cam is brought into action when required to act as a decompressor.



An eccentric vane type pump is used to circulate the oil on the 4¼ h.p. Beardmore-Precision.

Directly below the crankshaft pinion lies a bronze wheel, having a 3 to 1 reduction, which drives a rotary vane type pump, and delivers oil from a sump (formed by a chamber below the gear box and an enlargement of the timing cover) to a regulating chamber which lies between the tappet guides. A notched quadrant provides several adjustments for regulating the oil flow through a simple needle valve, and oil is delivered from the regulating chamber to the crank case through a ball valve. In addition, a pedal on the exterior of the crank case operates a disc valve, by means of which the crank case can be flushed with oil for racing purposes or in case of emergency. A special crank case breather returns the majority of the otherwise waste oil to the sump, but a small quantity is fed to the primary chain.

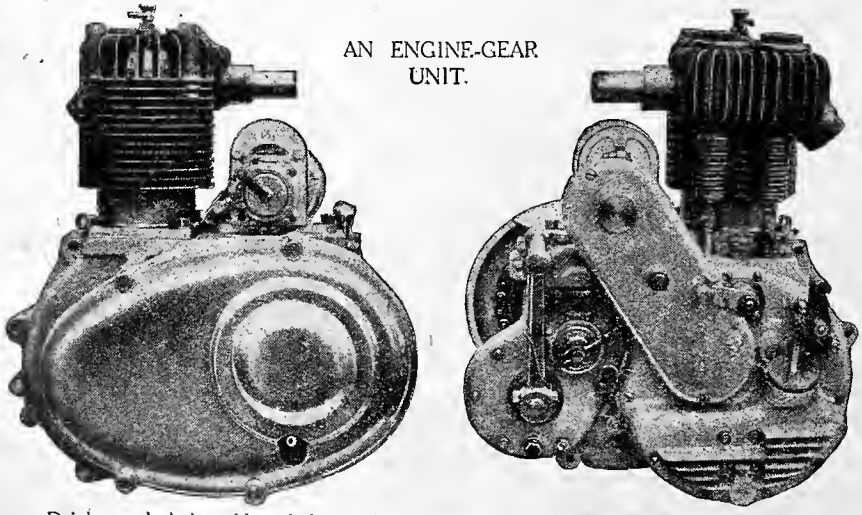


Oil regulator and quick thread screw exhaust lifter on the engine.

So short are the centres of the primary drive that no adjustment is provided, since when the chain is stretched sufficiently to cause bad running it should be replaced. The gear box housing is arranged so as to accommodate standard Sturmey-Archer gears, shafts, and clutch, though a modified starter and change-speed quadrant are fitted. The primary chain is almost entirely enclosed by a cast aluminium case, and special provision is made for trapping mud thrown off by the rear chain.

This most interesting unit is housed in a frame almost exactly similar to that already popularised on the spring frame Beardmore-Precision two-stroke. The same type of steel tank forms the main member of the frame. Similar front and rear springing is employed, and no cast lugs are incorporated, all joints and lugs being made of steel pressings welded together where necessary. Both brakes

AN ENGINE-GEAR UNIT.



Driving and timing sides of the combined engine and transmission unit; the cylinder is of 597 c.c. capacity, and the gear has three speeds with clutch and kick-starter.

Advance Details of 1922 Models.—

are of the contracting band type—that on the rear wheel being wide and particularly powerful.

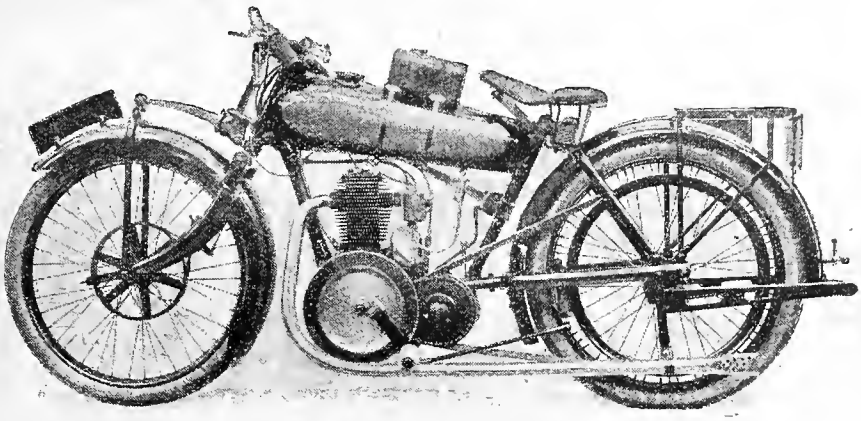
Detail modifications include a pressing to replace the tubular member between the front spindle and the leaf spring, cable guides and pump clips brazed to the tank, and a neat purple panel outlined with blue.

Important Details.

It will be remembered that the mudguards form part of the frame, and that the combined tool-box and carrier are part of the rear guard. Very sensible aluminium footboards with long upward extensions are part of the equipment, and 700×80 mm. or 26×3in. light car tyres are fitted.

It should be emphasised that the engine unit is not a modified 500 c.c. engine, but is designed throughout for its ultimate purpose, and that the complete machine is intended as a competitor to the low-priced light car. As a sidecar outfit, the price of this very fine machine will be £135, while the solo price will be £105.

The Sports two-stroke will, of course, be continued, and will sell at £75; and a machine similar in all details, but fitted with a 350 c.c. Barr and Strond sleeve-valve engine (described in *The Motor Cycle* of July 21st), will be listed at £85.



In addition to the above sports model Beardmore-Precision two-stroke, a similar machine may be equipped with a Barr and Stroud sleeve valve engine.

Radco Refinements.

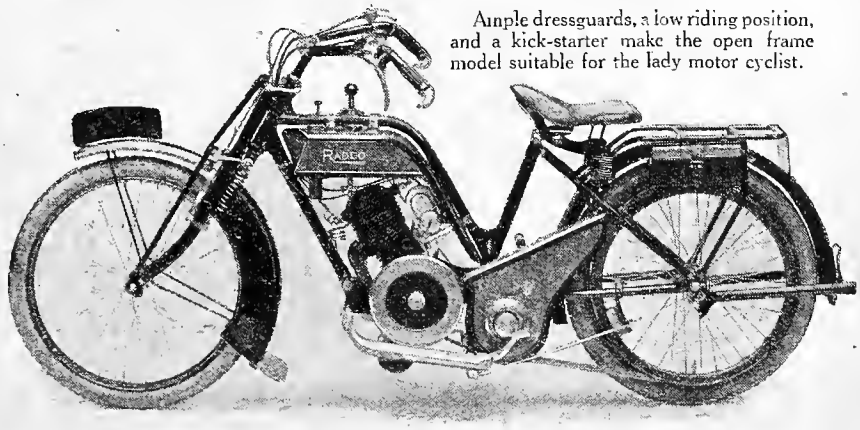
A Larger Engine, a Bijou Sidecar, and a Lady's Two-speed Model.

THE most important alteration to the Radco models lies in the fact that the bore and stroke of the engine have been increased to 67×70 mm. (247 c.c.). The No. 1 model is now fitted with inverted lever controls, Best and Lloyd sight-feed drip lubrication, a modified internal exhaust release, and a neat chain guard; aluminium footboards, Druid forks, C.A.V. or Runbaken magneto, and 24×2½in. tyres complete the specification; though a purple tank, with black and gold lining, is now standard.

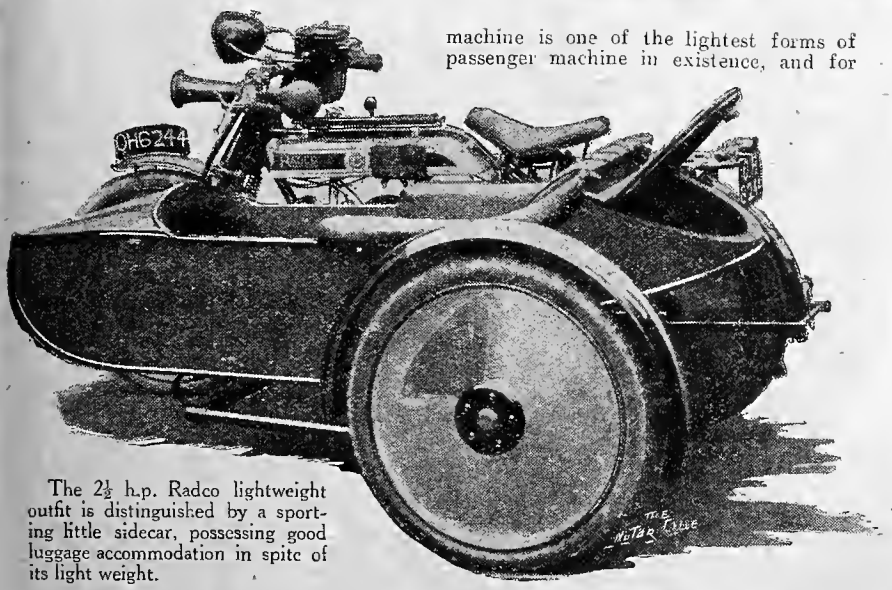
Choice of Gears.

This machine may be obtained either single-geared, with plain two-speed, or with clutch and kick-starter. Fitted with a very neat sporting sidecar, the little machine is one of the lightest forms of passenger machine in existence, and for dual work a three-speed Burman gear box is recommended.

A second model, with petroil lubrication, 24×2in. tyres, and footrests, instead of footboards, may also be obtained with various forms of transmission; and it is hoped that this machine will sell at an attractively moderate figure.



Ample dressguards, a low riding position, and a kick-starter make the open frame model suitable for the lady motor cyclist.



The 2½ h.p. Radco lightweight outfit is distinguished by a sporting little sidecar, possessing good luggage accommodation in spite of its light weight.

An Open Frame Model.

The lady motor cyclist who desires an open frame mount has not been forgotten, nor has the need for adequate dress guards on this type of machine. A neat design of frame has been evolved, and, by inclining the engine, it is kept well out of the way of the rider's skirts without being inaccessible. A metal shield extends downward from the tank in the rear of the engine, and both belt and primary chain are similarly adequately protected.

A Burman lightweight two-speed gear box, with kick-starter — a commendable feature on a lady's mount—is fitted, and, otherwise, the machine follows the lines of the standard Radcos.

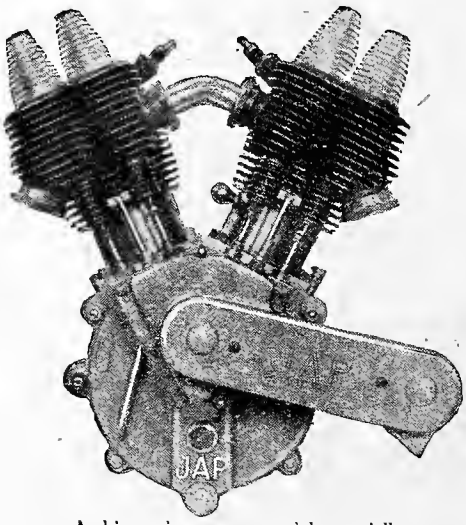
ENGINES FOR ALL REQUIREMENTS.

1922 J.A.P. Models: Side Valves Universal Practice Throughout Wide Range of Singles and V Twins.

THE full range of J.A.P. engines for 1922 will consist of no fewer than ten different models. The makers, J. A. Prestwich and Co., Ltd., Northumberland Park, Tottenham, London, N.17, are particularly anxious that their engines should be known not by their horse-power, as this, of course, is an unsatisfactory term, but by their cubical capacity measurements. The range will be the 250 c.c., 293 c.c., 350 c.c. standard, 350 c.c. sports, 550 c.c., 500 c.c. twin, 680 c.c. twin, the 986 c.c. standard, and the 986 c.c. sports; there is also the 986 c.c. water-cooled twin. Several of these are completely new models. Take, for example, the 350 c.c. sports model, which came into being just before the T.T. races. Unlike several other motor cycle engine manufacturers, those responsible for J.A.P. engines have pinned their faith to the side-by-side valve layout, and have obtained wonderful successes during the past year.

A Long Stroke 350 c.c.

The 350 c.c. sports engine has a bore and stroke of 70×90 mm., and it is now fitted with an oil spray device fixed over the relief valve, consisting of a pipe with a flattened head, and, on each side of the head, are two narrow openings, about ¼in. in length, through which oil is sprayed on to the valve stems. It would be thought at first that this idea, though excellent, would be rather messy, but very little oil issues therefrom, only just enough to moisten the valve stems. The illustration of the engine will show the multiplicity of the radiating fins and the die-cast aluminium "fir cones" attached to the valve caps which serve to dissipate the heat. The position of the sparking plug is to the rear of the inlet valve, a position which has been found after careful experiment. An engine, with the sparking plug fitted in the standard position, namely, the inlet valve cap, gave somewhat inferior results, but when the plug was moved to the new position the engine ran for ten minutes on full load and gave increased power. The test was purposely made with unsatisfactory plugs. The new engine has a roller bearing big end and ball bearings on the pulley side. It is also fitted with a new and more robust type of timing gear. It will be seen that the timing gear case is circular and the magneto chain cover forms part of it, while the platform to which the magneto is attached is of mild steel and is bolted on to a lug on the crank case. The valves are 1⅝in. in diameter. When used for competition purposes, an aluminium piston is fitted, but for general touring work a cast iron piston is supplied. Both these are of standard design. The gudgeon pin is held in the connecting rod and rotates in the piston, and it has been found that this system is quite satisfactory, even though, when an aluminium piston is fitted, no bushes are used.

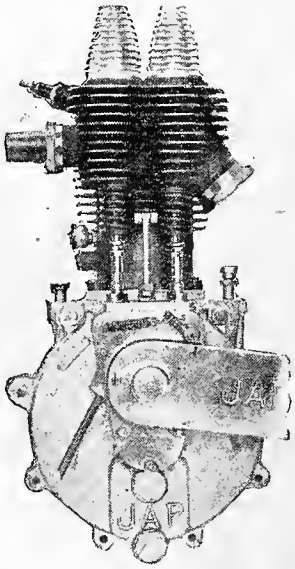


A big twin sports model, specially suitable for speed mounts. It has roller bearing big ends, and ball bearing mainshaft.

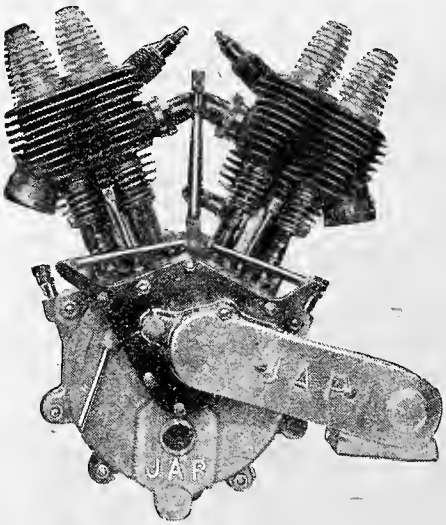
Big Single for Sidecar Work.

The new 550 c.c. engine follows similar lines, and the sparking plug position is the same. The bore and stroke of this engine are 85×95 mm., and it is of the low compression variety. The cylinder has a number of fins cast on it situated close together so as to dissipate the heat adequately, while the new timing gear (similar to the 350 c.c. type) is fitted; the big end has a roller bearing and a ball bearing is used on the pulley side. The piston is of cast iron, and the flywheels are very large.

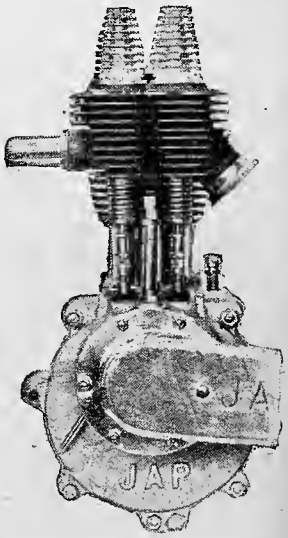
Another new engine which will attract a number of motor cyclists is the 986 c.c. sports model big twin; this is provided with valve oil spray similar to the smaller engines previously described. The radiating fins have been specially cast to keep heat from the valve chest, and the plug is similarly arranged, where it is cooled by the incoming gases. The size of the ports is also a point worthy of special remark. The valves are 1⅞in. in diameter, and 1¾in. exhaust pipes are fitted. Not only are the big ends of the roller



The 550 c.c. J.A.P. single cylinder. Note the die-cast "fir cone" valve cap radiators, the new position of the sparking plug, and the oil spray for the valve stems.



A V twin of 500 c.c., composed of two 250 c.c. single cylinders; the exhaust valve lifter is of the external variety, once popular on all J.A.P. products.



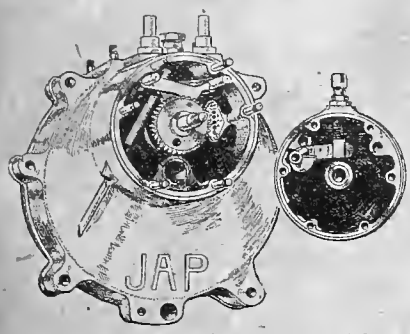
The new 250 c.c. J.A.P. unit. It has an oil spray for the valve stems, the die-cast "fir cone" valve cap radiators, heavy radiating fins, and an improved timing cover.

Advance Details of 1922 Models—

pattern, but ball bearings are used on both sides of the mainshaft. The makers guarantee that this unit will do eighty miles an hour.

The 250 c.c. T.T. Engine.

A review of the new J.A.P. models cannot be concluded without reference to the 250 c.c. engine which this year won *The Motor Cycle* Cup in the T.T., the Grand Prix, all Class A records, won its class in the 500 Miles Race, the Gaillon Hill-climb, and the recent world's records in the Paris Speed Trials. It is fitted with side-by-side valves, and it is hoped that it will attain eighty miles an hour. Such a speed from a 250 c.c. single-cylinder is almost incredible, more so since it is equal to the guaranteed speed of the big 8 h.p. twin-cylinder sports model already referred to.

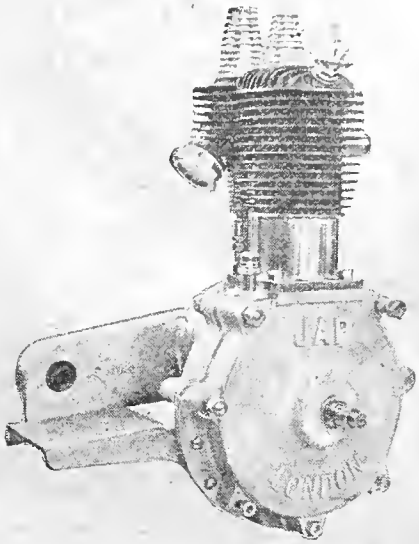


Crank case and simple timing gear of the 350 c.c. latest type single cylinder model.

10,000 Revs. per Minute.

Although 80 m.p.h. may seem a vain hope, the makers nevertheless are ready to demonstrate that this wonderful little 250 c.c. engine is capable of turning over at the hitherto unthinkable speed of 10,000 r.p.m.

There is also a new 550 c.c. sports model, which has one cylinder similar to those on the twin-cylinder sports model, large valves, ball bearings on both sides of the engine, and roller bearing big ends. The 500 c.c. twin is another attractive proposition, and is equipped with two 250 c.c. cylinders, 64.5×76 mm. It is also worthy of mention that the standard 8 h.p engine has been improved, the cylinders having a larger number of cooling fins situated closer together and roller bearing big ends.



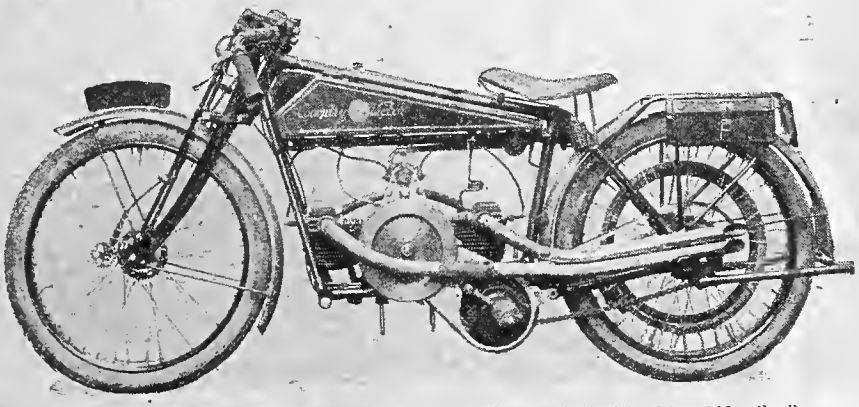
Front driving side view of the 350 c.c. engine, showing the mild steel magneto bracket bolted to the web between the crank case lugs.

"500 Miles" Coventry Victor Marketed.

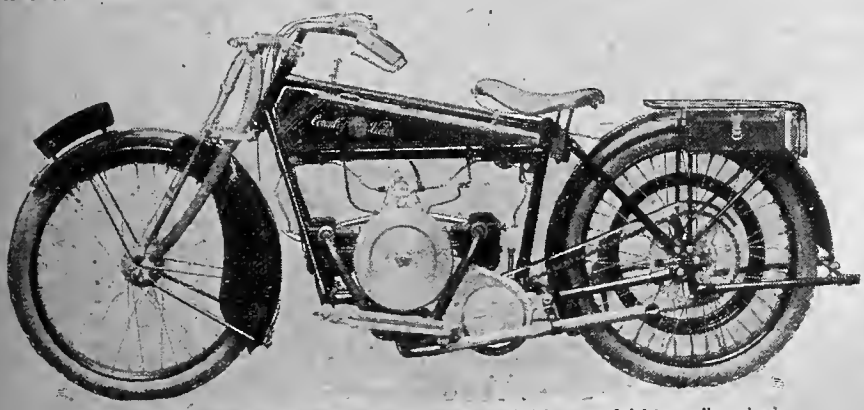
Replica of Successful Brooklands Mount, a Dual Purpose Touring Model and a Sidecar Machine.

BEFORE winning the 750 c.c. class in the 500 Miles Race at Brooklands, the 5-7 h.p. Coventry Victor had a useful reputation as a reliable and smooth-running double-purpose mount. Now that it has proved also to have a very useful turn of speed, it should meet with much success amongst the more sporting section of the fraternity as well as amongst the tourists who simply admire the absence of vibration characteristic of the flat twin.

For next year, what is to all intents and purposes a replica of the successful racing machine will be marketed as a standard sports model. Reasonable mudguarding and a cover for the primary chain are the chief deviations from the specification of the track machine; and, as this model is of the short wheelbase type (described in *The Motor Cycle* of July 2nd), it strikes one as a most attractive solo mount.



All the characteristics of a successful sports model are embodied in this "500 miles" Coventry Victor.



For a solo or sidecar machine the short wheelbase 5-6 h.p. model is equally suited.

The short wheelbase touring model has more ample mudguarding, footboards instead of footrests, neat new pattern silencing arrangements, and 28 × 3in. tyres. This machine sells at £115; and the price of the sports model, although not yet definitely fixed, will also be in the same neighbourhood.

Items common to both models are Sturmey-Archer gear box, Brampton forks and spring link chain, Amac carburetter, dummy belt rim front brake, and the new M-L lightweight magneto.

A Cox-Atmos carburetter with an original induction system is optional to those who prefer the single lever control. This instrument has been found to give excellent results on the flat twin engine.

A model with the longer wheelbase (the gear box being behind the rear cylinder instead of underneath) is retained as a purely sidecar mount.

A SIMPLE FOUR-SPEED GEAR BOX.

Four Speeds and Starter in Jardine Box with only Eight Constant Mesh Pinions.

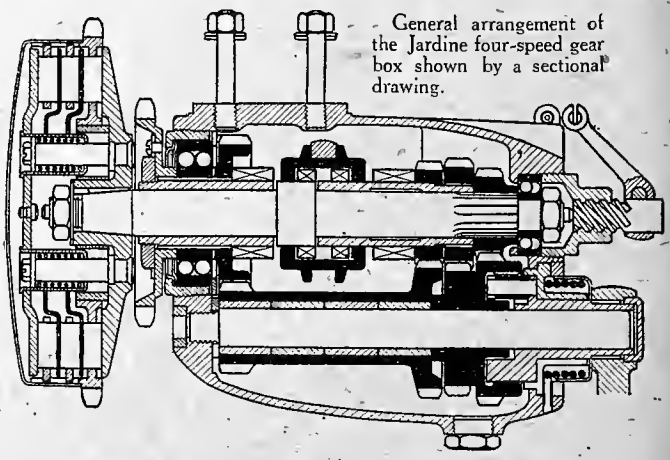
IT should not be necessary nowadays to enlarge on the advantages of the four-speed gear box compared with the three. It is generally admitted that the extra ratio is beneficial from all points of view, and on all types of machine; but, on the other hand, it is claimed that the disadvantages of extra weight, bulk, complication, and expense do not merit the adoption of four speeds for motor cycle use. Jardine, Ltd., of Deering Street, Nottingham, have gone all out to prove that the latter school argue on premises that do not exist; and their new four-speed gear box—their only model in future—is certainly less complicated (as our illustrations demonstrate) than many a present day three-speed model; moreover, the price is moderate (£17 10s. retail).

Not an Experiment.

Only in the very ingenious method of obtaining the four ratios with but one sliding dog and no sliding pinions does the box resemble any previous product of the firm; otherwise it has been entirely redesigned on modern lines by a pioneer designer of motor cycle gears, Mr. Cohen, and it represents two years' intensive experiment and labour. Before going on with the description it is worthy of record that plant, jigs, tools, and factory facilities generally are already in action, and indeed that about fifty boxes have been completed to date.

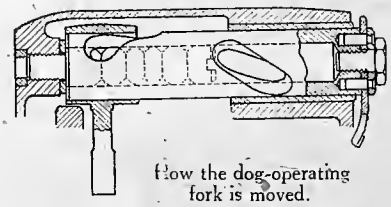
The mainshaft is mounted on double row ball bearings, and, expecting the low gear pinion at the extreme end, which is rigidly splined, the pinions rotate freely on sleeves, which are each provided with integral dogs. Following usual practice, one of these pinions is, of course, mounted on the sleeve which carries the rear chain sprocket. (A belt drive model is not made.)

On the stationary layshaft there are two sleeves, each carrying a pair of pinions, and each being machined out of the solid bar. These layshaft pinions are in constant mesh with those on the main shaft, and the longer of the two sleeves is mounted on four hardened and ground bushes, provision being made for lubrication. There is also a set of dogs on the bared portion of the mainshaft. No keys are used in the box.



General arrangement of the Jardine four-speed gear box shown by a sectional drawing.

Excepting the control mechanism and the kick-starter arrangements, a double internally dogged clutch completes the inventory of the internal parts. Lateral movement of this dog, bringing it into engagement with the dogs on the pinions and the mainshaft, gives the various gears in their right order. Reference to the diagrams will make this clear, the only involved action being on first or low gear when the drive goes to the layshaft *via* the low gear pinion, crosses back to a main shaft pinion, returns to the long layshaft sleeve, and thence back to the rear drive sleeve on the mainshaft. Top gear is direct.



How the dog-operating fork is moved.

The method of sliding and locating the dog is equally ingenious. Rotation (by the control lever) of a sleeve, mounted inside the box, which has a helical slot, gives this sleeve a lateral motion. Another sleeve carrying the dog-operating fork obtains double this lateral motion by being connected with a second helical slot on the main sleeve. The stub which engages in this second slot is in the form of a spring plunger, and serves the additional duty of locating the gear positions by engaging in grooves on the bar upon which the whole is mounted. No delay action device has been found necessary, and no gate of any sort is fitted. The gears are simply (and easily) "felt" by the long control lever, which, of course, is mounted on the box itself and has a vernier adjustment, so that it may be operated from any convenient angle.

Layshaft Gear as Starter Pinion.

One of the layshaft pinions also acts as a kick-starter pinion, thus leaving only eight gear wheels in the box; incidentally, we are informed that a master patent is held on this scheme of starter operation.

Clutch design and operation is conventional in general principles, but is notable on account of the very large diameter of the plates, and on account of a special thirty-hour treatment which the cork inserts undergo before use. We can

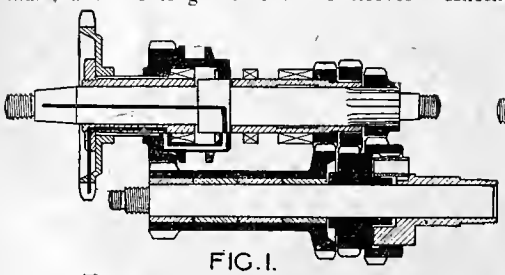


FIG. 1.

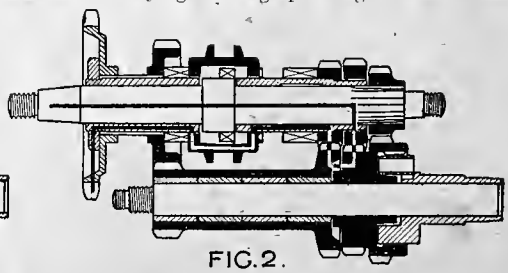


FIG. 2.

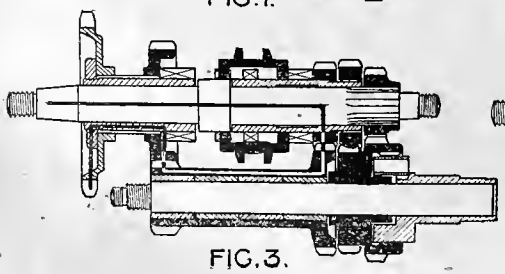


FIG. 3.

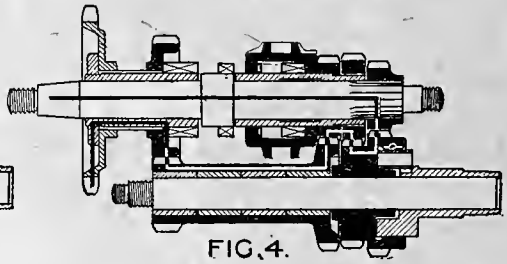


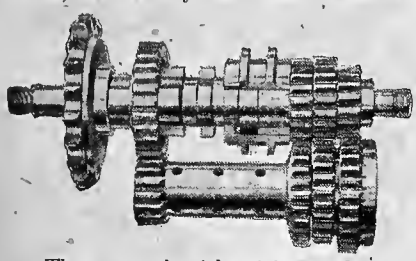
FIG. 4.

HOW THE GEAR WORKS.

Lateral movement of the double dog engages the various gears, as illustrated. Fig. 1, top (direct drive): fig. 2, third gear; fig. 3, second gear; fig. 4, first or low gear. The thick line shows the path of the drive on each gear. A neutral position is provided between first and second gears.

A Simple Four-speed Gear Box.—

testify to the fact that the clutch is extremely "sweet" and progressive in action, and we may also remark here that



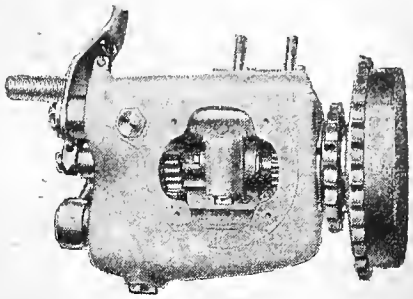
There are only eight pinions and one sliding dog clutch to provide the four ratios and the kick-starter gear.

the ease of gear changing compares favourably with any other box on the market.

The casing is a handsome casting, of perfectly clean outline, made in the factory's own foundries, and is provided with a neat inspection door through which the gears can be removed. Chain line and bracket dimensions conform with standard figures on proprietary gears already on the market, while the workmanship and finish are above reproach.

Minor details worthy of note are that all the gear teeth are of the stub pattern, that the rubber buffer for the kick-starter is allowed room for expansion in its housing, and is not merely crushed against a steel wall each time, and that the kick-starter step is of the folding variety.

The weight of the box complete with controls is 34½ lb., and the ratios with a 4 to 1 top are 4, 5.82, 9.22, and 13.4 to 1. Each gear is approximately a 50% reduction.



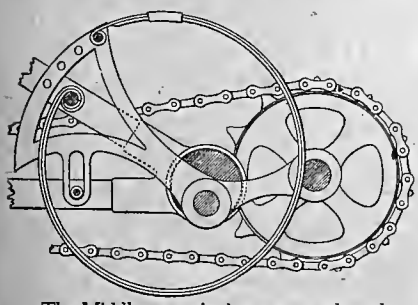
Exterior view of the complete box with the inspection door removed.

A SPRING WHEEL SIDECAR.

Floating Axle System Tested on Sidecars and Applicable to Motor Cycle Frames.

A NEW form of the popular Middleton sidecar has lately been placed upon the market. Its most noteworthy features are the substitution of the axle tube by a malleable casting of great strength, and an ingenious and simple form of spring wheel.

The spring is circular in form, one end being anchored to a lug on the



The Middleton springing system adapted to a motor cycle.

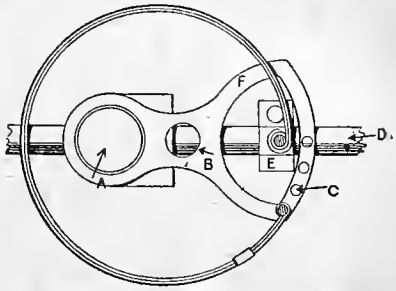
near side member of the chassis, while the other is fastened to a special carrier pivoted on a large spindle on the side member. The point of anchorage on the wheel spindle carrier is adjustable, so that the tension of the spring may be altered to suit the passenger's weight

Mr. Middleton, the inventor, is so well pleased with the system that he is thinking of incorporating it in a spring fork, and has also applied for a patent for the same system to be employed in the springing of the rear wheel of a motor bicycle. In this case the spindle carrier has an extension at the rear for the support of the back wheel spindle. The point where the springing is rigidly anchored is on the back forks of the motor bicycle, while the carrier is provided with a slide, so that its range of travel is restricted. It should be noted that the point about which the carrier pivots is eccentrically mounted in a housing at the end of the rear forks, so that the adjustment of the rear chain can easily be effected. Delicate adjustment of the tension of the driving chain within fairly wide limits is thus rendered possible.

Tested on Brooklands.

The Middleton spring wheel sidecar has been used a good deal on the track this year. D. R. O'Donovan and C. F. Temple and O. de Lissa have used them at Brooklands meetings.

Another noteworthy feature of the chassis is the extension of the near side member to the rear for the purpose of supporting the sidecar wheel mudguard, which is anchored at this point and also at its forward end. This is a well-established feature of the Middleton, and renders the fixing rigid and reliable.



Details of the Middleton sidecar springing:

A. Stud fixed to chassis tube

B. Hole where the wheel spindle is fixed in lever

C. Holes for spring adjustment

D. Chassis tube, on which lever F pivots or moves up and down

E. Lug with projecting studs, which is brazed to chassis tube D

Mr. Middleton, whose address is Middleton's Motor Works, 27, Stroud Green Road, Finsbury Park, London, N.4, is also experimenting with a semi-flexible sidecar, which gives just sufficiently to ease the strain on the motor bicycle frame.

Bradshaw Oil-cooled Engines on the Market.

A Range of Power Units; 350 c.c. Single, 500 c.c. Flat Twin, and Two Big 90° V Twins.

ONE exhibit at the forthcoming Motor Cycle Show at Olympia which will attract a great deal of attention and interest is that of J. Walmsley and Co. (Preston), Ltd., who are manufacturing the new Bradshaw oil-cooled engines.

It will be recollected that the full description of the 1,000 c.c. 90° V twin with integral four-speed gear, clutch, and kick-starter, first appeared in *The Motor Cycle* of June 30th this year, since when a 1,100 c.c. model has been adopted as the power unit of a new Belsize light car.

Additional to the 90° V twins of 1,000 c.c. and 1,100 c.c. capacity, the latter with gears incorporated as previously described, there will be shown a 500 c.c. flat twin (the same engine as that already used in the Zenith Bradshaw machine) and a 350 c.c. single-cylinder. All the engines operate on the same principle, having overhead valves working in cast iron air-cooled heads and cylinder barrels submerged in the crank case, through which a large quantity of oil is being passed by a gear-driven pump, the main cooling of the cylinders and pistons being through the agency of oil which gives up the heat to the large areas of the crank case with which it comes in contact.

The cylinder dimensions of the single engine are 68×96 mm. (349 c.c.), this engine being of the long stroke type. The flat twin has "square" dimensions, the bore and stroke being 68 mm. (494 c.c.). The smaller of the two 90° V twins is also a "square" engine, with bore and stroke of 86 mm. (998 c.c.), while the larger one has cylinder dimensions of 90×86 mm. (1,094 c.c.). The complete enclosure of all working parts in the crank case, with consequent silence of operation, will lend the smaller big twin a special attraction when fitted to high speed sporting mounts.

The Starley Semi-disc Wheel.

A Substitute for a Spring Wheel. Three-point Contact.

As the invention of the originator of the tangent cycle wheel, the latest motor cycle wheel produced by Mr. W. Starley is worthy of special attention, particularly as many of the advantages claimed are not obvious unless the construction is carefully studied. In the main, the wheel consists of two discs of aluminium spun to such a form as to give lateral rigidity. Close to their periphery these discs, when riveted together, form a circle of tubular section, in which are mounted three steel straps, which are held rigidly to the discs by outer metal strips, and form the sole contact between the disc and wheel rim.

A new idea in wheel construction by Mr. W. Starley.

Constructionally, therefore, the wheel is simple, light, and comparatively cheap. The advantages claimed in actual practice are many, but perhaps the most important is that the rim is given free play and springs to a certain extent, thereby greatly increasing the life of the tyre and also the rider's comfort. As regards strength, the wheel has been tested both mechanically (by a well-known engineering firm) and on the road, and has so far withstood its trials admirably.

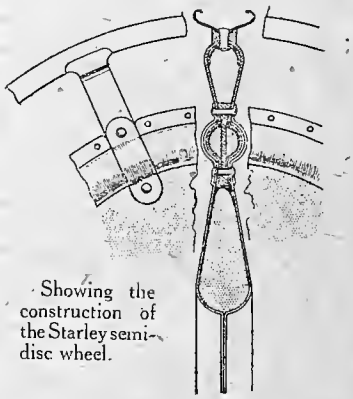
Easier to Clean.

It is obvious that a wheel constructed in this manner will be considerably easier to clean than one of the spoked type, and it has the further advantage that there are no spoke nipples protruding through the rim to cause possible damage to the tyre or to allow the ingress of water.

The discs, being of aluminium, are not liable to rust either inside or out, and the space between the rim and the disc provides free play for tyre levers when repairs to the tyre are necessary.

We are told also that the space surrounding the disc is sufficient to obviate trouble due to side winds, which is sometimes experienced with full disc wheels.

Another very considerable advantage lies in the fact that Mr. Starley has devised a very simple type of internal-expanding brake, which can be fitted to these wheels in a short time and without any alteration in the construction of the plain wheel. Details of this brake we are forced to withhold at the moment, owing to the patents being incomplete, but we may state, without divulging the principle, that they are light, simple, and cheap.



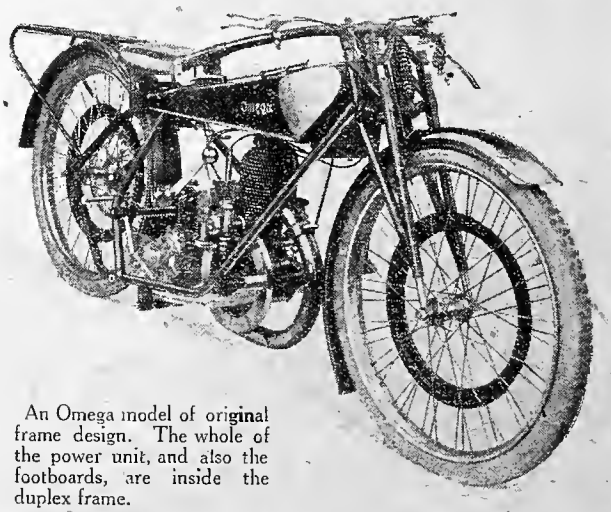
Showing the construction of the Starley semi-disc wheel.

An Omega Novelty.

Original Ideas Embodied in the Frame Layout of the New Two-stroke Model.

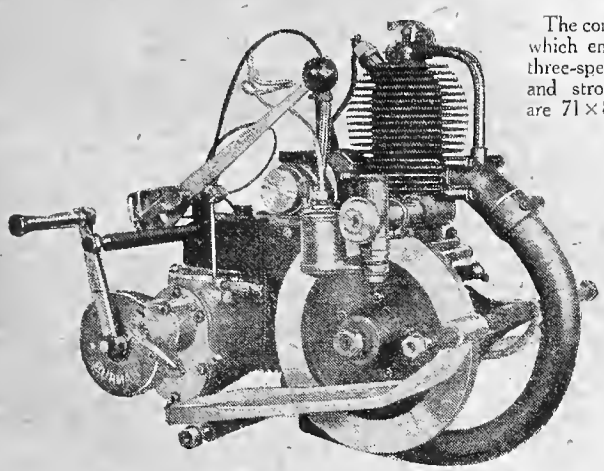
Quite one of the most interesting developments in the two-stroke world is the latest Omega model. The whole machine bristles with interest and should attract a considerable amount of attention at Olympia. The engine, which is built by the firm concerned, is of the four-port type, and has a bore and stroke of 71×88 mm. (348 c.c.). A hemispherical combustion chamber surmounts a well-ribbed cylinder casting, the ports being of large area. The gudgeon pin floats in the small end bush, and also in the cast iron piston bosses, endwise location being effected by spring rings. All the bearings of the built-up crankshaft are of phosphor-bronze and of particularly large proportions. Carried on the rear engine plates are the magneto and a two or three-speed gear box with clutch and kick-starter, the whole with the aluminium foot-plates forming a compact unit, which may be removed from the frame by uncoupling the petrol and oil pipes and final drive and slacking off three nuts. A very wide duplex loop frame, somewhat reminiscent of that employed by the A.B.C., contains the whole of this unit within its width, so that, in case of a fall, the frame will protect the working parts. Final drive is by belt.

Another novelty lies in the method of carrying the fuel tank, for no screwed lugs are carried by this delicate portion of the machine. Instead, the tank is recessed along its top centre so as to fit round the top rail, the whole being pressed upwards by plates through jack screws carried in special frame lugs.



An Omega model of original frame design. The whole of the power unit, and also the footboards, are inside the duplex frame.

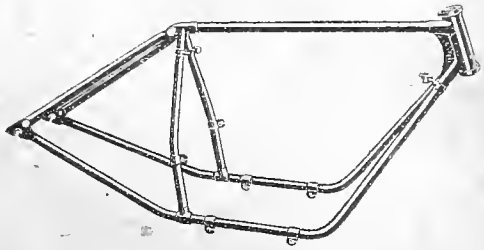
Detail work includes an exhaust release leading into the exhaust port, the latter part being well ribbed. Internal V type brakes are fitted. The finish is in black with a red tank panel. Three variations are obtainable: with plain two-speed gear, chain and belt drive, and either two or three-speed gear with clutch and kick-starter, in which case final transmission is by chain. The forks are of a somewhat novel type, the wheels being carried by rods acting in long guides, while the girder portion of the forks is stationary and clipped to the handle-bar on either side of the head. This construction enables a simple type of adjustable handle-bar to be used. Both compression and recoil springs are mounted high up and well out of the way of mud. Pivoted at the peak to a lug on the top tube, the saddle is fixed at the rear in such a manner that it may be reversed in case of leaving the machine in rain so that the seat does not get wet; and another important provision for the rider's comfort lies in the fact that ample legshields are fitted, which serve also to protect much of the machine from mud splashes without interfering with the cooling draught. The saddle position is particularly low, and yet there is comfortable leg room for a tall rider. In the illustration the leg shields are not shown.



The compact power unit, which embodies a Burman three-speed gear. The bore and stroke of the engine are 71 × 88 mm. (348 c.c.)

Altogether the Omega design is distinctly pleasing, and one which should attract considerable attention when it is exhibited at Olympia. In this machine we have a model designed and produced as a whole, instead of being built with standard units. Frame, fork, and engine are new in design and of Omega manufacture. Its performance in trials will be watched with interest.

Wide duplex frame used on the new Omega two-stroke. By slackening six nuts the engine, gear, and footboards may easily be removed.

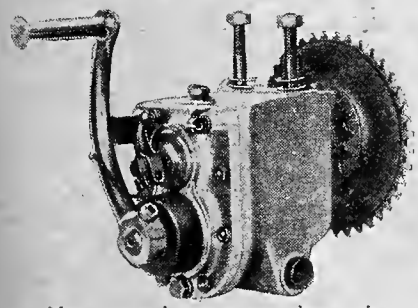


A Three-speed Sturmey Lightweight Gear.

Simplified Construction of the 1922 Sturmey-Archer Gear Box for Lightweight Machines.

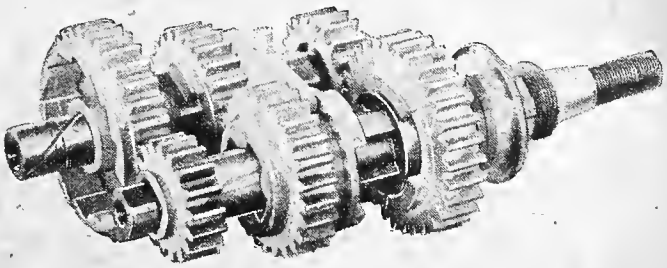
LIGHTNESS and simplification have been sought in the latest product of Sturmey-Archer Gears, Ltd., of Lenton, Nottingham.

Hitherto makers desirous of offering three-speed Sturmey-geared models of their lightweight machines have been compelled to use the heavy box equipped with a light clutch; but next year an entirely new gear will be available, interchangeable in every way with the already popular two-speeder. Incidentally, the weight is only 3 lb. heavier than the latter (18½ lb. in all); and, although a kick-starter is included, no additional pinions are required, for, instead of starting through two separate pinions, the low gear members are utilised for this purpose.



Neat external appearance characterises the new three-speed lightweight Sturmey-Archer gear box.

Gear wheels of the new Sturmey light three-speed gear; the large low gear layshaft wheel has an internal ratchet for the kick-starter pawl.



Actually the layout of the gears and the method of operation by sliding both constant mesh middle gear pinions bodily along their shafts is the same as in the heavyweight models; but, by using the low gear wheels as the kick-starter train, the size of the box is considerably reduced by the elimination of the projecting starter case. Methods of control and the single-plate type of cork insert clutch are the same as used on the two-speeder.

French Trials Programme for 1922.

Varied Fixture List, including Road Races and Long Distance Reliability Events.

A PRELIMINARY calendar of motor cycle events to be held in France next year has just been drawn up, and indicates a continuance of the activity which has marked the past season. Many of the events are only of local importance, but about half a dozen stand out internationally. The first event of the year will be a reliability trial, probably a non-stop affair, to be organised by the Union Motocycliste de France, doubtless in the suburbs of Paris. The first event of this nature was run this year in the Forest of Marly, on the western suburbs of Paris. The second trial has been fixed for February 19th.

Argenteuil hill-climb will be held on March 5th. The hill-climb up La Turbie, near Nice, is fixed for March 6th. The Tour de France, which promises to be one of the most important events of its kind for the year, has been settled for the month of March, instead of April. Paris to the Pyrenees and return will be run from April 28th to May 7th.

The Motocycle Club de France will hold its road races, on a course yet to be decided, on June 4th and 5th. On the 11th of the same month there will be a cycle car race organised by the Cycle Car Club. The big road race of the year, for which the national body, the Union Motocycliste, will be responsible, has been fixed for July 16th. There will be no important events in August, in order not to clash with the Six Days Trials. Gaillon hill-climb will be run on October 1st, and on October 29th there will be a one day reliability trial around the suburbs of Paris.

Some of the local French clubs are of the opinion that official expenses in connection with races and competitions are unnecessarily high. Thus the Motocycle Club de France states that the services of two timekeepers at the race held at Provins, near Paris, last summer cost 510 francs, or at normal exchange about £20. The cost of two timekeepers for the Paris to Nice competition was 1,813 frs. 80 cents, or nominally £72. It is stated that when the recent speed trials were held in the Bois de Boulogne an offer was received from England of the use of an electrical timing apparatus and the services of an official timekeeper free of cost. The Motocycle Club de France had to refuse this offer on account of a vigorous protest by the national authority in France. In this connection it is pointed out that the winner of the non-stop trials held in the Forest of Marly last March has not yet received the medal offered by the Union Motocycliste.

The local clubs claim that the expenses of officials should be kept as low as possible in order that motor cycle events may be held with lower entry fees than have to be applied at the present time.

CURRENT CHAT

Times to Light Lamps.

Nov. 10th	...	...	5.18 p.m.
,, 12th	...	...	5.14 ,,
,, 14th	...	...	5.11 ,,
,, 16th	...	...	5.9 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

November 28th.

Eighteen more days and Olympia will open its doors to the motor cyclist.

The Motor Cycle Film.

The Motor Cycle film, which will be loaned to clubs during the winter months, will be released during the motor cycle Show week, when it will be shown twice daily at the Polytechnic Picture House. See page 582.

Near Football Grounds.

A Liverpool motor cyclist was recently summoned for a breach of the traffic regulations which, in this particular instance, closed certain streets adjacent to a football ground during matches. It appears that the defendant could not reach his house and shop without contravening the regulations. The Stipendiary questioned the validity of the regulation, and the charge was withdrawn.

Two-stroke Lightweight Performances.

In the West Midland open trial reported on page 585, an outstanding feature was the climbing of some of the smallest two-stroke lightweights. The manner in which the Sun-Vitesse team and the two Morris machines performed was particularly noticeable, and quite outclassed many more powerful machines, while the O.K. and Velocette sidecars are the wonders of their kind.

THE MOTOR CYCLE

Special Show Numbers,

1921.

NOVEMBER 17th—

Passenger Machine Number.

NOVEMBER 24th

Forecast and Guide to the Show.

DECEMBER 1st—

Show Report.

ORDER TO-DAY!

The Autocar

SHOW REPORT

On Sale FRIDAY, November 11th, 1921.

Excursions to the Motor Cycle Show.

Excursion trains on pre-war lines will be run to the Olympia motor cycle show.

Show Report Number of "The Autocar."

An issue of extraordinary interest is the Show Report Number of *The Autocar* published to-morrow (Friday). Students of car design will find the contents of compelling interest, for, in addition to a technical survey of 1922 cars revealing progress in design, there is a stand-to-stand description of the Olympia and White City exhibits, with specifications of each type of car, and hundreds of line and half-tone illustrations. *The Autocar* Show Report is an issue worth preserving. Copies should be ordered to-day—fourpence.

Special Features.

100 MILES RACE IN SOUTH AFRICA.

INNOVATIONS IN DESIGN.

ROAD TEST OF OIL-COOLED TWIN.

Hotel Accommodation for the Show.

Provincial members of the A.C.U. may obtain assistance in securing hotel accommodation during Show week from the secretary of the Union.

Original Valve Timing.

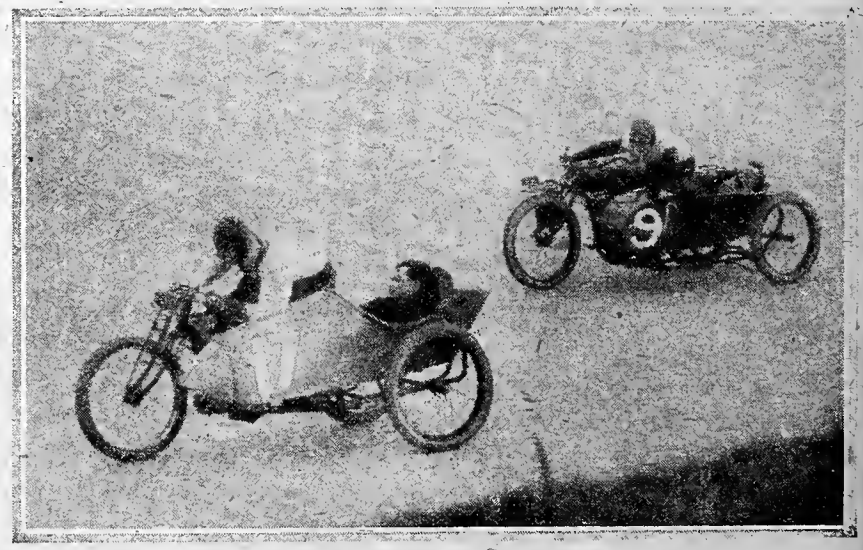
In reply to a motoring query to the *Statesman* (India), a reader is advised that the exhaust valve should close "when dead centre is reached five minutes past midday." In other words the engine attains 365 revolutions per year!

Next Thursday.

The next issue of *The Motor Cycle* will be the first of the three special Show numbers, and will be devoted chiefly to passenger machines.

Novelties for Next Year.

In this issue are described two designs for 1922 which justify the term "novelty." One is a very simple four-speed gear box, and the other a most unconventional spring frame. Both have passed the experimental stage.



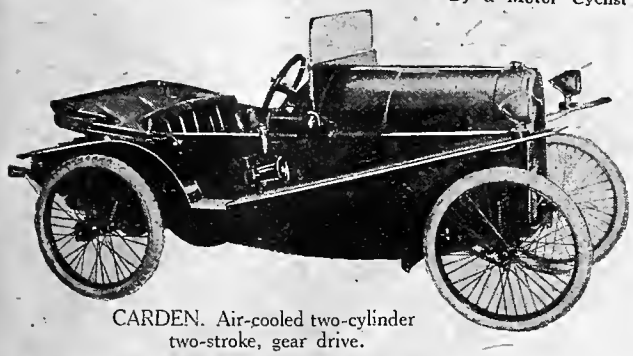
AT BROOKLANDS ON SATURDAY.

A photographic impression of speed in the only sidecar race. The riders are R. Charlesworth (5-6 Zenith sc.) and E. Bridgman (7-9 Indian sc.) D. H. Davidson on a similar machine to Bridgman's won this event.

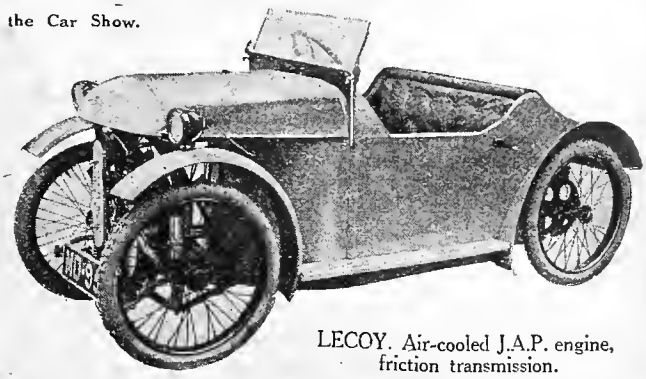
RUNABOUT ENGINE TENDENCIES.

Developments in the Design of Small Four-wheelers.

By a Motor Cyclist at the Car Show.



CARDEN. Air-cooled two-cylinder two-stroke, gear drive.



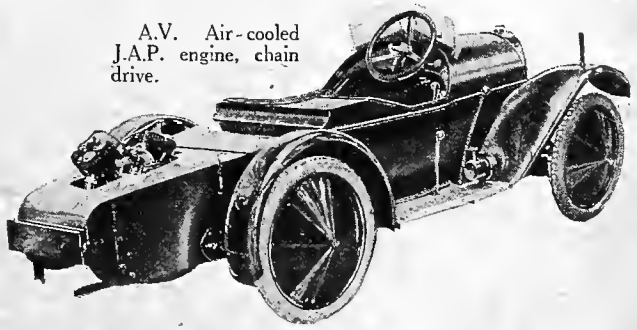
LECOY. Air-cooled J.A.P. engine, friction transmission.

NEVER before has the exhibition of cars at Olympia and the White City held so much of interest to the motor cyclist. There are more and better cycle cars and light cars on view than in previous years, and the range extends from the simplest possible form of four-wheeled runabout with a single-cylinder air-cooled two-stroke engine to the perfect miniature car having a four-cylinder water-cooled engine, three speeds and reverse gear, and shaft drive to a full floating rear axle. Almost every variation between these extremes is to be found.

Pioneer Small Cars.

Many salient features are bound to be of interest to those who are unable to visit the Show. One of the most interesting developments is the entry of France into the field of very light cars. Strictly speaking, France has been nibbling at the type for some years past, and such little machines as the baby Mathis and Peugeot are old friends; the latter has become the Peugeot Quadrilette, and in its latest form with staggered seats instead of tandem accommodation it will make a strong appeal. Now, however, we have a number of newcomers represented in this country, mostly of the miniature car type, such as the Salmson, M.A.S.E., Talbot, and the 5 h.p. Citroën. The last mentioned is a fascinating little vehicle, having a four-cylinder water-cooled *monobloc* engine of 855 c.c., built as a unit with the three-speed and reverse gear box. That well-known firm of engine builders, Messrs. Chapuis-Dornier, have also found it worth while to exhibit a tiny four-cylinder engine and gear unit.

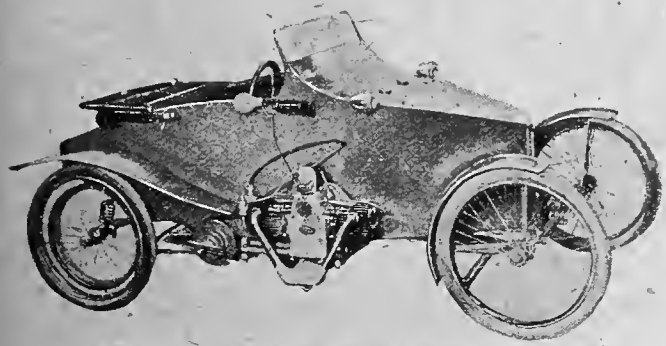
It must, of course, be remembered that the French invasion is only following in the footsteps of many British firms such as the Singer, the Standard, and Stellite, who are also in this class, who were pioneers of the type in this country. There are not many foreign competitors in the smaller classes, but the Kiddy shown on the Bignan stand is an exception. This little machine has a tiny flat twin air-cooled engine of 65×60 mm. bore and stroke, a two-speed and reverse gear, and shaft drive. Enclosed overhead valve gear is fitted. Of British flat twins there are a number. The water-cooled Jowett was a pioneer, and the water-cooled Bovier is fitted, amongst others, to the Unit and Corona light cars; and the 7 h.p. Wolseley is an interesting newcomer with a big reputation behind it. Air-cooled flat twins are perhaps best exemplified by the A.B.C. and Rover, though a little Gibbons cycle car is also thus engined. The new Hotchkiss engine is also a very fine piece of work. Water-cooled V types are exhibited by the Crouch, Coventry Premier, and Little Midland, the first mentioned being an interesting engine with enclosed overhead valve gear. The Coventry Premier, it will be remembered, was a three-wheeler last year.



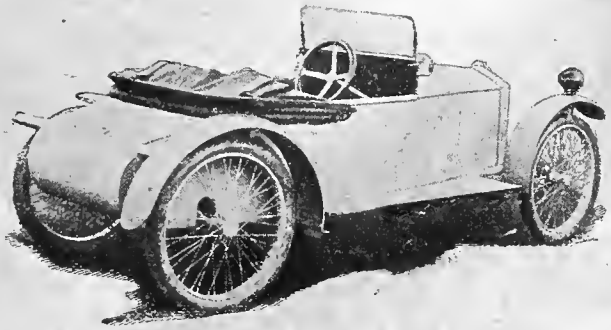
A.V. Air-cooled J.A.P. engine, chain drive.

Air-cooled Engines.

Air-cooled V twins are still the most popular type amongst the lighter and more moderately-priced vehicles. J.A.P. and Blackburne engines predominate in this class, and, in addition to the well-known A.V., Tamplin, Blériot-Whippet, and G.N., there are new adherents, such as the Swallow, with shaft drive and epicyclic gear, and the Lecoy, with its unusual body and friction drive.



GIBBONS. Coventry Victor flat twin engine, chain-cum-belt transmission.



TAMPLIN. Air-cooled J.A.P. engine, all chain transmission.

Small Engine Tendencies—

The latest Blériot-Whippet has all chain drive, with a three-speed and reverse gear box, and is a very attractive little machine, its luxurious suspension being one of its strongest points. New A.V. models include a family type body and several interesting refinements, while the latest side-by-side-seated Tamplin is almost the last word in simplicity, combined with comfort and economy. As an example of the future possibilities of the air-cooled V twin, the B.S.A. is most striking. In this chassis, which is replete with every modern convenience, including electrical starting, we find an overhead valve engine with entirely enclosed valve gear, pump lubrication, unit engine, and four-speed gear box. The price is rather higher than the average motor cyclist can afford; but, as an admirable example of air cooling, it is a matter of interest.

In a class by itself is the new Belsize, fitted with a V twin engine having air-cooled heads and the Bradshaw oil-cooling system applied to the rest of the engine. Side-by-side valves are employed.

The White and Poppe engine was shown in the Gallery. As regards transmission, there seems to be a slight tendency in the direction of the shaft drive in the lighter classes throughout, though quite an imposing array of friction transmission is staged. The Short-Ashby, one model of the Unit, the G.W.K. (a revived two-cylinder model will be of special interest), Lecoy, and New British (with air or water-cooled V twin engine) are interesting examples. The popular G.N. with its shaft and chain transmission remains unaltered, except for lubrication and starting arrangements; but belt transmission has almost entirely disappeared.

"THE MOTOR CYCLE" FILM.

IN addition to illustrating the enthusiasm of motor cycle clubdom, the reception which has been accorded *The Motor Cycle* film demonstrates one or two other interesting facts. The number of clubs which count managers of popular cinemas among their members is remarkable, as is also the ease with which the clubs less fortunate in this respect are arranging for the exhibition of the film in the leading cinemas of their towns.

We have received a number of congratulatory letters from various clubs, for which we take this opportunity of making public our thanks.

No fewer than fifty applications have already been received for the film, and at the time of writing twenty-two clubs have already been allotted definite dates. Many others are now completing their arrangements, and the latter total should be greatly increased by next week.

As announced last week, the length of *The Motor Cycle* film is 1,767ft., made up as follows:

Senior T.T. Race	395ft.
Junior T.T. Race	436ft.
French Grand Prix	148ft.
A.C.U. Six days Trials	346ft.
500 Mile Race	442ft.

It is expected, however, that an additional 300-400ft., including incidents in the recent 200 Miles Race for small cars, will be added before the film is released.

The following clubs have been allotted dates, but it should be noted that the majority of the intermediate dates are being reserved for other clubs which have applied and are now completing their arrangements:

Dec. 7.—Cheltenham and District M.C.C.
,, 8.—Gloucester M.C. and L.C.C.
,, 12.—Princess Mary's Convalescent Centre, Rednal.
,, 15, 16, 17.—Glasgow Western M.C.C.
,, 19, 20, 21.—Worcester and District M.C. and L.C.C.
,, 23, 24.—York and District M.C.
Jan. 1.—Barrow and District M.C.C.
,, 5.—Cardiff M.C.C.
,, 9.—Dewsbury and District M.C.C.
,, 11.—Clitheroe and District M.C.C.
,, 18.—Liverpool M.C.
,, 20.—Newcastle and District M.C.
,, 23.—Oxford M.C.
,, 25.—Keighley M.C.
,, 26.—Bradford M.C. and L.C.C.
,, 27.—Peterborough M.C.C.
,, 30.—Newport County M.C.C.
Feb. 2.—Stocksbridge and District M.C.C.
,, 23.—Eastern Valley M.C.C.
,, 24.—Gorseinon and District M.C.C.
Mar. 2.—Aberdare and District M.C.C.
,, 4.—Wellingborough, Rushden, and District M.C.C.

In addition to the above, the following clubs have either applied or acquainted us with their intention of applying at an early date:

Colne, N.W. London, Chorlton-cum-Hardy, Glasgow, Herts, Chester, Lancaster, Morecambe, Blackpool and Fylde, Leinster, Central Cornwall, Sheffield and Hallamshire, Oxford, Mansfield, Wellingborough, Rushden, Derby, Marlow, Aberdare, Cork, Levis Athletic, Ilkley, University College of N. Wales, Redditch, Standard (Coventry), Triumph (Coventry), Builth Wells, Kirkby Stephen, Annfield Plain, Gloucester, Cardiff, Birmingham, Rotterdam, Hull, and Portsmouth.

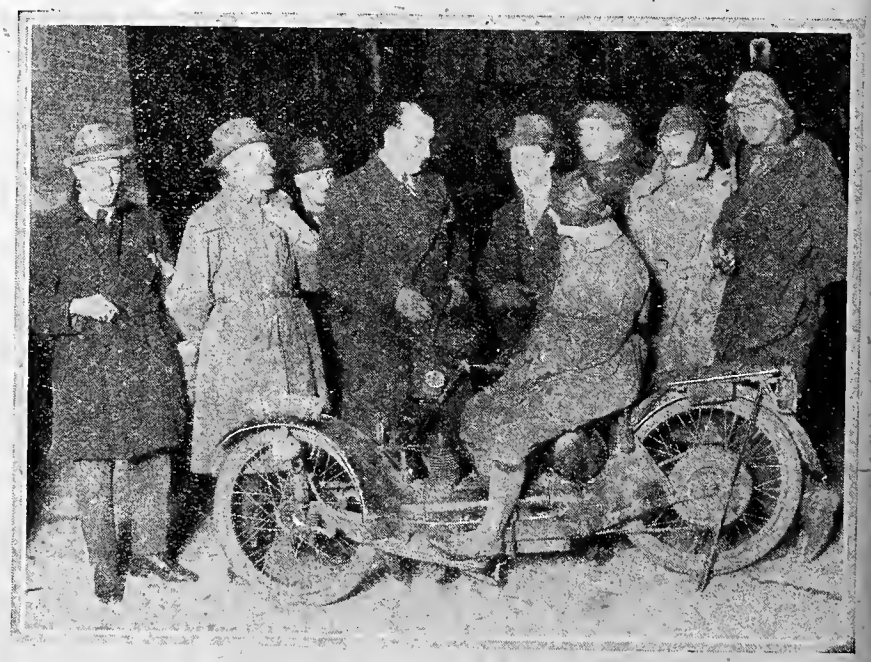
LADY RIDER'S 1,000 MILES TRIAL OF THE NER-A-CAR.

AN enthusiastic reception was accorded Mrs. G. M. Janson at Barnet on Saturday evening when she completed a 1,000 miles engine non-stop trial on the latest model Ner-a-car. Spectators at Highgate, the anticipated finish, were deprived the pleasure of witnessing the spectacular arrival of this plucky lady, escorted by a fleet of machines similar to that undergoing the test.

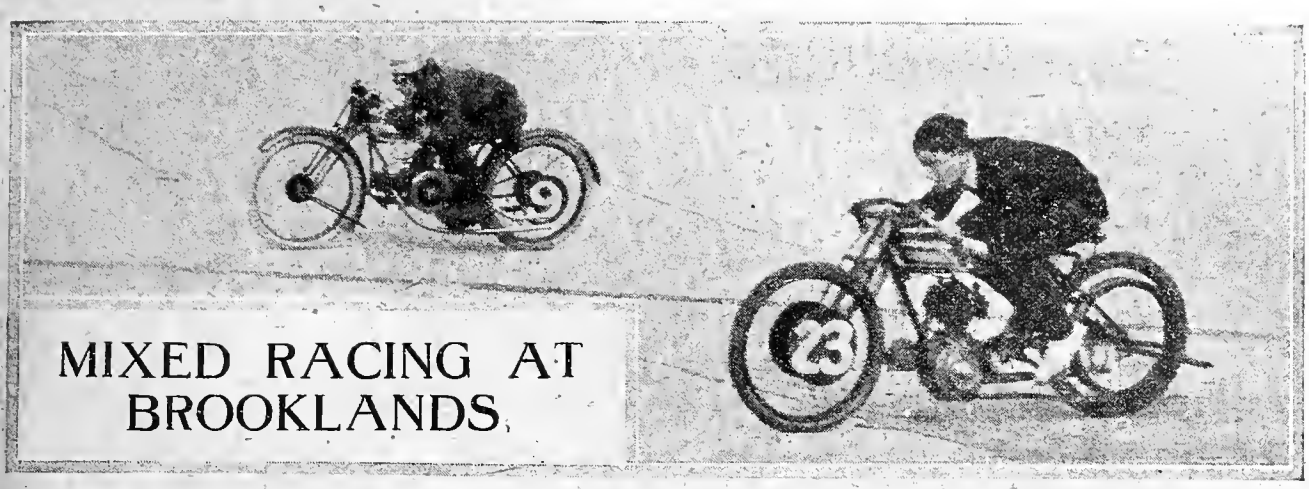
Rain and cold winds, entailing a severe skid at one point during the run, have been Mrs. Janson's misfortune; the comparatively clean condition of the machine at the finish, however, adequately demonstrated the efficiency of the large mudguards, whilst the rider herself, warmly clothed in a leather coat and spats have suffered little from the effects of wheel splash. She is to be congratulated on having completed a daily average mileage of 190 miles. The machine has done remarkably well, insomuch that no trouble has been reported by the A.C.U. official observers, Messrs. C. J. Cuffe and J. M. Barr.

Due praise must be given the rider who, when the machine skidded, had the presence of mind to disengage the clutch in order to keep the engine running. In this she was successful.

The weight of the Ner-a-car is just under 2 cwt., whilst the rider increases this by 8 stone 6 lb.



Mrs. Janson after the 1,000 miles A.C.U. officially observed test of a Ner-a-car. The photograph was taken at the old Gate House, Highgate.



MIXED RACING AT BROOKLANDS.

J. Hall (3½ Norton) and S. L. Bailey (3½ Douglas) "all out" in the 500 c.c. handicap. C. P. Wood won this race on a Scott-Squirrel.

Three-Lap Handicaps and a 750 c.c. Championship.

FOR the first time in its history the British Motor Cycle Racing Club has held a meeting in November. It is hardly a practice we should recommend, but luck favoured the club on Saturday last, as, after three wet days, the weather, though autumnal, was fine.

The three-lap handicap for solo machines not exceeding 500 c.c. attracted thirty-nine entries, of whom twenty-two started. A revival of an old idea was to be seen on Pullin's two Douglases and Stewart's Trump. It originated in the old Gillet-Lehmann carburetter, and consists of connecting the carburetter air inlet to the float chamber or the tank, or to both, so that a pressure feed is obtained to a certain extent. The ordinary air funnel tends rather to blow the petrol back into the jet than to force the mixture into the induction pipe. Pullin's Douglas had a large pressure box fitted round the air inlets of his two carburetters.

During the start Pullin got away rather badly, Le Vack stopped after leaving the starting line, while Remington let in the clutch of his Blackburne so violently that the machine reared in the air and flung his assistant on his face on the track. Tollady (Velocette), the limit man, held his own comfortably on the first lap, while Watson (Douglas) was second, and Greening (Francis-Barnett) third. "No. 13," James (Norton), retired in this lap. Halford (o.h.v. Triumph) was travelling well, but with only 12s. start he had to open up to keep among the leaders, Wood (Scott-Squirrel) was running eighth, buzzing like a gigantic bee.

A Two-stroke Win.

In the second lap Tollady still kept his lead, but Wood had shot forward to second place, Longden (Coulson) was third, and Halford was falling behind.

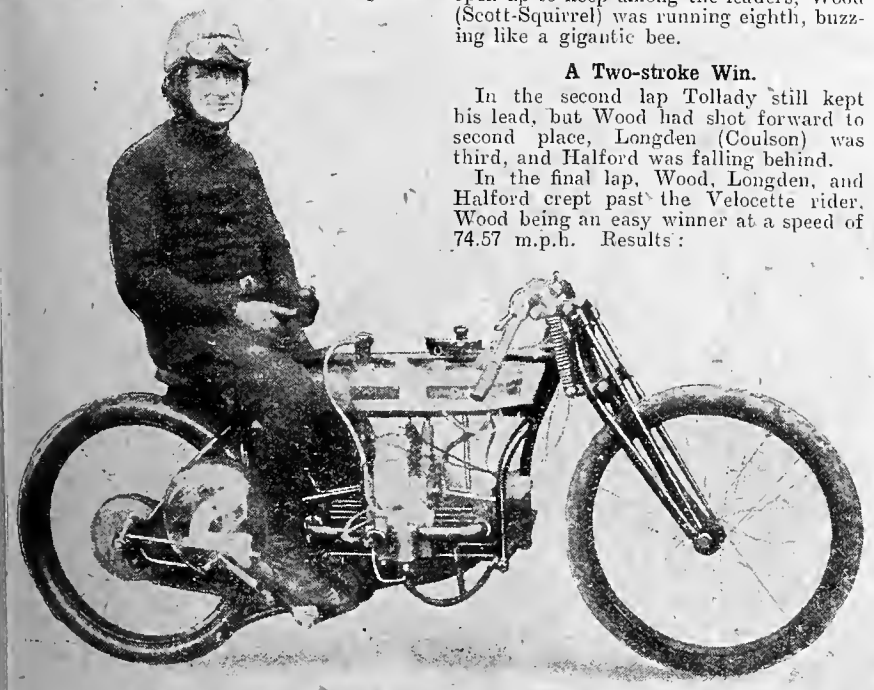
In the final lap, Wood, Longden, and Halford crept past the Velocette rider, Wood being an easy winner at a speed of 74.57 m.p.h. Results:

		START. M.	S.
1.	C. P. Wood (3½ Scott Squirrel)	1	9
2.	E. Longden (3½ Coulson) ..	1	42
3.	F. B. Halford (3½ Triumph) ..	2	12

Also ran: J. W. Tollady (2¼ Velocette), D. H. Davidson (3½ Indian), and J. V. Prestwich (2¾ Omega-Jap).

There were nineteen entries for the next event, a three-lap handicap for 500-1,000 c.c. machines, and only four non-starters. Lord (on a Sports Humber) made an excellent start with his clutch, Davidson (Indian) was rather slow off the mark, while Temple (Harley-Davidson) stopped his engine after leaving the starting line. Lord held his own easily in the first lap, Stewart (Trump-Jap) was second, and Bainbridge (B.M.) was third.

In the second lap Stewart led, with Horsman second, and Remington third, while Le Vack was in fifth place.



C. G. Pullin, who won the 750 c.c. championship race on a 3½ h.p. Sports Douglas at a speed of 76.49 m.p.h.

C. P. Wood on the Scott Squirrel, which he piloted to victory in two events; in one his speed exceeded 76 m.p.h.

Mixed Racing at Brooklands.—

The result was an easy win for Le Vack whose Indian ran magnificently. Winner's speed, 89.1 m.p.h. Results :

	Start. M. S.
1. H. Le Vack (7-9 Indian)	0 18
2. E. Remington (8 Blackburne) ..	0 9
3. R. N. Stewart (5-6 Trump-Jap)	1 30

Also ran : V. Horsman (4 Norton), C. G. Pullin (5 Douglas), and R. Charlesworth (5-6 Zenith).

The next race was another three-lap handicap, this time for sidecar outfits and cycle cars with engines not exceeding 1,000 and 1,100 c.c. respectively. The latter class was represented by E. B. Ware's Morgan and Marchant's original Blériot-Whippet with belt drive.

James (Norton sc.) made an excellent clutch start ; Le Vack had to push hard to get his engine to fire ; and Ware and Temple (Harley-Davidson sc.) were sent off together, but of the two Ware was easily the faster. F. A. Longman (Ariel sc.), the limit man, led at the start, and then followed : James (Norton sc.), Dequin (Zenith sc.), and Tucker (Norton sc.). Ware was travelling well, and looked like business. In the second lap Tucker took the lead, having gained a place over Longman, while James ran third. Bridgman (Indian sc.) was running fifth ; Ware had the speed, but had trouble in finding room to pass. The result was a remarkably close finish between the first two men, while the third man was only about two lengths behind, and the fourth not far away. The winner's speed was 70.28 m.p.h., and the race was a veritable Indian triumph. Results :

	Start. M. S.
1. D. H. Davidson (7-9 Indian sc.)	0 27
2. H. Le Vack (7-9 Indian sc.) ..	scr.
3. E. Bridgman (7-9 Indian sc.) ..	1 3

Also ran : G. W. Tucker (3½ Norton sc.), R. Dequin (8 Zenith sc.), and E. B. Ware (8 Morgan-Jap).

Next came the five-lap championship scratch race for motor cycles with engines between 500 and 750 c.c. All made an excellent start, forming a pleasing spectacle after the previous handicap events. Pullin, Bowen (Martinsyde), and Gifford (Martinsyde) were the three leaders in the first lap. In the second and third laps Bowen was the first man over the line ; while Gifford, Horsman, and Stewart brought up the rear, and never changed their positions. In the two final laps Pullin again assumed the lead, and his Douglas gradually gained ground. His speed was 76.49 m.p.h. Results :

1. C. G. Pullin (5 Douglas).
2. H. H. Bowen (5-6 Martinsyde).
3. E. H. Gifford (5-6 Martinsyde).

Also ran : V. Horsman (4 Norton) and R. N. Stewart (5-6 Trump-Jap).

76½ m.p.h. on a Scott.

A winner's three-lap handicap, open to the first four to finish in Events 1, 2, and 3, brought the meeting to a close.

In the first lap the limit man, Tucker (Norton), was passing as Le Vack left the line. Bridgman (Indian sc.) and Longden (Coulson) came next in close order with Horsman (Norton) third ; but C. P. Wood's Scott was clearly a danger, and before the finish the Scott's wonderful note was heard in the distance, and not a few were surprised to see him finish an easy winner at 76.43 m.p.h., while Davidson and Halford had a fine struggle for third place. Results :

	Start. M. S.
1. C. P. Wood (3¾ Scott)	1 15
2. V. Horsman (4 Norton)	1 24
3. D. H. Davidson (7 Indian) ..	1 12

Also ran : F. B. Halford (3½ Triumph), E. Bridgman (7 Indian sc.), and E. Longden (3½ Coulson).

ORIGINALITY IN A SPRING FRAME.

The Mackechnie-Coventry Victor which will make its Début at Olympia.

CASUAL observers of motor cycle development may be excused if they remark that spring frame design has gone into a groove nowadays, and that the designs which do break away from the conventional seldom get further than the Patent Office. With one or two notable exceptions, the observation is, unfortunately, true. It is therefore distinctly encouraging to encounter a promising new suspension system, which has survived its early road tests with honour, and which has now reached the marketable stage.

The machine which embodies the system in question, the invention of Col. Mackechnie, is being built at the works of Morton and Weaver, Ltd., Coventry, makers of the 5-6 h.p. Coventry Victor engine, with which it is fitted. It will be shown at Olympia as the Mackechnie Coventry Victor.

Remarkable Qualities.

Perhaps the three chief advantages of the Mackechnie design are (1) that lateral instability of the rear wheel is no more possible than on a rigid frame ; (2) that the single 4ft. long leaf spring permits more than 4in. up and down vertical movement to the sprung portion ; and (3) its promise of almost indefinite wear with a minimum of attention. These qualities are gained as follows :

Two pairs of slightly curved and cross braced tubes extend from the steering head to the rear axle, forming a cradle rigidly connecting the rear wheel to the head of the machine.

The engine is carried in a sub-frame, hanging between the main longitudinal members, and is slung from the centre of a five-leaf semi-elliptic spring which extends from a cross brace behind the steering head to the bridge of two vertical stays pivoting near the rear axle. Also, on this sub-frame are carried the petrol tank, Sturmey-Archer gear box and footrests, and mounted on the spring at the point of attachment is the saddle, which thus moves directly with the footrests. The chain stays are pivoted behind the gear box bracket, and at their rearward extremities—in both cases on Skefko self-aligning ball races. Incidentally, although the range of movement of the sprung portion is unusually great, only a very slight deviation of the chain stays takes place. As these are also well braced, there should be no cause to fear lack of lateral rigidity of the engine unit at this point.

Provision is made for lubricating the substantial mounting for the spring in front, and at the rear it is pinned to a cross-piece, which, on future models, will be carried in "oilless" graphite bushes. As the spring is so securely carried, and of such massive dimensions, there is no danger of the upper portion of the sub-frame developing side play.

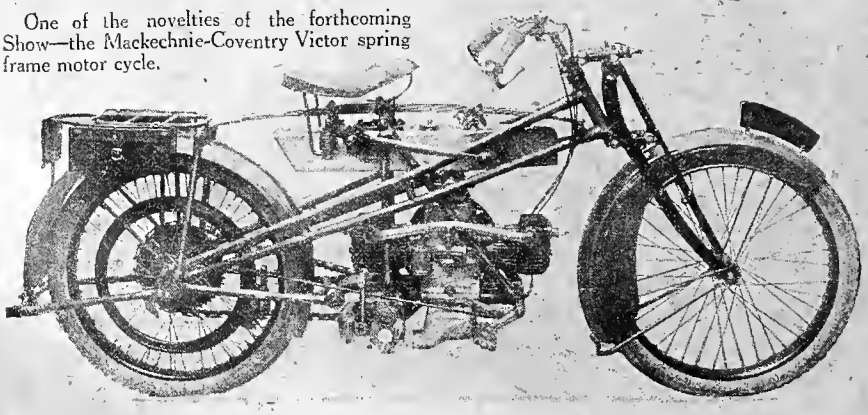
Transmission Variations Slight.

Variations in transmission tension are so slight as to be quite negligible with the Brampton spring chain fitted, while the even torque of the 5-6 h.p. Coventry Victor flat twin engine adds to the exceptional comfort of the machine, as we discovered on trying the first machine within half an hour of its completion ; and considering its newness, it gave a very fine impression of comfort combined with security, particularly at high speeds.

In detail specification this machine resembles the touring model Coventry Victor, 28×3in. tyres, dummy belt rim brakes on both wheels, Best and Lloyd latest type drip feed, M-L lightweight magneto, and Amac carburetter being standard. There is only a slight increase in weight, and the selling price, although not yet fixed, will similarly be not much greater.

Modifications which will be made in the future include a gaiter for the spring and combined engine and legshields, which may be conveniently fitted to the outside of the main frame members, thus shielding the rider from the flywheel and exhaust pipes.

One of the novelties of the forthcoming Show—the Mackechnie-Coventry Victor spring frame motor cycle.



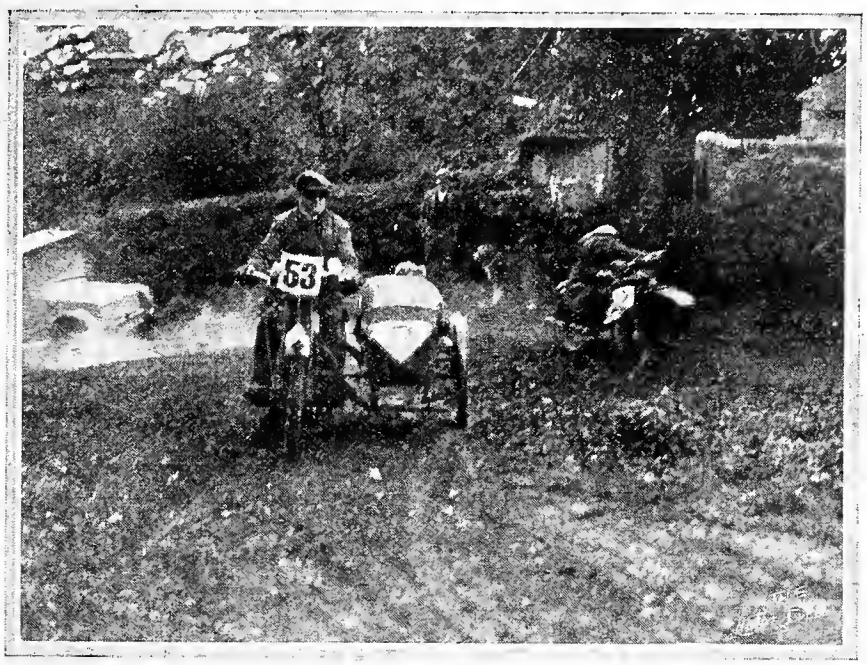
A SPORTING DAY IN THE MIDLANDS.

Midland Centre (A.C.U.) Autumn One-day Trial. Sixteen Teams of Three Riders compete for "The Motor Cycle" Prize.

PROBABLY the most unusual feature of last Saturday's West Midland Centre open trial was the manner in which some of the old hands failed to distinguish themselves, while certain other riders, neither familiar in competition nor trade circles, made excellent performances on the worst obstacles of the day.

The route was a difficult one over which to average 20 m.p.h., because it lay through an almost endless succession of undulating, winding, and greasy lanes.

Stewponey Hotel, between Kidderminster and Wolverhampton, was the scene of the nine o'clock start, and after about eight miles of fairly easy going, the string of eighty competitors found themselves faced with New Walton Hill, a kind of back-stairs ascent of the Clent Hills, near Hagley. The lower portion of the hill was merely a narrow, greasy road of no particular gradient, which debouched on to an open triangular patch of nettles and shrubbery; the road bounded this patch, taking the most acute angle, of course, and immediately afterwards followed a steep rise to the summit, where the gravel surface deteriorated into a grass track.



On New Walton hairpin. L. Newey (6-7 Ariel sc.) passes ahead of F. W. Giles (6-7 Ariel sc.), who attacked the hill too fast and skidded completely round.

Solo Riders in Difficulties.

Out of the first batch of forty-five soloists only four negotiated the lower hairpin without violent correction of skids by foot slogging. These four riders were R. W. Duke (4 Triumph), C. Greenwood (3½ Sunbeam), A. Milner (2½ O.K. Junior), and W. L. Handley (2½ O.K. Junior). True, the surface of the bend was greasy and muddy in the extreme, but the approach was good, and there was a firm patch beyond on which to "straighten up" and attack the gradient with wheels in track once more; moreover, after the place had been churned up by the bulk of the entry—solos, sidecars, and cycle cars—two tail-ender soloists came along, L. Cox (2½ Sun-Vitesse) and F. Whitworth, jun. (3 Ivy), and made perfect "corners."

Apart from the six above-mentioned, everyone else footed to greater or less degree; amongst the latter may be mentioned G. F. Mason (2½ Connaught), M. Bishop (2½ Sun-Vitesse), A. R. Edwards (2¼ Levis), and the two Smiths, A. K. and G. S., on 2¼ h.p. Morris machines.

B. Kershaw (2¼ New Imperial) and the Rev. J. M. Phillpot (2¼ Velocette) made brave efforts to keep their feet on the rests. D. G. Prentice (2¼ New Imperial) performed some most involved "figure skidding," while A. A. Symes (3½ Martinsyde) made a complete turn, rode down the hill, turned again, and struggled through at the second time of asking.

B. Kershaw (2¼ New Imperial) leading D. G. Prentice on a similar machine on the lower portion of High Oak Hill.

Sidecarists at Ease.

The sidecars experienced little trouble; W. L. Danskin (7-9 Rudge sc.) and F. S. Sibley (7-9 Rudge sc.) made splendid ascents, and L. Newey (6-7 Ariel sc.), J. T. Bashall (6 Martinsyde sc.), and T. Peck (4¼ Ariel sc.) were all excellent, while N. Hall (2½ O.K. Junior sc.) and G. Denley (2¼ Velocette sc.) made wonderful ascents. H. Greaves, on the new 4¼ h.p. Beardsmore-Precision outfit, was also good, but he was not much in evidence later in the day. The only actual failures were S. R. Philpott (6 Martinsyde sc.)

R. W. Duke (4 Triumph) crossing the watersplash at the foot of High Oak Hill—his performance was outstanding at this point.

and an 8 h.p. Rover car, but F. W. Giles (7 A.J.S. sc.) made an exhibition almost unbelievable in a rider of such experience; he approached the left bend much too fast, got the sidecar wheel in the air, turned right, and narowly missed an observer's car in a near-by lane, rushed up the hill again into the worst portion of the mud, and only got out by the most violent exertions.

After this point was a badly observed hairpin on a down grade (hereabouts unfortunately several went astray), then Beacon Hill and its hairpin were tackled before easier going was reached and Bromsgrove and Kidderminster traversed on the way back to the Stewponey Hotel for lunch.

Restarting from Cold.

After the lunch stop, a starting from cold test was made, riders not being allowed to do anything but turn on the petrol until the word to go was given; this test was well carried out, and the majority started within the ten seconds required.

The special test of the afternoon was High Oak Hill, not far from Bewdley. It is the "discovery" of a local farmer, who is also a keen motor cyclist, and is of great difficulty, being approached through a small watersplash; the rideable surface is greasy, stony, and just wide enough for sidecar outfits.

Most took the splash steadily, the only real exception being J. G. Nickson (3½ Douglas), who accelerated violently on sight of the water. A. Rollason (3½ Ariel) failed through belt slip on the gradient, and W. E. Jackson (2¾ Bown-Blackburne) petered out. L. Nicholson (2¾ Omega) ran alongside, and A. Milner (2½ O.K. Junior) paddled up the hill, smoking a cigarette the while. Two outstanding performances, on the lower portion of the hill at any rate, were H. J. Stretton Ward (4 Triumph) and F. S. Barnes (3½ Sunbeam), and, higher up, King Smith (2½ Morris) and H. W. Parkes (2½ Sun-Vitesse).

The sidecars were not nearly so fortunate. W. L. Danskin (7-9 Rudge sc.) and J. E. J. Whitaker (8 Matchless sc.) failed together with a deranged gear box and wheel slip respectively, and badly baulked F. T. Sibley (7-9 Rudge sc.), who made a fine attempt to get through. Giles (7 A.J.S. sc.) again gave an exhibition of "strenuosity" and exaggerated jockeyship in strong contrast to L. Newey (6-7 Ariel sc.), who followed him, making a perfect climb, with the passenger normally seated and no fuss. J. T. Bashall's passenger fell off the 6 h.p. Martinsyde sidecar, and, clinging manfully to the carrier was dragged to the summit, Bashall declining to stop, and the passenger refusing to let go!

T. C. de la Hay (3½ Sunbeam sc.) came up at great speed, regardless of choosing the best course; but R. Brown, on a similar machine, had wheel slip, and failed. S. Goodwin (10 Castle Three) climbed well, and Norris and Carr, on Morgans, roared over the gradient, thanks to Parsons chains, as did Cave on the G.N. cycle car. Hall and Denley on the O.K. and Velocette miniature sidecars were again outstanding performers.

Stopping and Restarting.

After the check at Abberley came Flagstaff Hill, with a stopping and restarting test, but the gradient only claimed eight actual failures.

Forty miles still had to be covered, *via* North Cleobury and Bridgnorth, to the finish at Stewponey, and detours were made to include Furnace Mill Hill and Farlow Bank. This last section was as nothing after High Oak, which had hardened the competitors to anything.

Taken as a whole the trial was an excellent one, organisation and route marking were thorough, and the secretary's programme wish, "May it rain like the deuce," was mercifully unfulfilled.

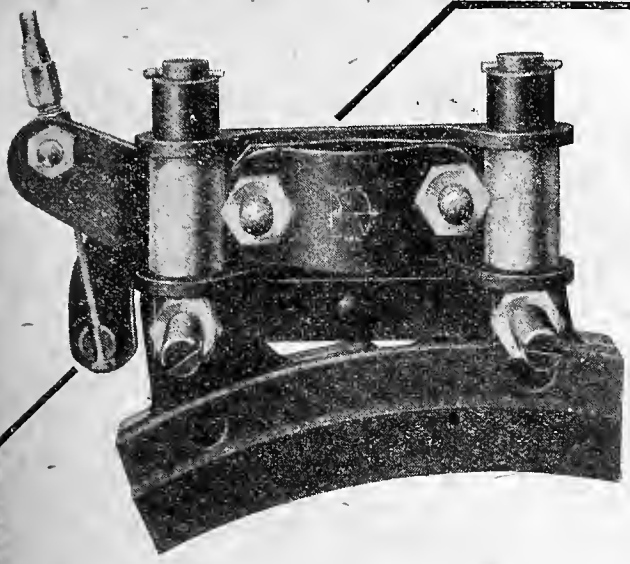
Special Tests.

The figures (in seconds) for the starting from cold test (after lunch hour) and stopping and restarting on Flagstaff Hill are given below; 10s. without penalty was allowed in the former, and 15s. for restarting and crossing a twelve yard mark in the latter. Only times outside the allowance are shown.

Rider and Machine.	Starting from Cold.	Stop and Restart.
	sec.	sec.
R. B. Clark (8 Matchless)	—	18
Len Crisp (4½ Humber)	—	—
R. W. Duke (4 Triumph)	—	—
E. Poppe (4 Triumph)	12	—
H. J. Stretton-Ward (4 Triumph)	13	—
A. C. Cope (3½ Douglas)	12	—
Cyril Greenwood (3½ Sunbeam)	—	—
A. Rollason (3½ Ariel)	—	—
W. Woodcock (3½ Ariel)	—	—
F. S. Barnes (3½ Sunbeam)	—	—
A. R. Evans (8½ Sunbeam)	—	—
A. W. Thrush (3½ Sunbeam)	—	—
G. Butcher (3½ Sunbeam)	—	—
A. A. Symes (3½ Martinsyde)	—	—
J. G. Nickson (3½ Douglas)	—	—
G. Strange (3½ James)	—	—
F. J. Adams (3½ Norton)	—	18
H. R. Milling (3½ Scott-Squirrel)	13	—
J. Wainwright (3 A.B.C.)	—	24
L. A. Bees (3½ Beardmore)	—	—
Albert Smith (3 Calthorpe)	11	—
J. H. Simpson (2¾ A.J.S.)	—	—
H. F. Harris (2¾ A.J.S.)	—	—
W. E. Jackson (2¾ Bown-B)	—	*
J. N. Roberts (2¾ New Imperial)	—	—
G. F. Mason (2½ Connaught)	—	—
L. H. Horton (2¾ New Imperial)	17	—
A. Milner (2½ O.K.-Junior)	—	—
W. L. Handley (2½ O.K.-Junior)	14	—
W. R. Bown (2½ Bown-Villiers)	—	—
M. Bishop (2½ Sun-Vitesse)	—	—
D. G. Prentice (2¼ New Imperial)	35	—
Bert Kershaw (2¼ New Imperial)	—	—
G. F. Povey (2¼ Velocette)	—	—
A. King-Smith (2¼ Morris)	12	—
G. S. Smith (2¼ Morris)	20	—
A. R. Edwards (2¼ Levis)	12	*
L. Nicholson (2¾ Omega)	35	—
H. W. Parkes (2¼ Sun-Vitesse)	—	—
F. J. Johnson (2¼ Sun-Vitesse)	—	—
F. C. Parkes (2¼ Sun-Vitesse)	—	—
V. Davis (2½ James)	—	*
Len. Judge (2¼ Velocette)	—	—
Rev. J. M. Philpot (2¼ Velocette)	—	—
W. L. Danskin (7-9 Rudge sc.)	—	—
F. T. Sibley (7-9 Rudge sc.)	—	16
J. E. J. Whitaker (8 Matchless sc.)	—	85
G. Packman (7 Matchless sc.)	—	1
F. W. Giles (7 A.J.S. sc.)	—	20
L. Newey (6-7 Ariel sc.)	—	—
T. F. Blumfield (6-7 Ariel)	—	23
J. Lidstone (7 James sc.)	—	—
S. R. Philpott (6 Martinsyde sc.)	—	*
W. H. Nicholson (6 Martinsyde sc.)	12	†
J. T. Bashall (6 Martinsyde sc.)	—	—
T. F. Watson (4 Norton sc.)	—	5
H. Greaves (4½ Beardmore sc.)	—	3
T. Peck (4½ Ariel sc.)	—	—
T. C. de la Hay (3½ Sunbeam-sc.)	62	—
E. Wheeler (3½ Sunbeam sc.)	—	4
F. Vallings (4½ Dunelt sc.)	—	3
A. Watson (3½ Sunbeam sc.)	—	—
Reg. Brown (3½ Sunbeam sc.)	—	3
Neville Hall (2½ O.K.-Junior sc.)	—	2
G. Denley (2¼ Velocette sc.)	—	1
S. Goodwin (10 Castle Three)	—	—
A. J. Carter (10 Castle Three)	—	—
Norman Norris (10 Morgan)	—	—
J. L. Cave (8-7 G.N.)	—	—
H. Greatwich (8 Rover)	—	—
W. A. Carr (8 Morgan)	—	—
W. Hope (3½ Norton)	—	—
L. Cox (2½ Sun-Vitesse)	—	—
F. Whitworth, jun. (3 Ivy)	—	—
H. G. Uzzel (8 New Imperial sc.)	15	—
J. H. Walker (6-7 B.S.A.)	—	—

*Indicates failure to restart, or outside assistance.
†Indicates passenger on carrier.

Teams for *The Motor Cycle* prize specified by New Imperial, A.J.S., V cette, O.K. Junior, Sunbeam (sc.), beam (solo), James, Ariel, Martins Sun-Vitesse, Sunbeam Depot, Mor and Matchless; and also by the Re M. Phillpot, T. F. Blumfield, and Coventry and Warwickshire M.C.



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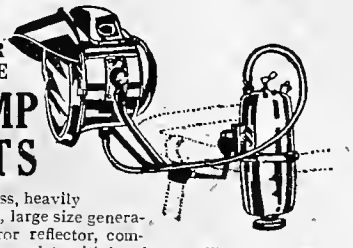

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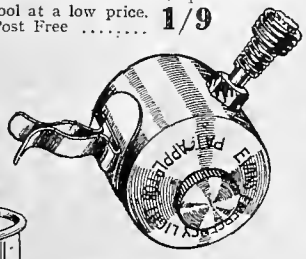

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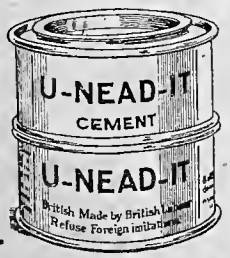

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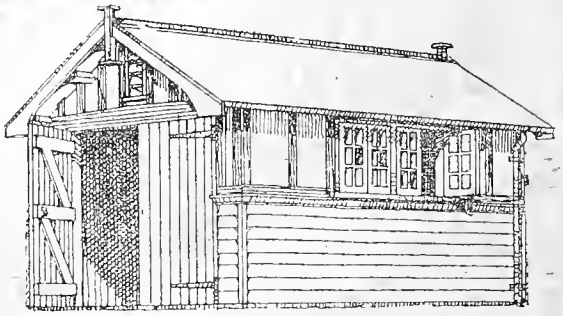

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10ft. × 8ft	£13	0	0	18ft. × 10ft.	£33	0	0
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Dear Sirs, Building arrived safely and I must say that the workmanship and materials are considerably better than one purchased from another firm lately. Yours faithfully, W. Nevol.

Illustrated Catalogue Free.

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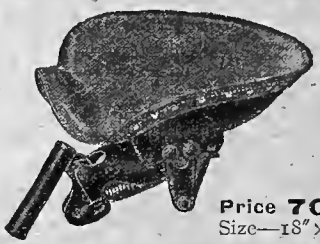
STAND **82**



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EXTRACT FROM A USER'S LETTER.

"This is the first time I have had to write you, and the saddle has been in constant use for 9 years. The roads here are atrocious, and I have never felt the need for a spring frame."
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Sole Manufacturers: **JOHN LECKIE & Co., Ltd.,**
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When ordering saddles, please give make and year of machine.
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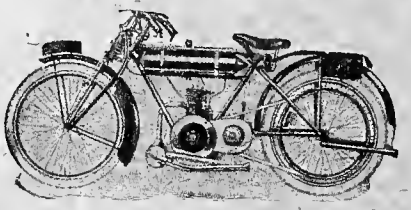
Ideal Solo or Sidecar Mount.

From **38** Guineas.



Agents for 1922 now being appointed.

Call and see this interesting Motor Cycle at our London Showrooms— **245, HAMMERSMITH ROAD, W.6.** (CLOS. TO OLYMPIA.)

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A.B.C.

A.B.C., brand new, just delivered, tax paid; £85, or offer.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [7381

For Record Value

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ALEXANDER'S!

WHO WANTS A BRAND NEW (Shop-soiled 1921) BLACKBURNE–ENGINE MOUNT at the price of Second-hand ?

This week we give a selection of machines fitted with Blackburne — Engines for your choice —

LIST PRICE. OUR PRICE.

£126 1921 4 h.p. **COULSON B**, 3-speed, clutch, kick-starter **£85**

£102 10 1921 4 h.p. **COULSON B** export model, 3-speed, clutch, and kick-starter..... **£80**

£122 1921 4 h.p. **OMEGA**, 3-speed, clutch, and kick-starter.... **£87 10**

£185 1921 4 h.p. **VERUS**, 3-speed, special Olympia Show model combination, with sporting sidecar mahogany tool-box A beautifully finished outfit..... **£130**

£99 15 1921 2¾ h.p. **MASSEY-ARRAN**, Sporting model, 2-spd., clutch and kick-starter **£82 10**

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£156 1920 4 h.p. **VERUS**, 3-speed, combination..... **£100**

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£209 12 1921 8 h.p. **REX**, comb., all-chain drive, 3-speed, detachable wheels and spare. A magnificent outfit.....**£150**

Search the whole world over, and you will find no better value !

Remember, the above are brand new models carrying makers' full guarantee

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272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C. 1915 3½h.p., 4-speed, all-chain, tax paid; £45.—D. and S. Autocar Co., 33, The Parade, Golders Green. [7762

1920 A.B.C., Lucas dynamo lighting, large quantity spares, perfect condition; £87/10.—Box 7,298, c/o *The Motor Cycle*. [7731

A.B.C., Oct., 1920, perfect condition, very fast, all on, Tan-Sad, only done 1,500 miles; £70.—Clegg, "Fitney," Bath Rd., Slough. [7285

1921 A.B.C., new June, very small mileage, Lucas lamps, all accessories; £85; list price £120; exchange Norton.—Box 7,297, c/o *The Motor Cycle*. [7730

A.B.C. 1920, perfect condition, 4 speeds, Lucas accessories, tax paid, carefully used; bargain, £70. —Pike, 102a, Church St., Chelsea. Tel.: Kensington 137. [7162

A.B.C. 1921 Solo Model, tax paid, very fine order; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7442

A.B.C. 1920 Combination, dynamo model, with Swan sporting sidecar, completely equipped and licensed; £110.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7457

A.B.C. 1920 Combination, 4-speed, clutch, kick start, 3 lamps, horn, speedometer, tax paid, insured, machine recently overhauled and sidecar repainted; any trial given.—Offers to Morris, 27, Grange Rd., Lewes. [7158

Acme.

MARCH (1921) Acme, 8h.p. J.A.P., and 3-seater family sidecar, Magdyno, hood, screen, side curtains, large grid and petrol carrier, 4 detachable and interchangeable wheels; best offer; insured for £250; stamp for full details and photograph.—95, Glengarry Rd., S.E.22. [7571

A.J.S.

LOOK Out For Julians of Reading on A.J.S. stand. [7234

1922 A.J.S. 2¾h.p., absolutely new; bargain, £80 — Timberlake's Garage, Wigan. [7246

A.J.S. Motors.—Make appointment at Olympia with Geo. Merrick, 174, Listerhills, Bradford. [4577

A.J.S. 2¾h.p., 1921, new Aug., unscratched; £80.— J. F. Russell, Wyverstone, Stowmarket. [7073

A.J.S. 2¾h.p., 3-speed, clutch, Lucas, 1916; £40, or near offer.—C.M.G., 300, Marylebone Rd., N.W.1. [7144

A.J.S. 2¾h.p., 2-speeds, clutch, 50 m.p.h., Binks, electric lighting; £43.—Wood, 10, Penylan Place, Cardiff. [7389

1920 A.J.S., Lucas dynamo lighting, spare wheel, every other accessory, spares, mileage 2,730; £165, offer; consider solo machine part.—153, Knollys Rd., Streatham. [7681

A.J.S. Combination, November, 1920, complete, spring seat pillar, speedometer, lamps, tax paid, spares, will ride reasonable distance.—B., 125, Exeter Rd., Exmouth. [7319

A.J.S. 1916 6h.p. Combination, unused 3 years, wind screen, Lucas acetylenes, Cowey, fully equipped, first-class condition; £110.—Myatt, Oakhill, Stoke-on-Trent. [7432

1920 A.J.S. Combination, screen, spare wheel, horns, trip speedometer, luggage carrier, lamps, guaranteed perfect, deliver to 50 miles; £115.—Reeves, Alvecote House, Tamworth. [7018

1921 (June) A.J.S. 7h.p. Combination, hood, cover, screen, unused spare wheel, unused Lucas accessories, perfect condition, done 500; £190.—Wilson, 21, Hawthorn Terrace, Durham. [7132

A.J.S., 1921, brand new, 2¾h.p., 3-speed, clutch, kick starter, all on, shop-soiled; £85, offers.— Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.J.S. 1919 6h.p. Combination, spare wheel with new Dunlop Magnum tyre, speedometer, Klaxon, Tan-Sad, wind screen, spares, perfect condition; £100.— Daintree, 34, Rhabon Rd., Wrexham. [X2045

I.O.M. 2¾h.p. A.J.S., S. valve, everything special, mechanical lubrication, condition excellent, extremely fast, sprockets and spares; accept reasonable offer; proceeding abroad.—19, Montagu Rd., Hendon, N.W. [7796

A.J.S. 1921 (Aug.) 7h.p., Grindlay Club sidecar, wind screen, D.A. lighting, A.L. Fallolite head lamp, semi-T.T. bars, horn, Watford, mileage 1,500, insured; £180.—Wells, 58, Upper Park Rd., Hampstead. [7584

A.J.S. 1920 Combination, spare wheel, Stewart speedometer, P. and H. and Lucas lamps, Tynesider, perfect condition, done only 3,000 miles; £135, or nearest; any trial.—S., Idlehour, Avenue Gardens, Horley. [7740

MOTOR CYCLES FOR SALE.

A.J.S.

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

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A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3983

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [8592

Alldays.

£25.—2¾h.p. Alldays 2-stroke, take 2 anywhere.—Ewers, Newton Rd., Burton-on-Trent. [7686

ALLDAYS Allon, 2¾h.p., lamps, excellent condition; £32/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7623

1919 Alldays Allon, 2¾h.p., 2-speed, and Canoelet sidecar, fully equipped; £42.—64, St. Andrew's Rd., Ilford, Essex. [7281

ALLDAYS Allon, 1920, 2-speed, clutch, K.S., fully equipped, as new; £42, bargain.—30, Thornsett Rd., Earlsfield, S.W. [7605

£35, bargain.—Practically new Alldays Allon, 2¾h.p., 2-speed, clutch, fully equipped, spares, insured; must realise.—4, Elm Gardens, Hammersmith. [7573

1921 Alldays Allon 2¾h.p., new condition, fully equipped, Lucas lamps, 6 months old, selling as owner returning to India; £55.—31, Benslow, Hitchin, Herts. [7029

ALLDAYS Allon, 1920 (late), 2-speed, clutch, full equipment, Tan-Sad, perfect running order, licence paid; any trial; £43.—Birkinger, 28, Fallowcourt Av., North Finchley, N.12. [7080

ALLDAYS Allon 1919 2¾h.p., 2 speeds, kick starter, clutch, electric lighting, speedometer, disc wheels, extras; £55; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate Manchester. [X2030

ALLDAYS 1920 5-6h.p. side-by-side upright twin engine, B. and B., countershaft Sturmey 3-speed, sporting sidecar, spare wheel and tyre. Lucas electric lighting throughout, separate dynamo and switchboard, guaranteed in thorough order, and mechanically sound and fast; sell £100, or exchange for higher power; what offers?—C. E. Moore, St. Neot's. [7725

American X.

£62 below list price; final reduction to clear of last two combinations.—Brand new American X, latest model, royal blue finish, 27×3½ tyres, etc., fitted with special Millford bulbous back sidecar; £155; easy payments 4% extra. Write for end of season clearance list.—The Premier Motor Co., Aston Rd., Birmingham. [X2053

Ariel.

ARIEL 1920 3½h.p., 3-speed, as new, £59; Watsonian coachbuilt sidecar, £10.—49, South Lambeth Rd., S.W.8. [7775

ARIEL 5-6h.p. (Oct., 1918) Combination, electric, fully equipped, excellent condition; £90, or offer.—27, Griffin Rd., Plumstead, S.E.18. [7312

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 6-7h.p. Combination, late 1920, electric light, fully equipped, perfect order; best offers.—Crompton, Vernon St. (near Goods Station), Longsight, Manchester. [7009

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £139; no extra charge for easy payments. [6449

ARIEL 5-6h.p. Combination, excellent condition in every way, screen, hood, leg shields, speedometer; nearest to £75; trial any time.—17, Winchester Rd., Basingstoke. [7423

ARIEL 6-7h.p. 1920 Combination, hood, curtains, screen, lamps, generators, speedometer, pillion seat, tyres unpunctured; any trial; £120.—58, St. Aidan's Rd., East Dulwich. [7439

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

ARIEL 1921 3½h.p., 3-speed solo model, list price £100, usual makers' guarantee given, imperceptibly soiled; accept £75 cash.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7441

Bat.

BAT Motor Cycle, 8h.p. 1920 model, spring frame, new, shop-soiled; £120 cash; easy payments arranged.—Manufacturers' Export Association, 104, High Holborn, London. [7266

BAT-J.A.P. 3½h.p. Combination, wicker sidecar, upholstered in leather, door, 2-speed P. and M. gear, Bosch mag., Binks 3-jet carburetter, tyres and condition good; seen any time; trial; £25.—Hart, 34, Devonshire Rd., Forest Hill, S.E. See also under Motor Transport Vehicles. [7606

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A FEW BARGAINS YET TO BE SNAPPED UP.

Why not get your mount NOW under our "EASIER" Easy Payment System, operating for a short time only? It is a genuinely easy opportunity that cannot occur again. Make your choice from the following:—

Slightly Shop-soiled but otherwise NEW 1921 Models.

ARIEL, 4½ h.p., 3-speed, all-chain	£97	10
BROUGH, 5-6 h.p., flat twin combination, fitted with hood, screen, Lucas lamps, and horn	£160	0
CLYNO, 8 h.p., 3-speed, spring frame, combination, spare wheel, screen	£160	0
ENFIELD, 8 h.p., combination, magdyno and Lucas horn	£165	0
RALEIGH, 5-6 h.p., 3-speed, combination spring frame, detachable wheels	£165	0
MATCHLESS, Model H2, with 2-seater body, two screens etc.	£165	0
VELOCETTE, 2¼ h.p., 2-speed	£60	0
ENFIELD, 2½ h.p., 2-speed	£60	0
ZENITH, 8 h.p., clutch Model	£125	0
B.S.A., 6-7 h.p., combination	£154	0

Etc., etc.

Selections from our Second-hand Stock. Every machine overhauled and guaranteed in good order.

1917-18 **P. & M.,** 3½ h.p., 2-speed	£55	0
1916 **LEVIS,** re-enamelled and plated, lamps, etc.	£32	10
1915-16 **DOUGLAS,** 2¾ h.p., 2-speed	£45	0
1920 **NEW IMPERIAL,** 2¾ h.p. J.A.P., 2-speed, and accessories	£55	0
1920 **METRO-TYLER,** 2-speed all red, sporting model	£45	0
1920 **SCOTT,** combination all accessories little used	£115	0
HENDERSON, 10 h.p., 4-cyl., combination	£90	0
1918 **8 h.p. ROYAL RUBY J.A.P.,** 3-speed, combination	£105	0
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1917 **6 h.p., 3-speed CLYNO,** combination, renovated as new	£95	0

Etc., etc.

EXTENDED PAYMENTS.
One-fifth deposit and balance, plus a small extra charge, in 12, 15, or 18 monthly instalments.
Please send for particulars.

The Service Company Ltd. (LONDON)

289-293, High Holborn, London.

MOTOR CYCLES FOR SALE.

Beardmore.

BEARDMORE, 1920, September, overhauled Precision's, accessories; sacrifice £50.—510, Bearwood Rd., Smethwick. [X2062

BEARDMORE-PRECISION, spring frame, ridden 9 months, fine machine, lamps, horn, licence; £48/10 for quick sale.—Towers, Tewkesbury. [7679

BARGAIN.—1921 Beardmore-Precision, 3½h.p., K.S., double sprung frame, splendid condition, all on, original tyres; £56/10.—34, Tonsley Rd., Wandsworth. [7583

Blackburne.

1921 Blackburne, 4h.p., brand new; £95; easy payments. — Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7626

1920 2¾h.p. Blackburne, 2-speed, clutch, kick start, fully equipped, perfect; £60.—31, Drakefield Rd., Upper Tooting, S.W. [7498

BLACKBURNE 1920 4h.p., Burman gear box, lamps, Klaxon, speedometer, tax paid; £75.—Seen Motor Cycle Depot, West St., Reigate. [7551

1920 4h.p. Blackburne, 3-speed, semi-T.T., all accessories, Tan-sad; 79 gns., or nearest.—G., 34, Guest Rd., Hunter's Bar, Sheffield. [X2069

£65.—1920 4h.p. Blackburne, lamps, horn, accessories, good running order and condition, no further use for motor cycle.—Taylor, Vet., Colchester. [7038

1920 Blackburne 4h.p., S.A. 3-speed, K.S., hand clutch, electric lighting, new chains, bearings, and cylinder, insurance; £62.—Bryant, 40, Grove Lane, Kingston-on-Thames. [7211

BLACKBURNE 1920 8h.p. Combination, Swan sidecar, fully equipped and licensed, very fine order; £130.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7443

1920 4h.p. Blackburne and Montgomery Sidecar, Lucas dynamo, speedometer, special shock absorber, spares, perfect condition; £100.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6008

BLACKBURNE-WILKIN Combination, 1920, 4h.p. Blackburne, S.A. 3-speed, hand clutch, kick-starter, all chain, Lucas Magdyno lighting, Millford sidecar, accessories, splendid condition; £90; exchanges.—63, Solon Rd., Brixton. [7529

Bown.

BOWN-VILLIERS, 1920, Sturmey, kick, clutch, best mechanical feed, heavy tyres, footboards, licence, fully equipped; cost £87; what offers?—Penn, 75, Abbey Rd., Bearwood, Birmingham. [7484

Bradbury.

1913 4h.p. Bradbury, new tyres, adjustable pulley, splendid engine; £22.—62, Upper Tooting Rd. [7166

1915 Bradbury 4½h.p. Combination, good going order, wicker sidecar; £50.—C.S., 64, Mountgrove Rd., Highbury. [7179

1914 Bradbury Combination, 4h.p., 3-speed, clutch, with new 1921 Watsonian sidecar, coachbuilt, good order; first £42.—35, Bridport Rd., Darnall, Sheffield. [7184

4h.p. Bradbury Coachbuilt Combination, 3-speed and clutch; £38; fully equipped, tax paid.—Speechley, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [7186

WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. Bradbury, new 1921, £70; and 6h.p. Bradbury combination, new 1921, £155; no extra charge for easy terms. [7753

Brough.

BROUGH and Swan Sporting Sidecar, Nov., 1919, 6h.p., 3-speed, clutch, and kick starter, all on, tax paid; £75.—D. and S. Autocar Co., 33, The Parade Golders Green. [7763

Brough Superior.

1921 Brough Superior, full electrical equipment, C. and M. sporting sidecar, smartest on the road, £205, or exchange.—198, King St., Hammersmith. [7412

BROUGH SUPERIOR 8h.p., Mark 1, latest model, with sporting Montgomery, complete electric equipment, all details, mileage 2,000, as new; £175.—Court Green, Chipstead, Surrey. [7614

ALLEN-BENNETT Motor Co., Ltd., Service Depot and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1921 models at reduced prices. Mark I., 90×77½, o.h.v., 3-speed, clutch, and kick starter, £150; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0723

Brown.

£12.—2¾h.p. Brown, Dixie, Druids, B. and B., good tyres, running order; trial.—Allwood, Fern Bank, Bakewell. [7547

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS Combination, 1920, 4h.p., just overhauled, small mileage, stored Sept., 1920, to May, 1921, fully insured; £100, or near offer; N. London.—Box 7,159, c/o *The Motor Cycle.* [6400

DOUGLAS, 2¾h.p., 3-speed, 1917, copper exhaust, lamps, mudshields, enamel unscratched, tyres perfect, mechanically sound, very fast; 42 gns.—37, Elmbank Gardens, Barnes. [7537

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Douglas, 1922 models, prices £75 and £85; also 3½h.p. sports model, £130; all fully equipped; easy terms, no extra charge. [6448

DOUGLAS 1914 2¾h.p., 2 speeds, with Grosvenor sidecar, fully equipped, tax paid, good condition; £50; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2028

1920 Douglas 2¾h.p., 3 speeds, hand clutch, kick start, Klaxon, electric lighting, absolutely unscratched, indistinguishable from new, bought brand new February, 1921; £70; exchange and cash.—37, Canterbury Rd., Dalston, N.1. [7793

89 GNS.; exchange cheaper machine.—1920 Douglas combination, 4h.p., 3 speeds, clutch, kick start, Easting wind screen, lamps, speedometer, smart, fast; any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [6857

DOUGLAS 4h.p. Models. We have a number of second-hand machines for sale at very low prices in order to make room for 1922 models. A call will well repay.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7489

1921 Douglas Combination, 4h.p., 3-speed, clutch, kick start, patent detachable sidecar and folding chassis, absolutely as new, all on, and tax paid; owner bought car; £108.—Walker, 769, Romford Rd., Manor Park, London, E. 'Phone: Ilford 500. [7212

SPECIAL Sports o.h.v. 350 c.c. Douglas, Flexi carburetter, spare Amac, many special fittings, streamline exhausts, knee-grips, lamps, 2 generators, Pedleys, Klaxon, licensed, perfect condition; must sell; £45.—16, Ailsa Av., St. Margaret's, Twickenham. [7580

DOUGLAS Combination (July, 1920), engine No. 11897, new condition throughout, mileage under 2,000 guaranteed, wind screen, mudshields, all lamps, spares, and tools; expert examination invited; any reasonable trial; £100.—Venton, Culliford Rd., Dorchester. [7120

SPECIAL 2¾h.p. Douglas, Wex aluminium carburetter, long nickel plated exhausts, dropped handlebars, drilled pistons, raced at Brooklands, crank case 1915, rest 1921, guarantee 55 miles per hour, touring carburetter, silencer, bars, etc., in addition: 50 gns.—J. Hall, St. Bride, Seaford, Sussex. [7087

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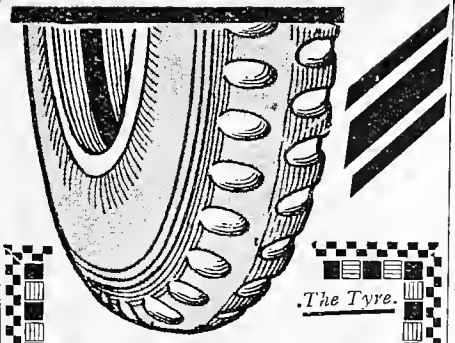

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ENFIELD Lightweight, 2-stroke, 2-speed, new condition; £35.—24, Geraldine Rd., Chiswick. [7561

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ROYAL ENFIELD 1914 2¾h.p., 2-speed, Bosch, fully equipped; £40.—A. Shepperson, Russell Rd., Beowick. [7070

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£39, 1920 (Nov.) 2¼h.p. Enfield; also 1916 Enfield combination, £78.—Harrington, 21a, Brent St., Hendon, N.W.4. [7091

2¾h.p. Twin Enfield, good condition, unlicensed; first cash £23 secures, carriage paid.—A. Grist, West End, Westbury, Wilts. [7094

1921 Enfield 2½h.p. 2-stroke, 2-speed, as new, unscratched; £48/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7622

1917 Enfield Combination, fully, tax, insurance, handsome outfit; 65 gns. — Maderia House, Streatley Rd., Brondesbury. [7534

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ENFIELD Combination (1919), 6h.p., electric lighting, all on, tax, insurance paid, perfect condition; £120.—47, Victoria Rd., Alexandra Park, N. [6427

1921 Enfield Combination, 8h.p., Magdyno lighting, brand new but slightly showroom soiled; list price £182; offered for cash at £150.—Below.

1921 Enfield Colonial Model Combination; list price £160; shop-soiled only; price for cash £135.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7445

1920 6h.p. Enfield Combination, lamps, horn, hood, and wind screen, tools, etc., perfect; £125, or nearest offer.—Hartley, Warner St., Haslingden. [7415

1921 8h.p. Enfield Combination, nearly new, Cameo, pillion, lamps, horn, spares, cost over £170, licensed; £135.—Johnson, Painter, Nantwich. [7397

ROYAL ENFIELD, 1916, 3h.p., fully equipped, engine recently overhauled, tyres good, must sell; reasonable offer accepted.—Merrett, Sunninghill. [7535

1920 Enfield Combination, 8h.p., Magdyno, speedometer, excellent condition; £120, or exchange late 3½h.p. solo.—Parsons, Fairfield House, Okehampton. [7129

ENFIELD, 1920 (late), 2-stroke, perfect running, splendid appearance, all on, including speedometer; 45 gns.—Owner, 75, St. Leonard's Rd., Mortlake, Surrey. [5330

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1921, shop-soiled only; reduced to £145; easy terms, no extra charge. [6442

£85.—Enfield combination, 6h.p., late model, Lucas dynamo lighting, Easting, mechanical horn, tools, speedometer, perfect order and appearance.—8, High St., Wandsworth. [7521

1921 Royal Enfield, only run 1,500, electric lamps, speedometer, Easting, Klaxon, Tan-Sad, condition as new; must sell; best offer; first cash.—Thompson, 13, Royston Rd., Penge. [7502

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ENFIELD 1912 6h.p. Combination, coachbuilt sidecar, fully equipped, exceptionally good condition, tax paid; £60; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2026

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ENFIELD 1917 Combination, Lucas dynamo lighting, 6h.p. J.A.P., complete with all lamps, speedometer, bulb and electric horns, pillion seat, luggage grid, tool kit, tax paid, in absolutely perfect condition throughout, has been little and carefully used, all tyres good, any trial given; £80.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [7691

1921 8h.p. Jap-Enfield Combination, new large P. and H. lighting set, sidecar lamp set, horn, tools, Tan-sad, spare chain, etc., storm apron, 700×80 Palmer light car tyres (as new), luggage grid, 3 lockers, licensed, only done 700 miles and looks like new, guaranteed perfect, any trial whatever; £114 lowest.—18, Marlborough Rd., Old Kent Rd., S.E.1. [7429

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3987

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BRITISH Excelsior Combination, 4½h.p., 3 speeds, Sturmey, kick start, perfect; £60, or offers; seen Saturday after 2 p.m., or Sunday.—Apply, W. Godfrey, Donkey Town, West End, Chobham, Surrey. [7229

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F.N. Combination, painted red, 4-cyl., licensed; price £30; wants overhauling.—Apply, 3, Belvedere Rd., Taunton. [7140

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1920 2¾h.p. Francis-Barnett, 2-speed, K.S., Lucas equipment, as new; 54 gns.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6005

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SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY-DAVIDSON 4h.p. Flat Twin, new condition; £80.—Bradley, Albion Rd., Margate. [6183

HARLEY Combination, 1919, handsome outfit; £115 or exchange.—24, Geraldine Rd., Chiswick. [7559

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1919 Harley-Davidson Combination, lamps, speedometer, horn, tools, etc.—A.S.C., 166, Gt. Portland St., W.1. Tel.: Museum 6626. [7302

1920 Harley-Davidson Combination, done 3,000, as new, dynamo, discs, speedometer; £125.—57, Lancaster Rd., Hampstead. 'Phone: 4608. [7709

1920 Harley, dynamo lighting, rear drive, speedometer, T.T. bars, perfect condition; sacrifice £80.—17, Sussex Rd., New Malden, Surrey. [7328

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1919 Genuine Harley-Henderson Combination, discs, very smart, excellent condition; £110; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7620

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HUMBER Coachbuilt Combination, 3½h.p., tax pa £28.—Speechley, 86, Churchfield Rd., Acton, W [71

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HUMBER 1919 3½h.p., flat twin, 3-speed, electr lights, Bonniksen speedometer, Klaxon, perfe £70.—Newnham Motor Co., 223, Hammersmith R W.6. 'Phone: Hammersmith 80. [74

HUMBER 3½h.p., splendid combination, low un slung coach sidecar, 3-speeds, free engine, k starter, splendid tyres, perfect condition guarante lamps, tools, tax paid, trial any time; bargain, £ —Stepney Garage, 77, Salmon Lane, Commercial R Stepney, London. [74

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1921 Big Four Norton Combination, in perfect condition, fully equipped; £135, or near offer.—Greaves, 43, Lithos Rd., Hampstead, London. [7309

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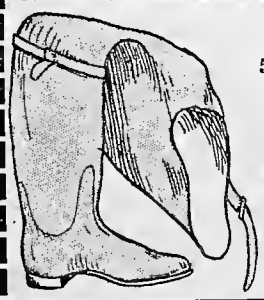


Sizes 5, 6, 7, 8, 9, 10, 11,
15/- PAIR.
1/- extra carriage

H. EMANUEL & CO.

(TYRE FACTORS),
27, Belgrade Road,
STOKE NEWINGTON, N.16.
Stores: 37a, Balls Pond Road
DALSTON, LONDON, N
Telephone: Dalston 3161

MOTOR CYCLES FOR SALE.

P. and M.

P. and M., 1918, incomplete; £18.—1, Springfield Park Crescent, Catford, S.E.6. [7634

P. and M. 1918 Combination, insured, good condition, lamps, spares; £58.—Seen, 28, Pavement, Clapham. [7032

£37.—Renovated R.A.F. model P. and M., perfect, fully equipped, insurance policy.—King, Egrove Oxford. [X2075

1918 P. and M., new tyres, makers' colours, fully equipped, perfect; £48.—17, Sussex Rd., New Malden, Surrey. [7327

1918 P. and M., blue-gold model, hardly used; £55; part exchange Enfield, Douglas.—61, New Kent Rd., London, S.E.1. [7404

F.O.C.H. have a 1919 P. and M., fully equipped; £56, bargain.—5, Heath St., Hampstead (near Hampstead Tube Station). [6766

£29/10.—P. and M. coachbuilt combination, 2 speeds, lamps, horn, perfect order; sacrifice.—8, High St., Wandsworth. [7522

1921 P. and M. Combination, in perfect condition; £110, or will exchange towards new combination. —Clegg, 1, Broad St., Teddington. [7700

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. P. and M. combination, late 1919, tax paid; £90; no extra charge for easy terms. [7750

P. and M. 3½h.p. 1918 Combination, £60, solo £47; 1921 colours, fully equipped, perfect condition.—62b, Highgate Rd., Kentish Town, N.W. [7388

P. and M. Combination, 3½h.p., 2-speed, K.S., makers' colours, copper exhaust, all on, smart, reliable; £65.—Write G., 25, Chetwynd Rd., Southsea. [7126

P. and M. 1919 Combination, equipped, very special condition; £80.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7491

P. and M., 1918 (Nov.), complete with lamps, speedometer, Klaxon, tools, spares, just overhauled, excellent condition; £48.—44, Mackenzie Rd., Beckenham. [7339

FOR Quick Sale, 1917-18 3½h.p. P. and M., stored since complete overhaul 1920, cover, tubes, lamps, and accessories, all new then, taxed, genuine £42/10.—41, Clarendon Rd., Putney. [7499

PHELON and Moore 3½h.p. Speed Model, 2 gears, especially small sprocket on rear wheel, nearly new, only done 1,000 miles, complete for road; price £65, or near offer.—Box 7,256, c/o *The Motor Cycle.* [7065

1921 3½h.p. P. and M. Combination, Lucas equipment, demonstration model, mileage 100, absolutely as new; £110.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [6013

P. and M. 1921 3½h.p., standard model, list price £115, very slightly shop-soiled, usual makers' guarantee given; £85.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7453

1921 P. and M. Combination, Lucas Magdyno lighting, sprung luggage grid, Bluemel wind screen, other accessories, tyres good, 5,000 miles at most, fully insured; trial, pleasure; cost fraction under £200 to put on road; £120; best bargain in London.—Loyd, 119, Piccadilly. [7206

Premier.

PREMIER 3½h.p., 2-speed, perfect, £20; sidecar, £6.—17, Heaton Rd., Mitcham. [7477

PREMIER 2½h.p., lamps, horn, etc., tax paid, good condition; £18.—40, Railway St., Barnes, S.W. [7174

2¼h.p. Premier, fixed, good condition, trial; £25.—James Hutton, Scott Crescent, Galashiels. [7422

PREMIER 3½h.p., countershaft 3-speed, first-class order; £40; any trial.—132, High Rd., East Finchley. [7169

PREMIER 2½h.p., good running order, tyres and belt like new, all on, licensed; £19/10; seen by appointment.—J. P. Steele, 16, Highbury New Park, N.5. [7282

PREMIER 1914 3½h.p. Single-cyl. Combination, 3 speeds, kick starter, clutch, fully equipped, tax paid; £50; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2031

Spare Parts:

PREMIER Spares and Repairs. — We are the specialists, late with the manufacturers; stamped envelope for reply per return.—Forfield Motors, Forfield Place, Leamington Spa. [X2108

Peugeot.

£14.—4-5h.p. twin Peugeot, 2-speed, clutch, waterproof Bosch, B. and B., running order.—King, Egrove Farm, Oxford. [X2076

Quadrant.

1922 Quadrant 4½h.p., all chain; £85; early delivery.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7742

WAUCHOPE'S, 9, Shoe Lane, London.—5h.p. Quadrant combination, new 1921; £120; no extra charge for easy terms. [7754

MOTOR CYCLES FOR SALE.

Quadrant.

1922 Quadrant 4½h.p. Combination, all chain; £105; early delivery.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7744

1922 Quadrant 4½h.p. Solo, chain-cum-belt; £80; early delivery.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7741

1922 Quadrant 4½h.p. Combination, chain-cum-belt; £100; early delivery.—Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. [7743

£75.—Quadrant 1921 5h.p. combination, accessories, insurance, tax paid, overhauled.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [6894

QUADRANT Combination, perfect condition, mileage 2,000, lamps, speedometer, etc., Canoelet sidecar, screen, insured; £95, or near offer; owner going to Congo.—McAllan, 52, Melville St., Edinburgh. [7015

Spare Parts:

FOR all Quadrant Spares and Repairs, The Clifford Wilson Manufacturing Co., Quadrant Sole Wholesale Distributers, 177, Westminster Bridge Rd., London, S.E.1. Hop. 210. [4020

Radco.

1921 Radco, 2-speed, special model Lucas, accessories, Watford speedometer, mileage 2,000, practically new; £36.—45, Pelham Rd., Wimbledon. [7434

Raleigh.

PREMIER Motor Co. for Raleighs

IMMEDIATE delivery at 1922 reduced prices.

5-6h.p., 3-speed, spring frame, detachable wheels, £130; standard sidecar, £35; De Luxe sidecar, £42; spare wheel and tyre, £6. The Raleigh is now the best value in high-grade combinations. Easy payments only 4% extra.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0626

RALEIGH 2¾h.p., 3h.p., and 5-6h.p. solos and combinations for earliest deliveries; cash, exchange, deferred payments. Raleigh Specialists.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7485

THE New Raleigh 2¾h.p. 4-stroke Lightweight, 2-speed, with clutch and kick starter, at £68, is the best value offered the motor cyclist for the 1922 season; orders now booking for January delivery.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0737

5-6h.p. Raleigh, 1921, spring frame, not 2,000 miles, engine just examined by makers, perfect condition, owner buying car while at College, speedometer, electric equipment and horn (Lucas), Cox Atmos hand and foot control, weatherproof, no-trouble gentleman's machine; £115, or without electrical equipment £105; £50 off cost price.—Coleby, R.N. College, Greenwich. Tel.: 608. (D) [7259

Reading-Standard.

1921 Reading-Standard Electric Combination, 10 weeks old, scarcely soiled, guaranteed; £150, offer.—Lee, 410, Sutton Park, Southend-on-Sea. [7062

Rex

6h.p. Rex and Coachbuilt Sidecar, complete and in running order, tax paid; £27.—Cross, Agent, Rotherham. [X2074

5-6h.p. Rex Combination, 2-speed, free, tyres, condition good, lamps; seen week-end; £45.—26, Stag Lane, Edgware, London. [7305

REX 6-8h.p. Twin 2-speed Combination, 2-seater sidecar, 1914, lamp, horn, wind screen, etc.; £57/10; exchange piano.—277, Camberwell Rd., S.E. [7341

REX 1913 Coachbuilt Combination, 2 speeds, chain drive, lamps, spares; £40; exchange P. and M. combination or light car.—4, Avenham Grove, Blackpool. [7128

Roc.

3½h.p. Twin Roc, 2-speeds, K.S., excellent order, £20; sidecar, £5.—17, Heaton Rd., Mitcham. [7478

Rover.

1914 Rover, 3-speed, Binks, lamps, all accessories; £35; Kingston.—Box 7,301, c/o *The Motor Cycle.* [7755

ROVER 3½h.p. for sale, practically new condition, engine perfect, fast, clutch model.—Hoad, Barham, East Heathly. [7098

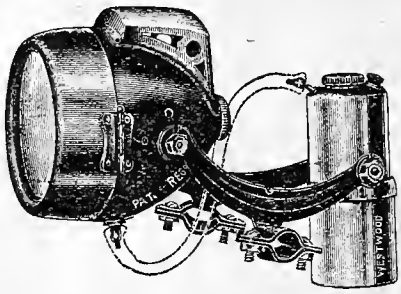
ROVER 1920 T.T., perfect condition, as new, fittings and spares; offer, or lightweight and cash. —47, Hamilton Rd., Reading. [7399

ROVER 1917 3½h.p. T.T., h.c. Philipson, lamps, etc., good condition; £60.—Jarvis and Sons, Ltd., Victoria Crescent, Wimbledon. [7178

ROVER 1919 3½h.p., 3-speed, light sidecar, fully equipped, recently overhauled, give trial half-way £88.—Stafford, c/o Burlingham, Evesham. [7020

£58.—1913-1914 3½h.p. Rover combination, 3-speed, K.S., just overhauled, tax paid, only wants seeing.—8, Half Moon Lane, Herne Hill, S.E.24. [7647

"WESTWOOD" ACETYLENE SETS.



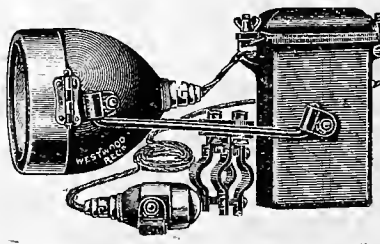
No. 40/1 for Heavyweight Solos, 37/6.
No. 40/2 with Large Generator 45/-
IDEAL Sidecar Lamp, 8/6. TORPEDO Tail Lamp, 6/6
No. 204 for Lightweights, Price 30/-
ROYAL RUBY TAIL LAMP, 4/-

"DAYBEAM" ELECTRIC SETS.

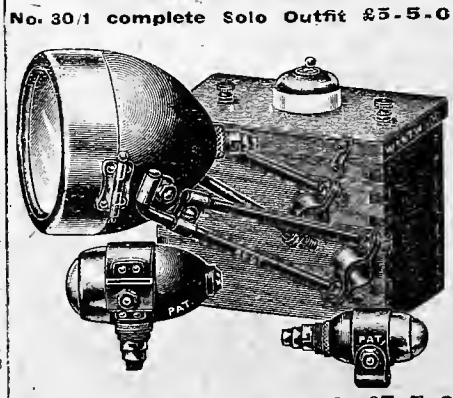
"DAYBEAM JUNIOR" Electric Solo Set.

For Lightweight Machines.

List No. 30/5 complete Outfit £3-3-0
List No. 30/6 Combination Outfit £3-15-0

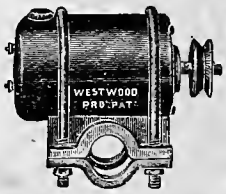


No. 30/1 complete Solo Outfit £5-5-0



No. 30/2 complete Comb. Outfit, £7 7 0

Motor Cycle DYNAMO, Mark 1, complete with Switch Box, £7 - 10 - 0



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TRADE MARK
WESTWOOD RIM & PATENTS LTD
LAWDEN RD BORDESLEY BIRMINGHAM.

MOTOR CYCLES FOR SALE.

Rover.

ROVER 3½h.p., 3-speed hub gear, 1913, reconditioned, £30; with sidecar £35.—Manufacturers' Export Association, 104, High Holborn, London. [7266

ROVER 1921 T.T., 75 m.p.h., used only 400 miles and specially prepared for competition, fitted with hand-controlled Philipson and knee grips, licence paid; £75.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7451

Royal Ruby.

ROYAL RUBY, Villiers 2-speed, all on, excellent condition; 30 gns.—25, Marchmont St., W.C. [7209

1920 Royal Ruby Combination, as new, equipped; £135.—Railway Mews, Ladbroke Grove, W.10. [7516

ROYAL RUBY 1917 Ladies' Model, 2¾h.p. J.A.P., h.b.c., kick, excellent condition; £40.—Tatton, Telephone Exchange, Leek. 'Phone: 23. [X1408

ROYAL RUBY 2-stroke, nearly new condition throughout guaranteed, all accessories, Tan-Sad pillion seat, overalls; sacrifice £40.—4, Gaywood Rd., Walthamstow. [7157

LATE 1920 3h.p. Royal Ruby, 2-speed, spring frame, T.T. bars, recently overhauled by makers; 75 gns.; seller buying combination; Burnley district.—Box 7,237, c/o *The Motor Cycle.* [7047

Rudge.

3½h.p. Rudge, clutch, tax paid; £30.—14, Phœnix St., Euston, N.W.1. [7654

1921 3½h.p. Rudge Multi, perfect, as new, £3 tax paid; £60, bargain.—Atkinson, Caersws, Mont. [7106

RUDGE Multi, 1914, tax paid, perfect order; any trial; fast and reliable; £26.—133, Liverpool Rd., N. [7467

1921½ I.O.M. Rudge Multi, fully equipped, scarcely used; 60 gns.—17, Sussex Rd., New Malden, Surrey. [7326

1919 3½h.p. Rudge Multi, roadster model, little used and in first-rate condition.—Hunt, Sutton-in-the-Elms, Leicester. [7200

7-9h.p. Rudge Multwin Combination, 1920, fully equipped, exceptional condition; £120.—Tomlinson, 194, Church Rd., Hove, Sussex. [7680

3½h.p. Rudge, thoroughly overhauled and enamelled, accessories, tax paid; £40.—Shepherd, Enfield Highway. Tel.: Waltham Cross 31. [0340

1920 Rudge 3½h.p. Combination, sporting sidecar, lamps, belt case, spares, excellent condition; £70; near offer.—42, Forest Rd., Kew, Surrey. [7545

RUDGE Multi, moving parts, piston, pulleys, bearings, etc., new, fine mechanical order; £33; ridden 60 miles.—Pickering, High St., Longton. [7050

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge I.O.M., 1921, electric lighting, tax paid; £70; easy terms no extra charge. [6644

1922 Rudge, 3-speed, 3½h.p., all-chain drive. We can give immediate delivery. Price £100.—Percy Co., 314, Euston Rd., N.W.1. Museum 1337. [725

1920 Rudge Multi, T.T. special engine, aluminium piston, racing cams, tools, speedometer, lamps, etc.; bargain, 65 gns., or near offer.—3, Grove Rd., Luton, Beds. [718

RUDGE Multi Late 1920 3½h.p., T.T. Isle of Man model, with sidecar; sacrifice, £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [007

6h.p. Rudge Multi Combination, 1916-17, equipped, overhauled, guarantee; no accommodation; exchange for solo machine and cash, or sell; private.—Box 7,303, c/o *The Motor Cycle.* [773

RUDGE Multi 3½h.p., fair order, nearly new Bate and Dunlop tyres, engine 13047, tax paid, T. bars; £35, no offers, or exchange Douglas.—Radford, Wendover House, Hutton, Essex. [700

1920 3½h.p. Rudge and 35-gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect; £76.—Edwards, 50, Harrington Rd., South Kensington. Deferred payments and exchanges. [601

RUDGE Multi Combination for sale, 1920 model, delivered March, 1921, 7-9h.p., wind screen, full equipment, mileage 5,000; price £130; can be seen any time for trial by appointment.—Brainsby's, Ltd., Broadway, Peterborough. [624

RUDGE Multi 1920 3½h.p. and Canoelet sidecar, completely equipped with lamps, horn, and speedometer, licence paid, small mileage; £80.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [745

RUDGE Multi, 1916, clutch and starter model, C.A.V., Senspray, wide tank, tyres and belt very good, perfect condition mechanically, very fast, enamel and plating good, complete with lamps, horn, and tax paid; £30.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [76

Scott.

SCOTT, 1915, lamp, horn, new tyres and chain; £55.—Box 123, c/o *The Motor Cycle.* [X17

1920 Scott, mileage 3,000, lamps, horn, taxed; £ offers.—Brown, New Inn, Silverton, Devon. [75

MOTOR CYCLES FOR SALE.

Scott.

SCOTT, 1920, original tyres, lamps, speedometer, perfect; best offer; or exchange.—72, Cornwall Rd., S.W.2. [7524

F.O.C.H. have a 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [6764

SCOTT 1920 Combination, electric lighting, Bonnikseu speedometer, accessories, several spares; £90.—Cockell, Holly Lodge, Dalston, E.8. [7406

19 19 Scott, Rotax dynamo lighting, Cowey horn, speedometer, Tan-Sad, lovely condition; gift, £79.—Manager, Old Waverley Hotel, Southport. [7547

SCOTT 1920 3¾h.p. Combination, fully equipped, Easting screen, as new; £90; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2024

SCOTT 1921 3¾h.p. Touring Model, shop-soiled only; to-day's price £130, accept £110; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2027

SCOTT 3¾h.p. Combination, Oct., 1920, electric light, all accessories, spares, guaranteed splendid condition; cost £230, accept £170, or nearest.—Particulars, 4, Waterdyke Av., Southwick, Sussex. [7440

SCOTT Combination, September, 1920, electric lamps, Tan-sad, Easting wind screen, excellent condition, owner bought car; cost £210; accept £90.—22, Greatheed Rd., Leamington Spa. [X2063

SCOTT Combination, 1920, perfect condition, small mileage, full equipment, unused Palmer cover, 2 spare tubes, speedometer; £110, or exchange for new Rover 8h.p. car, cash adjustment.—Jackson, Ridge, New Close, Shipley, Yorkshire. [7017

Stanger.

THE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Muswell Hill, London, N.10. [0731

Sun.

SUN-VITESSE, 1920, 2-speed, condition as new; £38.—Baker, St. Martin's Rd., Portland. [7222

SUN-VILLIERS 1916 2½h.p., perfect running order; £35, or offer.—C. Watson, Whaplode St. Catherine's, Holbeach, Lincs. [7016

19 19 2¾h.p. Sun, 2-speed, fully equipped, leg guards, knee-grips, long exhaust; any trial; £45.—Henson, Walton, Peterborough. [7501

SUN-VITESSE, new June, 1921, 2¾h.p., 2-speed, kick start, lamps, etc.; buying combination; £50, or offer, bargain.—Dixon, 304, High St., Lincoln. [7100

Sunbeam.

19 20 Sunbeam, 3½h.p., 3-speed, touring, perfect order; £90.—Railway Mews, Ladbroke Mews, W.10. [7517

3½h.p. Sunbeam Combination, complete lamps, screen, and tax paid; £115.—Cross, Agent, Rotherham. [X2072

19 16 3½h.p. 3-speed All-chain Sunbeam and Sidecar excellent order, 2 new tyres; £85.—C. Barton Clapham, Yorks. [0714

3½h.p. Sunbeam, brand new, will sell to trade or private owner with or without Gloria sidecar.—Mackness, Chippenham, Wilts. [7203

19 21 3½h.p. Sunbeam, mileage 1,600, lamps, horn, perfect condition; £110.—Graham, East Lodge, Wargrave Manor, Wargrave. [7173

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Sunbeam and sidecar, 1915; £85; no extra charge for easy terms. [7751

19 21 3½h.p. Touring Sunbeam, mileage under 300, Lucas lamps, horn; £115; seen any time.—H. Gimbert, Norwich House, Sutton, Cambs. [7247

SUNBEAM Late 1920 3½h.p., 3-speed, fully equipped, perfect condition; £95, or nearest offer.—J. Cowman, Main St., Sandwith, Whitehaven, Cumberland. [7069

SUNBEAM Combination, 3½h.p., complete, mileage under 2,000; cost £200, accept £100, lowest; buying car.—38, Eastern Rd., Wylde Green, Birmingham. [7405

SUNBEAM Combination 3½h.p., 1921, spare wheel, horn, luggage rack, perfect condition, insured; what offers? Oxford district.—Box 7,254, c/o *The Motor Cycle*. [7109

GENUINE Offer.—6h.p. Sunbeam combination, less body, in excellent order and condition; £85; exchange good solo.—Finchampstead, Farnburn Av., Slough. [7338

UNSCRATCHED 3½h.p. Sunbeam, 1914, unused since 1917, also new £37/10 metal sidecar; evenings; £88.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X2037

8h.p. Sunbeam, Canoelet sidecar, Easting, all accessories, tax paid, insurance, splendid condition; Stamford Brook district; £125.—Box 7,304, c/o *The Motor Cycle*. [7738

THE TALE OF A TWO-STROKE

IF ITS A VILLIERS THERE'S NONE TO TELL

SATISFACTION IS GUARANTEED

WORKS:- SUNBEAM STREET. WOLVERHAMPTON.

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM, 1921 (September), 3½h.p., sports, fully equipped, shop-soiled only; £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2020

19 20-21 8h.p. Sunbeam Combination, Lucas electric lighting, spare wheel, all complete and in first-class running order; £195; buying car.—L. Pinum, Hillslea, Harvey Rd., Guildford. [7086

19 21 3½h.p. Light Sports Sunbeam, with Montgomery sporting sidecar, complete, actual cup, gold and silver medal winner; any trial; £140.—Oliver B. Hodgson, 36, Upgate, Louth, Lincs. [7616

19 20 (July) 3½h.p. Sunbeam Combination, electric light, tax paid, new Easting, horn, tools, good condition; cost £220; owner bought car; £120, or offers.—A. Coulson, Watton Abbey, Cranswick, Yorks. [7125

3½h.p. 1915 Sunbeam and Mills-Fulford Sidecar, renovated this year by makers, and mechanically perfect, complete equipment 75 gns.—Anthony, 1, Townshend Cottages, St. John's Wood, N.W.8. [7541

SUNBEAM Combination, late 1918, 3½h.p., black and gold, 3-speed, K.S., lamps, horn, wind screen, apron, etc., good tyres, quiet, and reliable indistinguishable from new; £110.—15, Ranelagh Gardens, Ilford. [7563

SUNBEAM 1915-16 3½h.p. Combination, electric lighting, horn, speedometer, machine in perfect condition; accept £67/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

19 21 Sunbeam Combination, brand new but slightly shop-soiled; list price £162; offered at £150 for cash.—The Layton Garages, 30, Holywell St Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [7459

SUNBEAM 3½h.p. Combination, 1919, 3-speed, clutch, kick starter, all-chain drive, in extra good condition; £78.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [7416

SUNBEAM Combination, late model, 3½h.p., 3 speeds, hand clutch, kick starter, Sunbeam sidecar, lamps, licence, speedometer, screen, apron, splendid condition throughout, not W.D.; £80; exchanges.—63, Solon Rd., Brixton. [7531

SUNBEAM 8h.p. Combination, September, 1919, frame No. 3095, mileage under 5,500, electrical equipment, hood, screen, speedometer, spare wheel, Binks, Klaxon, luggage grid, licensed, first-class outfit; £125.—Crow Bros., Guildford. [7250

SUNBEAM 1919 8h.p. Combination, Sunbeam sidecar, all lamps, speedometer, interchangeable wheels, with spare, screen, luggage grid, in absolute perfect condition, equal new; exchange lower power and cash, or sell £130.—37, Canterbury Rd., Dalston, N.1. [7792

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, always at your service. We have Sunbeam experts to attend to your wants; complete, every part in stock. [7803

T.D.C.

2¾h.p. T.D.C., requires brakes and magneto control; £12.—44, Magdalen St., Exeter. [7693

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

BRAND New Triumph, Model H.; £92.—Ward, 51, Upper Richmond Rd., Putney. [6972

19 20 Countershaft Triumph, well equipped; £70.—24, Balliol Rd., North Kensington. [7392

TRIUMPH 4h.p., 1920, excellent condition; best offer.—Write Box 7,291, c/o *The Motor Cycle*. [7299

19 18 Triumph Combination, fully equipped, insured; £88.—1, Hillier Rd., Clapham Common. [7000

19 18 Countershaft Triumph, smart and perfect; £47.—24, Balliol Rd., North Kensington. [7390

CROSS, Rotherham, can give delivery of all model Triumphs from stock at reduced prices. [X2071

£19/10.—Triumph, 3½h.p., single-speed clutch, nice order, ride away.—8, High St., Wandsworth. [7523

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

19 20 Triumph, Millford combination, fully equipped, as new; nearest £110.—Mercer, Belmont Rd., Reigate. [7216

TRIUMPH, 1920, practically unscratched, with Canecelet sporting sidecar; bargain, £85.—H. Wright, Arlesey, Beds. [7707

19 20 (late) Triumph, beautiful Limousette sidecar, all accessories, as new; £120.—Smith, 16, Blyth Rd., Bromley, Kent. [7102

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1919 (Dec.) 4h.p. Triumph Combination, lamps, tools, etc.; £90, nearest.—Bigg, 26, Ferme Park Rd., Stroud Green, N.4. [6999

£32.—Triumph 3½h.p., 1913, 3-speed, clutch, original enamel, all accessories.—145, Leander Rd., Brixton Hill, S.W.2. [7205

1918 Countershaft Triumph, fully equipped; £48.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [7778

1919 Triumph, new Henderson s.c., lamps, horn, perfect condition; £92/10.—Longland, 37, Narcissus Rd., W. Hampstead. [7557

3½h.p. Triumph, 1912, new piston, engine cleaned, clutch and tyres good; price £36.—Lambert, Engineer, Horsmonden. [7316

1920 Triumph 4h.p. Combination, excellent condition; price £110; owner going India.—Tallis, The Grange, Pontnewydd, Mon. [7180

1921 Triumph Combination, under 500 miles, Easting, Lucas lamps, tools, etc.; £100.—16, King's College Rd., Hampstead, N.W.3. [7788

TRIUMPH 1914 Combination, 3-speed hub gear, speedometer, all accessories, grand condition; £55.—28, Hugo Rd., Tufnell Park. [7207

1917 4h.p. Countershaft Triumph, 3-speed, good condition; £45.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2593. [7472

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1921 All-chain Triumph, sporting Montgomery sidecar, discs, speedometer, hood, etc.; £125.—Write Forte, 135, Ladbroke Rd., W. Park 3393. [7101

1919 Triumph Combination, not W.D., lamps, tools, tax and insurance; owner going abroad; £80.—Gordon, Tregenna Mead, Eastbourne. [7119

1912 Triumph, 2-speed, Canoelet sporting sidecar, just overhauled, new cylinder; any trial; £40.—7, Norwood Rd., Herne Hill, S.E.24. [7652

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼h.p. Triumph Junior, tax paid, fully insured, all accessories; £50; easy terms arranged. [6447

TRIUMPH, frame adapted for gear box, sloping tank, cylinder rebored, new piston, perfect running order; £30.—173, King's Rd., Kingston, Surrey. [7024

TRIUMPH Countershaft Combination, enamelling and plating as new, Easting, good accessories; £85.—Bunting's Motor Exchange, Wealdstone. [7664

1914 Triumph 4h.p., 3-speed, hand controlled clutch, new carburetter and mag., enamel as new; £35, or near offer.—Hind, 51, Derby St., Prescot. [X2047

1917 C.S. Triumph Combination, 1920 sidecar, apron, mat, hand and foot clutch, P.H. lighting, perfect; trial; £70.—92, Beulah Rd., Thornton Heath. [7131

1920 Triumph-Gloria Combination, all accessories, guaranteed as new; £100, or offer; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [7382

1914 Triumph Combination, sporting sidecar, excellent condition, 3 speeds; bargain, £42/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [7624

TRIUMPH 1913 3½h.p. T.T. Model, fitted with latest dropped back frame, fully equipped, tax paid; £35.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2032

TRIUMPH Combination, 3-speed, clutch, etc., lighting set, etc., licensed, smart coachbuilt sidecar; bargain, £48.—Blackmore, 769, Romford Rd., Manor Park, London, E. [7213

TRIUMPH, 1921, all-chain, 3-speed, kick start, only run 450 miles, complete with rear drive speedometer and horn; 95 gns.—H. Julian, 84, Broad St., Reading. 'Phone: 1024. [7238

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3½h.p. Triumph, Bosch, Mabon countershaft gear, everything perfect, guaranteed, 30 gns.; another, complete, less wheels, perfect, first cheque £15.—58, Cromwell Rd., Upton Park. [7330

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TRIUMPH 1921 Special Model, brand new, 2 plugs side by side simultaneous spark, highly polished aluminium crank, chain, timing cases, cylinder base nickel plated, fast; £105.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [7011

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1920 Zenith Combination, unscratched, perfect; £85.—24, Balliol Rd., North Kensington. [7393

6h.p. Zenith Countershaft Combination, excellent condition; £45.—373, Katherine Rd., Forest Gate. [7506

WAUCHOPE'S, 9, Shoe Lane, London.—3½h.p. Zenith-Bradshaw, new 1922; £118; easy terms arranged. [7752

ZENITH 1914 4h.p., just overhauled, perfect condition, new belt, rear tyre; nearest £40; exchange.—16, Ivy Rd., Shipley. [X2005

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3½h.p. Zenith Combination, just overhauled, Binks. E.I.C.; any trial; bargain, £65.—Lang, 246, Wandsworth Rd., S.W.8. [7333

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ZENITH-GRADUA 1914 8h.p. Sports Combination, coachbuilt sidecar, clutch, tax paid, perfect order; £46.—J. Wickham, 77, Highbury Hill, N.5. [7466

ZENITH 1921 5h.p. Model, shop-soiled only; £100; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2021

1921 5h.p. Zenith Combination, speedometer, lamps, insurance, and everything; cost over £180; quick sale £130.—McKay, 51, Peel Rd., Wealdstone, Middlesex. [7019

3½h.p. Single-cyl. Sporting Model Zenith, late 1919, fitted with Gradua gear, lamps, horn, complete, thoroughly overhauled, condition as new; £65.—Tippen, Marden, Kent. [6372

ZENITH 1920 8h.p. Countershaft Combination, Lucas electric lighting, Zenith sidecar, £106; 1920 6h.p. sports, as new, speedometer, lamps, £72.—7, Exhibition Rd., S.W.7. [7663

ZENITH-BRADSHAW 1922 model in stock. All Zenith models supplied; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7488

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ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear and sidecar lamps, Cowey speedometer, knee grips Ace discs, luggage grid, as new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2033

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1916	**DOUGLAS** 2¾ h.p. "All On".....	50
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151, HIGH STREET, WALTHAMSTOW, LONDON, N.E.
'Phone—Walthamstow 169 (2 lines.)

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BUTTERWORTHS', Butterworths', Butterworths' Autumn Clearance Sale now on.—Sunbeam combination, 1919, black and gold, Sunbeam sidecar, all lamps, and guaranteed, £78; Sunbeam combination, 1914, Canoelet sidecar, lovely lot electric lighting set, £58; Sunbeam solo, 1919, had little use, lamps, etc., all taxes paid; £69; Clyno 2-stroke lightweight, in splendid order and guaranteed, £25; overhead valve J.A.P. solo, cheap 'bus, £17, tax paid; Enfield 1915 twin 3h.p., 2-speed, clutch, £34; underslung sidecar, nice body, £6; Indian spares, Triumph spares, N.S.U. parts, J.A.P. connecting rods and pistons; welding plant, all complete, only been used twice, cost £40, sell £18; P. and M. cylinder, £1; pillion seats, 1 doz. speedometers, cycle car parts, a few good saddles. Give us a ring for your wants.—Butterworths' Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [6838

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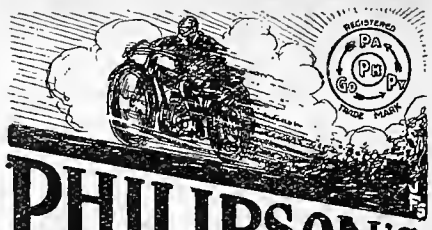

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COMBINATIONS, solos, Ford vans, for cash or exchange.—Crown Garage, Weybridge. [741

2-SPEED Lightweight Wanted, £25-£30 for best offered.—Write, 11, Stirling Rd., E.17. [767

WANTED, modern lightweight, must be cheap, cash waiting.—1, Othello St., Liverpool. [546

£25 offered for the best Douglas this week.—A. E. Blackman, 20, Malmesbury Rd., Bow, E.3. [716

WANTED, countershaft Triumph, cheap for cash.—30, Crystal Palace Park Rd., Sydenham. [736

1921 Big Twin Combination, Harley preferred; must be cheap.—Cox, 81, Blackheath Hill, Greenwich. [727

COMBINATION Wanted, Matchless, A.J.S., Clyno, also lightweight.—Thompson, 253, Munster Rd., Fulham. [75

WANTED, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Henderson.—Wandsworth Motor Exchange, Ebner St., Wandsworth. [776

WANTED, for spot cash, motor cycles, combinations, urgent.—W. Dawe, 216, Portobello Rd., N. Kensington. [65

A.B.C., Norton; exchange 1919 Indian combination all on, good condition; sell £90.—21, Whiteheadman Grove, Chelsea. [73

WANTED, anything cheap in motor cycles; cash waiting.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [767

WANTED, Indians, Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [777

WANTED, 8h.p. 1919 or 1920 Sports Zenith, under £70; must be perfect.—Johnstone, Forest Rd., Loughborough, Leicestershire. [76

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WANTED, motor cycles and combinations, any make or condition, new or old, for cash.—Write, call, or 'phone, Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [74

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KINGSBURY 1920 Model, as new, complete with seat; £25/10.—109, Leavesden Rd., Watford. [7175

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HARWOOD Pedal Cycle, engine 1¼h.p., new, perfect order, tax paid; £17; photo on application.—Rev. Bryant, Congleton. [7127

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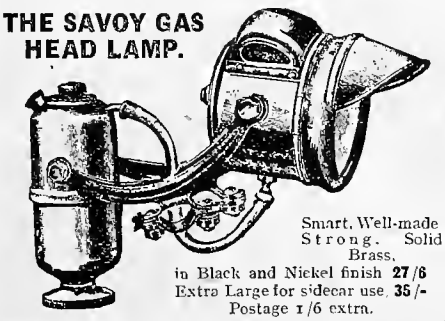

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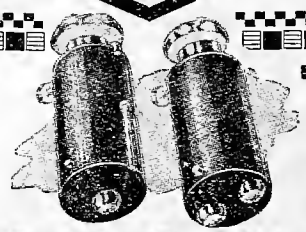

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MORGAN, 8h.p. J.A.P., Binks, spares, tyres good.—Kelly Bros., Llandudno. [X204

CARDEN 2-seater, 1919; £45; equipped, excellent condition.—47, Leigh Rd., East Ham. [750

MORGAN 1915, good order and looks well; bargain £90.—27, Linden Gardens, Chiswick. [706

HALIFAX.—G.N., 1920, dynamo lighting, £165; Tamplin 4-wheeler, 1920, £115.—Address below.

HALIFAX.—Morgan 8h.p., £105; another, £95; 1919 5-6h.p. A.V. Monocar, £69/10.—Halifax Motor Exchange, Horton St., Halifax. [729

BLUMFIELD 2-seater, hood, screen, lamps; bargain £65.—Fisher, 24, Tremadoc Rd., S.W.4. [757

G.N. Legere, 1921, dynamo model, excellent running order; £250.—Macdonald, Town House, Hamilton. [711

BRAND New Tamplin, complete with lamps; what offers?—Percy and Co., 314, Euston Rd., N.W.1. [725

MORGANS, second-hand, several in stock.—A. J. Rey, 378-384, Euston Rd. 'Phone: Museum 643. [640

A.V. 1921 Monocar, hood, screen, D.A. outfit, licensed, mileage 1,000; offers.—Pigott, Charlwood, Surrey. [706

MORGAN 8h.p. De Luxe Model; £80; hood, screen, perfect; motor cycle part.—257, Cavendish Rd., Balham, S.W.12. [758

1920 De Luxe Morgan, M.A.G., w.c., fully equipped, £140.—Braemar, 17, St. Quintin's Av., North Kensington, W.10. [777

MORGAN, 1918, lamps, horn, screen, hood, etc., tax paid, perfect; bargain, £85.—33, Hackford Rd., Brixton, S.W. [723

TAMPLIN 1920 2-seater, speedy, economical, not scratched, licensed; £90.—Bunting's Motor Exchange, Wealdstone. [76

SCOTT Sociable, as new, 1,300 miles, owner going India; 230 gns., or close offer.—Capt. Sellick, Ellamore, Tavistock. [70

MORGAN (1922) De Luxe, w.c. M.A.G., blue, accessories; cost £220, accept £190.—J. C. Ivens, Stanmore, Kidderminster. [71

SPORTING 2-seater, very fast, twin, water-cooled, 3 speeds and reverse; £95; exchange.—84, Greenside Rd., Croydon. [75

PILOT 2-seater, 4-wheeler, friction drive, water-cooled, drive away; £45.—Bunting's Motor Exchange, Wealdstone. [76

MORGAN. 1916, M.A.G. engine, a.c., good condition, disc wheels; £105, or nearest.—Berry, R.A.F., Cattewater, Plymouth. [70

£75.—New slightly shop-soiled Grahame-White 2-seat, 4h.p., 2-speed, electric lighting.—Percy and Co., 314, Euston Rd., N.W.1. [72

1921 Grand Prix Morgan, M.A.G., fully equipped, £150.—Hillier, 1, Thorpe Mews, Cambridge Gardens, North Kensington. [77

5h.p. A.V. Monocar, mechanically perfect, very fast, insured £100; any trial; £65.—Napier, Kenilworth Poultry Farm, Kenilworth. [X19

A.V. Monocar, 8h.p., Dec., 1920, double dickey, on; would exchange combination.—Wall, 1[illegible] Shardeloes Rd., New Cross, S.E. [70

MORGANS.—New and second-hand machines always in stock; official agents; delivery from stock; exchanges, extended terms.—Below.

MORGAN De Luxe, 1921, late, 10h.p. M.A.G. engine, well equipped, discs, perfect condition; bargain, £150.—Below.

1921 (late) Morgan Grand Prix, done only [illegible] miles, M.A.G. engine, W.C., dynamo lighting, aluminium dash, hood, screen, speedometer, car not scratched, cost £240; accept £215.—Elce, Ltd., 15-[illegible] Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0[illegible]

A.C. Sociable M.C., tax paid, recently overhauled, cylinder rebored, Sthenos carburetter; £60.—Apply Crowhurst's Garage, Moreton-in-Marsh. [7[illegible]

RUNABOUTS AND CYCLE CARS.

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-WHEEL Runabout, 3-speed and reverse, electric lighting, speedometer; £80; exchange motor cycle, h either way.—120, Sutherland Rd., Croydon. [7755

ORGAN 1918 De Luxe Model, disc wheels, water-cooled, good running order; any trial; illness com-s selling; £115.—Hull, c/o Cass Motors, Ely. [X1992

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.N. 1920, dynamo lighting, detachable wheels and spare, oversize tyres, speedometer; any trial; 50, or exchange Rover.—132, High Rd., East Finch [7170

WIFT 10h.p. 1921 2-seater with dickey, shop-soiled only; £345.—The Layton Garages, 30, Holywell Oxford. 'Phone: 581 and 784. T.A.: Integrity, ford. [7462

921 G.N., dynamo lighting, hood and screen, spare wheel, condition as new; £175, or exchange for tor cycle and cash.—Williams, Portland St., Chelten-m. [7199

ARDEN 2-seater, 1921 (August), hood, wind screen, electric lighting, all accessories, 70 m.p.g.; 15, or offer.—Chatsworth House, Derby Rd., Ponders d, N. [7348

EW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy ments, or exchange.—Service Co., 292, High Holborn C.1. [0673

AYLISS-THOMAS, 1922 10h.p. model, 4-cyl. water-cooled engine, 3 speeds, Magdyno; 300 gns; im-diate delivery.—Godfrey's, Ltd., 208, Gt. Portand St., ndon, W.1. [0730

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ONTGOMERY, special offer, shop-soiled, Model No. 2A, brand new; £25 cash.—Elce, Ltd., 15, Bishopsgate Av., Camomile St., E.C.3. 'Phone: enue 5548. [0075

920 Richardson Light Car for sale, 2-seater and dickey, electric light, fully equipped, nearly new; bargain, price £150.—Richardson, Whitewell Bottom aterfoot, near Manchester. [6179

ORGAN de Luxe, September, 1921, water-cooled, demonstration car, run only 1,200 miles, dark e, complete, tax paid; £180; any trial.—S. Hall, St. Peter's St., St. Albans. [7612

ASTLE THREE 10h.p., 4-cyl., w.c., dynamo lighting detachable wheels with spare, not done 600 miles, condition; price £210; owner bought larger car.— Haslemere Motor Co., Ltd., Haslemere, Surrey. [0735

ORGAN 1921 8h.p. De Luxe Model, M.A.G. engine, water cooled, electric lighting, tax paid, new; £180; deferred payments if desired.—Parker's, dshawgate, Bolton; also 245, Deansgate, Manchester. [X2029

.V. Monocar, late 1919, 6h.p., discs, electric light, hood, horn, insurance, tax paid, just been over-lled, rebushed, 2 new tyres fitted, very fast; best r secures; exchange.—Doyle, 22, Stanway Rd., Cov-ry. [X2117

.N., 1920, touring, dynamo lighting, ignition switch adjustable tappets, 5 detachable wheels, hood with elope, screen, horn, smart appearance, sound condi throughout; £170.—Telford Garage, 47, Streatham l, S.W. [7044

.W.K. Late 1916 2-3-seater, detachable wheels, with spare, 5 lamps, speedometer, tax paid; any l; cheap for cash, or exchange motor cycle and .—Laurel Works, Melbourne Rd., Leyton, E.10 one: Walthamstow 426. [7350

921 Crouch Light Car, issued new Sept., 1921, completely equipped and licensed, mileage ligible; cost £275, price £195.—The Layton ages, 30, Holywell St., Oxford. 'Phone: 581 and T.A.: Integrity, Oxford. [7460

ORGAN de Luxe, 1920, J.A.P. engine, extra wide body, disc wheels, water cooled, in perfect con-on; also Grand Prix model 1920 J.A.P. engine, r cooled, perfect condition.—Prices, trial, etc., apply ny Boys, Seawfell Hotel, Seascale, Cumberland. [7071

920 Morgan de Luxe, special w.c. M.A.G. engine, new hood and cover, wind screen, speedometer, k, horn, acetylene head and tail lamps, oversize els and tyres, special lockers in tail, in excellent me-nical condition; any reasonable trial or examination: 0.—Eyles, 45, Oakley Crescent, Chelsea, S.W.3. [7025

OVENTRY PREMIER Runabout, 1921, fully equipped, including dynamo lighting, electric horn, pare wheels (unused), 3 Dunlop and 2 Stepney tyres, key, special oak dash, speedometer, Tapley gradient er, dash lamp, fibre mat, tool locker, tools and spare es, in excellent condition, mileage under 2,000.— B. Shelley, Manor House, Titcnsor, Staffs. [6368

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1922 Model Coventry Premier (4-wheeler) Light Car, electric lighting, spare wheel and tyre unused, licence paid till Dec. 31st, in new and perfect condition.—Treliever, Quinton Rd., Coventry. [X1191

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REX Half Crank Case, timing side, 1910 or 1911 model.—Pollard, Motor, Burnley. [7228

WANTED, frame, 1915 Calthorpe 2¾h.p., with stand.—Address, County School, Neath. [7053

WANTED, Douglas engine, 2¾h.p.; 1913 or 1914 preferred.—Offers to Dennis, Seaford. [7133

RUDGE Front Fork Girder, good condition.—Rudge, 19, Brunstane Rd., Joppa, Midlothian. [7150

WANTED, Binks 1½in.; must be complete, or useless.—4, Blantyre, Walkden, Manchester. [7677

WANTED, surplus from manufacturers and garages.—Grove, 18, Fore St., Edmonton, London. [4211

WANTED, cheap, old motor bicycle, any make or condition.—King, Egrove, Kennington, Oxford. [X2078

WANTED, Centaur engine, 4h.p., or other make might suit.—Smith, Clencoe Cottage, Rayleigh Essex. [7301

WANTED, second-hand 2¾h.p. spring forks, suit 8in. column, 1in. handle-bar stem.—Benson, Dalbeattie. [7543

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WANTED, cheap magneto motor cycles; also old engines and gear boxes; cash on sighth.—Mayoard, 8, Silver St., Enfield. [7566

WANTED, second-hand Morgans, in good condition, not earlier 1919.—A. P. Rey, 378-384, Euston Rd. 'Phone: Museum 6436. [6410

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A.C. Sociable or Morgan Runabout wanted for cash; must be fairly modern and cheap.—Particulars to 24, Riffel Rd., Willesden Green, London, N.W. [4407

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£2,000 Cash Waiting for quantities of motor cycle parts and accessories.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [6112

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STANLEY Steamer; exchange combination, or offers.—167, Ashley Rd., Hale, Cheshire. [7096

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EXCHANGE, 1920 Rudge Multi for Powerplus Indian.—Green, 2, Howard Rd., Morpeth. [7167

4h.p. Douglas Combination, neat, reliable, for higher power; sell £90.—22, Queen's Rd., Basingstoke. [7198

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EXCHANGE Blumfield 2-seater for Combination; value £85.—Fisher, 24, Tremadoc Rd., S.W.4. [7577

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EXCHANGE 1920 8h.p. Zenith combination, with cash, for car; sell £145.—17, Garden Av., Mitcham, S.W. [7057

EXCHANGE 1916 4h.p. J.A.P., with cash, for P. and M. combination.—7, Holborn Rd., Plaistow, E.13. [7307

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I.O.M. Rudge Multi, T.T., 1921, fully equipped, for 4h.p. countershaft.—82, Caledonian Rd., London, N. [7370

EXCHANGE Splendid Lady's Cycle for sporting sidecar, sell £7.—Bird, Fairland St., Wymondham. [7500

EXCHANGE, new 4-cyl. watertight magneto for gent's 3-speed cycle.—Box 138, c/o *The Motor Cycle.* [X2067

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TRIUMPH Combination, 1918, all on, for Harley combination, or sell.—Frank, 30, Charlotte St., London, N. [7371

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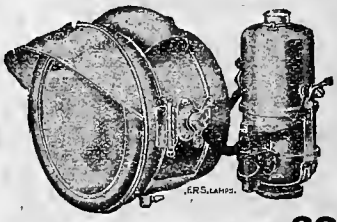

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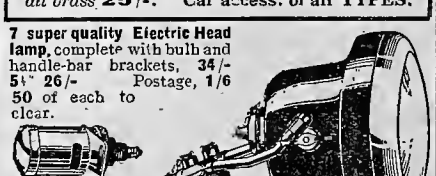

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IVY Lightweight, 2-speed, equipped, perfect condition, sell £45; exchange Zenith, Rudge, etc., cash adjustment.—28, Middleton Rd., Banbury. [73

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CALTHORPE 10h.p. 4-seater, 5 detachable wheel fully equipped, for good solo or combination an cash.—Davies, Christchurch Rd., Hemel Hempstea Herts. [77

EXCHANGE 5-6h.p. Sunbeam combination, as ne with £56 sidecar, any trial or examination allowe for good touring car.—Riley, Derby Rd., Belper, Derbyshire. [70

AUGUST, 1921, 2¾h.p. Douglas, uncratched; s under Douglas column; exchange, cash adjustments, for modern 2-stroke.—128, London Rd., King Lynn. [74

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EXCHANGE 1920 Sparkbrook 2-stroke, 2-spee excellent condition, all on, for combination, ca adjustment, or sell £45.—Glenthorps Villa, Lond Colney, Herts. [75

EXCHANGE, brand new 1922 Coventry Premier wheeler for combination and cash.—Newnha Motor Co., 223, Hammersmith Rd., W.6. 'Phone Hammersmith 80. [74

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FRAMES.—Repairs and alterations; special frames and tanks built, any design; enamelling and plating.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [4439

PISTONS, new, complete, standard or oversize, Minerva, J.A.P., Triumph, Singer, etc., 19/-; 2¾h.p. Douglas, etc., 10/-; also aluminium pistons supplied.—Below.

CYLINDERS Ground, new pistons with Brico rings No idle boast. 17 years' grinding experience Work guaranteed and cheapest in the trade. Support the firm who brought the prices down. Write for copy testimonials and prices.—Kendall and Co., Engineers, Stoney Stanton Rd., Coventry. [X1248

PISTONS for Every Type of Motor Cycle, ancient and modern in stock, prices complete with rings and gudgeon pins, from 19/- each; all full guaranteed by us.—C.M.D. (below).

CYLINDERS Reground on the same machinery as used by the leading motor cycle manufacturers. 4h.p. Triumph, J.A.P., Rover, Singer, Premier, B.S.A., etc., cylinders reground and fitted with new piston, complete with rings and gudgeon pin, 40/-; 2¾h.p. J.A.P., Singer, Humber, etc., 36/-; returned in 48 hours.—C.M.D. (below).

2¾h.p. Douglas two cylinders reground and fitted with two new pistons complete, 59/-; other twins, Indian, J.A.P., etc., 60/- to 78/-; compression and satisfaction guaranteed.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [7116

WELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve seatings, welded and machined complete; scored bores filled in and ground to existing pistons.—Below.

CYLINDERS Reground, new pistons fitted complete, in cast iron or aluminium.—West London Welding Co., Essex Place, Chiswick. 'Phone: Chiswick 536 [0415

CYLINDER Grinding, new pistons, etc.; accurate and highly finished work; prompt delivery; price list on application.—W. and F. Wills, Ltd., Engineers, Bridgwater. [0728

ENAMELLING, Plating. — Tanks enamelled as before; handle-bars, etc., plated. — Send to Murray's Plating Works, Union St., Coventry. Platers and enamellers to the trade. [0024

REPAIRERS.

V.S. Motor Cycle Agency.—Supplying spare parts and overhauling V.S. 2-speed gears, which are also fitted to Matchless machines, etc.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [4949

CYLINDERS Reground and fitted with new pistons, complete with gudgeon pin and rings: Triumph, J.A.P., Rover, Singer, Premier, B.S.A., etc., 40/-; accuracy and satisfaction guaranteed.—Below.

WE specialise in repairs, and guarantee same; complete overhauls; machining; any part made to pattern or drawing; no waiting.—Harvey's, 47, South Lambeth Rd., S.W.8 (near Vauxhall Station). [6568

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 5, Woodhouse Lane, Leeds. Competent and satisfactory service assured. [5963

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 16, London Rd., Leicester Competent and satisfactory service assured. [5964

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 20, Peter St., Manchester. Competent and satisfactory service assured. [5965

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 68, Renshaw St., Liverpool. Competent and satisfactory service assured. [5966

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 37, George St., Edinburgh. Competent and satisfactory service assured. [5967

WHY Wait for Repairs?—Engines overhauled, cylinders reground, new pistons fitted in few days, and spare rings by return; accuracy guaranteed. —Bowser, 30, Summer Row Parade, Birmingham. [8341

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depot, 8, Holdenhurst Rd., Bournemouth. Competent and satisfactory service assured. [6962

HARLEY-DAVIDSON.—Overhauls and repairs by expert, late foreman Harley-Davidson, Ltd. Terms moderate; satisfaction guaranteed.—Ajax Motors, 154, Loughborough Park, Brixton, London. [7277

SEND Your Work to the firm who make the Blackburne motor cycle. Tanks any make, frames and all details, also repairs to all parts; tip-top work, prices right. Try us.—Osborn Engineering Co., Gosport, Hants. [0652

READ the Following: "Cannock. I gained a medal with the engine you overhauled. The only lightweight to get placed.—F.B." See other advert.—Kendall and Co., Engineers, Stoney Stanton Rd., Coventry. [X2035

HARLEY-DAVIDSON Repairs and Overhauls.—We are now able to put work in hand without delay; skilled staff under careful supervision.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0043

WE can bring your machine up to date and make it into a countershaft model by fitting a new back, with Sturmey-Archer gear box; any machine converted.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [7257

CYLINDERS Reground, accurate finish, compression guaranteed: Triumph, Rover, Premier, etc., 37/-; all 2¾h.p. single, 33/-; twins, 2¾h.p. Douglas, 55/-; J.A.P., Indian James, 60/-; complete with pistons and rings.

PISTONS.—Every pattern, standard or oversize, in stock; low price.

PISTON Rings, high grade; none better; thousands of testimonials; oversize or step cut 2/-, standard 1/6 each; return post.—Patent Rings, 30, Wigan Rd., Atherton [5191

HUB Gear Machines Converted to Countershaft, or complete conversion sets supplied to suit all makes; recommended by the leading motor cycle manufacturers.—Sheldon Engineering Co., Bayley Lane, Coventry. 'Phone: 634. [2679

COULSON Spares and Repairs Co., 15, Woodstock St., Bond St.—Repairs and overhauls to Coulson machines, competent staff from Coulson works, first-class workmanship at lowest prices. See announcement regarding Spares. [7512

WELDING, Welding, Welding.—Welding done by experts; cylinders, crank cases, gear boxes, pistons, cranks, flanges, etc.; aluminium a speciality. No cure no pay, and all work returned in 6 days.—H. Heap, 105, Bissell St., Birmingham. [0023

SUNBEAM Motor Cycles.—Repairs, overhauling, and renovation of Sunbeams by Sunbeam experts at the makers' own depots, 57, Holborn Viaduct, London, E.C.1, and 157 and 158, Sloane St., London, S.W.1. Competent and satisfactory service assured. [5961

BEACH Engineering Co., 42, Earl St., Coventry.—Engines rebushed, cylinders reground, aluminium or C.I. pistons fitted from £2; connecting rods rebushed; valves 5/-, guides 3/6; pistons complete from 25/-, rings 2/-; valve cans 4/6; other repairs quoted for [059

ROC 2-speed Wheels, Humber, Rex, V.S., Matchless, and Campion-Jap, thoroughly overhauled; all spares in stock; repairs recommended by manufacturers; when forwarding leave on outer covers; protects the rim; Rex V pulleys in stock.—Connolly, 13, Carmelite Rd., Coventry. [X2114

JULIANS

OIL-COOLED.

ZENITH BRADSHAW

WATER-COOLED.

SCOTT

AIR-COOLED.

A.J.S., NORTON, LEVIS, TRIUMPH, O.K., ENFIELD, MATCHLESS, ARIEL, NEW IMPERIAL, Etc.

1921 SHOP-SOILED BARGAINS.

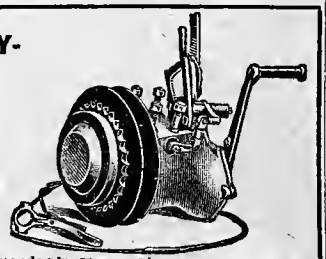
MATCHLESS Combination **£160**
With double-seated Sidecar **£165**
LEVIS (single-speed) - - **£45**

JULIANS,

84, Broad St., READING.

'Phone: 1024.

STURMEY-ARCHER GEAR SERVICE



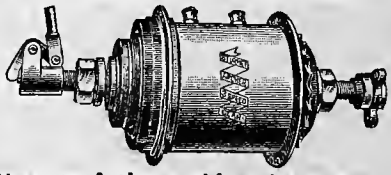
We are recommended by Messrs. Sturmey-Archer Gears, Ltd., for Repairs and Spares. Full range of 2 and 3-speed parts, and complete gears IN STOCK. No Waiting

CROMWELL ENG. CO.

327, PUTNEY BRIDGE RD., S.W.15

Telegrams and 'Phone: Putney 1601.

SEND REPAIRS PUTNEY STATION. (L. & S.W.) Rly.



Sturmey-Archer and Armstrong Gears. Immediate Repairs. All parts for all types in stock.

Quotations despatched same day as gear is received.

STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock, wholesale and retail—2-speed £11, 3-speed £17.

CROMWELL ENGINEERING CO., 327, PUTNEY BRIDGE ROAD, S.W.15.

Telegrams and Telephone—Putney 1601.

Send Repairs to Putney Station (L. & S.W.R.)

REPAIRERS.

N.S.U. Gears, N.S.U. Gears, N.S.U. Gears.—Butterworths' Garage can undertake the repair of these gears at short notice. Good stock of replacements always available. Send gear along to us.—Butterworth Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [683

CRITERION for Cylinder Grinding and New Pistons complete, every cylinder ground and perfect compression guaranteed; complete engine overhaul, practical efficiency guaranteed. — Criterion Motor Works, Criterion Mews, Fairbridge Rd., London, N.19. 'Phone: Hornsey 1147. [624

FRAME and Chassis Repair Specialists. Cut-down new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machining of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Enfield Engineering Co., 31, Silver St., Enfield. [51

WE Undertake Complete Overheals to Engines and Gear Boxes; faultless, prompt, and reasonable; work guaranteed; we specialise in Triumph, Douglas, B.S.A., and Matchless; perfect renovations undertaken. —Leythorn Engineering Works, 16, St. George's Mews, Regent's Park Rd., London, N.W.1. [731

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 1 Miller St., Camden Town, N.W. 'Phone Museum 243 which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [08

ACETYLENE and Electric Welding.—Broken flanges, cracked water jackets, scored bores, worn bearings built up; aluminium gear boxes, crank cases, and broken motor part welded and machined up and turned in 7 days; 14 years' experience.—Lincoln Jeffries Jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. 'Phone: Central 729. [28

WHITE and Watson, Motor Cycle Repair Specialists. Douglas riders now is your opportunity. 2¾h.p. Douglas cylinders reground and fitted with two new pistons complete, and valves refaced, for £2 per pair. Other cylinders at the following rates: Up to 80 mm. 25/6, 70 mm. 29/-, 80 mm. 34/-, 85 mm. 37/- and over 39/6; 2-strokes extra; aluminium pistons. Engine rebushed, rebalanced, and overhauled; gear boxes overhauled, and replacements machined.—White and Watson, 80, Belvedere Rd., S.E.1. [757

FOR 13 Solid Years we have earned our daily bread by properly repairing motors. We are the old firm of motor repairers in the Midlands, and our experience is worth a lot to you. You run no experimental risks here. Specially selected men and specially selected machinery enable us to turn out work which is a pleasure to our clients and us. Cylinders rebored and ground to a glass finish. Pistons, rings, and bushes made that really fit. Engines overhauled; bodies rectified; satisfaction guaranteed. If we cannot please you, you are hopeless.—Tennant Engineering Co., 2 Bristol St., Birmingham, Official Repairers to the A.C. and R.A.C. [00

PARTS AND ACCESSORIES.

NOTE: In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."

COUNTY of London Engineering Works, Ltd.

AUSTER Wind Screens, Triplex glass, adjustable aluminium fittings, 13×6½in., 10/-, post free

ELECTRIC Inspection Lamps, to fit over speedometer, complete with bulb and cable, 2/8 each

EXHAUST Boxes, Douglas 2¾h.p., 15/-; Douglas 4h.p. clutch races, 2/6; screwdrivers, 6in., 8in., 10in., 10d., 1/-, and 1/2 each.

HIGH-TENSION Wire, 9 mm. 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., per yard, 25 yard coil 2/-; postage on coils, 5 mm. upwards 1/-, 3 mm. 9d.

ALL Goods on approval per return post on receipt of cash, money refunded if not satisfied.

COUNTY of London Engineering Works, Ltd., New Park Rd., Brixton Hill, London, S.W. Streatham 2898. T.A.: Ignitionac, Brixstret, Lond

P. and M.—New Renold chain, 4/- ft.; ditto Cover 3/6; set 37/6.—Below.

P. and M. Open Chain, 7/-; kick start, 3/-; second hand chain, 20/- set.—Below.

P. and M. Chain Cases, 3/- piece, repaired; 7/- pair; stays, 2/-.—Below.

P. and M. Hollow Spindle, 5/-; rear spindle, main gear sprockets, 4/-.—Below.

P. and M. Brake Rods, 6/-; bands, 6/-; pedals, lamp brackets, 1/-.—Below.

P. and M. New Valves, 4/-; tank caps, 1/9 each; footrest rubbers, 2/3.—Below.

LONG Bros., 20, Sydney Mews, Chelsea. (Carr. extra.)

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
Telegrams: "Motorcycle, Coventry."
Telephone: 10, Coventry (5 lines).

ADVERTISING AND PUBLISHING OFFICES: 20, Tudor St., London, E.C.4
Telegrams: "Cyclist, Fleet, London."
Telephone: 2848 City (13 lines).

Midland Branch Offices: Guildhall Buildings Navigation Street, Birmingham.
Telegrams: "Autopress, Birmingham."
Telephone: 2970 and 2971 Midland.

Northern Offices: 199, Deansgate, Manchester.
Telegrams: "Iliffe, Manchester."
Telephone: 8970 and 8971 City.

Subscription Rates: Home, 23s. 10d.: Canada, 23s. 10d.: other countries abroad, 28s. 2d. per annum.

Passenger Motor Cycles.

THE most popular passenger vehicle on the road—the ubiquitous sidecar—promises to be even more popular than ever it has been. This is, of course, a natural tendency, since economy is to-day the keynote in every sphere of our national life. In this issue are described most of the new models which will be offered to the public in 1922, and which will be exhibited at Olympia from the 28th of this month until the 3rd of December.

Questions of comfort have exercised the minds of all responsible for passenger machines this year; the main feature of the car show was the exceptional amount of detail work designed to enhance the quality of comfort. At the Paris Salon the same tendencies were in evidence.

Closer attention has been given to springing, and most designs now reveal that the sidecar is no longer regarded as a wheel, a frame, and a body, so that the margin between the least and most efficient types has been considerably narrowed. Quality has improved—and at the same time prices have been reduced, so that the same price gap as existed between sidecars and light cars two years ago is still maintained.

Improvements in engines and transmissions are also noticeable, but on the whole there are less entirely new models than usual; rather have the makers attempted, by more economical production methods, to reduce prices to figures such that the purchaser can no longer hesitate on the score that further reductions may be expected.

Taken altogether, it is quite apparent that 1922 prices are being based entirely upon production costs, and that the latter are more stable than they have been since the Armistice.

There is no doubt that there will be keen competition in public favour, and this is a good sign from the buyer's point of view, for while demand exceeded the supply there was no incentive for manufacturers to consider seriously such questions as cost and improvement. Now, as with every other industry, it is a case of the survival of the fittest, and we can say with confidence that most of the new designs we have inspected are worthy to survive and to uphold the traditions of British workmanship and design.

Price Reductions.

SUFFICIENT is now known of the manufacturers' programmes for 1922 to enable us to state that next year prices will be considerably reduced.

Prices for the year 1922, compared with those prevailing at the commencement of the current year, promise to show an all-round reduction of about 25%, and this, in conjunction with the considerably reduced costs of tyres, petrol, oil, and other items concerning running costs, should assist materially in greatly increasing the number of motor cyclists. Those motor cyclists who have watched the fall in car prices do not always realise that approximately proportionate reductions have been made in the prices of motor cycles.

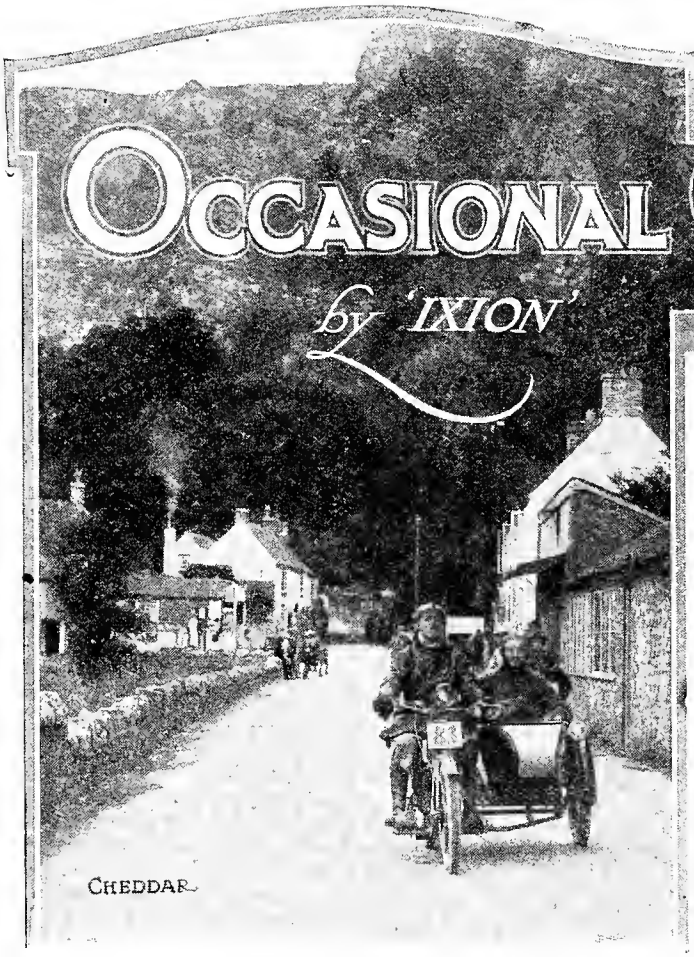
By careful reorganisation and improved methods of production some remarkably low-priced machines may be seen at Olympia at the end of this month. When the value of the pound is compared with its pre-war standard, and considered in conjunction with 1922 prices of motor cycles, it will be appreciated that never has the British motor cycle offered such good value. Refinements have been added and important points greatly improved. Had these been incorporated in 1914 designs with a consequent increase in cost, they would have emphasised even more the present day value.

Manufacturers realise that at the present time motor cyclists are very discriminating, and that their only hope of a successful year in 1922 depends entirely upon their offering the best possible workmanship, material, and design at the lowest possible price; therefore the prices which will be quoted at Olympia should stand firm for some time to come.

An index to the advertisements in this issue will be found on page 40.

OCCASIONAL COMMENTS

by 'IXION'


CHEDDAR.

Looking Backwards.

AS I mentally contemplate the passenger exhibits at Olympia, my reverie flits back across the years to the time when I also was an impecunious youngster, whose prime interest in life was the other sex. The sidecar and the cycle car were still unborn. I had a motor bicycle of the type which may start to-day, and may not have started by to-morrow. It had an engine which liked hills about as much as a sailor likes bombs. It had a belt which slipped more in dry weather than the worst modern belt slips in a watersplash. It had a contact breaker about as substantial as the icing on a wedding cake. Its brakes—I still sweat at the remembrance of them. The front brake was called a "spoon," and consisted of a large pad of rubber in a steel shoe, which was depressed on to the tread of the front tyre by a steel lever some 2ft. 6in. long, resembling a Turkish scimitar. The back brake was a Bowden horseshoe. The Bowden people used to assure me that their 1902 cables were guaranteed to stand 2,000 tons per square inch, and that my troubles were wholly ascribable to improper fitting. It may have been so. But if the wire did not snap incontinently when I put the brake on, the brake shoes would drip out of the horseshoe; or one pull-off spring, precariously anchored to a wafer clip round the frame tube, would be missing; the surviving spring would then haul the horseshoe lobsided. When I braked, a noise like an urchin rubbing a stick along iron palings would form a horrid prelude to the sudden collapse of my back wheel, as all the spokes fell into the road.

And the Trailers —!

LATER on some earnest firm—probably Mills and Fulford—constructed substantial trailers which would genuinely stand the bucketing which motor cycle haulage inflicted. But at the era of which I write, our trailers were built for pedal cycles (Yah! I remember that time). That is to say, their tubes were as thin as a Gillette blade. Their favourite point of fracture was just behind the connection to the bicycle seat pillar. The trailer then up-ended itself backwards. Out went Araminta. These trailers were really rather convenient for youthful motor cyclists at the susceptible age. No gentleman likes telling Araminta that Mabel has succeeded her in his affections. There is usually a scene, and, being in the wrong, one feels sheepish. But if the trailer tube snapped, it was Araminta who started the *strafe*. And one didn't feel to blame. Moreover, if one didn't happen to desire a breach, it gave one an excuse for being very tender and affectionate whilst comforting the stricken Araminta, so that relations were usually advanced one stage. Of course, for married men the trailer was the deuce and all. Breakfast the morning after—it must have been *fearful*.

But Nowadays —.

SO I try to picture myself going to the 1922 Olympia as an irresponsible flirt of, say, nineteen summers, with an *Olla Podrida* of all the Gibson and Kirschner girls at the back of my mind, and hesitating between a cycle car and a sidecar. Of course, the flapper bracket is well enough for the forthcoming type of damsel, but I always liked the shy sort best. Possibly such damozels would regard the very close company of a cycle car as rather alarming in the first chapter of the acquaintance. The comparative isolation of a sidecar, especially with a hood and an Easting, would, I think, have appealed to the sort of maiden who once charmed me. For conjugal couples, too, the sidecar has distinct attractions. If she begins to nag, one can open the cut-out, and, really, conversation becomes almost impossible.

Occasional Comments.—

The A.V.

I HAVE often prophesied that the cycle car would ultimately join issue with the sidecar, but I cannot say that I ever expected to see the offensive begun in 1922. Still, the A.V. is a real eye-opener in that line. Here we have an 8 h.p. two-seater with a very good "performance," and freed from that extreme narrowness of track which handicaps some cycle cars for use on really bad roads. Moreover, by averaging nearly a mile a minute in the 200 Miles, it showed that it is staunch, as well as taking to the eye. No doubt Major Empson split-pinned and spring-washered and taped everything he could think of; but there is nothing to prevent any other user from doing the same. Indeed, most hard riders tackle their new machines in the same jaundiced and cynical spirit. The A.V. works are not of Ford dimensions, and possibly a gigantic cycle car factory could go one better if its No. 8 hats did not all take £1,000 a year.

The Lightweight Sidecar?

THE lightweight sidecar is the logical corollary of the light car. A few years ago, when metallurgy was crude, and air-cooling took the form of never asking an engine to develop more than half its rated horse-power, we dared not set an engine to rev. perpetually. Knowledge grew. It became possible to ask an engine with a maximum output of 15 h.p. to develop an average of 10 h.p. during its working life. Hence the light car. Similarly in the motor cycle world we can now set a 2¾ h.p. engine to give off almost its full power continuously; and it will neither scale its exhaust valves, seize its piston, nor melt its plain bearings (if any). We are not all F. C. Norths, and every route is not as dead easy as the 1921 Six Days course. But the impecunious owner, resident anywhere short of the Alps, has at least two choices. He may perch his girl on a flapper bracket. Or he may seat her comfortably in a bijou sidecar, harnessed to what would only be a potterbus if it were ridden solo.

Compassionately.

WHILST I am on passenger topics I would draw the attention of designers, manufacturers, and victims to one of the most pathetic spectacles which our roads afford. My withers are sadly wrung when I pass an elderly female on a push-trike (I take it there is no odium in this compound?), and I hear a malevolent sniff of hate, disgust, and pity as I flit swiftly on. But my withers (what *are* "withers"?) are wrung still more when I overtake an elderly 500 c.c. combination travelling slowly. The bent, middle-aged driver is going slowly, not because he could not go faster, not because he does not like speed, but because he knows his outfit will fall in half before long if he opens the throttle. His rigid, unsprung outfit is bumping dizzily over the pot-holes on very narrow tyres, and if you gauge alignment with a swift glance from any angle, you will see that both his cycle frame and sidecar chassis have long since whipped out of truth. He and his lady utilise this meagre and uncomfortable transport because it is the only private transport which they can afford. By contrast you will occasionally see a 500 c.c. outfit of more recent date, designed by a man with soft tissues and deep sympathies. It has flabby 3in. tyres, a howling good fork, and a spring-mounted saddle. I have written much and often on the acute discomforts of some solo machines. But these solo 'buses are air-cushions compared to an ungenerously conceived sidecar outfit of the cheaper sort. Big tyres and plenty of springing are two slogans which sidecar buyers will bear in mind for 1922, and until our roads grow better.

IN THE TEA PLANTATIONS.
The motor cycle is becoming increasingly popular in Ceylon, where there are really excellent roads. The scenery, too, is magnificent, fine wooded valleys and mountain ranges being a feature of this beautiful island.

BY ROAD TO THE SHOW.

Some Hints to Provincial Motor Cyclists on How to Find Olympia.

As a general trade reunion, it follows that the contingent of Show visitors from the Midlands is a large one.

Quite a number of motor cyclists are in the habit of journeying up from the Warwickshire and Staffordshire homes of the trade by road, and, no doubt, more would follow this example but for a mistaken idea of the complexity of London traffic and the difficulty of finding Olympia in the largest city in the world.

Although thousands have visited London for the Shows, it is astonishing to find the number who would be hopelessly lost if landed at the railway terminus and there were no courteous policemen to advise them regarding the right 'bus or tube to take.

Usually, those who journey by the L. and N.W. trains change at Willesden on to a local train for Addison Road, which deposits them alongside the main entrance to Olympia, but many of these visitors have not the slightest idea into which part of London they have been deposited, and, when an evening trip into the West End is suggested, they almost invariably turn to the right (toward Hammersmith Broadway) on reaching the Hammersmith Road, instead of to the left.

Midlanders making the trip by road can travel by alternate routes:

(1.) Birmingham, Coventry, Daventry, Dunstable, St. Albans turn right to Edgware.

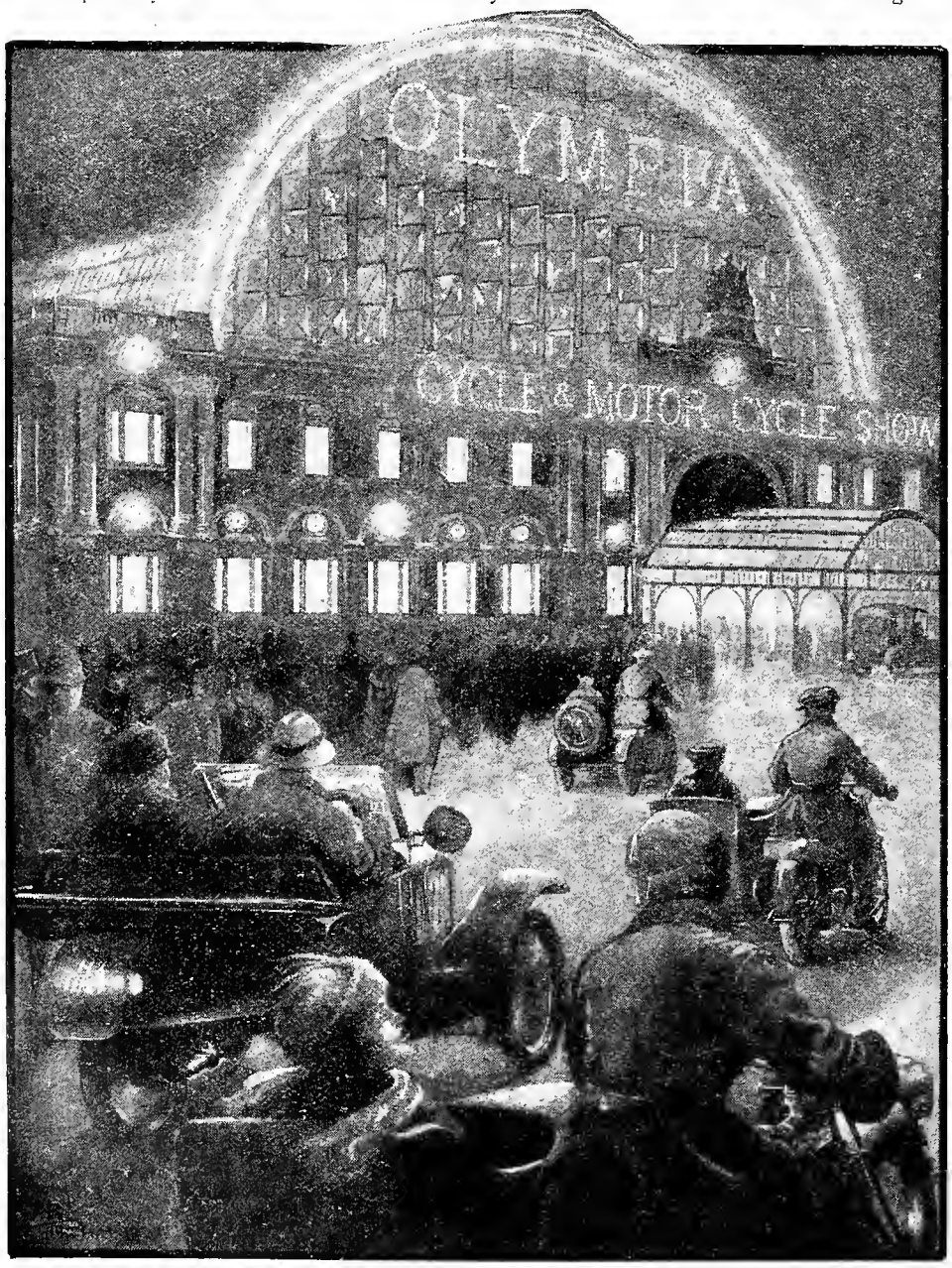
(2.) *Via* Oxford, Henley, Staines, Brentford.

(3.) *Via* High Wycombe and Uxbridge.

The first route brings the rider directly to the Marble Arch, where he may either turn sharp right, and follow the traffic to Shepherd's Bush Exhibition ground, then left along Holland Road to Hammersmith Road, with Olympia a few hundred yards to the right. Or he can cross the main thoroughfare, down Park Lane to Hyde Park Corner, turn right along Knightsbridge and straight ahead to Olympia.

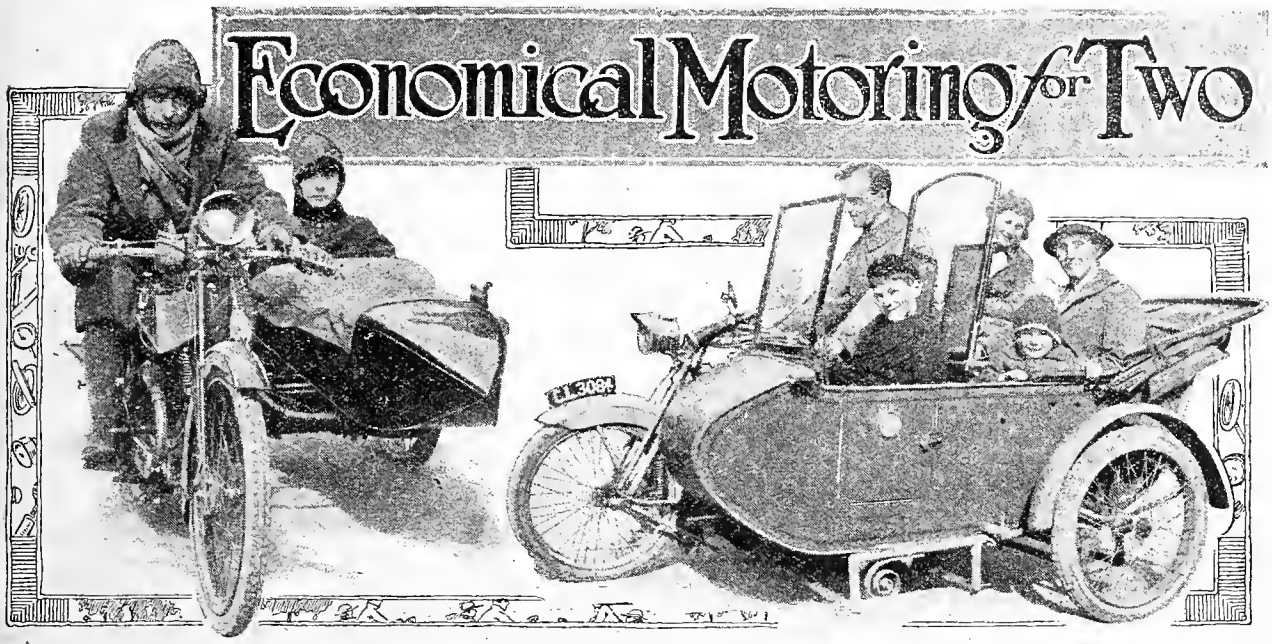
The alternative routes approach Olympia from the west, and nothing disconcerting will be experienced unless it be Hammersmith Broadway (when route 2 is taken), where the stranger may be uncertain which of the many streets he must take. In this case, let him make as straight a crossing of the tangle as possible, and then look out for the Clarendon Restaurant on his right, which will indicate that he is in the Hammersmith Road, less than a mile along which is Olympia on the left.

The third route brings the rider to Shepherd's Bush, where a right turn along Holland Road should be taken.



"Addison Road" entrance to Olympia. Vehicular traffic approaches it from Hammersmith Road.

Economical Motoring for Two



The Sidecar Reigns Supreme—even over the Railway—as an Inexpensive Means of Transport, not only for Two, but for Whole Families.

JUST as it is supposed that it is every motorist's ambition to possess a Rolls-Royce, many motor cyclists who own the *de luxe* type of outfit consider that every other type is but a step towards the top.

Probably members of *The Motor Cycle* staff have had as varied experience with different types of sidecars as any similar number of enthusiasts, yet it is their unanimous opinion that there is no pinnacle upon the crown of which rests one machine or even one type.

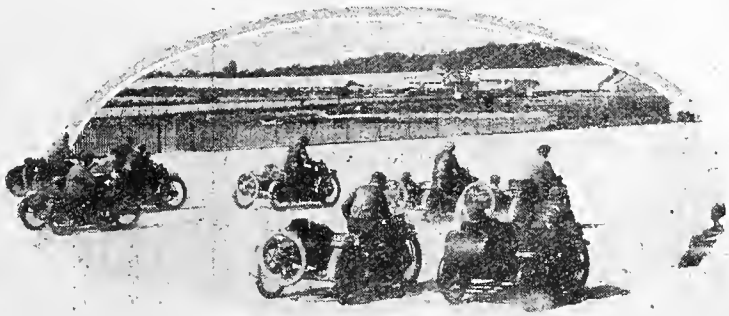
Anticipatory pride of ownership is an ever-varying trait inherent with all motor cyclists, and it is strange that almost everyone's dream mount is different and usually of a type with which no actual experience has been obtained. When the ideal of yesterday materialises to-day, the dream changes, for anticipation is always more enjoyable than realisation. Thus, almost every motor cyclist thinks continually of his next new mount, but the illusory quality which is sought for is not always increased power; it is not always increased efficiency; nor greater refinement. Ask a hundred motor cyclists to specify their ideals and there would be at least fifty different answers; but they would all spell two words — something new.

> Every sidecar machine which will be seen at the Olympia Motor Cycle Show may be regarded as somebody's ideal.

So we may regard every single sidecar machine to be seen at Olympia as somebody's ideal; but what of those who have no ideals or knowledge of the capabilities of the different types?

Obviously the heavyweight couple with two plump children are not promised the utmost satisfaction with a miniature machine of under 350 c.c. capacity, and the average dual purpose mount may fall short of the expectations of the young man who anticipates sidecar speeds to equal those of Temple or Le Vack.

Let it be said that the speeds so glibly mentioned by stand attendants are not always a safe guide as to a machine's capabilities. In these days when solo machines are capable of over 100 m.p.h., to mention a mere "fifty" may seem to do a mount scant justice, but a sidecar capable of 45 m.p.h. may be regarded as really fast, and, in due respect to all fast road men, let us whisper that very few sidecar machines sold to the public are capable of attaining, let alone maintaining, 50 m.p.h., however favourable the conditions may be. Only two sidecars exceeded 45 m.p.h. in the twenty-five lap speed test at Brooklands after the last Six Days Trials. One of these was an 8 h.p. Matchless and the other a 6 h.p. B.S.A. Both were light sidecars.

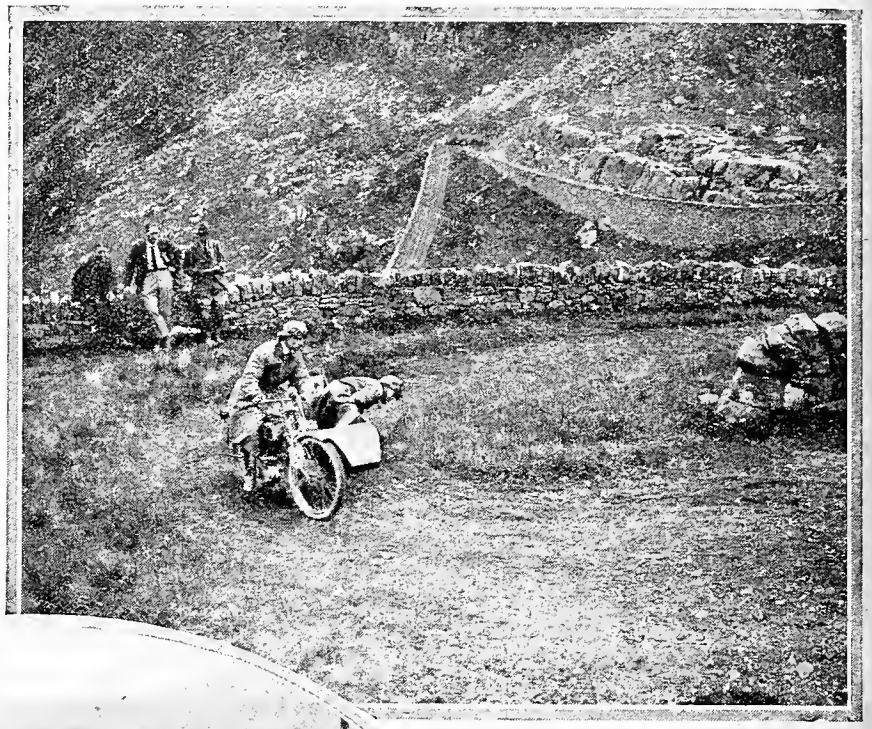


The speeds maintained at Brooklands at the conclusion of the Six Days Trials may be accepted as what may reasonably be expected from similar machines in the hands of private owners.

Economical Motoring for Two.

The schedule published in our issue for September 15th, which gave the speeds of all the survivors in the Six Days Trials, may be regarded as a very fair guide as to what the average privately-owned sidecar outfit may be expected to accomplish for short distances, and, in view of the exaggeration of owners and salesmen alike, it would be well, perhaps, to remark that the speeds, which are given below, may be accepted as very good indeed.

There are, however, many sidecar owners who will disagree with this statement, but let them find a five mile stretch of deserted road, without crossroads and traffic, and traverse it early some morning in order to see for themselves that it is one thing to get the speedometer needle up to 40 m.p.h., and quite another matter to cover four miles in six minutes. When this is realised, it will be appreciated that a maximum speed of 40 m.p.h. is as much as ninety per cent. of sidecarists require. After all, there is a speed limit of 20 m.p.h. in this country, and, even if there were not, there are very few places where sidecar speeds higher than 40 m.p.h. may be indulged in safely.



STRIKING PERFORMANCES BY SMALL TWO-STROKE SIDECARS IN SIX DAYS TRIALS.

Above is seen W. Peatty on the Hawker, climbing Scotland's most severe hill, the six-mile-long Applecross. On the left: F. C. North ascending the once dreaded Porlock on his O.K. sidecar. Both these hills, not long ago, tried severely even powerful mounts.

Speed, however, is not the chief consideration of the average buyer. Comfort comes first, and, taken generally, the larger the machine, the greater is the comfort, but even this point depends largely upon the design of the sidecar body, and there are "sporting" sidecar outfits of 8 h.p. which do not give to the passenger the same comfort as a lightweight fitted with a small tourist sidecar.

Two-stroke engines of quite small capacity may now be regarded as capable of serious sidecar work.

Sidecar discomfort may come under two headings: (1) the body may be cramped or the angles of the cushions may produce an unnatural position, and (2) the springing may be at fault.

The average speeds for sixty-eight miles on Brooklands of different types of passenger machines at the end of the last "Six Days," and referred to above, were as follows:

	M.P.H.
3½ h.p. P. and M.	34.92
4½ h.p. Dunelt	31.52
6 h.p. Martinsyde	40.94
8 h.p. Matchless	46.95
5-6 h.p. Rover	38.12
4 h.p. Norton	43.95
6 h.p. Ariel	38.61
7 h.p. James	43.21
7 h.p. A.J.S.	43.64
6 h.p. B.S.A.	45.63
8 h.p. Sunbeam	40.94
8 h.p. Morgan	44.03
8 h.p. T.B.	42.24

VARIOUS TYPES OF SIDECAR MACHINES DISCUSSED.

THE SMALL TWO-STROKE OUTFIT.

One of the most outstanding developments of the past few years has been the improvement of the two-stroke to a stage that quite a small engine may now be regarded as a serious proposition for sidecar work.

Before the war, a few adventurous spirits attached light sidecars to solo lightweights and obtained a certain amount of good service in pottering about flat districts. But this was sometimes at the expense of distorted frames and undue wear of engine and wheel bearings.

This practice, however, was discouraged as being distinctly unfair to the makers and not without danger to the driver, for a lightweight designed for solo work is not at all suitable for hauling a sidecar, and this should be remembered by the present-day owner of a two-stroke, who, seeing that the makers of his machine sell a small sidecar outfit fitted with the same engine as his own solo mount, may be tempted to convert it into a passenger outfit. In all probability the frame, forks, wheel bearings, size of tyres, and the gear ratios are totally unsuitable for the double load.

> Although these small sidecars are not capable of very high speeds, averages of 20 m.p.h. are comparatively easy to attain.

When a maker offers a miniature sidecar outfit to the public, it may be taken for granted that the frame has been strengthened, the wheel bearings enlarged, and the machine generally designed for the work it is intended to do.

No Longer a Toy.

Old motor cyclists who have traversed the highway of experience with all the older types of machines are apt to regard the little two-stroke outfit as a toy. One member of *The Motor Cycle* staff shared this view until, early this year, he saw a little Velocette haul a sidecar up a trials hill which had brought him to a standstill on a machine with a much larger engine. Then the wonderful ascents of Porlock and Lynton of F. C. North (O.K. sc.) in the A.C.U. Trials, and the manner in which the little Hawker climbed Applecross in the Scottish Trials, caused a number of riders to amend their views.

To many Porlock, Lynton, and Applecross are but names, but there are riders to whom each name spells defeat in pre-war battles with gradients. In 1914 it was regarded as cruelty to machinery to endeavour to climb such hills with a 3½ h.p. sidecar, and in justice to this type—and also the modern miniatures—it should be added that the old "3½" climbed every hill in the 1914 Scottish Six Days, excepting Applecross. There were three similar machines in that trial—a Sunbeam, a Premier, and an Ariel—and they all "petered out" on Applecross within a few yards of each other, which seems to be proof that this hill marked the limit for that type. Yet in the year 1921, a two-stroke of under 350 c.c. capacity took a sidecar up to the summit!

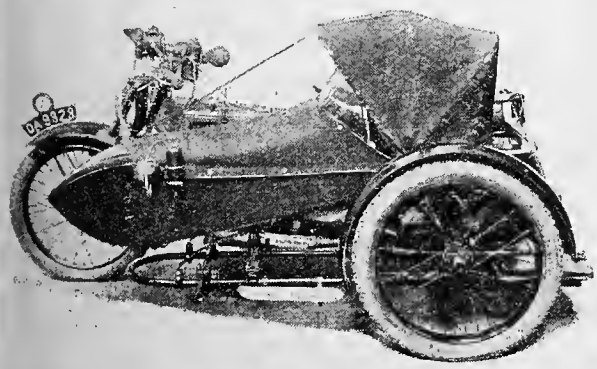
So much for the power of the little two-stroke sidecar—now for actual experience under ordinary private owner conditions.

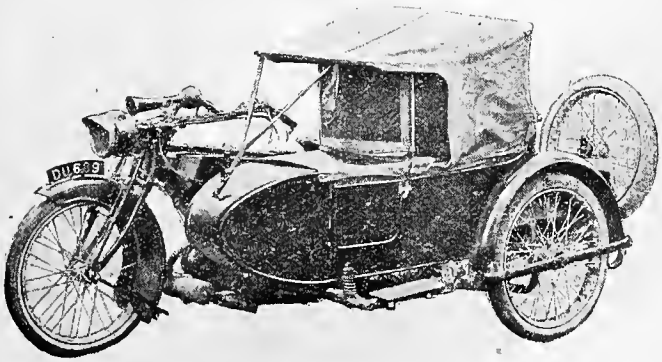
Miniature Sidecars on the Road.

After using one of the heaviest sidecar outfits on the road, the Ivy first impressed us by its lightness. We re-discovered how easy it is to lift the wheel of an empty sidecar on left corners, but, after re-adjusting driving methods to meet the new requirements, one quickly becomes accustomed to the feel of the machine.

On the road, with a passenger in the sidecar, speeds up to 32 m.p.h. were possible, but, owing to the light weight, scarcely advisable; though at 20 m.p.h. or a little over, the machine was really delightful to handle. However, average speeds of 20 m.p.h. are comparatively easy to attain, and, for all the extra power of larger machines owned by the writer, averages of 20 m.p.h. have been but rarely exceeded on short journeys. After all, it is "good going" to do an eighty mile journey in four hours, and there is little pleasure for the passenger in going all out for miles on end.

The Connaught and the O.K. gave similar service at ordinary touring speeds—there was always ample power in reserve for inclines, and gear-changing at corners was not called for even so much as it is in the case of big single outfits. This, of course, is due to the even firing torque of the two-stroke, which gives the same impulse effect as a flat twin four-





Two Blackburne-engined outfits equipped for all-weather service. (Left) The 2¾ h.p. Verus and (right) the 8 h.p. Rex-Acme.

Economical Motoring for Two.

stroke—and no doubt the fact that most two-strokes are comparatively low-compression engines has something to do with this attribute.

Another member of *The Motor Cycle* staff took a Connaught outfit on tour; with his wife as passenger and with luggage, nearly 20 m.p.h. was averaged over the whole of the 380 miles covered—and this with a petrol consumption of 90 m.p.g., and a total load of 700 lb.

The chain-driven "big single" is a go-anywhere sidecar. The driver of the Norton is quite happy negotiating a ford, while the new Rex-Acme single proves its hill-climbing ability by making a clean ascent of Screw Road, the Welsh hill discovered by *The Motor Cycle*.

All the three machines mentioned (O.K., Ivy, and Connaught) have extremely smooth running engines, and, once under way, the torque reminds one of a four-cylinder engine.

We have also heard very good reports of the Calthorpe and Francis-Barnett lightweight sidecar outfits, while one must also give credit to the makers of the Ixion, who, we believe, were the first firm to market an outfit of this character specially designed for the work. We recall quite an enjoyable run in one of this firm's pre-war outfits fitted with a three-speed hub gear, and, amongst others, we had good service from a Beardmore-Precision spring frame outfit of 350 c.c. capacity.

At the Olympia Show, no doubt, we shall see quite a number of these two-stroke lightweights, fitted with sidecars, and, in the majority of cases, we think it will be found that the makers have realised that a light sidecar can be produced without sacrificing the comfort of the passenger. The Ivy and O.K. firms, to mention two, have realised that those who prefer to climb over the side and to lie, rather than to sit, in the body are in the minority. Both the Ivy and the O.K. sidecars have doors and lockers, and a hood and a screen could easily be added if desired. The same thing applies to several other 1922 editions of this type.

The 350 c.c. four-stroke machine is a dual purpose mount in every sense of the term.

THE SMALL FOUR-STROKE TYPE.

For several reasons, which need not be discussed here, the very small four-stroke engine is not so suitable for sidecar work as a two-stroke of the same cubical capacity. From personal experience, we judge the two-stroke of 250 c.c. infinitely superior for passenger work to a four-stroke of this size. Add another 100 c.c. to the capacity, however, and the position is very much different.

For the coming year, quite a number of sidecar machines will be marketed fitted with this larger type of lightweight engine. Among these may be mentioned the A.J.S., which, with side-by-side valve engine in place of the famous "2¾", with which both the Junior and Senior T.T. were won, has already been found to make a successful sidecar machine. Other machines of the same type, and which will be at Olympia subsequent to their success during 1921, are the Royal Ruby and the Verus-Blackburne, the "slogging" power of the latter engine being specially suitable for heavy loads.

Economical Motoring for Two.

The writer has had in use for most of the past summer one of the last-mentioned mounts, fitted with a sporting Canoelet sidecar, and the conclusion has been formed that, as a genuine dual-purpose machine, it is nearer the mark than any type of motor cycle which is claimed to be designed for the double purpose of solo riding and towing a sidecar.

Defining "Dual-purpose."

The term "dual-purpose" has two almost different definitions; the manufacturers usually apply it to machines which are suitable for both the soloist and the family man; that is to say these machines—usually of the 3½ and 4 h.p. variety—are intended to appeal to two distinct markets, but are not seriously regarded as ideal for the man who requires a sidecar machine which may be quickly separated in order to use it as a solo mount. On the other hand, to the average owner a dual-purpose mount is one which he may use for either purpose at will. Usually, the purchaser of such a mount requires it chiefly for solo riding, but has occasionally need for a sidecar which does not necessitate calling in the assistance of his neighbours to attach or detach.

The little Verus fulfils these requirements. It is a solo machine first and a capable little sidecar outfit when required. The sidecar is light enough to detach single-handed, so it really does come off when not required. Some years ago, we ran a 500 c.c. machine, purchased with the intention of using it with a sidecar occasionally. Altogether 7,000 miles were covered: 1,000 solo, 5,000 with empty sidecar, and 1,000 with sidecar and passenger. The figures speak for themselves.

We thought the same thing would happen when we took over the Verus, but it came apart so easily, and there was no difficulty in getting it back again; that, after the first few rides with an empty sidecar, the attachment was always left at home when the passenger was not to be taken, for a light and empty sidecar is not really a joy to drive when affixed to a fast machine—and the 2¾ h.p. Verus is quite fast enough to make sudden swerves fairly exciting.

Light Motoring for Two.

For light motoring for two, this type of machine has many advantages. First, the tax is only £2 10s. instead of £4; second, the fuel bill is considerably lower than larger machines; in fact, half that of the average big twin outfit. It is light enough to be regarded as a lightweight, and fast enough to go touring in any company, for the 350 c.c. machine is now capable of averages which are as high as our roads allow, so that with any amount of extra power it is usually difficult to travel much faster.

For a lightweight couple, married or in the contemplating stage; for the youth and his sister—or somebody else's sister; for boys or girls, the Verus-Blackburne or some such outfit is ideal, and, unless *pater familias* is a reckless old gentleman, the youngsters will be able to keep him in sight on his heavier A.J.S., Excelsior, or Ariel, which fact illustrates that it only requires 2¾ h.p. to propel two people. The other 5¼ h.p. is only needed to take care of the (1) extra weight of the machine, (2) the extra weight of the sidecar and its equipment.

> A modern 4 h.p. motor cycle gives a buyer ample scope in the type of sidecar he may use.

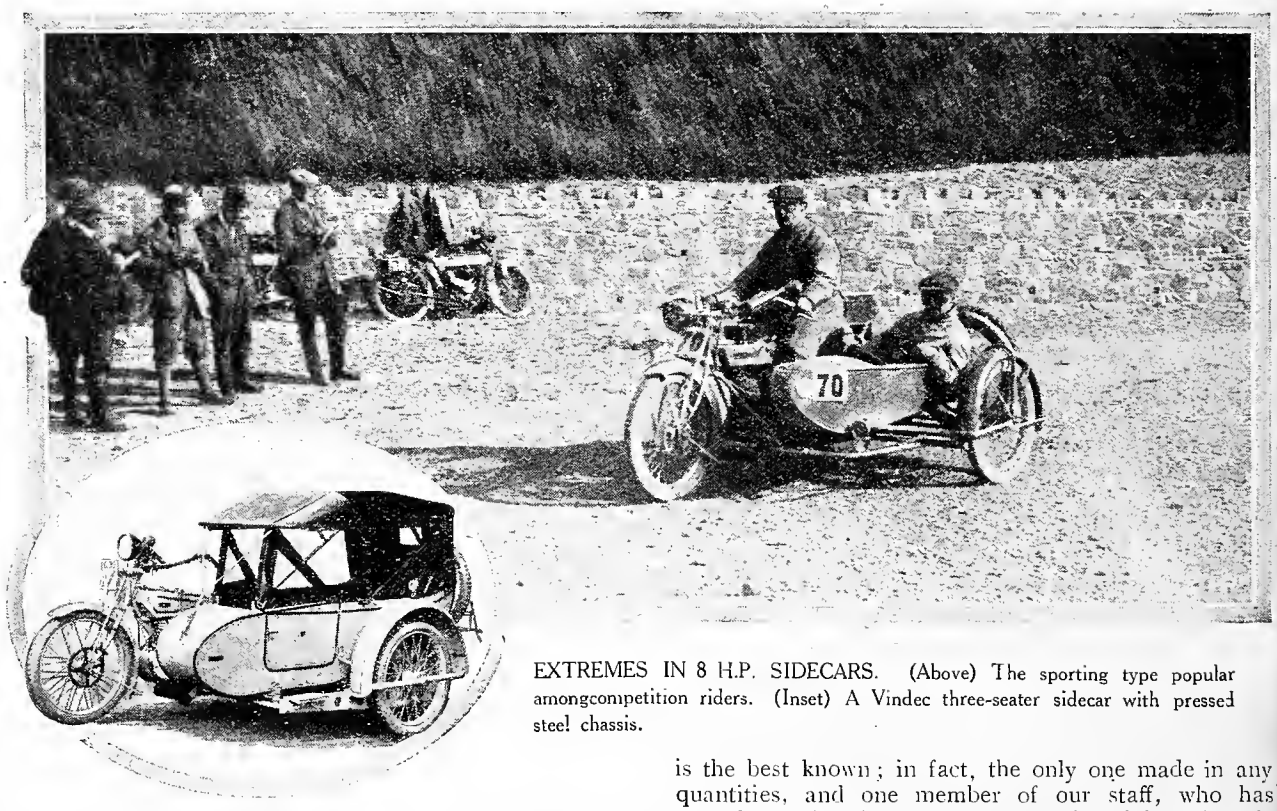
THE BIG SINGLES.

So far we have discussed only machines which may be termed light tourist models and intended for two persons. When a buyer invests in a modern 4 h.p. motor cycle, he has a far greater scope in the type of sidecar he may use, the number of passengers he may carry, and comfort providing equipment such as screens, hoods, pillion seats, and luggage grids.

This type of engine for sidecar work will always be popular for several reasons. First, it is the most economical engine for the family man, and it is simple, although not so simple as the two-stroke. We are not now referring to the father of a large family. Motor cyclists with more than two children must have a big sidecar and a big engine to pull it, and, when the family party exceeds six, *pater familias* must either arrange to split up parties or secure a Ford car fitted with a char-à-banc body.

Now the fastest sidecar machine the writer has run for any length of time was a Stanley-tuned Triumph. It was one of the first of the chain-driven models, lent for a three months' test under private owner conditions before it was placed on the market. This machine, fitted with a somewhat heavy Gloria sidecar, an Easting screen, and usually carrying an adult and a boy of nine, covered over 3,000 miles. The consumption averaged over 83 m.p.g. of benzole, and it ran 2,000 miles before being decarbonised. The fastest run was 100 miles in

The Dunelt proved the possibilities of the big single two-stroke in the 1920 and 1921 A.C.U. Trials. It is seen ascending the notorious Lynton Hill.



EXTREMES IN 8 H.P. SIDECARS. (Above) The sporting type popular amongcompetition riders. (Inset) A Vindec three-seater sidecar with pressed steel chassis.

four hours over indifferent roads. During these three months the tool roll was opened but once—to repair a broken rear chain which had been allowed to run too slack. Only once did we have to give way to a faster machine other than American twins, and that was a Norton driven by its designer—one of the "hardest" sidecar drivers we know. But no better tribute to the success of the single-cylinder sidecar is to be found than the numbers in use. Any observant motorist must have noticed the large number of B.S.A. outfits on the road.

Probably this type of machine is not quite so economical on tyres as a good twin. This does not apply only to chain-driven mounts, for the average chain-cum-belt motor cycle is as harsh in its transmission as all-chain, so much so in fact that the Triumph Co. now equip their chain-cum-belt model with a shock absorber.

In this respect the Sunbeam is particularly smooth running, and this, in conjunction with the "little oil bath" and the clutch, renders it extremely pleasant at low speeds—usually not the single's strongest point.

In the days of efficient clutches and gear boxes, however, there is no reason why a driver should not change into second gear for slow running in traffic and at corners.

It has become the accepted rule to regard the twin engine as an essential for the "de luxe" type of outfit.

The Big Single Two-stroke.

The big single two-stroke is another type of motor cycle which will interest the prospective purchaser of a medium-powered machine. In this class the Dunelt is the best known; in fact, the only one made in any quantities, and one member of our staff, who has owned one for the past year, has found it eminently satisfactory. In its road performance it resembles a 5-6 h.p. twin, and, as it possesses the slow-pulling qualities of all two-strokes, it may be regarded as a top gear machine, in that it is not necessary to change down so much in traffic, or corners, or on hills, for the Dunelt pulls well on a hill almost to a crawl, when the majority of four-stroke singles would knock and "konk out."

The 500 c.c. four-stroke is on the small side for this class of mount, and an extra fifty or so cubic centimetres makes a great deal of difference. In this connection, it is interesting to know that all firms who have been successful with single-cylinder sidecar outfits have now increased the size of the engine; even the P. and M., staunch adherent of the 500 c.c. class, has at last grown into the 4½ h.p. category. The 3½ h.p. Ariel has a long list of successes to its credit—a 4½ h.p. model was added to the range at the last Olympia Show. The Triumph "4" (550 c.c.) was originally a "3½"; the 500 c.c. single-cylinder J.A.P. was well-known before the war; for 1922, many well-known machines will be fitted with the new 550 c.c. engine of this make.

A new Blackburne of 550 c.c. has been added to the well-known outside flywheel group, and the Sunbeam range is now increased by the introduction of a new 4¼ h.p. model, which we have driven and found excellent. In addition, there is the well-known Norton Big Four, the 4½ h.p. Excelsior, the 4½ h.p. New Hudson, and the Quadrant.

Economical Motoring for Two.—

THE TWIN-CYLINDER SIDECAR.

The chief advantage of the twin-cylinder engine for sidecar work is its smoothness in running, due to the increased number of impulses as compared with the single-cylinder.

Although a few years ago single-cylinder engines were made as large as 800 c.c. capacity, the largest singles now on the market do not exceed 700 c.c., and it has become the accepted rule to regard the twin engine as an essential for a *de luxe* type of outfit.

Undoubtedly the twin engine is quieter than the single, and this, coupled with its other advantages, will lead the novice to wonder why all motor cycles are not fitted with engines having two cylinders or more. One of the reasons is that the advantages are not secured without some slight loss, and it is now accepted as fact that two cylinders do not produce the same power as one cylinder of the same capacity as the total of the two. Thus a twin engine with cylinders of 250 c.c. each (total 500 c.c.) is not expected to produce the same power as a 500 c.c. single-cylinder. Certain special racing engines of the latter type are known to have developed 20 h.p., yet no twin engine fitted with two cylinders each of 500 c.c. capacity has been known to produce 40 h.p. One of the reasons for this is the extra friction of working parts. Another reason why small twins are not so popular as singles is the smallness of the working parts.

Excepting in flat twins, no two-cylinder engines are now made under 500 c.c., and very few of these are available and not recommended for sidecar work, although 500 c.c. Lea-Francis, James, and N.U.T. solo mounts are used with a certain degree of satisfaction with sidecars.

Twin-cylinder machines offered to the public with sidecars begin with the 530 c.c. Scott, but this machine, being a two-stroke, is in a class by itself, and has the same impulse effect as a four-cylinder engine. Among four stroke V twins, those engines with 5-6 h.p. J.A.P. power units may be regarded as "go anywhere sidecar machines," but to be able fully to appreciate the liveliness of this engine, the owner should not fit a sidecar of the heaviest type. In other words, these 5-6 h.p. machines, such as the Rover and others fitted with 5-6 h.p. J.A.P. engines, make fast sporting outfits if not overloaded, but for heavy family work, an 8 h.p. engine is desirable, although not strictly necessary. So much depends upon requirements that it is difficult to lay down definite rules.

Another type of two-cylinder engine eminently suitable for a mediumweight sidecar is the flat twin.

Among those machines fitted with engines manufactured by the makers of the cycle, the twin B.S.A. deserves consideration, while the 7 h.p. A.J.S. also is acknowledged to be among the best outfits on the market. This latter machine has an engine of about 800 c.c., and the little extra power produced by another 100 c.c. of the Ariel 6-7 h.p. and Abingdon engines places these three mounts in a category between the "five-sixes" and the 1,000 c.c. "eights," such as the Matchless, M.A.G., the Jap-engined Excelsior and Sunbeam, the Enfield, and the Rex, not to mention the American big twins—the Indian and Harley-Davidson.

Another type of twin machine which is eminently suitable for mediumweight sidecar work is the flat twin represented by the silent 4½ h.p. Humber and 4 h.p. Douglas. A little larger model of the Douglas will also be marketed in 1922—an overhead valve machine which it is claimed will do 60 m.p.h. with sidecar. In this class, so far as size is concerned, is the 5-7 h.p. Coventry Victor.

The writer has owned an 8 h.p. Blackburne-engined Rex for the past two years, during which time it has been in use with a family sidecar having a dickey seat.

Readers contemplating the purchase of such a machine may be interested to learn that, with a Binks carburetter, the average petrol consumption is 50 m.p.g., although 60 m.p.g. has been obtained on long runs at speed. The original 28 × 3in. Dunlop tyres were untouched for 10,000 miles; at the end of that distance the front tyre was retreaded.

Flat twin sidecars have proved their worth in classic trials. One of the outstanding performances in the 1920 A.C.U. Six Days was the 4½ h.p. Humber's clean ascent of Park Rash.

MODERN THREE-WHEELERS.

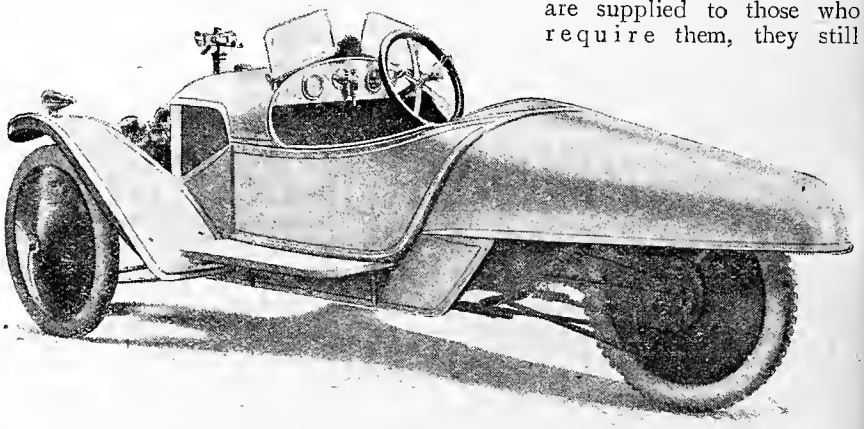
A Review of all Types Offered as a Step between Sidecar and Small Car.

EVER since the introduction of the three-wheeler, the type has been of absorbing interest to certain manufacturers and to a large section of the public. It would appear to be the obvious intermediate stage between the sidecar outfit and the car; for, while it provides protection for both driver and passenger, it can be made lighter and simpler than any conventional four-wheeler.

As in all forms of engineering, difficulties have cropped up; but our manufacturers have steadily overcome these troubles by careful road test and experimental work. It is not an easy matter, for instance, to provide flexible front springs, and yet prevent rolling of the rear wheel; and in the early days it was not uncommon for three-wheelers to turn turtle when driven fast round sharp bends. Nevertheless, the problem has been solved; for, in spite of the fact that suspension nowadays is better than of yore, an overturned three-wheeler is as uncommon as a car in a similar predicament.

Simplicity or—

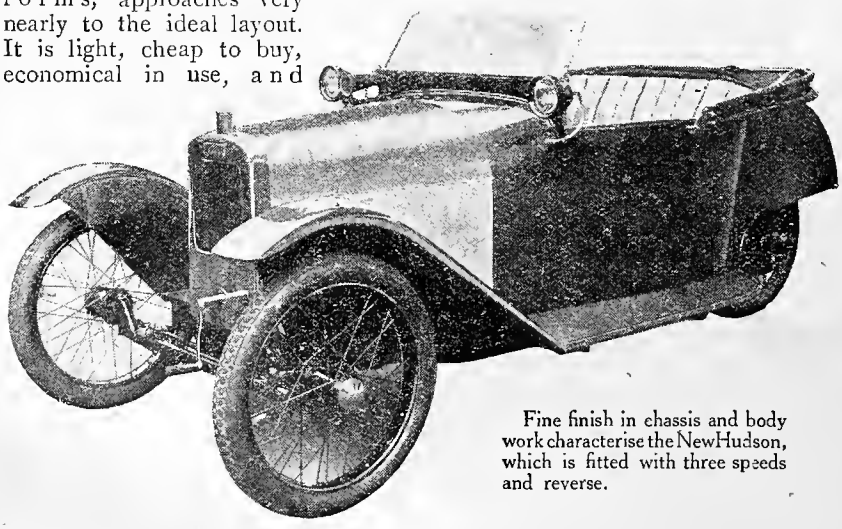
Opinions on the correct form for three-wheelers are still widely divided; and, though there are less than a dozen well-known manufacturers at the present moment, there are four distinct types of machine, with one or two sub-divisions. First, there is the ever-popular Morgan, which, especially in its simpler forms, approaches very nearly to the ideal layout. It is light, cheap to buy, economical in use, and almost the last word in simplicity. The high power-weight ratio renders the simple two-speed gear ample for all normal work, and the comfort and protection provided for the driver are equal to that of many light cars. Though luxurious water-cooled Morgans are supplied to those who require them, they still retain the main characteristics of the type, and remain distinct from the car on three wheels as exemplified by the New Hudson and T.B.



Probably the most popular runabout on the road—the Morgan three-wheeler, a make that has proved itself time and again in trials and speed events.

Luxury?

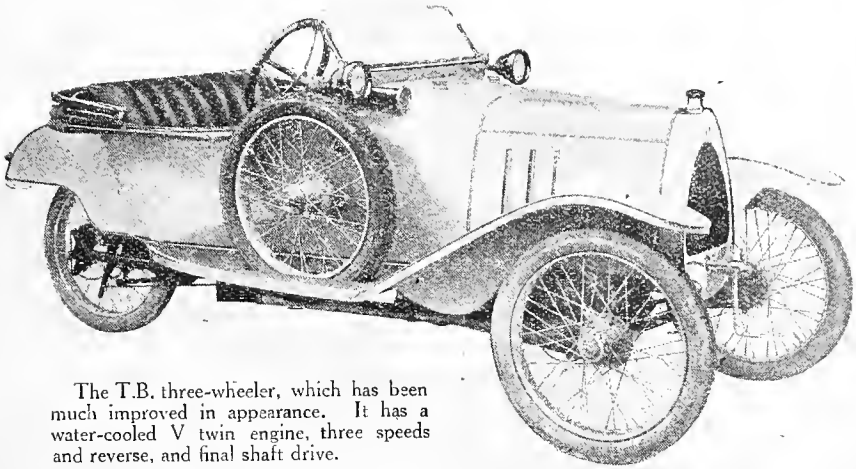
Here we find *de luxe* models with water-cooled twin engines, three speeds and reverse gear boxes, and, in the case of the T.B., final shaft drive. The bodies of these machines are deep and luxurious, and the specification is similar to that of most light cars, and, indeed, the addition of a fourth wheel would complete the metamorphosis. A third type is the Scott Sociable, which is in effect a highly developed sidecar machine. Here again we find three speeds, shaft drive, and a water-cooled two-stroke engine; but in no way, except as regards comfort and transmission, can the Scott be referred to as a car on three wheels. The most ingenious frame construction has advantages over both three and four-wheelers of normal design, and, though a little startling to the uninitiated, it is a thorough engineering job from end to end. Here again weight is reduced to a minimum, and in this design there are two



Fine finish in chassis and body work characterise the New Hudson, which is fitted with three speeds and reverse.

wheel tracks only, which is a decided help, from the springing viewpoint.

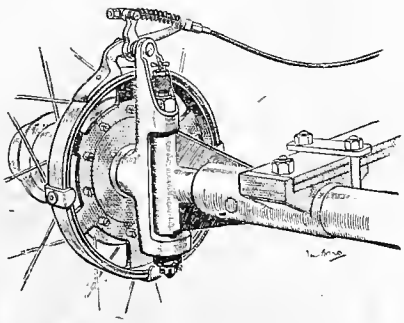
Quite distinct from the types mentioned is the Stanhope, with its front wheel drive. Front wheel drive has many advantages, and has fascinated designers of all engineering countries, the French Caffort being another example, while the Phanomobile and certain German electrically-propelled vehicles are also driven in this manner, as are certain commercial three-wheelers.



The T.B. three-wheeler, which has been much improved in appearance. It has a water-cooled V twin engine, three speeds and reverse, and final shaft drive.

Two varieties of the first-mentioned type must be mentioned—the L.S.D., a solidly constructed and well-sprung machine having an air-cooled engine and two speeds and reverse, and the Castle Three, fitted with a four-cylinder water-cooled engine, two speeds and reverse, and shaft drive.

It will be seen, therefore, that admirers of the three-wheeler have a choice of almost every possible type, and may decide for themselves the relative merits of air and water-cooling, reverse or no reverse, two or three tracks, two or four cylinders, chain or shaft drive, and so on. Whatever his choice, the hesitating buyer may be cheered by the fact that there are good machines of each type, and that there are few, if any, bad three-wheelers on the market at the present time.



Front wheel brake construction on the T.B. runabout.

Which is Best?

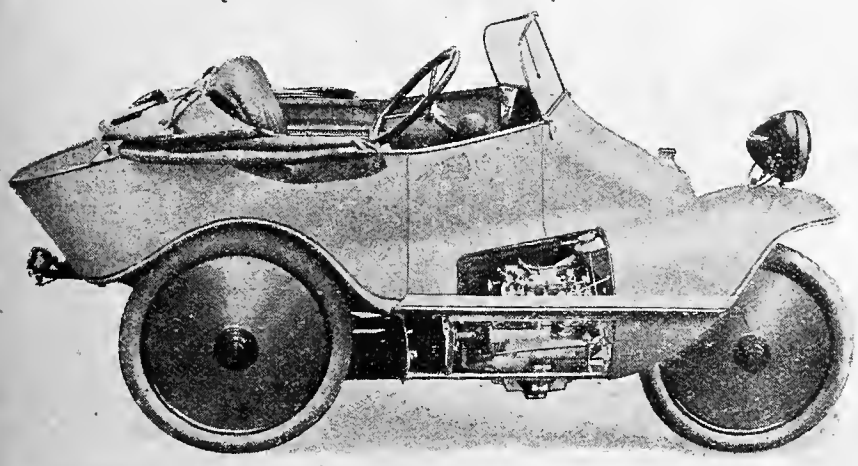
Now the reader of these notes will be apt to complain that they do not help him in his choice. Which is the best three-wheeler? Well, the question is equivalent to asking what size is a cardboard box? He must decide first of all if he requires a light simple runabout or an altogether heavier and more luxurious mount. If the former, do special circumstances require a reverse, or is he on rare occasions prepared to lift round the tail of his machine? The heavier types need a reverse, and are all fitted therewith. The Scott needs no reverse, since it is provided with a steering lock which enables it to turn with its "sidecar" wheel as a pivot.

Air or Water Cooling.

Interchangeable wheels are now almost universal, but again, does the prospective purchaser prefer water-cooling which requires less attention as regards decarbonisation and reduces the engine noise, to the altogether simpler and lighter form of air-cooling? The choice is altogether a matter of personal requirements and taste, and must be left almost entirely in the hands of the customer, price being usually the controlling factor.

There is always a market for the best possible machine in its class, but experience teaches us that super-development in the three-wheeler world is apt to lead to the growth of a fourth wheel, and so we lose a promising three-wheeler, while the car trade gains a new adherent and some more new ideas.

On the other hand, the three-wheeler is essentially a link between the motor cycle and the car, and as such it will always remain a popular type so long as manufacturers retain their sense of perspective, and take advantage of the fact that a three-wheeler of given specification can always be made at a lower price than a four-wheeler of the same specification. Add to this the fact that taxation is very much less in the case of the three-wheeler, and we have two cogent reasons for the development of these popular and handy runabouts.



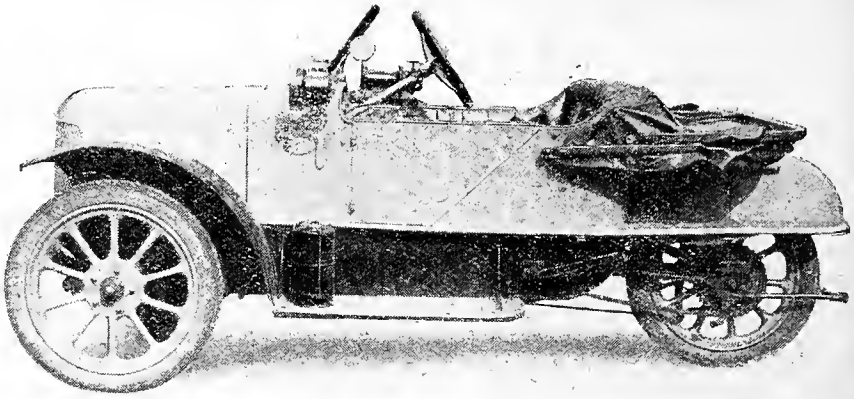
The only example of its kind, a two-track three-wheeled runabout—the Scott Sociable—shown with the engine cover removed.

Modern Three-wheelers.

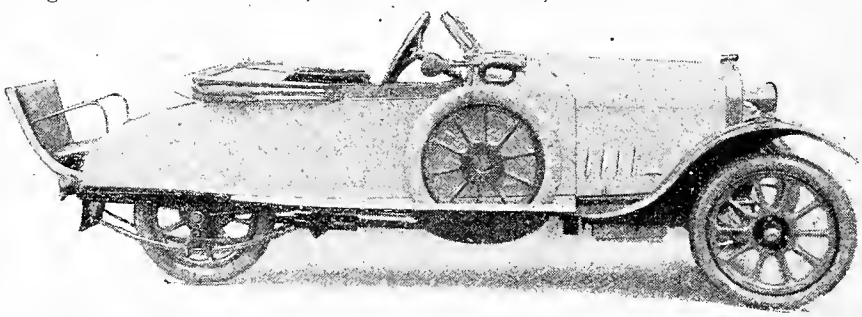
There are as usual rumours of newcomers to the class, and we must await still further developments, but we cannot help thinking that there is still room for more three-wheelers of the very simplest possible layout.

Unconventionality Disliked.

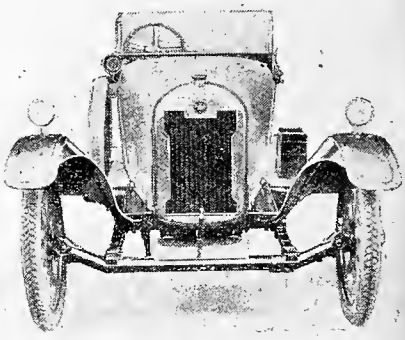
There is a very large number of keen motor cyclists who, as years advance, desire more protection from the elements than is provided by the saddle of a motor cycle. As regards engine and transmission, they are perfectly satisfied with that of their present-day mounts, and require only a greater degree of comfort and protection. Such machines as the Seal have gone some way to provide the necessary specification, though there is a curious but human streak in most of us which demands something that looks like a car, and for this reason, and in spite of certain mechanical disadvantages, it is probable that the simplest form of three-wheeler of the future will have three tracks instead of two, and will imitate the car in its general lines and appearance.



A well tried runabout—the L S.D. An air-cooled J.A.P. engine, and two-speed gear with reverse is fitted.

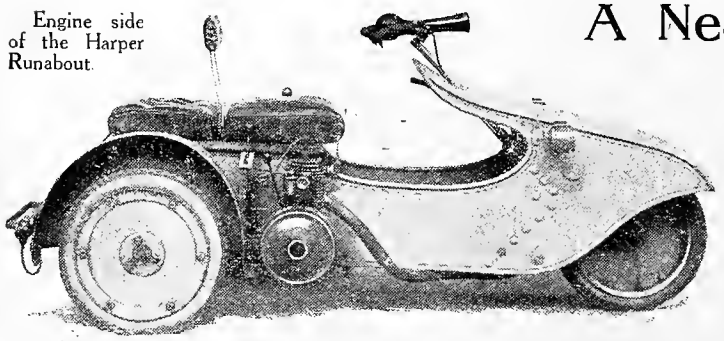


A four-cylinder water-cooled three-wheeler—the Castle Three—fitted with two speeds and reverse. Shaft drive throughout is adopted.



Distinctive radiator design and a tubular chassis supported in front by cantilever springs are features of the Castle Three.

A Neat Miniature Runabout.



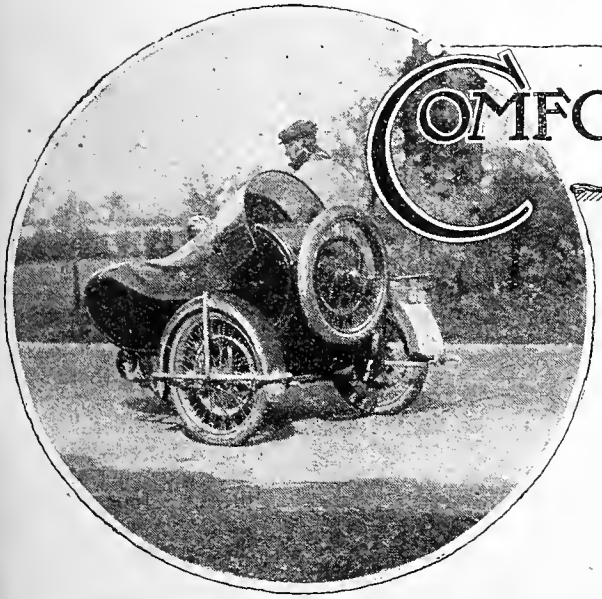
Engine side of the Harper Runabout.

DESIGNED by Mr. R. O. Harper, of Broughton, Manchester, the little vehicle illustrated is a praiseworthy attempt to provide a convenient form of transport for shopping and general runabout purposes. Engined with a Villiers two-stroke unit, it has three speeds, and, it is claimed, is capable of climbing the well-known Cat and Fiddle on top gear. A single-lever serves the double purpose of starter and hand brake: on passing it through a gate it is disconnected from the brake mechanism and couples up with the starting gear. Springing front and rear is by means of quarter-elliptic springs, and although a handle-bar is provided, the steering gear follows the practice of four-wheelers with direct steering. It will be marketed by R. H. Carlisle and Co., Ltd., of Deansgate, Manchester.

The Harper miniature three-wheeled runabout in use.

COMFORT and CONVENIENCE

Items that Enhance the Pleasures of Motor Cycling for Passenger and Driver.



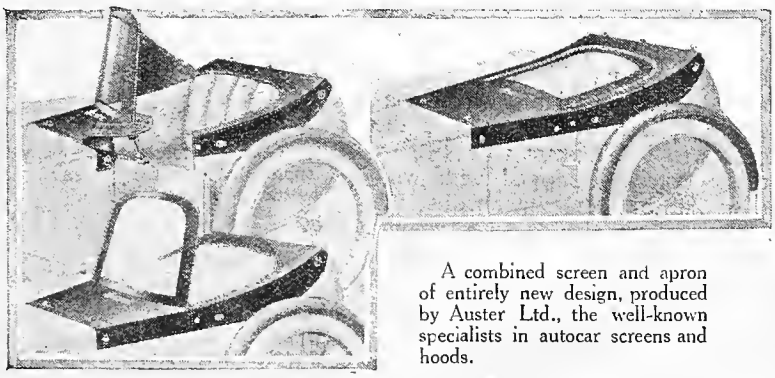
The prototype of the adjustable celluloid windscreen—the Easting, in use on a B.S.A. twin outfit.

IN every sphere of motoring, comfort and convenience are now the chief considerations. At the Paris Salon there was evidence that every coachbuilder had paid more than the usual amount of attention to the all-important question of comfort; at the Motor Transport Show the same tendencies were apparent in the char-à-banc section; and at the Car Show just concluded it was plain that the average buyer thought of comfort before items of specification. At the Olympia Motor Cycle Show visitors will find that manufacturers are agreed that sidecar buyers appreciate the same attention.

Apart from the advance made in sidecar body design, which is dealt with elsewhere in this issue, there are a number of accessories on the market which add materially to the comforts of the passenger and driver, and among these first place must be given to the number of excellent windscreens now available.

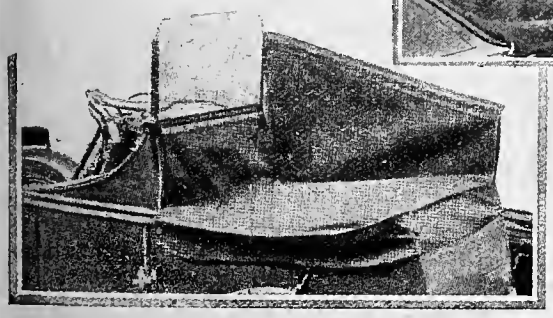
At one time it was considered that to fit a windscreen was somewhat "overdoing it," while the fitting of a hood almost invited derision. To-day, however, fully fifty per cent. of sidecar passengers demand these attributes to their comfort.

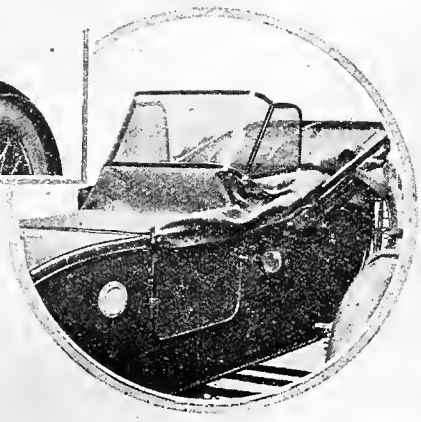
When just a flat piece of glass or celluloid was framed and hinged to the fore end of the cock pit, passengers found but one advantage; they were saved from the irritation of grit flying from the front wheel into their faces, but, as a means to prevent draught, this type of screen was a failure, as the current of air passing between the edge of the screen and the driver impinges upon the unfortunate passenger in a manner that is more unpleasant than the wind pressure present when a screen is not fitted.



A combined screen and apron of entirely new design, produced by Auster Ltd., the well-known specialists in autocar screens and hoods.

Although screens, of a sort, were in use before the war, it was not until the advent of the Easting that such protection for the passenger came into general use.





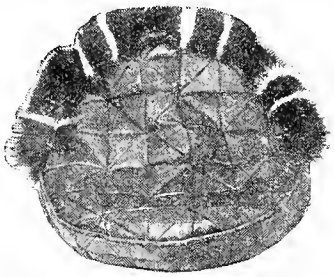
THREE METHODS OF PROTECTION.

(Left) The Vivian, Hardie and Lane side curtain.

(Top) A new screen by the makers of Montgomery sidecars.

(Right) The Bluemel screen, with adjustable wings.

Comfort and Convenience—



A leather patchwork foot-muff, by Spicers, of Leamington.

made so that the passenger may enter and leave the sidecar without first having to undo the brackets. For the benefit of newcomers to the motor cycle world, it should be added that this screen may be adjusted so that a hood is scarcely necessary.

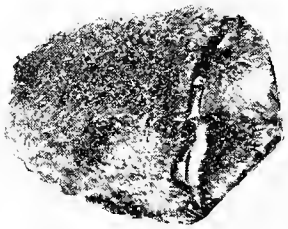
The Cameo is another very popular screen, and has a side curtain. In the latest model the side curtain, instead of being triangular in shape and buttoned to the sidecar body, the rear edge is carried on an adjustable upright, which considerably increases the area of the curtain. The makers offer two of these curtains equipped with windows, so that for winter riding the passenger may be as snug as in a closed car.

A screen, which converts an open sidecar into a miniature saloon, is known as the Coupé windscreen. It may be used also as an apron and a roof-screen without the enclosing side curtains.

Then there is the Bluemel screen, a most refined affair with a front screen of celluloid gracefully curved at each end, and two celluloid extensions. In this case the "lights" are framed in light steel.

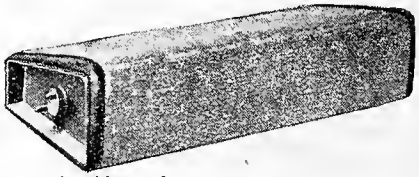
Two new screens for 1922 have been introduced by the makers of Montgomery sidecars and by Austers, the well-known car screen specialists, respectively. The former is a scoop-shaped screen of graceful shape and light appearance, since the celluloid is only bound at its lower edge. The new Auster contribution to the screen market is quite a novelty, and when "down" forms part of the apron, to which it is attached by a continuous lightning fastener of the kind used by quick-change artists. We have had in use for twelve months a pair of the overalls embodying this novelty, and we can say that the fastening is rust-proof and continues to function, by means of its tab, in the same manner as it did when new.

Easting screens on the road to-day share with the Tan-Sad seat the honour of greatest popularity amongst accessory fitments. Probably the Tan-Sad wins on account of the fact that it is a fitment for both solo and sidecar machines. The Easting is now

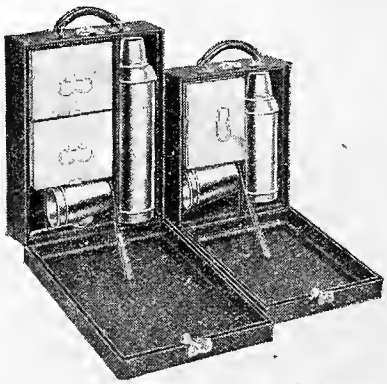


A foot-muff for sidecars, by James Grose, Ltd.

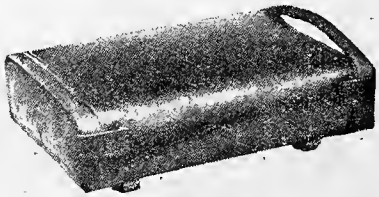
A leather foot-muff, by Dunhills, Ltd.



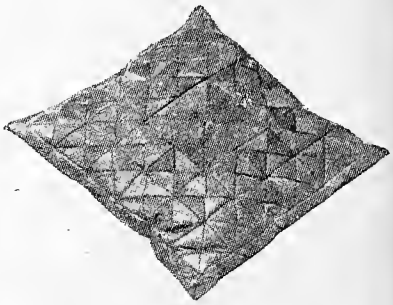
A sidecar foot-warmer—an accessory appreciated by the passenger in cold weather, by Dunhills, Ltd.



Marketed by Brooks, of saddle fame, these Thermos cases are even more useful in winter than in the summer time.



The "Ideal Air Spring" pillion cushion, by Saxessories, Ltd., George Street, Coventry.



Another Spicer speciality—a leather patchwork cushion suitable for use in sidecars.

chief item in comfort equipment, there are many other accessories which considerably enhance the pleasures of winter driving. Among these, foot-warmers probably will receive due attention. There are several kinds of these now offered. They may be metal water cases, or leather or fur foot muffs.

It is astonishing the extra comfort obtainable by a good cushion, one of the items usually overlooked as part of the sidecar's equipment. The only suitable materials for a sidecar cushion are those which will not absorb damp when lying in the sidecar not in use. A leather or imitation leather cover is best, and, although it costs more than a fabric, the extra is well worth it.

When one considers wearing apparel, the scope of those in search of extra comfort is considerably extended, for without suitable clothing and hats winter riding can be decidedly unpleasant.

Saddle comfort is also an important matter, and those in search of improvement in this direction should consider the Terry spring saddle, and the Brooks and Tan-Sad cantilever sprung seats.

The value of a backrest is not fully appreciated by the tourist. Backrests are still to be obtained to fit most standard saddles.

For sidecar drivers there is the Float-on-air saddle cushion made by David Moseley and Sons, Ltd., of Manchester, an air cushion for fixing to existing saddles, and a most efficient shock absorber, as we can testify from personal experience.

While on the question of comfort and convenience, it will be well to remember that, in winter especially, it is annoying to the passenger to be

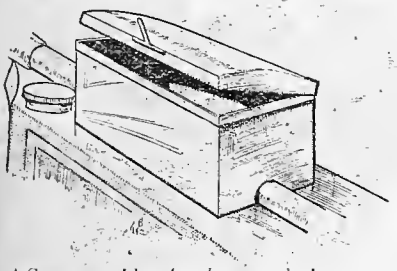
Comfort and Convenience.—
asked to disembark when the seat locker is searched for the tool roll. Tools should be carried in the tool-bags, but they have to be packed tightly to prevent rattling, so repacking may be a tiresome task on the road. A top tube box is most useful for carrying the tools which are necessary for ordinary wayside adjustments.

Head wear is another important point which makes or mars the pleasures of winter riding. Caps with ear-flaps are desirable—at least for the passenger—while an oilskin helmet, such as sold by Barbours, of South Shields, will often prevent a damp head for the driver. Gloves are another item, and for the driver these should be a loose fit: and, if handle-bar muffs are fitted, the hands are kept warm, whether it be freezing hard or raining in torrents.

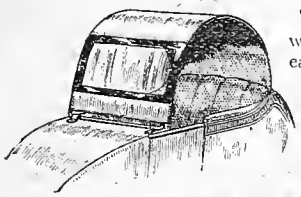
There are dozens of ways of keeping warm and dry in winter without attiring oneself to represent the coxswain of a lifeboat. It is drivers and passengers who make no special precautions who state that winter riding is unpleasant, and place their machines in dock during what is often a very pleasant part of the year.

There is nothing quite so invigorating as a spin over frost and snow-bound roads if the sun be shining and advantage be taken of the many accessories now sold for the passengers' and drivers' comfort.

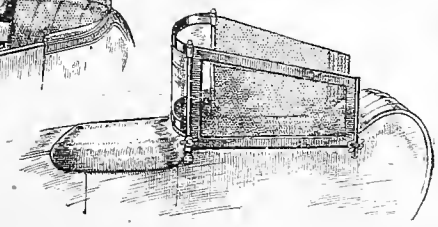
FOR THE COMFORT AND CONVENIENCE OF PASSENGER AND DRIVER.



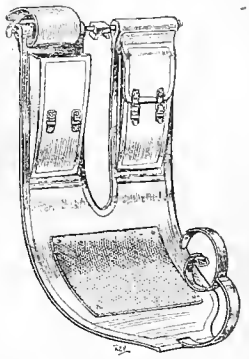
A Samson tool box for the top tube is a convenience on both solo and sidecar machine.



The familiar Cameo screen shown with the improved extensions on each side.

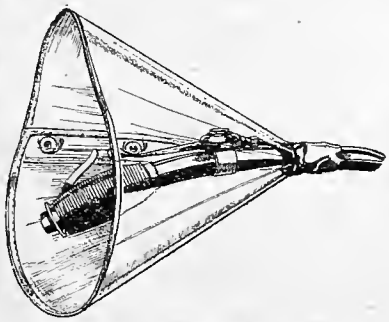


The Coupé combined screen and hood.

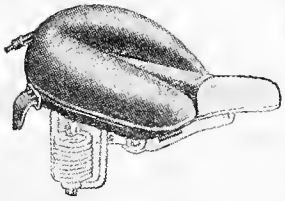


Conveniently placed pockets on the College mud shield are a good and appreciated feature.

A storm cap made by M. Shekman and Co., of Tyne Docks.



The Walbro celluloid handle-bar muff, made by H. S. Walton, Lynn Rd., Ely.



Designed to fit on any existing saddle. An air cushion made by David Moseley and Sons, Ltd., Manchester.

A back-rest produced by James Grose, Ltd.

NUMBERED ROADS.

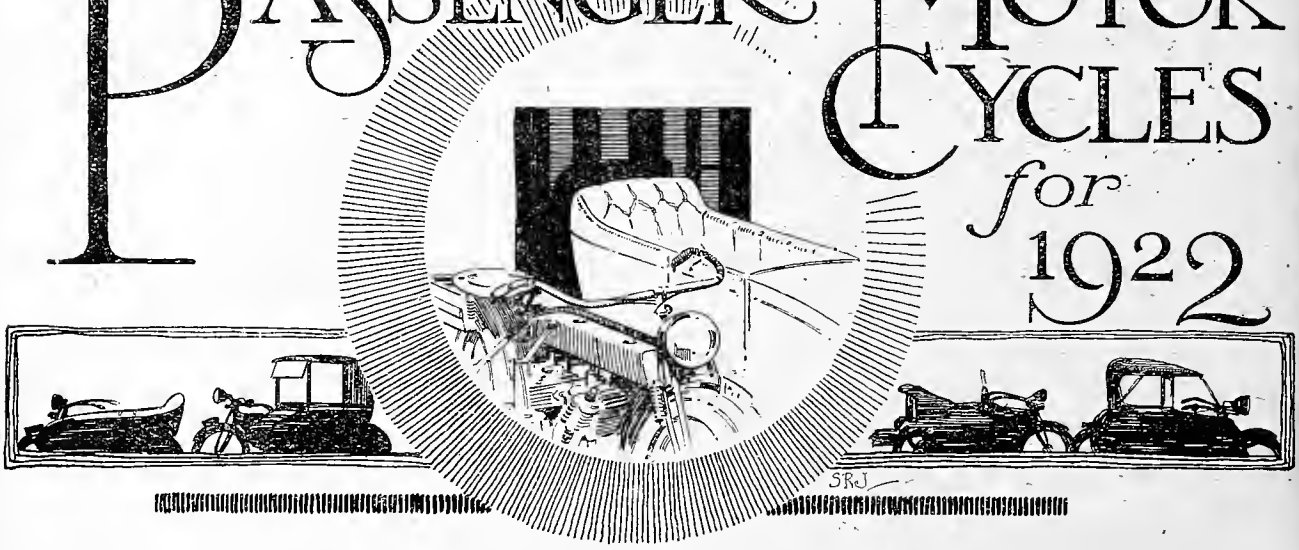
It has been known for some considerable time that the Ministry of Transport has decided to number and classify the principal roads in the British Isles, thus following the example of our friends in France. A stranger may be dropped in France by an aeroplane on any main road, and he is able to tell in a moment his whereabouts, and the direction he should follow to reach Paris by the numbers on the signposts and kilometre stones.

While the proposed new system does not exactly follow that of the French, it is one which is complete, and it now only remains for the county councils to follow the scheme set for them by the Ministry of Transport.

England and Wales are divided into six sectors, radiating from London, bounded by the great highways A1, A2, A3, A4, A5, and A6. Sector 1 is to the right of road A1, which is our old friend the Great North Road; Sector 2 is to the right of A2, the Dover Road, and the system is followed likewise up to A6, working round the map in a clockwise direction. All roads beginning in Sector 1 are numbered on the sectional radial system, and the numbers allocated to these roads with the figure 1 as the first figure; for example, A12, A110, B19, B156, and so on, and the same number is applied to all sectors; thus in Sector 4 the numbers are A410, B41, and so on. In addition it may be possible to find A47 in Sector 5, as roads do not necessarily terminate at a road bounding a sector, and this indicates that road A47 has its origin in Sector 4.

The whole system, together with illustrations, is described in a map published through the enterprise of the Michelin Tyre Co., Ltd.

PASSENGER MOTOR CYCLES for 1922



Review of Next Year's Sidecar Outfits of all Types.

FOR 1922 there will be one great improvement common to each and every example of the most economical form of transport for two: the sidecar outfit will be more economical than ever. Not only have prices, without exception, dropped in the last twelve months, but there has been a considerable increase in the number of tested and proved lightweight outfits with engines of only 350 c.c. or under.

Although one or two of the larger class of big single and twin-cylinder passenger machines have been re-designed or modified to give increased speed and power, the prevailing note for next year will be greater convenience and comfort for both driver and passenger. The majority of the sidecars that have served us so well in the glorious road year of 1921 will be offered again with a very noticeable absence of change for the sake of change. This is as it should be.

Before proceeding with a review of the sidecar outfits of 1922 it is worthy of mention, however, that some form of lighting equipment will be included in the standard specifications of a greater percentage of complete outfits than ever before. This is following the now general practice in the car world, for no cars are now marketed without lamps.

Sidecar outfits varying from 2½ h.p. to 10 h.p. will be available for 1922 at prices between £90 and £200.

Lightweight Two-strokes.

Some remarkable performances have been made in the big trials of 1921 by one or two of the miniature two-stroke outfits, but pride of place must certainly be given to the O.K. for its officially commended ride in the A.C.U. Six Days Trials. What is practically a replica of the successful machine will be marketed for next year, with a 2½ h.p. O.K. engine, all-chain drive, and a Moss three-speed gear box. Although handicapped by the absence of a third gear ratio, the little Hawker astounded the motor cycling world by hauling a sidecar and passenger up Tornapress (Applecross) in the Scottish Trial. This machine probably represents the limit of simplicity in a sidecar outfit.

Connaught, Calthorpe, and Metro-Tyler have already proved that they possess more than sufficient power to get round a severe trial's course solo, and, therefore, they should be amply suited to the average potterer's sidecarring requirements. The same may be said of the Allon, New Comet, and Radco, while the Velocette and Ivy have several times demonstrated their capabilities by some wonderful hill-climbing feats, with full-sized passengers normally seated. Two models of the Beardmore are offered, although not for the first time; the 350 c.c. type embodies the Beardmore spring frame, but a lighter machine is sold as a "sports sidecarette."

Lightweight Four-strokes.

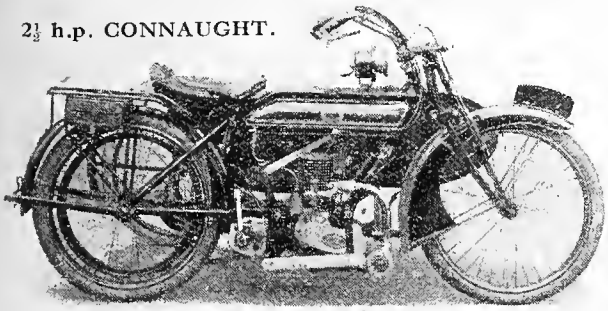
When a 350 c.c. four-stroke won both T.T. Races, even the general public began to realise that the so-called 2¾ h.p. engine of to-day has more power than the 3½ or 4 h.p. of bygone days. Nobody, therefore, distrusts the 2¾ and 3 h.p. sidecar machine, and the very names of its chief exponents form its own guarantee.

First officially introduced to passenger work only a month or two ago, the lightweight A.J.S. outfit will soon be a very familiar sight on the roads. All-chain drive, a three-speed gear box with kick-starter, and an amply strong frame eminently suit this little machine for the attachment of a light but roomy sidecar, also of A.J.S. manufacture.

As a passenger machine, the Royal Ruby lightweight is not so young, but the 1922 edition is essentially a new model, having a re-designed engine of 375 c.c. (nominally 3 h.p.) and a three-speed gear box of Ruby manufacture. The smaller 349 c.c. engine

EXAMPLES OF TWO-STROKE SIDECARS.

2½ h.p. CONNAUGHT.

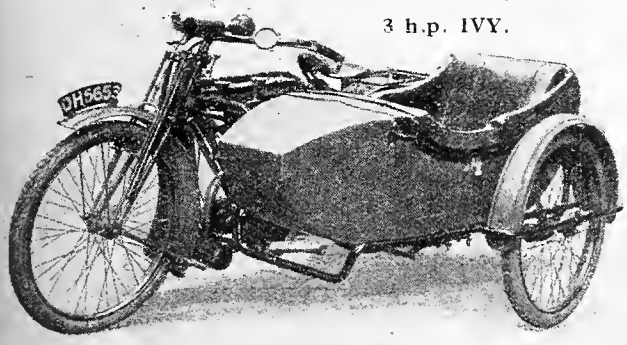


will still be fitted to the sports model, and, with a lighter doorless sidecar body, it should be quite up to its work. With a 2¾ h.p. Blackburne engine and a Canoelet sporting sidecar, the Verus is another excellent example of its type. Finally, the new Raleigh, with a 400 c.c. engine and Sturmey-Archer lightweight three-speed box, is a notable addition. It has final belt drive.

Mediumweight and Big Singles.

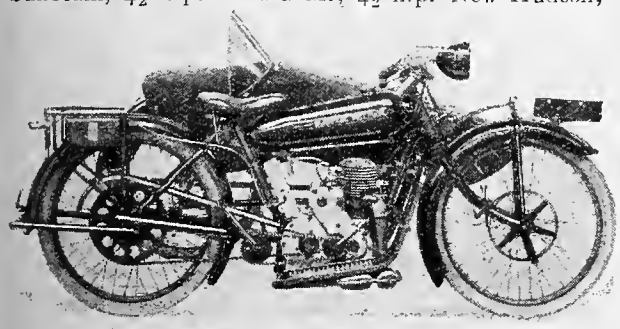
In popular fancy there is a big gap between the 2¾ h.p. and 3½ h.p. single. Actually there is often less than 100 c.c. difference in engine capacity, although in practically every case the larger outfit

3 h.p. IVY.



pays the higher rate of taxation—£4 against £2 10s. There are now comparatively few sidecars with engines of just under 500 c.c., but those which remain will ably sustain the reputation of their class. The 3½ h.p. Norton, all-chain Rudge, Sunbeam (the dual-purpose model), Coventry Eagle, and the Rover (now also offered as a sports outfit), are names that need little explanatory comment. Incidentally, these five are equally popular as solo machines.

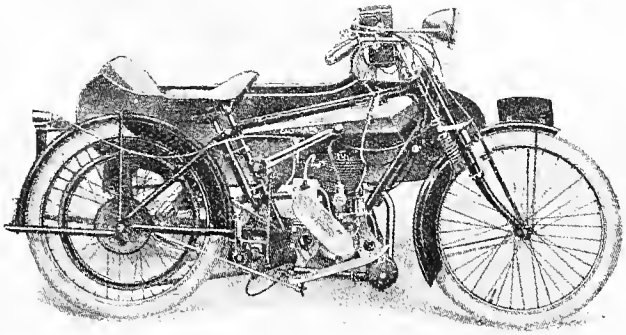
The tendency, however, is to fit a larger engine for purely sidecar work, such machines as the new 4¼ h.p. Sunbeam, 4½ h.p. P. and M., 4½ h.p. New Hudson,



3 h.p. BEARDMORE-PRECISION.

and the 4¼ h.p. Beardmore-Precision carrying power units specially designed for sidecar work. The P. and M., of course, has a four-speed gear, while all four have all-chain drive and roomy, well-sprung sidecars with considerable luggage accommodation.

Big singles such as the 4 h.p. Norton, 4 h.p. Triumph, 4½ h.p. Ariel, 4¼ h.p. B.S.A., 4 h.p. Bradbury, 4¼ h.p. James, 4½ h.p. Quadrant, and the 4½ h.p. Excelsior, have made names that are known the world over. Only detail improvements have been made for next year; for example, the Triumph (which, with the B.S.A., still retains a final belt model) has a much roomier sidecar and simpler chassis. The 4 h.p. Powell will be obtainable with all-chain drive, while



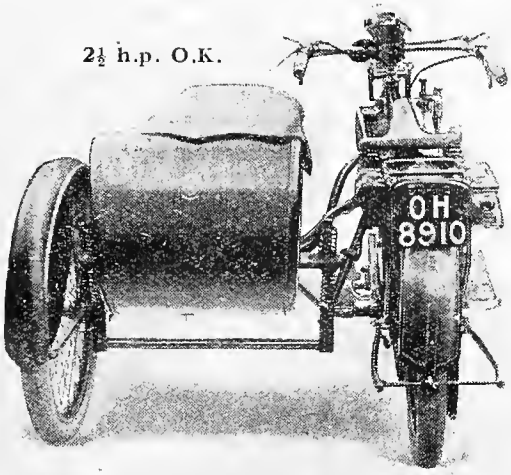
2½ h.p. CALTHORPE.

the Excelsior has such useful items as 28 × 3in. tyres and a large capacity tank included in its specification.

Two of the leading proprietary engine manufacturers—J. A. Prestwich and Burney and Blackburne—are marketing "over 500 c.c." singles for next year. A new Rex-Acme will be fitted with the 4 h.p. J.A.P. engine, and such machines as the X.L. and Wolf will enjoy increased power from the larger size of Blackburne singles.

As the only large two-stroke single, the Dunelt is in a class of its own; and, although it makes quite an attractive solo machine, its engine has the "slog-

2½ h.p. O.K.

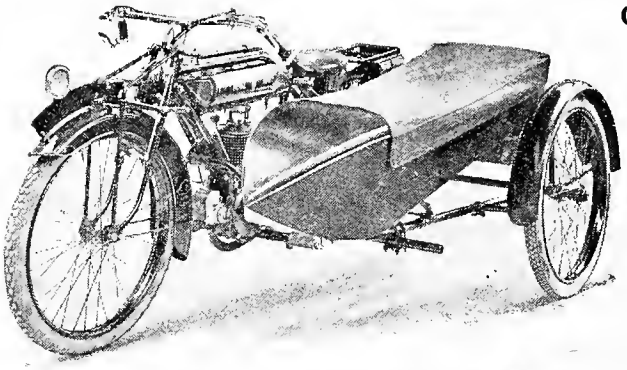


ging" powers specially desired by the sidecarist. An electric lighting set will be included in the 1922 specification.

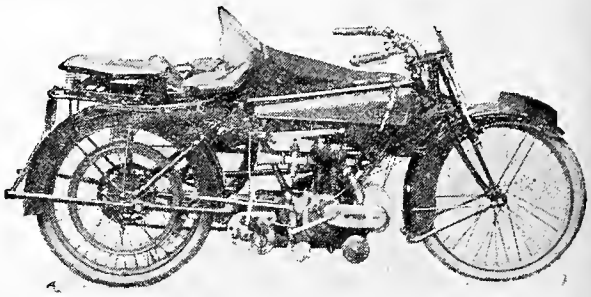
Flat Twins.

Next on the scale of capacity comes a batch of flat twins, none of them exceeding 800 c.c. (It is, by

CAPABLE LIGHT FOUR-STROKES.

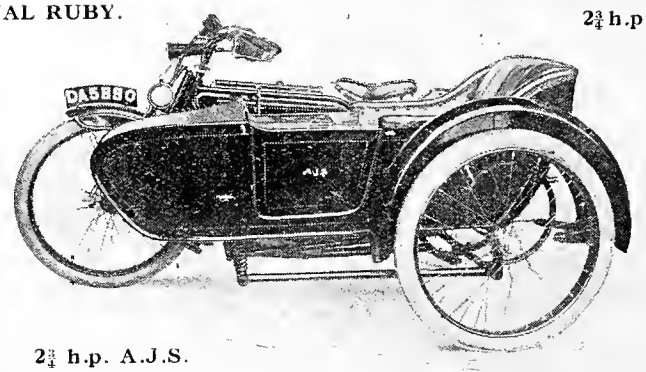


2¾ h.p. ROYAL RUBY.



2¾ h.p. VERUS.

the way, rather curious that no one should now market a 1,000 c.c. flat twin; with a short stroke and the gear box below the rear cylinder, such a machine should not be of unduly lengthy wheelbase.) Quite a different class of rider is catered for by the sidecar outfit with a horizontally-opposed twin engine; he is usually a man who prefers smoothness, silence, and comfort to sheer power.



2¾ h.p. A.J.S.

The Raleigh, on account of its very efficient spring frame, may be considered as a leading example of this type of machine; for 1922 it will have an improved sidecar. The Mackechnie-Coventry Victor also embodies a very flexible suspension system which should be particularly suited for sidecar attachment. Two models of the Coventry Victor, of varying wheelbase lengths, are both marketed as sidecar outfits, while both the Victoria and the Ready fit the same power unit as standard. The 4 h.p. Douglas is already a most familiar outfit on the roads, but the o.h.v. 6 h.p. model is a novelty which promises to be an exceptionally speedy machine, probably one of the fastest standard sidecars of the year, and said to be capable of 60 m.p.h.

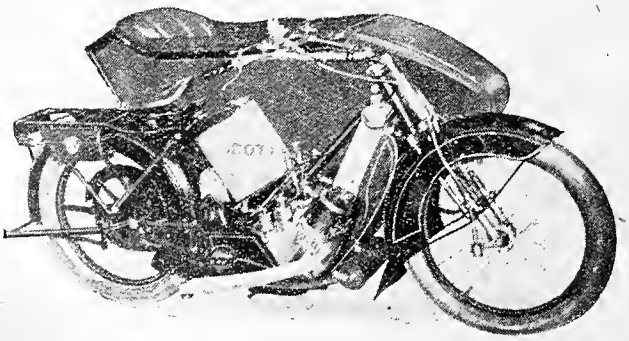
Noted for its silence, the Humber, now fitted with a luxurious Grindlay sidecar, is an attractive "gentlemanly" outfit, while the Sports Harley-Davidson, although designed for solo use, is strong enough and sufficiently tyred for sidecar haulage.

Two-stroke Twins.

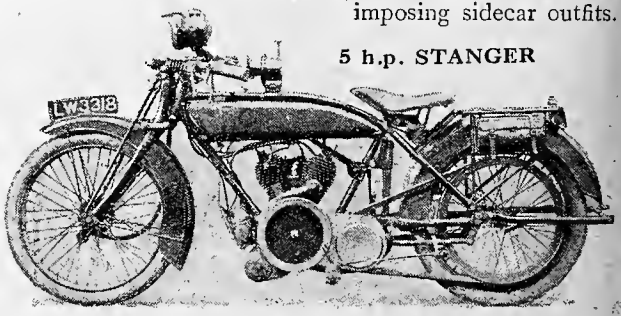
Before passing on to, numerically, the most popular passenger machine—the four-stroke V twin—there is a type which falls into the four-cylinder category as regards even running. This is the two-stroke twin — represented at present by the 3¾ h.p. Scott and the 5 h.p. Stanger. Apart from the one point of classification in common, the two differ widely. The Scott is water-cooled, and its cylinders are arranged side by side; the Stanger is of the V type and is air-cooled. The Scott has a two-speed selective clutch gear and final chain drive; but we understand that a three-speed gear is at present under consideration. The Stanger has a Sturmey-Archer three-speed box and a belt to the rear wheel. Both possess the requisite power for sidecarring.

Four Cylinders.

Even torque is also the chief characteristic of the four-cylinder machine, and it seems a pity that the only two examples available to the public at Olympia should not be of home manufacture. Nevertheless both are excellent productions. Nominally rated at 7 h.p. the F.N. has an engine of 748 c.c., and embodies much from car practice, including shaft drive and a plate clutch in the flywheel. It will appear at Olympia with a new design of engine with overhead inlet valves. Rated at 10 h.p. the Henderson, in one model, is nearly double the capacity, viz., 1,301 c.c. 27 × 3½in. tyres are a striking feature of the American "four." Both of these machines make imposing sidecar outfits.



3¾ h.p. SCOTT.



5 h.p. STANGER

WATER AND AIR-COOLED TWIN TWO-STROKES.

Passenger Motor Cycles for 1922.—

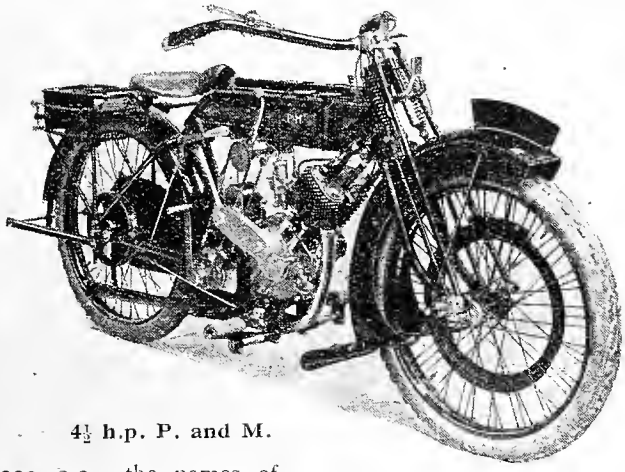
Mediumweight V Twins.

At least ten firms at Olympia will exhibit V twin outfits, with engines varying in capacity between 550 c.c. and 950 c.c. It is somewhat doubtful if these should be classified under the one heading of mediumweight twins, for they differ greatly in purpose, size, and weight. Not in every case do they represent their makers' largest and most luxurious models, and in such cases it is obviously correct to differentiate.

Taking first the examples where the so-called mediumweight twin forms the only model of that type on offer, and is consequently a highly specialised product with a performance reminiscent of 1,000 c.c., the names of A.J.S., Ariel, and James immediately occur.

Twelve months ago the engine capacity of the A.J.S. was increased from 750 c.c. to 800 c.c. As a passenger machine the 7 h.p. A.J.S. needs little comment; a team of these machines won the coveted team prize in this year's Six Days Trials, and scores may be seen giving satisfactory service wherever motor cyclists congregate. A two-seated sidecar is a feature of one of the A.J.S. models, while another small but interesting point where the machine differs from the majority of its class is in the fitting of a separate lighting dynamo instead of the combined instrument.

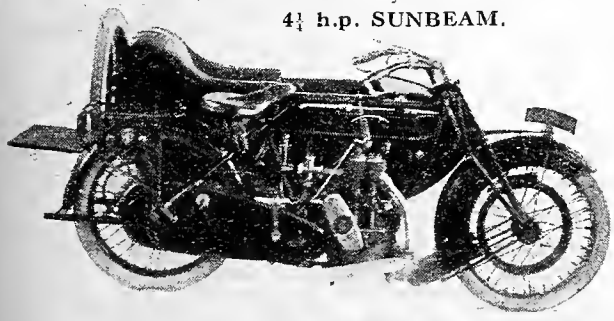
Only in engine capacity does the 6-7 h.p. Ariel fall short of being ranked among the biggest of big twins. It has a long-stroke engine of 795 c.c. capacity, and is an exceedingly sturdy production which

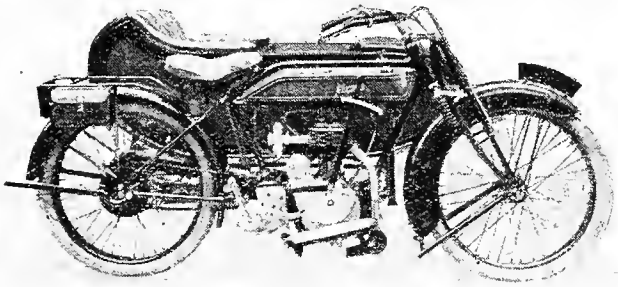


4½ h.p. P. and M.

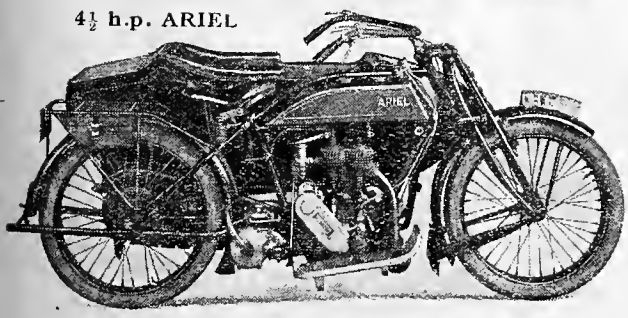
4¼ h.p. JAMES.

4¼ h.p. SUNBEAM.

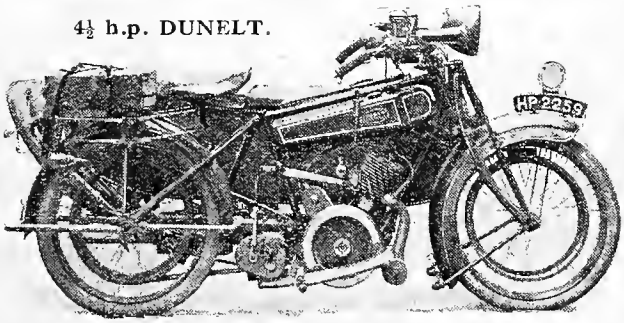


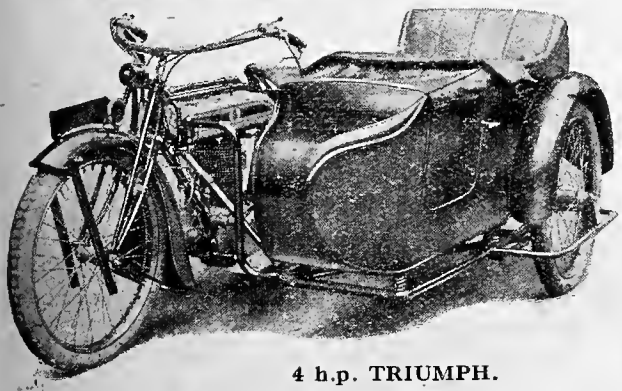


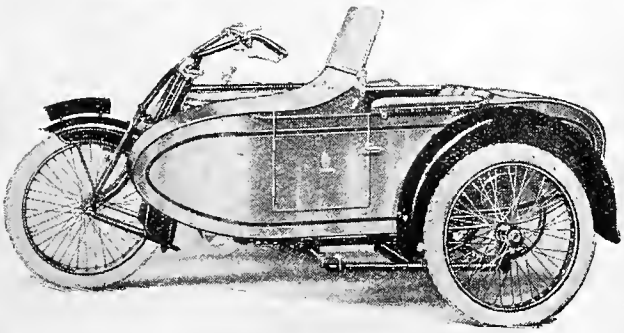
4½ h.p. ARIEL



4½ h.p. DUNELT.







4 h.p. TRIUMPH.

4 h.p. NORTON.

SEVEN SINGLES SPECIALLY SUITED FOR SIDECAR SERVICE.

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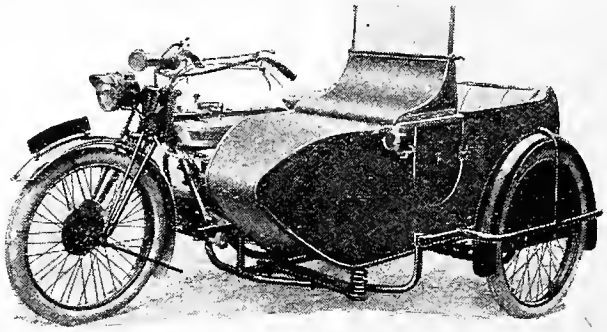
should obviously appeal to the man who wants long service with a minimum of attention. An 8 h.p. twin Ariel will, however, make its appearance at Olympia as an additional model. Tyres and tank capacity are on generous dimensions.

The James is a similar machine, and, like the Ariel, is built entirely at the one works. For next year the James will have completely interchangeable wheels, improved leg-shields, complete aluminium chain cases, and a roomier sidecar. It was increased from 5-6 h.p. to 7 h.p. last year, and has done well in the chief reliability trials of 1921.

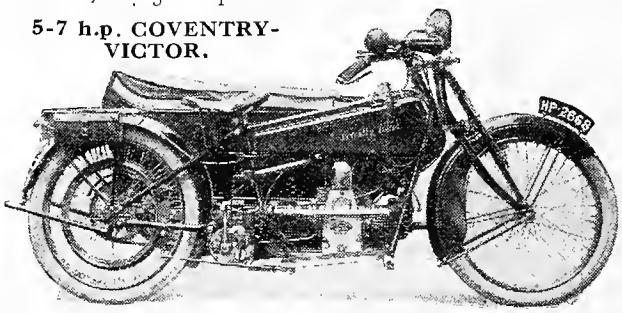
More truly entitled to the designation "medium-weight" are the 5-6 h.p. Rover, the 4 h.p. Indian Scout, the 5-6 h.p. N.U.T., the 5-6 h.p. Lea-Francis, and the 5-6 h.p. Verus. Excepting the Indian these machines are fitted with proprietary engines—the Rover and N.U.T. with J.A.P.'s, the Verus with a Blackburne, and the Lea-Francis with a M.A.G. The Indian, although originally laid out as a solo mount, has been marketed as an electrically-equipped sidecar outfit for more than a year now. Both as a touring and light sporting outfit the Rover enjoys considerable popularity. Incidentally, the Rover was one of the first designs to use the Brampton spring link chain instead of a transmission shock absorber.

The N.U.T. belongs essentially to the sporting type, and certainly looks a very speedy outfit. The Verus, on the other hand, comes into the luxury class pure and simple; it is fitted with exceptionally extensive mudguards and a handsome saddle tank, aluminium footboards and aluminium chain cases.

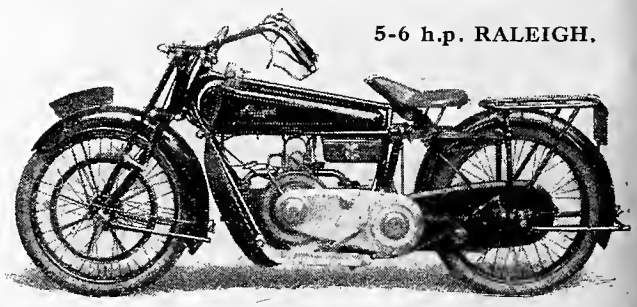
Finally, there are two smaller editions of 8 h.p. twins. The Brough-Superior is now obtainable with a 592 c.c. M.A.G. engine, but otherwise with all the distinctive features of its larger brother. The other is the 6 h.p. B.S.A., now marketed in a lighter frame under the appropriate title of the "Light Six." The sidecar fitted to this model has also been considerably reduced in weight.



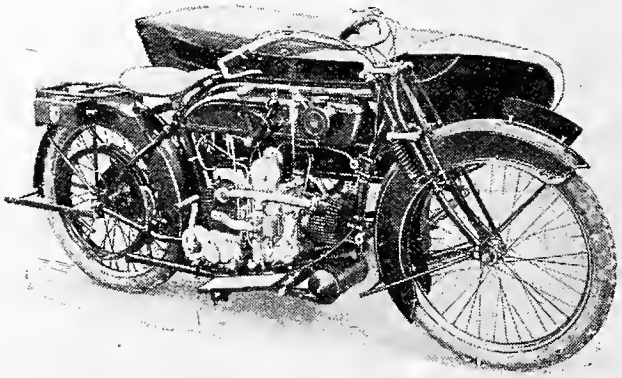
6 h.p. o.h.v. DOUGLAS.



5-7 h.p. COVENTRY-VICTOR.



5-6 h.p. RALEIGH.



4½ h.p. HUMBER.

REPRESENTATIVE FLAT TWINS.

Big Twins.

Those who desire a big reserve of power are well catered for, the "1,000 c.c. sidecar" being the leading product of firms which thoroughly deserve the title of "sidecar specialists."

Detail improvements—in most cases with a view to avoiding over-elaboration—will be the keynote of the big twin outfits of 1922, and there will be few entirely new models in this class.

Three only of the larger passenger outfits have spring frames—Matchless, Indian, and Royal Ruby—but each has survived several years of satisfactory use in the hands of private users. All three frames make use of the usual method of hinging the rear chain stays; but, while the Royal Ruby and Indian rely on leaf springs, the Matchless embodies coils. The latter type of spring is also used for the sidecar body suspension on the Woolwich production, which is now offered with a lighter semi-streamline sidecar body as a sports outfit. The new rigid frame sports solo mount is also eminently suited for the attachment of a sidecar of the ultra-light sporting variety.

Carrying Three with Comfort.

An additional Royal Ruby for next year will be supplied with a tandem-seated body capable of accommodating two adults in comfort.

Indians have always had a reputation for being speedy passenger machines, despite the fact that they carry the not inconsiderable extra weight of a spring

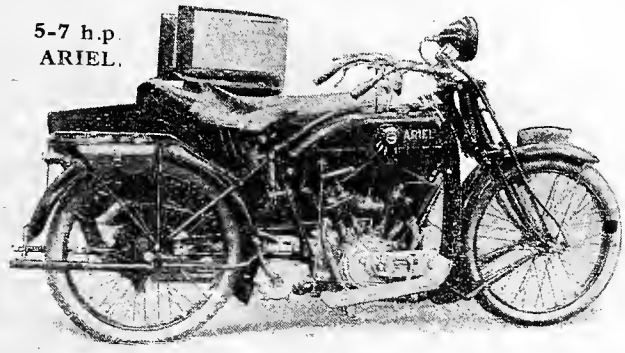
Passenger Motor Cycles for 1922.—

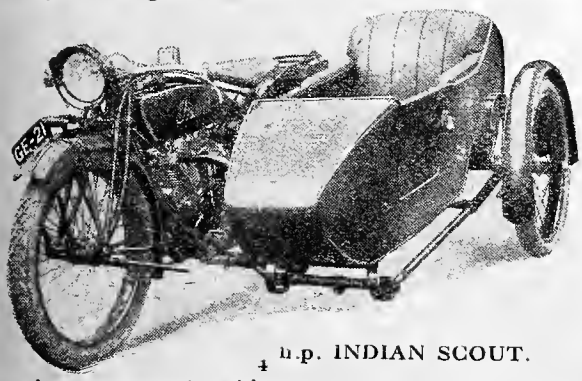
frame; and next year this reputation should be greatly enhanced by the introduction, under the appropriate name of the Indian Chief, of a 7-9 h.p. edition of the Indian Scout. A rigid, and consequently lighter, frame is the chief difference from the sprung model.

Other passenger machines deservedly and naturally noted for their high speed possibilities are the 7-9 h.p. Harley-Davidson, the 8 h.p. Zenith, the 8 h.p. Brough-Superior, the 8 h.p. New Imperial, the 10 h.p. Reading-Standard, and the 7-9 h.p. Rudge. In its most popular form, the Harley-Davidson is fitted with an American system of combined lighting and ignition outfit, and is finished in a most serviceable shade of dark green. On account of the Gradua gear, the Zenith is essentially a "high average" machine, and even the touring sidecar is fitted with a body on "sports" lines. Primarily intended as a *de luxe* solo mount, the Brough-Superior, nevertheless, becomes an exceedingly attractive and handsome sidecar outfit, with the addition of a specially designed model of the Montgomery sporting attachment. A choice of M.A.G. or o.h.v. or side valve J.A.P. engine is now provided. The remarkable successes of the $2\frac{1}{4}$ h.p. and $2\frac{3}{4}$ h.p. New Imperial lightweights this year have tended to obscure the consistent showing of the 8 h.p. New Imperial-Jap outfit in the most difficult reliability trials. Although there is nothing unconventional in its specification, this machine, nevertheless, "gets there" with great rapidity and regularity. Its price, too, will be exceedingly moderate. An 8 h.p. solo sports model will also no doubt be used for passenger work by one or two enthusiasts.

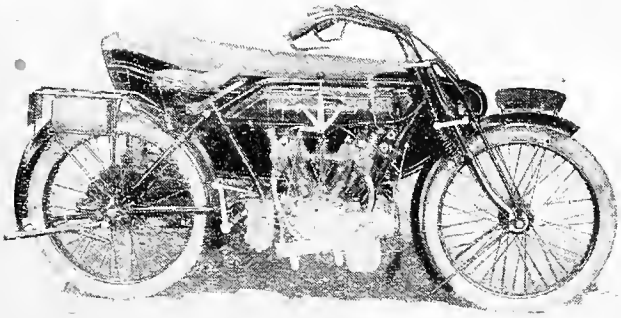
MEDIUMWEIGHT V TWINS.

5-7 h.p. ARIEL.



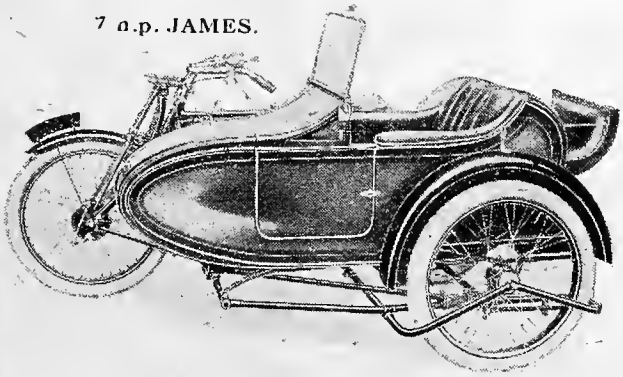


4 h.p. INDIAN SCOUT.



6 h.p. BRADBURY.

7 h.p. JAMES.



The Largest Twin.

The Reading-Standard follows British practice more nearly than most American machines, but it is fitted with an oversize engine of 1,170 c.c. This is the largest standard twin-cylinder outfit on the British market for next year.

Over a year has passed since the *début* of the chain drive Rudge twin, and it is generally becoming recognised as a dangerous competitor to the leaders of its class. A most comfortable and roomy and yet neat and handsome sidecar is a specially notable point on this outfit.

There are several other rigid frame outfits with engines in the neighbourhood of 1,000 c.c. Perhaps the best-known examples are the Sunbeam, Rex-Acme, Hazlewood, Enfield, Excelsior, Chater-Lea, B.S.A., Dot, Bradbury, and Ariel.

Fitted with an 8 h.p. J.A.P. engine, the Sunbeam is distinguished by neat and really efficient oil bath chain cases and an attractive all-weather black finish. The sidecar body is finished to match, and the outfit worthily upholds a respected name in the motor cycle world. Last year the Rex and the Acme were marketed as separate machines, with, however, a strong family resemblance. The two are now combined as the Rex-Acme, and chain instead of belt drive has been standardised. A Blackburne engine and Sturmey-Archer gear box need no description, but the long wheelbase of the machine and the correspondingly lengthy sidecar body deserve attention. The Hazlewood is an equally sturdy example of a machine embodying well-known components. The Enfield, however, is different; not only has it been one of the most moderately-priced big twins, but it is also unusually simple in design, light in weight (it has only a two-speed selective clutch gear), and noiseless in action—the mechanical silence of the Vickers-built engine accounting for this to no small degree.

A reputation for success in reliability trials stamps the Excelsior as an efficient and capable outfit. It has a J.A.P. engine, and the price is moderate.

Passenger Motor Cycles for 1922.—

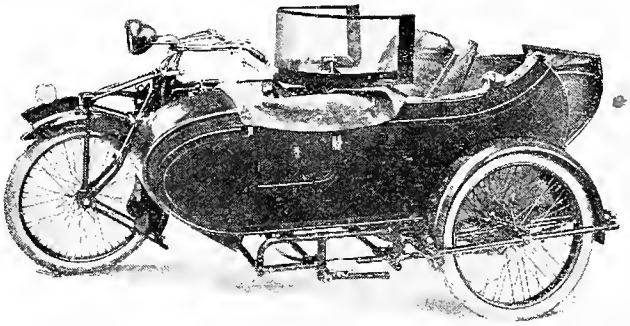
Chater-Lea's, however, make their own engine, but it is on well accepted lines; here again the price is not high. An increase in engine capacity has brought the popular 6 h.p. B.S.A. into the 1,000 c.c. class, although, as already mentioned, the smaller engine will continue to be fitted in a less weighty frame under the title of the "Light Six." The larger machine should meet with a distinct demand from the family man who desires an economical means of transport for three or more.

Both the Bradbury and the Dot hail from the North, and are of characteristically sturdy build. The former is fitted with an engine of Bradbury design and manufacture, while the latter uses the popular J.A.P. unit. Both have chain drive, and are equipped with strongly-built and comfortable sidecars. As described on another page of this issue, the Ariel twin will now be marketed in an additional model fitted with an 8 h.p. M.A.G. engine and all-chain drive. This machine will be similar to the 6-7 h.p. model.

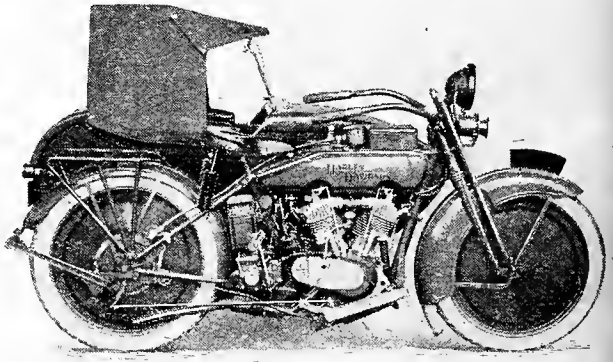
It has been impossible in the course of this article to give prices, for, in the case of new or changed models especially, very few have yet been announced to the public; and it would obviously be misleading to quote 1921 figures alongside those of other firms for 1922.

There is no doubt, however, that many 1922 prices as divulged at Olympia will come as a most pleasant surprise to the would-be buyer. Neither will this tendency to a return to pre-war values be confined to any one type; many of the expensive twins being reduced.

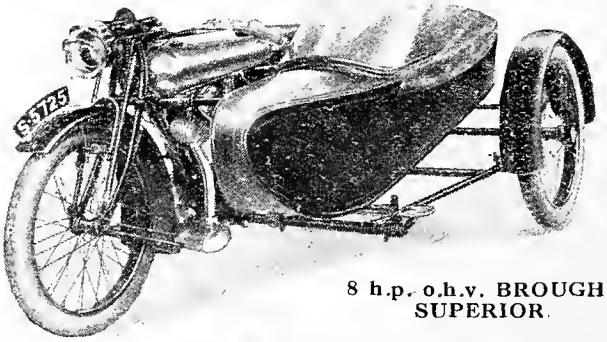
8 h.p. REX-ACME



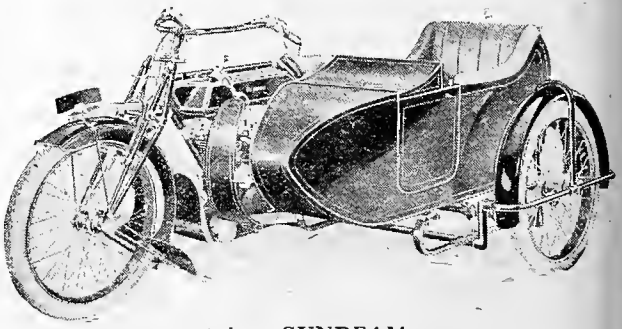
8 h.p. ROYAL RUBY.



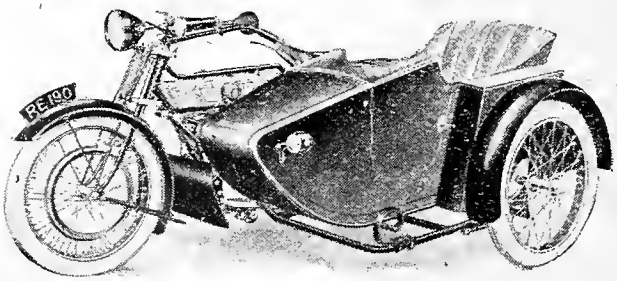
7-9 h.p. HARLEY-DAVIDSON.



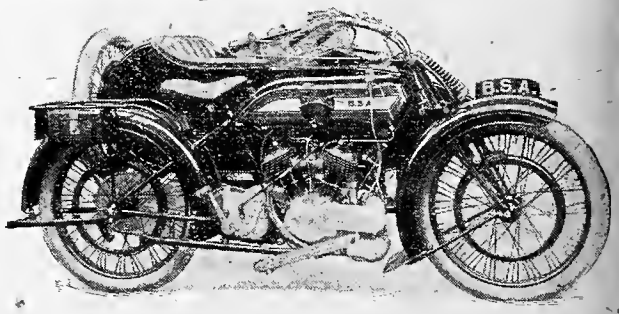
8 h.p. o.h.v. BROUGH SUPERIOR.



8 h.p. SUNBEAM



8 h.p. ROYAL ENFIELD.



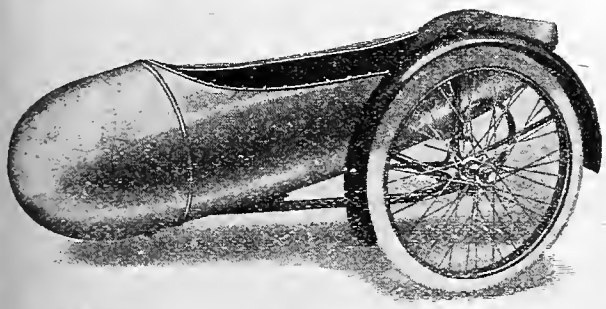
8 h.p. B.S.A.

Sidecars for Machines of all Types.

Proprietary Passenger Attachments for the 1922 Market.

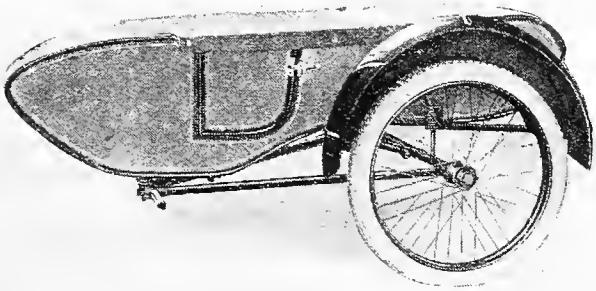
LAST year the sidecar tended somewhat to a luxuriousness and size savouring of over-development; this year the new models to be offered for 1922 show a return to simpler and sounder lines.

The Show of 1921 also was characterised by a greater number of spring-wheeled chassis, but latterly the introduction of further samples of this type has abated, possibly due to the fact that general trade conditions have militated against inventiveness and the incorporation of improvements which, in most cases, increase production costs to some extent. In one notable instance, the Triumph-Gloria to wit, the spring supported wheel axle has been definitely dropped, but such designs as the Grindlay, Sheffield-Henderson, and Millford-Rock are still being marketed, and the latter, at any rate, is of a design which is not necessarily complicated nor expensive, and its price has been appreciably reduced.



For lightweights and sports models: the Watsonian featherweight, which, with polished aluminium body, weighs but 60 lb.

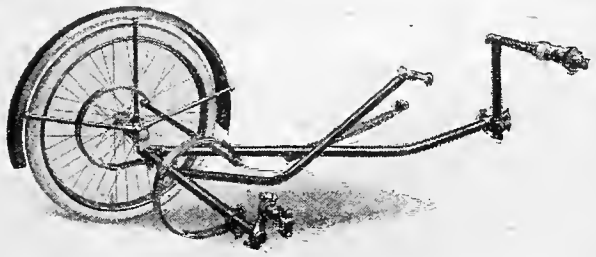
During the present year the general demand for lower prices has led to the introduction of many chassis of exceedingly straightforward design—a commendable tendency to combine strength with lightness, simplicity, and the possibilty of low manufacturing costs. The development of machines of small engine capacity as the propelling items of ultra-light passenger outfits has also spurred sidecar manufacturers to evolve soundly designed attachments from which non-essentials and consequent excessive weight have been ruthlessly eliminated. Grindlay, Watsonian, Montgomery, Sheffield-Henderson, and Canoelet names are all borne on the lightest of lightweight sidecars, and some exceedingly attractive chassis are being included in the catalogues of all these makers. The Watsonian concern, for example, list a featherweight attachment with a total weight of 60 lb., made up of a 42 lb. chassis of very simple design and a polished aluminium streamline body weighing a bare 18 lb. The Henderson Featherweight, too, is about the same weight, with a chassis embodying the fewest possible lugs and having a coachbuilt body on graceful and fairly roomy lines.



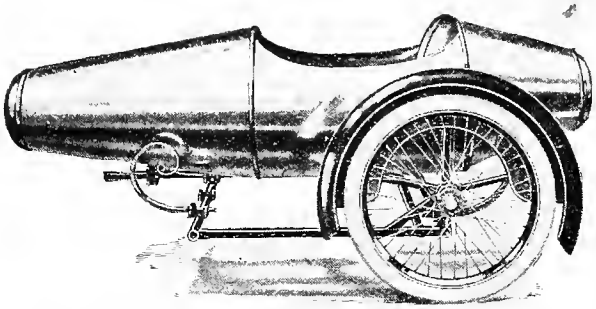
The Henderson featherweight model, a pioneer of light sidecars with a body which is nevertheless comfortable to ride in.

Lightness in Excelsis.

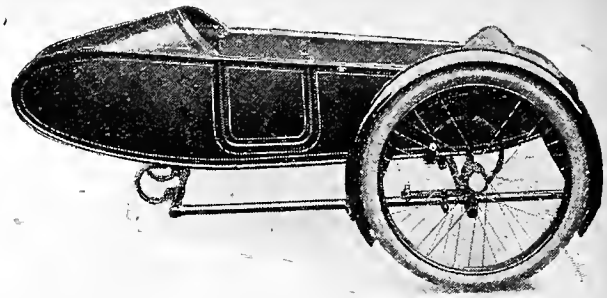
Probably the limit in lightweight chassis construction is achieved by the Montgomery designer, who has



Almost the limit in the elimination of non-essentials. The Montgomery ultra-light sidecar, suitable for machines of low engine power. Separately shown is the very simple chassis.



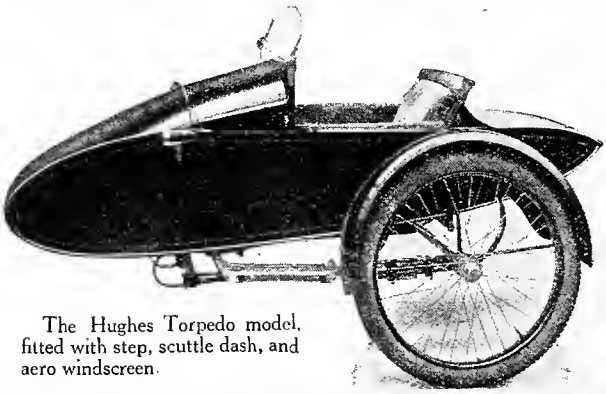
A more ambitious sporting sidecar, the Dunhill, of projectile shape in polished aluminium.



Ample body room distinguishes the Whitley sports model, which should be well suited to machines of the 4 h.p. type.

evolved a remarkably simple construction in which one might almost say that the connections weigh more than the actual chassis itself!

In a somewhat heavier class, the sporting model by the same makers is of exceptional grace, and combines strength and a reasonable degree of comfort for its type. Grindlay also has achieved popularity with a sporting model with similar body lines and a type of suspension on quarter-elliptic springs which has been

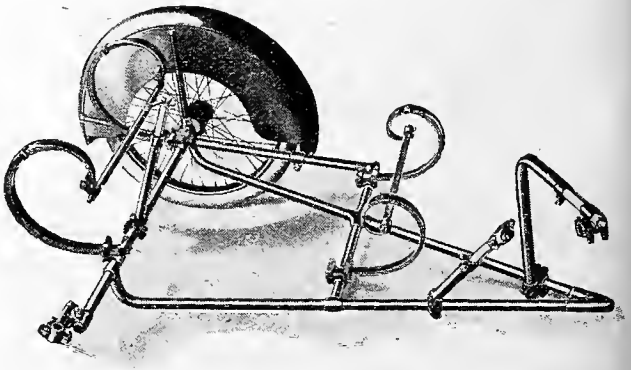


The Hughes Torpedo model, fitted with step, scuttle dash, and aero windscreen.

so satisfactory that it is to be incorporated throughout the whole range of sidecars bearing this name.

Amongst sports type sidecars of still more roomy construction, the new Whitley and the popular Watsonian "R 34" are to be mentioned; the semi-flexible rubber-buffer couplings of the latter concern are of special interest in view of "Wharfedale's" recent advocacy in our pages of this type of connection; they have been tested for a year or more.

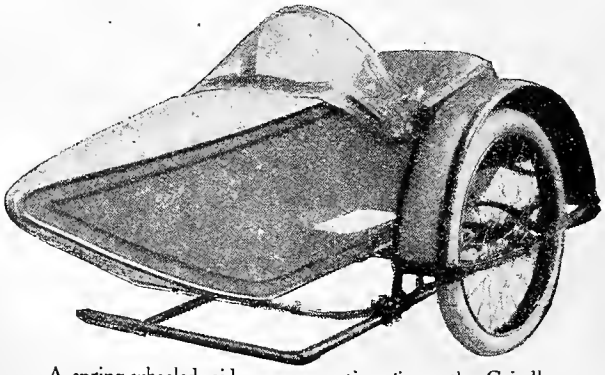
Turning to a heavier class of sidecar altogether, the more luxurious touring attachment suitable for machines of 4 h.p. to 8 h.p., we may single out the products of the pioneer firm of Mills-Fulford, Ltd., as typical examples. This concern, of course, is maintaining production of the "chassis-less" Rock design, introduced last year, but it also has a range of staunchly constructed sidecars mounted on strong chassis of rectangular form having longitudinal



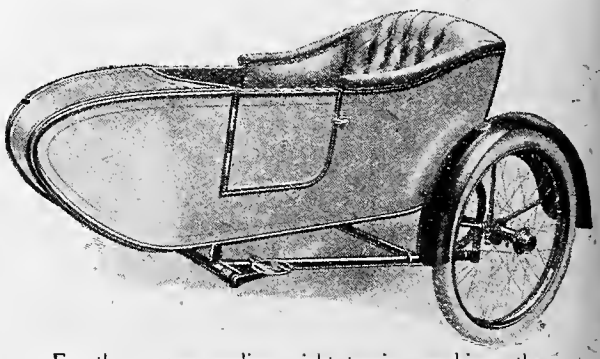
A speciality of Dunhills, Ltd.: the patent triangulated chassis used on the heavier touring models.

and axle members duplicated. Bodywork on these Millford productions is of unexceptionable quality.

Another firm specialising in high quality finish on a body and chassis of conventional design is the Whitley Manufacturing Co., while Dunhills also take a pride in highly finished and luxuriously trimmed bodies, which are mounted on a soundly constructed triangulated chassis. This London house also offers a sporting sidecar of "projectile" shape, but convenience of ingress and egress appears to have been neglected on this particular model.

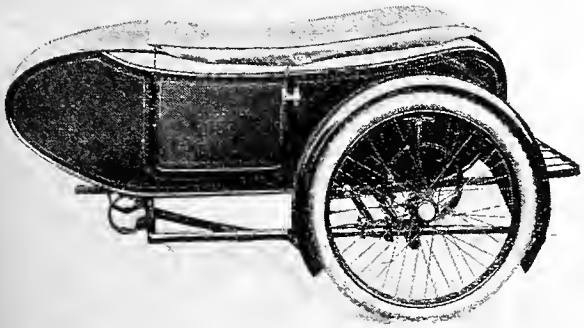


A spring-wheeled sidecar on sporting lines—the Grindlay Club model.

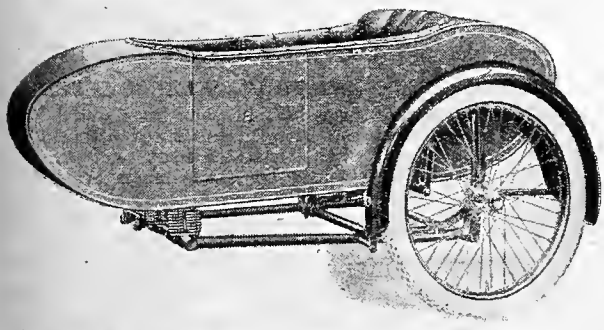


For the average mediumweight touring machine: the Montgomery "No. 2." Notice the step which is fitted.

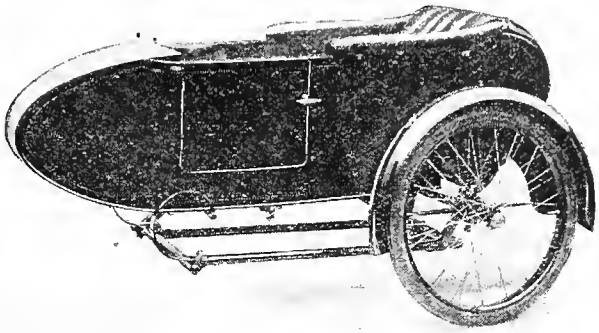
For goods or small live-stock: the Watsonian farmer's carrier sidecar.



Another sidecar for mediumweight machines: the Whitley standard model. Highly-finished bodywork is a characteristic of this production.



Between the average mediumweight and the most luxurious sidecars, the Watsonian Monarch holds a prominent position.



A Hughes touring sidecar with bulbous back.

Most of the firms mentioned produce double-seated sidecars for the family man.

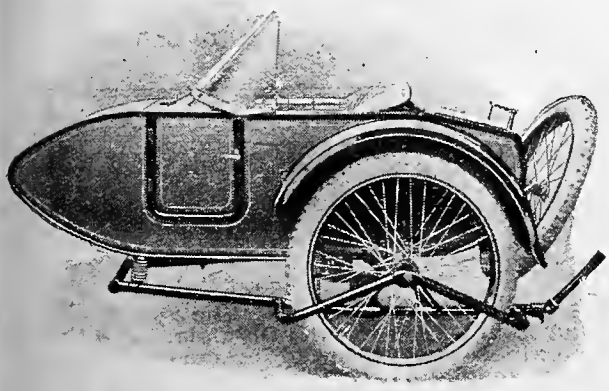
Innovations in the springing of sidecar bodies are conspicuously absent in the 1922 programmes, and the great majority depend upon leaf springs of the C pattern; the Grindlay sidecars, however, as previously mentioned, use quarter-elliptics inverted at the rear, and upturned at the front. Certain Montgomery models use coil springs for the front suspension, the application being similar to the roller-lever springs of bicycle practice. Watsonian sidecar bodies are mounted on C springs at the rear, and double compression coils at the front, while the luxurious Henderson Elite is carried at the rear on a combination of semi-elliptic and coils which are adjustable for weight.

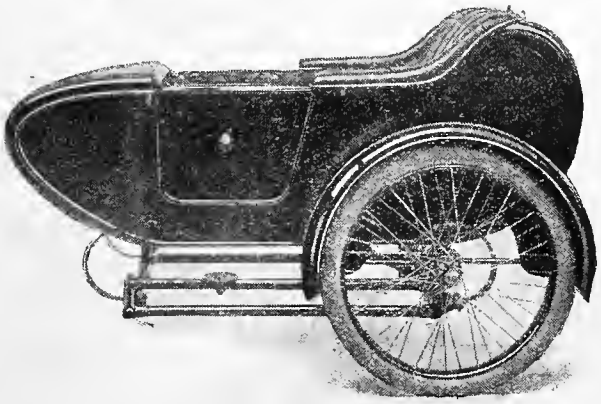
Trade Sidecars.

Quite a number of concerns produce sidecars specially suitable for trade delivery purposes. Watsonian, Millford, and the Willowbrook Co., all lay themselves out to meet the desires of motor cyclists who wish to use their sidecars for business purposes.

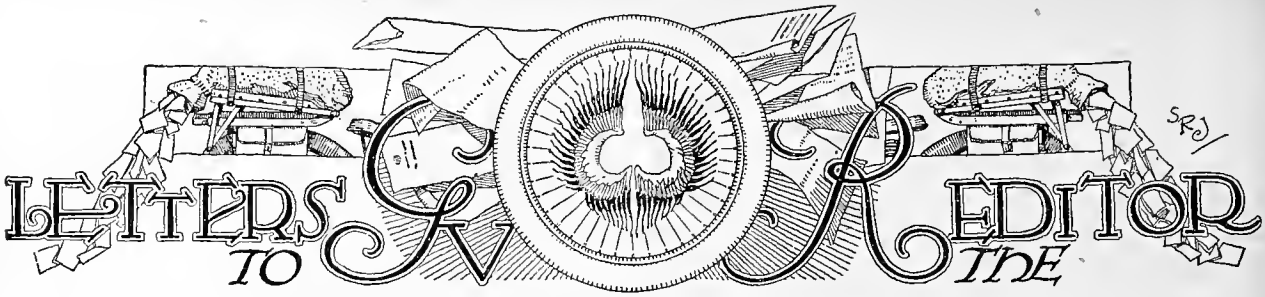
Folding Sidecars.

It might have been thought that the combined housing and garaging difficulties of the last year would have advanced the claims of the folding chassis to a greater extent, but the Hopley and Paragon constructions still maintain themselves in their solitary, but nevertheless successful, corners, fulfilling a demand which is probably only so limited because the public are not made sufficiently aware of their possibilities.





Commodious body design, luggage carrying capacity, and sturdy chassis construction, are features of these products of Sheffield and Coventry. The model names give the key to their qualities; that on the left is the Henderson "Elite," while the one on the right is the Millford "Luxury."



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

SIDECAR CONNECTIONS.

Sir,—I was pleased to see that my plea for flexible sidecar connections has received the support of one of such long and wide experience as Mr. W. F. Grew, who writes in the issue of November 3rd; his patented application of the Hardy coupling (which I had momentarily overlooked) would appear to be ideal for a back bottom stay connection, even if the other connections were merely the usual long and usually "whippy" tubes.

Mr. Willey, I observe, weighs in again in last week's issue, but infuses the debate with an air of acrimoniousness which does not help matters forward. I did not ask for "sloppily fitting" connections but flexible ones of the same order of flexibility as that existing in, say, a car shackle bolt—freedom without slop. Perhaps Mr. Willey will be interested to know that the technical adviser of the Scott Co. was using a sidecar with the back connection (yoke) turned vertical in 1919-20, if I remember rightly, so that I have the satisfaction of thinking with another great mind! My own 1919 Scott, not so fitted, broke its back fork end after a season of heavy competition work.

May I repeat my contention that existing motor cycle frames are O.K. for the purpose for which they were designed, and that sidecars must be designed *not to break them*—not that the frames must be redesigned to withstand sidecar stresses.

I refuse to be inveigled by Mr. Willey into a dissertation on frame design in *these* columns. I may queer my pitch (and the Editor's guineas) for an article on the subject at a later date!

WHARFEDALE.

"ISSUED TO MEMBERS"—BUT NOT FREE.

Sir,—May I, as a constant reader, trespass upon your valuable space to reply to "Zenith DX 1997," who writes upon this subject.

The A.A. and M.U. Handbook for the current year is issued free to all new members upon joining, and at a cost of half-a-crown for subsequent numbers. This cannot be called exorbitant when the extraordinarily low annual subscription to the Association is considered.

The only way to put a stop to the present persecution of motor cyclists in this country is to join some body strong enough to stand up for itself and its subscribers. Catering entirely for the private owner, and having, especially, the cause of the motor cycle at heart, the A.A. and M.U. is just such a body.

The history of the A.A. and M.U. is its best advertisement: let every motor cyclist give it a test. Then will the most popular, and yet most maligned, pastime come into its own and motor cyclists enjoy the privileges of other road users without its petty annoyances.

I have no connection with the A.A. and M.U.

Liverpool. PREMIER EP 178.

Sir,—If "Zenith, DX 1997" will communicate direct with me, stating where he was informed that his handbook would cost him 5s., also giving his name and address, the matter will be investigated.

With regard to your correspondent's comment concerning a considerable portion of the handbook being devoted to the advantages of membership and the services rendered, I would like to state that of the 532 pages in the A.A. Handbook over 450 pages cover information in regard to appointed agents, hotels, touring, motor law, and many other matters which it is really essential for our members to know; therefore, the handbook is not, as your correspondent suggests, merely a compendium of services rendered by the Association.

I may add that the authorised charge for the handbook to motor cyclist members is 2s. 6d.

STENSON COOKE,
Secretary the Automobile Association and Motor Union.

COMPARATIVE TWO AND FOUR-WHEELER SPEEDS.

Sir,—At the foot of page 517, in your issue dated 27th ult., there is a comparison between the speed attained by the 1,100 c.c. cycle car, with two-seated body, and carrying two persons, and that attained by a solo motor cycle, and of only 88 c.c. greater capacity!

Why not have compared the four-wheeler's speed with that of the sidecars? Surely the only fair comparison.

In point of fact, the speed attained on Saturday, 22nd ult., has been exceeded since then, and the speed of the last lap in the 200 Miles Race should not be forgotten.

Are we to infer that the motor cycle quoted was not a "highly specialised machine specially designed for events of this kind?" Surely not! The four-wheeler, however, was an absolutely standard chassis, except for the engine and gear ratios, and, of course, tank capacity.

C. LEWINGTON.

THE MOTOR CYCLE
FORECAST AND GUIDE
:: :: TO THE SHOW :: ::

THE MOTOR CYCLE
FORECAST AND GUIDE
:: .: TO THE SHOW :: ::

4D. Next week's enlarged issue—the second of "The Motor Cycle" Show Numbers—will be of special interest to all who intend to visit Olympia. Among other important features it will contain a stand-to-stand forecast of and guide to the solo and passenger machines which will be exhibited there. 4D.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—What machine is it that is sprung fore and aft, rides pot-holes like a dream, and does not play the deuce on grease? That with a suitable carburetter will tick over like a Leyland lorry, and scream off an acceleration to 60 m.p.h. standard? That, with proper tuning up for the track, will do a flying half-mile at 83 m.p.h., while its c.c. is but 398? That appears to have an unlimited capacity for revolutions, and feels like a four-cylinder to drive? That will take two up a hill of 1 in 7½ at 40 m.p.h. and revels in a light sidecar? That only fears others of the same make on the road? That has ideal weather protection and cannot hurt itself if it falls over? That has a sensible stand, sensible tool kit, and can be ridden with equal facility by man or woman? That with proper gudgeon pin fixings and stainless exhaust valves is as reliable as a Triumph or B.S.A., and is light on tyres? That holds the road as steady as a rock at 55 m.p.h. and over? That is the only really scientifically designed bicycle on the road?

The answer, gentlemen, is too obvious to be written.

Pinner, Middlesex. A.B.C. RIDER.

Sir,—In my opinion the best way to judge is by the different makes of machines one sees whilst touring over popular roads, or speed and hill trials, or anywhere where motor cyclists congregate.

One will then notice the popularity of the Triumph machines. In my idea 20% of the machines now in use are Triumphs. TB 4746.

Ashton-under-Lyne.

Sir,—The world's best motor cycle, in my modest opinion (as far as a solo heavy touring mount is concerned), is a 1921 P. and M. Unfortunately, I only possess a 1920 model, but there is not a great deal of difference. To back my opinion by visible points, not individual attainments (their engine power and general reliability has been publicly demonstrated in all reliability trials of importance), I would lke to ask what other machine at any price has all the following good points or their equal:

(1.) Two very large, easily opened, and firmly fixed toolbags.
(2.) Ratchet brake, which is very useful, even for solo work.
(3.) Pedal brake just under the heel—extremely powerful.
(4.) Highly efficient and strong front mudguarding.
(5.) Mechanical oiling, which oils directly and positively the big end, piston, and driving side crank case bearing.
(6.) A two-speed gear which cannot be scrapped by a novice, of high efficiency, and exceptionally long noiseless life.
(7.) Chains automatically oiled in strong cases with inspection covers.
(8.) Very efficient shock absorber.
(9.) Large straight through (yet quiet) exhaust pipe and silencer, fitted in an ideal position.
(10.) Swinging end of rear mudguard.
(11.) Celluloid-covered handle-bars, with controls in a very comfortable position.
(12.) Valves easily ground in without removing the cylinders.
(13.) Connecting rod milled from solid.
(14.) Low down, strongly fixed lamp bracket.
(15.) Ideal magneto position.
(16.) Decompressor.
(17.) A front brake that can be used.
(18.) Internal cone hub bearings.
(19.) Exceptional leverage to kick-start, which works direct.
(20.) Benzole-proof enamelled tank.
(21.) Finish in detail, as well as polish, second to none.
(22.) Most courteous and quick service—an important point.

Of course, it has its disadvantages; every bicycle has. In my opinion, they are:

(1.) Rather slow—45 m.p.h. on a 5¼ to 1 gear.
(2.) Decarbonising takes too long.
(3.) No handle-bar or foot clutch control, unless you fit a foot control to the gear, which is easily done.
(4.) Cannot fit knee grips.

I have, of course, no connection with Messrs. Phelon and Moore. B.T.B.

Hale.

Sir,—I apologise for intruding once more, but, as one of the guilty participants in the discussion on solo machines, may I suggest that it is rapidly becoming aimless. Originally, I think, the question was as to which is the Rolls-Royce of solo machines, and not which is the best solo machine. There is a distinction. "Rolls-Royce" has become synonymous with luxury, and luxury means refinement, comfort, silence, and safety. Viewed from this aspect, I still maintain emphatically that no single-cylinder four-stroke can compete, and the four-stroke V twin, being the worst balanced engine obtainable, cannot even be considered. (I confess, however, to a sneaking regard for small V twins, of the Indian Scout type, though I am weakening my case by admitting it!)

However, the discussion need not be prolonged. A far more useful debate would be, "Which is the worst solo machine?" A few candid admissions from enthusiastic owners would undoubtedly help considerably in eradicating faulty design.

If some candid riders will give their views I shall be delighted. I do not think manufacturers will start actions for libel. After all, most machines have one good point. They go.

NORMAN WILLIAMS.

An artist's impressions of a strenuous autumn trial.

MERCURIAL FRENCH CHALK.

Sir,—"Ixion" has at various times given hints of a beneficial nature as to the carrying of spares, but I do not remember reading of how he carries his French chalk. Perhaps he will kindly give a little enlightenment. I have tried tins and airtight receptacles used by chemists and others, but always with the same result (no matter how tight the fit in the toolbag is); everything else gets smothered with French chalk. BL 9232.

Woking.

WHY DOES AN ENGINE ACCELERATE?

Sir,—The reason why an engine accelerates when the throttle is opened is that it gets more gas. Usual disclaimer.
Leamington. COMMONSENSE.

Sir,—With a closed throttle the suction stroke merely creates a vacuum in the combustion chamber. On full throttle, the combustion chamber takes a full charge of gas at atmospheric pressure. Upon intermediate openings the downward piston stroke creates vacuums of degrees varying inversely as the throttle opening and the quantity of gas admitted.

In other words, a small opening admits a small amount of gas at very low sub-atmospheric pressure, the aperture for the inrush of air being smaller relatively to the period of induction and the vacuum to be filled than with a wider opening. It will be seen that, upon compression, this will be more intense when the gas was at atmospheric pressure upon the closing of the inlet valve than when it was at the same period at a pressure below that of the atmosphere; and the explosion will be more violent, correct mixtures in all cases presumed. H. C. DAVIES.

Sir,—Your correspondent "Xenesider" apparently overlooks the presence of a pressure of 14.7 lb sq. in. (atmospheric).

When the piston descends, causing a negative pressure in the cylinder, gas would flow to the cylinder if not partially held by the throttle, and the engine would rapidly accelerate to full load.

What actually happens is: The cylinder is only partially filled, therefore the initial pressure, instead of being probably 80 lb. sq. in., is much lower (a manograph diagram will register only 30 lb. sq. in. at times), the working pressure, or explosive pressure, is lowered, therefore the engine is really controlled by the throttle reducing the working pressure.

If this argument is followed to its natural conclusion with the two-stroke design, perhaps one of your readers may hit upon some solution to the four-stroking nuisance. I suggest a transfer port carburetter.

"Hons. Eng." gives a very lucid explanation except at one point. "The engine takes . . . a full charge whether the engine is going slowly on small throttle or fast on full throttle."

This seems to suggest the cylinder negative pressure and atmospheric have time to balance on a small throttle opening.

For various involved reasons (not connected with shorter time the valve is open), this cannot possibly take place.
G. W. WEBB.

Sir,—I confess to being a novice, and recognise that some involved technical reason is the solution; but one point seems to me overlooked, and yet I cannot help thinking it must have some bearing on the matter. I refer to varying suction according to throttle openings.

I believe that factor to be greatly used in construction of speeded shutters in photography, but to make my point more clear. I should perhaps give an illustration.

Anyone who can take two close-fitting canisters or cylinders and put one inside the other will find the difficulty of pulling out the inner one, if one end of each is quite sealed and the whole reasonably airtight. By its own weight the inner cylinder is even longer in falling out if held vertical.

If one places a small hole in the sealed end of the larger cylinder the inner one comes out fairly easily. If the cylinders or canisters are large, one can experiment further, and find that a small hole, while rendering the withdrawal of the inner cylinder not only possible but fairly easy, is not so good as a larger hole, and so on.

May it not be, therefore, that, as the valve orifice is constant throughout, the piston drawing on a small opening cannot descend in the cylinder of an engine so freely as on a larger opening, even though propelled by explosive force after the compression stroke?

I suggest that the induction stroke is a factor to be reckoned with in that respect as a retarding influence to the ability of the engine to attain higher "revs.," possibly only a small retarding influence, but at least present.
JOHN TREWAVAS, JUN.

Sir,—May I be permitted to give my opinion upon the subject, but first let me quote "Boyles Law on Gases"? "When the temperature is constant, the volume of a gas varies inversely as the pressure."

Now, when an engine is running at a small throttle opening, the gas is drawn into the cylinder through a restricted area, *i.e.*, partially closed throttle, and although the cylinder is filled with gas it is in a rarefied state, *i.e.*, at less than atmospheric pressure (14.7 lb., per sq. in.), owing to the small time the inlet valve is open. If this gas were compressed to atmospheric pressure the total volume of gas in the cylinder would be far less than the full capacity of the cylinder at atmospheric pressure.

Likewise, as the throttle is opened, so would the gas be drawn into the cylinder at very much nearer atmospheric pressure, thus increasing the actual volume of gas at 14.7 lb. per sq. in. pressure. A.A.W.
Eastwood.

SUNDAY COMPETITIONS.

Sir,—In your November 3rd issue I read with great interest the letter of Mr. Samuel St. John.

The Sunday competition machines form a very small percentage of the vehicles on the road.

What about the hundreds of chars-à-bancs with their noisy, jovial loads, the thousands of cars and motor cycles and smaller fry, dashing to and fro in an irresponsible manner?

Perhaps Mr. St. John will be good enough to give us a clearly defined statement of the difference between "the law-abiding (?) Sabbath joy-rides" and the "Sunday competition rider who makes the day hideous with his uproar."

Personally, I think Mr. St. John's letter is a direct attack on Sunday riding generally, and not against Sunday competitions in particular. W. A. DOVENER,
Hon. Sec., The Bradford Motor Cycle and Light Car Club.

SUMMARY OF CORRESPONDENCE.

Some time ago Mr. A. W. Davies, in reply to a correspondent, stated in these columns his satisfaction with the Best mechanical oil pump on a B.S.A. He now writes that he has covered a further 10,000 miles in all weathers still without trouble.

"Rook" complains of boarding house charges in North Wales, having been charged £3 5s. for two nights' and one day's accommodation for two.

Mr. S. Williams wonders why "so many manufacturers of motor cycles spoil an otherwise excellent production by putting the magneto just in the rear of the front wheel."

Dissolved acetylene is preferred by "Night Owl" (Hinckley) either to plain carbide or electric lighting sets. He highly recommends this type of lighting equipment.

Two more correspondents, "20 m.p.h." (Birmingham) and "BJ 5406" (Dorset) revive the suggestion that the Tourist Trophy races be held for standard stock machines only.

"Devon" (N. Devon) complains that prices both in the new and second-hand markets are still too high.

Mr. G. H. S. Ellis considers that prompt payment of spares accounts would make a big difference in manufacturers' service.

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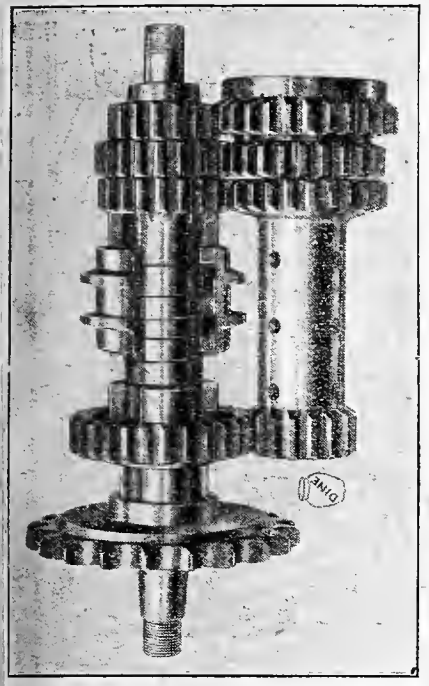
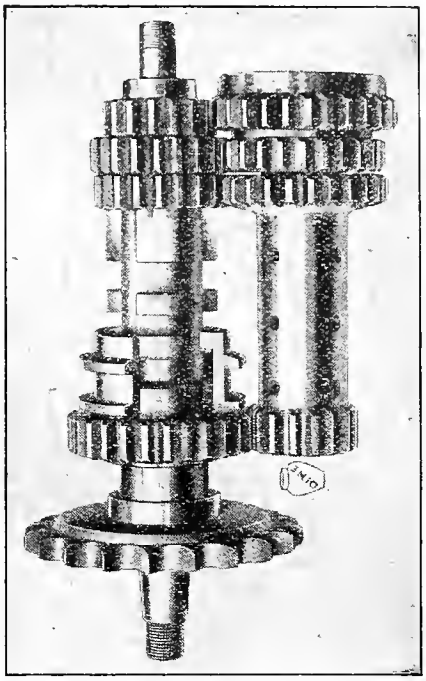


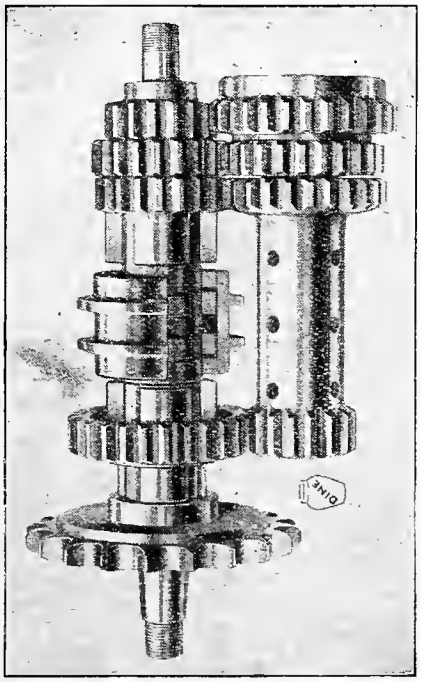
Second Gear.

Patent
FOUR
DINE
SPEED

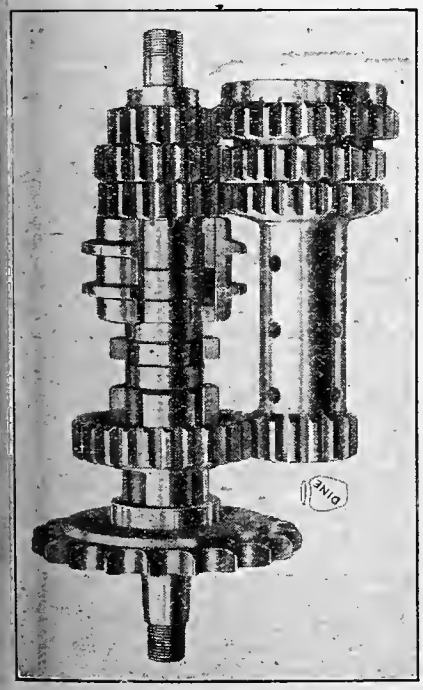
See how it slides.



Fourth or Top Gear.



Neutral.



First or Bottom Gear.

Only one Sliding Member.

John Jardine Ltd.
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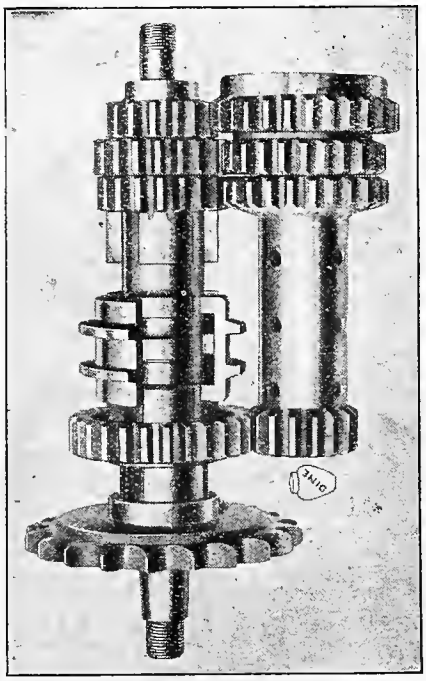

Third Gear.

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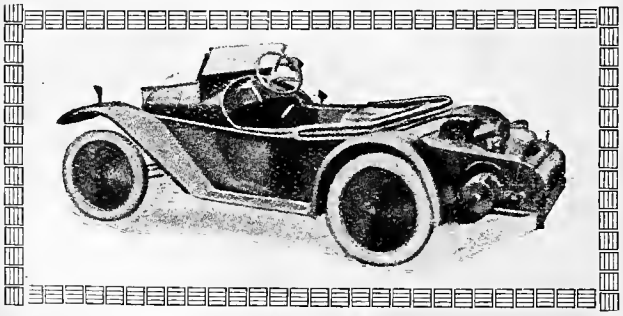

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Advance Details of 1922 Models.

A Sports Model Ariel and a New Big Twin.

Five Models for 1922, including an 8 h.p. M.A.G.-engined Mount.

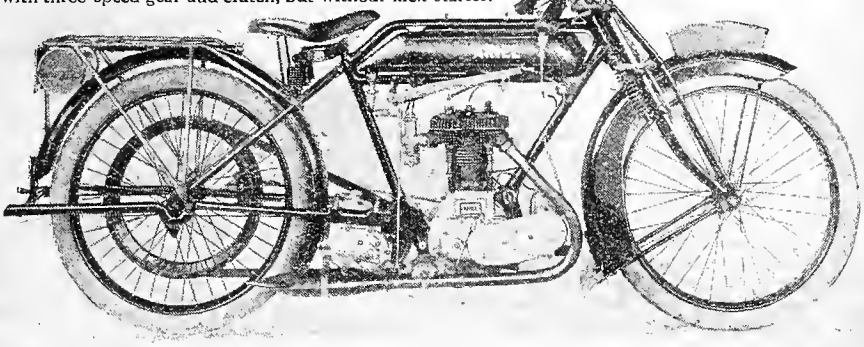
IN addition to existing Ariel models, in which little change has been made, there will be marketed a new sports type. Selling at the very moderate figure of £87 10s., this new Ariel is bound to attract a considerable amount of attention. Fitted with the 499 c.c. Ariel engine (86.4×85 mm.) and three-speed gear box, it has an enclosed primary chain, lubricated by excess oil from the crank case, and final belt drive.

Decompressor, but no Kick-starter.

In connection with the engine, it will be remembered that a decompressor has been fitted for many years past, though in the latest type the operating pedal is attached directly to the decompressor instead of being connected by external links. The sports model has a handle-bar clutch control, but no kick-starter, so that the decompressor is a particularly useful fitting in this case.

Of standard construction, the three-speed gear box has a new type of gear operation, the lever and quadrant lying conveniently below and at the side of the new dome-sided tank.

An addition to the Ariel range is the 3½ h.p. Sports model, with three-speed gear and clutch, but without kick-starter.



Many detail modifications have been carried out, such, for instance, as the replacement of pannier toolbags by a circular metal tool box at the rear, while the tyre pump is also attached to the carrier in such a manner that it does not interfere with luggage capacity. A long exhaust pipe from the engine now leads to a welded sheet metal silencer of streamline formation, having a long narrow final exit. A toe-operated belt rim brake is fitted to the rear wheel.

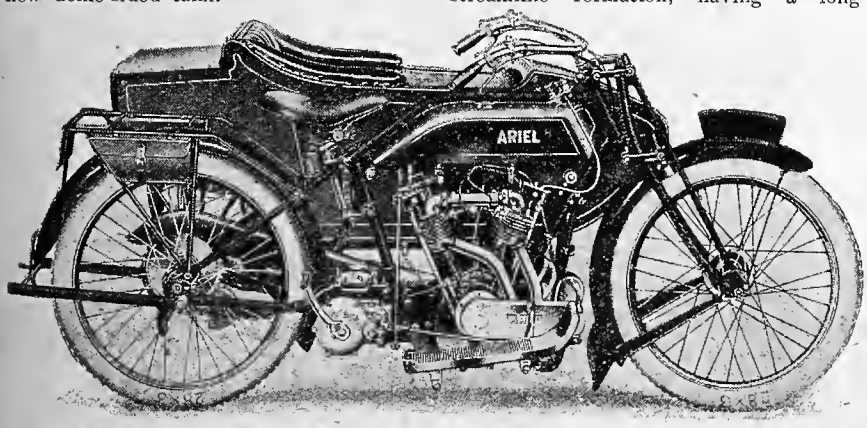
The front mudguard is fully valanced, and has a wide splasher at the base, which does much towards protecting the engine and rider's feet. Besides the usual specification, which includes B. and B. carburetter, Best and Lloyd sight feed drip and pump, and 26×2⅜in. Dunlop tyres, rubber grips are fitted to the handle-bar—a refinement which is not usual on standard machines.

An 8 h.p. Twin.

The standard 3½ h.p. three-speed Ariel will sell at £95, and the big 4½ h.p. single (chain drive) at £105. The 6-7 h.p. twin, with chain and belt drive, is listed at £110, and a new model, fitted with an 8 h.p. M.A.G. engine and all-chain drive, will be marketed at £125.

Two sidecars are marketed, the lighter model, for chain-cum-belt drive machines, selling at £30, while the special type, for all-chain drive machines, costs £5 extra.

All Ariel machines are fitted with the already well-known Ariel gear box, and, with the exception of the sports model, the spring saddle pillar peculiar to this firm is supplied. In addition, the new 8 h.p. model has internal expanding brakes in both front and rear wheels.

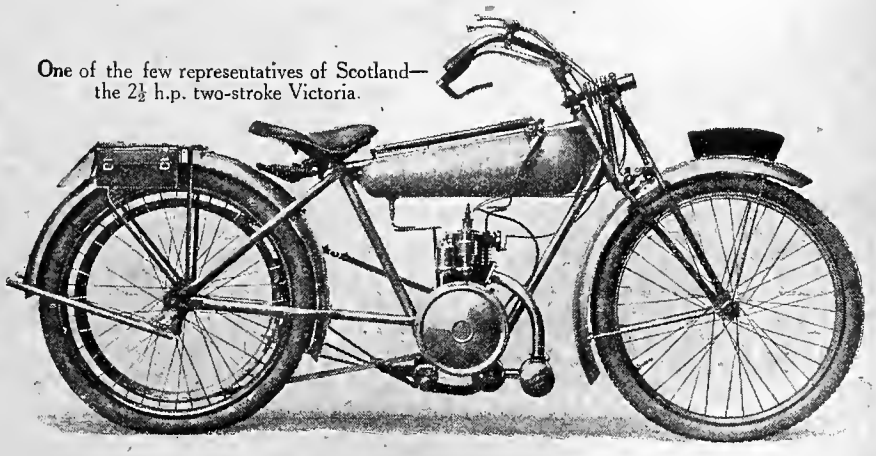


An 8 h.p. M.A.G.-engined Ariel, which marks the entry of this well-known machine into the full-powered class.

A Scottish Lightweight.

ONE of the few motor cycles made North of the Tweed is the Victoria, a product of the old-established Victoria Motor and Cycle Co., Ltd., of Glasgow. At last year's show this firm staged a 4 h.p. sidecar outfit at £125, which was, at that time, easily the cheapest outfit on the market. This year the leading Victoria model will be a two-stroke lightweight, embodying the well-known Villiers engine with flywheel magneto, and priced at £39 18s. for the single-speed model, £45 for the plain two-speed, and £50 with two-speed gear, clutch, and kick-starter.

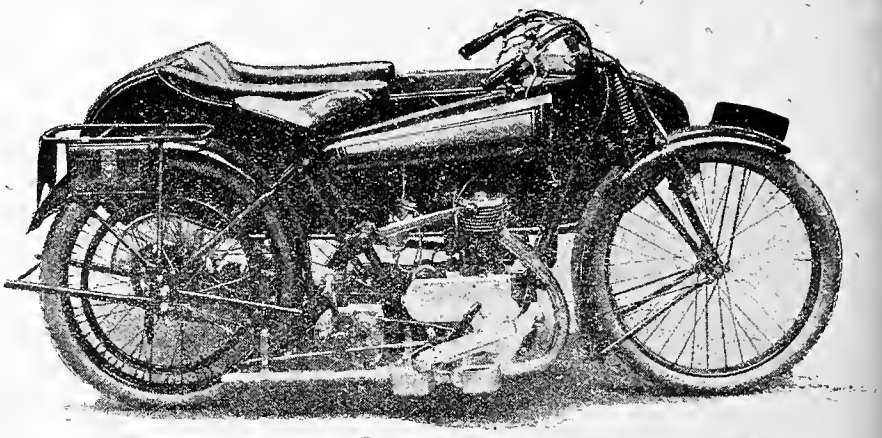
One of the few representatives of Scotland—the 2½ h.p. two-stroke Victoria.



Quadrant Modifications.

A Low-priced, Long-stroke, Big Single Sidecar Outfit.

BESIDES the excellent finish and sturdy construction of the big single Quadrant the most noticeable feature is the attractive price at which it is to sell. Completely equipped with Sturmey-Archer three-speed gear, chain and belt drive, a sound specification throughout, and a deep-bodied coach-built sidecar with good upholstery, the 4½ h.p. Quadrant is listed at £100, an extra £5 being charged for all chain drive. Without sidecar the two types sell at £80 and £85 respectively. Such prices for a thoroughly well turned out machine equipped with an engine of 85×110 mm. (654 c.c.), cannot fail to draw the attention of the buying public.



One of the largest capacity single-cylinder outfits on the market—the 4½ h.p. Quadrant, fitted with a 654 c.c. engine.

Sound Specification.

Regarding specification, the Quadrant remains largely unaltered, but a very neat circular section saddle tank replaces the earlier square type. Quadrant forks are, of course, retained, and it will be remembered that a rebound spring is incorporated in the design. The forks pass through the wide flat front guard, and the mudguarding throughout is sensible. Cast aluminium is employed in many places where sheet metal is more commonly used, and in addition the aluminium footboards, the silencer, and both front and rear chain guards are of the same material. A powerful Ferodo wedge type brake is fitted to the rear wheel, a rim brake being retained in front. We have had some road experience with the Quadrant outfit, and can testify to its roadworthiness and its pulling powers, for with its 5 to 1 top gear it is capable of taking a loaded sidecar up all normal main road hills. The standard sidecar as fitted is roomy, and contains a large locker in the bulbous back and a smaller locker under the seat. Fixed to the body, so as to prevent rattle, the mudguard is of sensible proportions, and amply protects the passenger. Four points of attachment are provided for the stoutly constructed chassis, and the body is fully sprung. 26×2½in. tyres are fitted, and the equipment is excellent as regards essentials. A shock absorber is fitted in the rear hub of the chain-driven model, and a choice of Amac or Senspray carburetters is provided.

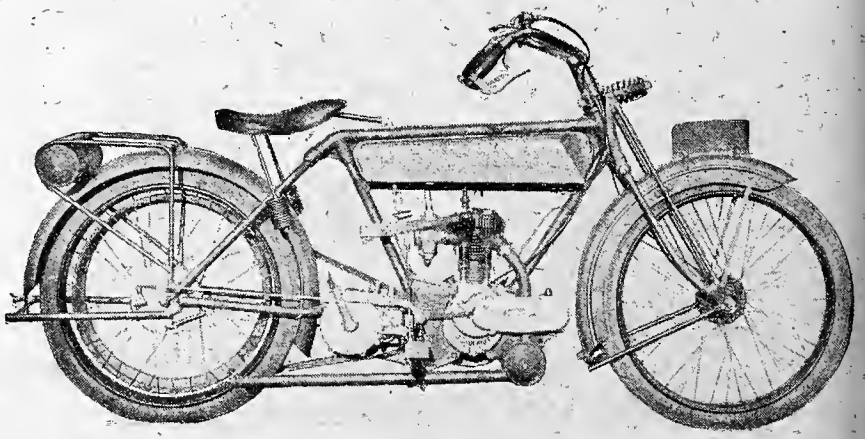
Next Year's Hawker Models.

Range of Blackburne-engined Four-strokes in Addition to the Well-known Two-stroke.

THE Hawker two-stroke may be said to have found itself during 1921, so its manufacturers have decided not to interfere with its design, and the only alteration will be an improvement of the finish, which will be black with gold lines. Having made their reputation with the two-stroke, the Hawker Engineering Co., Ltd., Kingston-on-Thames, have decided to sell three Blackburne-engined models during the 1922 season. These will be fitted with the 2¾ h.p., the 4¼ h.p., and the 2¾ h.p. overhead valve sports pattern engines. It is interesting to note that the identical frame is used in every case. Of these, the smaller machine is fitted with the Burman two-speed gear and clutch, while the 4¼ h.p. has the same make of three-speed gear.

Special features in these machines will include A.B.C. pattern hub brakes, both front and rear, and a saddle of the firm's own manufacture, the peak of which is hinged at the top tube, the springs being anchored to the top stays.

Another feature common to all models is the circular all-metal tool-box fitted to the rear of the carrier. Quite an attractive machine will be the 2¾ h.p. sports model fitted with the overhead valve Blackburne engine. This will have all-chain drive, a three-speed gear, and clutch, but no kick-starter. The 4¼ h.p. model also has all-chain drive.



A 2¾ h.p. Blackburne-engined Hawker. Such details as the cylindrical metal tool bag are retained.

In the case of the 2¾ h.p. two-stroke machine, hinged front forks are retained, and all Hawker machines will be fitted with the latest pattern M-L magneto as standard.

If you are visiting Olympia for the Motor Cycle Exhibition during the first three days, take with you a copy of next Thursday's FORECAST AND GUIDE NUMBER OF "THE MOTOR CYCLE."

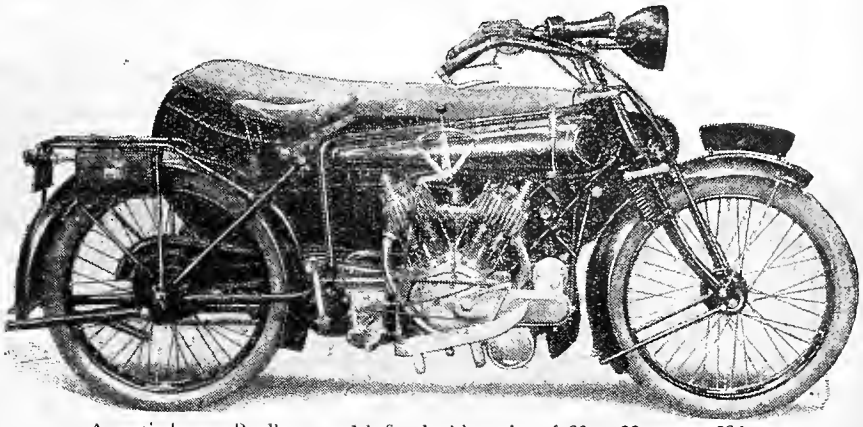
An 8 h.p. Bradbury for 1922.

Six Models, Four Sizes of Engines; Next Year's Programme at Oldham.

FOR 1922 the Bradbury range is to include an 8 h.p. twin outfit of new design. As will be seen from the accompanying illustration, it is quite a handsome mount—an enlarged edition of the well-known 6 h.p. model with the exception that the seat tube is approximately vertical. The Bradbury three-speed gear box, with cork inset clutch, is used, and the wheels carry 28×3in. tyres.

The 6 h.p. model is practically unchanged except for minor refinements, which remark also applies more or less to the other models. These include three 2¾ h.p. machines and a 4 h.p. single-cylinder sidecar model. The engine dimensions, weights, and prices are as follows:

	2¾ h.p.		4 h.p.
Bore and stroke ..	74.5 × 80	..	89 × 89
Capacity	350 c.c.	..	554 c.c.
Weights	174 lb.	..	280 lb.
Prices	£60	..	£92
	6 h.p.		**8 h.p.**
Bore and stroke ..	74.5 × 86	..	80 × 99
Capacity	750 c.c.	..	996 c.c.
Weights	325 lb.	..	360 lb.
Prices	£117	..	£135

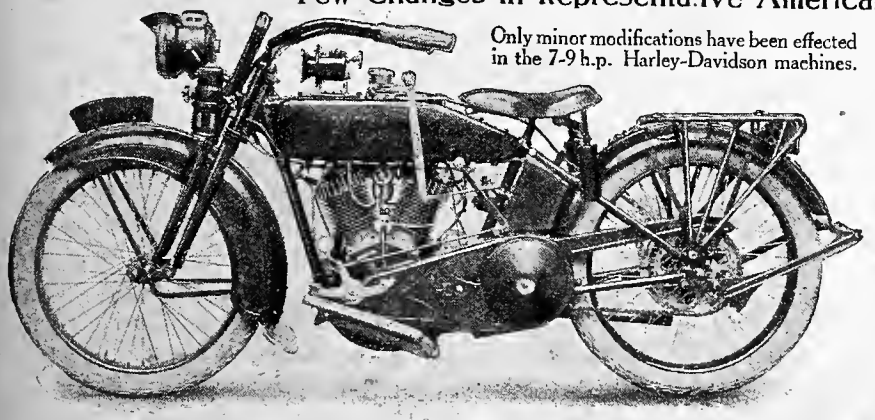


An entirely new Bradbury model, fitted with engine of 80 × 99 mm. = 986 c.c.

The three 2¾ h.p. machines vary only in respect of the gear box. The first model is single-geared and has no clutch, the second a plain two-speed gear, and the third two speeds with hand control clutch and kick-starter. The latter two models are priced at £75 and £80 respectively. All have chain-cum-belt transmission, but the three larger models are chain-driven.

1922 Harley-Davidsons.

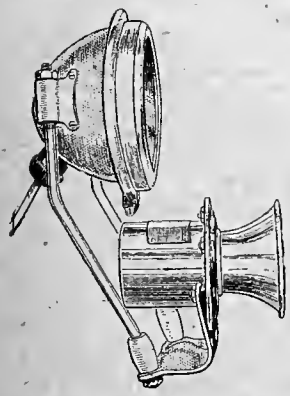
Few Changes in Representative American Models.



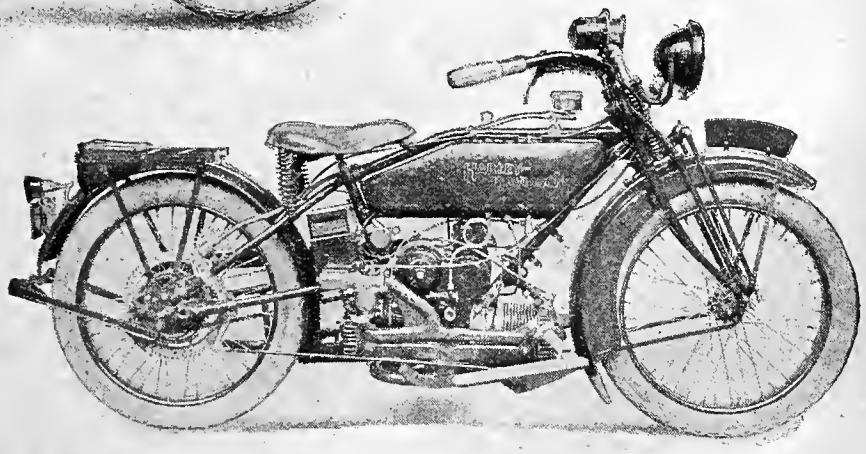
Only minor modifications have been effected in the 7-9 h.p. Harley-Davidson machines.

IN common with some of the British makes, Harley-Davidson motor bicycles may be classified among those which have reached a stage in which innovations necessitated on the new models are of the most trifling description.

The chief alteration in the 1922 models is the change of colour, which is now a dark olive green—quite an attractive colour indoors, but not so serviceable as the light khaki colour, on which mud or dust are quite inconspicuous. Dark green, however, has this advantage: it is an excellent wearing colour, and any scratches or chipping of the enamel may be touched in easily, so as not to be noticeable.



The head lamp and electric horn are supported on the same bracket, and a quickly detachable lamp glass fitted.



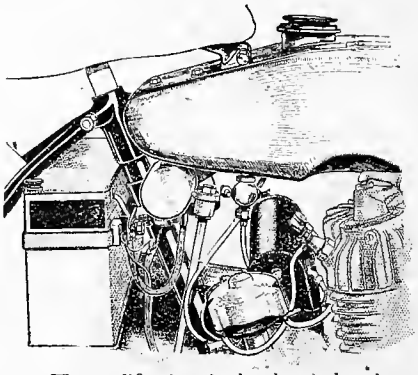
For 1922 the popular flat twin Harley will have a guard instead of the completely enclosed chain case hitherto used.

Advance Details of 1922 Models.

So far as the 7-9 h.p. model is concerned, it will be sold, as before, in two patterns—the electrical and the magneto, the former being complete with dynamo generator manufactured by the Harley-Davidson Motor Co., Ltd. A small improvement has been made in the design of the distributer cover of this equipment, so that the terminals are below, in order that there shall be no tendency for wet to run down into the interior, as was the case with the old pattern.

Improved Mudguarding.

Other points worthy of mention on the big twin for 1922 are that the front mudguard is now deeply valanced, that the head lamp and the horn (fixed below it) are finished in black, while the external brake is operated by the rider's heel and the internal expanding brake by the toe, both pedals being on the same side of the machine. The front chain is now entirely enclosed. Double dust caps are now fitted to both wheel bearings. It is interesting to note that British-made Bonniksen speedometers are now a standard fitting on these machines; the speedometer is mounted on the top tube and driven from the off side of the rear wheel.



The modifications in the electrical equipment include a new distributer, which shields the H.T. wires from rain. The disposition of the fuse box and accumulators is also shown.

Modifications of the Flat Twin.

As regards the 4 h.p. machine, the makers have ceased to enclose the chain entirely, and it is now protected by a guard. The tool bag is a very neat fitting, which is let into and flush with the top of the carrier. This model is an excellent solo mount, which will nevertheless take a light sidecar anywhere, and is a most satisfactory dual-purpose machine; it is also finished in dark olive green. At the present time this is America's sole representative in the flat twin class.

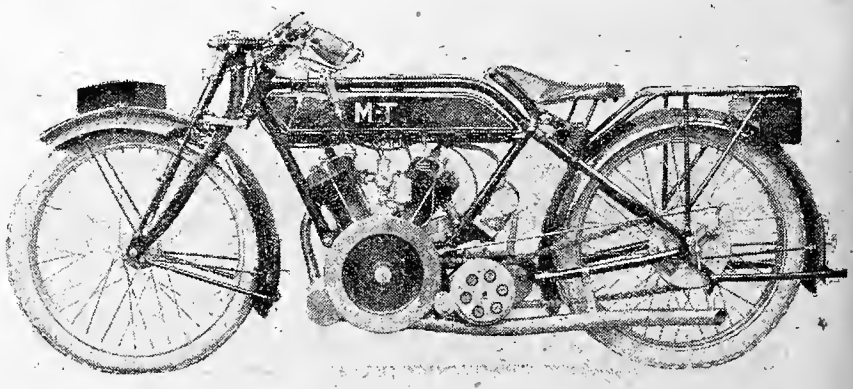
New Metro-Tyler Models.

A 5-6 h.p. Twin with Blackburne Engine, as well as the Two-stroke Models, to be Marketed

AMONG the several firms which have turned their attention to the sporting twin-cylinder may be mentioned the Metro-Tyler Co., Ltd., Banister Road, Kilburn Lane, London, W.10. Their latest production consists of a 5-6 h.p. twin fitted with a Blackburne engine, 71×88 mm. (698 c.c.). It is provided with all-chain drive and a Burman three-speed gear box and kick-starter.

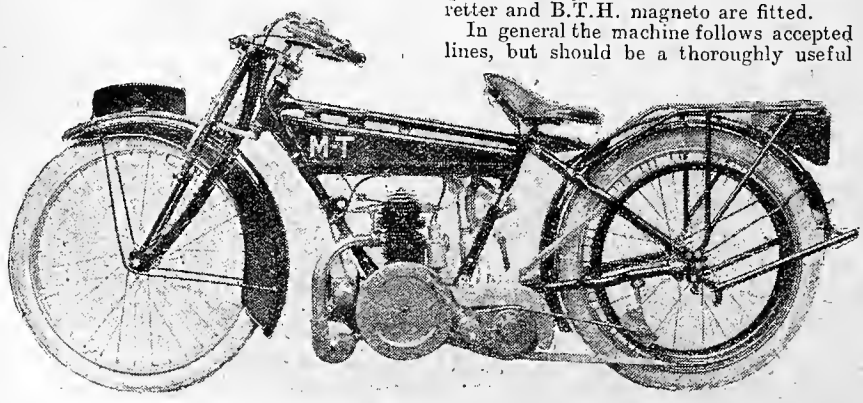
Knock-out Hub Spindle.

So as to facilitate tyre repairs to the back wheel a withdrawable spindle is fitted. The front wheel bearings are of standard design. The magneto is carried behind the engine, and is driven by a chain, which is rather long, however. Careful attention has been paid to the mudguarding, the mudguards being wide and well valanced. The machine has a short wheelbase, low riding position, and wide handle-bars giving adequate steering control. An Amac carburetter and B.T.H. magneto are fitted.



A new V twin Metro-Tyler, which marks another entry into the big solo class. The engine is a 5-6 h.p. Blackburne.

In general the machine follows accepted lines, but should be a thoroughly useful high-speed touring mount. Special mention must be made of the roomy toolbag placed at the back of the carrier, and fitted with a lid provided with an ingenious fastener.



Neat frame design is a feature of the 2½ h.p. two-stroke M.T. sports model, equipped with an Albion three-speed gear box.

The Two Strokes.

So far as the popular 2½ h.p. M.-T. two-stroke is concerned, the alterations are in detail only. The previously used oiling arrangement of the cylinder has been abandoned, the oil now being introduced into the inlet pipe, as this system is found to be more economical in manufacturing costs.

The sporting model of this type has now a roller bearing engine, and when used in conjunction with a sidecar has an Albion three-speed gear box and clutch. In the new sports model two-stroke the magneto and gear box are not enclosed, as is the case in the ordinary model where engine, magneto, and gear box form practically a unit.

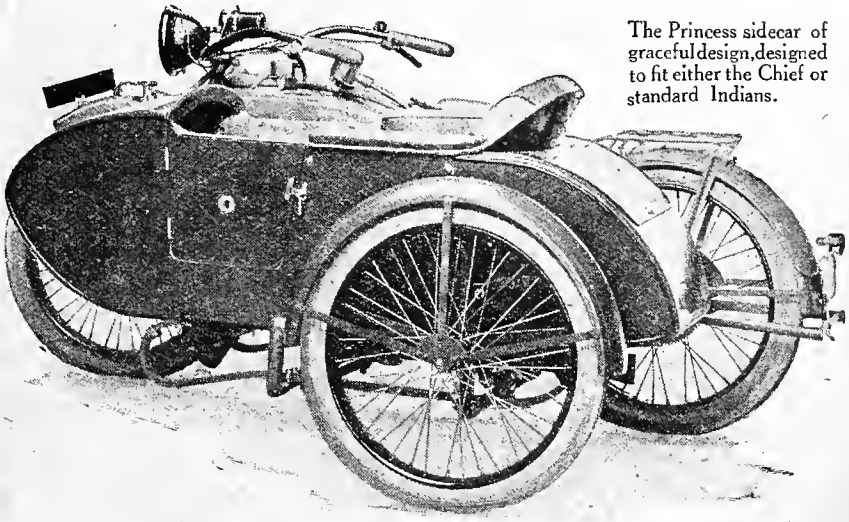
If your visit to Olympia will be at the latter end of the week, "The Motor Cycle" Show Number (Dec. 1st) will assist you in your examination of the most interesting exhibits.

A New Indian Big Twin.

Indian Chief Model, an Enlarged Edition of the Indian Scout.

AFTER the Scout the Chief. Rumours *via* the American papers have warned us to expect something good in the new Indian Chief, and Indian enthusiasts will certainly not be disappointed. This new model is bristling with good points and is a very fine production. The new engine has the same dimensions as its predecessor—79×100 mm., 980 c.c. —but the design of the cylinders is similar to those of the engine with which the principal Indian records have been made during the present season. The radiating fins are more numerous and are considerably deeper, and have been brought down round the exhaust outlets. The large exhaust pipes are devoid of bends and lead straight into a generous exhaust pipe with a flattened end, and, notwithstanding this arrangement, the engine, we understand, is very quiet.

So far as the timing gear design is concerned, the Indian Chief engine has a separate cam wheel for each cylinder, which renders the timing more accurate.



The Princess sidecar of graceful design, designed to fit either the Chief or standard Indians.

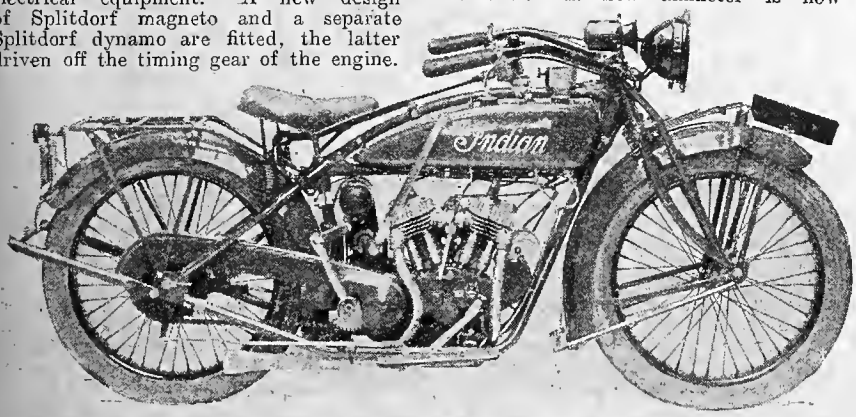
Steadying the Cylinders.

To hold the engine rigidly in the frame, forged steel anchor plates are used, while the cylinder heads are bolted to a stay secured to the secondary tube of the frame.

The engine has, moreover, been considerably strengthened, and the new crankshaft is 1in. in diameter instead of ⅞in. Heavier flywheels are fitted. A "Y" type of induction pipe is now a feature of this engine, and tends towards a more easy distribution of the mixture, while special unions serve to eliminate all air leaks.

We now turn to the Indian Chief's electrical equipment. A new design of Splitdorf magneto and a separate Splitdorf dynamo are fitted, the latter driven off the timing gear of the engine. Contrary to usual practice, there is no slip ring on the new magneto, but access to the distributer is obtained by removing a pin and swinging back a retaining bar. This exposes the distributer, the carbon brushes, and the segments, and the high-tension wires are merely connected by a pin passing through them and by pressure. The removal of the advance lever arm and of three nuts gives access to the interior of the magneto.

There are oil wells in both the magneto and magneto, the object of which is to prevent any oil which has leaked from the transmission reaching the instruments. A new ammeter is now fitted to the top tube which contains the lamp switch, giving three positions—full on, dim, and off.



An addition to the Indian range of machines—the Indian Chief—an enlarged edition of the 4 h.p. Scout. The engine is 79 x 100 mm. = 980 c.c.

The Transmission.

The transmission is similar to that employed in the Scout, being through spiral gears, but is, of course, of increased dimensions, and the clutch is considerably larger, having nearly 100% greater frictional surface.

Following standard American practice, the footboards are hinged, the rear portion of the clutch pedal on which the rider's heel rests being also hinged and kept in normal position by means of a spring. The kick-starter passes through a lug in the frame supporting a 5in. bearing. The Indian Chief has a rigid frame, but an excellent spring seat-pillar and a first-class saddle are provided. The front mudguard is in one piece with its valances, while the rear guard can have its lower portion hinged back so as to expose the tyre. This new model has the sidecar lugs forming part of the frame.

The Scout Model.

Little alteration has been made to the well-known Indian Scout, but in its design it follows many of the improvements made in its bigger brother. The new model has an improved spring for the front forks, the new type ammeter and switch, and a similar type of kick-starter. The other Indian model—N.E. —has the standard large valve type engine used last year, and the excellent Indian spring frame.

The A.J.S. Programme.

A New 2¾ h.p. Model. Detail Modifications to 7 h.p. Model.

AS regards the popular 7 h.p. A.J.S., only details have been altered. Of these, perhaps, the most important is the addition of a transmission shock absorber mounted on the engine-shaft, which sweetens the already smooth drive. Larger exhaust pipes are now fitted, and a new and improved front mudguard has been designed. Further modifications are only such as are deemed desirable refinements after careful tests. An entirely new 2¾ h.p. model is, however, to be listed. The engine is founded on the existing side-by-side valve model, but, apart from this, the machine has been redesigned and embodies several features of considerable interest. Full details of the innovations will be published in next week's issue of *The Motor Cycle*. In a "sports" form this new model is expected to be capable of well over 60 m.p.h.

1922 Matchless Models.

No Drastic Alterations. New Tandem-seated Sidecar.

LITTLE mechanical alteration is being made to the Matchless sidecar model, which has proved so satisfactory during the past season. In the suspension of the frame and of the sidecar, coil springs are exclusively used, except for the springing of the front of the body, where the springs are of the quarter-elliptical variety. There have, however, been one or two detail improvements in the sidecar. The spring bearers, instead of running clean through the body, now allow the seat to be lower, and the battery box to be below the level of the floorboard.

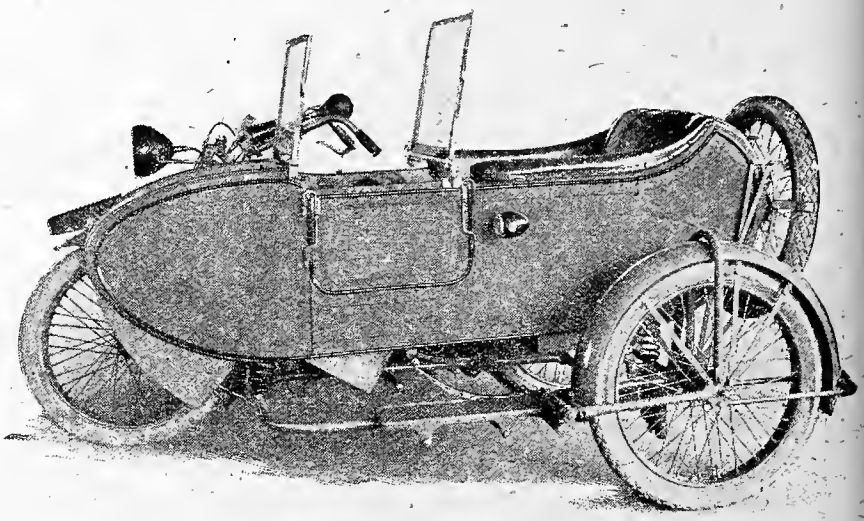
A Two-seated Sidecar.

An improvement in the appearance is effected by utilising plated brass beading round the edge of the body.

The principal innovation introduced for 1922 is the double-seated sidecar, in which the passengers are accommodated tandem fashion, and there is a separate screen for each passenger. The chief interest in this body lies in the ingenuity displayed in the design of the door, on either side of which is a combined hinge and fastener, so that either side may be opened, thus allowing a clear passage to either seat while using the same door. The sidecar is also provided with a collapsible footboard in front, so that the extra foot room can be dispensed with when the front of the body is not occupied by an extra passenger.

We have already referred to the model J sports machine with rigid frame, the engine of which is specially tuned and has aluminium pistons. It is an excellent double-purpose mount, and will be shown at Olympia fitted with a light but comfortable sidecar. Among its special features may be mentioned the clutch, controlled by either hand or foot, a kick-up stand clip and a sidecar wheel stand forming part of the frame holding the sidecar wheel.

There is also a model H sports model with light sidecar and spring frame, 28in. wheels, and a slightly higher saddle position. On this model the tools are carried in the sidecar seat, while in the model J the tool box is fastened to the top tube of the frame.



A feature of the Matchless double-seated sidecar is the door which is made to open either end. Observe the collapsible floorboard for the front seat.

Detail Improvements to Rudges.

No Serious Changes in Design. Three-speed and Multi-gear Models.

RUDGE motor cycles have for many years enjoyed an excellent reputation for power and speed without sacrificing the equally important qualities of comfort and sturdiness.

Although no entirely new models or big changes in design have been introduced for 1922, these familiar Coventry-built machines should more than retain their present position in popular esteem. Especially is this so of the three-speed chain-driven models, which have undergone considerable detail refinement since their introduction this time last year.

As an example of a British-built big twin, the 7-9 h.p. model makes a particularly attractive sidecar machine, possessing a wonderful reserve of power. Instead of the multi-type of plate clutch a neat Ferodo insert clutch of large diameter has been substituted. It is also carried on the engine-shaft, lying flush up with the crank case. An efficient shock absorber is incorporated, and on future models "keystone" shaped Ferodo inserts will be used instead of the circular pattern, thus giving an appreciably increased frictional area.

An aluminium chain case for the primary chain and guard for the rear chain are enamelled black, but the aluminium footboards are left in their natural finish. Front, rear, and sidecar wheels are quickly detachable and interchangeable, and both front and rear brake shoes are of the same pattern, being fully 9in. long.

Following usual Rudge practice, a separate oil tank is fitted behind the saddle tube, the pump being operated by a heel pedal. A Magdyno may be supplied with this model, the price of which without the lighting set is £120, or with sidecar and interchangeable wheels £151. Fitted with T.T. bars, it should make an excellent semi-sporting solo mount.

The $3\frac{1}{2}$ h.p. model differs mainly in tyre sizes (650×65 mm.) and the lighting equipment (a Maglita, again optional). A lighter sidecar is, of course, supplied, but both are very roomy and well finished.

Finally, one useful little improvement has been incorporated on all the 1922 machines. The spring-up stand, when in use, is now more nearly vertical, thus causing less strain, and enabling the machine to be lowered more easily.

It is also worthy of mention that the tool-kit includes a set of box spanners of only four sizes, which fit every important nut, and that a simple chain rivet extractor is supplied with the appropriate models.

A TWO-STROKE COULSON.

VERY little alteration has taken place in the latest Coulson models, which are now being produced in Birmingham by A. W. Wall, Ltd. A passenger model, engined with the new $4\frac{1}{4}$ h.p. Blackburne, will be shown, and also a similar machine with $2\frac{3}{4}$ h.p. Blackburne engine.

It is hoped, also, that a new sports model, with 350 c.c. overhead valve engine, will be ready in time for Olympia. This model will have a three-speed Burman gear box with clutch but no kick-starter; it will also have footrests and simple, light fittings.

Both the touring models will have three-speed Burman gears with clutch and kick-starter. The Coulson front and rear springing will be retained, and the saddle will still be carried on the top tube; adjustable handle-bars are also a feature of all models.

Detail modifications consist of internal expanding brakes on each side of the rear hub, wider guards, and a general cleaning up of fittings, while a new type of aluminium footboard slightly splayed in front will be used. A new engine for the Coulson frame will be a two-stroke $2\frac{1}{2}$ h.p. Liberty. This will be fitted with a two-speed Burman gear box with clutch and kick-starter, and final belt drive.

New F.N. Designs for 1922.

Overhead Inlet Valves on New 8 h.p Four-cylinder and 2¾ h.p. Shaft-driven Models.

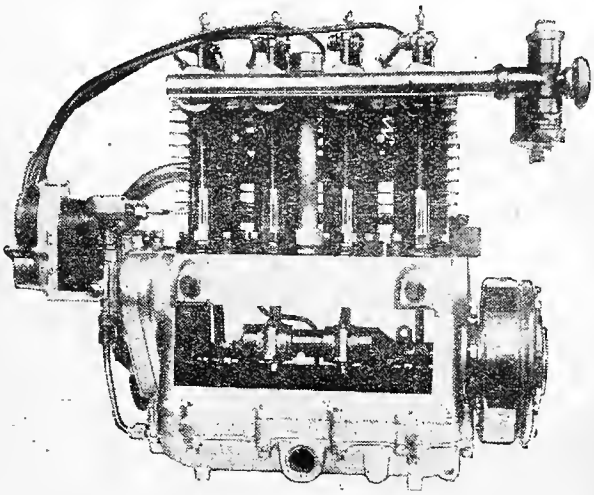
ONE more example of how features of T.T. models are eventually embodied in standard touring machines is the introduction of new models of the well-known F.N. motor cycle.

In the T.T. races of 1914 Belgium's representative was a four-cylinder F.N., with overhead inlet valves centrally disposed in the cylinders. A new and enlarged edition of this model of 8 h.p. will be exhibited at Olympia, together with a new 2¾ h.p. single-cylinder. Both will follow the general lines of the existing types, but close inspection will reveal several modifications, especially in the engine unit and in the gear box.

As will be seen from the illustration, the overhead inlet valves are operated by vertical push rods from the near side of the crank case. These rods can be removed in a few seconds by lifting them against the springs of the valves. Adjustment is provided for. The inlet valves are contained in cages.

The two-bearing crankshaft is supported by ball bearings, while both shafts of the gear box are also carried on ball bearings of generous dimensions.

In addition to this new 8 h.p. four-cylinder model and the o.h.i.v. single, which, of course, are shaft-driven, the existing models will also be marketed next year with detail improvements.

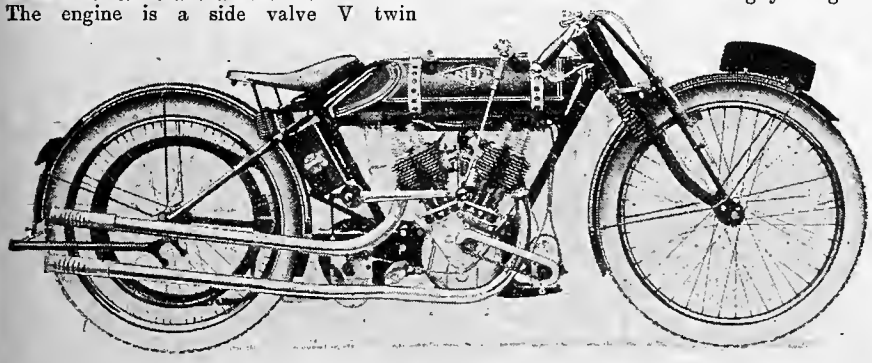


The new 8 h.p. F.N. engine with overhead inlet valves.

A New Sports N.U.T.

All-chain Drive as an Alternative to Chain and Belt Offered for Next Year.

THREE main models will form the N.U.T. range for 1922, all of which are V twins, two of them being of 3½ h.p. and the other of 5 h.p. Beginning with the lowest-priced machine this is offered with chain-cum-belt transmission for £110 and all-chain drive £120. The engine is a side valve V twin 64.5×76 mm. (496 c.c.), which has a ball bearing on the driving side of the main shaft. Druid forks, three-speed Sturmey-Archer gear, Brooks B170 saddle, and 26×2½in. tyres form the main items of its equipment. This machine is also offered fitted with Lucas Magdyno lighting set and electric horn for £135 chain-cum-belt, and £145 all-chain drive.



A speedy looking mount, the T.T. model 3½ h.p. N.U.T.

A new sports model has been introduced, which embodies a specially-designed side valve V twin of the same dimensions as the touring model, but having aluminium pistons, roller bearing connecting rods, and large interchangeable valves.

A T.T. three-speed Sturmey gear with gear ratios of 4.5, 5.8, and 7.3 to 1, and T.T. regulation mudguards are included in the specification, but no carrier is fitted, and as is now usual on sports models, a kick-starter is dispensed with. The price is £120 chain-cum-belt, and £130 chain drive, and the weight 250 lb.

The 5 h.p. model is an enlarged "3½," the engine being 70×88 mm. bore and stroke (678 c.c.). Alternative gear ratios are offered, one 4.5, 7.3, and 12 to 1, and the other 5.1, 8.3, and 13.6 to 1. As on the other models, Druid forks and 26×2½in. tyres are fitted, and again the option is given of chain-cum-belt or all-chain transmission, the respective prices being £110 and £120.

West Midland Open Trial Awards.

THE results of the Midland Centre Open Trial—practically the last open trial of the year—which was held last Saturday week, and reported in our issue of the 10th inst., show that about 75% of the starters qualified for an award of some kind, 25% gaining golds.

Sixteen teams of three were entered for *The Motor Cycle* prize; but, taking all facts into consideration, no outstanding team could be decided upon, the Ariel (Rollason, Woodcock, and Newey) being deemed equal with the Sun-Vitesse team (Bishop, Johnson, and F. C. Parkes). The private owner's prize, presented by Messrs. Norton Motors, Ltd., was gained by L. Crisp (4½ Humber). The other awards are as follows:

GOLD MEDALS.—L. Crisp (4½ Humber), R. W. Duke (4 Triumph), C. Greenwood (3½ Sunbeam), A. Rollason (3½ Ariel), W. Woodcock (3½ Ariel), S. H. Rhodes (3½ Wolf-Blackburne), A. W. Thrush (3½ Sunbeam), A. A. Symes (3¾ Martinsyde), L. A. Bees (3½ Beardmore), J. H. Simpson (2¾ A.J.S.), H. F. Harris (2¾ A.J.S.), J. N. Roberts (2¾ New Imperial), G. F. Mason (2½ Connaught), W. R. Bown (2½ Bown-Villiers), M. Bishop (2½ Sun-Vitesse), B. Kershaw (2¼ New Imperial), F. J. Johnson (2½ Sun-Vitesse), F. C. Parkes (2½ Sun-Vitesse), J. M. Philpott (2½ Velocette), J. H. Walker (6-7 B.S.A.), L. Newey (6-7 Ariel sc.), and A. Watson (3½ Sunbeam sc.).

SILVER MEDALS.—R. B. Clark (8 Matchless), E. Poppe (4 Triumph), H. J. Stretton Ward (4 Triumph), A. C. Cope (3½ Douglas), F. S. Barnes (3½ Sunbeam), A. R. Evans (3½ Sunbeam), G. Butcher (3½ Sunbeam), J. G. Nickson (3½ Douglas), G. Strange (3½ James), H. R. Milling (3½ Scott), A. Smith (3 Calthorpe), L. H. Horton (2¾ New Imperial), D. G. Prentice (2¼ New Imperial), G. F. Povey (2¼ Velocette), A. K. Smith (2¼ Morris), G. S. Smith (2¼ Morris), A. R. Edwards (2¼ Levis), V. Davis (2¼ James), L. Judge (2¼ Velocette), F. W. Giles (7 A.J.S. sc.), T. F. Blumfield (6-7 Ariel sc.), W. H. Bashall (6 Martinsyde sc.), T. C. de la Hay (3½ Sunbeam sc.), E. Wheeler (3½ Sunbeam sc.), N. Hall (2½ O.K. sc.), N. Norris (10 Morgan), W. A. Carr (6 Morgan), F. Whitworth, jun. (3 Ivy), and F. T. Sibley (7-9 Rudge sc.).

BRONZE MEDALS.—W. Hope (3½ Norton), L. Cox (2½ Sun-Vitesse), F. J. Adams (3½ Norton), H. W. Parkes (2¼ Sun-Vitesse), J. E. J. Whitaker (8 Matchless sc.), G. Packman (8 Matchless sc.), W. H. Nicholson (6 Martinsyde sc.), G. Dooley (2¼ Velocette sc.), J. L. Cave (8.7 G.N.), and H. G. Uzzel (8 New Imperial sc.).

NO AWARD.—W. E. Jackson (2¾ Bown-B.), A. Milner (2½ O.K.), J. Lidstone (7 James sc.), H. Greaves (4¼ Beardmore sc.), F. Vallings (4½ Dunelt sc.), and S. Goodwin (10 Castle Three).

RETIRED.—J. Wainwright (3 A.B.C.), W. L. Handley (2½ O.K.), L. Nicholson (2¾ Omega), G. Hill (2½ Diamond), W. L. Dauskin (7-9 Rudge sc.), S. R. Philpott (6 Martinsyde sc.), T. F. Watson (4 Norton sc.), T. Peck (4¼ Ariel sc.), R. Brown (3½ Sunbeam sc.), A. J. Carter (10 Castle Three), and H. Greatwich (8 Rover).

The Rendezvous of the T.T. Races.

Present Opinions as held in London and the Isle of Man.

THE silence of the Auto Cycle Union concerning next year's T.T. races would lead the motor cycle public to imagine that the making of arrangements are proceeding satisfactorily, but many on the outer circle of the A.C.U. organisation have confessed to us uneasiness at the delay in finally fixing arrangements.

With a view to throwing some light upon the present position, we have investigated the matter from both sides. A member of *The Motor Cycle* staff has visited the Auto-Cycle Union, and we give below a review of the position as seen in London.

At the same time we commissioned our regular Isle of Man correspondent to furnish us with the Manx view. This also is given here, and from which it will be seen that the Manx authorities have been moving in the matter.

The London View.

There is still some doubt as to whether the T.T. races will be held in the Isle of Man. So far, the guarantees promised by the I.O.M. representatives who attended the last A.C.U. General Committee meeting at Leicester have not been made in concrete form. The A.C.U. is naturally getting impatient, with the result that the Competitions Committee of the Auto Cycle Union have told the I.O.M. authorities that they must have a definite statement as to what the Island is prepared to do with regard to steamship facilities, the unloading of machines at Douglas, and suchlike details which have been so unsatisfactory in the past, by November 30th. This date is mentioned so that the matter may be reported to the General Committee at the meeting which will be held on December 10th at the Grand Hotel, Bournemouth.

One step, however, towards the running of the races in the Isle of Man has been made, and that is the decision of the Tynwald Court to continue the Act legalising the holding of the races. The old Act recently expired.

From our I.O.M. Correspondent.

Readers of *The Motor Cycle* will be aware of the decision taken by the General Committee of the A.C.U. to hold next year's T.T. races in the Isle of Man as heretofore, provided satisfactory guarantees were received on certain specified matters. Members of the deputation, which met the A.C.U. at Leicester, on their return to the Island immediately took steps to comply with this resolution.

It seems that the Act which enables the Manx roads to be closed for racing expired in July last, and a new Act is necessary. His Excellency the Lieut. Governor has instructed the Attorney General to prepare an Act, and this will come before both branches of the Legislature, the House of Keys and the Council, at an early date. In the meantime, to bind both branches of the Legislature to the principle of motor racing, His Excellency the Lieut. Governor had inserted in the agenda of the past Tynwald Court, which was held on November 2nd, a declaratory resolution in favour of motor racing, and this resolution was practically unanimously carried by the Court. The effect of this resolution is that His Excellency has now been able to intimate to the A.C.U. that the necessary permission for the holding of the races in the Island next year will, in due course, be granted.

The next difficulty was with regard to the dates. The Management Committee of the A.C.U. and the Competitions Committee intimated to the Highway Board their previous decision to go to Belgium, and consequently there was no application before the Highway Board for dates. The Leicester deputation had several interviews with the Highway Board on this point, but, up to the time of writing, no application has been received by the Highway Board, which is the proper authority, asking for dates, and consequently the matter has not been settled, but the A.C.U. did write to His Excellency and suggested two dates, May 27th and 29th, a Saturday and Monday.

As a matter of fact the Governor has nothing to do with settling the dates, and an intimation to this effect was conveyed to the A.C.U. But the dates suggested are quite impossible. Saturday is the busiest day for the arrival of visitors, and it would be quite impossible to close the main roads in the Island on that day. Monday is the market day for agriculturists in the north of the Island. Therefore Monday would be equally impossible. The people in the Island cannot understand why the A.C.U. has asked for these dates. The A.C.U. can have the following Tuesday and Thursday with pleasure, even if, by granting these dates, it necessitates the R.A.C. postponing the proposed car races a week.

Sad Sunday to Go=

The next difficulty was with regard to restrictions on pillion seat riding, and on "Sad Sunday." The Leicester deputation interviewed the Highway Board and the Local Government Board, the responsible authorities. The Highway Board refused to give any decision, but the Local Government Board were in favour of repealing them.

Eventually, the Deputy Chairman of the Local Government Board moved a series of resolutions at the Tynwald Court, held on Tuesday, November 8th, the effect of which is that all previous regulations are withdrawn, but new regulations have been imposed forbidding the use of racing machines on any road on a Sunday, and all racing machines immediately on their arrival on the Island must have their racing numbers securely affixed to them.

In other words, these two new resolutions only carry out the rules imposed on racing machines by the A.C.U. themselves, and will therefore impose no hardship.

With the object of allowing those people along the course, who are awakened every morning by the early practices, an extra sleep on the Sunday, no motoring is to be allowed on the Sunday previous or the Sunday after a race *before nine o'clock* in the morning, with certain exceptions, such as motors conveying food, doctors, etc., and those motorists arriving by the early morning steamers, who will be permitted to drive to their hotels.

It is thought that these reasonable compromises will not inconvenience anybody in the slightest, as nobody surely will want to be on the road before that hour. These new proposals were submitted to the A.C.U., but, up to the time of writing, no word has been received from that body.

The A.C.U. officials have expressed themselves perfectly satisfied with the proposed arrangements to be made by the Isle of Man Steam Packet Co. During the whole of the practices there will be at least two boats a day between Liverpool and Douglas, and they will be first-class steamers, sailing from Liverpool at 10.30 a.m. and 3 p.m., and returning from Douglas at 9 a.m. and 4 p.m.

The A.C.U. has also received satisfactory assurances from the Douglas Corporation.

Landing Facilities.

With a view to facilitating the discharge of motor cycles at Douglas, the Tynwald Court of November 8th also passed a vote of £5,000 for the erection of an electric crane on the Victoria Pier, which crane will be completed before Easter. Satisfactory arrangements are also to be made in Liverpool by wider gangways, etc.

The only outstanding demand of the A.C.U. is that of the proposed grant or subsidy towards the A.C.U. expenses. The impression left on the minds of the Leicester deputation was that this was to be a guarantee against loss amounting to, say, £500. The A.C.U. has asked for a subsidy, which is quite a different matter. Up to the time of writing it is not known whether this subsidy will be forthcoming. The opinion in the Island is that they have gone a very long way to meet the reasonable requirements of the A.C.U. and the competitors. They think it would be degrading to the A.C.U. if they went round, cap in hand, asking people to subscribe. A guarantee against loss is quite a different matter. The Isle of Man people have still to be convinced that there *was* a loss on last year's T.T. races.

Current Chat

Times to Light Lamps.

Nov. 17th	...	...	5.6 p.m.
,, 19th	...	...	5.4 ,,
,, 21st	...	...	5.3 ,,
,, 23rd	...	...	5.0 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Next Thursday.

The Motor Cycle second special Show Number—Forecast and Guide to the exhibits will be on sale on Thursday next.

Over £3,000,000 Surplus.

The amount of revenue from motor taxation to the end of October exceeds £10,400,000—over £3,400,000 in excess of the amount upon which the present scheme of taxation was based.

Sunday Competitions.

A Laycock correspondent to the *Keighley News* writes to that paper protesting against Sunday competitions. Fortunately, the majority of clubs agree with *The Motor Cycle* campaign against trials and speed trials held on the Sabbath, and complaints from other districts are exceedingly rare.

Imports and Exports.

The importation of motor cycles for October showed a marked decline compared with previous months, the value being down to £5,597. Export figures, however, show a slight increase against last month, but, compared with the corresponding month of last year, they are despondent reading. In October, 1920, we exported £259,810 worth of motor cycles and parts, but last month the total was only £61,654. Under the circumstances, which, as everyone knows, are as bad as they can be for export trade, even the slight increase on last month is welcome.

IMPORTS.

	Sept., 1921.	Oct., 1921.
Number of motor cycles ..	1,557 ..	39
Value of machines and parts	£36,491 ..	£5,597

EXPORTS.

	Sept., 1921.	Oct., 1921.
Number of motor cycles ..	425 ..	430
Value of motor cycles only	£34,745 ..	£35,034
Value of parts	18,841 ..	26,620
Total	£53,586 ..	£61,654

B.M.C.R.C. Annual Dinner.

One of the chief functions of Show week will be the annual dinner of the British Motor Cycle Racing Club, which is to be held at the Holborn Restaurant on Monday, the 28th inst. A very large number of club prizes won during the past season will be presented to members at this function, totalling in value over £300. In addition to these, the presentation will be made of the 200 guinea Miller Gold Cup for the 500 Mile Race. Tickets for the dinner, price 15s., are now ready, and early application should be made for them to Mr. T. W. Loughborough, B.M.C.R.C., Mill House, Warlingham, Surrey.

THE MOTOR CYCLE

GUIDE to OLYMPIA.

Intending visitors to the Motor Cycle Show at Olympia (Nov. 28th—Dec. 3rd) will appreciate the special contents of next Thursday's issue. It will form a convenient Guide to the Exhibits. Illustrations will be a feature.

ON SALE THURSDAY, Nov. 24th
—— 4d.——

Special Features.

ECONOMICAL MOTORING FOR TWO.

MODERN THREE WHEELERS.

PASSENGER MOTOR CYCLES FOR 1922.

I.A.E. in the North of England.

The North of England Centre of the Institution of Automobile Engineers will hold the first meeting for many years on Wednesday next, at the Assembly Room, Education Offices, Chapel Street, Salford, Manchester, when Dr. L. Aitchison will read a paper on "Structural Chromium Steels." Invitation cards may be obtained from Mr. H. Alban Brayshaw, 5, College Lane, Paradise Street, Liverpool.

A Scottish Reunion.

The Scottish Ex-Signal Service Despatch Riders hold their second annual reunion on February 3rd, 1922, during the Scottish Show week. On this occasion the reunion will take the form of a dinner. All ex-Signal-Service despatch riders are invited to attend, and make the event a successful one. Mr. R. Watson, jun., 6, Cecil Place, Ibrox, Glasgow, is the organiser, to whom all communications should be sent.

Mr. J. L. Norton snapped outside the Town Hall, Durban, S.A. He is mounted on an ordinary "Big Four" Norton, and accompanied by his sister-in-law. Mr. Norton is on a tour round the world with the object of studying first hand overseas conditions.

The T.T. Races.

On page 624 the position regarding the T.T. races is discussed from the points of view of London and the Isle of Man.

Production Engineers.

A general meeting of the Institution of Production Engineers will be held on Friday, the 25th inst., at the Institution of Mechanical Engineers, Storey's Gate, London, S.W., at 7.30 p.m., when several interesting papers will be read.

M.M.G. Reunion.

A reunion is being arranged on December 3rd for those who served with the "H" Corps Signals as D.R.'s and those who served with the 3rd Motor Machine Gun Battery. It is hoped that a meeting at Olympia will be followed by a dinner. Will those who are interested write for details to Mr. P. L. Cearns, 8, Plaistow Park Road, Plaistow, London, E.13?

Minimum Weights.

We hear that the maker of a genuine lightweight motor cycle was refused the facilities of the A.C.U. Six Days Trials wherein to prove his production, because it did not weigh 132 lb. or more. It would seem that, while the present F.I.C.M. regulations are in force concerning minimum weights, the development of the genuine lightweight in the neighbourhood of 100 lb. is being throttled.

Class C Hour Record Beaten.

On Friday, the 11th inst., J. L. Emerson, riding a 3½ h.p. Douglas (68×68=499 c.c.), beat the 50 and 100 miles, one and two hours records in Class C. The distances and times were as follows:

	h. m. s.	m.p.h.	k.p.h.
50 miles ..	0 39 51⅘ =	75.26 ..	121.11
100 miles ..	1 21 49⅘ =	73.32 ..	117.99
	mls. yds.		
1 hour ..	74 471 =	74.26 ..	119.52
2 hours ..	144 1,099 =	72.31 ..	116.37

The B.C. and M.C.M.U. Banquet.

With reference to the banquet of the British Cycle and Motor Cycle Manufacturers Union on the 25th inst., we understand that the Gallery of the Grand Hall, Hotel Cecil, will be available for ladies and friends of the guests and members to listen to the speeches, which will commence about 8.15 p.m.

A musical entertainment is also provided. Admission passes to the Gallery can be obtained on application to the Union's offices, "The Towers," Warwick Road, Coventry, stating names for whom required.

Accommodation for A.C.U. Members.

Any A.C.U. provincial members who will be in London for the Olympia Show requiring assistance in securing suitable accommodation should notify their requirements at an early date to the secretary.

Proposed 200 Miles Sidecar Race.

In addition to organising the London-Holyhead trial during 1922, the Ealing and District M.C.C. is booking Brooklands Track for a 200 Miles Sidecar Race. So far, no one has attempted to run a long distance sidecar race, and this event should be both interesting and instructive. Valuable prizes will be offered, and the question of including a 1,100 c.c. class is being considered.

Credit where it is due.

From the letter published on this page, it will be seen that the Motor Legislation Committee claims the credit for the Ministry of Transport's decision to issue quarterly licences. We congratulate the Committee, but, as a rejoinder to Mr. Loughborough's letter, would add that the phrase, "as a result of continued agitation," was designed to embrace *The Motor Cycle* as well as the A.C.U. and A.A., since this journal has on many occasions urged the authorities to grant quarterly licences for motor cycles.

Severe Short Distance Trial.

The last event in the South Birmingham Club's programme for 1921 was run off on Saturday last, Bert Kershaw being responsible for the captain's trial over a really wicked course of ten miles of clay, ruts, and ice-bound roads. There were no main roads in the route. Swan Hill and Gravel Pit Hill, and the Gaby Glide were some of the tit-bits, but more difficulty was experienced in negotiating some less well-known parts of the course in view of the fact that the whole run was non-stop, and had to be traversed three times. When riders like G. Denley (Velocette) and Neville Hall O.K. Junior) only qualify for bronze medals it speaks volumes for the course. The results were:

CAPTAIN'S PRIZE (for best performance, any machine).—W. L. Handley (2¾ O.K. Junior).

NEXT BEST PERFORMANCE.—Solo, R. Cooper (2¾ Allon); sidecar, H. Uzzell (8 New Imperial sc.).

BRONZE MEDALS.—G. Denley (2¼ Velocette), L. Cox (2½ Sun-Vitesse), B. Holt (2½ Murphy), H. W. Parkes (2½ Sun-Vitesse), L. E. Clulee (2¾ Allon), Neville Hall (2¾ O.K. Junior sc.), S. Bolderstone (7 A.J.S. sc.), and J. H. V. Wood (2½ Connaught).

Taxation in 1922.

In view of the fact that taxation revenue in the first ten months of 1921 is 50% more than the estimated yield, it is natural that motor cyclists and car owners are asking whether taxation in 1922 will be reduced.

Release of "The Motor Cycle" Film.

During the week of the Motor Cycle Show at Olympia (November 28th-December 3rd), *The Motor Cycle* film will be included in the programme of the Polytechnic Cinema, Regent Street, London, W.

Noise Prosecution Dismissed.

Over the appropriate *nom de plume* of "Victorious," a Birmingham correspondent acquaints us that he was recently summoned for riding a standard 16H Norton fitted with the makers' usual straight through exhaust pipe and muffler end. The magistrates decided to hear the actual machine running, and, having done so, dismissed the case.

The History of Four-wheel Brakes.

One of the modern tendencies in automobile design is the adoption of four-wheel braking systems, the practice even extending to small cars. It is not generally known that this was a British invention. An informative article tracing the history of four-wheel braking systems appears in to-morrow's issue of *The Autocar*, illustrated with diagrams and photographs.

For A.C.U. Members Visiting Olympia.

As in former years, the A.C.U. has made very complete arrangements for the convenience of its members attending the Motor Cycle Exhibition. The Princes Rooms will again be reserved for the exclusive use of members. All A.C.U. members attending the Show should remember to take their membership cards, as these will be the means of admission to the Princes Rooms. The A.C.U. official stand in the Exhibition will be situated on the right-hand side of the hall from the Addison Road entrance. On the stand members of the headquarters staff of the Union will be in attendance, and full information and new literature respecting A.C.U. benefits can be obtained.

American Side Bodies.

For the first time American-built side bodies are to be imported with Indian motor cycles. British-built chassis will be used.

MOTOR CYCLE TAXATION.

A Letter from the A.C.U. Secretary regarding Quarterly Licences and Suggested Reforms for 1923.

SIR,—Your leading article on the 3rd inst. commences by stating that the Ministry of Transport, "as a result of continued agitation," has agreed to issue quarterly licences to motor cyclists next year. But you do not state to whom credit for this development is due.

I suggest that it cannot be too widely known amongst motor cyclists that this advance is another example of the good work done by the Motor Legislation Committee. The three organisations on this Committee which have been particularly concerned in securing the issue of quarterly licences are the A.A. and the A.C.U., representing the users of motor cycles, and the B.C. and M.C.M. and T.U., representing the motor cycle trade. It is due to these three bodies pulling together and not being at cross purposes—as were other organisations when the fight to retain the petrol tax was lost—that the Ministry of Transport has given way.

There is no hope of getting the present system of taxation changed in favour of a petrol tax during 1922, but it is not too early to agitate for this reform in 1923. Every motor cyclist can help the Auto Cycle Union in its efforts to secure this and other reforms by letting his friends know that, quite apart from the personal benefits membership of such organisations as the A.A. and the A.C.U. confers, membership of one or both of these bodies is the only way by which the motor cyclist can bring influence to bear on the Government.

T. W. LOUGHBOROUGH, Secretary Auto Cycle Union.

TAN SAD

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THE MOTOR CYCLE

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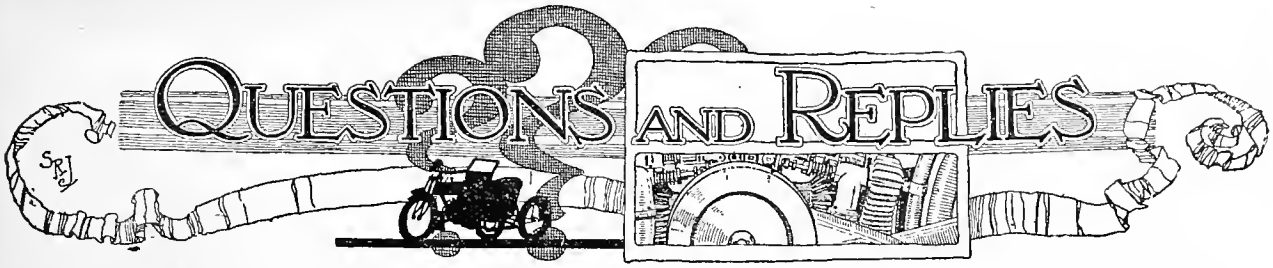


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

GARAGE RESPONSIBILITIES FOR PERSONAL EFFECTS.

What is the legal view of the following loss of a coat? I put my motor cycle in a public garage and put the coat in the sidecar. When I came for the motor cycle the coat and gloves which were in the pocket were missing. The garage people say they are not responsible, but as I wore the coat into the garage, and it not being there when I wanted it, I think they should be made responsible, but before pressing the matter I should like your advice. The garage people gave me a ticket for the machine, which, of course, I had to give up on taking it away.—A.R.H.

It is very doubtful if you could prove liability on the part of the garage proprietors for the safety of your coat, unless it was specifically handed to some responsible authority and a receipt obtained. You would no doubt be able to base a successful claim upon such a loss if it was due to negligence or lack of reasonable precautions, but even so, it might be urged that there was contributory carelessness on your own part.

FROM HAND PUMP TO DRIP.

I am running a 1916 4 h.p. countershaft Triumph, and do 100 m.p.g. (tested) regularly on a 5 to 1 top gear. I propose raising this to $4\frac{1}{2}$ to 1. How will this affect consumption and speed? I have been used to a Best and Lloyd drip feed, and cannot get on with the Triumph pump. I therefore propose to fit a similar feed. Which is the best way to set about this? Can it be done without cutting up the tank? How many drops a minute should I set it to for ordinary running?—J.C.B.

It is not advisable to raise the top gear of a 4 h.p. Triumph unduly; it should not be higher than $4\frac{3}{4}$ to 1, or you will probably lose both in speed and consumption. If you desire to fit a Best and Lloyd sight feed drip, you will have to cut the tank, and unless you are absolutely set on doing this, it would be advisable to retain the present system. With regard to the number of drops of oil, it is impossible to give a figure, since it depends on the condition of the engine and the type of oil used, but about thirty drops per minute might be tried. You will best discover this by experience, but you should take care to over-lubricate, and gradually cut down the supply rather than the other way round.

BELT BREAKAGES.

On my single-speed Diamond-Villiers I have considerable trouble with the belt splitting at the side of the fasteners. The belt is a $\frac{3}{8}$in. Dunlop. I always punch it with a proper punch through the second serration on the underside from the end. (1.) Do you consider the fault is mine through putting the fastener on wrongly? (2.) Would a $\frac{7}{8}$in. or 1in. belt be any better? (3.) If so, is there any objection to using a larger belt? (4.) Does it appreciably alter the gear ratio?—E.H.P.

(1.) The trouble you are experiencing is rather unusual if the belt is a new one. It is possible that the belt pulleys are not in correct alignment; also, the belt drill may make too large a hole, and so damage the canvas core of the belt. (2 and 3.) A $\frac{7}{8}$in. belt would probably be satisfactory; but it is impossible to answer this definitely without inspecting the pulleys, as they may not be wide enough for a belt of greater section than that fitted as standard. (4.) The gear ratio would be very slightly raised.

MISFIRING ON FRONT CYLINDER.

Only a very weak spark appears on the front cylinder of my 1920 8 h.p. Enfield-Jap, fitted with Lucas Magdyno, with the result that it will only fire at high speeds and when hot. I have cleaned the carbon brush and slip ring, and there is no shorting from the high-tension terminal to the plug. Apart from the size of the spark, the current is noticeably weak compared with the back cylinder when the terminal is held in the fingers. The contact breaker appears to be in good order.—K.B.

You can scarcely form an opinion as to the relative intensity of the currents at each high-tension terminal unless you have a more exact testing arrangement. We should imagine that, in all probability, the irregular firing is due to an air leak at the front cylinder. Make quite sure that all connections in the induction system are perfectly air-tight. Also tighten up the valve caps, sparking plugs, and compression tap of the offending cylinder, and make quite sure that the inlet valve is not worn in its guide.

A NEW TRIALS OBSTACLE. High Oak Hill, near Bewdley, which is approached from a small watersplash. It was included in the recent West Midland Trial.

ACCUMULATORS SPILLING ACID.

I should be glad if you would give me any information respecting the following: (1.) I have a lot of trouble to keep the acid in the accumulator of my lighting set (dynamo) on my motor cycle. Is there any paste or the like that can be used in place of acid with equal effects? (2.) If so, what is it?—G.L.G.

(1.) You do not say from what cause the acid comes out of the accumulator. If it is due to vibration, possibly an improved type of vent plug would improve matters. If the trouble, however, is due to overcharging or charging at an excessive rate, this is a matter for modification of the dynamo, either by driving at a less speed or by using a resistance in the charging circuit. (2.) Paste electrolytes have been manufactured, but their use is not common, and the majority of accumulator makers do not recommend them. The study of a book on electrical lighting apparatus, such as "Electricity and the Motor Car," would assist you in your difficulty.

ABNORMAL BEARING WEAR.

I have a 2½ h.p. machine, which is lubricated by semi-automatic drip feed; and, although only purchased new three months ago, in this short time I have had to return it to the makers to have the big end bearing rebushed, and now, after less than one hundred miles, and in spite of lubrication, there are signs of big end bearing play again. The engine has nearly ⅛in. side play. Do you think this is anything to do with it? I may say that thirty drops of oil per minute is the correct feed, but I have been giving it about forty per minute without any signs of over-lubrication, and have not opened the throttle more than half-way.—D.D.

There is absolutely no reason why the big end bearing, if reasonably well designed, should not give from 7,000 to 10,000 miles service. Of course, a new machine, especially one with plain bearings, requires a comparatively large amount of oil until the engine is run in; but it should not be necessary to allow more than forty drops per minute through the drip-feed lubricator. You do not give us very much information, nor do you mention the make of the engine; and, therefore, we are unable to advise you as to what you should do under the particular circumstances. The excessive end play will not cause serious harm, but it will probably result in noisy running.

READER'S REPLY.

NO POWER.

Your correspondent "T.L." complains in the issue of November 3rd of his Levis engine tiring and stopping every few miles. I had the same trouble with a brand new two-stroke machine which fizzled out on its first journey; it would start again immediately, go on nicely for a few miles, and then repeat the performance *ad lib.* All the makers could advise was to try a different plug. I tried plug after plug, but they made no difference. After putting up with the inconvenience for nearly six months I wrote to the makers of the magneto. They replied that from my description it appeared as though the condenser of the magneto was at fault, and asked me to take the machine to them and they would put it right. I made all arrangements to do this, and the day prior to my making the journey a fellow motorist advised me to have a new high-tension cable fitted; I did so, and had no further trouble. The next day, instead of going to the magneto works, I did sixty miles non-stop at a better speed than ever I got before, and since then I have done non-stop journeys of eighty to ninety miles. What I cannot understand is why the makers of the machine, engine, or magneto, to say nothing of numerous motor mechanics, could not have made such a simple suggestion.—A.A.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"A.C.H." (Forres).—1919-1920 o.h.v. Henderson: speed, reliability, valve adjustments, consumption, any other information.

"C.B." (Wrexham).—Sports Sunbeam: Durability, reliability, and maximum speed.

"D.L.P." (London, N.W.1.).—3½ h.p. Norton: Belt drive (Model 9), speed, climbing, reliability, and life of belt; ease of control in traffic with or without Philipson pulley.

"A.O.R." (Warrington).—1922 G.N., with sunk dickey: Noise and comfort.

"G.C.H." (Cardiff).—2¾ h.p. Douglas two-speed for light sidecar work: Advisability of reboring worn cylinders and fitting oversize pistons instead of replacing new standard ones.

"J.L.F." (Bristol).—Dunelt, with sidecar: Reliability on tour, hill-climbing, durability, fork springing, and general experiences.

"A.F.B. (Winkelholme).—Any kind of mechanical oil pump fitted to a 4 h.p. Triumph or similar machine.

"L.W.A.L." (Haileybury). — 4 h.p. Indian and Scott-Squirrel for sports solo use: Speed, acceleration, reliability, finish, and consumption.

"A.T.B." (Hastings).—8 h.p. Royal Ruby, 1921 spring frame.

"F.H.L." (Amsterdam).—3½ h.p. o.h.v. Douglas: Reliability, slow running on top, comfort, steering (especially on bumpy roads), noise of valves, transmission, and exhaust.

Important Dates.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd, to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

Sun., Mar. 5th, 1922—Argenteuil Hill-climb (France)

Mon., Mar 6th, 1922—La Turbie Hill-climb (Nice).

SPARKLETS

In Sweden.

A 4 h.p. Wolf-Blackburne, ridden by N. Ohlsson, recently gained an award in a petrol consumption test at Stockholm, covering 44½ km. on one litre of petrol (approximately 130 m.p.g.).

Winter Overhauling.

As an inducement for Triumph riders to have their machines overhauled at the works during the winter months instead of in the spring rush period, the Triumph Co. offer a special discount of 10% off all overhauls which exceed £5. This applies to November and December only.

Tyre Valve Fittings.

A general price reduction of Schrader tyre valves, pressure gauges, and other tyre accessories is announced. The makers, A. Schrader and Son, Inc., now have British works in full working order at Victoria Road, Willesden Junction, N.W.10.

Prop Stands.

"Ixion," in his article on "Prop Stands" (*The Motor Cycle*, November 3rd, page 553), dealt with a special and now obsolete edition of the Bowland stand, which is now made in three different patterns to suit various types of motor cycle.

Two-stroke Gaskets.

A particular grade of leather which is claimed to be specially suitable for the joint between cylinders and crank cases is being offered for sale by A. Mason, 60, Hill Top Mount, Harehills, Leeds. On two-stroke engines it is anticipated that the Zephyr leather washers will eliminate all compression losses at the most vulnerable point, and although we have not yet tested it a sample washer submitted appears to be an excellent thing for the job.

A Matter of Usage.

In our issue of November 3rd a querist mentioned that his rear brake was steel-lined, "unlike the A.J.S. which is Ferodo-lined." No doubt the phrase was used in a general sense, as it is often applied to friction linings, just as the patented name "petrol" is applied to all motor spirits. In justice to Cresswells, Ltd., of 44 and 45, Exchange Buildings, New Street, Birmingham, however, it should be mentioned that the A.J.S. machines have brake linings of their speciality "Chekko."

For Jointing Purposes.

Metalastene is the name of a sort of aluminium paintlike preparation packed in tubes by the Metalastene Co., of Poulton-le-Fylde, Lancs. Its purpose is cylinder and pipe jointing, and it appears to be a good line for its particular purpose. We have jointed an inlet dome and induction pipe with it, and a previous "blow" is now non-existent.

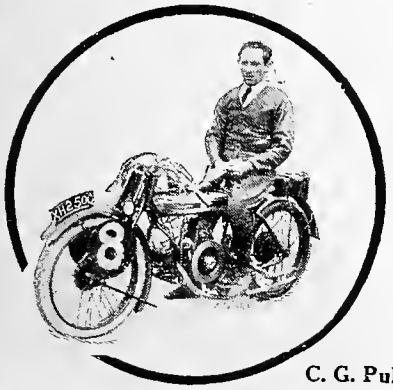
Motor Cycle Manufacturers

By Appointment to H.M. The King.

WORLD-WIDE VICTORIES.

Douglas

WINS ANOTHER CHAMPIONSHIP.



C. G. Pullin

At the last B.M.C.R.C. Meeting of the season, held at Brooklands, on Saturday, November 5th, the event of the day — 750 c.c. Championship Race — was won by Mr. C. G. PULLIN, riding a standard DOUGLAS

AT 76·49 M.P.H.

J. L. Emerson

In both Brooklands solo Championship Meetings this season, in which DOUGLAS machines were entered, they proved themselves undoubtedly the victors of each of these solo class races, the former being won in October by Mr. J. L. EMERSON

AT 79·9 M.P.H.

with Mr. C. G. PULLIN running second on another DOUGLAS, covering a lap

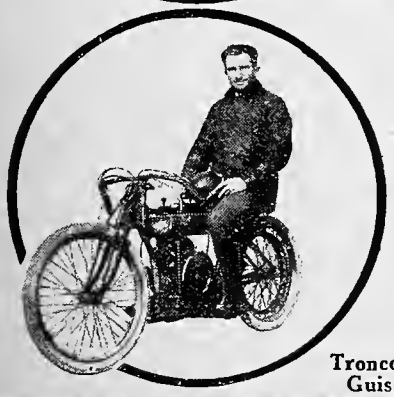
AT 82 M.P.H.

P. Flook

SOUTH AFRICA. The Rand Motor Cycling Club, of South Africa, held a keenly contested Hill Climb, which was handicapped according to c.c., and run off in heats by the very large number of entrants. It resulted in

P. FLOOK, 3½ h.p. Standard Sports Model, being **FIRST**, beating all types and powers of machines.

"The Star," Johannesburg, says: "Riding superbly, Flook literally leapt the last corner and roared over the line at a speed I have never seen equalled on the top of that hill. The 3½ h.p. Douglas he rode is a Sports model, and the hottest of hot stuff."



Troncon Guiseppe

ITALIAN RECORD. We have received information that Troncon Guiseppe, riding a Douglas in the 350 c.c. class at TREVISO, established new time for the kilometre record.

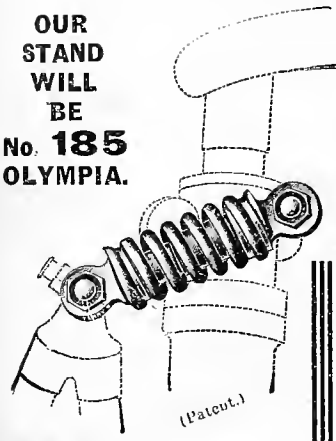
Evidence is reaching us from all quarters of the world that the Douglas machines are still maintaining their high position in the competition sphere.

SEE THE NEW 1922 MODELS, RANGING FROM 2¾ H.P. TO 6 H.P., AND FROM £75, ALL FULLY EQUIPPED.

OLYMPIA, STAND 119.

DOUGLAS MOTORS, LTD., Kingswood, BRISTOL.

OUR STAND WILL BE No. 185 OLYMPIA.



Terry's patent Spring Links

absorb bar vibration—stop wrist ache, and increase motor cycling comfort. When you fit the spring links, the front wheel kicks are not carried to the wrists. Thus the machine will glide over the roughest surfaces easily and smoothly at speed.

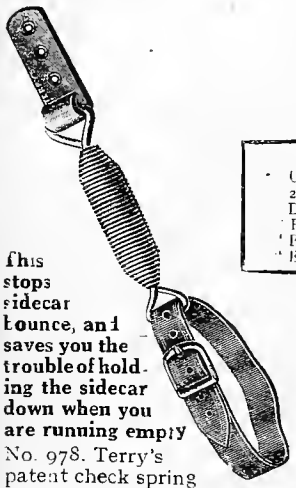
Suitable for all Link Types.

Up to 2¾ h.p. solo ..	**12/6**	pair
2¾ h.p. to 6 h.p. sidecar	**15/6**	,,
Douglas " 2¾ h.p. only	**15/6**	,,
B.S.A." 3½ h.p.	**15/6**	,,
Enfield " 2¾ h.p.	**21/-**	,,
Enfield " 6 to 8 h.p. ..	**24/-**	,,

Order a pair from your own Agent. List post free

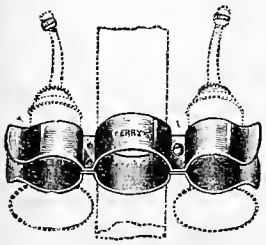
TRADE MARK.

Herbert Terry & Sons Ltd., Manufacturers, Redditch, England.
Est. 1855.

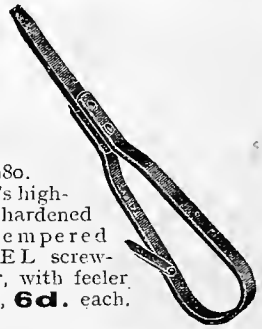


This stops sidecar bounce, and saves you the trouble of holding the sidecar down when you are running empty

No. 978. Terry's patent check spring sidecar fitting. Very best quality workmanship, **5/-** pair, from your Agent



Have oil and petrol squirts close to hand. Clip them to the frame. Save time opening and closing tool bag. Very best quality **4/-** each From your Agent.



No. 980. Terry's high-grade hardened and tempered STEEL screw-driver, with feeler gauge, **6d.** each.

No. 980A. Without the feeler gauge, **5d.** each. From your Agent.

For the safe and compact carriage of that miscellaneous bundle of letters, papers you carry in your pocket, use Terry's folding Lever letter clips. Get one or two for your maps, routes, etc.

Midget and small **2d.** each. Medium **3d.** Large **4d.** each. From stationers, ironmongers, etc.

Hughes SIDECARS

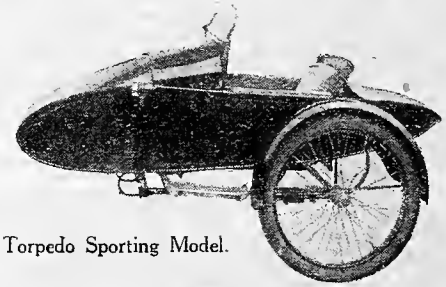
"QUALITY" SIDECARS

DESIGNED AND BUILT

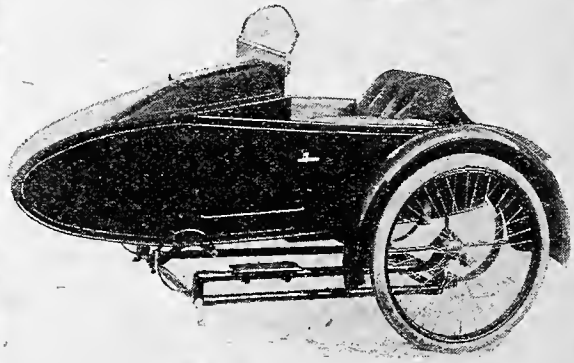
by Motor Cyclists for Motor Cyclists, of the finest materials available, "QUALITY" SIDECARS will outlast all others for length of service, and will give satisfaction all the time.

OLYMPIA, Stand 116

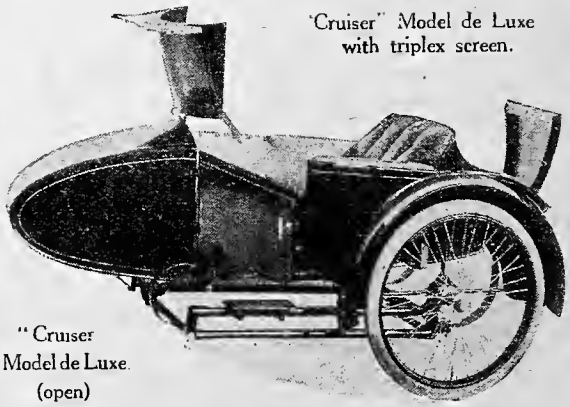
These Models can be seen on our Stand at Olympia. Prices on application.



Torpedo Sporting Model.



"Cruiser" Model de Luxe with triplex screen.



"Cruiser" Model de Luxe (open)

THOS. HUGHES & SONS,
Baker Street, Sparkhill, Birmingham.
Telephone: Victoria 56.

Three of our leading motor car manufacturers are now fitting

AYRTITE SLEEVES

on every car they send out, in order to minimise wear in Valve Guides and Valve Stems, and thus prevent the engines deteriorating from their original state of perfection.

AYRTITE SLEEVES are *desirable* upon new engines, but *absolutely essential* upon engines no longer in new condition, particularly Motor Cycle engines, for cold air leaks past the Valve Stems and Guides, upsetting the mixture, making the engine sluggish, difficult to start and wasteful of petrol.

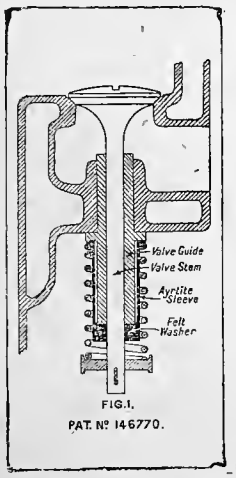


FIG. 1.
PAT. No 146770.

AYRTITE SLEEVES

cure those troubles and make the considerable expense upon new Valves and Guides unnecessary.

AYRTITE SLEEVES

cost very little—**2/6** each, and are sold on the understanding that if they do not do what is claimed for them, they can be sent back and the money paid will be refunded.

Now is the time to fit them. Here are a few testimonials from motor cycle owners. We have over 6,000 more of the same sort, all unsolicited.

"I get 11 more miles to the gallon, sweeter running, easier starting; in fact, a general improvement."

"For the improvement in starting alone they are worth the money."

"They have increased my mileage 10 m.p.g."

"The total difference surpasses comment."

"The running is greatly improved since fitting the Sleeves."

"I have fitted the Sleeves; the running is much easier, and I have reduced all my jets. The Sleeves give a new lease of life to the engine."

"I have fitted the Sleeves and consider them the finest little fitting I have dropped on yet. The engine pulls better with less petrol."

"I fitted the Sleeves and could not believe I was on the same machine. It is a great improvement. Power is improved and petrol consumption is less."

"The Sleeves have given a marvellous improvement to my engine."

"I have fitted the Sleeves and find they do all you claim for them. The engine runs quieter, starts easier, and uses less petrol."

If your Garage does not stock, the appended form may be used.

To THE STREATHAM ENGINEERING CO., LTD.,
47, Streatham Hill, London, S.W.2.

I enclose remittance s. d. *Please send me*.....*Sleeves for a*
.....(*make*).....(*h.p.*).....*year.*

NAME.....

ADDRESS (*or enclose card*) .....

.....

COPPEN, ALLAN & CO.,

89, GREAT PORTLAND STREET, LONDON, W.1. ('Phone: Langham 1601),

SOLE DISTRIBUTORS

"READING STANDARD"

THE WORLD'S MASTER MOTOR CYCLE.

REDUCTION OF PRICE FOR 1922.

Reading Standard 8-10 h.p. Solo, including

Dynamo Lighting, electric horn, cushion sprocket, pump, tools, three months' guarantee **£135 0 0**

Reading Standard 8-10 h.p. Comb, including

Dynamo Lighting, electric horn, cushion sprocket, "M.P." single-seater sidecar, coverall apron, sidecar lamp, pump, tools. three months' guarantee **£175 0 0**

Reading Standard 8-10 h.p. Comb, including

Dynamo Lighting, electric horn, cushion sprocket "Plus One" single or double-seater sidecar, coverall apron, step plates, sidecar lamp, pump, tools, three months' guarantee **£188 10 0**

COMPARE THE ABOVE PRICES WITH ANYTHING ON THE MARKET.

READ THIS.

Guernsey, 4th October, 1921.

The machine has done very well during the year I have had it. Recently I did a tour of some 500 miles in the South of England. I carried my wife, two children, and myself, tent, eleven blankets, cooking utensils, ground sheet, sheet to cover sidecar and machine, two tyres, and a large bundle of clothes. I had the machine weighed with all on, and it was over 11 cwt., no trouble except a puncture or two in the back wheel. Camped out several times. I thought it was pretty good carrying the weight it did. (Signed) Major H.M.

THEN COME TO OLYMPIA, STAND No. 18, AND PLACE YOUR ORDER.

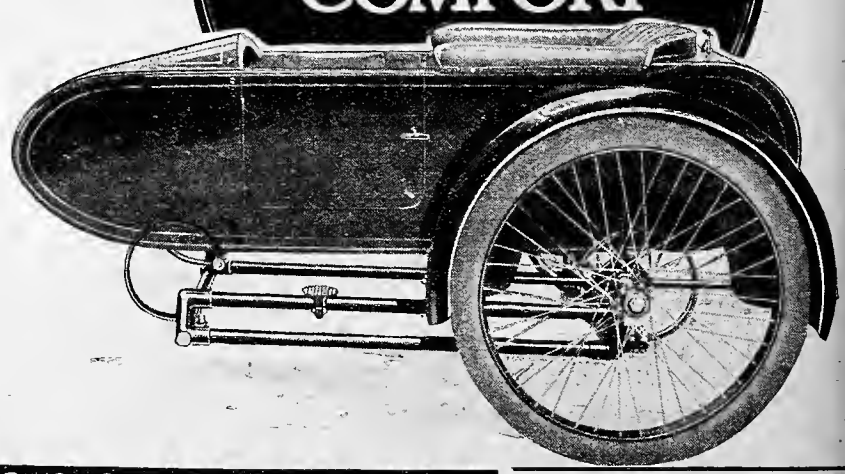
AGENTS AND FACTORS' ENQUIRIES INVITED.

THE ABOVE ALSO APPLIES TO THE FINEST SIDECAR PRODUCED.

"PLUS ONE," a Single or Double-seater Sidecar at will 50 Gns.

MILLFORD 1922 SIDE CARS

QUALITY AND COMFORT



ALTHOUGH prices have been reduced the high quality and comfort of the Millford Sidecars remain: the quality never varies. For nearly 20 years Millford Sidecars have been the best sidecar investment.

There are 8 models for 1922. The Millford here illustrated is the "Millford Junior," the price being **£22.** Lightness is achieved by careful selection of material.

See this and other "Millford" Models at

Stand 58 - Olympia

MILLS FULFORD LIMITED, COVENTRY.
The *ORIGINAL* Sidecar Makers.
Established 1899.

FAMOUS FOR QUALITY & COMFORT

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., brand new; £88.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155 [8268

Indian Successes

AT THE FINAL MEETING OF THE B.M.C.R.C. HELD AT BROOKLANDS ON NOV. 5th.

1000 c.c. Solo Handicap
INDIAN——FIRST
Speed 89.1 miles per hour.

1,000 c.c. Sidecar and Cycle Car Handicap—
INDIAN
FIRST—SECOND—THIRD
Winner's speed, 70.28 miles per hour.

1922 Model Indians

4 h.p. INDIAN SCOUT, twin engine, clutch and kick-starter, 3-speed, gear drive to countershaft, rigid frame, spring saddle pillar, 26×3 wheels. £120
DITTO, with sporting Sidecar .. £150
DITTO, with De Luxe Sidecar .. £155

4 h.p. INDIAN SCOUT, as above, electrically equipped, and speedometer.. .. .. £139
DITTO, with Sporting Sidecar.. .. £169
DITTO, with De Luxe Sidecar.. .. £174

7 h.p. INDIAN POWERPLUS, twin engine, spring frame, clutch and kick-starter, 3-speed, re-designed, wide mudguards, 28 × 3 wheels and many new refinements £130
DITTO, with De Luxe Sidecar .. £165

7 h.p. INDIAN POWERPLUS, as above, electrically equipped, and speedometer £150
DITTO, with De Luxe Sidecar £185

8 h.p. INDIAN CHIEF, Special Datona twin engine, clutch and kick-starter 3-speed gear drive to countershaft, rigid frame, spring saddle pillar, wide mudguards, 28×3 wheels, full electrical equipment and speedometer £170
DITTO, with Princess Sidecar.. .. £210

Place your order with Godfreys, Ltd., SOLE LONDON AGENTS and secure early delivery.

Our representative will be on the —— Indian Stand at the Show ——

GODFREYS

Limited,

208, Great Portland Street, London, W.1.

Telephone: Langham 1300.

MOTOR CYCLES FOR SALE.

A.B.C.

£80.—Dynamo lighting 1920 A.B.C., speedometer, electric horn, overhauled Sopwith's, registered.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1 [8148

A.B.C., latest model, 4 speeds, dynamo lighting, every accessory, machine almost new; bargain, £90.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

A.B.C. 1921 Combination, special body, Easting wind screen, standard chassis, dynamo lighting, speedometer, horn, usual equipment, licence, spares; £120.—Derrington, Grafton Rd., New Malden. [8009

A.J.S.

1922 A.J.S. 2¾h.p., absolutely new; bargain, £80—Timberlake's Garage, Wigan. [7246

NEW 2¾h.p. A.J.S. in stock, £85; second-hand 1920 outfit, £150.—Cross, Agent, Rotherham. [X2326

A.J.S. Motors.—Make appointment at Olympia with Geo. Merrick, 174, Listerhills, Bradford. [4577

1919 A.J.S. Combination, in very good condition, spare wheel, hood, screen, lamps.—97, Chesnut Rd., Plumstead. [7996

1920 6h.p. A.J.S. Combination, fully equipped, perfect condition; £138.—Barrett, Rosslyn, West Wycombe Rd., High Wycombe. [8189

1921 2¾h.p. A.J.S., done 300, all on, insured, taxed, faultless; cost altogether £104, take £80, no offers.—Dr. Martin Harvey, Chelmsford. [7966

1919 (Nov.) A.J.S. Combination, spare wheel, hood, screen, lamps, horn, appearance as new; bargain, £120, no offers.—Ward, 24, Mottram Rd., Hyde. [8286

1920 6h.p. A.J.S. Combination, excellent condition, acetylene lighting, spare wheel, speedometer, Tan-Sad, fully equipped; bargain, £125.—Lamb's Garage, Wood Green. [7889

1921 7h.p. A.J.S. Combination, fully equipped, speedometer, hood, side screen, low mileage, guaranteed perfect; £185.—Readett, Hand Lane, Leigh, Lancs. [8173

A.J.S. 1916 2¾h.p., 3-speed, hand clutch, all-chain, fully equipped, tax paid, perfect; £45; exchange.—1, Albert Cottages, Marlborough Rd., Old Kent Rd., S.E.1. [8504

A.J.S., 1921, new, 2¾h.p., 3-speed, clutch, kick starter, all on, shop-soiled; £85; offers.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

A.J.S. 1919 6h.p. Combination, spare wheel with new Dunlop Magnum tyre, speedometer, Klaxon, Tan-Sad, wind screen, spares, perfect condition; £100.—Daintree, 34, Ruabon Rd., Wrexham. [X2045

1921 A.J.S., 3-speed, clutch, licence holder and horn, tax paid, only run 50 miles, absolutely as new; very great bargain, £85, or near offer.—Julian, 84, Broad St., Reading. 'Phone: 1024. [7865

A.J.S. Lightweights, 2¾h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

1919 A.J.S. Combination, splendid condition, fully insured, 95 gns.; also P. and M. combination, cost 130 gns. four months ago, 78 gns., Watsonian sidecar; evenings.—67, Fernlea Rd., Balham, S.W.12. [8517

A.J.S. 1920 Combination, spare wheel, Stewart speedometer, P. and H. and Lucas lamps, Tyneside, perfect condition, done only 3,000 miles; £125, or nearest; any trial.—S., Idlebour, Avenue Gardens, Horley, Surrey. [8077

A.J.S. 1920 Combination (August), celluloid side screen, hood, spare wheel, Lucas lamps, 3 generators, Watford trip, Binks, full insurance July, 1922, Tan-Sad; Sunday mornings or letter; £155, close offer.—35, Ferndale Rd., Hoylake. [8200

A.J.S. Combination, 1920, detachable wheels, screen, horn, lamps, tools and spares, speedometer, very fine machine, in excellent condition, insured to March, 1922; £145.—Kinsey and Co., 352, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [8373

1920 5-6h.p. A.J.S. Coachbuilt Combination, 3 speeds, kick start, hand clutch, Lucas dynamo electric lighting, all equipment, including spare wheel, storm apron, hood and screen, Cowey speedometer, machine delivered 1921, only ridden 1,000 miles; £180.—337b, King St., Hammersmith, W.6. [7870

A.J.S., 1921, bought July, 1921, in perfect condition, side screen, electrical equipment, electric horn, speedometer, mirror, watch, Tan-Sad, fully insured to July, 1922; any trial or examination London district; owner proceeded abroad; £175.—Write or 'phone, Salter, 72, Ewell Rd., Surbiton. 'Phone: Kingston 191. [7900

A.J.S.

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [3983

MOTOR CYCLES FOR SALE.

A.J.S.

Spare Parts:

A.J.S. Spares for 1910-11-12 can be supplied in many cases by return of post.

COMPLETE Overhauls, engines, gear boxes rebuilt with the A.J.S. accuracy and satisfaction.

ANY Model of this date can be given a new life, which will give the owner his early pleasures once again.

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Alldays.

1920 Alldays Allon, 2-speed, kick starter; £50.—Fox, 12, Conduit St., Lichfield. [X2297

ALLDAYS Allon 2¾h.p., overhauled, lamps; £32/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [8403

1919 2¾h.p. 2-speed Alldays Allon, overhauled, re-enamelled, new, unused, 1921 engine; £50.—3a, Kohat Rd., Wimbledon. [7952

ALLDAYS Allon 1919 2¾h.p., 2 speeds, kick starter, clutch, electric lighting, speedometer, disc wheels, extras; £55; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2290

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8-10h.p. American X, large 3-seater sidecar, Triplex hood, electric light inside body, ideal taxi.—35, Park Rd., Ilford. [8172

AMERICAN X 1921 Combination, brand new condition, Grindlay super sidecar, hood, screen, curtains, dynamo lighting, electric horn, spare new tyres, tubes, and many spares, unscratched, guaranteed and insured; £120, or offer.—13, Grenfell Rd., Notting Hill, W.11 (Latimer Rd., Metropolitan). [8290

£62 below list price; final reduction to clear of last two combinations.—Brand new American X, latest model, royal blue finish, 27×3½ tyres, etc., fitted with special Millford bulbous back sidecar; £155; easy payments 4% extra. Write for end of season clearance list.—The Premier Motor Co., Aston Rd., Birmingham. [8379

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1921 Arden 2-stroke, 2-speed, new model; list £65; bargain at sale price, £45.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [8167

Ariel.

3½h.p. Ariel, speed machine, decompressor; sacrifice £29.—Fairhurst, 68, Standishgate, Wigan. [8301

ARIEL 3½h.p., new Aug. last, all on, solo; £80; owner leaving for India.—Jeffery, Wardour, Tisbury. [7853

£18.—Ariel lightweight, B. and B., M-L mag., good order, less brakes.—1, Mona Rd., Lausanne Rd., Peckham. [7992

ARIEL 3½h.p. Coachbuilt Combination, hood, screen, speedometer, Klaxon, lamps; £44.—109, Whipps Cross Rd., Leytonstone. [8261

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 1920 3½h.p. Combination, Canoelet sidecar, all lamps, tyres very good; £68. — Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [8495

3½h.p. Ariel Coachbuilt Combination, variable gear, Bosch enclosed, B.B., 3 lamps, tools, completely overhauled; £35.—76, Wistern Rd., Southall, Middlesex. [7920

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £139; no extra charge for easy terms. [8439

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ARIEL 1920 Combination, 3½h.p., all lamps, sidecar screen and cover, all spares, overalls, and new sectional garage 10½ft.×8½ft.; best over £100 secures lot, or garage sold separately.—Thorley, 81, Beckett Rd., Doncaster. [8003

Beardmore.

1920 Beardmore-Precision Combination, electric lighting, splendid condition, insured, exchange Triumph, Norton, or similar; £65.—4, Elm Gardens, Hammersmith. [8076

Blackburne.

1921 Blackburne 4h.p., brand new; £95; deferred terms.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [8405

LATE 1920 4h.p. Blackburne, lavishly equipped, unscratched, 3-speed, clutch, kick starter; £67.—24, Balliol Rd., North Kensington. [8104

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1912 3½h.p. 2-speed B.S.A., rebored and bushed by makers; £35.—3, Norwood Rd., Herne Hill, S.E.24. [8219

B.S.A. Combination, coachbuilt sidecar, good order. —Oakwood East Horsley, Leatherhead (Horsley Station). [8182

1915¼ B.S.A. Combination, 3-speed, K.S., all on, splendid condition; £65.—H.C., 52, Cartwright Gardens, W.C.1. [8512

£85.—B.S.A. 3-speed combination, all accessories, tax paid, indistinguishable from new.—5, Norwood Rd., Herne Hill, S.E.24. [8220

4¼h.p. B.S.A., chain-cum-belt, all lamps, licence paid, not done 500 miles; bargain, £85.—Churchill, The Grove, Dorchester. [X2175

D. and S. Autocar Co.—B.S.A. 4¼h.p. 1918 combination, in good order, tax paid, all on; £75.—33, The Parade, Golders Green, N.W. [8550

1921 H2 B.S.A., large bulbous sidecar, Cowey, Tansad, all accessories, done 2,162 miles (1,300 solo); £120.—Fulwood, Vaults, Eastwood, Notts. [8004

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B.S.A. 1920-21 4¼h.p. Model K., new this year, fast and powerful, condition perfect; £80; seen by appointment.—117, Bromley Rd., Catford, S.E.6. (54 Tram passes.) [8471

1921 6-7h.p. B.S.A., fine combination, practically new, dynamo lighting, ampmeter, spare wheel, luggage grid, spares, perfect condition; £180.—40, King's Rd., Reading. [8279

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B.S.A. 4¼h.p., new Nov., 1920, 3-speed, kick start, £40 Swan sidecar, fully equipped, disc. Tan-Sad, etc., original tyres, splendid condition, only used weekends; cost £165, accept £110.—9, Langwell Crescent, Ashington, Northumberland. [7826

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CLYNO Combination, 6h.p., 2-speed, kick start, chain drive, splendid order; £68; take older lot part.—57, Kenbury St., Camberwell, London. [8343

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£38.—Douglas 1916 2¾h.p., fully equipped and perfect, insured.—8, Bishop's Mansions, Fulham. [7817

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1922 Model Douglas 2¾h.p., 2-speed, all on, used once; £70; not soiled.—Fox, 12, Conduit St., Lichfield. [X2298

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4 h.p. Douglas, 1918, 3-speed, new tyres and belt, good condition; 40 gns.—Fitt, nr. Pikes, Church St., Chelsea. [8523

£55; 2¾h.p. Douglas, equipped, spares, guaranteed; exchange.—30, Sterndale Rd., Shepherd's Bush Rd., Hammersmith. [8184

DOUGLAS 1914 2¾h.p., 2-speed Albion, Bosch, excellent condition, tax; £40.—76, Balvernie Grove, Wandsworth, S.W. [7839

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3½h.p. Douglas, 1914, perfect condition, 2 speeds, lamps, complete; £40, or near offer.—Apply, Quittenton and Gardener, Warlingham, Surrey. [7934

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DOUGLAS 2¾h.p., 2-speed, fully equipped, good condition, licensed; real bargain, £32/10.—Armstrong, 17, Goldhawk Rd., Shepherd's Bush, London. [8313

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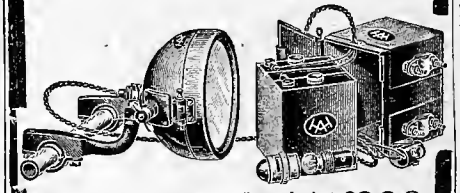

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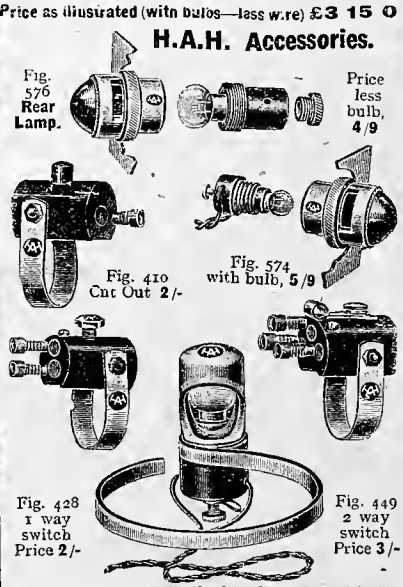

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1921 Edmund-Jap 2¾h.p., 2-speed, clutch, kick starter, lamps, horn, mileage 1,000, excellent condition; £70, or offer.—Davies, 1, Fair View, Wellington, Somerset. [785

1921 Edmund, spring frame, 2¾h.p. J.A.P., speed, clutch, kick starter, new model; list £85, sale price £75.—Sam E. Clapham (Motors), 2, Stockwell St., Greenwich, S.E.10. [816

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1921 Enfield 2½h.p., 2-speed, unscratched; £48/10.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [8402

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F.N. 2¾h.p., 2 speeds, clutch, horn, taxed, sound condition; £21, offer.—30, Thornsett Rd., Earlsfield, S.W. [8478

F.N. Lightweight, July, 1920, mileage 1,470, shaft drive, all accessories, 45 m.p.h.; £65, offers; seen Liverpool.—Blyth, Sidney House, Oundle. (D) [7959

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1921 Francis-Barnett, 2-speed, clutch and K.S., fully equipped; £70.—Herbert, 30, Waldron Rd., Earlsfield, S.W. [8508

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY-DAVIDSON 4h.p. Flat Twin, new condition; £80.—Bradley, Albion Rd., Margate. [6183

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HARLEY-DAVIDSON Combination, 7-9h.p., late model, 3 speeds, clutch, kick starter, lamps, licence; £65; exchanges.—63, Solon Rd., Brixton. [8232

HARLEY-DAVIDSON Combination, recently overhauled by makers, excellent condition.—Rutherford, Bassenthwaite Lake, Cumberland. [7954

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HARLEY Combination, £125; P. and M. combination, £60; Kingsbury 2-speed lightweight, £40; Triumph free engine, £25; exchanges.—76, Dalling Rd., Hammersmith. [8057

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1920 Harley-Davidson 7-9h.p. Combination, special show sports model with airship shape sidecar, dynamo lighting, beautiful turnout, fully equipped; great bargain, £135.—Speechley, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [8020

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1919 3½h.p. Flat Twin Humber Combination, excellent condition and appearance, fully equipped, spares, wind screen, insured; £65.—4, Elm Gardens, Hammersmith. [8075

HUMBER 1919 3½h.p., flat twin, 3-speed, electric lights, Bonniksen speedometer, Klaxon, perfect; £70.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7492

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1916 Indian Powerplus Combination, equipped, spare, Magdyno, discs, good condition; £67.—Cranleigh, College Slip, Bromley, Kent. [7813

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JAMES 1920 6h.p. Combination, fully equipped, speedometer, Easting, as new; £115; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2285

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LEA-FRANCIS 1920 3½h.p., twin M.A.G., 2-speed, clutch, kick starter, lamps, horn, etc.; £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0087

LEA-FRANCIS Motor Cycle, 3½h.p., twin J.A.P. engine, gear box, 2 speeds and free engine, Bosch mag., recently overhauled; what offers? Would consider exchange for cycle less h.p.—A. C. Bradshaw, Ltd., Merchants, Chatteris. [7112

1919 Lea-Francis Combination, 4h.p. J.A.P. twin, 2-speed clutch, kick start, Lucas lamps, horn, tax paid, etc., recently overhauled by makers; £84, or near offer; would consider good lightweight part exchange; Midlands.—Box 157, c/o *The Motor Cycle.* [2396

1920 Model Lea-Francis and C.B. sidecar, special 4h.p. J.A.P. engine, K.S., hand and foot clutch, licensed, insured Sept., 1922, full lighting set, just overhauled and new Magnum fitted, reliable and smooth running machine; £105, near offer; private owner.—Write, or call after 6 p.m., Hooper, Fernside, Godstone, Surrey. [7845

Levis.

PREMIER Motor Co. for 1922 Levis

LATEST Improved Models for immediate delivery at 1922 reduced prices.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S 2¼h.p., 2-speed, clutch, £58, or with kick starter £60; easy payments only 4% extra; carriage paid to any address. Buy your machine direct from the Levis specialists.—The Premier Motor Co., Aston Rd., Birmingham. [8383

2¼h.p. Levis, in good condition; cheap, £22/10.—93, Ridgeway, Wimbledon. [7979

£28.—2½h.p. Levis, re-enamelled and overhauled like new.—King, Egrove Farm, Oxford. [X2350

LEVIS 2½h.p., splendid order throughout, tax paid, £26/10.—Speechley, 86, Churchfield Rd., Acton, W.3. [8019

LEVIS Popular Model, good order, legshields, fully equipped, spares; offers.—Fairman, Eastwood, Falfield, Glos. [8203

2¼h.p. Levis, absolutely as new, very good, smart, equipped; £34, near. — Evers, Newton Rd., Burton-on-Trent. [8123

LEVIS, 2¼h.p., legshields, footboards, makers' overhaul last year costing £17; perfect snip, £30.—Coish, Broadway Buildings, Reading. [8240

SPECIAL Offer of a few slightly showroom soiled 250 c.c. T.T. model Levis motor cycles; list price £65, reduced to £55; makers' speed guarantee of 50 m.p.h. with each machine; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [838

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—Complete parts for Levis always in stock; write for complete illustrated list post free. [780

Marloe.

1921 Marloe-Blackburne 2¾h.p., brand new, 2 speed, clutch, kick start; £68/10; deferred terms.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [840

Martinsyde.

MARTINSYDE Combination, electric lighting, hood screen, speedometer, Tan-Sad, perfect; 105 gns.—Evans, 272, Oxford Rd., Reading. [799

MOTOR CYCLES FOR SALE.

Raleigh.

RALEIGH 2¾h.p., 3h.p., and 5-6h.p. solos and combinations for earliest deliveries; cash, exchange, deferred payments. Raleigh Specialists.—Lewnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [7485

THE New Raleigh 2¾h.p. 4-stroke Lightweight, 2-speed, with clutch and kick starter, at £68, is the best value offered the motor cyclist for the 1922 season; orders now booking for January delivery.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [8384

5-6h.p. Raleigh, 1921, spring frame, not 2,000 miles, engine just examined by makers, perfect condition, owner buying car while at College, speedometer, electric equipment and horn (Lucas), Cox Atmos and foot control, weatherproof, no-trouble gentleman's machine; £100 complete.—Coleby, R.N. College, Greenwich. Tel.: 608. (D) [7259

Rex

3½h.p. Rex (unlicensed), good running order; £9.—Chappell, Sketchley, Hinckley. [X2323

5-6h.p. Rex; £25, or exchange for 2-stroke lightweight.—Write Dully, 11, Fraser Rd., Leyton, E.10. [7980

1914 8h.p. Rex Combination, A.J.S. 3-speed, Tan-Sad, electric lighting, accessories; £65.—3a, Kohat Rd., Wimbledon. [7951

REX 1914 6-8h.p. Twin 2-speed Combination, 2-seater, lamps, wind screen, etc.; £57/10, or exchange piano.—277, Camberwell Rd., S.E. [8480

1920 8h.p. Rex-Blackburne Combination, complete, lamp, screen, spare wheel; great bargain, 90 gns.—White, 46, Chalk Farm Rd., N.W. [X2350

3h.p. Rex Combination, Montgomery sidecar, 2-speed, free engine, handle start, speedomter, lamps, etc., smart appearance, perfect running order; £42, absolute bargain.—71, Perham Rd., West Kensington. [7926

Rover.

ROVER Combination, 1913-14, 3-speed, clutch, 3½ h.p., lamps, horn, luggage grid, etc., first-class condition; £37/10.—Below.

ROVER Combination, 5h.p. 1918 J.A.P. engine, all accessories, machine in excellent condition; accept £65.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

ROVER Combination, 3½h.p., 3-speed, clutch, kick start, guaranteed; £50; or lightweight and cash.—126, Queen's Rd., Dalston, E.8. [8066

1921 3½h.p. T.T. Rover, Philipson, very fast, scarcely ridden, good reason for selling, accessories; £88/10.—Slater, Chigwell Row, Essex. [8051

£58.—1913-1914 3½h.p. Rover combination, 3-speed, K.S., just overhauled, tax paid, only wants seeing.—8, Half Moon Lane, Herne Hill, S.E.24. [8221

1921 6h.p. Rover Sporting Combination, special engine, exceptionally fast; £98, or near offer; exchange considered.—57, Villiers St., Stoke Coventry. [X2393

1919 5-6h.p. Rover Combination, 3-speed, kick start, lamps, horn, spare valve, piston rings, tyre, excellent conditon; £75.—Fitt, nr. Pikes, Church St., Chelsea. [8522

Royal Ruby.

3h.p. Jap-Royal Ruby, good condition; £35, or near offer.—22, Brent St., Hendon. [7876

ROYAL RUBY 1920 3h.p., spring frame, little used, condition as new, accessories; £75, or near.—14, Mansfield Rd., Ilford. [8001

ROYAL RUBY 2-stroke, nearly new condition throughout, guaranteed all on, Tan-Sad, overalls; sacrifice £40; bought car.—4, Gaywood Rd., Walthamstow. [8002

ROYAL RUBY 8h.p. Combination, in good running order and ready to drive away; can be seen by appointment; £130, or near offer; owner buying car.—Box 7,384, c/o *The Motor Cycle*. [8032

R.S.

5-6h.p. Twin R.S., Bosch mag., B. and B. carburetter, countershaft 2-speed and clutch, all-chain, new tubes and cover, footboards, legshields, licensed, overhauled, and enamelled recently, powerful and smart; £65, or reasonable offer.—Webb, 43, Arthur Rd., Mostyn Rd., Brixton. [8203

Rudge.

1915 Rudge, I.O.M., clutch, all on, licensed, smart; £32/10.—17, Heaton Rd., Mitcham. [8273

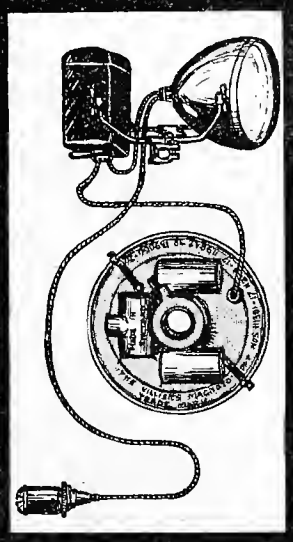
RUDGE Multi 3½h.p. Combination, 1916-17, perfect, tax paid; £38.—77, Acre Lane, S.W.2. [8388

RUDGE 3½h.p., good running order; £18.—Lowe, 4, Carlton Terrace, Child's Hill, N.W.2. [8056

1921 Rudge Multi Combination, perfect condition, Easting wind screen; £85.—Fox, 12, Conduit St., Lichfield. [X2295

3½h.p. Rudge Multi and Sidecar, pedal starter, excellent condition; £60.—Cole, 62, Lonisburg Quarters, Bordon. [7916

3½h.p. Rudge, recently overhauled, new tyres and belt, perfect order; £35, or near.—35, Gilpin St., Peterborough. [8285



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Rudge.

1920 5-6h.p. Rudge Multi with sidecar, mileage 600; £120, or exchange lightweight and cash.—Taylor (Inspector), Lyc. [X2253

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge I.O.M., 1921, electric lighting, tax paid; £70; easy terms no extra charge. [8434

3½h.p. Rudge, overhauled and engine rebushed, 2-speed, free engine, disc wheels, fast machine; bargain, 30 gns.—Pledger, 10, Alexandra Rd., Hornsey, N.8. [8113

RUDGE Multi, late 1920, 3½h.p. T.T. I.O.M. model, sidecar; sacrifice, £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

1921 (Sept.) Rudge Multi Combination, absolutely new and unused, Cameo wind screen, registered and tax paid; bought car; bargain, £99/10.—Hill, Birchwood, near Alfreton. [8234

RUDGE Multi 1920 3½h.p., I.O.M., T.T. bars, special B. and B. carburetter, lamps, horn, tools, very fine condition; £65, or nearest offer.—Kinsey and Co., 352, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [8372

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, the Rudge spare part specialist. Send for complete illustrated lists, post free. [7802

Scott.

F.O.C.H. have a 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [8021

1921 Scott Squirrel, mileage 1,000, new condition, lamps, Klaxon; £95, bargain.—W. J. Bladder, Sidbury, Worcester. [8158

1920 Scott Combination, lamps, horn, speedometer, Easting, in excellent condition; £110.—7, Ashfield Lane, Doncaster. [8307

SCOTT, 1920, condition as new, Lucas lighting set, perfect condition; £78.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [8494

SCOTT Motor Cycles, Scott Sociables, Scott repairs, Scott spares, Scott gears overhauled.—Cathedral Motor Works, 99, Gt. George St., Liverpool. [8357

SCOTT, new for Scottish Six Days, 1919, sporting model, Ace disc wheels, lamps, horn, tax paid, Palmer tyres almost new; best offer.—Seen, 12, Coudray Rd., Southport. [X2300

SCOTT 1921 3¾h.p. Touring Model, shop-soiled only; to-day's price £150; accept £110; deferred payments if desired.—Parker's, Bradshawgate Bolton: also 245, Deansgate, Manchester. [X2288

Spare Parts:

SCOTT Parts.—We can quote you promptly for anything in the Scott line, new or second-hand.—Ward Motors, Ltd., the Scott Specialists, 32, Hustler St., Bradford. [0739

Singer.

SINGER Lightweight, splendid order; £22; take push cycle part.—57, Kenbury St., Camberwell, London. [8342

22 GNS.—1916 Singer 2¾h.p., 2-speed countershaft, new tyres.—20, Treen Av., Hoggers Corner, Barnes, S.W.13. [8211

Stanger.

THE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Muswell Hill, London, N.10. [0731

Sun.

SUN-VILLIERS 2¾h.p., U.H. mag., B. and B. carburetter, nearly new Dunlops, equipped and licensed; first cheque nearest £22, or offer.—Penny, 146, Huish, Yeovil. [8347

Sunbeam.

3½h.p. Sunbeam, complete, Lucas lamps, done 90 miles only; £140.—Cross, Agent, Rotherham. [X2327

1916 3½h.p. 3-speed All-chain Sunbeam and Sidecar, excellent order, 2 new tyres; £85.—C. Barton, Clapham, Yorks. [0714

1916 3½h.p. Sunbeam Solo, in excellent condition, owner going abroad; £75.—David Plaistowe, 63, South Rd., Southall. [7830

1916 3½h.p. Sunbeam Combination, complete lamps, speedometer, etc., good condition; £80.—Hole, Broadway, Burgess Hill. [7968

3½h.p. Sunbeam, brand new, will sell to trade or private owner with or without Gloria sidecar.—Mackness, Chippenham, Wilts. [7203

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. Sunbeam and sidecar, 1915; £85; no extra charge for easy terms. [8431

1921 Sunbeam Combination, 3½h.p., spare wheel, horn, luggage rack, 200 miles only; £190; Oxford district.—Box 7,391, c/o *The Motor Cycle*. [8035

MOTOR CYCLES FOR SALE.

Sunbeam.

3½h.p. Sunbeam Combination (Oct., 1920), Henderson sidecar, new tyres; £150; exchange Ford and cash.—Archer, Standish St., Burnley. (D) [7852

BRIGHTON.—1921 (May) 3½h.p. sports model Sunbeam, perfect condition, all accessories; £130.—Captain Morrey, Military Hospital, Brighton. [7895

1920¾ 3½h.p. Sunbeam, Lucas lamps, legshields, Amac and Binks carburetter, pillion seat, excellent condition; £95, or near offer.—White, 31, Shakespeare St., Southport. [8223

SUNBEAM 1921 Model 3½h.p. Combination, fully equipped, new condition; bargain, £118, or exchange solo and cash.—Ayers, Garage, Kensington Palace. 'Phone: Park 86. [7986

SUNBEAM, 1921 (September), 3½h.p., sports, fully equipped, shop-soiled only; £130; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2282

1919 Sunbeam 8h.p. Combination, all lamps, speedometer, spare wheel, etc., magnificent condition; £130; exchange and cash considered.—37, Canterbury Rd., Dalston, N.1. [8538

1921 Sunbeam Sports Model, competition model, mileage 1,500, speedometer, horn, leg shields, etc., very little used, excellent condition; £110.—Boston, Manor, Wistaston, Crewe. [8318

1921 3½h.p. Light Sports Sunbeam, with Montgomery sporting sidecar, complete, actual cup, gold and silver medal winner; any trial; £140.—Oliver B. Hodgson, 36, Upgate, Louth, Lincs. [7616

SUNBEAM 3½h.p. 1920 Combination, Donhill sporting sidecar, Easting screen, electric lamps, Lucas and Klaxon horns, magnificent order; £125.—Seen at Robertsons Motors, Ltd., 157b, Gt. Portland St., W.1. [8150

8h.p. Sunbeam Combination, 1920, fitted Sunbeam sidecar, Lucas King of the Road lighting set, Tan-Sad, etc., condition equal to new, not done 2,000 miles, and been well looked after; £170.—Finch, 38, High St., Crewe. [X2324

6-8h.p. Sunbeam Combination, April, 1921, Magdyno speedometer, electric and bulb horn, spare wheel, insured, licensed, guarantee given, ride 50 miles to bona-fide purchaser; cost £285, sell £215.—Coombes, Southdown, Bath. [7835

1920 3½h.p. Sunbeam and Sidecar, interchangeable and detachable wheels, speedometer, Lucas acetylene and electric lighting, cost £230, carefully used, perfect running condition; best offer over £140.—Carisbrooke, Langley Av., Bingley. [7866

SUNBEAM 8h.p. Combination, dynamo lighting, spare wheel, hood, wind screen, speedometer, spares, in perfect condition; £190, or nearest offer; private owner, Sir Malcolm Murray.—Can be seen at Pack's Garage, Sunningdale. [8111

1920 3½h.p. Sunbeam Combination, spare wheel, Lucas acetylene, Cowey, at present with makers undergoing thorough overhauling and reconditioning; can arrange with purchaser to take delivery from Wolverhampton. See Exchange.—West Borwins, Askrigg. [7873

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, always at your service. We have Sunbeam experts to attend to your wants; complete, every part in stock. [7803

T.D.C.

T.D.C., 2¼h.p., 2-speed, good tyres, lamps; £25, or near offer; take bicycle part payment.—Lawrence, Bernerton, Salisbury. [8297

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham. [0627

TRIUMPH 1920 2-stroke, 2-speed, licence paid; £45.—Jones' Garage, Droitwich. [8316

CROSS, Rotherham, can deliver all models Triumphs from stock at list prices. [X2525

£29.—Baby Triumph, believed 1914, 2-speed, perfect order.—181, Newton Rd., Burton-on-Trent. [8125

3½h.p. Triumph, clutch, Philipson, just overhauled; £20, or offer.—Paxman, Dairy, Banbury. [8358

1918 Countershaft Triumph, smart and perfect; £47.—24, Balliol Rd., North Kensington. [8106

£18.—3½h.p. Triumph, believed 1911, good tyres, ride away.—Evers, Newton Rd., Burton-on-Trent. [8126

1918 Countershaft Triumph, lamps, tools, condition guaranteed; £56.—45, Pelham Rd., Wimbledon. [8136

£19/10.—Triumph 3½h.p. 1911 solo, single-speed, hand control clutch.—8, High St., Wandsworth. [8349

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

TYRES

Size.	Make.	Ou. Price	List Price
24×2¼	Clincher de Luxe Heavy	30/-	—
26×2	Englebert Passenger ...	23/6	53/-
"	Englebert Touring	19/6	46/-
26×2¼	Bates Special Heavy ...	31/-	54/-
"	Palmer Cord	29/-	53/6
"	Beldam Extra Heavy ..	28/6	51/3
"	Spencer-Moulton Ex. Hy	27/9	68/-
"	Clincher de Luxe Heavy	25/-	54/6
"	Hutchinson T.T.	23/-	56/6
"	Englebert Touring	22/6	49/-
26×2⅜	Palmer Cord Heavy ...	30/-	62/-
"	Hutchinson T.T. Rub. S.	27/6	59/9
"	Clincher de Luxe Ex. Hy	25/-	68/6
26×2½ ×2¼	Clincher de Luxe Hvy	32/6	51/3
26×2½	Goodrich Safety Tread .	45/-	52/6
"	Bates Special Heavy ..	35/-	68/6
"	Clincher de Luxe Heavy	27/6	58/9
28×3	Goodrich Safety Tread .	61/6	100/-
"	Englebert Racing	39/6	100/9
650×65	Goodrich Safety Tread..	40/-	67/6
"	Goodyear A.W. Tread ..	35/-	—
"	Best French R Non-skid	25/-	83/-
700×80	Beldam Bulldog	61/-	—
"	Firestone Rubber N.-S...	58/-	87/8

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26×2¼	7/-	10/3			
26×2⅜	7/9	11/3	26×2½	8/9	12/9
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MOTOR CYCLES FOR SALE.

Triumph.

1920 Triumph Combination, as new; £90.—Goa 122, Maida Vale, W.9. 'Phone: Hampste 1353. [84

1919 Triumph, Gloria De Luxe sidecar, excelle condition; £96. — 7, Anedale Cliff, Braml Leeds. [81

TRIUMPH 1916 4h.p., 3-speed countershaft; 39 g —28, Woodford Rd., Forest Gate. 'Phone: Sto ford 2598. [80

TRIUMPH Junior (July, 1921), condition as new, paid; £45.—5, Buckingham Rd., Harlesden, L don, N.W.10. [80

TRIUMPH 1918 Combination, electric and ace lene, speedometer; £68, offers.—45, Knighton F Forest Gate. [78

1918 Countershaft Triumph, perfect; £48.—Hill 1, Thorpe Mews, Cambridge Gardens, No Kensington, W.10. [8

1918 Triumph, fully equipped, 3-speed countersh beautiful condition; £70; exchange A.B.C.— Arlington Rd., Surbiton. [81

WAUCHOPE'S, 9, Shoe Lane, London, E.C. Triumphs, all 1922 models supplied promptly easy terms or exchange. [8

TRIUMPH, 1921, engine No 74867, Type H, lam and horn, new condition; £90, offers.—E 7,395, c/o *The Motor Cycle.* [8

3½h.p. Triumph Combination, 3-speed, kick, perf order, any trial; first cheque £50; genuine Watkins, Broadway, Ilminster. [8

1914 3-speed Triumph, wicker sidecar, good mech cal condition, tyres nearly new, complete.—Ch Strick, Ystalyfera, Swansea Valley. [8

1920-21 Triumph H and Henderson lightweight s car, lamps, speedometer, small mileage; £ £90.—2, Hazel St., Warrington. [X2

3½h.p. Triumph, 2-speed, clutch, new tyres and b reground and new piston, electric, splendid or —Adams, Knightsbridge Barracks. [78

1920 Triumph-Gloria Combination, guaranteed new, all accessories; £100; exchange.—C.S., Swaton Rd., Bow, E.3. Tel.: E3155. [8

1912 Triumph, 2-speed, Canoelet sporting side just overhauled, new cylinder; any trial; £4 7, Norwood Rd., Herne Hill, S.E.24. [8

TRIUMPH 4h.p. Coachbuilt Combination, 3-sp splendid order throughout, fully equipped, paid; £45.—Speechley, 86, Churchfield Rd., Acton, W [8

TRIUMPH 1920, countershaft, engine 66000, ing bars, footboards, as new throughout, equipped; £78.—30, Crystal Palace Park Rd., Sydenh [8

WAUCHOPE'S, 9, Shoe Lane, London, E. 2¼ h.p. Triumph Junior, 1921, tax paid, insured, all accessories; £50; easy terms arrange [8

TRIUMPH 1913 3½h.p. T.T. Model, fitted with la dropped back frame, fully equipped, tax paid; £3 Parker's, Bradshawgate, Bolton; also 245, Deansg Manchester. [X2

1914 Triumph 3½h.p., 3-speed, just overhau renovated, perfect, £38/10; sidecar for di £6.—Goad, 122, Maida Vale, W.9. 'Phone: Ha stead 1353. [8

TRIUMPH Combination, C.B., 1914, 3-speed, ol Bosch, speedometer, accessories, good condi tax paid; £56; after 6.30.—Faulkner, 111, Mayola Clapton, E.5. [

1918 4h.p. Countershaft Triumph Combination speed, kick starter, sporty, fully equip £65.—1, Feltham Cottage, Hampton Court Hampton Court. [8

1919 Triumph, just renovated by Triumph, new ford sidecar, 2 unpunctured Dunlops, la Klaxon, speedometer; £120; appointment.—12, Bed Rd., Tottenham. [8

1914 Triumph, 3-speed Sturmey, with Sandum sidecar, all accessories, and in excellent co tion; £65, or near offer; would separate.—Box 7, c/o *The Motor Cycle.* [

TRIUMPH Combination, 1916 renovated, 3-s clutch, large Swan coachbuilt, Easting, s ometer, horn, lamps, etc.; £60.—Drennan, 25, Rd., Clapham, S.W.4. [8

OCTOBER, 1920, Triumph combination, L lamps, Lucas horn, speedometer, hood screen, posh lot; cost £190, sacrifice 90 gns.— Summerhill Rd., Dartford. [

TRIUMPHS.—We are the North London agents, can deliver from stock for cash, deferred ments, or exchange.—Jones Garage, Muswell Hill, Woodside Parade, N. Finchley. [

TRIUMPH 1918 4h.p., S.A. countershaft, ele lighting, speedometer, Klaxon, sporting sid large exhaust; to see this is to buy; £85.—25, House Rd., Beckenham, Kent. [

1919 O.S. Triumph and Millford C.B. Sidecar, running order, lamps, tools, horn, Easting, various spares, licensed; bargain at £60, or ne Lothian, Draper, Morebattle, Kelso. [

MOTOR CYCLES FOR SALE.

Miscellaneous.

HALIFAX Motor Exchange, Horton St., Halifax.—A.J.S. 1919 combination, £135; Ariel 3½h.p. 1920 combination, £97/10.

HALIFAX.—Ariel, 3½h.p., 1920, £84/10; 1920 Alecto, 3½h.p., 2-speed combination, £79/10.—Below.

HALIFAX.—Alecto, 1920, 3½h.p., 2-speed, £69/10; 1921 Beardmore-Precision, 3½h.p., spring frame, £69/10.—Below.

HALIFAX.—B.S.A. 1915 4¼h.p. combination, £79/10; Bradbury 3½h.p. 3-speed combination, £69/10.—Below.

HALIFAX.—Chater-Lea 8h.p. combination, £85; Blackburne 1920 4h.p. 3-speed, £85.—Below.

HALIFAX. — Enfield 6h.p. combination, £85; Edmund, 1920, 2¾h.p., spring frame, £65.—Below.

HALIFAX.—Excelsior, 1920, 2½h.p., 2-speed, £42/10; Harley, 1918, with 1920 Henderson sidecar, £115.—Below.

HALIFAX.—Henderson 4-cyl. combination, £165; Humber 1914 3½h.p. combination, £49/10.—Below.

HALIFAX.—Indian, 1918, 7-9h.p., 1920 sidecar, £105; Indian Scout, 1920, £105.—Below.

HALIFAX.—1918 8h.p. Enfield combination, £95; 1916 O.K., 2¼h.p., 2-speed, £35.—Below.

HALIFAX.—Rex 6h.p. 2-speed combination, £49/10; Rudge 1920 7-9h.p. combination, £105.—Below.

HALIFAX. — Scott 1920 3¾h.p. combination, £115; Triumph 1913, handle-bar controlled clutch, £42/10.—Below.

HALIFAX.—Triumph 4h.p. 3-speed combination, £69/10; Peugeot, 7-9h.p., 2-speed, £37/10.—Below.

HALIFAX.—1920 3½h.p. I.O.M. Rudge, £65; 3½ h.p. 2-speed Humber, £25.—Below.

HALIFAX.—Sunbeam 8h.p. Magdyno combination, very special equipment, £197/10, like new.—Below.

HALIFAX.—1921 P. and M. speedometer, etc., like new, £92/10; Indian 7-9h.p. 2-speed combination, £55.—Below.

HALIFAX.—1916 Rudge Multi 3½h.p., £57/10; 1920 2¾h.p. Wooler, £55.—Address below.

HALIFAX.—Zenith-Gradua 6h.p. twin combination, £57/10; 8h.p. countershaft Zenith combination, £75; deferred payments quoted.—Halifax Motor Exchange, Horton St., Halifax. [8550

HOLLBER Garage, Thornsett Rd., Earlsfield, London, S.W. (opposite Earlsfield Station, L.S.W. Rly.). Phone: Latchmere 4388. Call on us when visiting Show. We have a few good machines to clear at bargain prices.

HOLLBER.—1921 O.K. Junior 2-stroke, ridden a few miles only, absolutely as new, tax paid; £32.

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HOLLBER.—Douglas 1916 2¾h.p., 2 speeds, good tyres, full equipment, in splendid condition, tax paid; £39.

HOLLBER.—Sun-Villiers 2½h.p. 2-stroke, speedometer, lamps, horn, engine just overhauled, good clearance, tax paid; £26.

HOLLBER.—Levis 1916 2-stroke, 2 speeds, good tyres, splendid machine, tax paid, accessories; £32/10.

HOLLBER.—Calcott 3½h.p., complete with all accessories, as a new machine, tax paid; £26.

HOLLBER.—Mars, 1921, 2¾h.p. J.A.P., 2 speeds, clutch, kick starter, disc wheels, complete with lamps, horn, and tax paid, most beautiful machine, as new; bargain, £59.

HOLLBER.—Douglas 1919 4h.p., 3 speeds, clutch, kick starter, complete with lamps, horn, and tax paid, in splendid order, another bargain; £62.

HOLLBER.—Edmund, spring frame, 2½h.p. J.A.P., Enfield 2-speed gear, chain drive, in good order;

HOLLBER.—Douglas combination, 1917, 2¾h.p., 2 speeds, Watsonian sporting sidecar, complete with all accessories, good order, tax paid; £[illegible]/10.

HOLLBER.—Indian combination, 1916 7-9h.p., 3 speeds, clutch, kick starter, spring frame, coach sidecar, electric lighting, aluminium disc wheels, in splendid condition, tax paid; £58.

HOLLBER.—Humber combination, 4h.p., 2 speeds, handle starting, coach body, complete with all accessories, tax paid, in good order; £38. [8359

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PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m. [8154

WANTED, 1920 countershaft Triumph, all cc, cash.—33, Ronver Rd., Lee, Kent. [8078

INDIAN wanted, cheap, on easy terms; security.—Box 7,350, c/o *The Motor Cycle*. [7860

GOOD Lightweight; cash paid on sight.—37, Dalcham Mews, Hampstead. 'Phone: 4608. [7994

TRIUMPH Lightweight, late model, equipped; cheap.—14, Park Av., Palmer's Green, N.13. [8266

WANTED, Triumph clutch model; must be cheap; cash waiting.—King, Egrove, Oxford. [X2338

WANTED, B.S.A. combination or solo, late model; cheap for cash.—King, Egrove, Oxford. [X2339

WANTED, modern lightweight, must be cheap, cash waiting.—1, Othello St., Liverpool. [5460

TRIUMPH, countershaft, wanted, equipped, late W.D. considered; cash.—57, Stopford Rd., E.13. [8045

LATE Twin Combination, dynamo lighting; cheap.—Rowe, 22, Blatchington Rd., Hove, Sussex. [8210

MATCHLESS 1921 2-seater Combination, equipped, wanted.—Drapper, 40, Royston Rd., Penge, S.E. [8064

WANTED, several old solos; must be very cheap.—Full particulars to 20, Treen Av., Barnes, S.W.13. [8213

WANTED, good solo or combination for cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [8269

WANTED, combination (not later than 1920), good condition, for cash.—E.C., 20, Great Rd., Brentford. [7814

ENFIELD Combination Wanted, 1921, must be reasonable; cash waitng.—70, Cedar St., Southport. [8312

WANTED, late combination or good solo for immediate cash.—Grocer, 193, Lancaster Rd., Notting Hill. [7838

WANTED, anything cheap in motor cycles.—Goad, 122, Maida Vale, W.9. 'Phone: Hampstead 1353. [8411

£100 for Best Electric Indian Scout Offered; state mileage, condition, etc.—35, Manor Av., Fulwood, Preston. [8284

DOUGLASES, 2¾h.p., any condition.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station. [8227

WANTED Connaught.—Particulars, date, condition, weight, Hollicot, Lichfield Rd., Sutton Coldfield, Birmingham. [8374

WANTED, 1920-21 4h.p. Triumph; price, full particulars.—Uppett, Durban, Wootton Gardens, Bournemouth. [8303

WANTED, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Henderson's. Wandsworth Motor Exchange, Ebner St., Wandsworth. [8145

WANTED, Harley-Davidson combination, late model, acetylene preferred, new condition, cheap.—Hetherington, Moffat. [X2252

WANTED for Export, combinations and solo for cash; send particulars; rock prices.—14, Upham Park Rd., Chiswick. [8352

WANTED, 2¾h.p. 3-speed 1920-21 Douglas, unscratched; cheap; spot cash.—Write, Kwato, Liskeard Garden, Blackheath. [8043

1921 Sports Model Sunbeam Wanted in exchange for Zenith combination and cash.—436, Katharine Rd., Forest Gate, E.7. [8511

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0604

£60 cash waiting for late countershaft Triumph, must be in perfect condition and fully equipped.—W. Earl, 5, Gloucester Rd., Trowbridge, Wilts. [8098

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WANTED, Red Indians, Harley-Davidsons, spot cash.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [8146

WANTED, Douglas 4h.p. or 3½h.p. solo, not later 1919, in perfect condition; state full particulars and lowest price.—Box 7,347, c/o *The Motor Cycle.* [7843

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CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone. Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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A.C. Sociable, by The A.C. Co., dependable runabout, take 2 persons anywhere, good condition and appearance, fully equipped, from £50 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [7138

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ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [2684

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AUTO-WHEEL Scooter, 1920; £15/10, or offer.—27, Falmouth Av., Highams Park. [7971

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WALL Auto-wheel, complete, splendid condition; £10 —Murray, 37a, Charles St., Hatton Garden, Holborn. [X2279

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THOMSON-BENNETT Magnetos, new and unused, single-cyl., clock or anti, suit any machine, price 55/-; twins, 45, 48, 50, 55, 60, 180 degrees, for J.A.P., Clyno, Douglas, etc., price 55/-. See our guarantee.—Below.

C.A.V. Magnetos, new, single-cyl. and 180° twins, clock or anti, ideal for Douglas, Levis, Calthorpe, O.K., or any lightweight; these magnetos are of the finest workmanship throughout; price 55/-. See our guarantee.—Below.

BOSCH D.A.L. Magnetos, soiled only, otherwise as new, single-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; a powerful spark at low speed, ensuring easy starting. All the above magnetos are variable ignition and fitted short-circuiting switch. See our guarantee.—Below.

GUARANTEE.—Every magneto that leaves our works, no matter what the price or make, carries a written guarantee. Not merely a guarantee that same is in good order at time of sale, but a plainly written statement that we guarantee every machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [6616

BOSCH and M-L Singles 30/-, C.A.V. 180° 35/-, 4-cyls. £4; mudguards, front, valanced, 6/-.—84, Greenside Rd., Croydon. [8130

P. and M. T.B. Magnetos, complete with sprocket and chain, £2/5.—Motor Cycle Accessories Co., 868a, Old Kent Rd., S.E. [8543

GOVERNMENT Surplus Unused Magnetos.—Having purchased the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; special long driving spindles for Rudge, 10/- extra; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

GOVERNMENT Surplus New Plugs in boxes.—A.C. (Titan), 1/6; K.L.G., type F7, detachable, 2/6.—Below.

HIGH Tension Wire, new, unperished, 9mm. 5d. per yard, 25 yard coil 8/6; 7mm., 4d. per yard, 25 yard coil 6/-; 5mm., 3d. per yard, 25 yard coil 4/-; 3mm., 2d. per yard, 25 yard coil 2/-.—Below.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d. See other goods under Parts and Accessories.—Below.

ALL Goods on Approval per return post on receipt of cash; money refunded if not satisfied.—Below.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [6406

JEBRON, registered 291298, greatly superior to platinum, for blades, screws, etc., cures misfiring; Jebron screws, fit Bosch mags., 10/6 pair; old screws, any make, Jebronised, 4/9 each, return post.

JEBRON, the pioneer motor contact, registered March, 1907, and March, 1921; hundreds of unsolicited testimonials.—Jebron, 38, Herbert Rd., Woolwich, S.E.18. [0001

MAGNETOS by C.A.V.'s, Bosch, and Thomson-Bennett, 50% below cost; see last or next week's issue of this paper.—Vale Engineering Syndicate, 8-11, Brown's Buildings, St. Mary Axe, E.C.3. [0700

IGNITION, LIGHTING, ETC.

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhanling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

CONTINENTAL Ignition Repair Co., 13, Hardwick Rd., Chiswick, London. [8503

AVOID Risks and Fines by fitting the Loveland magneto rear lighting attachment (Prov. Pat. No. 24856); attachment only 21/-, complete; installation 50/-. Write for list R. 'Phone: Streatham 1390.—Loveland Bros., Crescent Magneto Works, Norbury, S.W. [7514

U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. A1, B1, AO, KB1, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee. —Charles Parker and Co., Churchfield Rd., Acton, London. [8475

SURPLUS Magnetos (with written guarantee one year.—M-L., single, 35/-; ditto, advance-retard, 40/-; Bosch single, 42/-; Thomson-Bennett and C.A.V. singles and twins, 50/-; spares for all makes; magneto repairs of every description.—Whitdale Magneto Service, Cherry Orchard, Croydon. [7161

MAGNETO and Dynamo Repairs Service, also self-starters, batteries, and general electrical equipment are speedily and thoroughly repaired by the Runbaken Repairs and Spares Service, all work returned indistinguishable from new. Spare parts for every known make.—Connecticut Service Station.

THERE is a Service Depot in every large town. Call to-day for a quotation. Head Office and Works, Derby St., Cheetham, Manchester; Manchester town depot, 288, Deansgate; London depot, 115, Gt. Portland St., W.1; Leeds depot, 52, Woodhouse Lane; Liverpool depot, 65, Renshaw St.; Birmingham depot, 192, Corporation St.; Bristol depot, 14, Colston St.; Paris depot, 40, Rue Brunel. [0258

FOR Immediate Disposal. — Thomson-Bennett, C.A.V., all degrees, single and twin, leads, and variable ignition, for all machines, £2/12/6, includes postage; Bosch £3, postage extra, 1/6. We forward immediately all magnetos on approval against cash. Money refunded if dissatisfied.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, S.W.9. [8526

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1 'Phone: Museum 1158. T.A.: Kumagnelec, Eusroad, London. [6015

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos; Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approval A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, cables, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., 329, Euston Rd., London, N.W.1. 'Phone: Museum 5034. T.A.: Magdyno, Eusroad, London. [0263

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HERBERT ROBINSON, Ltd., Green St., Cambridge. Great reduction in covers and tubes, all guaranteed, and sent on 7 days' approval.

26×2 Special Line in clearance tubes, best make, and guaranteed; 4/6 each.—Robinson's.

26×2¼ Palmer Cord 32/-, Wood-Milne 23/6, Wood-Milne Combination 32/-, Macintosh Chain 32/-, Dunlop W.D. 30/-, Matchless 20/-, Pedley 20/-; clearance tubes 4/6.—Robinson's.

26×2⅜ Palmer Cord 35/-, Dunlop W.D. 30/-, extra heavy 37/6, Clincher 30/-, Avon 32/6, Hutchinson 30/-, Kempshall 30/-; best make tubes 6/-.—Robinson's.

26×2½ Wood-Milne 28/-, Kempshall 30/-, John Bull heavy 48/6, Bates extra heavy 50/-; clearance tubes 4/6.—Robinson's.

26×2¼ (to fit 2¼) Rubber Studded 27/6, Robinson's extra heavy 30/-, John Bull 48/-, Bates extra heavy 50/-; best make tubes, 6/-.—Robinson's.

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650×65, special bargains in Avon clearance extra heavy, 37/6; John Bull rib stud, 45/-; Cuthbe, 65/-; tubes, 6/-.—Robinson's.

700×80 John Bull Heavy 50/-, Cuthbe Cyear 65/-; tubes, 8/-.—Herbert Robinson, Ltd., Green St., Cambridge. [7811

My friends were stunned!

I won the Challenge Cup!

A perfect example ! !

From all over the British Isles I am daily receiving wonderful testimonials for my numerous special accessories made especially for Douglas Motor Cycles. Mr. John H. Darlington writes from Cheshire:—"Your Exhaust Pipes not only add to the appearance but give an increase of power. My friends were stunned, and you will get one or two customers from this town."

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These are but a few of the wonderful expressions of opinion I have received, proving beyond all doubt that as an Exhaust System, "Zoom! Zoom!!" stands by itself. Its mellow tone offends no one, yet the free passage for the exhaust gases and the enormous area for expansion permits the engine gaining its greatest power. Many agents are now fitting "Zoom! Zoom!!" One Garage alone has taken over twenty pipes and they say the prompt attention they receive from me is an object lesson to some of the older traders.

My service is a return service—everything you order you get by return post, and if you are not satisfied, return the article, and your money is returned to you without any deductions.

My price for Zoom! Zoom!! is only 30/- An ordinary Silencer costs you 37/6, and I could not have manufactured Zoom! Zoom!! six months ago for twice this amount:—remember it adds £10 to the appearance of any Douglas,—apart from efficiency.

Do you want the new 3½ h.p. Sports Model Douglas? I guarantee them to do 75 m.p.h.

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Official Douglas Agent,

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PALMER Cover, 26×2, and tube, new, 17/6; tu 2/6.—53, Cardiff Rd., Norwich. [78

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TWO New Clearance Wood-Milne 4-ply Motor Cy Covers, £2 the pair.—Murray, 32, North Vill Camden Sq., N.W. [78

ECONOMIC Tyre Co.—We have the following b gains in stock for immediate delivery on approv carriage paid against remittance.

ECONOMIC.—24×2¼ (oversize 2in. rims) Clinch de Luxe heavy, 25/-, listed £2.

ECONOMIC.—26×2 Wood-Milne extra strong, 22 26×2¼ Bates special W.D., 31/6; Wood-Mi extra strong, 26/-.

ECONOMIC.—26×2⅜ Bates special heavy, W. 32/6; Hutchinson Tourist Trophy, W.D., 29/-.

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ECONOMIC.—Fully guaranteed Dunlop rubber-st 24×2 22/6, 24×2¼ 24/9, 26×2 24/6, 26× 25/9.

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THE Difference between a good retread and a one is its mileage. Try us. Watch results.—Mel Rubber Works, Melton Mowbray. [0

SCOTTISH Readers will find it advantageous to chase their tyres from McArthur, Hill and 47, Carrick St., Glasgow. Lists post free. [6

TRY Our 3,000 mile retread. Repairs of ev description. High-class workmanship, guarante Return carriage paid.—Buxton Vulcanising Co., Bux Derbyshire. [4

BURST Motor Cycle Tyres, chafed beads, remoul made perfect, tube vulcanising, butt-ends fit retreading; send for list.—Melton Mowbray Rub Works, Melton Mowbray. [0

5/- Each for Repairing Damaged Covers.—Old co retreaded, light 12/6, medium 15/6, heavy 1 extra heavy 20/-.—Phœnix Tyre Repairing Co., Sherlock St., Birmingham. [X2

TYRE Repair Specialists.—H.F. process throughi including retreading burst covers. Every kind repair to tyres and tubes in 24 hours. retreads in days.—The Motor Tyre Co., 66, High St., West Br wich. [6

MURRAY'S Tyre Bargains.—24×2 Wood-Milne, 1 26×2¼, 20/-; 26×2½ and 3in., 25/-; 650 30/-; 28×3 Kempshall, 27/6; Avon steel-studded, 5 Rom grooved, 45/-.—Murray's, 37a, Charles St., Ha Garden, Holborn. [X2

STARTLING Offer.—New Beldam covers, 26×2 or 20/- each, 26×2½ 30/-, 28×3 35/-, 650×65 700×80 45/- each; new Avon or Michelin steel stu covers, W.D., 700×65 35/- each.—The Homerton Ru Works, Brooksby's Walk, Homerton, E.9. [0

26×2½ New Beaded Covers, 24/-; new best qua tubes 24×2¼ 5/-, 26×2 6/-, 26×2¼ 6/6, 2½ 7/6, 26×2½×2¼ 8/-, 26×3 9/-, 700×80 9/6, 7 75 10/-, 28×3 10/6; new rubber belts, 6ft. 2in.×1 10/6; 15in. inflators, 2/3; sent approval, carr paid, receipt remittance.—Palmer's Garage, Toot S.W. [8

CENTRAL Garage, 302, London Rd., Thorn Heath, S.E.—Why buy rubbish when for a l more you can obtain the real thing? We hav splendid stock of all makes in all sizes at very rea able figures, from which you can make your ch Send us your enquiries. We guarantee satisfac or return your money.—Below.

ONE Item: Brand new Palmer Cord, 26×2¼ 24/6.—Below.

ADDRESS your Enquiries to Sale Dept., The Cen Garage, 302, London Rd., Thornton Heath. [8

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TANKS for B.S.A., new, 42/6; 1910, 1921.—Cove Tankers, Ltd., Hearsall Works, Coventry. [X6

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COVENTRY Tankers, Ltd., makers to the prin manufacturers; petrol tanks for any style plied, extra capacity.—Hearsall Works, Coventry. [

DOUGLAS 4h.p. Tanks, latest type (round ed enamelled makers' colours, brand new, unsol 65/- each.—1a, Works, Paradise Rd., Highbury, N. [1

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XCHANGE for light car, or good Ford, Douglas combination, 1920, perfect condition.—Manufactur- Company, 98, Holm St., Glasgow. [7842

)17 Ford Ton Lorry (attachment), pneumatics, good order, for combination, small car; sell £65.— ach, Tailor, Marnion Rd., Portsmouth. [8470

XCHANGE Piano, nice tone and condition, for motor cycle with gears, about 3h.p.; Cirencester rict.—Box 7,382, c/o *The Motor Cycle.* [8030

3h.p. 4-cyl. Van, baker's, similar, mahogany body, perfect; trial; £60; exchanges, motor cycle.— lor, 637, Seven Sisters Rd., Tottenham. [8276

NGINE, about 5h.p., with magneto complete; will give motor cycle, 3½h.p., licence paid.—Blogg, staeridge, Barton-on-Humber, Lincolnshire. [7897

LOTS (Bromley).—Well-sprung Chesterfield suite, cushions, Jacobean sideboard (London), new, for M.C.—1a, Bevan Terrace, Stockton-on-Tees. [X2330

XCHANGE T.T. Scott, completely equipped, value £45 (photo), for 3½h.p. combination, cash adjust- t either way.—Grout, Milgate Park, Maidstone. [8346

EW 3½h.p. Rudge Multi, T.T., unridden, plus £50 cash, for Grand Prix Morgan. 10h.p., not earlier 8, in guaranteed condition.—Keen, Leominster. [7963

XCHANGE, 1918 Triumph combination, good run- ning order, and cash for 1920-21 6h.p. combina- , all on, no rubbish.—70, Baring Rd., Lee, Kent. [8079

XCHANGE 6h.p. Minerva twin, Grado gear, Bosch, drop top tube, mechanical valves, for good motor ter or other; sell £19.—89, East Hill, Wandsworth. [8489

NBEAM 8h.p. 1919 Combination, spare wheel, all lamps, speedometer, etc.; exchange lower power and , or sell £130.—37, Canterbury Rd., Dalston, N.1. [8540

)20 A.V. Monocar, 8h.p., electric lamps, perfect throughout, for A.B.C., N.U.T., or Zenith; sell ; exchange level.—9, Tresham St., Rothwell, Ketter- [8081

XCHANGE 1914 2-seater G.W.K., also Humber- ette, for lightweight and cash, or sell £85 each. 3, Woodford Rd., Forest Gate. 'Phone: Stratford 8. [8094

h.p. Triumph, clutch model, complete, new condi- tion, very carefully used, for 2¾h.p. Douglas, late el, cash adjustment.—F. T. Smith, The Stores, Twy- , Hants. [7927

XCHANGE 1915 Bedford-Buick 4-seater, 4-cyl., starter and lighting, perfect condition, for G.N., gan, or combination and cash.—24, Geraldine Rd., wick. [8501

)16-17 Grand Prix Morgan, M.A.G. engine, Zenith carburetter, discs, very fast, tyres good, for erful combination, or sell £120.—21, St. John's , N.19. [8474

ROUGH 3½-4h.p. T.T. twin, o.h.v. (believed 1918- 19), latest Sturmey 3-speed, kick start, clutch, accessories, value £65, for late solo.—89, East Hill, dsworth. [8490

XCHANGE Smart 3-wheel Cycle Car, watertight mag., hood, wind screen, tax paid, complete with s, for ton lorry or Ford van.—Box 152, c/o *The r Cycle.* [X2268

RY Pretty Motor Launch, 21ft. 6in.×4ft., 6h.p. Demon engine; would exchange up-to-date motor .—Further particulars, Witton Manure Co., North- , Cheshire. [7941

RIPPS-BOOTH 3-seater, 1916-17, lighting and starter, spare wheel, every detail A1; £250; ex- nge combination or 3-wheeler.—Bunting, Motors, ldstone. [8496

CHANGE, brand new 1922 Coventry Premier 4- wheeler for combination and cash.—Newnham r Co., 223, Hammersmith Rd., W.6. 'Phone: mersmith 80. [7497

A.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Station). 'Phone: Hampstead 3752. Hours 9-7 ding Saturdays. [8024

CHANGE, brand new 1922 Rover 8h.p. for com- bination and cash.—Newnham Motor Co., 223, mersmith Rd., W.6. 'Phone: Hammersmith 80. ys a car on view. [7496

p. Rudge Multi Combination, 1916-17, equipped, overhauled, guarantee; no accommodation; ex- ge for solo machine and cash, or sell; private.—Box 3, c/o *The Motor Cycle.* [7737

5 and 8h.p. Premier Countershaft Combination or A.C. Sociable (wheel steering), or new piano, 919 2-speed 2-stroke, for Morgan or similar.—591, shill Rd., Coventry. [X2394

UMBER 1921 4¼h.p. Flat Twin, luxurious sidecar, electric lighting, small mileage, as new; exchange 921 6h.p. combination, cash adjustment either way. llett, Caterham Valley. [8252

ARRACQ 1912 2-seater and dickey, excellent run- ning order, recently overhauled, new tyres; ex- ge good combination, 1920 or 1921.—Major Taylor, rinary Surgeon, Shaftesbury, Dorset. [7984

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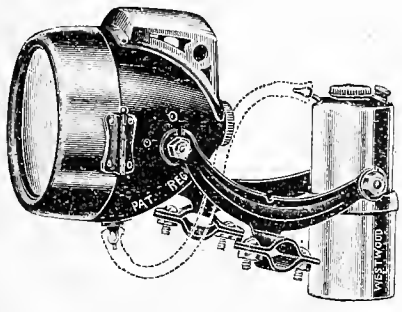
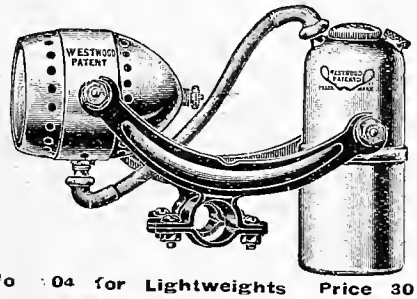


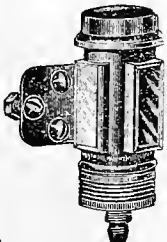
No. 40/1 for Heavyweight Solos, 37/-
No 40/2 With Large Generator, 45/-

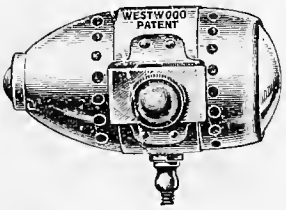


No 40/4 for Lightweights Price 30/-

ROYAL RUBY. *List No.* 19/3. Price 4/- each.

TAIL LAMP *List No.* 19/1. Price 5/6 each.



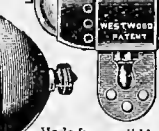


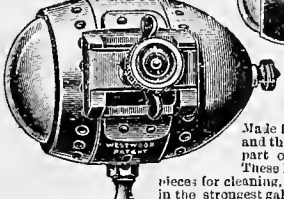
"IDEAL" SIDECAR LAMP.

Similar in construction to 19/4 Lamp, but having 1¾in. diameter lens, and also Ruby Lens in rear. List No. 205. Price 8/6 each. Plated finish

SIDE LAMP. *List No.* 19/4. Price 16/- each. Right or left fitting.

SIDECAR LAMP. *List No.* 19/2 Price 6/- each.





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Made from solid brass, turned and threaded at joints. Every part of solid construction. These lamps may be taken to pieces for cleaning, and will remain alight in the strongest gale. Best quality lenses are fitted, and can be easily replaced if broken. These lamps will last as long as the machines they are used on, and are absolutely rustless

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EXCHANGE late Henderson combination for Harley with bulbous sidecar, or sell £130; disc wheels, hood, screen, mechanically sound, enamel good; ex- pert examination.—G. M. Pirie, Cranleigh. [7998

EXCHANGE 1916 4h.p. Douglas combination and 4h.p. Zenith-Gradua solo, good machines, for 6 or 8h.p. combination, A.J.S. preferred, or sell £65 and £40.—Harris, 33a, Midmoor Rd., Balham. [7844

19 20 A.J.S. Combination, Lucas dynamo lighting, spare wheel, complete accessories, mileage 2,730; exchange for late de luxe Morgan or solo and cash; sell £165.—153, Knollys Rd., Streatham. [8330

TRIUMPH 4h.p., clutch model, fully equipped, per- fect order, or Hobart-Villiers 2¾h.p., 2-speed, free, fully equipped, perfect order, for old big twin, any con- dition.—Write Tibbles, 29, Durant St., Hackney. [7977

EXCHANGES a Speciality.—Motor cycles taken in part exchange for small and large 2 and 4-seaters; bargain prices.—Seabridge, Hansler Rd., East Dulwich. Hours 10-5.30, or appointment (not Sundays). Sydenham 2452. [4804

EXCHANGE Underwood visible typewriter, gent's 18c. gold single stone diamond ring, gent's 9c. solid gold double albert, and cash, for Morgan or good Enfield combination, or offers considered.—Box 151, c/o *The Motor Cycle.* [X2267

A.V. Monocar, 1921, with dickey seat, 8h.p., electric lighting and acetylene, discs, new condition throughout, for motor cycle; sell £85; cash adjustment. —3, The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [8483

GRAY and Raynes have a large stock of motor cars, motor cycles, and accessories, and are open to consider reasonable offers of cheaper machines and a little cash: send stamp for bargain lists.—8, Low Rd., Balby, Doncaster. [8419

8h.p. o.h.v. Chater-Lea-Jap Combination, 3-speed countershaft, clutch, kick start, Easting wind screen, whole like new, very fast and powerful, for A.B.C., Triumph, or other good solo.—Derrington, Grafton Rd., New Malden. [8536

10 7h.p. Cobrili 1921 Coventry-Simplex Engined 2- seater, with double dickey, very smart, reliable, and economical car; £185, or exchange for cheaper car, lorry, or motor cycle with cash; stamp for reply.— 8, Low Rd., Balby, Doncaster. [8417

EXCHANGE, J.E.S. engine set complete, No. 10, rotary duplicator, quantity of new cycle parts, etc.; wanted, motor cycle engine, or offers of any- thing; particulars stamped envelope.—Gibbs, Armourer, Stewart Barracks, Curragh. [8243

ALLDAYS 10h.p. 2-seater, 3 speeds, reverse, 5 lamps, speedometer, horn, hood, screen, 5 inter- changeable wheels, perfect little car, for motor cycle, cash either way; sell 95 gns.—19, Richmond Terrace, Clapham Rd. 'Phone: Latchmere 4290. [8482

FORD 1919-20 4-seater, electric lighting and self- starter, repainted, new tyres, hood, with side cur- tains, etc., speedometer, spare wheel, practically new; motor cycle part exchange.—Bennett, 95, Wellmeadow Rd., Catford, S.E. 'Phone: Croydon 2450. [7863

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HALIFAX. — 1922 Airedale, B.S.A., Calthorpe, Lagonda, Coventry Premier, and Standard light cars; Norton, B.S.A., Sunbeam, Levis, Enfield, New Imperial, and Triumph motor cycles; quick deliveries; liberal exchanges.—Halifax Motor Exchange, Horton St., Halifax. [8547

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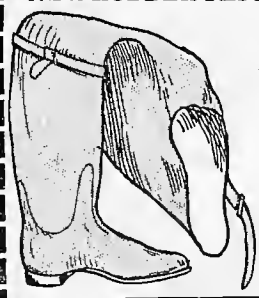

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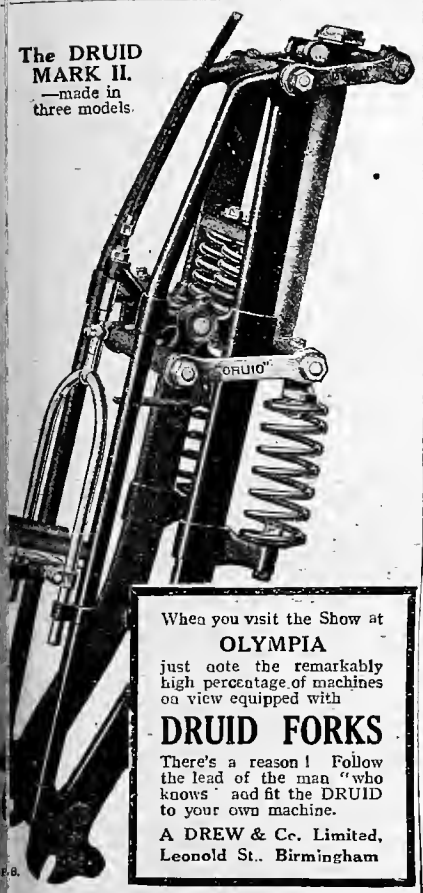

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BEPWORTH PISTON RINGS were used on the Napier 'Lion engine in the D.H.9. Biplane, which broke the world's altitude record, and also on the same type of engine which was fitted to the machine winning the British Aerial Derby, 1921.

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PARTS AND ACCESSORIES.

4h.p. Douglas New Spares.—Induction pipes 12/6, big ends 2/-, small ends 1/6, gudgeons 1/-, rings 1/6, valves 2/6, springs 6d., fork springs 1/6, adjustable pulleys 15/-.—Below.

ALL Gear Box Parts in stock.—Clutch ball races 1/6, plates (front) 6/6, middle 2/6, loose 4/-, chain wheel 12/6, bridles 3/6, K.S. pinions 2/6, nuts 1/6, front gear box arm 2/6, rear 6/6, draw bolts (complete) 4/-, handle-bars (touring) 12/6.—Below.

CLUTCH Brake Pedals 3/6, steering columns 7/-, clutch keys 10d., main timing wheels 4/-, pumps (complete) 9/-, worms 1/6, hub caps 1/-, spindles 2/6, shells 4/6, lock rings 1/-; lot more parts nuts, bolts, springs, etc.—Below.

2¾h.p. Douglas New Spares.—Pulleys 5/-, chain wheels 6/6, gear box ball races (large) 5/-, small 3/-, valves 2/-, tappet guides 1/3, exhaust lifters (complete) 10/-, bars (plated) 11/6, etc.—Below.

RUDGE Multi, new.—Pulleys complete 20/-, cam wheels 10/-, intermediate 5/-, intermediate gear wheel 10/-, inlet domes, slightly chipped, 10/-, fork springs in sheath 8/-, chain ring for starter 10/-, carriers 10/-, exhaust valves 4/6, rings 2/-, all gear clutch parts cheap.—Below.

VARIOUS.—Sensspray carburetters 27/6, Scott carburetters 5/-, B.B. (less controls) 20/-, Vici single lever (new) Douglas £2, Clyno frames £3, rear portions £2, Douglas chassis (less springs and wheel, unrenovated) £2, Rudge gears (complete) £5, various bars (plated) 10/-, carriers (Douglas, B.S.A.) 10/-, 3½h.p. Douglas pistons (new) 12/6.—Below.

THOMSON-BENNETT Magnetos, 180° and singles, £2. Write us for anything you require; large stock; carriage extra.—Banister and Botten, 341, Upper St., London, N.1. 2480 North. [8174

CHATER-LEA Lightweight Frame, wheels, tyres, tank, spring forks, saddle, mudguards, handle-bars, etc., sound condition; bargain, £7, carriage paid.—56, Lawrence Hill, Bristol. [7972

ROYAL RUBY and Enfield Parts.—Frames, wheels, handle-bars, front forks, etc., 8h.p. J.A.P. models only; send your enquiries.—Pugh Engineering Works, Shirley Rd., Croydon. [8416

HUGE Quantities ex Government Surplus to be sold at one-third list price, sometimes less. Liberal discounts to the trade. All spares advertised are new and unused.—McNeille and Platt.

4h.p. Douglas.—Cylinders, £1; main oil pipes, 5/-; dog clutches, 3/6; camshafts, 15/-; back hub spindles, 2/6; plain sleeve pinions, 15T, 4/6; timing wheel bushes, 1/-; clutch dust caps, 6d.; gudgeon pins, 1/-; small end bushes, 1/6; big end bushes, 2/-; induction pipes, 12/6; tappet spanners, 9d.; pistons complete (pattern), 18/-; new T.B. mags., £2/10; piston rings, 1/6; valve caps, 2/-; kick starter springs, 6d.; tappets with rollers, 3/3; bronze gear forks, 3/6; gear mainshafts, 9/-; clutch bridals, 2/6; kick start pinions, 2/6; nuts, 1/6; valves, 2/6; valve springs, 6d., per doz. 3/-; screwed sleeve pinions, 5/-; 23T pinions, 5/-; crown races, 1/-; sidecar C springs, 5/-; timing side ball races, £1.—McNeille and Platt.

2¾h.p. Douglas.—Tappet spanners, 6d.; exhaust pipe union spanners, 1/-; valve cap spanners, 1/-; belt pulleys, 4/-; plain sleeve pinions, 6/-; front fork links, 1/-; front brakes, less lever and cable, 5/-; cylinders with guides, 30/-; armoured toolbags with clips, 6/-; head clips, 4/-; cam wheels, 16/-; connecting rods complete, 26/-; lubricator glass tubes, 1/-; semi-T.T. bars (pattern), 15/-; 2-speed gear boxes only, £4/10; chain wheels, 10/-; piston rings, 1/-; exhaust lifters with lever complete, 7/6; pistons complete, 12/6; back carriers, 16/-; back stands, 10/-; crankshafts, £2/10; new T.B. magnetos, £2/10; tappet guides, 1/6; tappets complete, 3/3; valves, 2/-; per dozen 12/-; ball races, flywheel side, 8/-; valve guides, 2/-; belt rims (pattern), 10/-; gear box ball races, large 6/-, small 4/-; engine sprockets, 3/9.—McNeille and Platt.

REPAIRS. Repairs.—We specialise in Douglas and Triumph engine overhauls, and, on account of our huge stocks of spare parts at such cheap rates, we can quote you prices which defy competition. Rail your engine, gear box, or complete machine to us.—McNeille and Platt.

SCOTT.—All engine parts, S.H., good condition, half list. Scott carburetters, new, 5/-.—McNeille and Platt.

TYRES. Tyres.—Brand new covers, 26×2¼, 16/6; brand new manufacturers' surplus Dunlops, 26×2½ (for 2½in. rim), 35/-; tubes, 7/6.—McNeille and Platt.

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ALL goods sent on 3 days' approval. Full carriage and packing must be sent. Cash refunded if not satisfied. All spares sent per return.—McNeille and Platt, 57, Great George St., Liverpool. 'Phone: 1092 Royal. [8044

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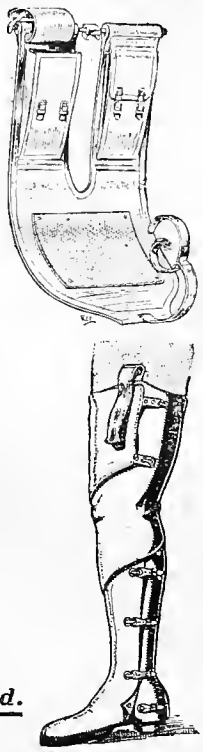

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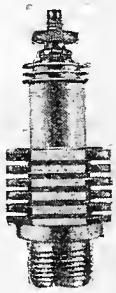

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BURLINGTON, the Douglas Specialists.—The following are a selection from our enormous stock of spares. We have practically everything in stock for Douglas and Triumph machines. All the following are new:

BURLINGTON.—Engine parts for 2¾h.p. Douglas: Cylinders, front only, £1/15; piston complete, 12/-; piston rings, 1/6; gudgeon pins, 1/3; big end bushes, 3/-; small end bushes, 2/-; exhaust lifter links, 7/6 per set; timing side ball races, 12/-; cam wheel and intermediate wheel studs, 3/-; rocker arm studs, 2/6; intermediate wheels, 5/-; valve guides, 2/-; tappets complete, 3/-; tappet guides, 2/6; flywheel sprockets, 16, 17, and 18T, 3/9; exhaust and inlet valves complete, 4/- each; silencers complete with unions, 17/6; end plates, 9d.; carburetter gauze, 4d.; gauze washer, 6d.; Amac jets, No. 26, 2d.

BURLINGTON.—2¾h.p. Douglas tank, £2/10; oil pump plunger complete, 4/6; petrol tap and filter combined, 3/6; drain tap, 2/-; tank caps, glass or plain, 2/- each; drip-feed needle valves, 4/-.

BURLINGTON.—2¾h.p. Douglas frames, new £7, rebuilt £5; mudguards, 12/- per pair; rear stands, 12/6; stand bolts, 6d.; rear stand clips, 1/6; front stand, £4/- clips, 1/-; belt rims, not drilled, 12/6; wheel rims, front 7/6, rear 8/6; carriers, 17/6; saddles, £1/10; handle-bars, semi-T.T., 15/-.

BURLINGTON.—2¾h.p. Douglas front fork blades, shop-soiled, 25/-; front fork springs, plated, 2/6; fork spindles, long 1/9, short 1/6; spindle nuts, 4d.; front brake, complete with lever and cable, 15/6; head locking rings, 1/6.

BURLINGTON.—2¾h.p. Douglas gear box pulleys, 6/-; chain wheels, 7/-; L.H. chain wheel nuts, 8d.; adjustable clamp for gear rod, 4/-; ball races, large 7/6, small 5/6.

BURLINGTON.—4h.p. Douglas big end bushes, 3/6; small end bushes, 2/6; gudgeon pins, 1/6; piston rings, 1/9; valve guides, 2/6; flywheel sprockets, 16T, 4/3; intermediate pinion wheels, 8/6; magnete pinion wheels, 9/-; tappet rollers, 9d.; pin for same, 2d.; housing for camshaft bearing, left or right, 4/6; C. and A. induction pipe washers, 6d.; clutch drawbolt complete, 3/-; clutch plate ball races, 1/-; exhaust pipes, 24/- per pair; silencers, 16/6; fork springs, 3/6; brake pedal springs, 9d.; rear stand clips, 1/6; footboards, 15/- per pair; belt rims, not drilled, 15/-; wheel rims, front 7/6, rear 8/6; carriers, 25/-; saddles, £1/10; frame head lugs, 23/-; Y lugs, 12/6; undershields, complete with clips, 5/-; tank only, £3/5; Ferodo rings for clutch, 5/-; semi-T.T. pattern handle-bars, £1; front mudguards, 1915 pattern, shop-soiled, 12/6; belt guards, 6/-.

BURLINGTON.—Rear springs for Douglas chassis, 15/-; front springs, 4/-; luggage carrier with straps, £2/10; sidecar mudguard, 18/6.

BURLINGTON.—Triumph Spares: Piston rings, 1/6; inlet valves complete, 4/-; exhaust valves complete, 8/-; rear wheel spindle with cones, 5/-; front wheel spindle with cones, 4/-, wheel cups, 8d.; toolbags, 18/6; rear stands, 22/6; oil squirt, 3/-; T.T. handle-bars with grips, new, 15/-; Renolds chains, 50 links, 15/-; foot pedal for clutch, 4/-.

BURLINGTON.—Armoured toolbags with strap fastenings, real leather fronts and clips for Triumph, 6/-; special deep bag for 2¾h.p. Douglas, 8/-; long bag for 4h.p. Douglas, 11/6.

BURLINGTON. Double texture khaki twill motor cycle leggings, a real cheap line, 15/- per pair.

BURLINGTON.—Carriage and packing on all the above goods extra.

BURLINGTON Motor Cycle Co., Ltd., 7, South Side, Clapham Common, S.W.4. 'Phone: Brixton 2417. T.A.: Burlington Motors, Clapham. 50 yards from Clapham Common Underground Station. [7945

MUDGUARDS, front, 3in. and 3½in., with side shields and number plates, 7/6 each; sidecar guards with shields, 5in., 9/6 each.—Lancaster, 103, Heeley Rd., Birmingham. [X2273

SADDLES.—Brand new lightweight, 22/-; 3½h.p., 30/-; Brooks B170 or Empire, renovated, as new, 22/-; recovering, 10/-; all post free.—Gosford Engineering, Ltd., Coventry. [X2397

BARGAINS.—22/6, 4in. P. and H. lamp sets, complete, generators, brackets, brand new, lamps as new; postage extra; approval against cash.—Garage, Stratford St. Mary, Colchester. [X2173

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HALIFAX.—New Binks and Senspray carburetters to suit any machine; liberal exchanges; used Amac, Binks, and B. and B. at low prices.—Collier's Motories, Horton St., Halifax. [8546

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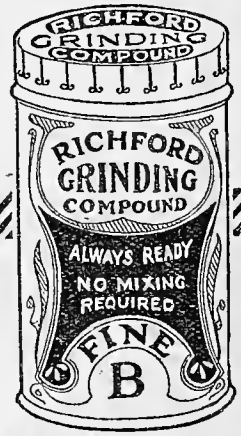

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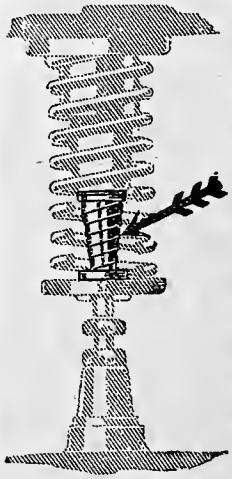

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SULINA Garage.—Quantity 2¾h.p. Douglas frames, one fracture only, £1; fork blades, 15/-; steering columns, 8/6; buffer heads, complete, 5/-; cylinders, 15/-.

SULINA Garage.—4h.p Douglas spares, front brakes complete, 18/6; chain wheels, 12/6; fork blades, old type 7/6, latest type 35/- pair; frames, £3/10; exhaust pipes, 12/6 pair; cylinders, good, serviceable second-hand, 7/6 each. We are the largest stockists of Douglas spares in London. Before purchasing elsewhere, call, write, or 'phone, as it will pay you. Satisfaction guaranteed or money refunded.

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SULINA Garage.—Brooks B170 saddles, absolutely as new, 25/-; send for one on approval. Dunlop inner tubes, unpunctured, 26×2⅜×2¼, 2/6. Carriage on all goods extra. Stamp for reply, please.

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8 h.p. New Imperial Spares, brand new: Chain cases, £1 per set, complete; front and rear wheel spindles, complete with nuts and cones, 3/- pair; rear brake pads, 2/- pair; sliding gears for gear box, 5/- each, plus carriage.—South Eastern Motor Works, Soloman's Passage, Peckham Rye [7950

HENDERSON Motor Cycles, 1914-15-16.—We have a large quantity of spares, crank cases, pistons, cylinders, camshafts, frames, tanks, gears, clutches, etc., etc., much below makers' prices.—Barker's Motors, 194, Balham High Rd., S.W. Tel.: No. 4441 Latchmere. T.A.: Pushfully, Bal., London. [7850

J.A.P. 8h.p. Brand New Cylinder, 35/-; crank case, 35/-; pair double cam gear wheels, 9/- each; crank pins, driving side shafts, main timing shafts, 3/- each; main shafts, timing wheels, 2/6; piston rings, 8d. each; valves, 3/-; gudgeon pin bushes, 1/6.—Marble Arch Motor Exchange, W. [7780

3½h.p. Triumph Parts.—1913 frame (centre portion), £2; front forks complete, £2/10; clutch wheel, £4; 1913 cylinder (slightly imperfect), £1/10; timing case, 10/-; centre frame portion and tank (old type), £1/5; Philipson pulley, £4; countershop carburetter, £2/17/6.—Longhurst, Kingston Rd., Ewell. [7974

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NEW Blackburne 4h.p. Engine, with Amac carburetter and Thomson-Bennett magneto, £23; Grado multi pulley, with kick starter, less control handle and clip, £4; Bowden front brakes, 11/-; Bowden magneto controls, 11/-.—Bastones, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [7720

PISTONS, complete with rings and gudgeon pins, 150 different patterns in stock: 2¾h.p. J.A.P., Singer, Premier, etc., 22/6; 6h.p. Rex, 3½h.p. Norton, 6h.p. J.A.P., etc., 25/-; 4h.p. Bradbury, Premier, J.A.P., Singer, etc., 26/-, post 1/-; all new and fully guaranteed by us.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [7117

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Easy payments taken on new machines, and exchanges entertained.

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1921	MARTINSYDE Combination, all acces.	£125
1921	6 h.p. NEW IMPERIAL Combination, all accessories	£125
1920	TRIUMPH, all accessories	£85
1920	8 h.p. NEW IMPERIAL Combination, all accessories	£135
1921	3½ h.p. SUNBEAM, dynamo lighting, speedometer, as new	£125

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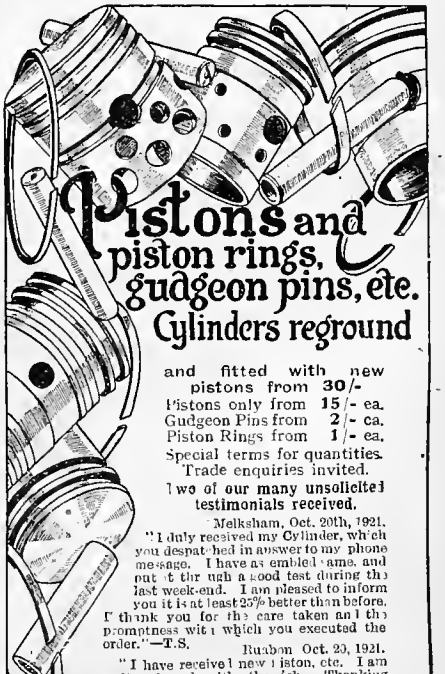

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"I duly received my Cylinder, which you despatched in answer to my phone message. I have assembled same, and put it through a good test during the last week-end. I am pleased to inform you it is at least 25% better than before. I thank you for the care taken and the promptness with which you executed the order."—T.S.

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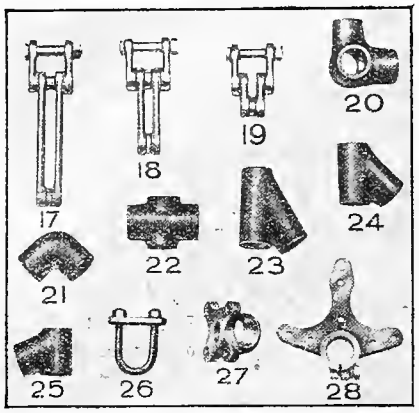

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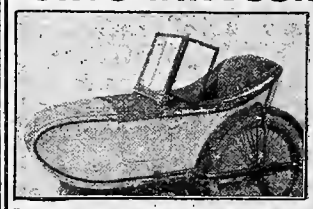

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OLD Man Hep. wishes to notify his numerous clients that he has the annual Toy Bazaar now open. Send for a 5/-, 10/-, or £1 parcel for the kiddies. State age and sex when ordering. Cheapest in the country.—'Phone: 1958 Brixton.—17-19, Wilcox Rd., South Lambeth, London, S.W.8. [8472

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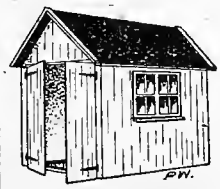

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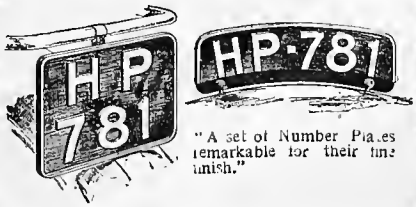

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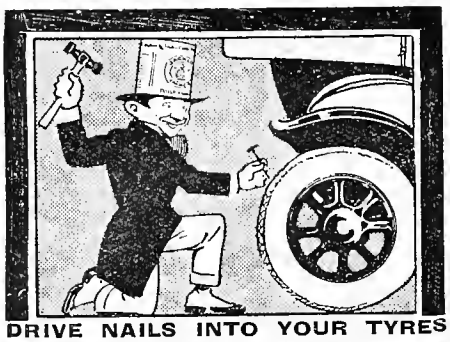

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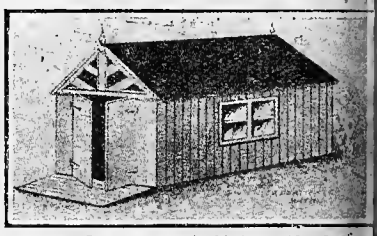

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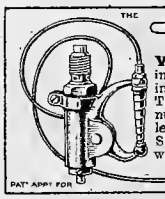

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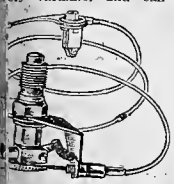
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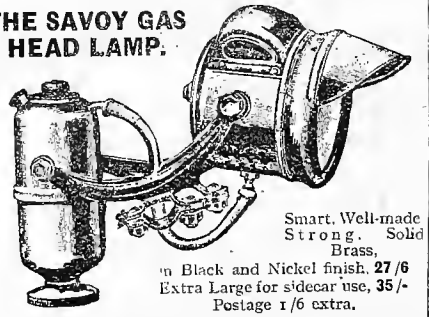

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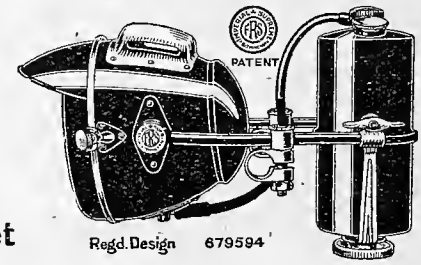

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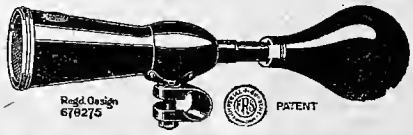

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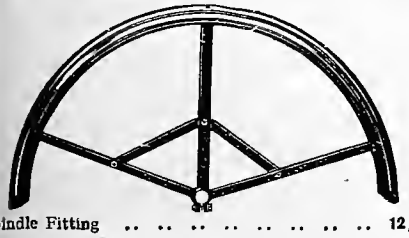

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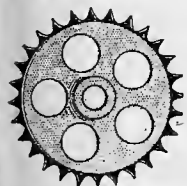

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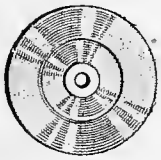

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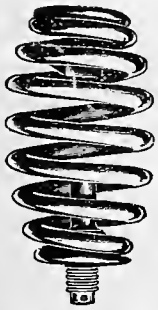

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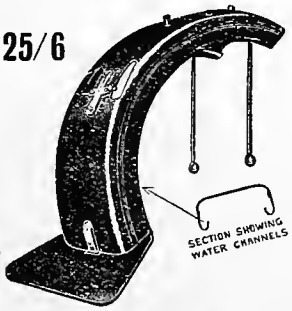

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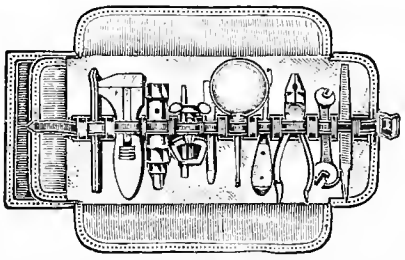

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Large Standard Kits, as illustrated. Usual price, 35/-. Special clearance price, 18/6. Smaller Kits, 9/6 Postage 1s.

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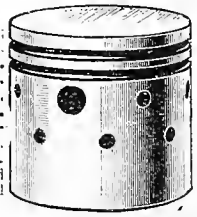

Pattern 2½ h.p. Premier, 25/-; 3½ h.p. Premier, 30/-; J.A.P., 4, 6, and 8 h.p., 30/-; 2¾ h.p., 25/-. Triumph, any year, 24/6. Douglas, 2¾ h.p., 14/6; 4 h.p., 18/6; 3½ h.p., 20/-. B.S.A., 21/-. New Hudson Sunbeam Harley-Davidson Indian, Singer, 2½ h.p. and 3½ h.p. 25/-. Rudge, 29/9. All complete with Rings and Gudgeon Pin. Piston Rings, all makes 1/6 each.

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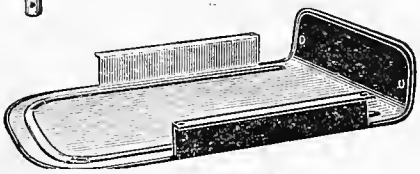

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Suitable for 2¾ h.p. and 4 h.p. Douglas, 7/6

LEATHER HELMETS.

Tan and Brown, fleece lined, 10/-

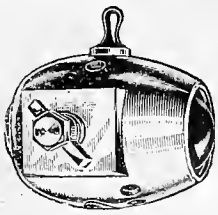
R.A.F pattern, fur lined, As illustrated, 18/6. Long R.A.F. Winter Pattern, 27/6

ALUMINIUM SIDECAR LAMP.

Gas, as illustrated. White light, front; red light, rear 6/-

BLACK NUMBER-PLATE, fitting white for number plate; red rear, 4/-

LARGE SIDECAR LAMP. 7/6. Postage 6d.



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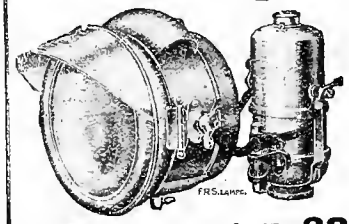

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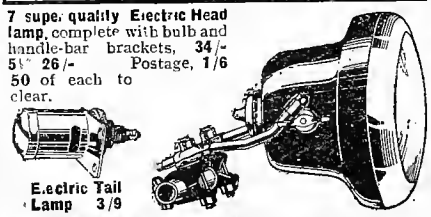
F.R.S. 1920 pattern, 600 feet beam.

The ONLY REAL BARGAIN IN LAMP SETS ON THE MARKET **38/-** Post 1/6

Clearance list contains electric horns **30/-**, Sidecar electric outfits complete **90/-**, Acetylene ditto **60/-**, Mechanical horns *all brass* **25/-**. Car access. of all TYPES.

7 super quality Electric Head lamp, complete with bulb and handle-bar brackets, 34/- 5½" 26/- Postage, 1/6 50 of each to clear.



Electric Tail Lamp 3/9

FORDS 61, MOOR STREET, BIRMINGHAM.

Telephone Central 4079.

Fig. 1.

MOTOR CYCLE SUIT

(*Fig.* 1) Double texture waterproof material, seams cemented and taped, wind cuffs, gusset in overalls and patent clasp fasteners.

SUIT COMPLETE 35/-

Fig. 2.

WATERPROOF TRENCH COAT

(*Fig.* 2) Rubber-lined, perfectly waterproof.

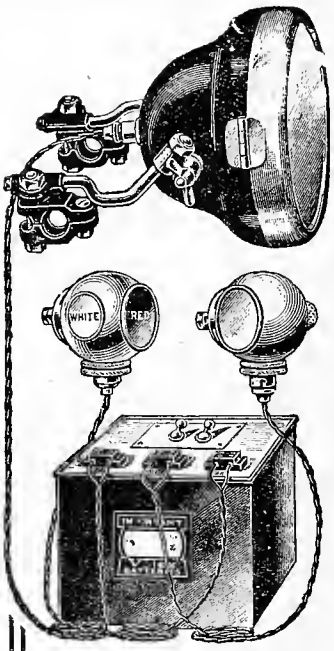
Price 25/-

If you cannot call, send money with breast measurement and height.

CARRIAGE PAID.

Our Guarantee
Money Refunded in full if not thoroughly satisfied.

Actual Manufacturers:
Martin Waterproof Company,
208, Oldham Road, New Cross, Manchester.



British made **"Volex"** Dry Battery

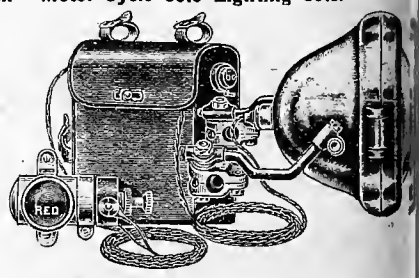
MOTOR CYCLE and SIDECAR **LIGHTING OUTFITS**

RECOMMENDED FOR HOME AND EXPORT.

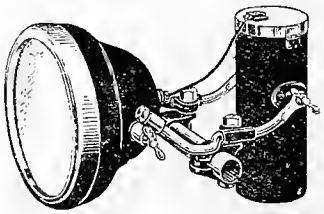
"Volex" Dry Battery Lighting Sets are the ideal no-trouble outfit. No other battery outfit will give results equal to the "Volex."
In satisfactory service for over 10 years with a constantly increasing demand due to their reliability, convenience, and economy in use.
These sets give from 9 to 12 months' service, in ordinary intermittent use, without renewal batteries.
Specification—6 volt "Volex" Dry Batteries in metal container, Switchboard, Superba Head Lamp (5½in. front), Side and Tail Lamps, Cord and Bulbs.
No. Mc/490, as illustrated. Price .. **£8-8-0**
Also supplied with "Superba de Luxe" Head Lamp, 7in. front. No. Mc/450. Price .. **£9-9-0**
Ready for Immediate Use.

"Volex" Motor Cycle Solo Lighting Sets.

The most efficient Dry Battery Solo Sets produced. Made upon the same principle as our "Volex" Combination Set. Head Lamp is provided with 6 volt bulb giving an exceptionally brilliant light, and ample light is provided in the rear lamp.



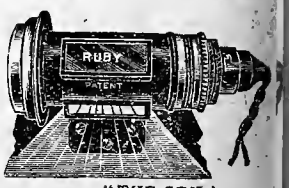
THE "RAY-O'NITE" SELF-CONTAINED MOTOR CYCLE ELECTRIC HEAD LAMP. BRITISH MAKE.
A Great "VOLEX" Achievement.



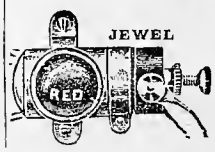
Recommended for Home and Export.
No accumulator, oil, or acid required; a brilliant light obtained at will. A successful self-contained motor cycle lamp such as the "Ray-o'nite" is only rendered possible by the remarkable efficiency of the "Volex" Dry Battery, which is in a class apart from all other primary batteries. Comprising "Superba" Head Lamp (5½in. front), combined with a strong metal container holding the "Ray-o'nite" Dry Battery, complete with bulb. Ready for immediate use.
No M9/1 .. **£3 10 0**
Ditto, with "Superba de Luxe" Head Lamp (7in. front) **£4 4 0**
Spare "Ray-o'nite" Dry Batteries **10/6**
Can be fitted in a few seconds.

"Superba" Head and Rear Set.
5½" front Head Lamp, M10/10 .. .. **£4 12 6**
Head Lamp set only, M10/7 .. .. .. **£4 2 0**
"Superba de Luxe" Head and Rear Set.
7" front Head Lamp, M10/11 .. .. **£5 7 6**
Head Lamp set only, M10/8 .. .. **£4 17 6**
"Superba" Head Lamp, 5½" front.
Complete with Holder and Adaptor .. **£2 0 0**
"Superba de Luxe" Head Lamp, 7" front.
Complete with Holder and Adaptor .. **£2 12 6**

ELECTRIC REAR LIGHTS.
Rear light only
GEM 5/6
JEWEL 15/-



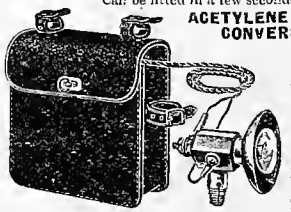
"THE GEM"



JEWEL

Fitted with Bulb and 6ft. Conducting Cord.
GEM 7/6
JEWEL 17/-
Complete with "Volex" Dry Battery fitted in strong Satchel Container
Gem 25/-
JEWEL 30/-

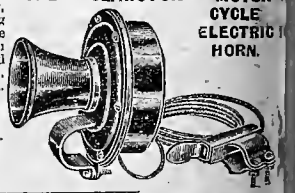
ACETYLENE TO ELECTRIC CONVERSION SET.



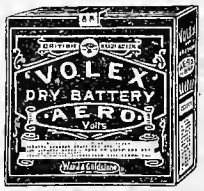
The Adaptor screws into the Acetylene Burner and the wiring can be carried out in a few seconds. Complete Outfit as illustrated with 4 Volt "Volex" Aero Dry Battery in Leather Satchel with Conducting Cord and Bulb. Price **31/-**
Do., with 6 Volt "Volex" Aero Battery. Price **37/-**

THE "CLAROVOX" MOTOR CYCLE ELECTRIC HORN.

Gives a loud, clear, sonorous warning note. Complete with Switch Attachment and Conducting Cord. All Black finish.
Price 30/-
De Luxe Model Heavily Nickelled.
Price 40/-



"VOLEX" DRY BATTERIES.



The most powerful dry batteries on the market. Unsurpassed for Ignition, Motor Cycle Lighting, Operating Electric Horns, etc.

Type	Volt	Size.	Price
Giant	4	6½x3x3	10 6
"	6	6½x3¾x3	15 0
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"	6	6½x6x2½	21 0
Emperal	4	6½x7½x2½	25 0
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Full particulars on request.

TORPEDO SIDECAR LAMP
13/6
BALL ditto. 11/-
BALL Tail Lamp 13/6
Smaller Type 10/6

RED LENS

All complete with Lamp Holder and Adaptor

Sectional List M202A on request.
Enclose Business Card or Memo. for Trade Terms.

Metal Filament Bulbs.
Min. Screw Type (15 mm) 2 & 4 volts, 1/- 6, 8 & 12 volts, 1/10
S.B.C. Type, 2, 4, 6, 8, & 12 volts, 1/8
When ordering state whether for Accumulator or Dry Battery Service.

Sliding Knob Switch.
Strong and Efficient. Polished Wood. Price 2/9

Ward & Goldstone PENDLETON. MANCHESTER LTD

THE MOTOR CYCLE

ESTABLISHED IN 1903

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The Eve of the Show.

ONCE more we have arrived at the eve of the Show—the third since the war, and one which promises to be quite as interesting as any of its predecessors. To the student of design it may not contain so much material for debate, but it will reveal tendencies which are all to the good both from the buyers' and from the manufacturers' point of view.

Following closely the very successful automobile show, the motor cycle exhibition at Olympia is expected to excel all other similar shows in respect of the number of visitors who will daily throng to Kensington to examine the latest productions of the British, American, and Continental motor cycle industries.

Interest in motor cycles was never greater. It only requires an improvement in trade generally to increase the purchasing power of the middle classes, and the motor cycle movement will grow more rapidly than ever before. In other words, the recent depression in trade has been due to economic reasons only, and has no parallel in the history of industry.

In the early days of the motor cycle movement supply exceeded demand, because the number of persons interested in this type of vehicle was very limited. The reason further was that the motor cycle was a new method of transportation admitted to be in the experimental stage. To-day the motor cycle is as reliable as any other form of machinery, and the veriest novice, after learning the simple controls, may undertake a thousand miles journey with confidence. At one time it was necessary to be more or less a mechanic to obtain satisfactory results; to-day little more than the knowledge of driving is necessary. What is more, the general public now appreciate this. One no longer hears questions regarding reliability or otherwise of motor cycles; reliability is taken for granted, just as it is accepted by all in connection with cars. Thus, by trial and research, manufacturers have removed the most adverse influence to sales which obtained in the past.

Motoring for All.

Most of the old points criticised a few years back have been eliminated. Mudguarding is much improved; both motor cycles and sidecars are comfortable. The chances of tyre trouble have been minimised by the general adoption of larger tyres. Increased knowledge in metallurgy has brought about refinements in design which a few years ago were impossible; it has also rendered possible the wonderful increase in engine efficiency, so apparent to all who have had opportunity to compare recent machines with those of only a few years ago.

Love of the open country is as great as it has ever been—the extraordinary popularity of the motor char-à-banc confirms this—and the motor cycle provides the most economical form of transportation for one person or a whole family, whether for pleasure or for business purposes.

Roads are returning to their pre-war standard and, so far as motor cycles are concerned, the value of the pound sterling shows a decided and welcome tendency in the same direction. In this connection, we are constrained to remind our readers that the 1922 prices of motor cycles compared with those prevailing in 1914 are remarkably low when the value of the pound is considered in connection with the purchase of any other commodity. There are very few articles which can be purchased below 100% increase on the pre-war price, yet 1922 motor cycles are, in many cases, quoted at figures considerably below the 100% increase standard. Only those who purchased motor cycles before the war can fully appreciate this. Prices, too, promise to be more stable, and there should not be any hesitancy on the part of would-be buyers to defer purchases from fear of high depreciation.

Everything considered, there is much to indicate that 1922 will be a far more successful year than at one time appeared likely.

OCCASIONAL COMMENTS

BY IXION

Terminology.

THE secretary of the Croydon Foreign Language Club admits shortcomings in our mother tongue. He quotes a common advertisement on French hoardings:

"*Pneus Hutchinson, pour Auto, Moto, et Vélo.*"

This quite gets over the "pushbike" difficulty, doesn't it? But I must candidly warn my linguistic friend that willing as I am for my mount to be re-christened a "moto," I am quite sure he will never persuade the members of the North Road C.C. to allude to their dinky little speed-irons as "vélos." They are more likely to accept with glee such things as rear lamps and taxation! Time heals all wounds, and if my grandson follows in grandpa's footsteps, and perpetrates this column in A.D. 1975, he will probably be able to use the word "pushbike" without causing tanned gentlemen with exaggerated calves and large clubs to call at the office and ask if he is in.

The Tea-planter's Sidecar.

I SUPPOSE a certain percentage of our readers are tea-planters in embryo, and for their sakes I pass on a tip just to hand. Don't take out a car to a plantation in—well, anywhere ending in "-addy" or "-ugger," without first seeking local information. My correspondent informs me that his rain book records 1.85in., 4.45in., and 1.17in., for the last three days, and that his neighbourhood is simply studded with bogged cars, like the almonds on a sponge cake (pre-war model). He recommends a sidecar, because, when the worst comes to the worst, you can dissect a combination into its two main components, whereas a Rolls-Royce is by way of being an indivisible entity. In his part of the world the undershields of cars get so silted up with samples of road that there is no room left for the flywheel to revolve.

The Tink-a-Ponks.

I MUCH appreciate our correspondent's new name for the baby 'buses. We shall have to revise our opinion of the little 'uns. In the old days nobody could possibly regard them as a man's machine; they were potterbuses, pure and simple. To-day, two varieties are quite assuredly good touring machines for moderately hard riders. One is the three-speeded baby two-stroke. I specify *three* speeds because no ordinary two-stroke possesses quite as good a range of engine revolutions as a decent four-stroke, and want of engine flexibility must be atoned for by plenty of gears. My own 2½ h.p. Cedos is a two-speeder, capable of about 45 m.p.h. on top, slowed on second gear by the need of a ratio which enables it to climb most things. Plus a rather higher top, a middle appreciably higher than its present bottom, and a lower bottom, it would keep up a higher average, and become a positive dreadnought. The other sound touring model is a three-speeder four-stroke, fitted with some such engine as the 8,000 r.p.m. J.A.P. Of course, some of these babies are not sufficiently brilliant in design to be really comfortable—that is where the buyer must employ discrimination, for others hold the road like glue, and are not a bit dithery.

At any rate, engine and gear box design in the 250-350 c.c. class may be O.K.'d as being on sound go-anywhere lines, and some of the new frame layouts that are being readied for Olympia are miles ahead of 1920 designs. The methods whereby the engine and the gear box may be fitted *en bloc* take my eye mightily.

A miniature reproduction of the coloured cover of our next week's issue, which will contain a full report of the Olympia Show.

Are Journalists Handsome?

I AM deeply pained. I have had a most impertinent letter from a reader who has apparently succeeded in penetrating my pseudonymity. He says he knows several other motoring scribes who, of recent years, have imitated my gay, irresponsible *causerie*, and they are—if possible—uglier than I am. He wants to know if there is any intrinsic connection between ugliness and contributing to the technical press.

Perhaps. A certain witty nobleman was once being chaffed about his somewhat uncouth personal appearance. "Ugly?" he thundered. "Of course I'm ugly. All intelligent men are ugly. Look at the bench of bishops." *(Then sotto voce):* "Aren't they handsome?" This letter reminds me that editors usually ask for portraits before granting interviews to aspirants to an editorial post.

Occasional Comments.—

The Poor Man's Motor Coach.

MOST impressive is the modern 5-8 h.p. family sidecar outfit—one of the commonest objects of the roadside, and may be termed Mr. Quiverful's joy. Mr. Quiverful is on the saddle, of course. Mrs. Quiverful occupies the central tier of the sidecar seats. In front of her (I never pried into their means of support) are the twins. Astern, in a kind of stern pocket corresponding to the dickey of a car, is little Tommy, not infrequently wedged in by Matilda; neither she nor Tommy can see anything which is not broadside on to them, for Mrs. Quiverful's material back makes an effectual windscreen. Mrs. Quiverful's sister occupies the carrier. It is because private owners subject innocent chassis to such terrific overloads that clubs have to include bad dreams like the Inverfarigaig hairpins in their competition routes. It is because of Mr. Quiverful and his like that sporting grass widowers like myself who want a sports solo have to put up with machines that weigh 240 lb. like the new o.h.v. Triumph. Ten years ago the Triumph people would have turned that 'bus out at 160 lb. Mr. Quiverful and his like have cured makers of that. Bad cess to 'em.

Bone Lazy.

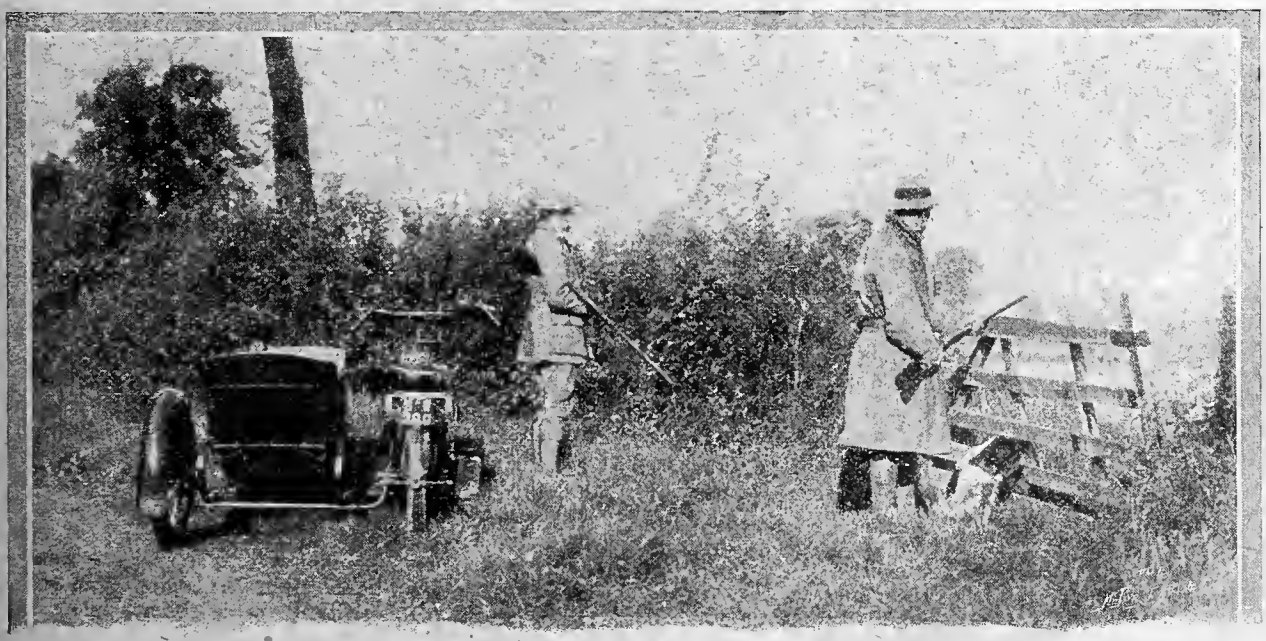
MY intimate friends always say that I was born tired. This is how they account for the fact that I take a far livelier interest in cycle cars than in sidecars. Perhaps it is so. There are days when our roads assume the consistency of the Passchendaele Ridge, and erupt a kind of gritty porridge on to their surfaces. It is possible that a cycle car brings home as much of this nauseous mire as any sidecar. But the gleanings are visible on the motor bicycle half of the outfit. It is more or less submerged in them. It is a long and grimy business to remove them. On the other hand, a cycle car is enclosed in coachwork. The true function of coachwork, dear reader, is not to contain passengers. It is to conceal mud. I have the kind of mind which is worried by visible mud, but recks nothing of invisible mud. So I frankly prefer the discreet and deceptive cycle car, which conceals its mud just as families secrete their skeletons in cupboards. I tell my friends who make sidecars that I will buy a sidecar outfit when ten minutes' business with a hose will render it ostensibly clean.

Seriously, though.

IT is easy enough to fling light persiflage at any type of passenger motor cycle, which after all is only the personification in metal of the poet's phrase

My poverty, but not my will, consents.

Yet there is one solid fact to be urged in favour of sidecars, quite apart from all considerations of finance. What vehicle furnishes such real passenger comfort in all weather as a first-class sidecar, with suitable hood, screen, and other appurtenances? The Bedford cord cushions of a 40 h.p. saloon? Believe me, its springing is seldom as perfect as that of the best sidecars, and it fits you so loosely that you are jerked about by centrifugal force even if no actual jars reach you. In a good sidecar you float over the vilest pot-holes, and when the outfit swings its snug sides pinch you, and you swing in smooth harmony. Moreover, you do not feel as if you ought not to be in it. Occasionally one of my profiteer acquaintances (I do not know any lords) transports me in a £2,500 saloon, and I feel rather ashamed of sharing luxury when so many folk are unemployed. But a sidecar is comfort at a modest price, and Beery Bill, when he sights me, does not regard me as grinding the faces of the poor. So physically and morally and mentally the sidecar represents unalloyed comfort.



WITH THE AUTUMN GUNS.

Few of us live right on the top of a rabbit-haunted meadow, but many of us appreciate the thrill of a day's shooting. The sidecar solves the transport problem for all—not forgetting the dog.

AN OPEN LETTER TO THE TRADE.

The Economic Position. Catering for the Motor Cyclist of To-day and To-morrow.

GENTLEMEN,—By the Editor's courtesy it is my privilege to address you annually on the eve of the Show upon matters which are near both our hearts. This year I am inevitably reminded of a certain Oriental king, who slept badly after rather a damp evening. He dreamt. In his dream he saw seven hearty-looking cows feeding in a meadow. After a time seven skinny animals prowled into the meadow, "very ill-favoured and lean-fleshed"; but their appetites were certainly "O.K.," for they promptly gobbled up the seven fat cows. The king in question, like certain foreign princelings whom we wot of, was not a remarkably bright boy; so he sent for the business man of his empire, who immediately foretold a boom, to be shortly followed by a slump; and made provision accordingly.

Now you, gentlemen of the trade, are not a dreamy lot of people; in most of my dealings with you I have found you quite remarkably wide awake. Still, I believe you all dreamed this particular dream some time in November, 1918, and possibly you, too, saw seven fat cows, followed by seven ill-favoured beasts. The trouble is that only one fat cow came along. It was followed by one quite extraordinarily lean-fleshed and ill-favoured beast, which has gobbled up the fat cow, and is still as ill-favoured as it was at the beginning. Moreover, no man knows how many more of these lean-fleshed and ill-favoured beasts are coming along—the croakers expect a regular procession of them. So we are all rather sorry for ourselves.

We buyers and riders find time to be a little sympathetic with you sellers and makers, but we are much more sorry for ourselves. You, at any rate, had your one fat cow—in 1919 you could get any price for your machines that you liked to ask.

Both Sides of the Labour Question.

If you are not tired of parables, I may be bold enough to indicate the best way of showing the lean cows out of the meadow. In pre-war days I once employed a bricklayer to put up a garage, and he laid over 700 bricks in the day, by which he earned, if I remember aright, about 7s. After the war some of us converted an Army hut into a village club. The job entailed the laying of 1,200 bricks, and the wage bill for bricklaying alone amounted to over £20. When a labourer will not labour, costs go up; when costs go up, export trade disappears in competition with countries where labour does labour. Some people pause and fulminate at this point of the enquiry, others go on to ask why labour will not labour.

Some years ago I got a young married mechanic a job in the cycle trade at Coventry. He was a steady, hardworking young fellow, and had spent all his savings in furnishing. In his first year at Coventry he was never technically unemployed, but he only got 150 days' work, and he was only paid 150 days' wages. Labour not unnaturally desires security. When labour finds that there is not enough work to give every man 286 days' work in the year, it invents dodges for distributing the job and the wage as evenly as possible; and the remedy is often as bad as the disease. That is the problem which we have to solve before whole-hearted co-operation between employer and employee can return. Let us hope it will return rapidly, and restore our lost export trade.

Competitions Still Booming.

Leaving these dismal matters on one side, we have had a great season in spite of the slump. A record addition of riders to our ranks. Plenty of clean, wholesome sport in our competitions. Lots of new reputations made. Few old reputations smirched. We shall return to the struggle in 1922 with renewed ardour—the T.T. in particular is going to be a battle in which no quarter is asked or given, and I don't think anybody is really sorry that in all probability we shall revisit the Isle of Man again, even though a race in Belgium might have stirred our lethargic Parliament to picture a race somewhere in the centre of England.

I daresay you have noticed a most profound and subtle change which is stealing over the motor cycle world. Before the war, motor cycling was sport. To-day it is transport. I don't say that the sporting type of rider is extinct; it is still every boy's dream that papa will remember his birthday with something which has short flat handle-bars and an exhaust pipe like a stove funnel. But just as the pedal cycle began by being a society toy, and eventually economised the rural postman's shoe leather, so the motor cycle is now regarded, like the doormat, as an essential and unromantic part of many people's existence. Gone for ever are the days in which most riders treated the machine as a collector treats a precious *objet d'art*. It isn't the pivot round which our lives revolve. We don't gallop home from the office to clean it. No! Most of us ride it in a sober, businesslike fashion, cuss it when necessary, and forget all about it between whiles. Now there are essential differences between an idol and a doormat. Men don't object to devoting much time and cash and thought to their

An Open Letter to the Trade—

gods. But they expect a doormat to function automatically and without attention.

It follows that the motor cycle of to-day and to-morrow should be an entirely different proposition from the motor cycle of yesterday. Terrific speed no longer matters. Climbing should be sure rather than breath-catching. A glittering appearance is quite unnecessary. On the other hand, the machine should weigh as little as may be. It should float over the vilest surfaces. It should start at a nod of the owner's head. It should cost a mere trifle to maintain. It should never require any cleaning. It should stand up by itself on the least provocation. It should not compel you to dress as if you were trying to break the altitude record with an aeroplane. It should lend itself to transporting the modest baggage which cyclist travellers need, from a pound of tomatoes up to eight stone of female beauty. It should be skidproof. It should never, never, never develop fits of the sulks on a wet night. Its oil should be out of sight and out of mind. It should never confront its user with the highly expert task of mending a tyre in the cold dark on his way to keep a vital appointment. It should not make noises like a machine gun.

It is a slow job to convince John Citizen in his millions that you make the best utility machine on earth. On the other hand, you can earn a colossal reputation in three months by winning the T.T. But if you specialise on the sports side of the industry, its far more important utility aspects are apt to get obscured, both in your own mind and in your drawing office. No man can serve two masters.

Towards New Ideals.

Besides all this, the utility aspect bristles with barbed wire. How to lighten the machine? How to weatherproof it? How to spring it? How to make it punctureproof? How to cut down running costs? None of these problems are easily solved. Still, behind all the speed and stunt work most of you are busily working towards the new ideals. Quite a lot of standard 3½ h.p. machines will do their 100 miles on a gallon of petrol, and their 1,500 miles on a gallon of oil. The new super saddles save our spines many a jar. The 3in. tyres which are gradually invading the smaller classes add to our comfort, and often run a whole season without deflation. Crank cases are growing "cleaner." Automatic oiling is slowly gaining ground. Nickel plating is shrinking annually in area. Weight is coming off here and there, though not half fast enough. The A.C.U. Six Days Trials were a clean break with the riotous tests of the past, though they largely failed to differentiate the best machines from the not-so-goods. John Citizen is still seriously scared when he chances to witness one of our motor cycle competitions, but he is, nevertheless, coming over to us in large numbers; and in another year we shall understand more clearly what this worthy gentleman wants.

It is quite possible that the sidecarette is the real pointer towards the future of the industry. The extraordinary achievement of F. C. North's O.K. outfit shares with the 2¾ h.p. A.J.S. victories the chief sensations of the year. Now John Citizen has limited use for a solo mount. He is as sociable as he is timid. A sidecar will accommodate Mrs. Citizen and some of the olive branches; moreover, it will not fall over on grease, and it does not want holding up or propping when it is blocked in traffic or happens to be dismounted. So John seldom remains content with two wheels. If we get any poorer than we are now, the single-cylinder sidecar outfit is going to be the maximum most motor cyclists will consider. Then we shall get down to the sidecarette, which would, at the worst, transport two or three people cheaply over easy roads. Given moderate prosperity, the 4 h.p. proposition will be the best seller. For a year or two something good and cheap to carry two people is what is most wanted. That is why the pillion seat survives so doggedly. It may not be too safe on the novice's machine, it may never be cosy, but it gets there, and the extra seat costs no more in taxation.

Expensive Electric Lighting.

It is very unfortunate that electric lighting should have become really sound just when few of us can afford £30 extras, for electric lighting is almost a necessity on a utility machine. Perhaps the dissolved acetylene people will seize their chance. We all want electric lighting, but only a limited number are going to pay £30 for it. Nothing so reconciles a man to all-weather motor cycling as the knowledge that he can rely on first-class lighting with the minimum of trouble. A word of commendation is therefore due to those who have evolved, or are attempting to evolve, a simple combined lighting and ignition set suitable in weight and cost for the very lightest machines.

Our current impoverishment leads to cheaper machines. But there are many ways of cutting prices. Designing for production is the road to fame and riches. Reducing quality is the road to bankruptcy. The utility mount must be reliable first, last, and all the time.

Perhaps we ought all to give a thought to the immense number of roadworthy motor cycles which are now in owners' hands. There are over 370,000 machines licensed in this country. The vast majority are still eminently rideable. Only a percentage of their owners will buy new machines until general trade revives. We have to break new ground to find big 1922 markets. The good sign, however, is that there is no lack of interest in motor cycles, and the desire to possess a new model is as keen as ever. Another cheery note is that we have the strong pull of economy, for no form of transport is so cheap and reliable as a good motor cycle. Those who spend their Bank holidays and their summer vacation awheel know it too.

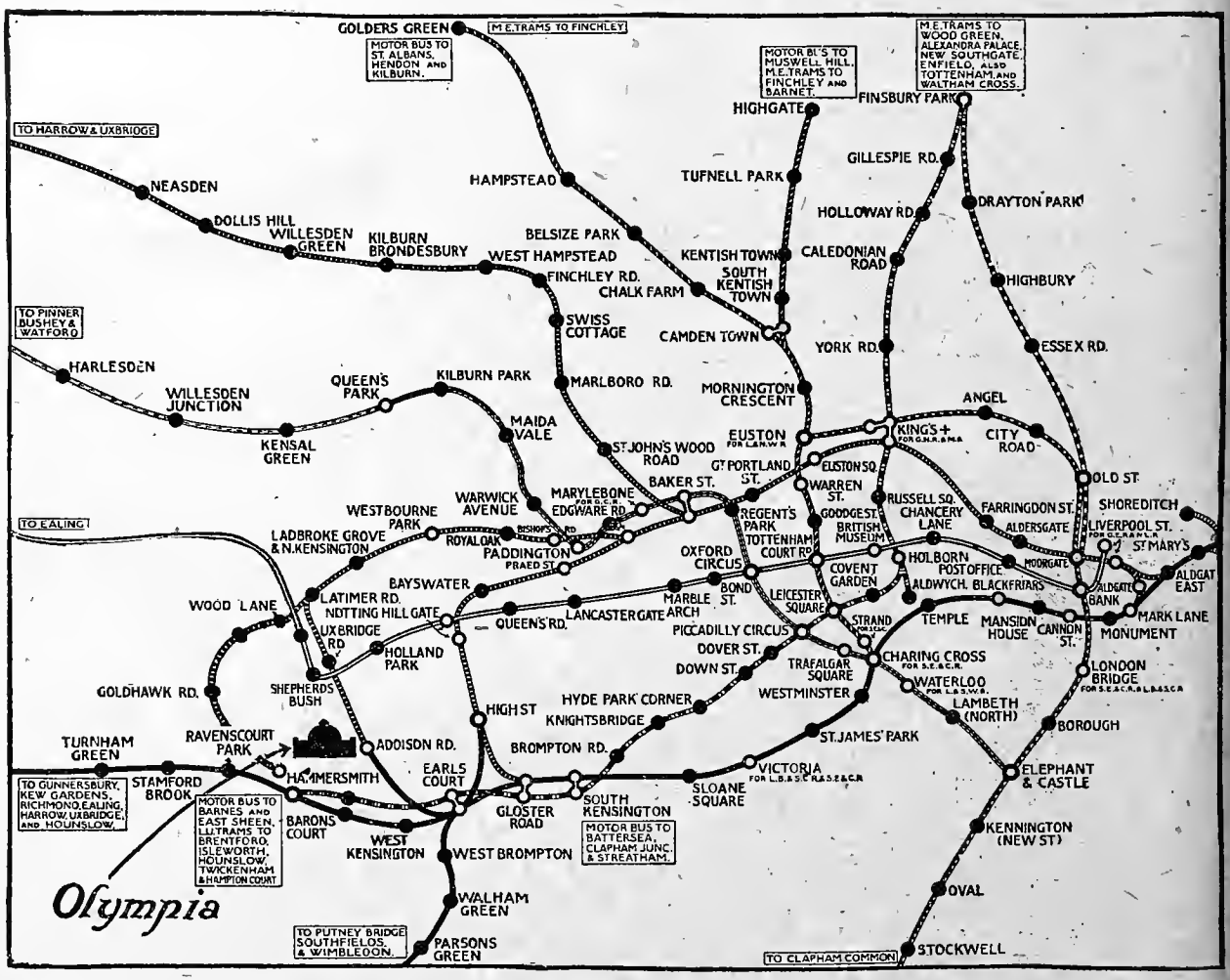
I fervently hope, gentlemen, that before another Show comes round we shall have got our house in order, so that the unsurpassable quality of British motor cycles will again reap its due reward on the international markets, and so create increased prosperity at home.

Yours very sympathetically,
B. H. DAVIES.

NEXT THURSDAY THE MOTOR CYCLE SHOW REPORT NUMBER.

HOW TO REACH OLYMPIA.

Connections of the Underground System with the Main Lines shown by Map and Table.



FOR those who do not know their way about London the following information will be of service. The map, in conjunction with the table, shows how Olympia may be reached by underground railway, or by motor omnibus, from the principal termini, as well as the Tube routes from all parts of the London area.

BAKER STREET (Metropolitan Ry.). By Metropolitan Railway to Addison Road.

BROAD STREET (L. & N.W. Ry.) By Central London Railway to Shepherd's Bush, changing there to motor 'bus—Nos. 49, 49a, or 49b.

CANNON STREET (S.E. & C. Ry.). By District Railway to Addison Road, changing at Earl's Court.

CHARING CROSS (S.E. & C. Ry.), By District Railway to Addison Road, changing at Earl's Court.

EUSTON (L. & N.W. Ry.). By Hampstead line to Charing Cross, thence by District Railway to Addison Road, changing at Earl's Court; or by L. and N.W. Railway to Addison Road, changing at Willesden.

FENCHURCH STREET (L.T. & S. & G.E. Rys.). By District Railway from Mark Lane (3 minutes' walk) to Addison Road, changing at Earl's Court.

KING'S CROSS (G.N. Ry.). By Piccadilly line to Addison Road, changing to District Railway at Earl's Court.

LIVERPOOL STREET (G.E. Ry.). By Central London Railway to Shepherd's Bush, changing there to motor 'bus—Nos. 49, 49a, or 49b.

LONDON BRIDGE (L.B. & S.C. & S.E. & C. Rys.). By District Railway from Monument Station to Addison Road, changing at Earl's Court.

MARYLEBONE (G.C. Ry.). By Metropolitan Railway from Baker Street to Addison Road.

PADDINGTON (G.W. Ry.). By Metropolitan Railway to Addison Road.

ST. PANCRAS (M. Ry.). By Piccadilly line to Addison Road, changing at Earl's Court.

ST. PAUL'S (S.E. & C. Ry.). By District Railway from Blackfriars Station to Addison Road, changing at Earl's Court.

VICTORIA (L.B. & S.C. & S.E. & C. Rys.). By District Railway to Addison Road, changing at Earl's Court.

WATERLOO (L. & S.W. Ry.). By Bakerloo line to Charing Cross, thence by District Railway to Addison Road, changing at Earl's Court.

'Bus Routes to Olympia.

For those who prefer to travel all the way to Olympia by motor 'bus, the following particulars of the services available should be studied ;

BAKER STREET (Metropolitan Ry.). 'Bus service Nos. 27, 27a, or 27b.

BROAD STREET (L. & N.W. Ry.). No. 9.

CHARING CROSS (S.E. & C. Ry.). No. 9 or No. 33.

CANNON STREET (S.E. & C. Ry.). No. 1 to Piccadilly Circus, thence by No. 9 or No. 33.

EUSTON (L. & N.W. Ry.). No. 73.

FENCHURCH STREET (L.T. & S. & G.E. Rys.). No. 23 to Oxford Circus, thence by No. 73.

KING'S CROSS (G.N. Ry.). No. 73.

LIVERPOOL STREET (G.E. Ry.). No. 9.

LONDON BRIDGE (L.B. & S.C. & S.E. & C. Rys.). No. 13 to Piccadilly Circus, thence by No. 9 or No. 33.

MARYLEBONE (G.C. Ry.). Nos. 27, 27a, or 27b.

PADDINGTON (G.W. Ry.). Nos. 27, 27a, or 27b.

ST. PANCRAS (M. Ry.). No. 73.

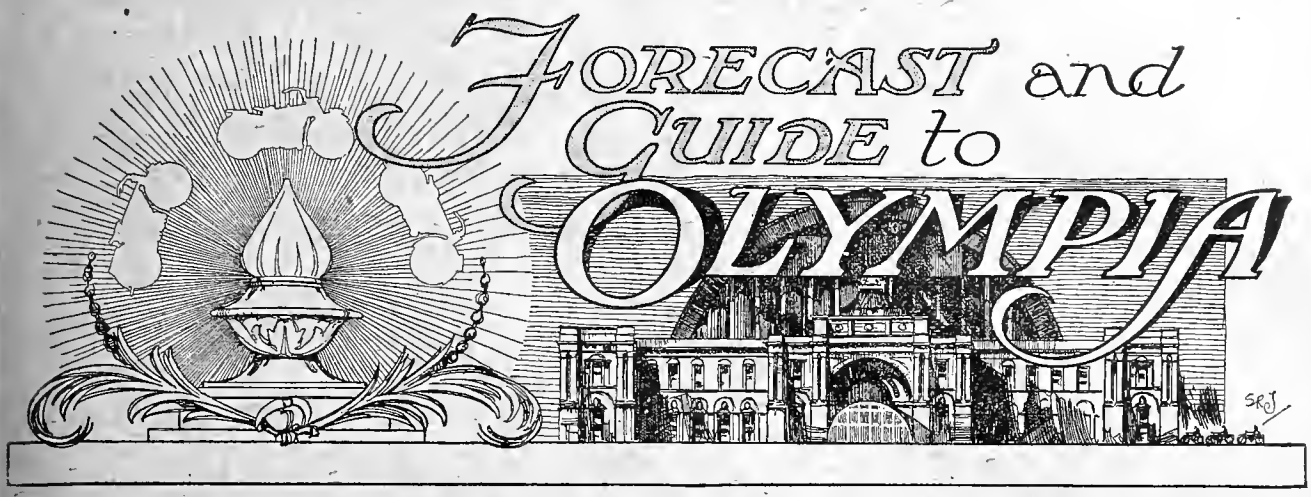
ST. PAUL'S (S.E. & C. Ry.). No. 9 from Ludgate Circus.

VICTORIA (L.B. & S.C. & S.E. & C. Rys.). Nos. 16, 25, 25a, 25b, 38, 38b, to Hyde Park Corner, then by No. 9, 33, or 73.

WATERLOO (L. & S.W. Ry.). Nos. 1a, 6, 68 to Strand, thence by No. 9.

HOUNSLOW. No. 37 to Richmond, thence by Nos. 33, 73, or 27.

LEWISHAM. Motor 'bus No. 49a runs from Shepherd's Bush *via* Holland Road, serving also Catford, Forest Hill, Upper Sydenham, Crystal Palace, Beulah Hill, Streatham Common, Tooting Bec Road, Trinity Road, Northcote Road, Falcon Road, Battersea Bridge, Sydney Street, Gloucester Road, and High Street Kensington.



An Advance Review of 1922 Motor Cycles, Sidecars, and Runabouts to be Exhibited at the Motor Cycle Show opening on Monday Next.

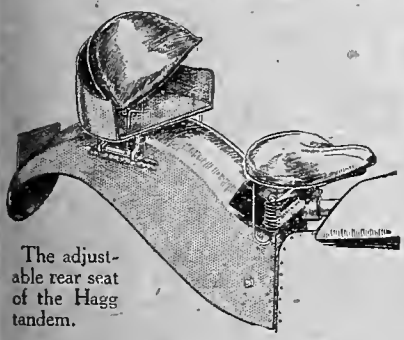
The following pages contain a stand-to-stand forecast of the exhibits, so arranged as to form a guide to the Show. Also in this issue will be found plans showing the positions of exhibitors.

In addition to the forecast of 1922 models contained in this issue, "The Motor Cycle" for several weeks past has contained detail descriptions of new machines. The issues in which these appeared were as follows:

Ariel	Nov. 17	Francis-Barnett	Nov. 3	Matchless	Oct. 6	O.K.	Oct. 27	Sirrah	Oct 27
Bradbury	Nov. 17	Hazlewood	Nov. 3	and	Nov. 17	P. & M.	Oct. 27	Sunbeam	Nov. 10
Beardmore-Precision	Nov. 10	Humber	Oct. 13	Mackechnie	Nov. 10	Quadrant	Nov. 17	Sparkbrook	Oct. 27
Bown	Nov. 3	Harley-Davidson	Nov. 17	Metro-Tyler	Nov. 17	Rudge	Nov. 17	Triumph	Oct. 27
Coulson	Nov. 17	Hawker	Nov. 17	New Comet	Oct. 27	Raleigh	Sept. 22	Verus	Oct. 27
Coventry-Victor	Nov. 10	Indian	Nov. 17	New Imperial	Nov. 3	Royal Ruby	Nov. 10	Velocette	Nov. 3
Douglas	Oct. 27	Ivy	Oct. 27	New Hudson	Nov. 3	Radco	Nov. 10	Victoria	Nov. 17
F.N.	Nov. 17	James	Oct. 20	N.U.T.	Nov. 17	Rex-Acme	Oct. 13	Wolf	Oct. 27
		Levis	Oct. 27	Omega	Nov. 10				

Stand **HAGG.**

3. The Hagg has now fully passed its experimental stage. The mechanism is almost entirely enclosed by means of aluminium plates, which not only serve to enclose the moving parts, but act as efficient windshields. Pressed steel enters largely into the construction and is employed in the tank, rear forks, and rear mudguards, which enclose a very large portion of the back wheel. The frame, incorporating the engine cradle, gear box carrier, and under shield, is made of heavy tubing, while the rear wheel is sprung by means of a single leaf spring.

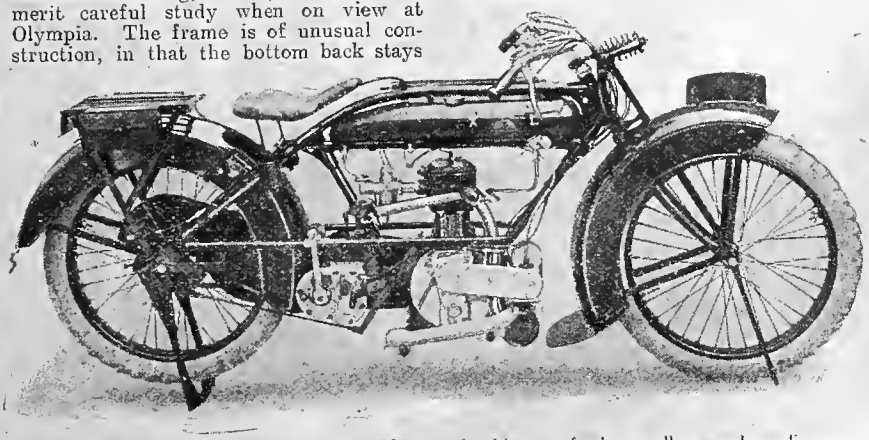


The adjustable rear seat of the Hagg tandem.

The engine is a 350 c.c. Precision two-stroke, driving through a foot-operated Burman two-speed gear box. The engine is started by hand by means of a long lever attached to the usual kick-starter spindle. The Hagg may be used not only as a solo mount but as a tandem, the passenger being carried on an aluminium bucket seat sliding in grooves attached to the valances of the pressed steel rear mudguard. A low centre of gravity should ensure absence of skidding.

Stand **X.L.**

3. Among the lesser known, but none the less deserving, makes, the X.L. will merit careful study when on view at Olympia. The frame is of unusual construction, in that the bottom back stays are extended forward to meet the front down tube lug, so making the construction a rigid one, without depending upon the engine crank case, which is held by separate bearers. Pressed steel lugs are employed throughout. The motive power is the new pattern 4 h.p. J.A.P. engine, 85×95 mm. (550 c.c.), and the gear box is a Sturmey-Archer. A saddle of the firm's own construction hinged at the peak, and made under Lycett's patents, is used. Hinged front forks are fitted; and both front and rear mudguards are most efficient.



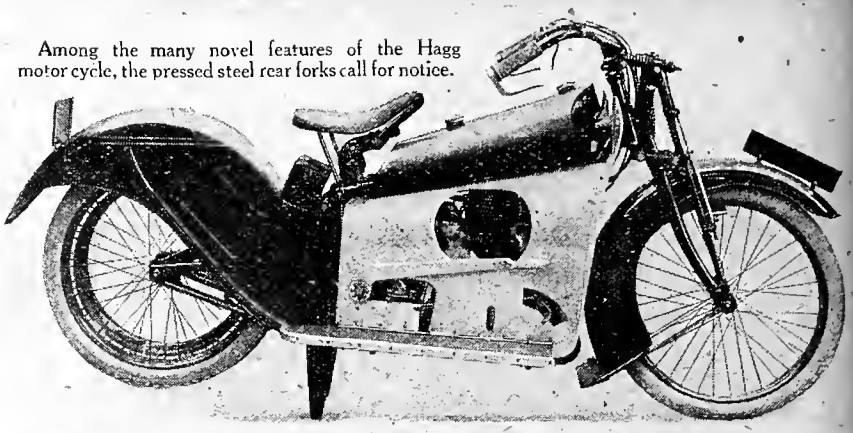
A mount of graceful appearance—the X.L., noticeable, too, for its excellent mudguarding.

Forecast and Guide to Olympia.—

Stand **P.V.**

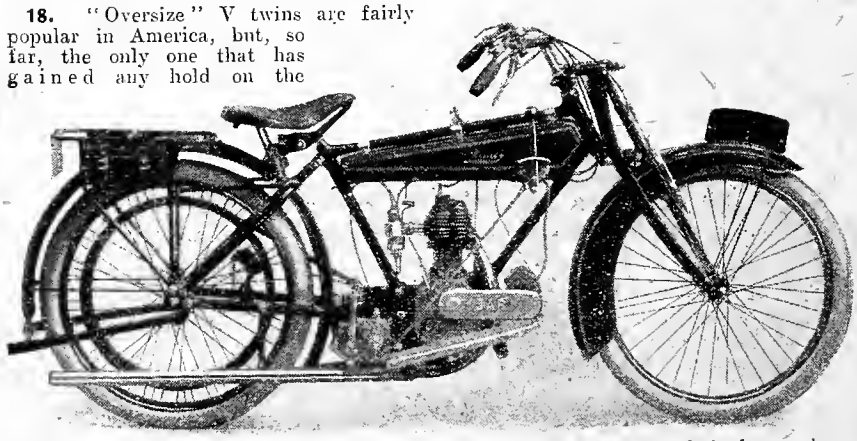
17. One of the earliest successful spring frames, the P.V. design, remains as neat as any on the market. Yet it has not been altered to any great extent in recent years, which is testimony to the original excellence of the layout. The system is simple. The short pivoting forks upon which the rear wheel is carried are extended forward, being controlled by concealed shock and rebound springs in the suitably curved saddle tube. A Villiers-engined lightweight is probably the best known P.V., but the frame has also been found to be eminently satisfactory in a J.A.P.-engined twin 4 h.p. model.

Among the many novel features of the Hagg motor cycle, the pressed steel rear forks call for notice.



Stand **READING-STANDARD.**

18. "Oversize" V twins are fairly popular in America, but, so far, the only one that has gained any hold on the British market is the Reading-Standard. It has an engine of 1,280 c.c., and, in one or two respects, is not quite so strikingly "American" as its compatriots from across the Atlantic. Side-by-side valves are standard, and a transmission shock absorber may be fitted, if desired, at a slight extra cost. Twist grip control and a commendably deep and capacious petrol tank form unmistakable clues to its nationality. Wide mudguards of clean contour and enclosed valve springs are two admirable points in the design. Dynamo lighting may be fitted at the option of the purchaser.



Following conventional design this Ready model will appeal to followers of the four-stroke lightweight type of mount.

Stand **READY.**

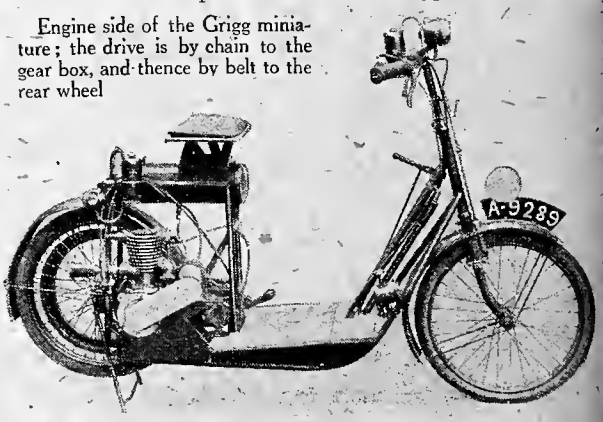
18a. The Ready is a production from Weston-super-Mare, and a newcomer to Olympia. Four models will be exhibited, representative of the range of seven machines to be offered in 1922. Two of the motor cycles staged will have 292 c.c. J.A.P. engines, Burman two-speed gears, one having a clutch and kick-starter. A 350 c.c. J.A.P. engine forms the power unit of the third model, and the gear box is of the three-speed type with clutch and kick-starter. The fourth model has a Coventry Victor flat twin engine, and is intended for side-car work. The silencing arrangements on all these motor cycles are well worth noting. At first sight it appears that plain exhaust pipes without expansion boxes are fitted, but on examination it will be found that neat detachable silencers are contained in the ends of the pipes.

Stand **GRIGG.**

19. The chief feature of the Grigg exhibit will be the 1½ h.p. ultra light-weight two-stroke with duplex frame, which is described elsewhere in this issue. It is a fascinating little mount, which must make a strong appeal to ladies especially, while those well past their youth will find in it a type of machine for which so many have been waiting.

Engined with the same diminutive power unit, the seat-type scooter is also an attractive production for those desiring this type of vehicle.

Engine side of the Grigg miniature; the drive is by chain to the gear box, and thence by belt to the rear wheel

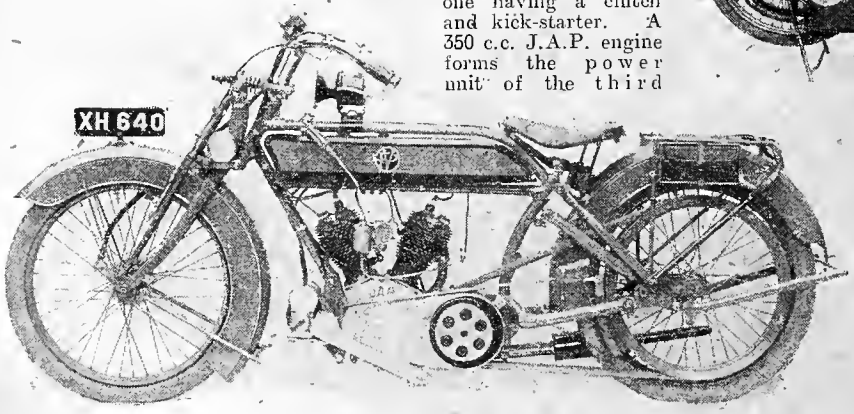


Stand **COTTON.**

20. Motor cyclists who have studied triangulated frame design, and those who favour weight reduction, will find the Cotton exhibit of great interest. The Cotton frame is of the duplex type, and none but straight tubes are used in its construction. It is not a new idea, for the Cotton frame has had a successful existence since pre-war days.

Stand **POWELL.**

21. A Wrexham production, the Powell is one of the post-war designs. It has a 4 h.p. four-stroke outside fly-



A 4 h.p. dual purpose mount—the P.V., fitted with a rear-springing system that has stood the test of several years' experience.

Forecast and Guide to Olympia.—

wheel single-cylinder engine placed in an inclined position in the frame. For 1922 several alterations have been made, including a re-designed timing gear which now has separate cam wheels instead of both cams being on one camshaft. Chain drive will be introduced in place of the chain-cum-belt transmission hitherto used.

Stand **QUADRANT.**

22. Bearing an honoured name in the motor cycle world, the Quadrant is again offered at a very low price. Equipped with a Quadrant 4½ h.p. four-stroke engine, and fitted with a Sturmey three-speed gear and chain drive with shock absorber, the Quadrant sidecar outfit is to be sold at £105. An alternative model with chain-cum-belt transmission is £5 less. It is an exceedingly neat outfit, well made, and cleanly designed. The tank is of the saddle type, has rounded sides, and the mudguarding is well carried out.

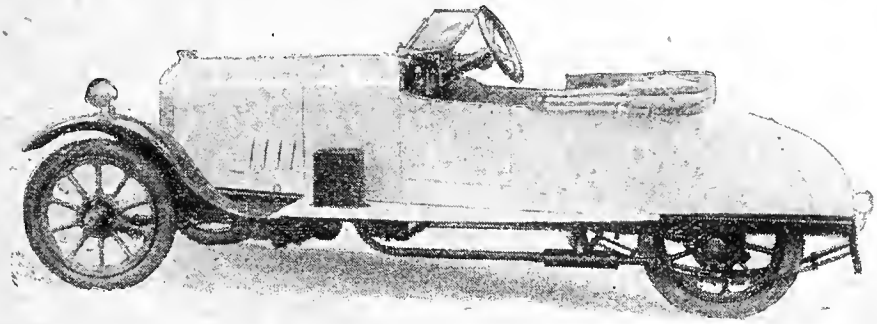
An inclined cylinder is a feature of the outside flywheel Powell engine.

Stand **UNIBUS.**

23. Visitors to Olympia who regard shaft transmission as the ideal for motor cycles will pause long at the stand of the Gloucestershire Aircraft Co. to examine the Unibus miniature; it is an excellent example of the manner in which shaft drive can be applied to a single track machine. The Unibus is excellently made, and, had the same mechanical principles been applied to a larger machine more on motor cycle lines, there is no doubt that such a machine would have taken its proper place among the post-war designs. As an elaborate form of "scooter," it represents the last word in this type of machine.

Stand **SIDECAR BODY CO.**

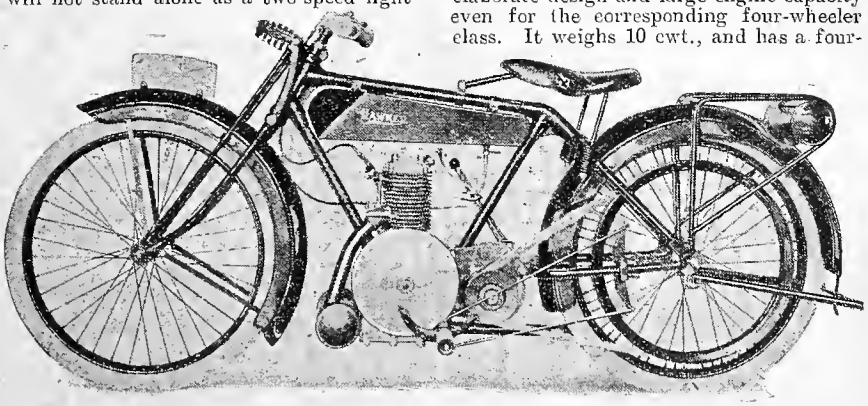
24. A wide range of sidecars, marketed under the general name of Rideezi, will be shown by the Sidecar Body Co. The Show exhibits will range from large double-seated sidecars to the inevitable sporting models of projectile shape in polished aluminium. Touring sidecars for low, medium, and high-powered machines are to be shown. A feature of all the Rideezi sidecars is that they are built throughout in the works of the makers, even the lugs and fittings being machined under personal supervision.



Of substantial construction and pleasing in design—the 10 h.p. Castle Three runabout.

Stand **HAWKER.**

25. Next year the Hawker two-stroke will not stand alone as a two-speed light-weight of extremely simple design; several firms are following similar lines in their 1922 models. But the Hawker remains distinctive in several ways—the saddle, for example, and the cylindrical metal tool-box, which is a replica of the silencer. Only in finish has this model been improved for next year. Following the same general lines, however, a range of Blackburne-engined machines has been introduced, including 2¾ and 4 h.p. types, and also the new 2¾ h.p. overhead valve model. Burman gear boxes are fitted to the heavier Hawkers.

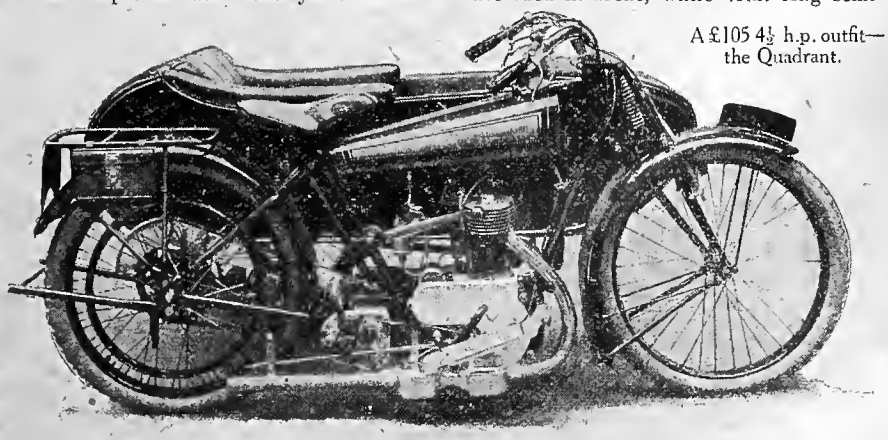


Except in very minor details the two-stroke Hawker, which has done well in this year's trials, has not been altered.

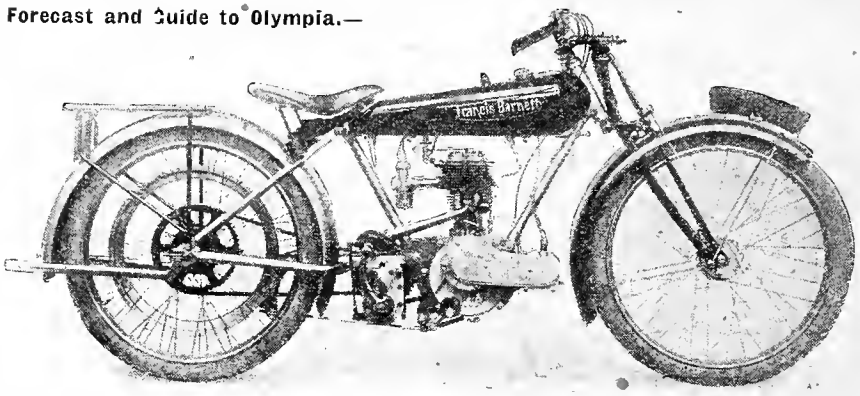
Stand **CASTLE THREE.**

26. Except that it has but three wheels, the Castle Three is a small car of quite elaborate design and large engine capacity even for the corresponding four-wheeler class. It weighs 10 cwt., and has a four-cylinder water-cooled engine of 1,207 c.c. (nominally 10 h.p.). Although car practice is again followed in the drive (by shaft), the gear box is of the epicycle type. A reverse is provided. The bodywork and general finish are most attractive. Transverse quarter-elliptic springs are used in front, while 40in. long semi-

A £105 4½ h.p. outfit—the Quadrant.



Forecast and Guide to Olympia.—



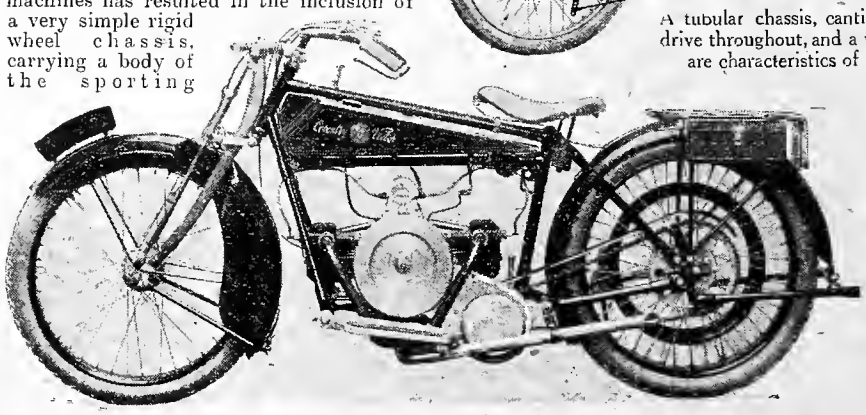
A Francis-Barnett Sports model fitted with 2¾ h.p. J.A.P. engine.

elliptics support the rear wheel. All three wheels are interchangeable, and special provision has been made to ensure quick detachability of the rear.

Stand **GRINDLAY SIDECARS.**

27. The Grindlay name was built up on the success of an admirably sprung chassis, which embodied a floating hub spindle carried between two half-elliptic springs; these, with their front anchorage and back shackle, form an enclosing rectangle about the wheel. Such a successful design naturally is still prominent in the firm's programme, but the demand for lighter and cheaper chassis for use with less powerful and heavy machines has resulted in the inclusion of a very simple rigid wheel chassis, carrying a body of the sporting variety. A very graceful semi-sports body is also mounted on a spring wheel chassis forming the Club model, and most attractive it looks.

Previously, the luxurious *de luxe* models had coil springs to support the toe of the body, but now upturned quarter-elliptics are used. At the back are also quarter-elliptics, the free ends of which slide in special lugs on the chassis cross members.



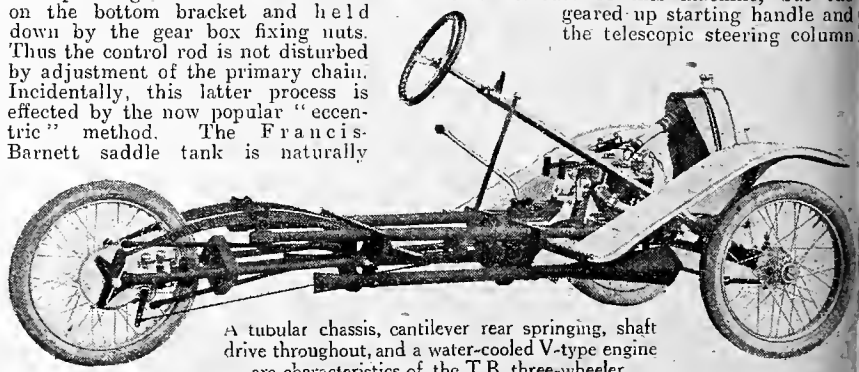
For solo or sidecar service—the 686 c.c. flat twin Coventry Victor.

Stand **FRANCIS-BARNETT.**

28. There are several lightweights with a very similar general specification to the Francis-Barnett, but careful detail design gives it a surprising amount of distinction. This is particularly true of the new 350 c.c. sporting model, which has as a power unit the remarkably efficient little J.A.P. engine of that capacity. Transmission is by chain through a light-weight three-speed Sturmey gear box, the operating lever of which is mounted on the bottom bracket and held down by the gear box fixing nuts. Thus the control rod is not disturbed by adjustment of the primary chain. Incidentally, this latter process is effected by the now popular "eccentric" method. The Francis-Barnett saddle tank is naturally fitted, but it is now enamelled black, as are as many hitherto plated parts as possible. Other models include a two-stroke and a 293 c.c. J.A.P.-engined utility mount, both with two-speed Sturmey-Archer gear boxes. Legshields and a Maglita may be fitted to the 293 c.c. model if desired. All three machines are excellently finished.

Stand **T.B.**

29. The T.B. belongs to the heavier class of three-wheeler, and has a car-type gear box giving three speeds and reverse; the final drive is by shaft. A choice of J.A.P. engines, however, is allowed, ranging from the water-cooled 10 h.p. type down to the air-cooled 986 c.c. model (nominally 8 h.p.). None of the T.B. three-wheelers, however, exceed 8 cwt. in weight, and thus they come into the £4 class for taxation. An enormously strong chassis or frame is the chief feature of this machine, but the geared up starting handle and the telescopic steering column are also worthy of mention. The rear wheel is quickly detachable, and all three are interchangeable.



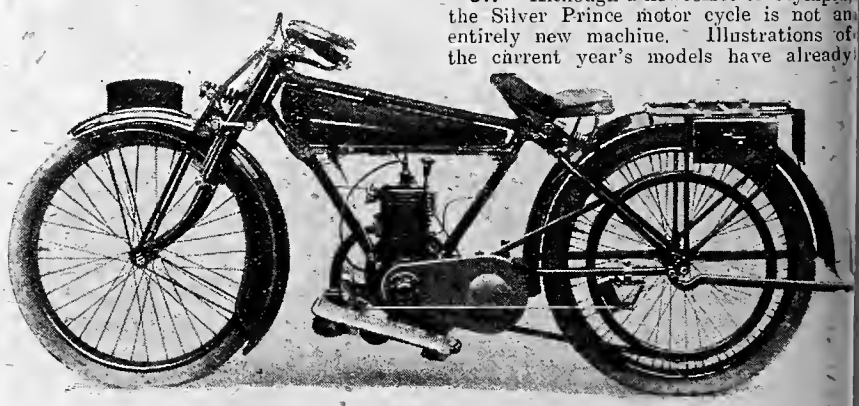
A tubular chassis, cantilever rear springing, shaft drive throughout, and a water-cooled V-type engine are characteristics of the T.B. three-wheeler.

Stand **DOT.**

30. A new spring frame of duplex construction is one of the Dot features for 1922. The principle adopted embodies a rear wheel frame hinged near the gear box, and connected to the upper part of the main frame by means of coil springs. The hinged member is carried on ball bearings. Both engine and gear unit are carried inside the frame. Two 8 h.p. outfits are to be offered, one being a "sports" model.

Stand **SILVER PRINCE.**

31. Although a newcomer to Olympia, the Silver Prince motor cycle is not an entirely new machine. Illustrations of the current year's models have already



This utility model of the Silver Prince two-stroke is named the Indian Prince

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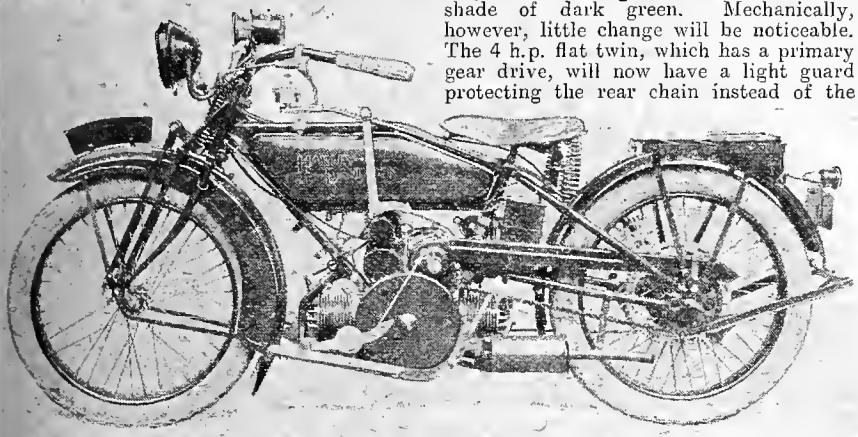


An alteration immediately noticeable on the 1922 flat twin Harley-Davidson is the substitution of a chain guard for the case previously used.

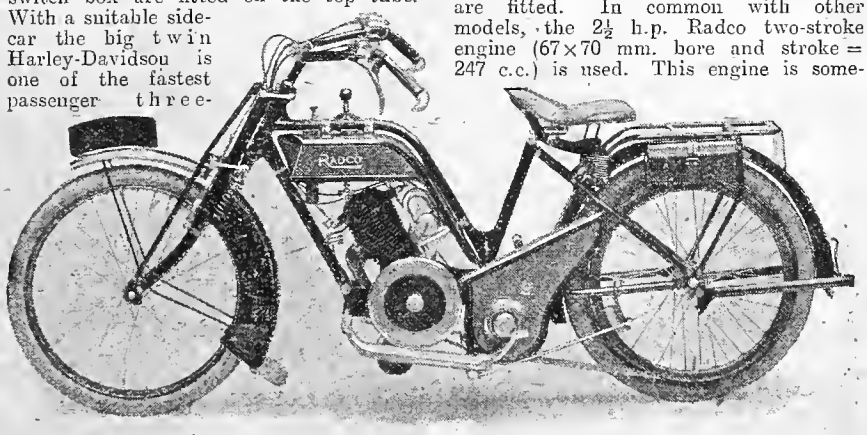
appeared in these pages, and we were constrained to comment upon the excellent finish and detail work. The 1922 models which will be on this stand include two and four-stroke lightweights of conventional types. In addition, a new model, which it is proposed to name "The Indian Prince," with a two or four-stroke engine, will also be shown.

Stand **COVENTRY VICTOR.**

32. There will be more than one interesting machine on this stand. In addition to the sports model 5-6 h.p. Coventry Victor (which follows closely the lines of the winning 750 c.c. machine in the 500 Mile Race), there will be an example of the new Mackechnie-Coventry Victor, first described in *The Motor Cycle* of November 10th. It will be recalled that the latter model embodies an entirely original suspension system of distinct promise. Briefly, the power unit, gear box, and tank, with the rider, are suspended on a sub-frame independently sprung from the main girder frame connecting the steering head to the rear axle. Only one long leaf spring is used, and an unusually wide range of movement is permitted to the spring portion. This machine and the three rigid frame Coventry Victors are all fitted with the same flat twin engine.

Stand **HARLEY-DAVIDSON.**

35. It will come as a shock to many Harley-Davidson owners, if they have not already noted the news in the press, to find their familiar flat twin or big twin staged at Olympia in an unfamiliar shade of dark green. Mechanically, however, little change will be noticeable. The 4 h.p. flat twin, which has a primary gear drive, will now have a light guard protecting the rear chain instead of the complete case hitherto fitted. Mechanical pump lubrication, twist grip control, and 28×3in. tyres, and the like distinctive features of an American machine are retained. The popular "seven-nine" for 1922 mainly differs from the 1921 model in electrical details; a new ammeter and switch box are fitted on the top tube. With a suitable sidecar the big twin Harley-Davidson is one of the fastest passenger three-wheelers on the road, while it makes a suitable solo mount for certain enthusiastic types of solo motor cyclists.



A lightweight for ladies—the 2½ h.p. Radco.

Stand **VELOCETTE.**

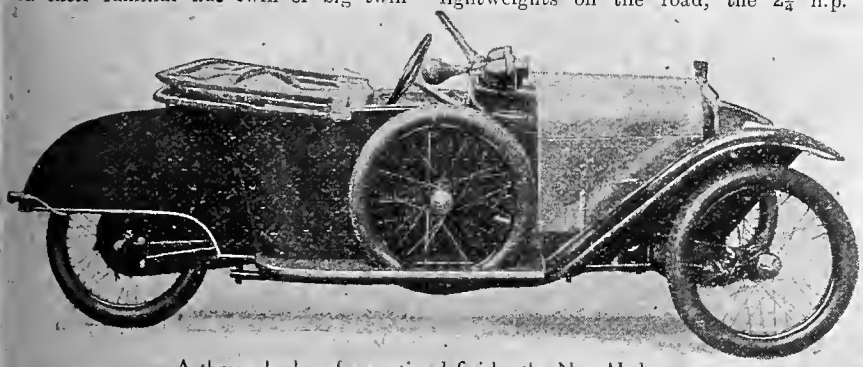
36. Although it is already undoubtedly one of the most successful lightweights on the road, the 2¼ h.p. Velocette has been further improved for next year. The gear box has been redesigned, and is now obtainable in two or three-speed forms with both clutch and kick-starter, which latter fitment, by the way, does not necessitate an extra pinion. Gear control is now effected by a conventional type of gate; a more efficient silencer with an ejector action, and neater and more easily detached chain guards are also among the alterations. Provision has also been made to exclude oil from the rear brake (of the internal expanding type); and throughout the machine grease cups replace the pedal cycle type of lubricator wherever possible. Finally the front forks have been strengthened, and both front and rear mudguards extended. The Velocette self-contained, mechanical lubrication system has, of course, been retained; and, indeed, the power unit generally has not demanded change. Only one size and type of engine is made by this firm.

Stand **RADCO.**

37. A feature of the Radco exhibit will be a neat little machine especially manufactured for riders of the fair sex. The weight will be no more than 150 lb., and it will have a very low saddle position. 24×2in. tyres are used, and special quickly detachable dressguards are fitted. In common with other models, the 2½ h.p. Radco two-stroke engine (67×70 mm. bore and stroke = 247 c.c.) is used. This engine is somewhat larger than that used in previous models, though it retains most of the original features. Amongst other details are the neatly enclosed exhaust release leading to the exhaust port. Several variations on the standard machine are available, and single geared, two-speed, and two-speed with clutch and kick-starter are made. In addition, a light sidecar outfit with three-speed gear may be shown.

Stand **NEW HUDSON.**

38. From the neat little New Hudson two-stroke to the beautifully equipped three-wheeler is a large gap, but this is bridged by the new big single sidecar outfit. With all-chain drive and Sturmey-Archer gear, footboards, and legshields, and a very full equipment, this will be one of the most attractive bargains for the buyer who desires a useful sidecar mount, selling, as it does, at a very moderate figure. The New Hudson three-wheeler has undergone several important modifications, and is now fitted with the 10 h.p. water-cooled M.A.G. engine.



A three-wheeler of exceptional finish—the New Hudson.

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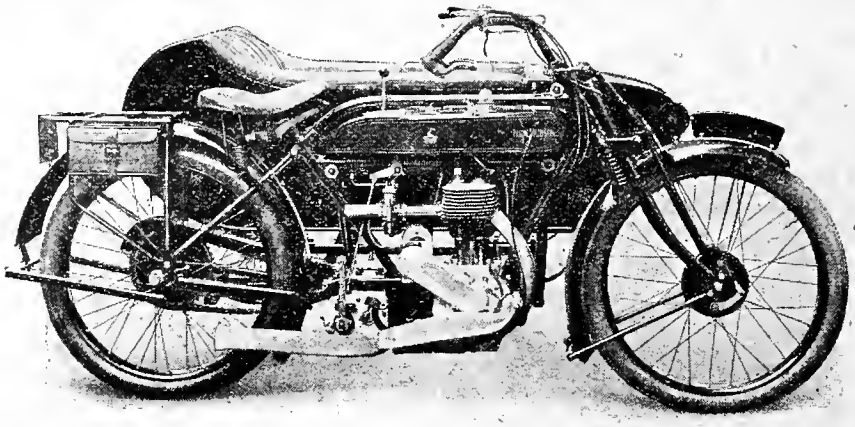


Very careful consideration has been given to the detail work of the 4½ h.p. New Hudson.

Visitors should not fail to see the very neat and simple permanent jack which is used to facilitate the removal of the rear wheel. Three speeds and reverse and shaft and chain drive are features of this luxurious runabout. The little two-stroke is too well known to need description, and it is sufficient to state that a *de luxe* model with all-chain drive is now marketed as well as the popular lightweight.

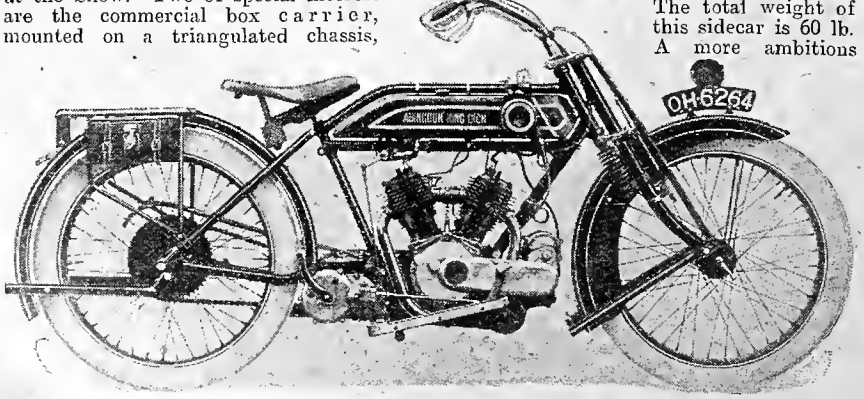
Stand **LEA-FRANCIS.**

39. Noted for the excellence of the detail work and finish, Lea-Francis, Ltd., have not found it necessary to make any radical alteration in their 3½ and 5 h.p. twin-cylinder models. The only modification of note lies in the fact that on the larger machine the clutch and shock absorber are now fitted on the countershaft instead of on the engine-shaft. A Brampton spring link chain is also fitted as a final drive on the 5 h.p. model. It will be remembered that, though a normal type of gear box is employed on the passenger machine, on the smaller mount the gear unit is housed in a cylindrical bottom bracket with a simple eccentric chain adjustment. M.A.G. engines are fitted in both cases.

Stand **WATSONIAN SIDECARS.**

40. Watsonian Sidecars, of Conybere Street, Birmingham, are putting forward several new models which will be staged at the Show. Two of special interest are the commercial box carrier, mounted on a triangulated chassis, and capable of dealing with loads up to 3 cwt., and the truck sidecar, with a float type of body, suitable for farmers, builders, plumbers, or similar tradesmen. The truck body will accommodate two standard milk churns, and its strength (the construction is of oak, reinforced with iron plates) permits it to be used for small livestock or any heavy or rough load.

Amongst the touring Watsonian models may be mentioned the new Featherweight A. This is a streamlined body of polished aluminium on a very light triangular chassis. The price is very low, almost at pre-war level, and the appearance is attractive. The total weight of this sidecar is 60 lb. A more ambitious sporting model is the R34, built on "airship" lines; while the Monarch is a large and roomy touring sidecar with ample locker space, yet it is comparatively light withal, its weight being 111 lb.



A useful type of mount for serious sidecar work: The Abingdon 6-7 h.p. twin with three-speed gear.

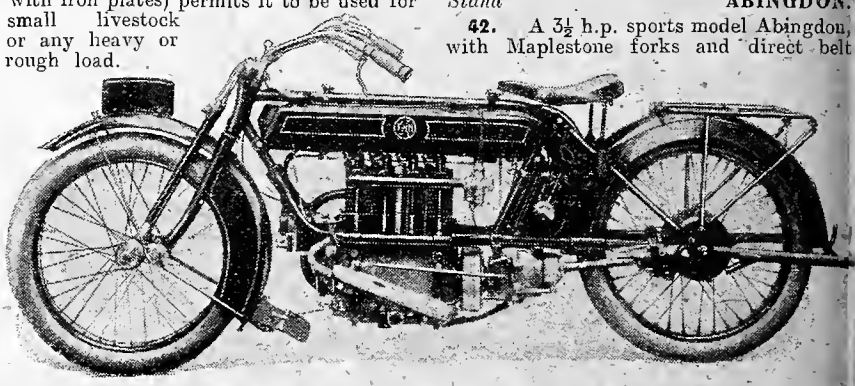
Stand **F.N.**

41. The new 8 h.p. F.N. will undoubtedly be one of the attractions at the forthcoming Exhibition. There have been few alterations since 1914, but the 1922 model will be a thoroughly up-to-date machine, having overhead inlet valves in the four-cylinder engine placed centrally in the cylinder heads similar to those of the 1914 T.T. model. The single-cylinder lightweight will also have an overhead inlet valve.

The exhibit will consist of four standard 2½ h.p. lightweights, two 7 h.p. four-cylinder motor bicycles, and two 7 h.p. four-cylinder motor bicycles (of which one will be fitted with the F.N. standard sidecar complete with hood and screen, while the other will be equipped with a special limousette sidecar with V pattern windscreen). Two of the new 8 h.p. four-cylinders will be shown—one with and one without sidecar—and one 2¾ h.p. lightweight with overhead inlet valve.

Stand **ABINGDON.**

42. A 3½ h.p. sports model Abingdon, with Maplestone forks and direct belt drive, in conjunction with an adjustable pulley, will be shown. A similar machine with three-speed gear and chain and belt drive makes a useful dual-purpose mount, while the 6-7 h.p. twin, fited with all chain drive and 28×3in. tyres is a fine heavy passenger job. A novelty, however, will be the big 4¼ h.p. single, 85×110 mm. bore and stroke (624 c.c.). This machine is specially built to meet the demand for a robust and simple sidecar machine, and we are in a position to state—after a trial run—that the pulling powers of the new engine are excellent. Fitted with three-speed gear and all chain drive, the big single Abingdon will make a strong appeal to a large class of buyers, to whom the name of the manufacturers is sufficient guarantee of sound construction. 28×3in. tyres are also fitted to this model.



Improved appearance is a characteristic of the new 8 h.p. o.h.i.v. F.N.

Stand **B.S.A.**

43. Besides the well-known single cylinder B.S.A., which is one of the most popular dual-purpose machines on the road, there will be three other models exhibited. First the sports model, which is a replica of the standard machine

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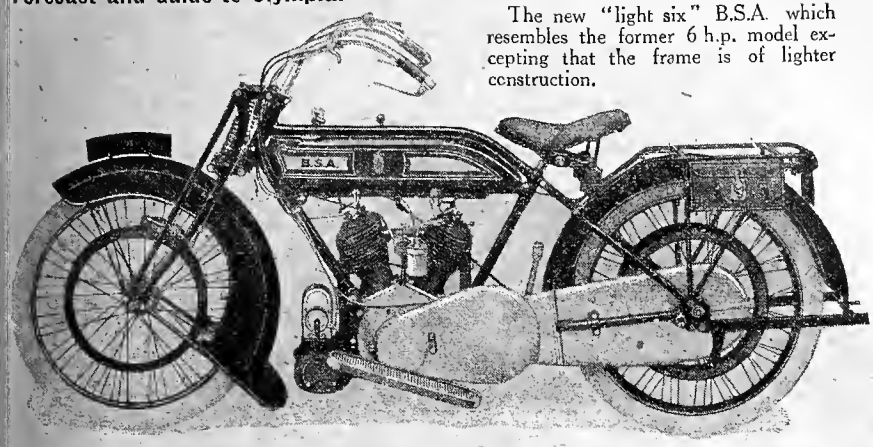
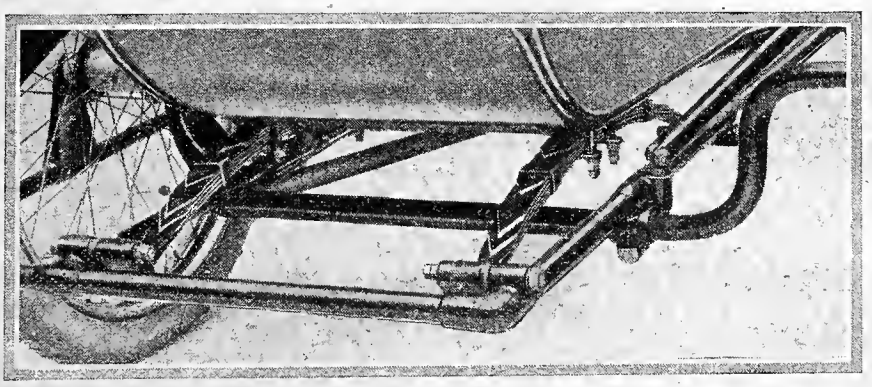
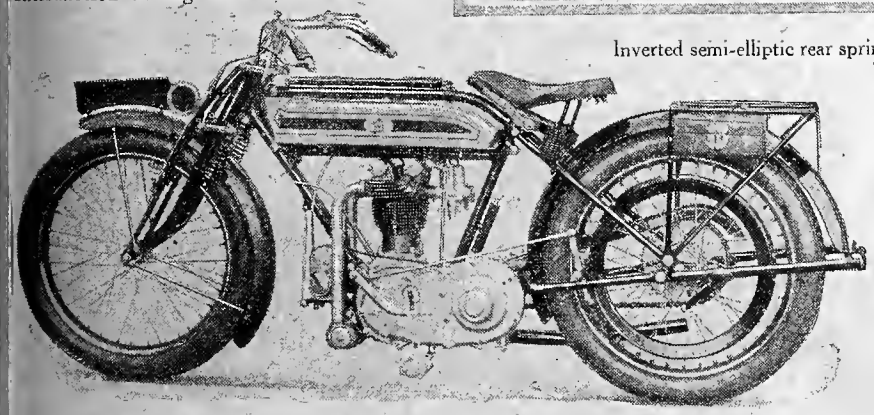


The new "light six" B.S.A. which resembles the former 6 h.p. model excepting that the frame is of lighter construction.

minus all but the essential fittings, and having a specially tuned engine; next the "light six," which has the existing 6 h.p. engine mounted in a light frame, and is suitable either for fast solo or sidecar work; and lastly the 8 h.p. twin, which is designed particularly for heavy sidecar work. With its all-chain drive enclosed in cast aluminium cases, its three brakes, and interchangeable wheels, the 8 h.p. B.S.A. is a fine example of the British big twin. No effort has been spared to make a sidecar roomy and luxurious and a machine capable of towing a heavy load wherever wheel grip can be obtained. The B.S.A. oscillating oil pump is worthy of special attention; it has given every satisfaction during 1921.



Inverted semi-elliptic rear springing on the new Triumph sidecar.



The marketing of this overhead valved machine as a sporting model marks a big departure for the Triumph manufacturers.

Stand **TRIUMPH.**

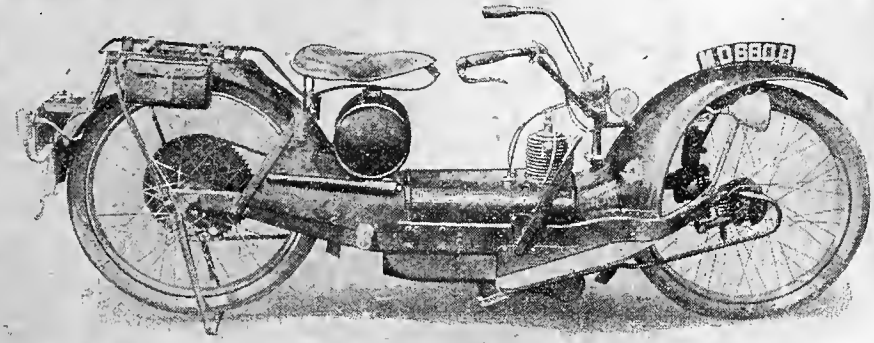
44. Triumph motor cycles are so widely known that little need be said concerning the exhibit on this stand. Being a new model, and probably the only four-valve single in the Show, the 3½ h.p. sporting mount, however, deserves attention. The o.h.v. engine fitted to this machine is of Ricardo design, but manufactured by the Triumph Co. in its usual "finished" way. It also differs from the great majority of sporting mounts in the fact that it is not purely a racing production; 26×3in. tyres are fitted, and the transmission and gear box are the same as used on the familiar 4 h.p. model (chain-driven). Mainly unaltered, the latter machine will continue to cater for the occasional or permanent sidecarist. For the chain and belt-driven "fours" a new sidecar has been designed possessing a simpler chassis and roomier body. The handy little two-stroke continues in its present form.

Stand **KENILWORTH.**

45. A clutch on the countershaft is the chief addition to the now well-known Kenilworth miniature—a type of machine often miscalled a scooter. The four-stroke overhead valve engine is retained, and detail improvements have been embodied as a result of another twelve months on the road. For the lady who has had no previous experience with motor cycles, and who wishes to substitute a petrol-driven vehicle for her pedal cycle, the little mount is eminently suitable. It is extremely easy to wheel about and to start at walking pace, and the new clutch should facilitate this.

Stand **NER-A-CAR.**

46. Although the manufacturers of the Ner-a-car insist that their production is *not* a motor cycle, it will be shown at the motor cycle exhibition, where no doubt it will attract considerable attention. It is a very unconventional form of vehicle. A two-stroke single-cylinder engine is set across a pressed steel frame, and drives to the back wheel through friction discs and a final chain. No front forks are employed, the front wheel being supported centrally within the hub, and the steering column is connected to the wheel by means of a short arm and tie-rod following motor car lines. Everything except the cylinder is entirely enclosed. There is ample protection for the rider, and the mudguarding is excel-



An unconventional machine known as the Ner-a-car. The engine is a two-stroke of 211 c.c. capacity.

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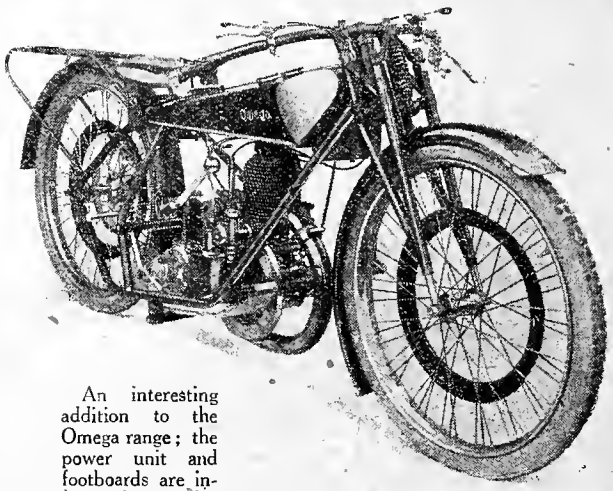
lent. The front mudguard does not move with the wheel, but is so wide as to cover it through its somewhat limited "lock." It will be remembered that this machine has successfully accomplished a thousand miles A.C.U. officially observed trial in the hands of a lady driver.

Stand **MARTINSYDE.**

47. The engine units of the Martinsyde machines are unique in having the valves disposed so that the exhaust is overhead and immediately above the inlet valve, which is in a normal position at the side of the cylinder; this arrangement does much to keep the cooling of the head reasonably even, so avoiding distortion. In detail the 6 h.p. sidecar outfit has been improved, especially as regards the interchangeable wheels, brakework, and the sidecar. The 3½ h.p. twin sports solo model will, of course, be shown. Further reference to Martinsyde improvements and alterations for next year will be found on another page of this issue.

Stand **OMEGA.**

54. Apart from their standard models, the makers of the Omega are introducing one of the few novelties of the Show, and undoubtedly the centre of attraction on their stand will be the new duplex frame two-stroke. A 350 c.c. two-stroke engine, with a well-finned cylinder, is built up as a unit with a three-speed gear box, clutch, and kick-starter, and aluminium footplates. This unit is carried in a very wide duplex frame, and is quickly detachable therefrom. The saddle position is very low, and the mudguarding and leg screens are excellent. Alternative final drive and two or three-speed gear boxes are offered, and the method of holding the tank against the top tube by plates and jack screws should be studied, as it offers a fresh solution to the question of tank fixings without rattle. Examples of one or two of the other Omega models will also be shown.



An interesting addition to the Omega range; the power unit and footboards are inside the duplex frame.

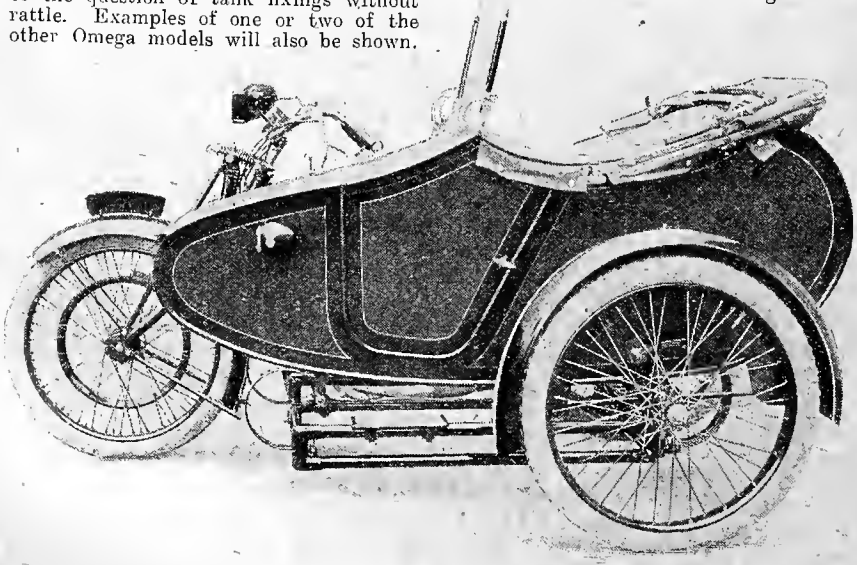
Stand **MONTGOMERY SIDECARS.**

55. To sum up in a few words the range of sidecars to be exhibited by Montgomery, of Coventry, is almost an impossibility.

Pride of place, perhaps, should be given to the sporting model, a sidecar of the hammock seat variety, with bodywork on most graceful and racy lines, and a chassis of ample strength for attachment to the fastest of 8 h.p. "hog-'buses," and yet of the lightness demanded by the owner of a 3½ h.p. single.

For lightweights of low capacity is a new lightweight model in which the chassis is "cut" to the ultimate minimum. The designer must surely have started while singing a drawing office parody, "Ten little chassis tubes," and then got down to the last verse.

Apart from these sporting types there is the ample range of medium and heavy touring sidecars of sound design and a commercial box body, which would be readily interchangeable on certain of the touring chassis.



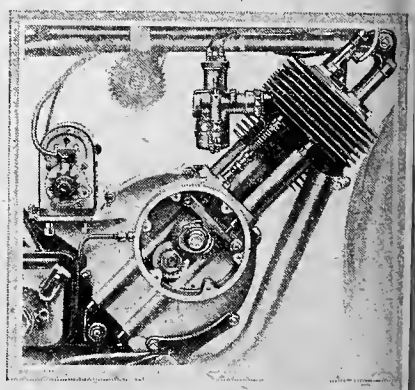
Roomy comfort rather than super streamlining has been the aim of the Martinsyde sidecar designer

Stand **DIAMOND.**

56. Though a long list of Diamond models will be shown, the frames and specifications are similar, the variations being in the engines and transmission. It is to the frame that special attention should be drawn, for the duplex detachable down tubes and removable tank rail are features peculiar to this make which have well withstood the test of time. Fitted with a 350 c.c. J.A.P. engine and three-speed Sturmey-Archer gear, the super-standard model is very attractive. The chains are entirely enclosed, and the fittings and finish are beautifully carried out. Similar to this, but with no kick-starter, and with carrier replaced by a combined guard stay and toolbag support, is the sports model, while the same engine may be obtained with two-speed gear and chain and belt drive. A 250 c.c. J.A.P. may be fitted with either two or three-speed Sturmey-Archer gears and a 293 c.c. J.A.P. with Enfield or Sturmey-Archer two-speed gears. In addition, a Villiers two-stroke model will be shown with two-speed gear, and single-geared. The direct action rear brake is well known to our readers, and remains a feature of all models. The tanks are panelled in a pleasing shade of green.

Stand **P. and M.**

57. With one of the oldest names in the motor cycle world, the P. and M. motor cycle is the result of slow but certain evolution. Little by little the design has changed from the original model of pioneer days, but at no time have the alterations resulted in a departure from the original layout. This year, however, there are at least very important changes. The engine has been enlarged to 555 c.c., and four speeds are now provided in the place of the two ratios previously used. The two extra speeds are obtained by means of a simple form of gear box working in conjunction with a modified form of the well-known selective clutch two-speed gear.



Simple timing gear of the new P. & M. engine. This picture also shows one of the neat valve and valve-spring covers in position.

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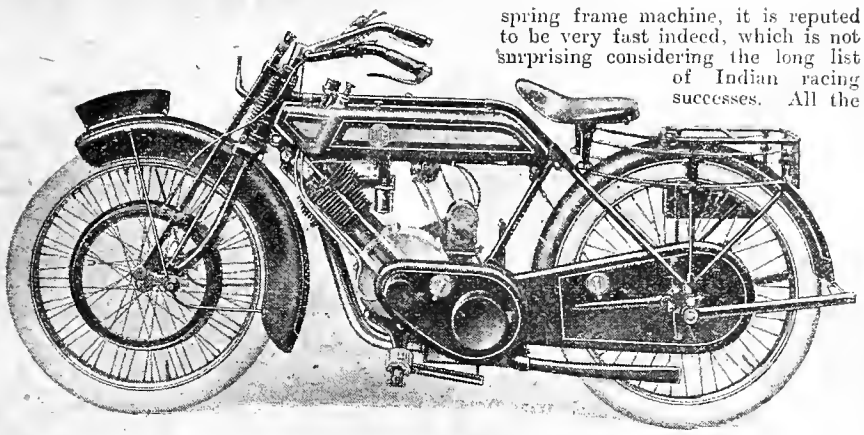
In general appearance the P. and M. has been improved also, and an unusual fitment (which should form part of every sidecar machine) is the ratchet brake, by means of which the outfit may be left standing on a hill without the necessity of "scotching."

Stand **MILLFORD SIDECARS.**

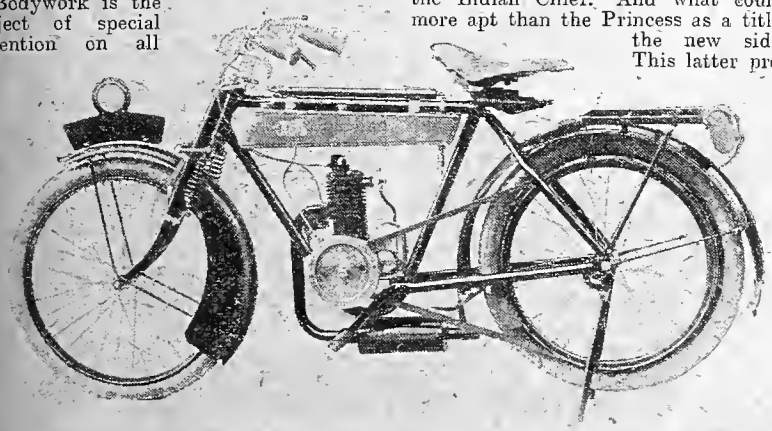
58. Last year the old-established Coventry house of Mills-Fulford, Ltd., departed from the beaten track by adopting a design of chassisless, semi-flexible, and completely sprung sidecar which had been evolved on the rough roads of Australia. This design, the Rock, and marketed as the Millford-Rock, will again be exhibited, for its success is assured, especially in the overseas markets, where rough roads prevail.

On more conventional lines a number of medium and luxurious heavyweight sidecars will be staged. These are chiefly mounted on very sturdy chassis of rectangular form, having both axle and longitudinal members duplicated, thus giving a very powerful construction.

Bodywork is the object of special attention on all Millford productions, and the family man should make special note of this stand, for several of the sidecars are provided with a small extra seat in the forepart for the accommodation of an additional small passenger.



Increased engine capacity (555 c.c.) and a four-speed gear should more than ever ensure the success of the P. & M. as a go anywhere dual-purpose mount.



One of the simplest and lightest motor cycles on the market—the single-speed, two-stroke, 1½ h.p. J.E.S.

Stand **J.E.S.**

59. The J.E.S. motor cycle returns to Olympia with a splendid reputation accruing from several years' service. It is a machine which forms a step between the auxiliary-powered pedal cycle and the motor cycle of conventional type. Several models will be exhibited, including single and two-speed two-stroke machines having a bore and stroke of 60×60 mm. (170 c.c.). The single-speed models are now obtainable with a free engine clutch pulley.

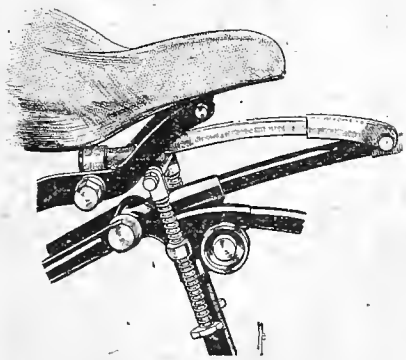
J.E.S. miniature machines will also be exhibited with a new four-stroke engine of 60×60 mm. (170 c.c.), and a lady's model fitted with this engine will be staged.

Stand **INDIAN.**

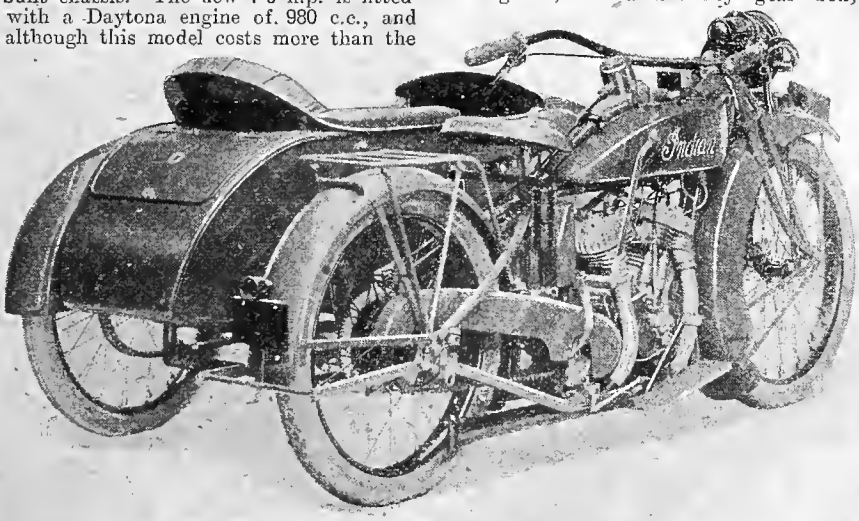
60. There is no motor cycle manufacturing concern which chooses more appropriate and happy names for its products than the Hendee Mfg. Co. Last year there was the Scout solo mount and the Powerplus spring frame sidecar machine. This year the demand for a rigid frame big twin is met by an enlarged edition of the 4 h.p. to be called the Indian Chief. And what could be more apt than the Princess as a title for the new sidecar? This latter product is interesting, having an American body of pleasing if unusual contour on a British-built chassis. The new 7-9 h.p. is fitted with a Daytona engine of 980 c.c., and although this model costs more than the spring frame machine, it is reputed to be very fast indeed, which is not surprising considering the long list of Indian racing successes. All the models are now fitted with a new and more accessible type of Splitdorf magneto.

Stand **REX-ACME.**

61. An extremely serviceable and solid-looking dual-purpose mount is the chief new model bearing the combined names of Rex and Acme. Engined with a new pattern 550 c.c. J.A.P. in a slightly modified form, which drives by chain throughout, *via* a Sturmey gear box,



Saddle suspension on the 8 h.p. Rex Acme.



An addition to the Hendee range of machines—the 986 c.c. Indian Chief, in reality an enlarged edition of the Scout model.

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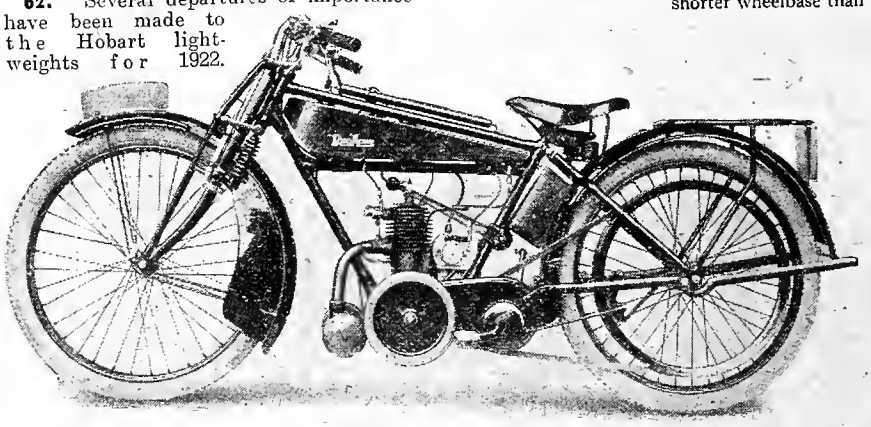
this machine is distinguished by its robust and clean framework and good quality detail fitments. Brampton forks and dummy belt rim brakes on both wheels are included in the specification. A roomy sidecar finished in mauve to match the tank may be supplied if desired. The big twin outfit is now offered with a choice of power units—J.A.P. or Blackburne—and of final drives—belt or chain; otherwise it is unaltered. Other Rex-Acme models include a two-stroke in various forms, and J.A.P. and Blackburne-engined machines of $2\frac{3}{4}$ h.p. In the latter case, the drive is by chain, and a lightweight three-speed Sturmey gear box is incorporated.

Stand **HOBART.**

62. Several departures of importance have been made to the Hobart lightweights for 1922.

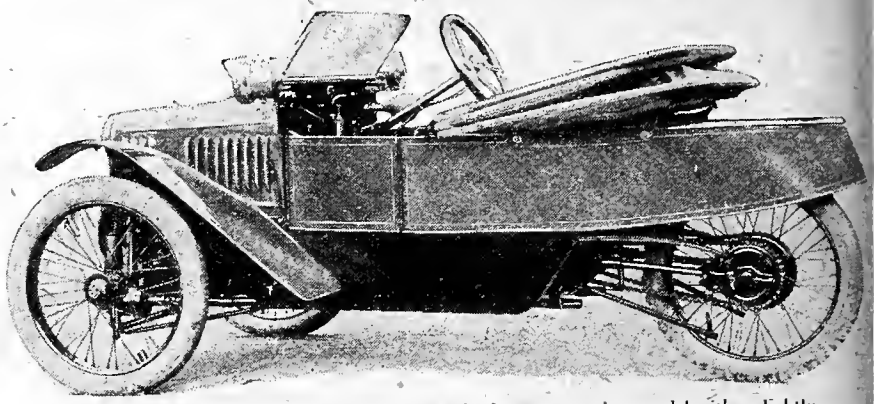


An addition to the Rex Acme range—a $2\frac{1}{2}$ h.p. two-stroke with Sturmey-Archer gear.

These innovations, however, do not affect the well-known spring frame design, although rigid frame models of all the types are now obtainable. Fuller particulars of the new models, which include Morris, J.A.P., and Blackburne-engined machines, will be found on another page of this issue.

Stand **MORGAN.**

63. Observant motor cyclists have noticed that, during many trials this year, Mr. H. F. S. Morgan has used what has been described as a special short wheelbase model. The Morgan Motor Co. has now decided to market this type, which, fitted with an air-cooled 8 h.p. J.A.P. engine, of the latest type, will be sold at the low figure of £150. Its weight is

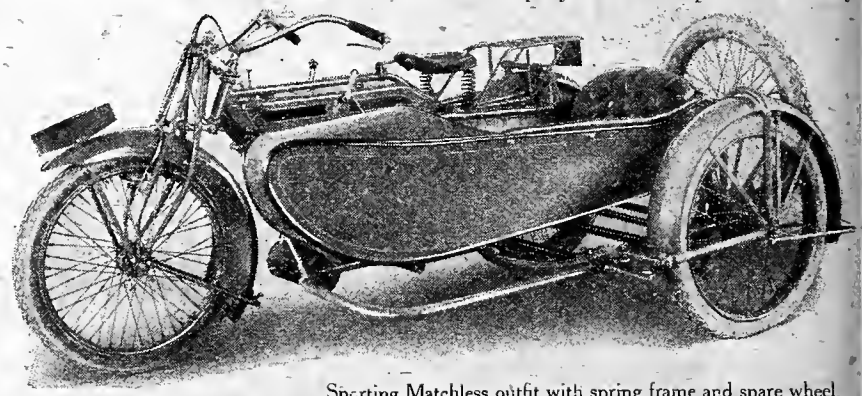


An addition to the Morgan range of three-wheelers—a sporting model with a slightly shorter wheelbase than the standard machines.

only $4\frac{3}{4}$ cwt., but comfort has not been sacrificed in order to attain this, as a comfortable body is fitted, having a side door and an adjustable screen. Hood, horn, acetylene lamps, two mats, licence holder, tools, and oilcan form part of its equipment.

Stand **IVY.**

64. Having distinguished itself before the public by feats of endurance, power, and speed, the Ivy two-stroke will surely attract a number of interested spectators. This make has done much towards popularising the lightweight sidecar movement by its consistently good performances with a roomy but light passenger attachment. Visitors should take note of a new cylinder casting, which is a fine piece of construction. The aim of the company has been to produce a steady

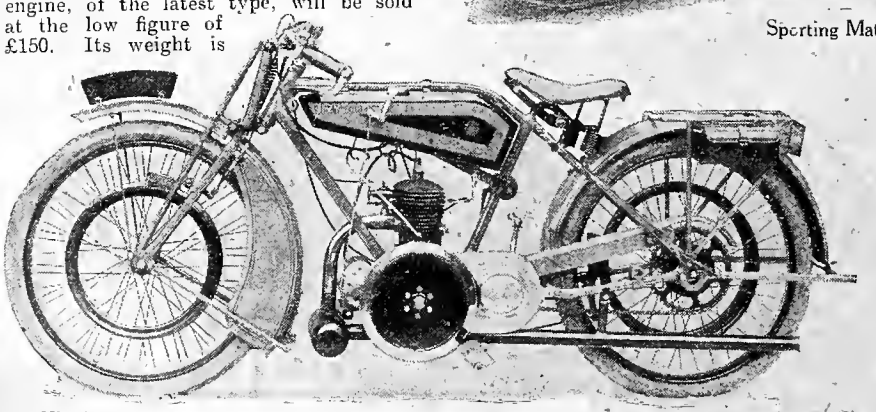


Sporting Matchless outfit with spring frame and spare wheel.

pulling light sidecar outfit capable of taking a passenger wherever road grip can be attained, and for this reason it must not be confused with certain ultra-light runabout outfits. The solo and sporting interests have not been forgotten, and specimens of these will, of course, be exhibited.

Stand **MATCHLESS.**

65. Two distinct types of Matchless machines will be staged, each with 8 h.p. engines, the difference being in the frame construction. The now well-known Model H, with spring frame, is retained, and may be obtained (1) with ordinary touring sidecar body, which now has a hinged dash; (2) with a two-seated family



The Ivy sports model two-stroke. The large flywheel contributes to the smooth running of the engine.

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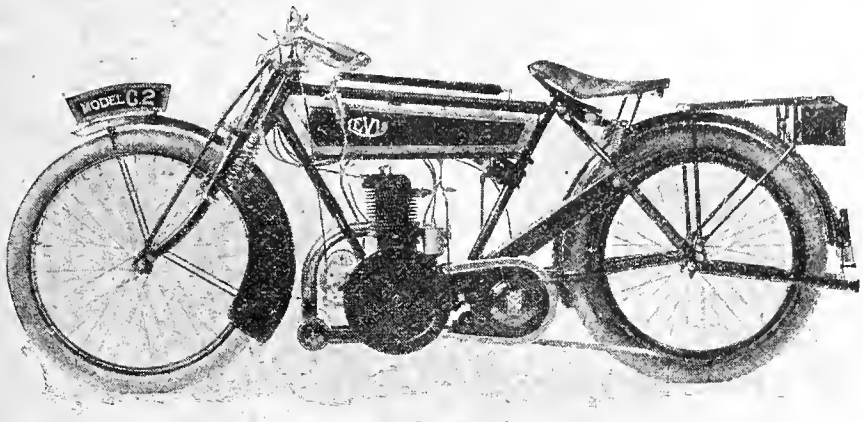
sidecar of a new type—the door to which swings from either jamb; and (3) a sporting sidecar. In the last-mentioned, an engine specially tuned for speed is fitted.

The second type has a rigid frame, and is intended as a big twin dual-purpose mount.

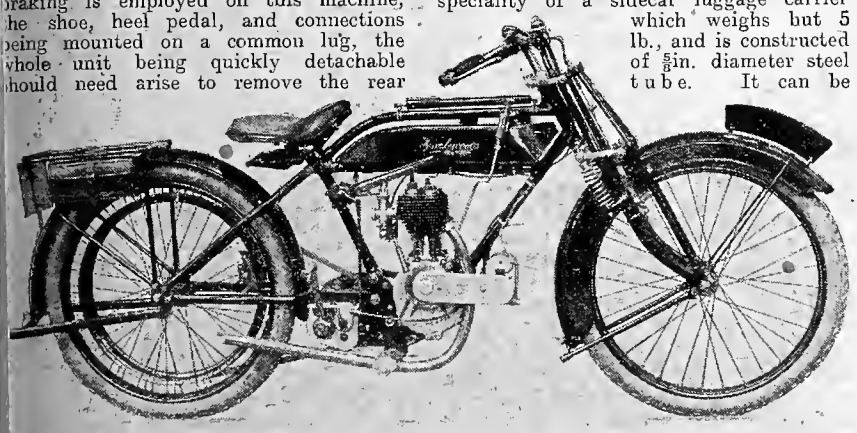
Several minor improvements have been embodied in the construction of the Model H, one of them being alterations which permit the sidecar seat to be lowered.

Stand **HAZLEWOOD.**

66. Though not newcomers to the lightweight market, the Hazlewood factory has not produced this type for some years. Consequently it is of special interest to note a neat J.A.P.-engined machine appearing under the Big H. mark. Alternative specifications are offered as far as transmission is concerned, and a sporting model is manufactured. An unusual system of rear braking is employed on this machine, the shoe, heel pedal, and connections being mounted on a common lug, the whole unit being quickly detachable should need arise to remove the rear wheel. Well-known Hazlewood models that are retained include an 8 h.p. and 6 h.p. twin; a new 4 h.p. single will also be shown, all having J.A.P. engines.



A well-tried two-stroke—the 2½ h.p. two-speed Levis.



One of the Hazlewood range, fitted with 2½ h.p. J.A.P. engine and two-speed Sturmey gear box.

Stand **LEVIS.**

67. Apart from the fact that two sizes of Levis engine (211 c.c. and 247 c.c.) are made, the chief difference in the various models of this pioneer two-stroke lightweight lies in the presence or absence of a gear box and kick-starter. A new design of frame, however, has made a wonderful improvement in the appearance of the larger 2½ h.p. model. The straight top tube slopes to the rear, and the tank is carried on platforms brazed to the detachable lower rails. 1¾ gallons of petrol and half-a-gallon of oil may be carried, which should suffice for more than two hundred miles without refilling.

Stand **DUNHILL SIDECARS.**

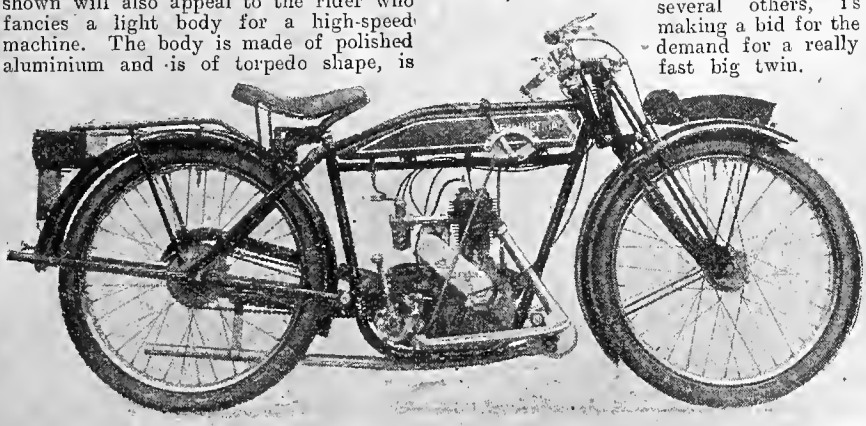
68. Dunhill sidecars are famous for their chassis construction, and several examples will be seen on this stand. These chassis are noted for their rigidity and are triangular in form, giving great strength. Other features are straight-through axles and the attachment of the mudguard to the chassis at three points, so that there is no possibility of trouble through the mudguard stays breaking. The wheel hub is of heavy construction and dust and waterproof, while 26in. wheels are fitted. The firm make a speciality of a sidecar luggage carrier which weighs but 5 lb., and is constructed of ⅝in. diameter steel tube. It can be attached to any well-known standard sidecar body. The Dunhill bodies will be well worth inspection. The touring model is most comfortable, has a bulbous back containing a spacious locker, which provides ample room for tools, and under the seat there is space for a spare tin of petrol. The sporting sidecar to be shown will also appeal to the rider who fancies a light body for a high-speed machine. The body is made of polished aluminium and is of torpedo shape, is well made, strongly and carefully constructed, and light in weight.

Stand **NEW IMPERIAL.**

69. Undoubtedly in the smaller class of four-stroke lightweights, the most consistently successful machine in competitions during 1921 has been the New Imperial. Not only did this little machine win *The Motor Cycle* Cup in the Junior T.T., but it has been equally successful in reliability trials and speed events. The New Imperial lightweight range for 1922 will include three distinct types, with 250 c.c., 293 c.c., and 350 c.c. engines respectively. The first-named will be staged in two types: an entirely new model known as the Baby New Imperial, with 24in. wheels, three-speed gear, all-chain drive, and a sports model with special three-speed gear without kick-starter. The improved frame construction, allowing unit assembly of engine and gears, is a feature to be looked for.

The next model will approximate to the present New Imperial Light Tourist, but will have a three-speed gear box, with or without clutch and kick-starter, and chain-cum-belt or all-chain transmission. The third type has an engine of 350 c.c., and is a sports model on similar lines to the 250 c.c. sports model.

In addition to the solo machines, two 8 h.p. sidecar outfits will be exhibited, one of which, being a new type of 8 h.p. machine, will be staged as a sports model, which indicates that this firm, like several others, is making a bid for the demand for a really fast big twin.



Compact appearance on the 2¾ h.p. New Imperial is gained by housing both gear box and engine as a unit assembly within the loop frame.

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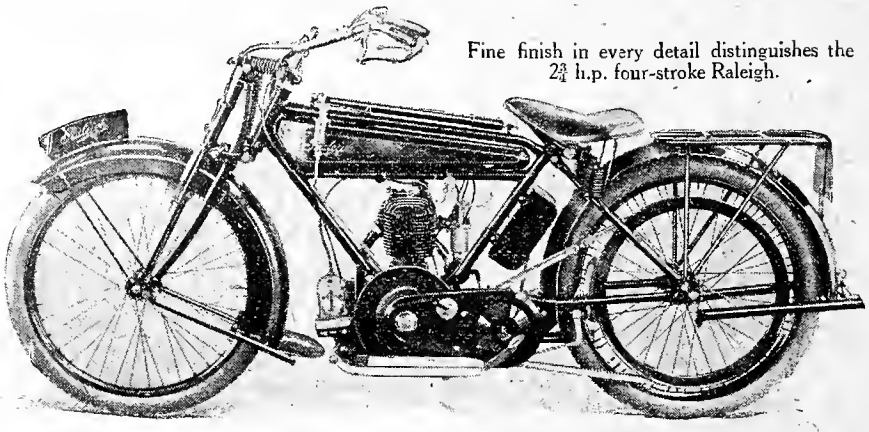


Fine finish in every detail distinguishes the $2\frac{3}{4}$ h.p. four-stroke Raleigh.

Stand **RALEIGH.**

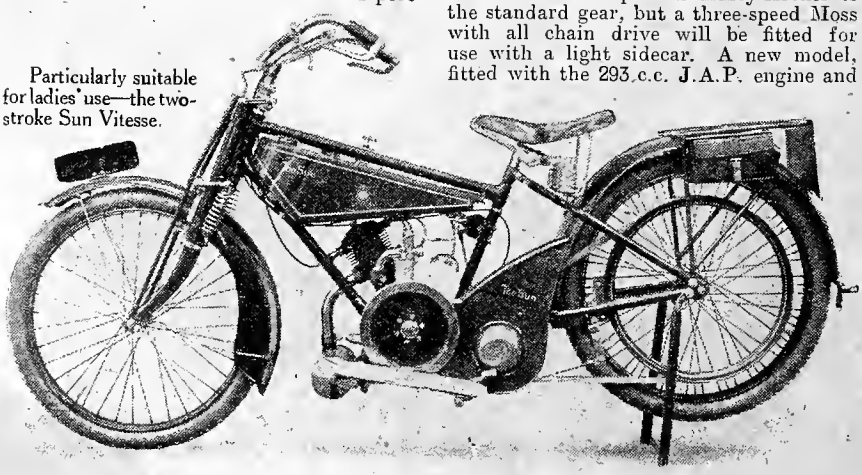
71. Distinguished alike for its fine finish and its comfort, the 5-6 h.p. spring frame Raleigh will no doubt remain the centre of attraction on this stand. At the same time the new lightweight single should run it a close second in popularity, particularly by reason of the moderate price and the name behind it. With a 3 h.p. (400 c.c.) engine and three-speed gear, this model is marketed as a sidecar outfit. At a slight extra cost the 348 c.c. lightweight may also be supplied with a three-speed box, but in its normal form only two ratios are obtainable. With T.T. bars and footrests instead of boards, the $2\frac{3}{4}$ h.p. single makes an attractive sports model. All the lightweights are under the 200 lb. taxation limit. Little change will be noticeable in the big flat twin, but since the last Show very considerable improvements have been made to the sidecar and its chassis.

Stand **SUN.**

72. Besides the standard Sun two-stroke, which will, of course, be staged with single or two-speed gear, there will be several examples of the rotary valve engine. Interest on this stand is bound to centre on this novel engine, which, it will be remembered, made its *début* to the public in the Isle of Man.

The main feature is a rotary disc valve driven from the crank web. A port in this rotating disc uncovers a corresponding port in the crank case, to which the carburetter is attached; thus the induction stroke is timed as far as mixture is concerned. There is, however, an air port in the cylinder, controlled by the piston in the normal manner, through which air only may be induced. It has been found that a considerable improvement in power and flexibility has been obtained by this arrangement.

Visitors will be enabled to study the action of the valves on a sectioned engine driven at low speed from an electric motor. A two-speed Sturmey-Archer is the standard gear, but a three-speed Moss with all chain drive will be fitted for use with a light sidecar. A new model, fitted with the 293 c.c. J.A.P. engine and two-speed Sturmey-Archer gear, with clutch and kick-starter, will also be shown.



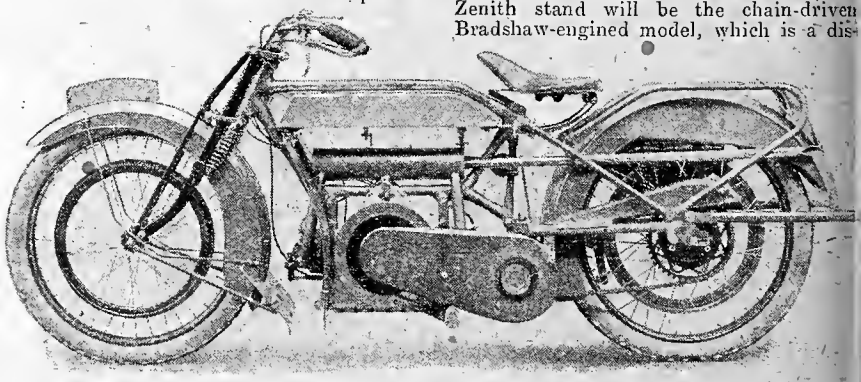
Particularly suitable for ladies' use—the two-stroke Sun Vitesse.

Stand **REYNOLDS.**

73. In addition to the standard type of Reynolds runabout, which is now fitted with chain drive throughout, $24 \times 2\frac{1}{2}$in. tyres, Maplestone forks, and a $2\frac{1}{2}$ h.p. Liberty engine, an entirely new tandem-seated vehicle will be staged. Bucket seats, deeply upholstered and supported on coil springs, are provided for both driver and passenger, and ample leg-shields, rubber-covered floor, and running boards, and wide mudguards give all the protection which is possible on a two-wheeler. A duplex frame, strengthened by auxiliary tubes wherever necessary, carries a 350 c.c. J.A.P. engine and three-speed gear, with clutch and kick-starter bolted together as a unit. All chain drive, internal expanding brakes fore and aft, $26 \times 2\frac{1}{2}$in. tyres, and Maplestone forks are fitted. Engine and transmission are almost completely out of sight, and interest is bound to be attracted by this very unusual type of two-wheeled machine.

Stand **ZENITH.**

74. The chief item of interest on the Zenith stand will be the chain-driven Bradshaw-engined model, which is a distinct departure from the procedure followed by this firm since its inception, being the first all-chain drive type introduced. A detailed description of this machine appears elsewhere in this issue. Four examples of this new model will be shown, and four Bradshaw-engined Zeniths, which will be belt-driven and with the Grauda gear. These exhibits will demonstrate the cleanness of design of the Bradshaw oil-cooled engine, a road test of which was described in *The Motor Cycle* of November 10th. There will also be a 5 h.p. J.A.P.-engined sport model, a 5 h.p. J.A.P.-engined machine with clutch, and an 8 h.p. sidecar outfit with counter-shaft drive and clutch. The requirements of all classes of riders have been studied, and the machines range from the fastest and most powerful twin-cylinder to the mediumweight sport models; while the family man's requirements have not been overlooked, the sidecar outfit being a thoroughly well designed and practical mount.



This all-chain drive model should multiply the admirers of the Zenith-Bradshaw.

Stand **ARGSON.**

76. Necessarily in a class by itself the Argson invalid tricycle resembles anything else at the Show only in its power

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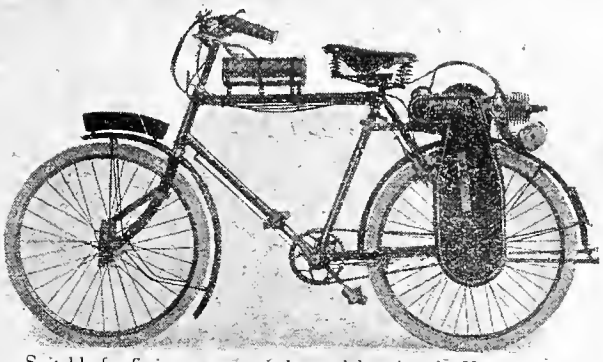
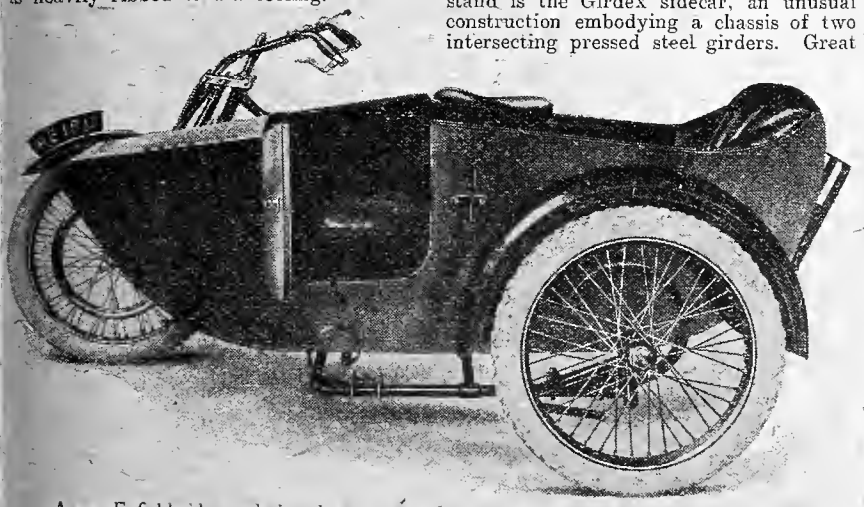
unit—a two-stroke flywheel magneto engine. It is simply and solely a self-propelled invalid chair, and comfort and convenience have naturally been considered, to the exclusion of super-hill-climbing and speed capabilities. Unfortunately, this type of vehicle will interest many, and it fully deserves its place at Olympia.

Stand **YOUNG.**

77. The popular Young motor attachment which can be fitted to pedal cycles, or preferably sold complete by its makers, has not undergone any startling alterations. A simplified form of spring fork attachment has been made which should greatly add to the rider's comfort. In the case of the little $1\frac{3}{4}$ h.p. (54×57 mm.) two-stroke engine, one important innovation is the fitting of an aluminium cylinder with cast iron lining; the short exhaust pipe from the cylinder forms part of the cylinder casting, and is heavily ribbed to aid cooling.



Suitable for fitting to any existing pedal cycle—the Young motor attachment. The capacity is 130 c.c.



A new Enfield sidecar, designed to accommodate two passengers in comfort. When the door is closed the external appearance is quite pleasing.

The exhibit will consist of special bicycles fitted up with the Young attachment, both for ladies and gentlemen, and a tandem bicycle. What is known as the *de-luxe* model will also be shown, to be sold complete with acetylene lamp, tools and spares, and the new forks in which the spindle floats between two enclosed springs, and is adaptable to any pedal cycle.

Stand **WHITLEY SIDECARS.**

84. Comparatively new as a firm, the Whitley Manufacturing Co., of Charterhouse Mills, Coventry, has, in its controlling force, a tradition for superfine finish, choice materials, and honest workmanship. It follows, therefore, that the Whitley productions should be distinguished by the above-mentioned qualities, some of which are observable, while all are there.

Startling originality is not sought in the range of attachments which will be shown, yet there is more than ordinary merit in the couplings used to link up the sidecar with its propelling machine; a great point also is in the machining of all connecting lugs, either from the solid or from steel forgings. Bodywork, both in sporting or full touring models, is superlative in finish, and even the former type is roomy—more so than many of its fellows.

Also to be shown on the Whitley stand is the Girdex sidecar, an unusual construction embodying a chassis of two intersecting pressed steel girders. Great strength with light weight are its special features.

Stand **NEW SCALE.**

85. Three models only of the New Scale will be shown, as it has been decided to abandon the two-stroke and concentrate on solo and sidecar four-stroke singles. Two dual-purpose machines are fitted with the 4 h.p. and $2\frac{3}{4}$ h.p. Blackburne engines respectively, three-speed Burman gear boxes, and all-chain drive. A similar specification holds for the exclusively solo model, which embodies the o.h.v. $2\frac{3}{4}$ h.p. Blackburne engine and a Burman gear without kick-starter. All three are finished in red, and are not lacking in appearance.

Stand **ROYAL ENFIELD.**

86. Royal Enfield owners will find but few alterations to existing models in the 1922 range. The $2\frac{1}{4}$ h.p. two-stroke has practically the same specification, with the exception that the saddle is anchored to the top tube of the frame and to the carrier, thereby saving weight.

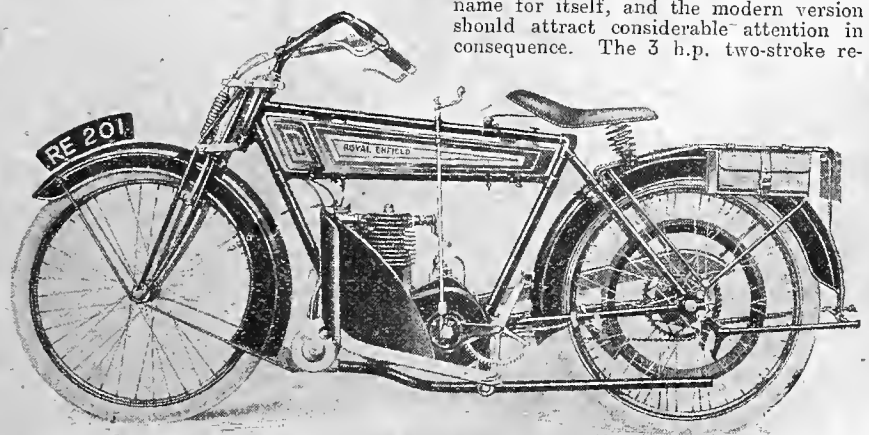
The 8 h.p. type, which is engined by a power unit built for the Enfield Co. by Vickers, Ltd., remains unaltered except for equipment. In this respect it is interesting that the Terry patent spring saddle will be fitted as standard, while the wheels are shod with Dunlop 700×80 tyres.

Entirely new types of sidecar bodies have been adopted, attention being paid particularly to the provision of ample accommodation for luggage by means of a large locker at the rear, to the lid of which is affixed a rubber platform and fittings to allow further luggage to be carried.

Instead of the green upholstery previously used, the body will be upholstered in black rubber cloth. A new design of two-seated body, with most distinctive outlines, will also be a feature—this has a folding front seat.

Stand **BEARDMORE-PRECISION.**

87. Developments of interest to both soloist and sidecarist have been made to the Beardmore-Precision range for next year. Chief is the new big single four-stroke of nominally $4\frac{1}{4}$ h.p., which is assembled in a "semi-unit" construction with the gear box. Before the war, a Precision of this type made a wonderful name for itself, and the modern version should attract considerable attention in consequence. The 3 h.p. two-stroke re-



A popular Royal Enfield model is the $2\frac{1}{4}$ h.p. two-stroke, with kick-starter.

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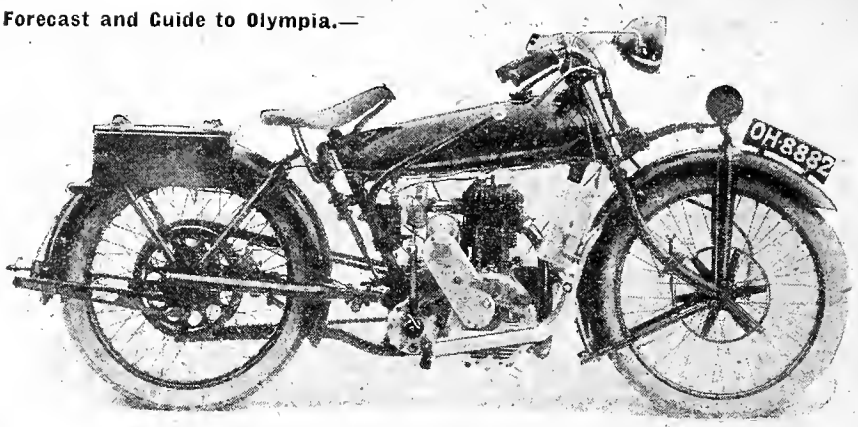
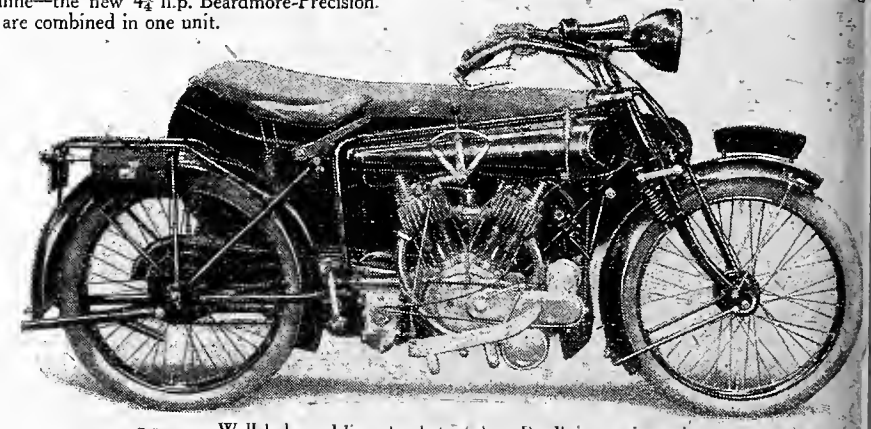


An effectively sprung single-cylinder machine—the new 4¼ h.p. Beardmore-Precision. The engine and gear box are combined in one unit.

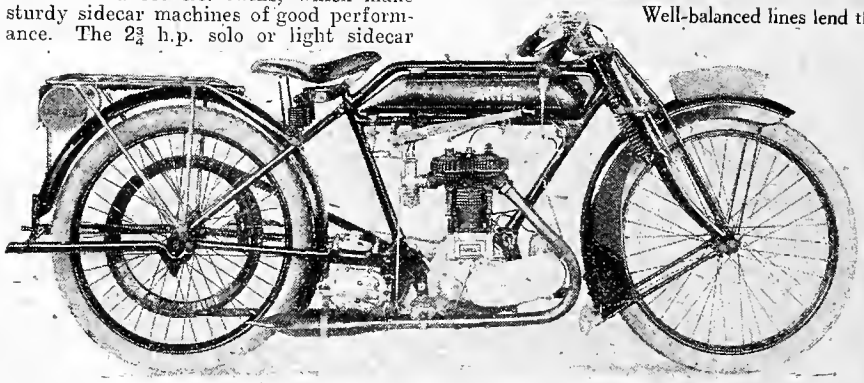
tains its advanced features of design, *i.e.*, pressed steel tank forming a frame member, "chain elevator" lubrication system, and efficient spring frame. In conclusion, one of the lighter sports models will be fitted with the 350 c.c. Barr and Stroud sleeve valve engine.

Stand **BRADBURY.**

88. With the introduction of a 996 c.c. Bradbury twin, the 1922 range bearing this old-established name is very complete. Engines and gear boxes (when fitted) are all of Bradbury manufacture. Chain drive *via* a three-speed box is now incorporated in all the larger models, *i.e.*, the 554 c.c. single and the 750 c.c. and 996 c.c. twins, which make sturdy sidecar machines of good performance. The 2¾ h.p. solo or light sidecar machine may be obtained either single-geared or with a two-speed box with or without clutch and kick-starter. Final drive in this case is by belt. An M-L Maglita to the single, or a Lucas Magdyno to the twin, may be fitted optionally.



Well-balanced lines lend the 8 h.p. Bradbury an imposing appearance.



Elimination of the non-essentials is the *motif* of the sports Ariel.

Stand **ARIEL.**

89. The 3½ h.p. Ariel was noteworthy during 1921 as a three-speed countershaft gear machine selling at £100. For next year a re-designed sports model of this type will be priced at £87 10s., which is nearing pre-war value in this class of machine. No kick-starter is fitted, and other unessential details, such as the Ariel spring seat-pillar, have been eliminated. Nevertheless, it promises to be a most attractive solo mount. The corresponding touring model and the 4½ h.p. sidecar single have not been altered in specification; but the 6-7 h.p. twin is now offered with a final belt drive only; and an 8 h.p. M.A.G.-engined machine has been produced as the all-chain twin. This is a fully-equipped model with large sidecar and 28×3in. wheels.

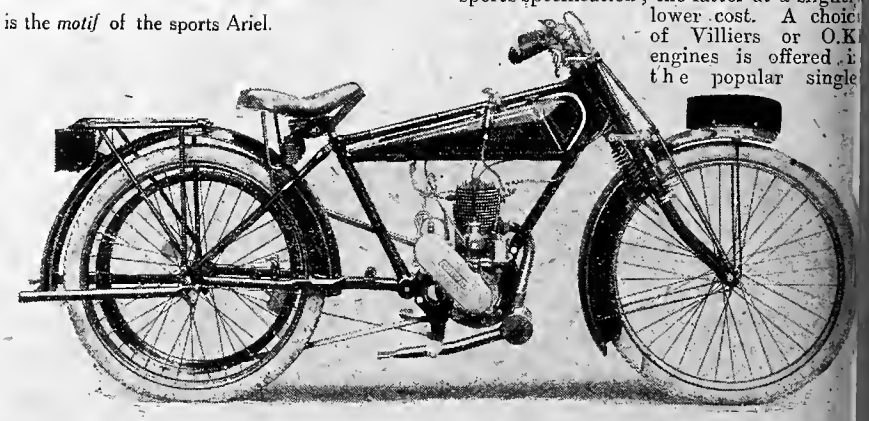
Stand **CALTHORPE.**

90. Having pleasant recollections of a neat little 4 h.p. twin-cylinder outfit which the Calthorpe Co. made before the war, we are glad to announce that the chief item of interest on this stand will be a similar machine on up-to-date lines. The engine fitted is a 4 h.p. J.A.P., and the specification includes Sturmey-Archer three-speed gear.

In addition, there will be the company's usual range of lightweights augmented by a single gear model, having a two-stroke engine of 247 c.c. capacity which will be offered at a moderate price.

Stand **O.K.**

91. Few, if any, makers of lightweight sidecar machines have a competition record with this type equal to the manufacturers of the O.K. The O.K. sidecar outfit staged here will, therefore, most assuredly attract attention from those seeking a means of transport for two at a moderate price. An O.K. engine and a Moss gear box are fitted to this model. An all-chain solo machine, also only supplied with the O.K. power unit, may be obtained either with a touring or sports specification; the latter at a slightly lower cost. A choice of Villiers or O.K. engines is offered in the popular single



A model free from embellishment yet quite a practical light touring mount—the 2½ h.p. single geared two-stroke Calthorpe.

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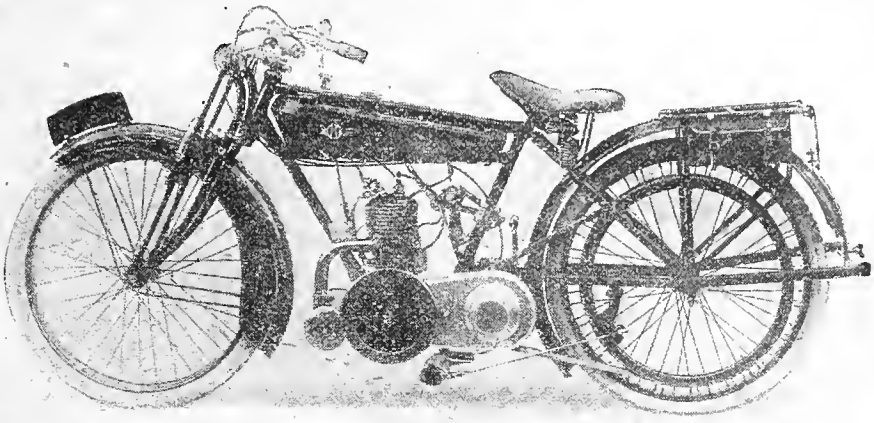
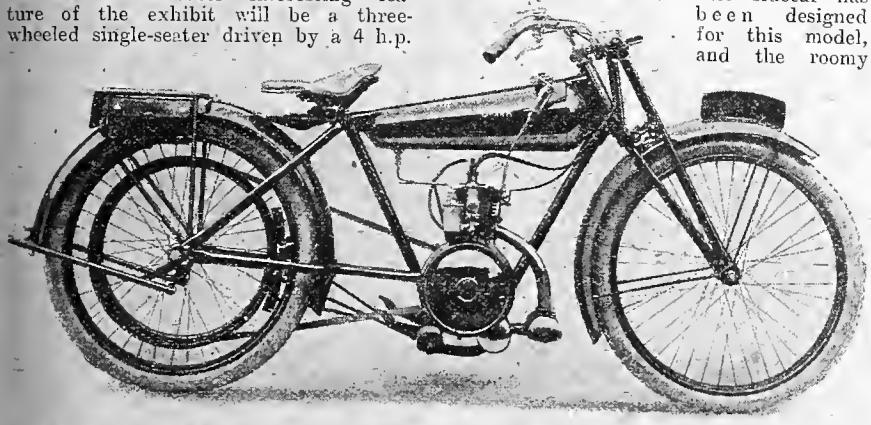
gear model, and the same option holds good on the plain two-speed, two-speed with clutch and kick-starter, and three-speed (Albion) models. Several detail refinements have been introduced throughout the O.K. range.

Stand **DAYTON.**

92. For the first time since the war the Chas. Day Mfg. Co., Ltd., will be showing a motor bicycle. The new Dayton is a lightweight driven by the 2½ h.p. Villiers engine with magneto flywheel, mounted in a frame of all steel construction, in which is incorporated a substantially webbed head lug and a further webbed lug on the saddle tube, to which is bolted the pressed steel tank. Lubrication is effected by air pressure through a drip feed. Both brakes controlled by heel-operated pedals mounted one on each footrest are applied to the outer side of the belt rim. The Dayton motor bicycle will be shown in three types—single geared, with clutch, and with Sturmey-Archer, two-speed gear and kick-starter. Another interesting feature of the exhibit will be a three-wheeled single-seater driven by a 4 h.p. Blackburne engine with three-speed gear box, chain-cum-belt drive, and wheel steering. The engine will be situated in front, and every wheel is sprung, as is also the coachbuilt body.



Few lightweights enjoyed the popularity of the O.K. this year. Above is the three-speed model for 1922.



A genuine attempt at simplicity with a capital "S" has been made in designing every part of the 2½ h.p. Spark.

Stand **SPARKBROOK.**

93. Perhaps the most interesting machine in the Sparkbrook display will be the new Villiers-engined Spark. Having a frame in which no castings are employed, and a steel tank incorporating an air-pressure lubrication system, the little machine bristles with novelties, and is well worth a close study. The Spark will be sold as a single-geared or clutch model, but the standard Villiers-engined Sparkbrook models are retained, and may be fitted with the Sparkbrook two-speed gear and clutch. Another new model, having a 350 c.c. J.A.P. engine and three-speed Sturmey-Archer gear, will also be shown.

Stand **ROVER.**

96. All the Rover models for 1922 will be frankly dual-purpose machines, and as such will be shown. There are three: the 5-6 h.p. J.A.P.-engined twin, the 3½ h.p. touring single, and the 3½ h.p. sports single. The latter bears a strong resemblance to the touring machine, but is equipped with the usual T.T. paraphernalia, and has no kick-starter. A decidedly attractive little sidecar has been designed for this model, and the roomy standard attachment will be retained for the touring single and twin. Belt drive has been abandoned entirely.

Stand **WILLOWBROOK SIDECARS.**

97. The sidecars produced by the Willowbrook Motor Co., of Belgrave Gate, Leicester, are on straightforward lines. The concern has held its excellent reputation for good bodywork, however, for a considerable time. Many well-known sidecar outfits are mounted with bodies of Willowbrook manufacture.

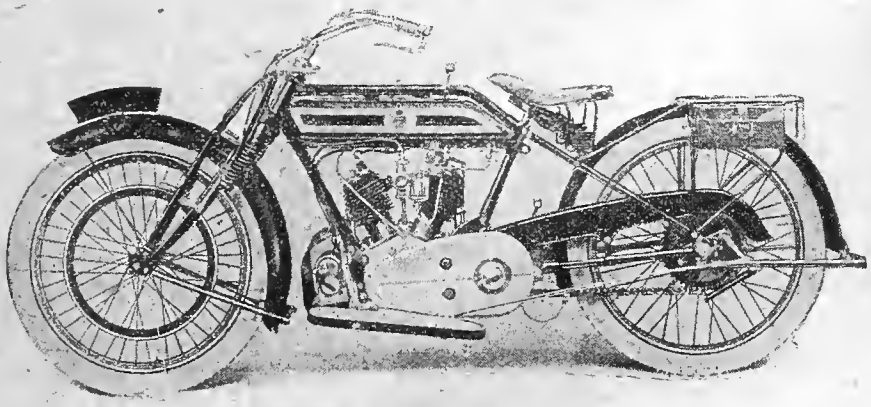
For 1922 a couple of lightweight models are included in the range, both being mounted on a triangulated chassis and differing in bodywork, one being in polished aluminium with a hammock seat, the other being on more conventional lines. In addition, standard touring models and a taxi-sidecar will be exhibited, attached to an all-chain-driven 8 h.p. Rex-Acme.

Stand **CONNAUGHT.**

98. Two-stroke lightweights only have borne the name of Connaught in the past, and consequently efficient design may be expected as the result of this specialisation. The 2½ h.p. Connaught has had a most creditable competition record this year, and has proved itself as a capable little solo machine. A new model for sidecar work will be exhibited, which has a two-stroke engine of 370 c.c.—an unusual size. The sidecar body will be quickly detachable for substitution of a tradesman's carrier.

Stand **NORTON.**

99. There is little need to describe either the 3½ h.p. or the "Big Four" Norton. Suffice it to say that no modifications of any importance have been found necessary. Capped or "acorn" nuts are fitted where possible, a



A mediumweight twin popular for solo as well as sidecar work—the 5-6 h.p. Rover.

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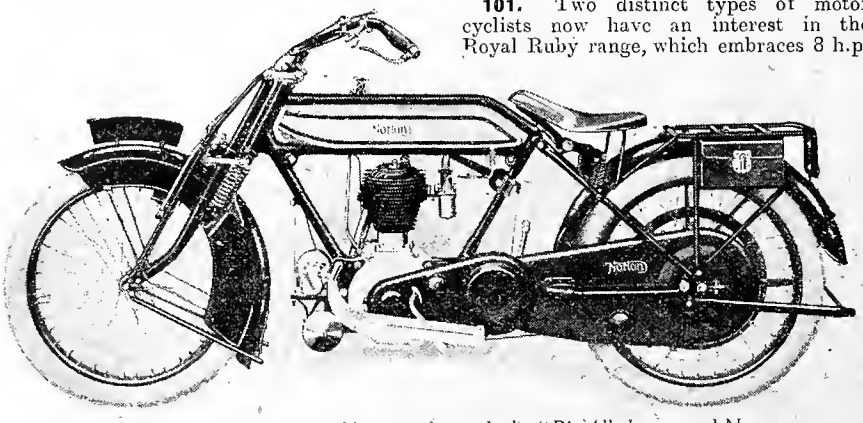


One of the fastest sidecar machines on the road, the "Big 4" three-speed Norton.

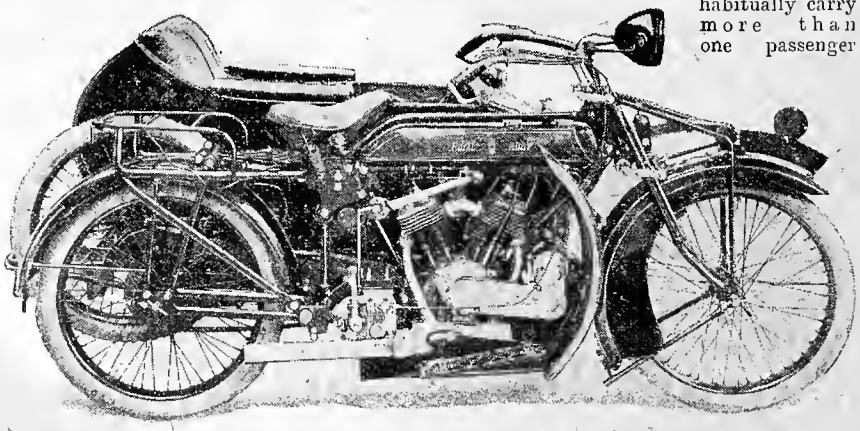
slightly different tank finish has been standardised, and the detail work has been cleaned up to some degree. The success of the Norton during the past twelve months has even exceeded its previous record, and the standard models are well-known throughout the length and breadth of the country.

Stand **EXCELSIOR.**

100. Excelsiors, particularly the sidecar models, possess an exceptionally good record of competition successes. These machines especially distinguish themselves in climbing difficult hills; and, although admittedly their drivers are experts, only a very sound machine gains premier awards in the hotly contested reliability trials of to-day. For next year the same three models—the 4½ h.p. "big single," the 6 h.p. J.A.P., and the 8 h.p. J.A.P.—will be continued. The single is a strongly built heavy service machine, and although rated at 4½ h.p., the engine capacity is 650 c.c. 28×3in. tyres and a large tank are useful points. The "six" is down as a "popular" model, and as the price is extremely moderate it should continue to live up to its name. Fitted with the new J.A.P. twin, the 8 h.p. outfit aims at a "luxury" specification, but a reasonable selling price. Villiers and Blackburne-engined lightweights are also manufactured.

Stand **ROYAL RUBY.**

101. Two distinct types of motor cyclists now have an interest in the Royal Ruby range, which embraces 8 h.p. luxurious spring frame sidecar outfits, and 2¾ h.p. to 3 h.p. lightweights with and without sidecars. When a spring frame is embodied in the 3 h.p. (375 c.c.) model, it is offered as a solo mount only. Three-speed gear boxes of Royal Ruby manufacture are standard on both of the lightweight models, and in each case final belt drive is fitted; the engines are also the factory's own product. The 2¾ h.p. (349 c.c.) model is classified as a sports type, and when a sidecar is attached it is of the (doorless) Canoelet make. To the larger lightweight is fitted a more elaborate sidecar complete with a door. For those who habitually carry more than one passenger the new tandem sidecar, seating two adults, on the 8 h.p. model should be of special interest.



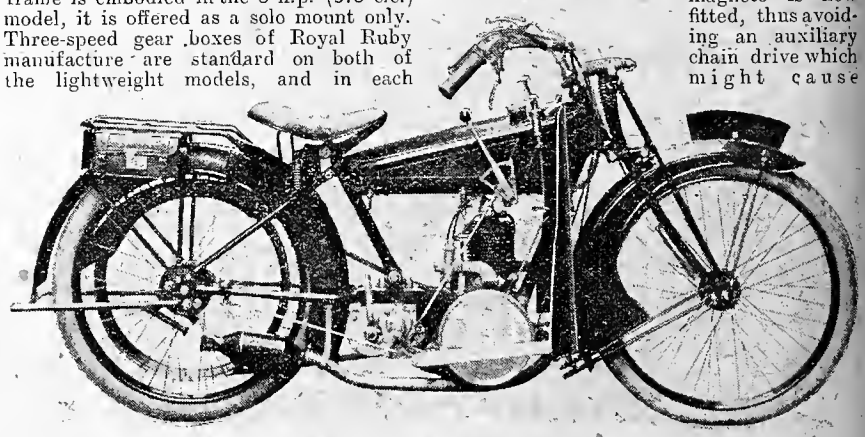
A comfortable, fast, and powerful sidecar outfit; the electrically equipped 8 h.p. Royal Ruby, sprung fore and aft, and fitted with leg guards and undershield.

Stand **ALLON.**

102. Interesting features which should not be missed on the Allon exhibit are the horizontally split crank case and the method of casting in the oil leads. Cylinder and top half of crank case are cast together, and the engine unit is held in the frame by lugs placed above the crankshaft centre, so that it is only necessary to detach the lower half of the crank case in order to remove the crankshaft, connecting rod, and piston.

A large bore steel oil pipe leading to each crankshaft bearing is cast into the crank case so that only one oil union is necessary and a multiplicity of bent tubes is avoided. Larger bearings have been fitted, and the piston has been modified to obtain lighter weight and better gas flow.

Several detail modifications are incorporated, including wider mudguards and longer wheelbase. A Villiers flywheel magneto is now fitted, thus avoiding an auxiliary chain drive which might cause noise. This ignition set may be converted to provide current for lighting at a very moderate cost. Sensible legshields are included in the specification, and an unusual feature is the fitting of the Allon special band brakes to both front and rear wheels.



The popular Allon two-stroke has now a flywheel magneto.

Stand **CHATER-LEA.**

103. For 1922 Chater-Lea, Ltd., will specialise in two patterns of lightweights—a *de luxe* and a Popular model. Of these, the latter is fitted with a 2½ h.p. Villiers engine, with separate magneto.

The *de luxe* model also has a 2½ h.p. two-stroke engine, which is fitted with extra long gas-tight bronze bearings and an efficient silencer and extension pipe, while the compression release is carried into the exhaust. The machine can be fitted either with clutch and kick-starter or with clutch only, while the gear is changed by means of the Chater-Lea delay-action gear control. Roller and ball bearings are embodied in the gear box, and the ratios are 6 and 10¾ to 1. The kick-starter has its mechanism entirely enclosed. An improved type of spring fork with substantial link plates and hardened bolts has been evolved.

Features of both this and the popular models are the Chater-Lea wheel hubs with

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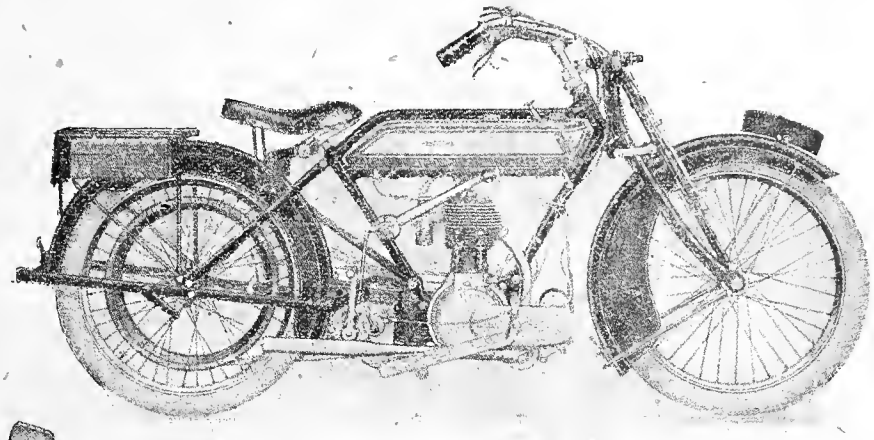
disc-adjusting bearing, which allow the wheels to be removed without interfering with the adjustment. The rear wheel is provided with a knock-out spindle, and, by the use of hinged distance pieces, the inner tube can be changed without removing the wheel from the frame.

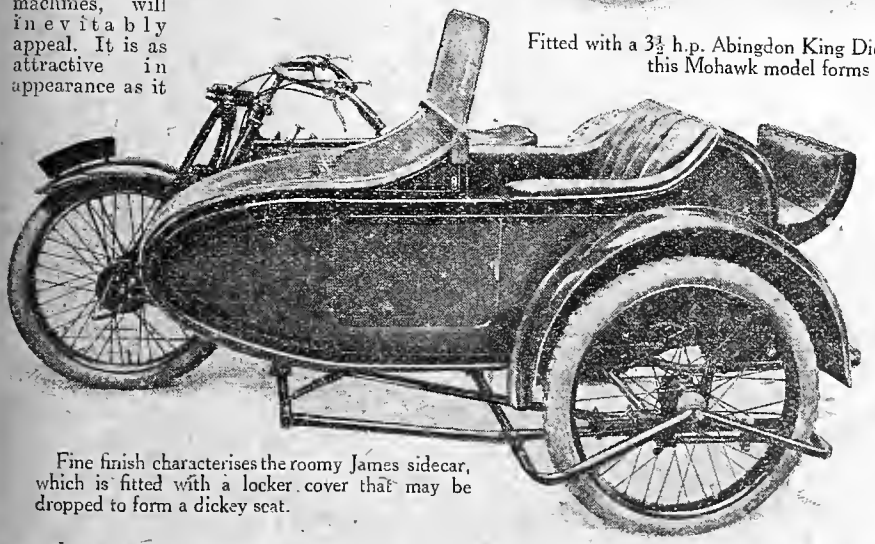
A modified 8 h.p. sidecar model will also be shown with three-speed gear and plate clutch on the engine-shaft; a clutch stop is fitted to the latter.

Stand **JAMES.**

104. There are four widely differing James models for 1922, but each is a very creditable example of its type. For the sporting soloist the re-designed 3½ h.p. twin, which now closely resembles the actual I.O.M. and Grand Prix machines, will inevitably appeal. It is as attractive in appearance as it is comfortable to ride, and it will be delivered with a guaranteed speed of 60 m.p.h. Aluminium chain cases and completely interchangeable wheels are the only points upon which it was found necessary to improve the 7 h.p. sidecar outfit; nor has the simpler "4¼" been basically altered. Both the sidecars, however, have undergone detail changes, making for great comfort and convenience. The lightweight two-stroke in its standard form is unaltered, but a variation is offered with a conventional two-speed gear box and clutch, instead of the twin chain and dog clutch gear arrangement.



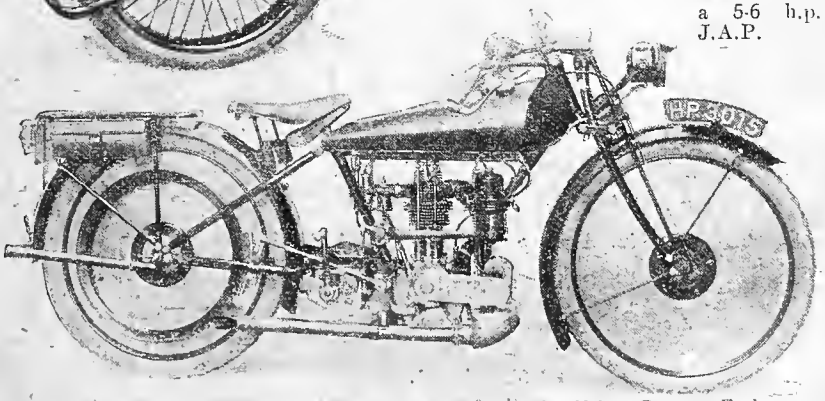
Fitted with a 3½ h.p. Abingdon King Dick engine and Sturmey-Archer three speed gear, this Mohawk model forms a useful double-purpose mount.



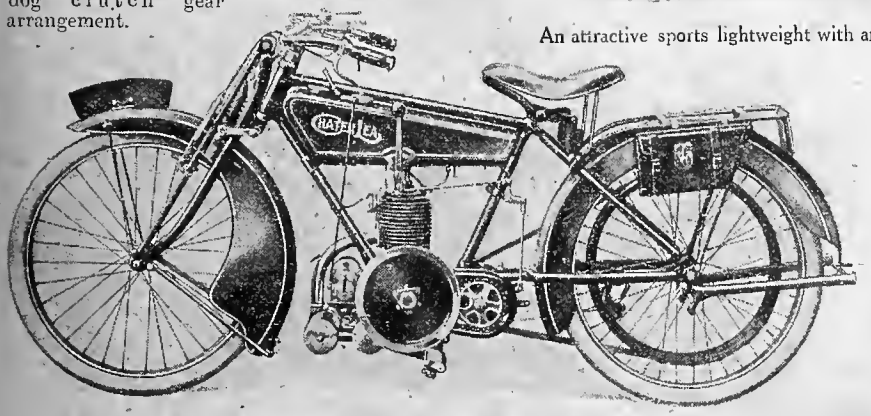
Fine finish characterises the roomy James sidecar, which is fitted with a locker cover that may be dropped to form a dickey seat.

Stand **MOHAWK.**

105. The Mohawk Cycle Co. has probably been better known in the past by its pedal cycles than its self-propelled two-wheelers; but for 1922 a complete range of motor cycles will be made. A Villiers-engined two-stroke will be supplied alternatively as a single-geared (direct belt drive) model, or fitted with a two-speed gear box with clutch and kick-starter. Next there is a very similar machine, but fitted with a 293 c.c. J.A.P. A 350 c.c. engine of the same name has served as the basis of a neat sporting solo mount; and in the passenger class there is a single and a mediumweight twin—the former a 3½ h.p. Abingdon, and the latter a 5·6 h.p. J.A.P.



An attractive sports lightweight with an o.h.v. engine—the 2½ h.p. Coventry Eagle.



Exceptionally deeply valanced mudguards are good features of the 2½ h.p. Chater-Lea two-stroke.

Stand. **COVENTRY EAGLE.**

106. The sporting Coventry Eagle has the honour of being one of the earliest lightweights to be turned out as a luxury mount pure and simple. It will be remembered that this model is fitted with a 2½ h.p. o.h.v. J.A.P. engine with several detail refinements and a distinctive design of ribbed exhaust manifold. A handsome saddle tank and clean frame and mudguard lines add to the uncommonly pleasing general appearance of the machine, which, incidentally, is supplied fully equipped down to aluminium number plates. For next year the saddle tank, which made its first appearance on the lightweight, will be fitted to all the Coventry Eagle models. The others are: A 2½ h.p. two-stroke, a 293 c.c. J.A.P.,

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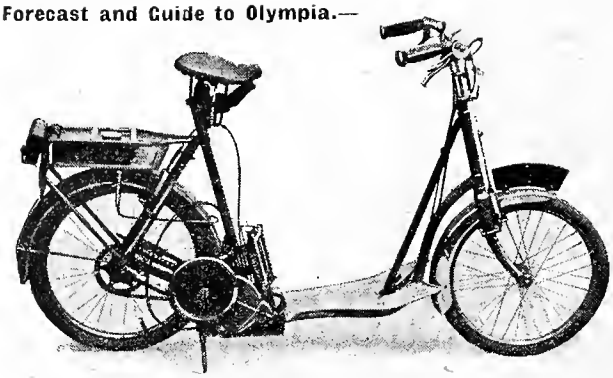
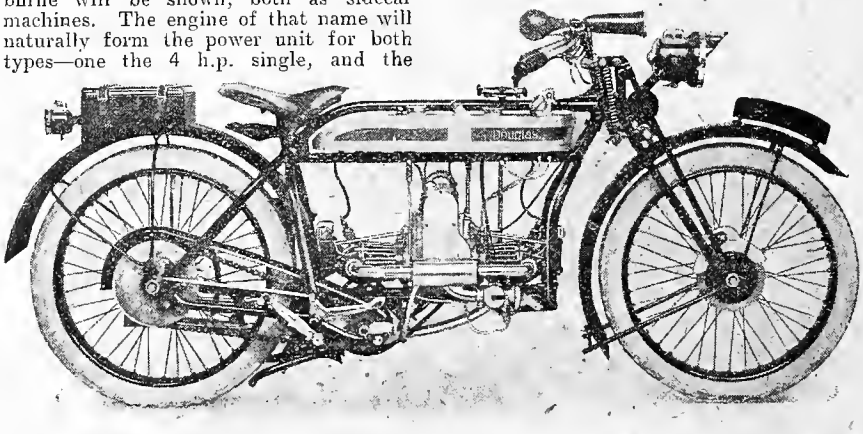


A miniature machine on light and simple lines—marketed by the Hack Engineering Co.

a 350 c.c. J.A.P. (also offered as a light-weight sidecar outfit), a 3½ h.p. J.A.P. (which may be obtained in a "sports" guise), a 4 h.p. (550 c.c.) J.A.P., and a 5-6 h.p. twin J.A.P. sidecar outfit.

Stand **BLACKBURNE.**

108. Two models only of the Blackburne will be shown, both as sidecar machines. The engine of that name will naturally form the power unit for both types—one the 4 h.p. single, and the other the 8 h.p. twin. Four complete outfits comprise the actual exhibit as follows: An 8 h.p. twin with O.E.C. sidecar, an 8 h.p. three-seated taxi outfit, an 8 h.p. tandem-seated outfit, and a 4 h.p. single with a semi-sports sidecar.



A speedy flat twin, the o.h.v. 3½ h.p. Sports Douglas.

Stand **HUGHES SIDECARS.**

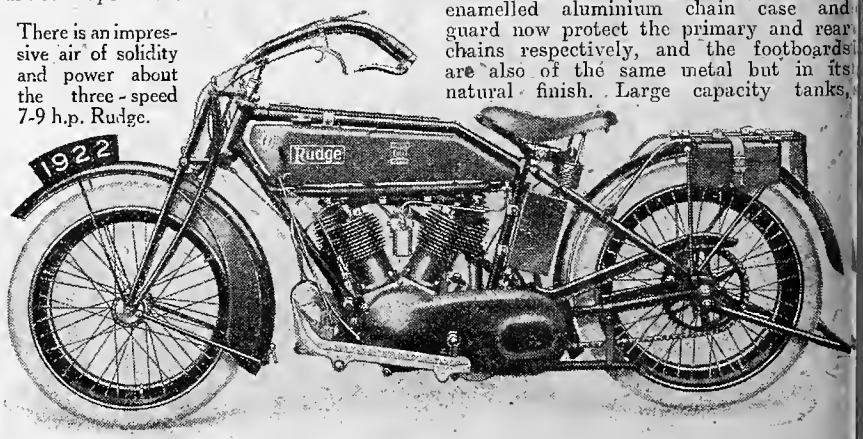
116. Newcomers to the proprietary sidecar market, although having much experience of manufacturing for other concerns, Thos. Hughes and Son, of Baker Street, Sparkhill, Birmingham, will show a big range of models. Almost every type of demand is catered for, with (in certain cases) alternatives for similar classes of work or to suit machines of the same power.

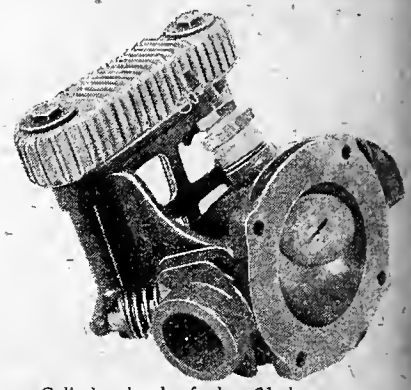
A well-upholstered sporting sidecar, of racy shape, with pointed tail, is specially worthy of notice; and another and heavier model, the Cruiser *de luxe*, follows the same general lines, but is mounted on a duplex chassis, so as to be suitable for use with the biggest and most powerful machines. A feature of the Hughes range is the fitting of scuttle type hinged dashes, carrying windscreens, and aluminium steps mounted on the chassis.

Stand **HACK.**

117. A little machine, mainly intended for runabout purposes, the Hack miniature should prove of value to nurses and others to whom ordinary cycling has been found fatiguing. Its weight is 75 lb. It is fitted with aluminium footboards, down the centre of which runs a groove carrying the control wires to the unit. The engine is the Simplex two-stroke slightly modified and adapted to the Hack. Several improvements have been carried out, among which the magneto gear wheels are now enclosed, and the drive is by single chain to the rear wheel, the gear ratio being 10 to 1. A clutch fitted is used solely to disconnect the engine from the road wheels if it is found necessary to wheel the machine, and this is controlled by a lever on the handle-bars, the first operation of which releases the compression, while the second disengages the clutch. The clutch, therefore, cannot be used for starting purposes, but this is not an extremely difficult operation.

There is an impressive air of solidity and power about the three-speed 7-9 h.p. Rudge.





Cylinder head of the 3½ h.p. sports model Douglas.

Stand **DOUGLAS.**

119. Douglas machines have good reputations in two distinct quarters. Even the casual dabbler in motoring matters knows and respects the 2¾ h.p. model as a general utility machine, while the speed enthusiast is beginning to realise the wonderful capabilities of the three o.h.v. models, which have innumerable Brooklands and hill-climb successes to their name this year. The 2¾ h.p. model may be obtained in a variety of forms, but is probably most popular when fitted with a plain clutchless two-speed gear. As a general utility sidecar machine the 4 h.p. type is almost as familiar on our roads to-day, but for high speed sidecarring the new o.h.v. 6 h.p. model is the more suitable. For fast solo mount, the 2¾ h.p. and 3½ h.p. o.h.v. models are, of course, retained. All the Douglas machines are sold complete with lamps, horn, etc.

Stand **RUDGE.**

120. After just one year's existence on the market it has not been found advisable to alter greatly the countershaft three-speed all-chain drive Rudge singles and twins. Since last Show, however, a much less cumbersome form of clutch has been evolved, but this innovation is not new to the public, for it has been fitted to the production machines for some time now. It is of the usual Ferodo insert type, but is carried on the engine-shaft instead of on the gear box; it embodies an efficient transmission shock absorber. A black enamelled aluminium chain case and guard now protect the primary and rear chains respectively, and the footboards are also of the same metal but in its natural finish. Large capacity tanks,

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very strong wheels, and a most efficient front fork are features that have long been common Rudge practice. The two multi gear (belt drive with expanding and contracting pulleys) models remain in the form which enjoyed so much popularity in the past.

Stand **SUNBEAM.**

121. One would not be far wrong in crediting the Sunbeam designers with having set the fashion in the "sports model," when, last year, they introduced a light semi-T.T. machine, less kick-starter, exclusively for solo use. It was almost alone then, but this year it is extremely difficult to find a firm that is not listing a "sports model." The enthusiastic solo rider has already much for which to thank the Sunbeam makers, but for 1922 he has even more reason to be pleased. A new long-stroke T.T. model has been introduced, which really does follow the lines of the I.O.M. machines, being a "clubman's 'bus" pure and simple. The sporting model of 1921 is retained, with the addition of a kick-starter, as a fast touring solo machine; and the 3½ h.p. standard has been modified for dual-purpose use. Another new long-stroke single of 4¼ h.p. has been evolved for purely sidecar work; while, of course, the popular big twin is retained. Excepting the T.T. machine, all have the Sunbeam oil-bath chain cases front and rear.

Stand **MONOPOLE.**

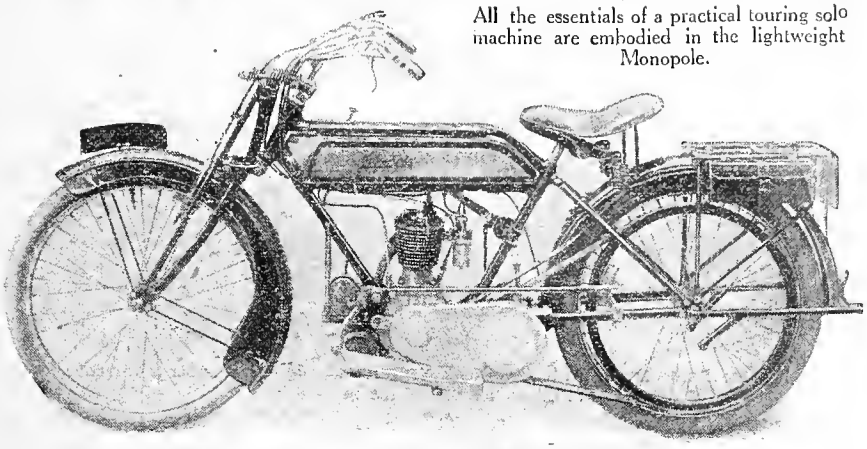
122. Improvements in the Monopole range are chiefly limited to the detail alterations to their components already described in several recent issues of *The Motor Cycle*. From this it may be inferred that the machines bearing this transfer embody familiar gear and engine units. Nevertheless, they are all serviceable and roadworthy productions. The chief types are: Villiers 293 c.c. and 350 c.c. J.A.P.-engined lightweights (the latter as a sports model), and 499 c.c. Abingdon and 654 c.c. J.A.P. dual purpose models.

Stand **VICTORIA.**

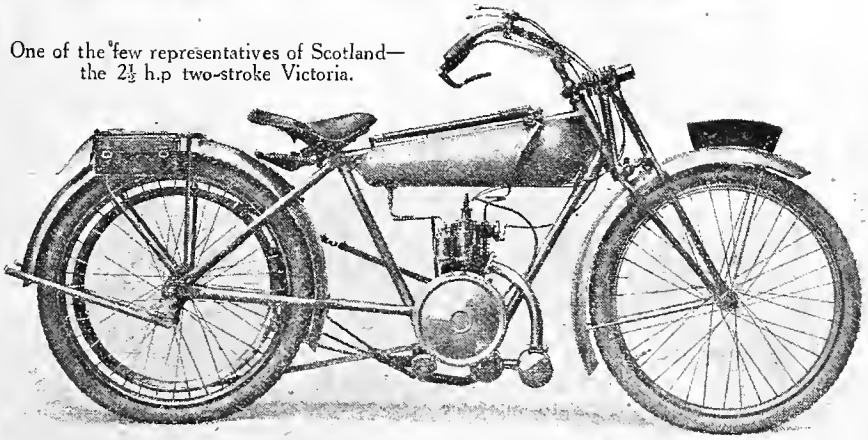
123. As last year, competitive prices will be a strong feature of the Victoria exhibit, which is, incidentally, one of the few representatives from beyond the Tweed. Lightweights, mediumweight singles, and a Coventry Victor-engined flat twin are the chief models. Well-known components are embodied, Villiers, Blackburne, and J.A.P. engines being fitted to the singles. Sturmey-Archer three-speed gear boxes are used on the heavier sidecar machines, and it is worthy of note that a single-geared direct belt drive model, with a 4 h.p. J.A.P. engine, is listed.

Stand **HUMBER.**

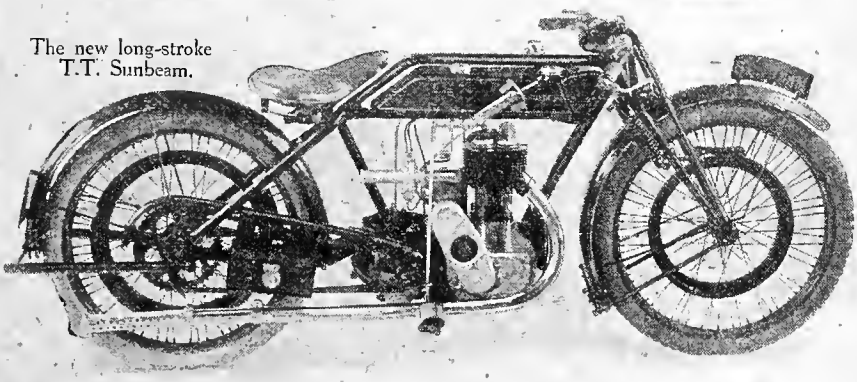
124. The 4½ h.p. flat twin engine of the Humber is a most adaptable power unit. Not only is it fitted to a smooth running sidecar outfit of proved capabilities and noiseless action; with detail modifications it now provides the power for a 70 m.p.h. solo machine selling at a most moderate price. The modifications in question consist mainly of lighter reciprocating parts, aluminium pistons, providing a higher compression, and



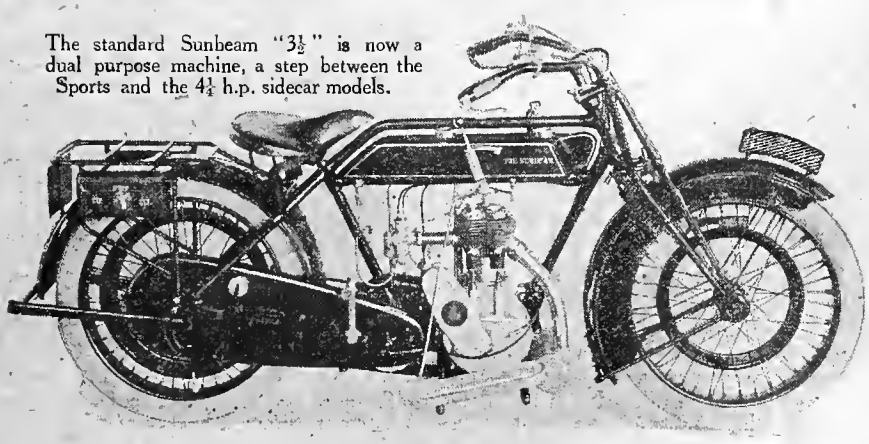
All the essentials of a practical touring solo machine are embodied in the lightweight Monopole.



One of the few representatives of Scotland—the 2½ h.p two-stroke Victoria.



The new long-stroke T.T. Sunbeam.



The standard Sunbeam "3½" is now a dual purpose machine, a step between the Sports and the 4¼ h.p. sidecar models.

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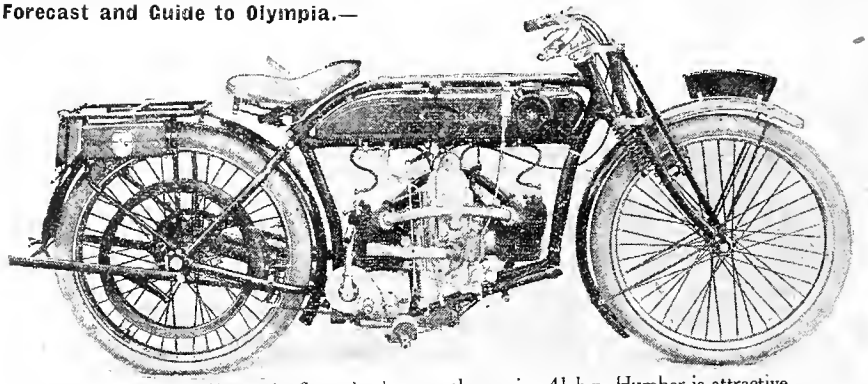
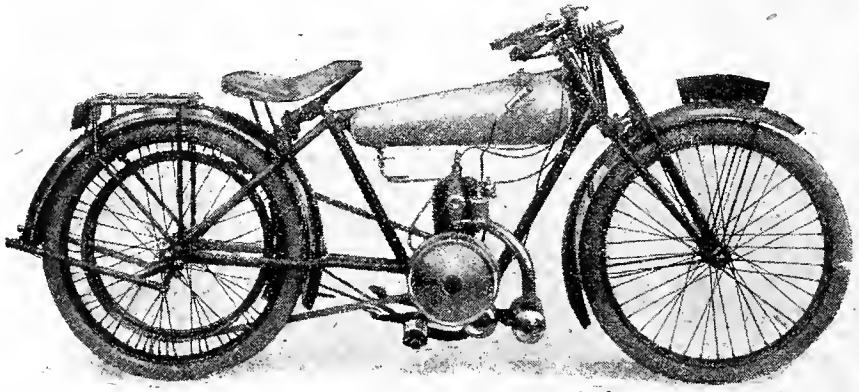


For those who favour the flat twin the smooth running $4\frac{1}{2}$ h.p. Humber is attractive. The illustration depicts the sports model.



A Wolf single geared model two-stroke fitted with flywheel magneto.

redesigned exhaust pockets to allow a free sweep to the exhaust gases through two unrestricted pipes. Detachable valve pockets, one of the Humber's special features, are retained on both the touring and the sports models. A Grindlay sidecar of pleasing and dignified appearance converts the touring machine into a capable passenger outfit.

Stand **WOLF.**

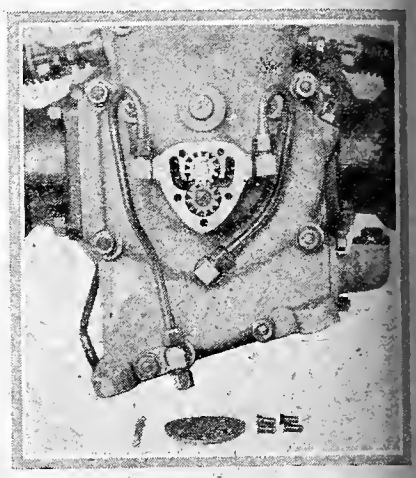
125. A special feature of the Wolf exhibit will be a miniature lightweight embodying the Villiers engine. It will be staged at a very competitive figure, and offered with various alternatives, such as Sturmey or Burman two-speed gear with clutch or kick-starter, or with single gear and Villiers engine-shaft clutch. Lighting sets operated from the flywheel magneto may be added. The usual range of Wolf models will also be shown.

Stand **BOWN.**

126. Among the lesser known, but none the less efficient lightweights of Birmingham manufacture, the Bown is the product of an extensive and well-equipped factory. Two models are specialised upon—a $2\frac{3}{4}$ h.p. Blackburne mount with a two-speed gear and final belt drive, and a very similar machine with a Villiers two-stroke engine. These are both intended for solo work, for so far the makers have not recommended their bigger machine for light sidecar service.

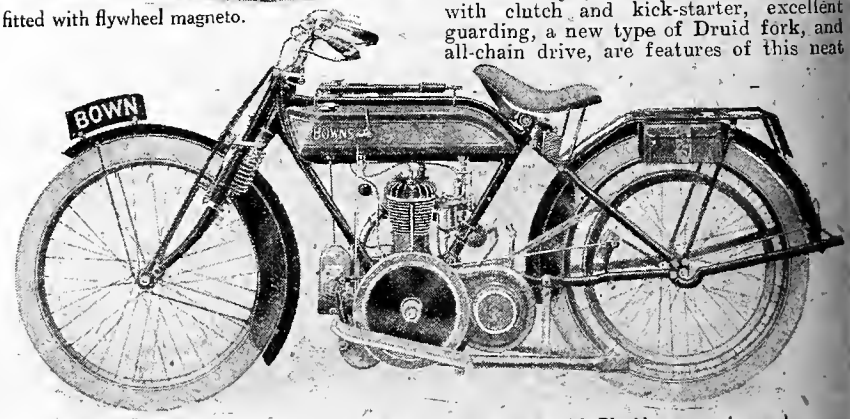
Stand **A.J.S.**

127. It is difficult to decide whether the greater public interest will lie in the popular 7 h.p. A.J.S. sidecar outfit or the new $2\frac{3}{4}$ h.p. models. The former has been modified only in minor respects. A new front mudguard gives a neater aspect, and permits a better flow of air to the engine. Larger exhaust pipes are fitted, and the rake of the sidecar seat has been altered to provide greater comfort. Three types of the $2\frac{3}{4}$ h.p. model will be shown—

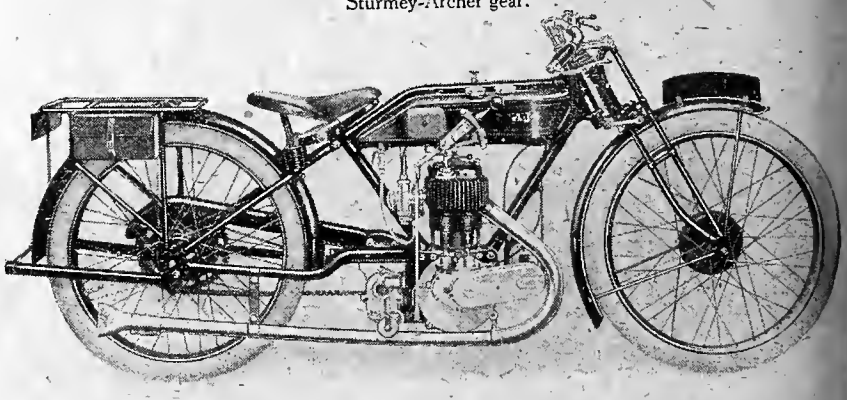


Lubrication system of the $4\frac{1}{2}$ h.p. flat twin Humber.

touring, standard sports, and stripped sports—and, in addition, the touring model will be shown with a light sidecar. Side-by-side valves, three-speed gear with clutch and kick-starter, excellent guarding, a new type of Druid fork, and all-chain drive, are features of this neat



A mediumweight four-stroke—the $2\frac{3}{4}$ h.p. Bown, fitted with Blackburne engine and Sturmey-Archer gear.



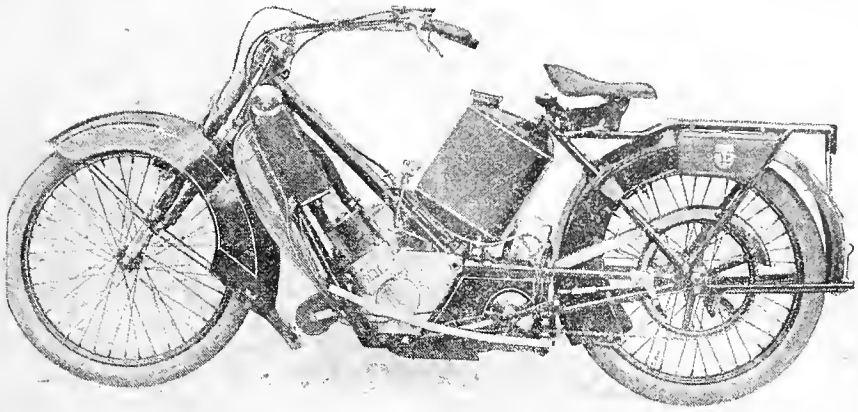
The speedman's mount, a stripped sports $2\frac{3}{4}$ h.p. A.J.S., with no kick-starter, light chain guards, and racing mudguards. The carrier is easily detachable and leaves the rear guard well supported.

Forecast and Guide to Olympia.—

little machine. The standard sports differs in that footrests are fitted in place of aluminium and rubber boards, while the engine has higher compression and higher valve lift. As its name implies, the "stripped sports" is minus all unnecessary fittings, such as kick-starter, etc., while narrower front mudguards and lighter chain guards are fitted. The new frame fitted to all three light machines is particularly attractive.

Stand **SCOTT.**

128. There will be few alterations to the Scott models for 1922; but these machines remain in many respects unique. The sports or Squirrel model, exhibited for the first time last year, will again be on view after a successful year in the hands of the public. Minimum speed and consumption for this type are guaranteed as 60 m.p.h. and 75 m.p.g. respectively. There will also be a Colonial model Scott, with 8in. ground clearance and 28×3in. wheels, while another innovation is the Squirrel outfit with special light sidecar.

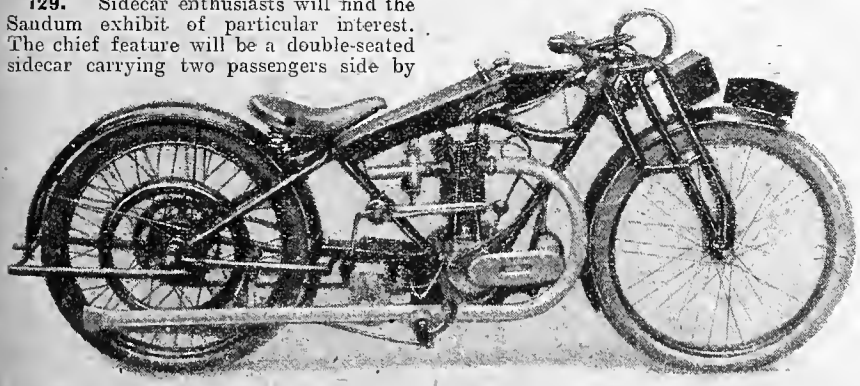


A model which will always have a following on account of its many distinctive features—the 3¾ h.p. water-cooled Scott.

This new mount, which is to be sold purely as a sports model, will carry with it a guarantee of 70 m.p.h. A Sturmey-Archer three-speed gear with close ratios and without kick-starter, forms part of its equipment.

Stand **SANDUM SIDECARS.**

129. Sidecar enthusiasts will find the Sandum exhibit of particular interest. The chief feature will be a double-seated sidecar carrying two passengers side by side fitted on a standard chassis, this being effected by sinking the foot well inside the chassis longitudinal members, and allowing a slight overhang. On all the heavier Sandum sidecars the wheel spindle is supported at its outer end. Another interesting portion of the exhibit will be the Sandum-Easting windscreen, which can be adjusted to any angle, and made to protect the passenger entirely. Sandum bodies are covered in special material, which is afterwards painted and varnished, and is weather and sun-resisting. A speciality is also made of lightweight bodies, several examples of which will be shown. One of these, of streamline form, will weigh but 24 lb. Another feature of the exhibit will be a touring body with a rubber-covered lid to the locker at the back.



Although a trifle unconventional in appearance, this model of the 2¼ h.p. o.h.v. Sheffield-Henderson-Blackburne has already won its spurs in the big speed trials.

Stand **SHEFFIELD-HENDERSON.**

130. In addition to a range of Henderson sidecars for which this Sheffield firm is now well known, two new models of the Sheffield-Henderson motor cycle will be exhibited; one of these will be engined with the 2¾ h.p. o.h.v. Blackburne engine, and having a frame of rather unique design, which gives an exceptionally low riding position.

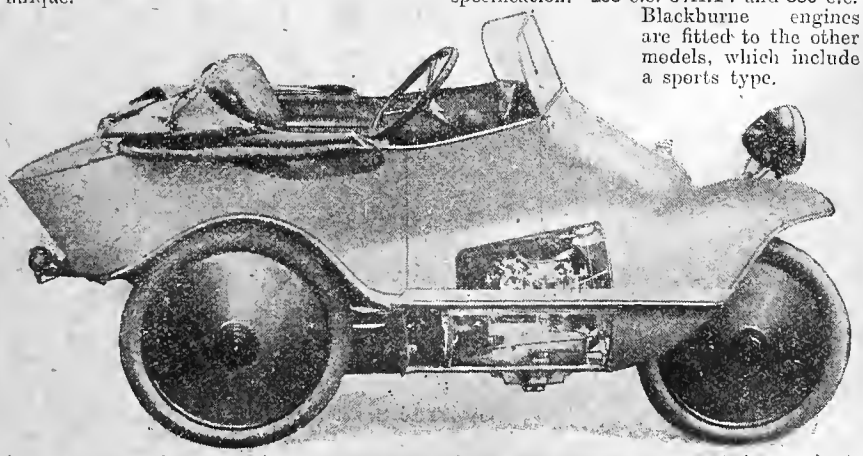
The other model is a dual purpose machine having the new 4¼ h.p. Blackburne engine of 550 c.c., Sturmey-Archer three-speed gear, and other first-class equipment. The vacuum lubrication system on this machine is somewhat unique.

Stand **SCOTT SOCIABLE.**

131. Produced by its makers as a sidecar substitute, but recognised by the definition of the ruling bodies as a cycle car, the Scott Sociable will make its second appearance at Olympia with a minimum of alteration. Attention, however, has been paid to strengthening the shaft transmission and reducing the noise of the bevel gears. Last year the Sociable was introduced to the somewhat staggered public as, perhaps, the most unconventional, yet sound, engineering job ever staged at Olympia. It was only known to a few favoured ones, and to be able to assert that one had driven it was to command wonder and respect. This year many have been on the road, and users are enthusiastic at its linking of sidecar performance with the comfort and silence of the small car.

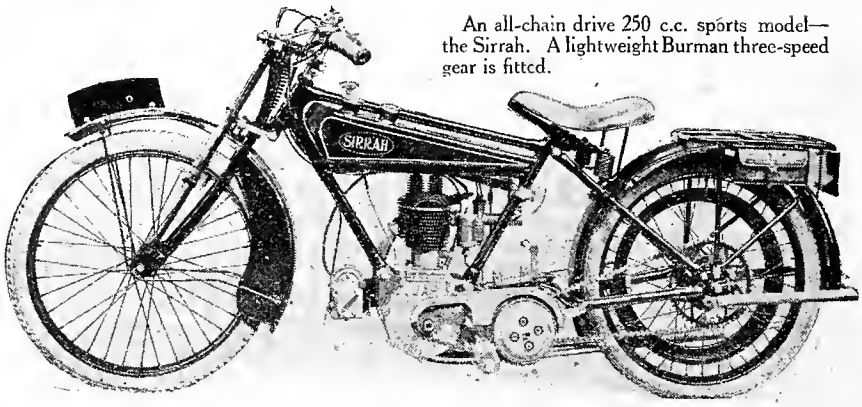
Stand **EDMUND.**

132. An adjustable spring frame is the feature by which the Edmund is best known; it has hitherto been confined to lightweight models, although obviously perfectly suited for any power. For next year a 4¼ h.p. machine will be listed fitted with the new Blackburne engine of that rating. A saddle tank of nice appearance, a Burman gear box, all-chain drive, and internal expanding brakes on both wheels, are salient features of the specification. 293 c.c. J.A.P. and 350 c.c. Blackburne engines are fitted to the other models, which include a sports type.



The Scott Sociable is attractively unconventional in almost every respect. At last year's Show it was a centre of attraction.

Forecast and Guide to Olympia.—



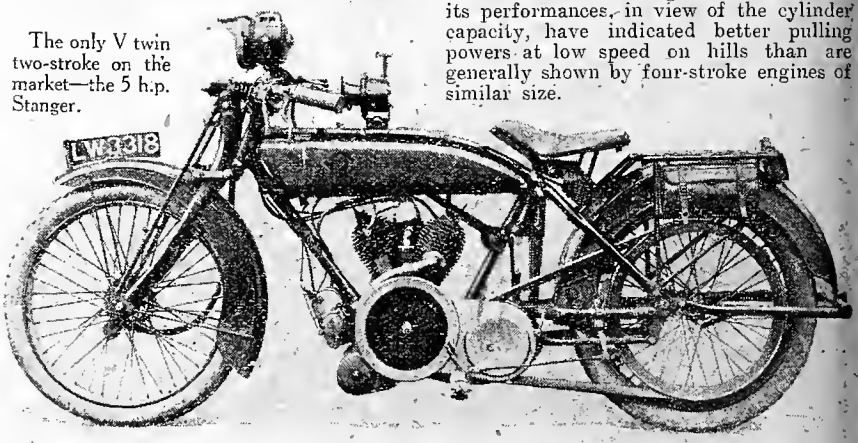
An all-chain drive 250 c.c. sports model—the Sirrah. A lightweight Burman three-speed gear is fitted.

Stand **SIRRAH AND VERUS.**

133. It is impossible simultaneously to build a machine down to a price and up to a quality; and, recognising that the two types appeal to separate sections of the public, Messrs. Alfred Wiseman have introduced "popular" models of their Verus motor cycles under the name of Sirrah. Both makes cover a wide range of types, from the simple two-stroke to a luxurious 5-6 h.p. twin, equally suited to solo or passenger-carrying requirements. The twin Sirrah will be fitted with a 654 c.c. J.A.P. engine, while the corresponding Verus will have a 696 c.c. Blackburne. Saddle tanks and handsome mudguards of ample width are special features, and the aluminium chain cases are noticeably neat. A miniature sports model Verus, employing a 2¼ h.p. J.A.P. engine and the highest quality components, will be particularly distinctive in its wheel size—24in. A lightweight (2¾ h.p. Blackburne) sidecar outfit is another leading model bearing the Verus transfer.

Stand **MASSEY-ARRAN.**

134. If the Massey-Arran had never achieved any other success it would go down in history as the machine on which J. Whalley put up such a lone fight against adversity and all the favourites in the 1921 Junior T.T. Incidentally, Whalley has now joined the staff of the makers, and will be in attendance at Olympia. Excellent detail work and finish characterise the Massey-Arran products, and for 1922 it is intended to concentrate on the lightweight single-cylinder models. A new sports model, equipped with 2¾ h.p. o.h.v. Blackburne engine, will prove specially attractive; it is a replica of the above-mentioned T.T. machine.



The only V twin two-stroke on the market—the 5 h.p. Stanger.

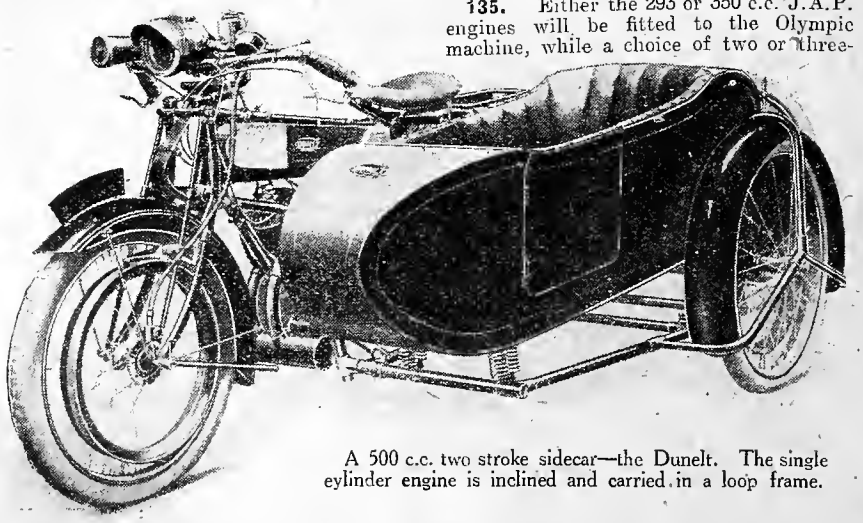
Stand **OLYMPIC.**

135. Either the 293 or 350 c.c. J.A.P. engines will be fitted to the Olympic machine, while a choice of two or three-speed Burman gear or four-speed Juckes gear is provided. The Swan spring fork, which employs enclosed coil and buffer springs between the fork blades, is fitted, and either Amac or Vici carburetters are supplied. Visitors to Olympia should not fail to see the swinging gear box bracket, which provides a simple and positive adjustment for the primary driving chain.

On the same stand, but under another name, is shown the New Courier fitted with Villiers engine, Gosport forks, and either single gear, Burman two-speed gear, or Burman two-speed gear with clutch and kick-starter.

Stand **DUNELT.**

136. As sole example of the 500 c.c. single-cylinder air-cooled two-stroke, the Dunelt has proved itself during the past year, and will be staged at Olympia with only minor changes and improvements. Its price, complete with full electric lighting set, sidecar, and spare wheel, will be most attractive. In almost every competition in which it has been entered the Dunelt has distinguished itself, and its performances, in view of the cylinder capacity, have indicated better pulling powers at low speed on hills than are generally shown by four-stroke engines of similar size.



A 500 c.c. two stroke sidecar—the Dunelt. The single cylinder engine is inclined and carried in a loop frame.

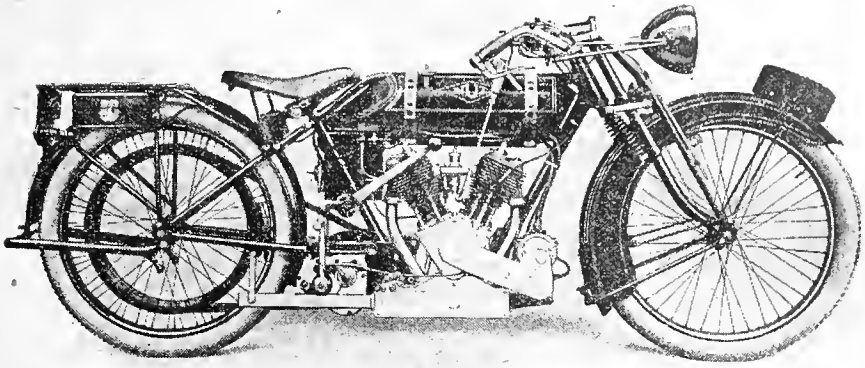
Stand **JUPP.**

136a. A newcomer to Olympia will be the tiny Jupp, which embodies many unusual features. Briefly, it may be described as a small open-framed motor cycle, having a comfortable bucket seat and footboards sprung together. In addition, protection from mud and oil is amply provided for. The rear wheel is almost enclosed by protecting panels, and the long spring footboards are met at the front end by wide legshields; the engine also has a partial covering, and the transmission is protected by suitable shields. In the lowest part of the open frame lies a two-speed Burman gear box with clutch and kick-starter, and a 2½ h.p. Liberty two-stroke is set well in front in an inclined position. This little machine forms yet another example of a motor cycle modified to suit the requirements of a lady or of elderly riders.

Stand **STANGER.**

137. The Stanger is not an entire novelty, but this year will mark its first appearance in improved form with spring frame at Olympia. It earns the title distinctive on several counts. It is one of the only two multi-cylinder two-strokes on the market, and is the only air-cooled V twin of that type at present on the British market. Apart from

Forecast and Guide to Olympia.—its originality the Stanger engine appears to be a very nicely designed job generally, and should be equally suited to solo or sidecar work. It is, of course, very simple, and possesses a minimum of working parts; this, in conjunction with the fact that the engine gives the torque effect, and consequent smooth running of four cylinders, should prove a most attractive quality to the discriminating class of rider. Well-tried standard components are used, such as the Amac carburetter and the Sturmey-Archer three-speed gear box. Final drive is by belt, and the frame suspension is controlled by a long laminated leaf spring.



Of symmetrical and compact appearance, this 3½ h.p. electrically-equipped sports model N.U.T. should make a wide appeal.

Front view of the substantially constructed L.S.D.

Stand **L.S.D.**

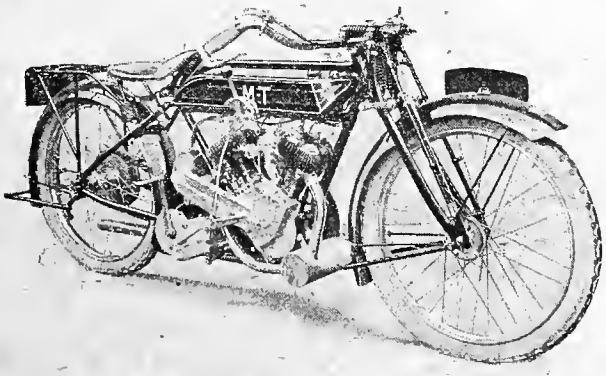
138. As a type, this Yorkshire production represents a very sound development of three-wheeler design. Its air-cooled motor cycle engine, two forward speeds, and general absence of "frills," guard it from the accusation of over-development, while its interchangeable wheels, reverse gear, and the new kick-starter place it on an equality with the sidecar in point of ease of handling and convenience.

This year new and improved bodywork will be shown, and a general refinement of detail, but the same springing and the excellent and sturdy chassis construction will remain unchanged. For trade delivery work a roomy box body may be fitted.

Stand **CANOELET SIDECARS.**

139. Present-day motor cyclists, especially the newcomers to our ranks, may have forgotten the days of the cane-chair type of sidecar, and believe, in consequence, that the modern style of coach-built sidecar body was with us from the earliest period of the popular attachment. Such is not the case, and to Mead and Deakin, of Tyseley, Birmingham, must be given much of the credit of popularising the present-day underslung coach sidecar; the introduction of their Canoelet *(circa 1912)* inaugurated an epoch. The traditions of this firm will be upheld in 1922, and at Olympia will be exhibited taxi-sidecars, light and heavyweight commercial carriers, and all types of touring sidecars.

The sporting Canoelets (again prototypes of a now almost universal class) will be provided with locker accommodation at the back and a mudguard attached to the body instead of to the chassis as heretofore.



Another big sports solo mount—the 5-6 h.p. Blackburne-engined Metro-Tyler.

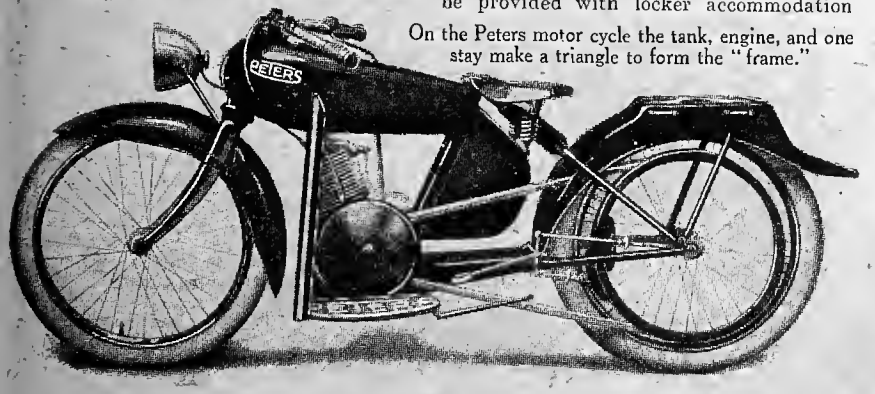
Stand **N.U.T.**

140. The mediumweight V twin as a solo or light sidecar machine has been the N.U.T. policy for several years now, and the result is a production that in appearance is bettered by none. Chain-driven models are now obtainable, in addition to the final belt machines of last year. Two sizes of J.A.P. engines are offered—the 3½ h.p. (496 c.c.) and the 5 h.p. (678 c.c.) twins—and also a special sports model with the former engine, but with lighter reciprocating parts. In this case a close ratio Sturmey-Archer gear box is fitted.

Stand **PETERS.**

141. Certainly most original in appearance and design, the Peters two-stroke will assuredly attract a fair quota of spectators. It is sprung front and rear on simple principles, the actual springs being entirely concealed (the front coil in the steering head). The bulbous tank forms the main member of the frame, and the 347 c.c. engine acts as a down tube. An exhaust pressure system of lubrication, already described in *The Motor Cycle*, is incorporated, and the transmission is by belt over variable pulleys. Lighting is electric, current being supplied by a flywheel magneto.

On the Peters motor cycle the tank, engine, and one stay make a triangle to form the "frame."



Stand **METRO-TYLER.**

142. Hitherto, the Metro-Tyler range has been confined to lightweight motor cycles, therefore the introduction of a new 5-6 h.p. twin-cylinder model is of interest. Designed primarily as a solo mount, it has very pleasing outlines, and should be a worthy addition to the range of dual purpose machines now on the market

The engine fitted is a 5-6 h.p. Blackburne, and the equipment includes

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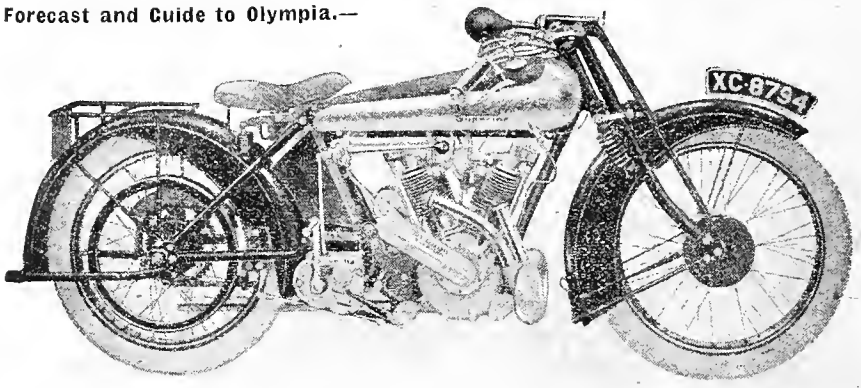


One of the most symmetrical and compact looking British twin motor cycles is the new 6 h.p. Brough Superior, equipped with the 72 × 90 mm. M.A.G. engine.

three-speed gear box, clutch, kick-starter, and all-chain drive. Quick detachable wheels are a feature, the rear wheel being removable without affecting the adjustment of the chain and foot brake.

Stand **ECONOMIC.**

143. Economic Motors specialise in a two-stroke flat twin motor attachment with flywheel magneto, originally designed to be used as a pedal cycle attachment, but this unit, which is now British-made, will be shown fitted to a duplex frame lightweight with chain-cum-belt drive. An Economic *de luxe* attachment will also form part of the exhibit, and will be fitted to a pedal bicycle. It will incorporate the Economic spring drive and lighting from the flywheel magneto. The spring drive is bolted to the rim of the rear wheel, and the initial shocks are taken up by means of suitably arranged springs interposed between the sprocket and its attachment. The standard product of this firm will be a pedal cycle fitted with the unit, having a sprocket attached directly to the spokes of the rear wheel. A tradesman's carrier will be shown fitted with the Economic unit and spring drive to the rear wheel. Quite a novelty will be a simple three-wheeler for one person, fitted with Economic engine and a friction gear.

Stand **BROUGH SUPERIOR.**

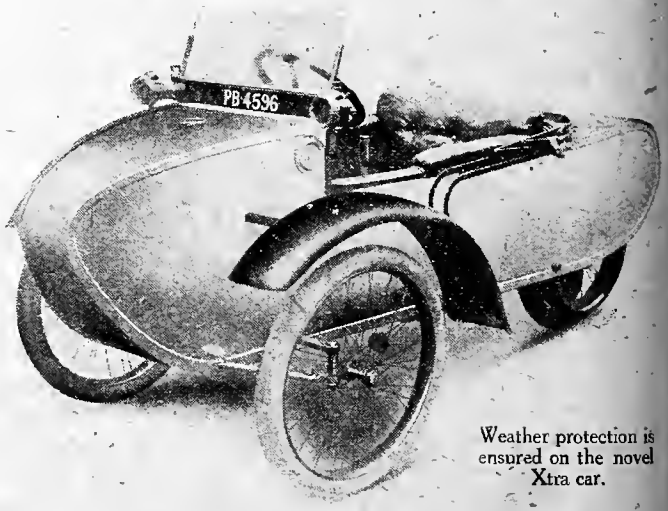
144. This will be the first appearance of the Brough Superior at Olympia, and it may be safely predicted that the exhibit will claim much attention. As no attempt has been made to build the machine down to a price the designer has had a free hand to produce a motor cycle without a jarring line from the appearance view-point. Either an o.h.v. or a side-by-side 8 h.p. J.A.P. engine may be fitted, and a close ratio Sturmey gear box is usually specified. Although the machine was originally designed as a fast solo mount, it is not surprising that there is now a considerable demand for it as a sporting passenger outfit, when it is fitted with a light Montgomery sidecar of suitable design. For 1922 a smaller edition of the 8 h.p. machine will be fitted with a 750 c.c. M.A.G. power unit.

Stand **XTRA CARS.**

148. The Xtra Car exhibit will be of interest to those who are looking for a cheap three-wheeled monocar which is economical in upkeep, and with an appeal to the man who does not care for a solo motor cycle. It follows motor cycle lines throughout, however, the body having the outline of the average touring sidecar. The whole power unit is carried in a separately sprung frame at the rear of the vehicle, and consists of a $2\frac{3}{4}$ h.p. Villiers engine with flywheel magneto, the engine-shaft sprocket driving two sprockets of different sizes by a single chain which passes over all three. On the sprocket spindles, and attached to the sprockets, are two cork friction pulleys of different sizes, which, by rocking a swinging arm on which they are mounted, may be engaged in turn with the special rim attached to the rear wheel, thus giving two speed ratios. Cooling is effected by the air draught passing underneath the body. As this vehicle is fitted with hood and screen, the driver is completely protected from the elements. Starting is by handle actuating a chain running over a free wheel on the engine-shaft.

Stand **BEAUMONT.**

148. Sloping top tube frame, $2\frac{3}{4}$ h.p. Blackburne engine, Brampton forks, and Burman gear box with chain-cum-belt drive are the chief items in the specification of this North-country production. The general lines of the machine are good, and it bears evidence of excellent finish. Another model with chain drive, through a Sturmey box, with the oil tank carried on the saddle tube, will be staged in conjunction with a lightweight sidecar.

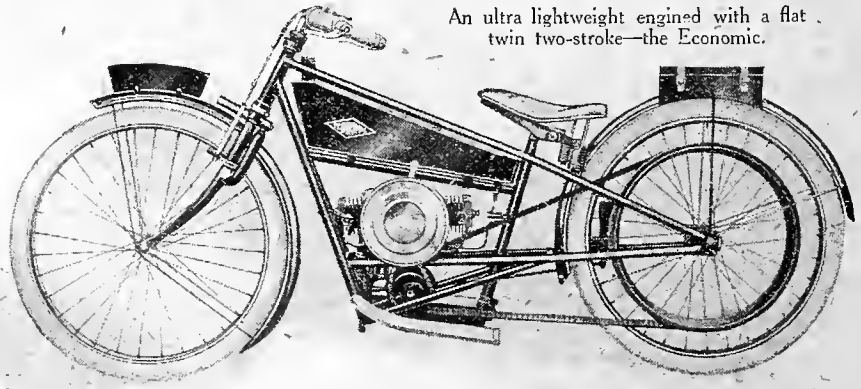


Weather protection is ensured on the novel Xtra car.

Stand **VINDEC.**

162. Produced by a firm primarily engaged in the trade as factors, the Vindec machines will be exhibited in the Gallery at the Show. There are two models—an 8 h.p. J.A.P.-engined model and a $2\frac{1}{4}$ h.p. two-stroke of 64×70 mm. (225 c.c.). The former machine is on highly-developed but conventional lines, having three-speed Sturmey-Archer gear, chain-cum-belt drive, and interchangeable wheels equipped with 28×3in. tyres. The two-stroke is of interest, in that the transmission is by two chains from the engine to countershaft, and thence by belt to the off side of the back wheel. The chains run over different sized sprockets, and a double dog clutch on the countershaft engages either the high or low gear as desired.

An ultra lightweight engined with a flat twin two-stroke—the Economic.



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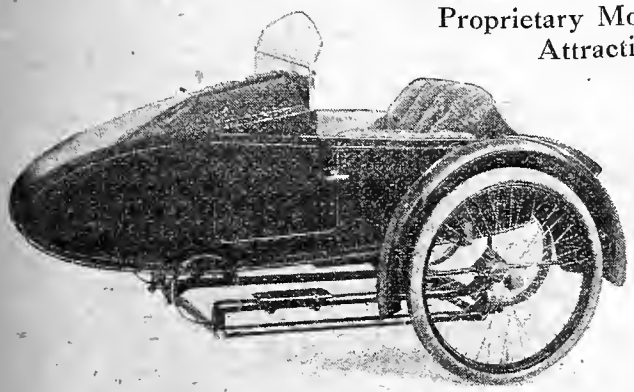
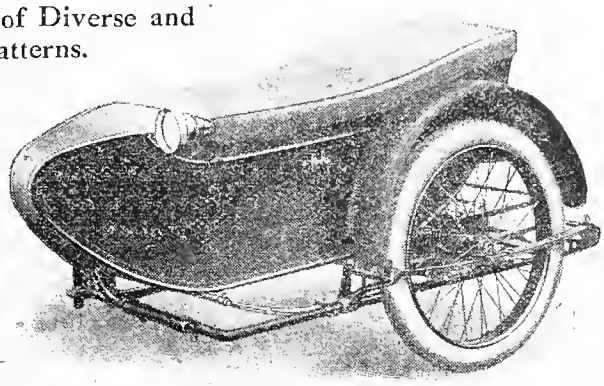
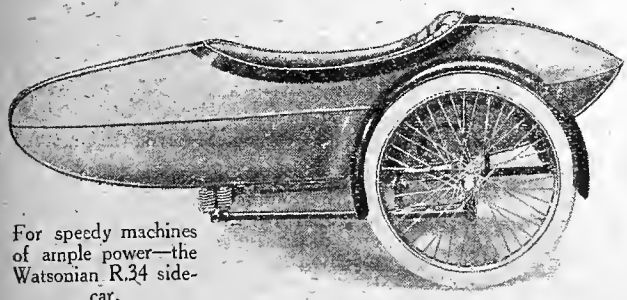


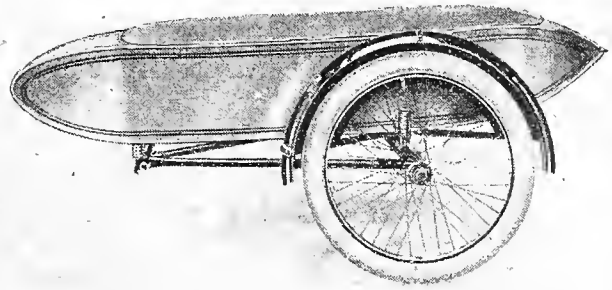
Hughes Cruiser model, a touring sidecar on sporting lines. A hinged scuttle dash, aero type screen and an aluminium step are standard fittings.



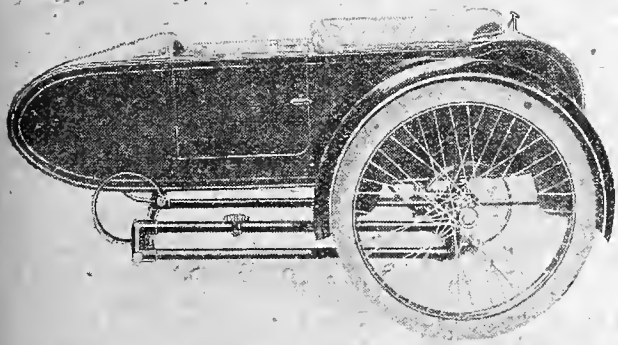
A *de luxe* sidecar with spring wheel: the Grindlay.



For speedy machines of ample power—the Watsonian R.34 sidecar.

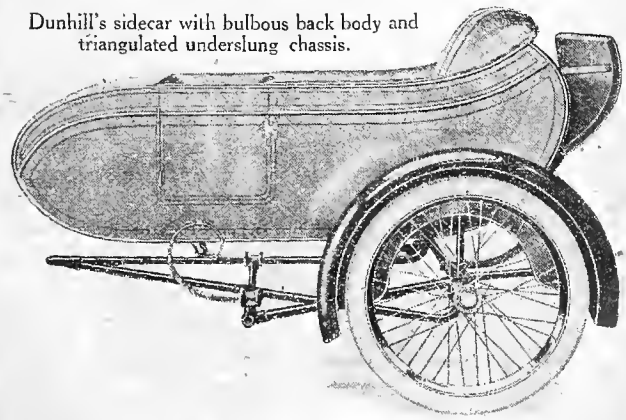


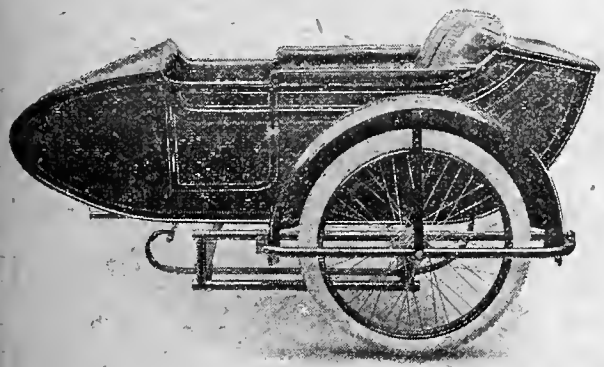
Built for speedwork: the Henderson racer. The body is carried by coil springs on a light triangular chassis.



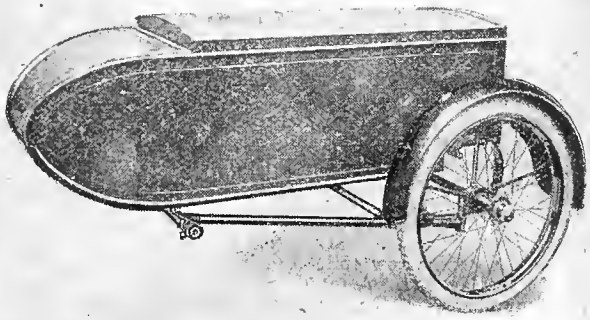
A mediumweight sidecar on graceful lines, with a duplex chassis of ample strength the Millford Junior.

Dunhill's sidecar with bulbous back body and triangulated underslung chassis.





For big touring machines: the Sandum, with large locker accommodation. The chassis is suitable for use with interchangeable wheels.



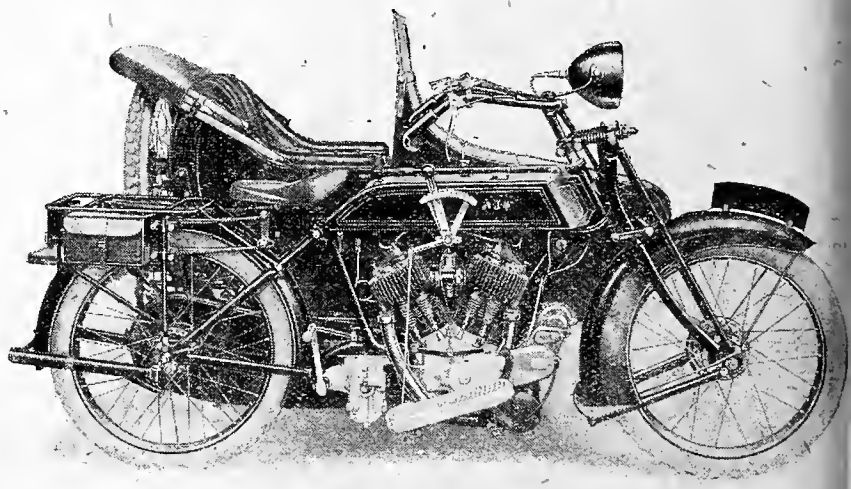
A box carrier manufactured by the producers of Montgomery sidecars.

Advance Details of 1922 Models.

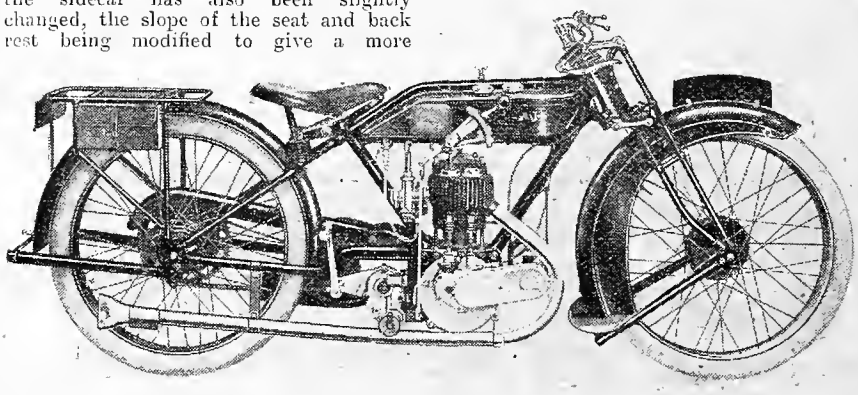
New A.J.S. Singles and Twins.

Modifications to the Sidecar Outfit, and Extended 2¾ h.p. Range.

ONE of the most popular sidecar outfits on the market—the 7 h.p. A.J.S.—has been modified in one or two important points. Chief of these is the fitting of a shock absorber on the engine shaft. This device consists of a floating sprocket prevented from rotational movement by a face cam splined on to the crankshaft, and held in engagement by a powerful coil spring. Any sudden shock causes the sprocket to ride slightly on the spring-loaded cam. A new front mudguard passes between the fork members, and the valances splay outwards below the head; this guard, while being equally effective, provides a better air flow to the cylinders. Instead of the separate magneto and dynamo the Lucas Magdyno is now standardised, and larger exhaust pipes held by a very ingenious external clamping nut are employed. Further modifications consist of improved roller bearing big ends and fabric inserts in the clutch instead of cork. The seating accommodation of the sidecar has also been slightly changed, the slope of the seat and back rest being modified to give a more natural riding position. The Brooks B600 saddle is, of course, retained, and in the case of the A.J.S. this does not interfere with the fitting of pannier toolbags.



New front mudguards and larger exhaust pipes are the most obvious changes on the 7 h.p. A.J.S.

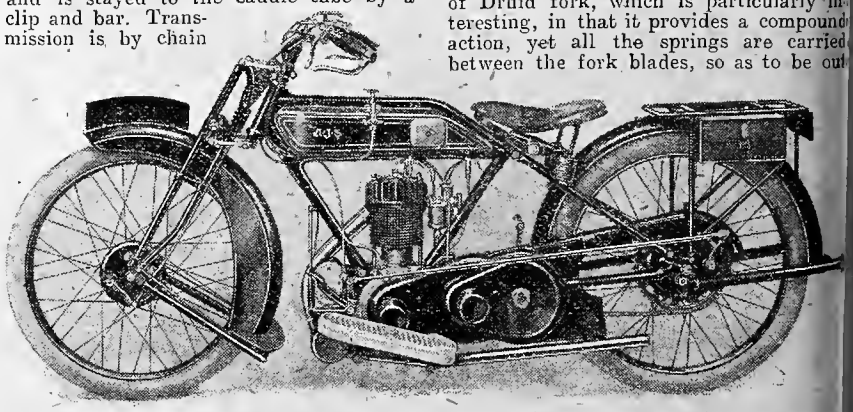


A standard sports model 2¾ h.p. A.J.S. Fitted with kick-starter and footrests, this is an ideal fast touring machine.

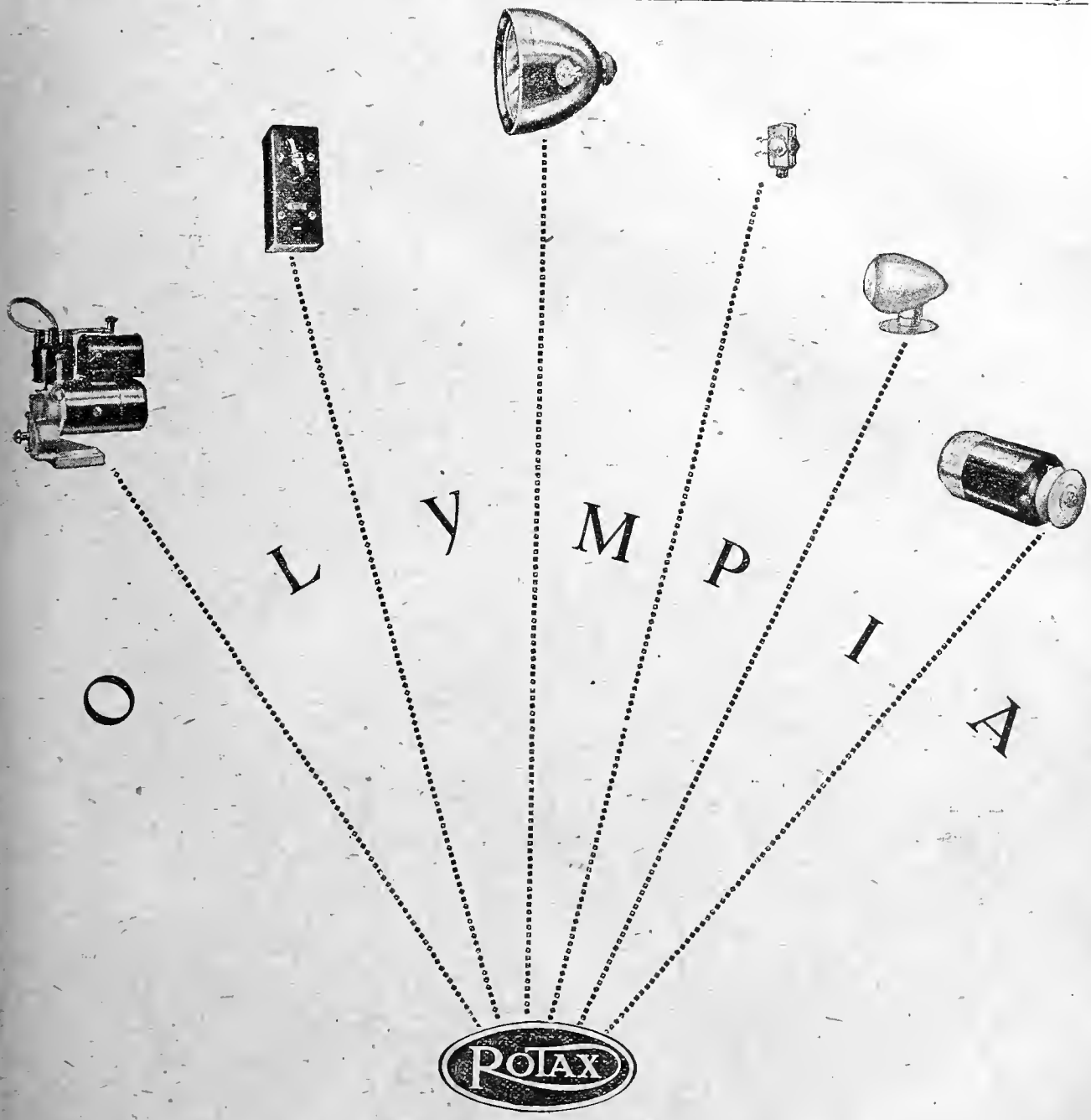
The Improved Light Solo Models.

Solo riders will be charmed with the latest 2¾ h.p. A.J.S., which is one of the neatest and best carried-out medium-weight machines that we have examined. It is to be listed in three models, all at the attractive figure of £85. The average solo rider will probably choose the standard sporting model, and this we shall take as a basis for description. The engine (74×81 mm. bore and stroke=348 c.c.) differs little from the already well-known 2¾ h.p. side-by-side valve engine. Plain crankshaft bearings are employed, but a double row roller bearing is fitted to the big end. A cast-iron piston, with four narrow piston rings, is used; and, except for details, the cylinder head is a replica of that of the 7 h.p. model. Following A.J.S. practice, the head is held down by a cross-bar and two long bolts, and is stayed to the saddle tube by a clip and bar. Transmission is by chain throughout, a shock absorber being fitted on the engine-shaft. Three speeds are provided by the countershaft gear box, and a three-plate cork insert clutch is mounted on the gear mainshaft. Contrary to usual practice, a kick-starter is fitted to the standard sports model. Both front and rear brakes are of the internal expanding type, and the rear wheel is easily and quickly detachable without disturbing the brake or chain; 26×2½in. Dunlop heavy tyres are fitted. The frame is particularly neat and light, and provides a low saddle position well forward of the rear wheel; while another important point lies in the fact that the engine plates are secured to the frame by two bolts to both down and saddle tubes. A very simple and ingenious adjustment is provided for the footrests, the bosses of which are drifted so as to form an internal octagonal star, which may be mounted on the square section cross-bar in a number of positions.

Front suspension is by the latest type of Druid fork, which is particularly interesting, in that it provides a compound action, yet all the springs are carried between the fork blades, so as to be out



A new frame giving lower and more amidships seating is a feature of the 2¾ A.J.S. Excellent guards and internal expanding brakes are fitted to the touring model.



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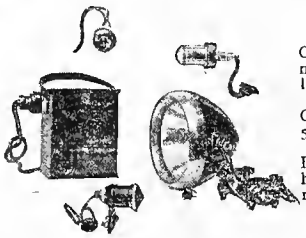
1.—Sidecar Combination Lighting Sets

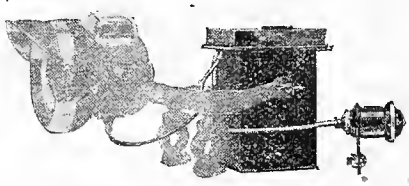


Conversion set with new side and tail lamps £3 15 0

Complete set, with 5in. head lamp .. £5 10 0

Ditto, with 7in. head lamp wired up ready for fixing .. £6 5 0

2.—Solo Lighting Sets.



Conversion set, with new tail lamp..£2 5 0

Complete set, with new head and tail lamp wired up ready for fixing .. £4 0 0

3.—Accumulator—Hart or Peto-Radford Manufacture.

(In metal case with strap handle.)

4 Volts
12 amps. actual. 24 amps. ignition.

Quantity.	Price each.	Total price.
1	14/-	14/-
2	13/-	26/-
3	12/8	38/-
4	12/3	49/-
6	12/-	72/-

Size 5¾ × 3¼ × 3¾.

All above prices include free delivery.

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in which case call at any of the addresses given below, or write for illustrated list giving full particulars and prices of the Wates Electric Sets for both Solo and Combination mounts.

There is no need to bother any longer with troublesome and odorous acetylene, you can convert your existing lamps to electric, or equip your machine with new lamps with

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"I have used your Electric Conversion Set over some hundreds of miles, and find it the most satisfactory lighting for motor cycles I have had to deal with, and many of my friends are going to discard their messy gas generators in favour of the more up-to-date methods."

In the Solo lighting sets, the accumulator case fits on the existing acetylene lamp brackets. The following lamp sets are all suitable for holding the accumulator case. These are not the only sets suitable for converting, but give an idea of what is required.

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A broken down MAG ENGINED machine is as rare as a DEAD DONKEY—have you ever seen ONE? We can *show* you why you have not, at

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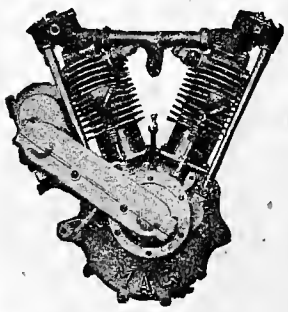

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Telephone: Willesden, 1092
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Advance Details of 1922 Models.

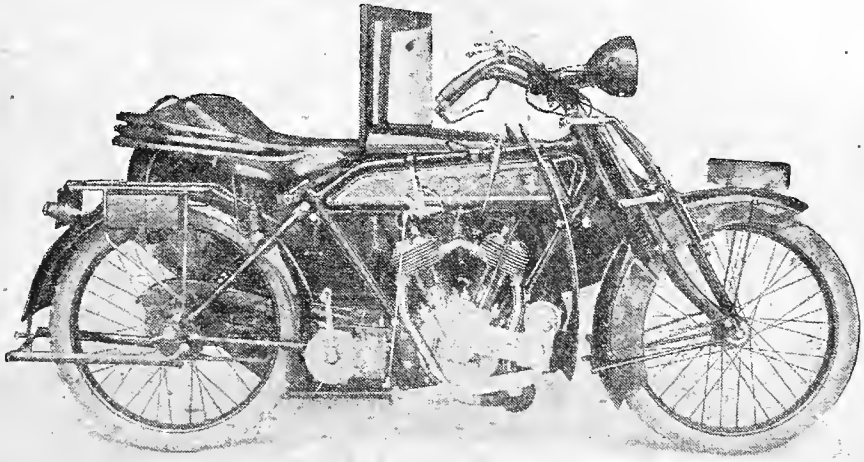
of the mud and clear of mudguard fittings. This fork is very neat, and we are informed that it is most effective. Both sporting models have high compression engines with rather higher valve life than is employed on the standard touring machine; but, whereas the mudguards on the standard sports model are wide, and fully balanced in front, the front guard of the stripped sports is of the racing type. There is a difference also in the chain guarding, that of the stripped model being less complete. No kick-starter is fitted to the ultra-sporting type; and, though a carrier is fitted, it may be removed without interfering with mudguard supports. Both these models are capable of well over a mile a minute, and embody all the firm's experience in high-speed touring practice.

The more sedate tourist has not been forgotten, and for him the touring model should be ideal. Similar to the sporting models in essentials, it is fitted with a lower compression engine and lower lift valves, and is a fine machine capable of pulling at low speeds and of taking a light sidecar anywhere in reason. Rubber-studded aluminium footboards and touring bars are fitted, and the new A.J.S. may be described as a real dual-purpose mount—not too heavy for a solo mount, yet sufficiently powerful and stoutly constructed for sidecar work. The reputation already established by the A.J.S. touring machines, especially in the Six Days Trials, is such that it is only necessary to add that the new models closely follow the firm's standard practice, but embody such improvements and modifications as have been found desirable.

Excelsior Plans.

A Comprehensive Range of Lightweights, Big Singles, and Twins.

A WIDE range of models will be shown by Bayliss, Thomas, and Co., the manufacturers of the well-known Excelsior machines. These vary from the 2½ h.p. Villiers-engined, single-geared motor bicycle, selling at £39 18s., to the 8 h.p. J.A.P.-engined *de luxe* sidecar outfit at £162. Dealing first with the lighter models, the Villiers engine is fitted to three of them; a clutch may be fitted to the single-geared machine already mentioned, or a sporting model may be obtained with two-speed gear clutch and kick-starter. A similar specification is applied to a third model, which, however, is provided with an open frame, and is particularly suitable for riders of the fair sex. This model, by the way, is an exception to the Excelsior rule, in that it is fitted with 24×2¼in. wheels.

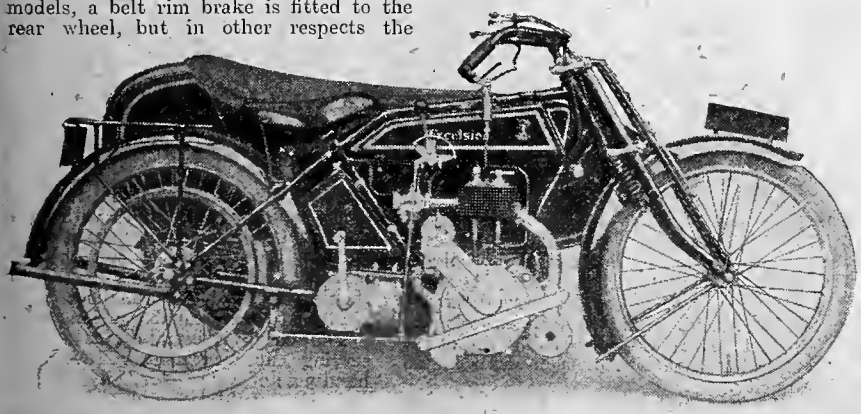


Fitted with an 8 h.p. J.A.P. engine and Burman three-speed gear box, this electrically equipped Excelsior model with a fully fitted sidecar is in the front rank of powerful sidecar outfits

A Solo Touring Mount.

A very pretty little machine, with sloping top tube and excellent fittings throughout, is the new 2¾ h.p. Blackburne-engined model, with three-speed gear, clutch, and kick-starter, and all-chain drive. An internal expanding rear brake is fitted, and the machine will undoubtedly appeal to the sporting rider who requires a go-anywhere machine.

Including the 4½ h.p. big single, all the larger Excelsiors are fitted with Burman gear boxes and 28×3in. tyres. The 4½ h.p. machine is a solidly constructed single, particularly suited for hard work, with a sidecar attached; it is sold solo at £95, or with a well-built sidecar at £125. Unlike the twin-cylinder models, a belt rim brake is fitted to the rear wheel, but in other respects the specifications differ but little. A 6 h.p. twin J.A.P.-engined Popular model is sold complete with sidecar at £135, or with the new 8 h.p. roller and ball bearing engine at £142. This machine is fitted with all necessities, but differs from the *de luxe* 8 h.p. in that it is not supplied with such luxuries as interchangeable wheels. In the case of the 4½ h.p. and the Popular models, tool boxes have replaced the pannier bags, but the standard arrangement of bags is still retained on the *de luxe* type. As regards the 8 h.p. *de luxe* machine, there is little to be said, except that it is replete with every modern convenience, and is a remarkably fine example of typically British big twin construction. Chain drive throughout, internal expanding brakes in each wheel, and beautiful finish are among the outstanding features.



An "oversize" single that has had many years' vogue, the 4½ h.p. Excelsior, fitted with a 650 c.c. engine.

CALTHORPE MODELS.

AS pioneers amongst the builders of two-stroke sidecar outfits, it is not surprising to find a 2¾ h.p. two-stroke fitted with a three-speed Burman gear amongst the Calthorpe range. This machine is, of course, intended for sidecar work, being fully capable of such duty.

Amongst other interesting machines turned out by the makers are a neat little 2½ h.p. two-stroke with 24×2in. tyres. Single-geared, this genuine lightweight will sell at a most attractive figure. An addition to the range is formed by a 500 c.c. twin J.A.P.-engined machine with Burman three-speed box, which will make an ideal dual purpose mount.

Quite a novelty is the spring seat-pillar fitted. The saddle-pillar floats in the down tube, and is supported by an enclosed spring placed in a tube behind the saddle tube, rebound springs are fitted, and the movement is controlled by a piston working in oil.

Rex-Acme Models.

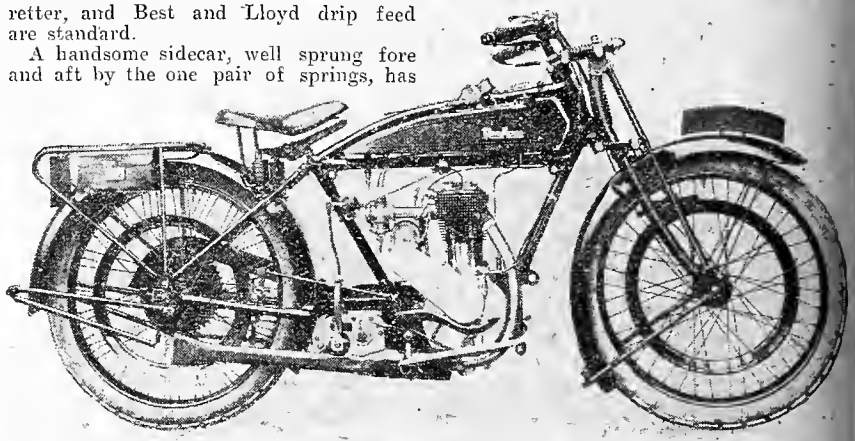
Dual-purpose and Two-stroke Machines under a Combination of Two Well-known Names.

FOR some time now a 4 h.p. Rex-Acme and sidecar has been distinguishing itself in the most important Midland reliability trials; and this severe testing ground has materially helped to evolve the most business-like dual-purpose mount which will be offered to the public for 1922. Experimental machines of this model have proved successful where others of nearly double the capacity have failed, including a sidecar ascent of the notorious Screw Road in North Wales.

A slightly modified 550 c.c. J.A.P. engine and a three-speed Sturmey gear box are standard components, while the frame design is notable for its solidity. The final drive is by chain to a Rex-Acme shock absorber in the rear sprocket; and light guards only are fitted to both chains.

Mudguarding is efficiently and cleanly carried out, and the 26×2½in. tyres should prove well up to carrying the quite moderate weight of the machine. Compensating brakes act in dummy belt rims on both wheels, and the pedal for the rear brake provides great leverage, being over 6in. long. The rear stand is of very light but strong girder design. Footboard, handle-bar, and saddle locations afford a comfortable riding position, while Brampton forks attend to the elimination of vibration from the front wheel. An M-L magneto, Amac carburetter, and Best and Lloyd drip feed are standard.

A handsome sidecar, well sprung fore and aft by the one pair of springs, has been designed for attachment to this model.



Sturdy and clean design is exemplified on the new 550 c.c. dual-purpose Rex-Acme.

Last year's big twin sidecar outfit has been little altered. A J.A.P. or Blackburne engine and chain or belt final drive are optional. A sidecar taxi, however, will be marketed in conjunction with the makers of the Willowbrook sidecars.

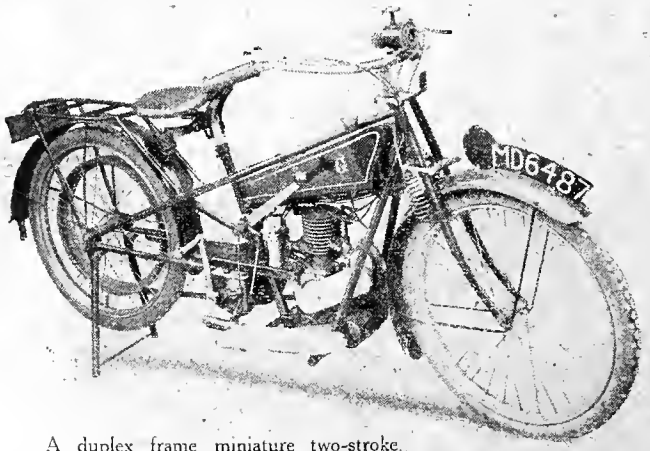
The 2¾ h.p. lightweights have been already described in *The Motor Cycle*, but a novelty for this firm is the introduction of a two-stroke lightweight, obtainable with or without a gear box. Standard components are used.

Excepting the big twin models, which embody the well-known spring seat-pillar, fitted for some time now to both the Rex and the Acme machines, a Lycett "spring nose" saddle is a standard fitment throughout the range. This saddle has, after a thorough trial, proved most comfortable in action.

An Ultra Lightweight.

The 1¾ h.p. (161 c.c.) Grigg Two-stroke Miniature Motor Bicycle.

THE makers of the Grigg miniature motor bicycle have hitherto specialised on a machine of the scooter type, but they have now adopted a policy which this journal predicted would become general after the first flush of the stand-up scooter boom had subsided.



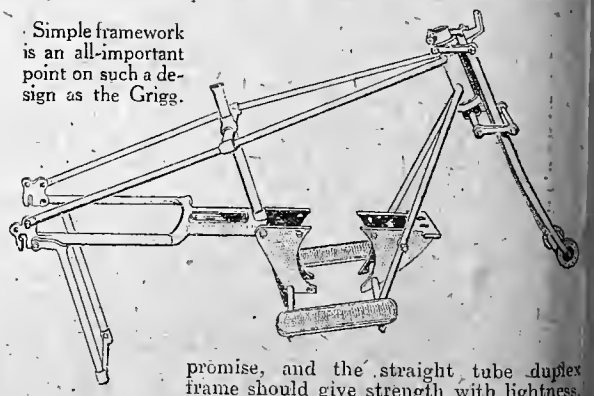
A duplex frame miniature two-stroke, the Grigg—a 161 c.c. engine and Sturmey-Archer two-speed gear are fitted.

Although the scooter will not be discontinued, the Grigg Motor and Engineering Co., of Winchester Road, Twickenham, have incorporated the same engine in a simple low-built duplex frame of motor cycle type. A two-speed Sturmey gear box, with clutch and kick-starter, is incorporated, the transmission being by chain and belt. The frame is constructed largely without lugs, the joints being welded, and the construction is light. Girderless Druid forks carry the front of the machine, and 24×2in. wheels are used, tyres of this size being no doubt ample for a machine of such small engine capacity.

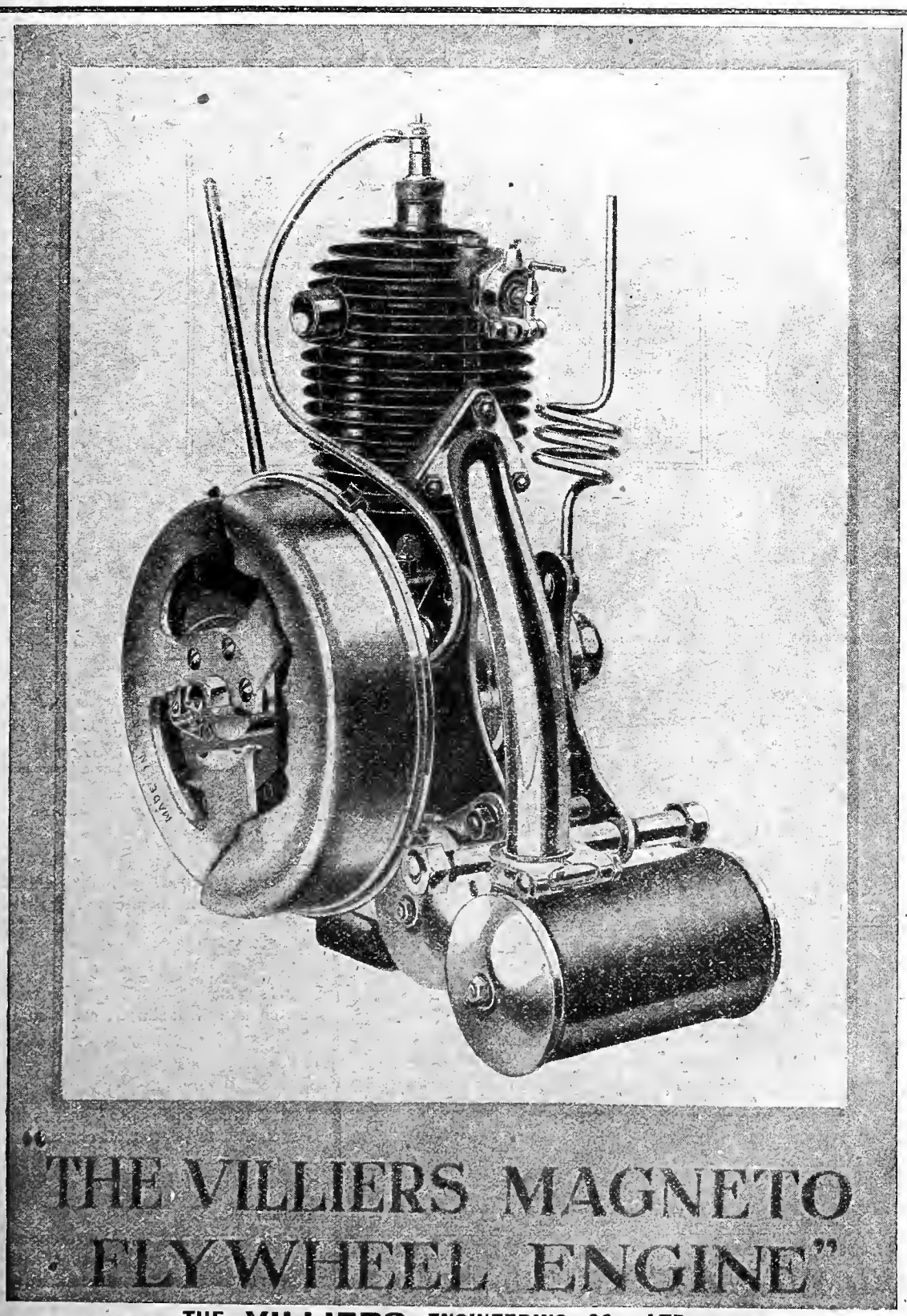
The two-stroke engine of 57×63 mm. bore and stroke is well designed, and has a compression release which connects up with the exhaust system; the cylinder ports are bridged, so that unpinned piston rings may be used without fear of the ends springing open into the port orifices.

From many points of view the Grigg is a machine laid out on lines of great promise, and the straight tube duplex frame should give strength with lightness, and at the same time permit a saddle position low enough to suit the shortest person. Marketed at a low price, it should be ideal for runabout work, in addition to being capable of long journeys.

Simple framework is an all-important point on such a design as the Grigg.



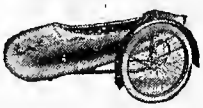
The Grigg is certainly of a type deserving encouragement. Having all the handiness of a "scooter," it nevertheless embodies well-tried and approved motor cycle design. The fact that scooters made their riders too conspicuous was frequently overlooked.



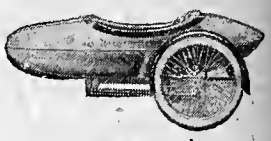
MANUFACTURERS: THE VILLIERS ENGINEERING CO., LTD., SUNBEAM STREET, WOLVERHAMPTON.

MODEL P CHASSIS.

COMMERCIAL TRUCK.


FEATHER-WEIGHT MODEL A.

MODEL Q CHASSIS.


R34 MODEL.

WATSONIAN WINDSCREEN

Special fittings for lugs incorporated in motorcycle free.

Watsonian SIDECARS

Special colours to order without extra charge.

Revised Prices for 1922.

Taxi Sidecar	£77 5 0
Monarch Model	£26 0 0
R34 Model	£25 0 0
Commercial Truck ..	£23 0 0
Commercial Box	£22 10 0
Tourist Model	£22 0 0
Feather-weight Model A	£17 10 0

Unaltered Specification.

Model U Chassis	£15 10 0
Model P Chassis	£13 0 0
Model Q Chassis	£10 10 0
Hood & Side Curtain ..	£5 0 0
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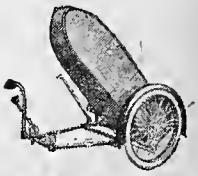
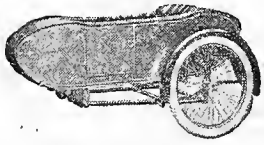
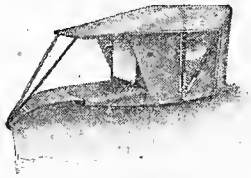
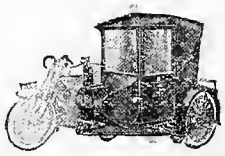
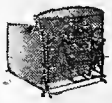

FOR ENGINE INSPECTION

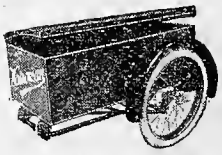

MONARCH MODEL.

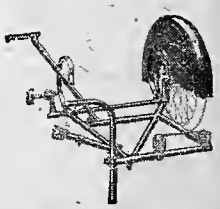
TOURIST MODEL.


HOOD & SIDE CURTAINS.


WATSONIAN TAXI.


LUGGAGE & PETROL CARRIER.


COMMERCIAL BOX.


MODEL U CHASSIS.

ADJUSTABLE SPRING FRAME

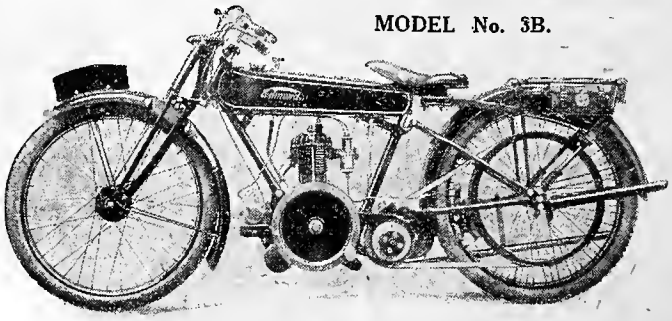
Edmund

"You Simply Float"

STAND 132

CYCLE & MOTOR CYCLE SHOW
OLYMPIA — NOV. 28 — DEC. 3

MODEL No. 3B.



1920 MODELS.

Model No. 2.
Fitted with $2\frac{3}{4}$ h.p. Jap engine and Burman two-speed gear with clutch and kick-starter, chain-cum-belt drive
Price **£75**

Model No. 3B.
Fitted with $2\frac{3}{4}$ h.p. Blackburne engine and Burman two-speed gear with clutch and kick-starter, chain-cum-belt drive.
Price **£85**

Model No. 4B.
Fitted with $2\frac{3}{4}$ h.p. Blackburne engine and Burman three-speed gear with clutch and kick-starter, all-chain drive
Price **£90**
(Special Sports Model. Price £95.)

Model No. 5B.
Fitted with $4\frac{1}{4}$ h.p. Blackburne engine and Burman three-speed gear, with clutch and kick-starter, all-chain drive
Price **£105**
(Sidecar, £23 10 0 extra).

Write for Illustrated Leaflet to

C. EDMUND & CO. (1920), LTD.

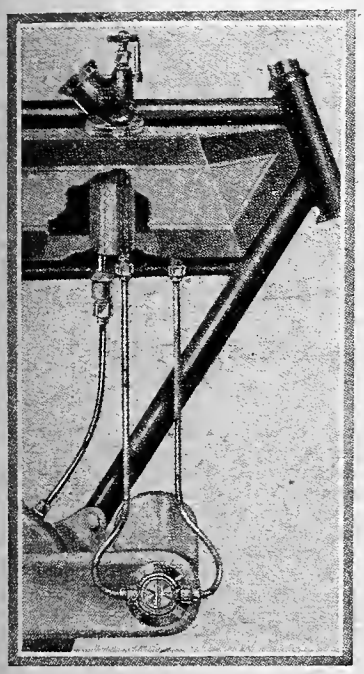
MILTON WORKS, CHESTER.

Wires: "Cycle, Chester." *'Phone: 879 Chester.*

Mechanical Lubrication for any Engine.

The Showell Pump for Use with Visible Drip Feed, driven from the Magneto Timing.

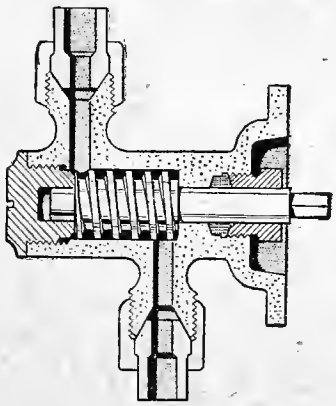
A MECHANICAL oil pump, suitable for attachment to existing machines, and driven from the magneto timing wheel, is not an entirely novel device, but E. Showell and Sons, Ltd., of Stirchley, Birmingham, have approached the idea on new lines.



Oil leads connecting tank, pump, drip feed, and crank case.

Obviously the designer of the Showell pump has set out to achieve in the one fitment ease of application, simplicity in construction and action, and low cost of production.

The "business" portion of the Showell equipment is a small cylindrical casting having integral inlet and outlet pipe unions; inside the casting runs a spindle with a small clearance in the bore of the instrument; the spindle has a deep square thread or worm around its circumference, and oil reaching this thread at the inlet orifice is "screwed" along to the outlet pipe, up which it is forced to the visible drip feed on the tank. The pump spindle is rotated by means of a square extension which engages with

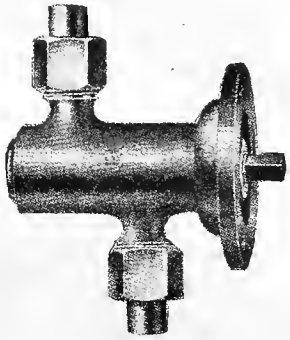


Section of the Showell pump showing the simplicity of construction; there is only one moving part which may be driven at either engine or camshaft speed.

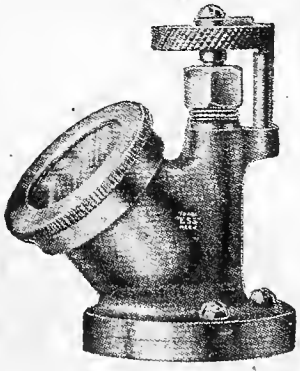
a square hole in a special magneto pinion nut, the pump body being mounted upon the magneto-chain cover or timing case.

A regulator for the drip feed is provided. For existing machines the Showell pump may be arranged to work in conjunction with the almost universally fitted semi-automatic hand-operated drip feeds.

The only criticism which might be made is that the functioning of the pump appears to depend upon a supply of oil from the tank by gravity, and the pressure attained is not likely to be high; possibly this will require a fairly thin oil in winter. However, we have not yet



Clean outline of the Showell mechanical pump; the squared spindle engages with a special magneto sprocket nut.



Drip feed regulator mounted on tank used with the Showell pump.

had this pump under road extended test, and, in actual practice, no difficulty may be experienced on this score.

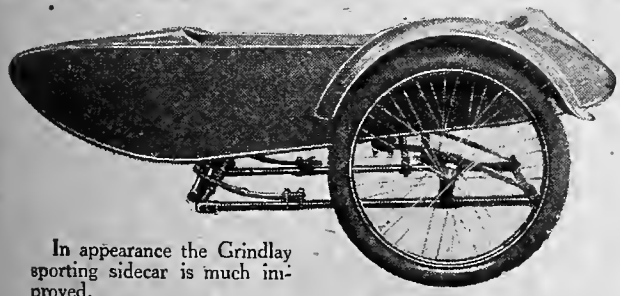
New Grindlay Sidecars.

Improved Springing and a Very Simple Lightweight Chassis Introduced.

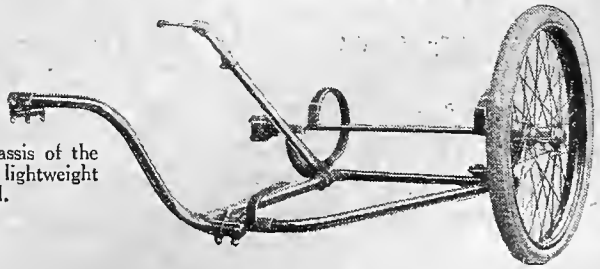
GRINDLAY sidecars have enjoyed an excellent reputation in the past, both the *de luxe* models and the lighter sporting types of distinctive design holding high positions in their respective classes.

For next year several modifications have been made to the existing designs, and one entirely new model (for genuine lightweight machines) has been introduced. Chassis design in this case is of the simplest, the main frame being U shaped, underslung from a very sturdy axle. The body, supplied in either "sporting" (doorless) or touring shapes, hinges on a single spring in front, and is supported on two C springs in the rear. Complete with wheel and tyre, it weighs only 80 lb., but one of these models has already survived a severe testing attached to a big twin motor cycle. The price will be approximately £18.

The only alteration to the luxurious *de luxe* model is in the substitution of an upturned quarter-elliptic springing at the front instead of the coils previously used. This form of springing is also incorporated in the touring model, and has been used on the Club for some time.



In appearance the Grindlay sporting sidecar is much improved.



Chassis of the new lightweight model.

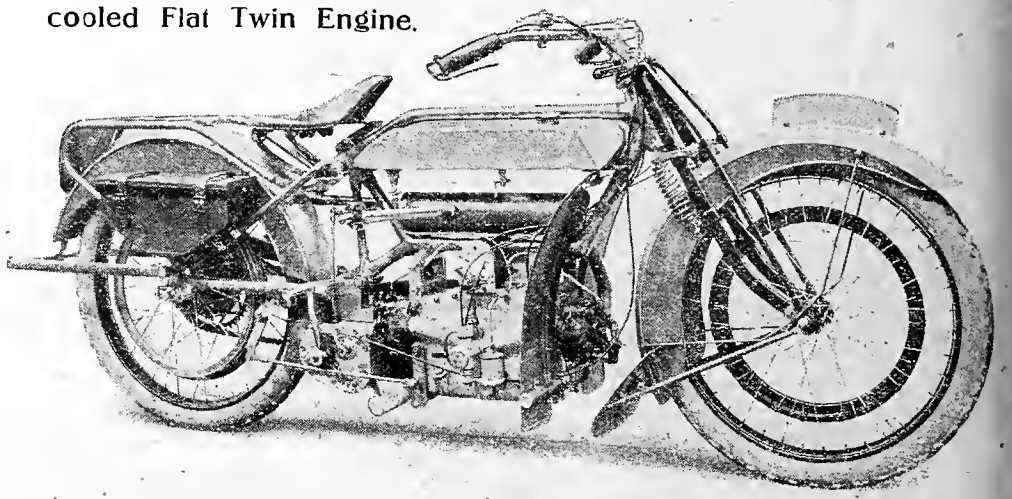
A Chain Driven Zenith for 1922.

Three-speed, Clutch and Kick-starter Model, with Bradshaw 500 c.c. Oil-cooled Flat Twin Engine.

AFTER an unwavering and staunch adherence to belt transmission, the Zenith designers have at last followed the popular demand, and will offer an all-chain drive machine in future. Primarily, the new machine is intended as a solo mount, and an attractive one at that.

No doubt the relinquishing of the infinitely variable Gradua gear on even one of the Zenith range has been undertaken with mixed feelings, but we think that Zenith Motors, Ltd., have acted wisely, for nowadays the demand for belt transmission is largely limited to the sporting type of rider, who in these bread and butter times does not form the backbone of the motor cycle movement.

Turning to the machine itself, it will be observed that it closely follows the lines of the Gradua-geared Zenith-Bradshaw already described in these pages.

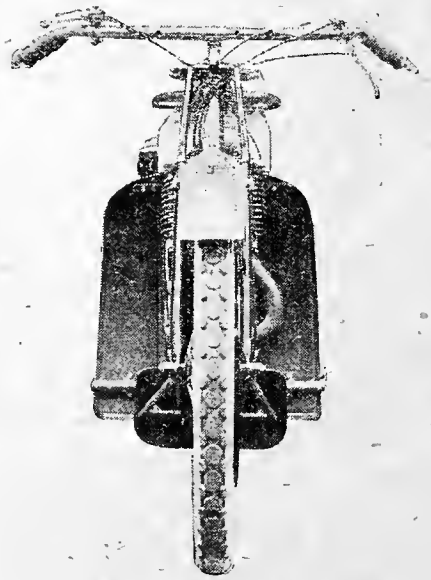


A unique feature of the Zenith with the oil-cooled Bradshaw engine is the fitting of the silencer above the power unit.

Straightforward Chain Drive.

The 3½ h.p. oil-cooled Bradshaw engine is held by hangers extending from the bottom horizontal frame tube. Naturally, the chief novelty lies in the chain drive, but the application is conventional, and the gear box is the well tried Sturmey-Archer three-speed pattern, including clutch and kick-starter. The ingenuity of the designer has been cleverly displayed in the disposition of the engine, gear box, and silencer, and the special step bracket made for the attachment of the gear box is an example. In spite of the many difficulties which had to be overcome, the general appearance of the machine is both pleasing and attractive. Great attention has been paid to mudguarding, and the rear guard valances are provided with troughs to keep all drippings away from the chain case and other parts.

Both brakes are applied to the grooves of dummy belt rims, the front being operated by an inverted lever, and the rear by a pedal conveniently placed adjacent to the near side footrest. Front shields protect the rider's legs, and the lower ends of these are fastened to a cross-bar, which serves to protect the mechanism of the motor bicycle from damage in the event of a fall.



The new chain-driven model Bradshaw-engined Zenith, showing the front shields, the width of the front mudguards, and the mud flap protecting the valve gear.

The engine, which is of 3½ h.p., 68×68 mm. (498 c.c.), is fitted with a Thomson-Bennett magneto and the latest pattern Amac carburetter; and, owing to its excellent system of lubrication, is capable of covering over 2,000 miles on a gallon of oil, while the petrol consumption is stated to be between 90 and a 100 m.p.g.

Unusual Silencer Position.

On inspecting the machine, the observer is immediately struck by the appearance of a large cylindrical component immediately below the tank.

This item is the silencer, which is unusual, in that it is situated above the engine instead of beneath it; lest, however, it is imagined that the proximity of the silencer to the tank and rider's legs will be dangerous and uncomfortable respectively, it must be pointed out that an outer casing completely surrounds the silencer proper, an air space between the two preventing conduction of heat to the exterior.

In addition to the standard model a variation, in the stripped sports category, will be introduced.

Martinsyde 1922 Models.

Detail Frame and Transmission Improvements. Interchangeable Wheels. Dummy Belt Rim Brakes.

IT is chiefly in detail improvements that the 1922 6 h.p. Martinsyde sidecar outfit differs from its predecessor. The 6 h.p. 50° twin-cylinder engine, 70×88 mm. (678 c.c.), with overhead exhaust valves, ball bearing crankshaft and camshafts, and roller bearing big ends, remains unaltered, but the high-speed chain is now enclosed by a cast aluminium chain case, while the rear chain is protected by means of an efficient guard. So far as the gear box is concerned, the kick-starter mechanism is now entirely enclosed; it is fitted with an arrangement to prevent jamming, and works with surprising smoothness. Particular attention has been paid to mudguarding, 6in. guards being fitted all round. For the coming season 26×3in. interchangeable and detachable wheels will be fitted, with a brake rim fitted to each. The front brake is hand controlled, while the rear brake is actuated by foot and provided with a ratchet so that the machine may be left unattended on a hill.

The particular model illustrated is not fitted with the latest pattern tank, which will be set across the top tube and secured by concealed fastenings. Electric lighting is supplied, in this particular case from an accumulator.

For 1922, a Millford *de luxe* sidecar chassis, with dual tubular side members

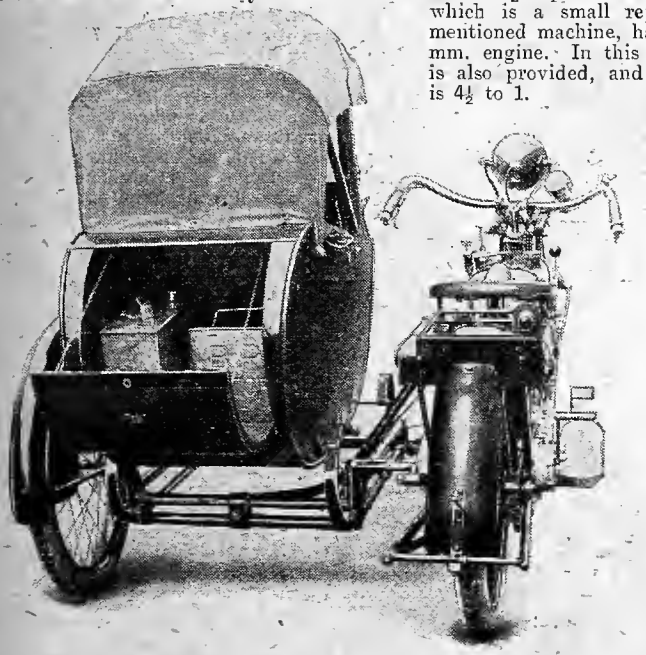
Advance Details of 1922 Models.

attached to the motor cycle frame at three points, has been adopted, while the body, which is of Martinsyde's own construction, is mounted on C springs fore and aft. It is provided with a sloping door of ample size, so as to give ease of entry, and at the rear is a spacious locker, which will accommodate three tins of petrol. An excellent screen is provided, while there is also a cover for the body as well as an efficient hood. In this and other Martinsyde models the finish has been greatly improved in every detail, bright parts being eliminated wherever possible. Practically similar in every detail to the sidecar model just described is the 6 h.p. sports model, but the latest pattern now possesses a kick-starter, and while the top gear ratio of the sidecar machine is 5½ to 1, that of the sports model is 4 to 1.

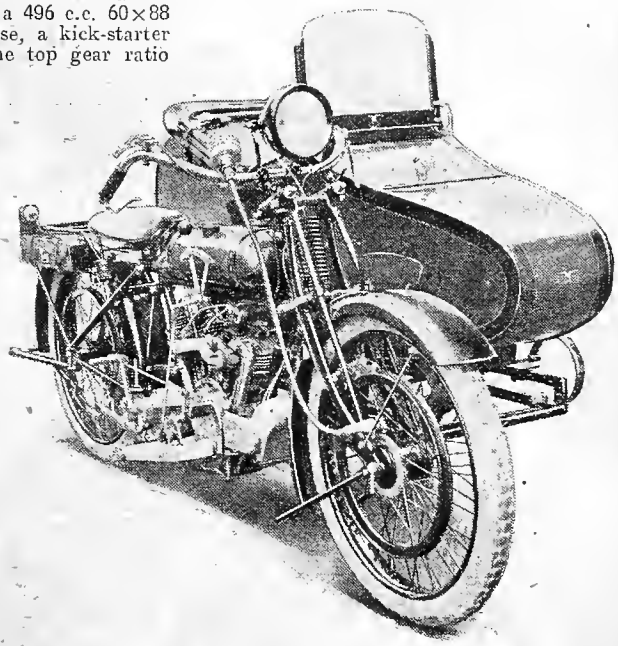
The 3½ h.p. Martinsyde sports model, which is a small replica of the aforementioned machine, has a 496 c.c. 60×88 mm. engine. In this case, a kick-starter is also provided, and the top gear ratio is 4½ to 1.

We have had considerable road experience with the 6 h.p. Martinsyde sidecar outfit during the present season, both as passenger and driver, and can testify to the efficiency and smooth running of the engine, the behaviour of which is more like an 8 than a 6 h.p.—no doubt the overhead disposition of the exhaust valve is responsible for this.

The manufacturers are Martinsyde, Ltd., Maybury Hill, Woking, Surrey.



The capacious locker of the new Martinsyde sidecar, capable of holding three petrol tins in addition to other oddments, is noticeable.



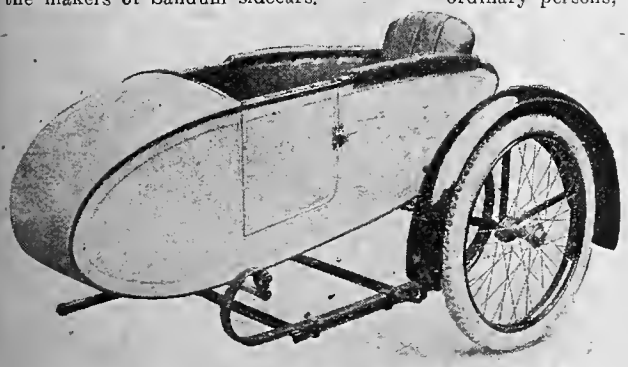
Several detail improvements have been effected on the machine; the wheels are interchangeable, and both brakes work in dummy belt rims.

Some Sidecar Innovations.

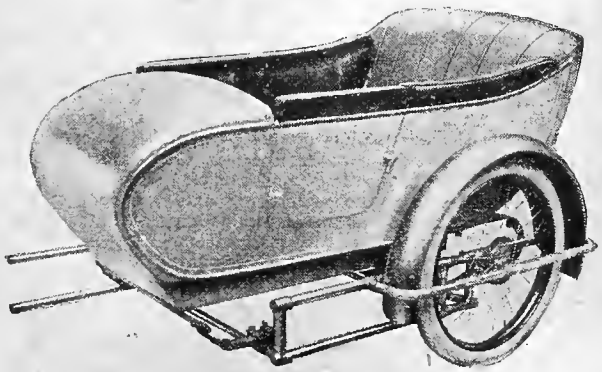
Side-by-side Double-seated Sandum Sidecar Body on a Normal Width Chassis. New Sandum-Easting Windscreen.

SEVERAL innovations for next season, the chief of which is a side-by-side two-seater sidecar body, so constructed that it will fit on to an ordinary chassis, have been introduced by the Sandham Engineering Co., Ltd., of 336, Gray's Inn Road, London, W.C., the makers of Sandum sidecars.

The possibility of the above-mentioned construction is brought about by sinking the footroom below the side members of the chassis and allowing the external lines of the body to overlap slightly. Notwithstanding the apparently restricted space, there is ample leg room for two ordinary persons, and the whole body is ingeniously carried out. The chassis possesses two duplex side members suitably braced, while the body is slung at the rear on inverted C springs. This chassis, as are all other Sandums which are intended for use with the more powerful machines, has the wheel enclosed. Stub axles are only employed on the



Simple yet pleasing lines characterise both bodywork and chassis of this Sandum model.



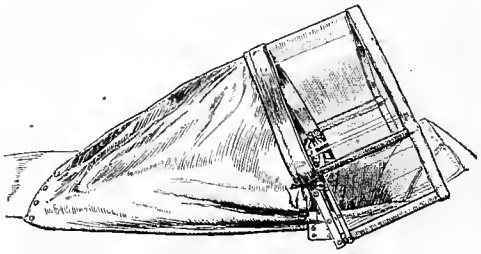
A double-seated model in the Sandum range of sidecars.

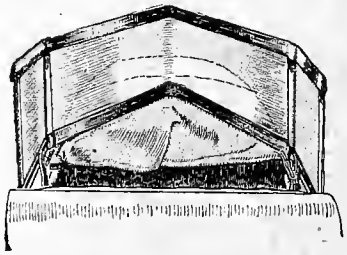
Advance Details of 1922 Models.

lighter models. A feature of all Sandum sidecars is the use of specially tempered springs, which will not take on a permanent deformation.

Of the numerous models which will be exhibited at Olympia, we may mention a streamline body with two lockers, one under the seat and the other at the back, which weighs only 24 lb. The body, the back of which forms a rubber-covered platform, fitted with suitable beading for luggage, and beneath which is a spacious locker containing an adjustable shelf, is equipped with a Triplex glass screen, cabriolet hood, and a sliding table under the scuttle.

So far as the comfort of the passenger is concerned, a novel and ingenious innovation consists of a V type celluloid screen provided with a sliding clamp on each side, which allows backward and forward movement to the extent of 7½in. The screen may also be set at any angle, and can be so adjusted as to cover the passenger completely. To remove one side of the screen to allow the passenger to dismount only one wing nut need be unscrewed. This screen is known as the Sandum-Easting, and is marketed in conjunction with Easting Windscreens, Ltd.





(Left) Adjusted for use as a hood—the Sandum-Easting screen. (Right) In its normal position this screen gives exceptional protection.

Hobart Changes.

All Types of Solo Singles up to 350 c.c. Capaci y.

HOBART lightweights for 1922 embody no startling changes, but at the same time several important alterations and additions will be made, so that the range includes practically every type of solo machine with an engine of less than 350 c.c.

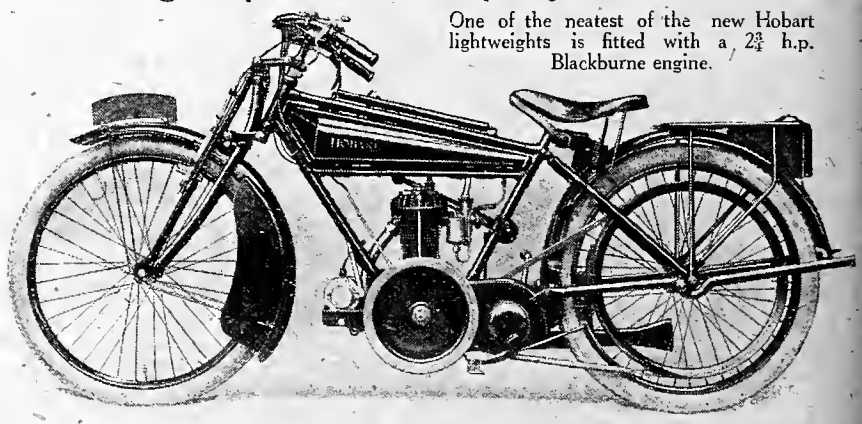
Change of Engines.

In future all the two-stroke models will be fitted with Morris engines, which, incidentally, have made some most meritorious performances in one or two of the difficult trials of 1921. With this power unit, the Hobart may be obtained with direct belt drive, a plain two-speed gear box, or a Sturmey-Archer two-speed with clutch and kick-starter. In the latter form it will be sold as an "all on" model, the lighting equipment being a B.T.H. Sparklight.

Next there is a 293 c.c. J.A.P.-engined mount, also with a two-speed Sturmey gear and kick-starter and final belt drive. 26×2⅛in. tyres are substituted for the 26×2in. size on the two-strokes.

Another final belt drive model has a 2¾ h.p. (350 c.c.) Blackburne engine, and either a two or lightweight three-speed Sturmey gear box; and at the top of the scale there is an all-chain drive 350 c.c. J.A.P.-engined machine, which gives one the impression of being an especially attractive solo mount. Although a two-speed gear box is also optional in this case, we should imagine that the three-speed (Sturmey) model will probably make the greater appeal to the soloist's taste. Such items on the specification as Brampton double vertical spring type forks, dummy belt rim compensating brakes on both wheels, and a B.T.H. Sparklight ignition and lighting set speak for themselves. A sidecar has been specially designed for this model.

Excepting the last-mentioned, all the models may be fitted with the well-known Hobart spring frame. No alteration has been deemed necessary to this simple and efficient frame.



One of the neatest of the new Hobart lightweights is fitted with a 2¾ h.p. Blackburne engine.

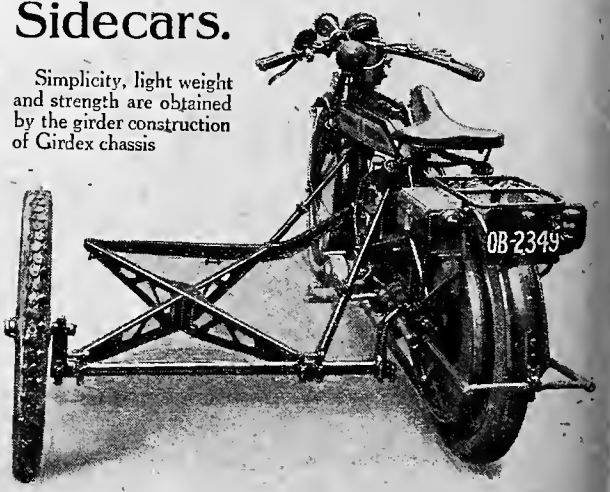
Girder Construction for Sidecars.

IT is claimed, not without some reason, that, instead of twisting the frame of the motor cycle, to which it is fitted, the Girdex sidecar chassis actually supports and strengthens it.

In this remarkably simple design, two correctly designed pressed steel girders are built up as shown, their ends being joined in the front by an I section member, which then extends upwards to form one of the connections to the cycle, and in the rear by the underslung axle tube. There are four points of connection in all, and, excepting the main front girder, all are adjustable. The chain stay connection incorporates a ball joint to ensure ease of alignment.

It is not difficult to imagine the advantages of this construction. The front girder, which takes the load on to the front down tube, is so held that it must always be parallel with the axle tube, for to twist it would necessitate bending the main girders.

It is also claimed that the chassis strengthens the motor cycle frame. This may appear to be far-fetched on a cursory consideration, but, nevertheless, merits careful study. The second front connection extends from the steering head to the deepest point of the front girder, and thus any externally caused tendency of the cycle frame to twist would first have to bend the front girder of the sidecar at its strongest point.



Simplicity, light weight and strength are obtained by the girder construction of Girdex chassis

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A. A. Swan, the Manager of the Motor Cycle Dept. of MARLBORO' MOTORS, having at Brooklands and in other Speed Events proved the merits of "NEW IMPERIALS," is "out" for Service, and the firm have a staff of Skilled Motor Cycle Mechanics, and always carry a good supply of spare parts and accessories.

NEW IMPERIALS SOLD ON THE GRADUAL PAYMENT SYSTEM, and full market value given for second-hand machines taken in exchange.

MARLBORO' MOTORS,
LONDON ROAD.
'Phone 159.

New Imperial Service Agents

HULL

"EVERYTHING COMES TO HIM WHO WAITS—EVEN A NEW IMPERIAL OWNER IN TROUBLE—BUT RARELY."

THE LEADING SOLE AGENTS FOR THE HULL DISTRICT are NEW IMPERIAL enthusiasts, owing to the complete satisfaction they give to customers.

All the LATEST TYPE MODELS will shortly be on view. Every sale of a NEW IMPERIAL carries with it our efficient service, as we carry good spare parts stock, and have skilled workers at your service at all times. APPOINTMENTS AT STAND 69 Olympia will be made with pleasure.

JONES CYCLE STORES,
(HULL), Ltd.,
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WREXHAM

"IF YOU'RE A NEW IMPERIALIST WE'LL SERVE YOU 'RIGHT.' IF NOT, IT'LL SERVE YOU RIGHT."

BUY YOUR NEW IMPERIAL FROM

OUR LIST OF SHOP-SOILED AND SECOND-HAND MACHINES WILL BE GLADLY SENT ON REQUEST.

WE HOLD ONE OF THE LARGEST STOCKS OF MOTOR CYCLES IN THE COUNTRY.

The NORTH WALES MOTOR EXCHANGE WREXHAM Phone 283

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"SERVICE, REAL SERVICE, MAKES FRIENDS. FRIENDS MEAN LASTING CUSTOMERS."

NEW IMPERIALS for 1922 mark a most notable advance in Motor Cycle construction—we carry full stocks and offer you full and discriminating service.

1921 was the New Imperial year. 1922 will be the "NEW IMPERIAL-HORSLEY" year.

MEET US by appointment at Stand No. 69.

T. HORSLEY & SONS, LTD.,
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"PRACTICE MAKES PERFECT—PERFECT DEPENDABILITY."

Bert Bladder is the NEW IMPERIAL Passenger machine expert for the Midlands. His numberless Trophies gained speak for themselves.

PRACTICAL RIDING
PRACTICAL EXPERIENCE
PRACTICAL SERVICE

are his triple slogans.

A post card, making an appointment, will find him at Stand 69 Olympia.

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"FOLLOW THE MAJORITY—
BUY A NEW IMPERIAL."

The Stockist of everything for Motor Cyclists — especially NEW IMPERIALS. We will win your favour by our service, as the NEW IMPERIAL won the T.T. on merit.

Official Repairers to the A.C.U. and A.A. & M.U.

THOMAS D. A. CHAPMAN,
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"ALL ROADS LEAD TO HEREFORD. ALL NEW IMPERIAL RIDERS LEAVE HEREFORD SATISFIED WITH OUR SERVICE."

The Motor Cycle and everything for it.

Largest stock of NEW IMPERIALS in the district—spare parts, repairs and overhauls a speciality.

THE HEREFORD MOTOR CO., LTD., EIGN STREET.
(Separate Garage for Motor Cycles and Cycles).
'Phone 1174..

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PERCY & CO., 319, Euston Road, London.
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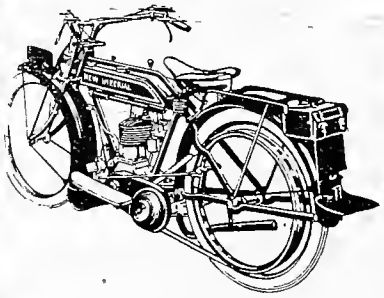
NEW IMPERIAL

Famed for Perfect Dependability.

The New Models now introduced mark a notable and sound advance in Motor Cycle Construction.

NEW MODELS AND PRICES FOR 1922

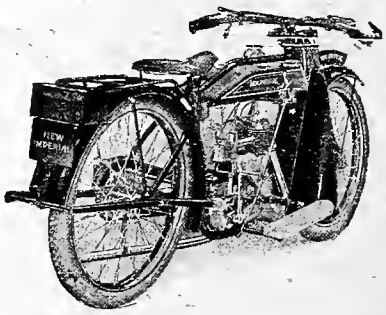


New Imperial Models 1 and 2

2¾ h.p. Light Tourist, chain and belt drive, three-speeds.

Model 1, 3-speeds **£63 0 0**

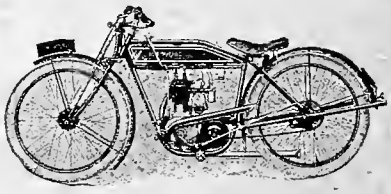
„ **2,** 3-speeds with clutch and kick-starter .. **£69 0 0**



New Imperial Model 3

2¾ h.p. Light Tourist. New **all-chain** drive, 3-speeds, clutch, and kick-starter; roller bearings, big end and main shaft of engine **£73 0 0**

Model 4, ditto "Baby" 24in. wheels **£73 0 0**

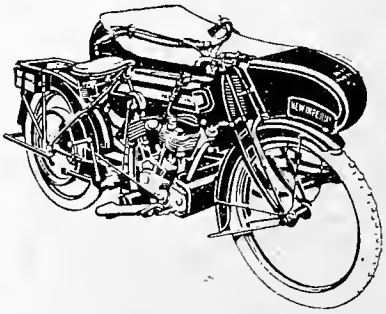


New Imperial Model 5

2¼ h.p. "I. of M. Sports," Super 250 c.c. engine, 3-speeds with clutch **£80 0 0**

Model 6, ditto, Super 350 c.c. engine **£84 0 0**

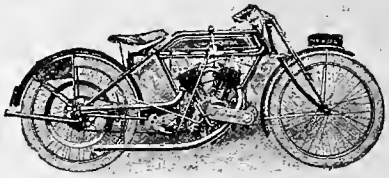
SPECIAL :—
Backwheel bearings on 8 h.p. models, **guaranteed Two Years.**



New Imperial Model 7

8 h.p. Twin Cylinder Combination, Touring, three-speeds, all-chain drive **£145 0 0**

Model 8—
8 h.p. Tradesman's Light Combination, special three-speed gear, all-chain drive, ample accommodation .. **£147 0 0**



New Imperial Model 9

8 h.p. Twin "Sports." Super 998 c.c. engine, special 3-speed gear and clutch, all-chain drive; capable of highest speeds—Solo Model **£132 0 0**

Don't fail to inspect the new and wonderfully efficient All-chain Lightweight Models.

ALL MODELS READY FOR IMMEDIATE DELIVERY

OLYMPIA—STAND 69

NEW IMPERIAL CYCLES, LTD., BIRMINGHAM (Est. over 30 years)

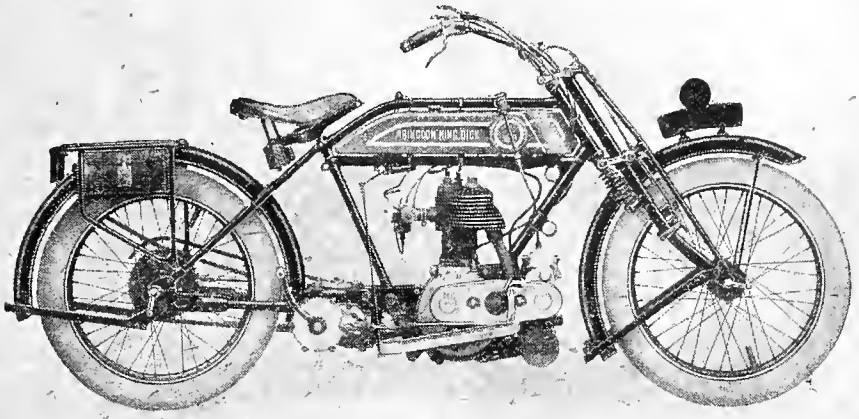
DIC

A Big Single Abingdon.

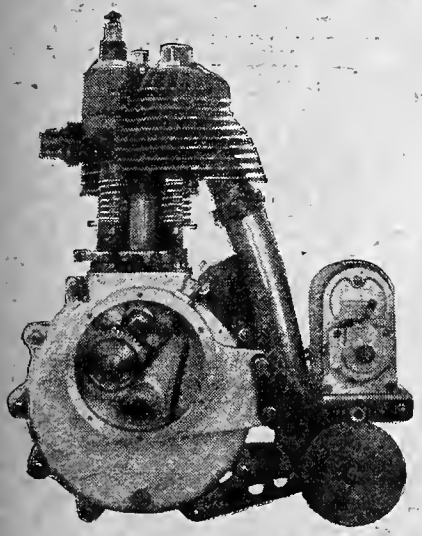
A 4¼ h.p. Engine for Heavy Passenger Work.

UNDOUBTEDLY one of the features of the Show will be the increase in the number of big singles. Quite one of the most interesting of these is the 4¼ h.p. Abingdon King Dick (85×110 mm. = 624 c.c.). This machine has been designed primarily for heavy passenger work and not essentially for high speeds; thus, we find that simplicity and sturdiness are the main characteristics of the new engine. Side-by-side valves are employed, operated by a single cam, the inlet having a direct lift through a tappet housed in a long cast iron guide, and the exhaust being actuated through a bell crank rocker. There are, therefore, only two gear wheels in the timing case, and these are exceptionally wide so as to ensure quiet running and long life.

Lubrication is effected on the principle introduced by Mr. Blumfield many years ago—that is to say, that oil is led to a large plain bearing on the timing side, whence it is forced inwards by the action of the crankshaft in conjunction with a spirally grooved bearing. The oil escaping in proximity to the flywheel is caught in a thrower ring and flung by centrifugal force to the big end. This big end, by the way, is a bronze bush of exceptional area.



All-chain drive is used on the 4¼ h.p. Abingdon King Dick, which is designed specially for sidecar work. Quickly detachable wheels are fitted.



A newly-designed Abingdon King Dick big single of 624 c.c. Observe distinctive arrangement of cooling fins, which do not extend round the inlet valve pocket.

The driving side of the crankshaft is carried in a very large diameter Skefko bearing, the outer race of which is housed in a steel ring and not in the aluminium of the crank case. A flange on this housing is machined so as to form a double face joint for the oil-tight chain case, and a felt oil gland is provided behind the bearing.

Connecting Rod Design.

An I section connecting rod is split at the small end, and when tightened up grips the centre of a very large diameter hollow gudgeon pin. The piston is of cast iron, having three top rings, the lower ring acting as a scraper, and oil return holes being provided directly to the gudgeon pin bosses. Floating in the piston bosses, the gudgeon pin is not liable to cause distortion; nevertheless, the sides of the piston are relieved, and oil grooves are provided on the bearing slippers.

Designed for Cool Running.

There is plenty of metal in the cylinder casting, which is well laid out as regards cooling, and the circumferential ribs are joined front and rear to prevent ringing. Incidentally, there are wide air spaces between both ports and the cylinder.

From a short road test, we are able to state that the engine is admirably suited to the purpose for which it is designed, and the heavy flywheels enable it to pull slowly without snatch.

Fitted with a three-speed gear box, clutch, kick-starter, and all chain drive, the frame is a powerful piece of construction, the chain stay lugs in particular being very massive, while the large ball bearing hubs are rendered oil-tight and dustproof by a simple form of packing gland which has proved most effective in service.

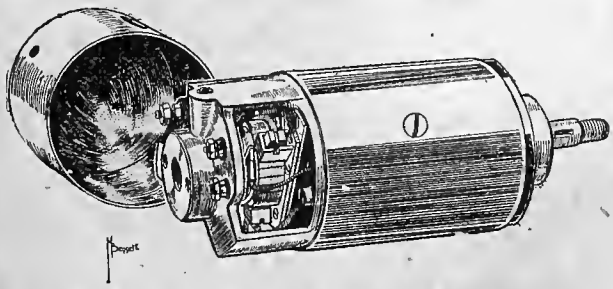
A C.A.V. Lighting Dynamo.

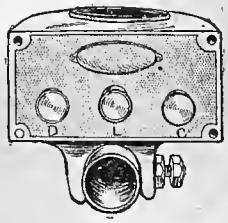
Prominent Car Lighting Specialists Introduce Motor Cycle Lighting Equipment.

THE pioneer firm in Great Britain to adapt dynamo electric lighting for motor cars were C. A. Vandervell and Co., Ltd., of Acton, London, W.3, and consequently every confidence can be placed in the experience they have gained over the last sixteen or seventeen years.

They have been a long time in producing a motor cycle lighting set, and their experiments have extended over a considerable period. The new dynamo, which weighs 5¾ lb., is cylindrical, and has an overall length of 7¾in. It is designed on conventional lines, regulation of output being effected on the well-known three brush method.

The dynamo begins to generate at 900 r.p.m., but reaches its maximum output at 2,000 r.p.m.; any revolutions in excess of this figure do not affect the output of current, even up to 5,000 r.p.m. The dynamo contains the minimum amount of material consistent with its strength, has the armature spindle mounted on ball bearings at each end, a box type brush gear supported on a spider

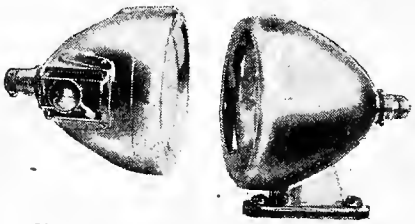




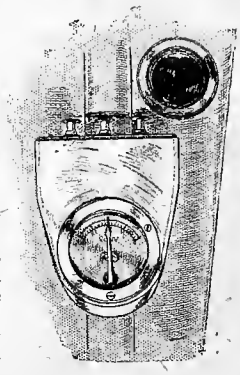
(Right) The new C.A.V. motor cycle dynamo, with cover removed. (Left) Method of attaching the switchbox on to the top tube.

Advance Details for 1922 Models.

rendering the brushes accessible, and a commutator of ample size. An electro-magnetic cut-out is situated on the accumulator box of the sidecar outfit, but when the installation is fitted to a motor bicycle a governor pattern cut-out is fitted to the armature-shaft. The dynamo which is fitted to the motor cycle is intended to be driven off the engine-shaft either by means of a chain or a spring belt. The switch box is so arranged that in the case of a solo mount it is clipped to the top tube, so that the driver looks down upon the face of the ammeter, and the switches are arranged on the end facing him. In the case of a sidecar, it may be attached either to the side of the body or to the dashboard. The switches are arranged as follows: Charge, all on, and dim. The dimming is effected in the case of a sidecar installation by coupling up the lamps in series, thus reducing the current consumption to about one-half. In the case of a solo outfit, the dimming is effected by means of a resistance.



Showing alternative sidecar lamp fittings.



Switchboard of the C.A.V. neatly located on the tank.

When a sidecar is used, a special low type battery is employed, which is intended to be placed in the locker under the cushion. The battery is the C.A.V.-Willard type, 6 volts, 30 ampère-hours on a ten-hour rating. It weighs 24 lb. ready for use, is 7⅝in. long, 4¼in. broad, and 6½in. high (total height); for solo machines, the battery may be supplied in the 7, 10, 12, and 15 ampère-hour sizes.

The C.A.V.-Willard battery is of special type, possessing rubber separators, the rubber being porous and resilient. These batteries carry a free service guarantee. They also carry a twelve months' guarantee.

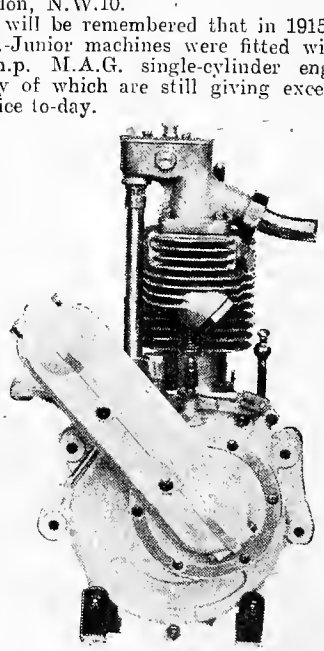
The C.A.V. head lamp for motor cycles.

New M.A.G. Engines.

Large Range of Lightweight Singles and Medium and Large V Twin Power Units.

NEXT year both 250 c.c. and 300 c.c. single-cylinder M.A.G. engines will be marketed by M.A.G. Engines, Ltd., of Harrow Road, Willesden, London, N.W.10.

It will be remembered that in 1915 the O.K.-Junior machines were fitted with a 2¼ h.p. M.A.G. single-cylinder engine, many of which are still giving excellent service to-day.



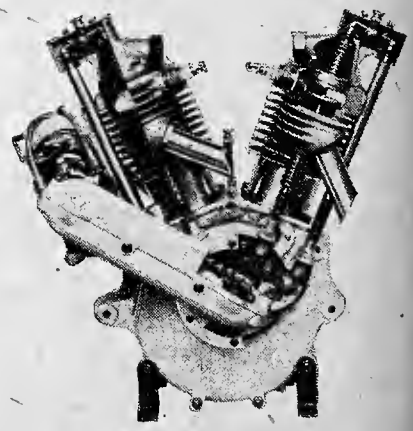
An attractive addition to the M.A.G. range of engines, the 250 c.c. single.

The new engines will follow the general lines of the M.A.G. productions, having overhead inlet valves operated by completely enclosed push rods and rocker gear. The smaller engine (2¼ h.p.) has a bore and stroke of 64×77 mm. (248 c.c.), while the dimensions of the larger are 64×92 mm. (296 c.c.).

In addition to these are two large capacity cycle car engines, having cylinders set at 90°. The smaller of these has a bore and stroke of 82×103.5 mm. (1,100 c.c.). It has a large oil sump in which there is an oil pump with two plungers, one of which pumps the oil, while the other distributes it by uncovering the ports, delivering it to the bearings and big ends. Plain bearings are employed throughout. The magneto is fitted to the front of the crank case on a platform integral with the timing gear cover, and a starting handle is provided. On the other side of the crank case a spigot is machined so that a gear box or clutch casing may be attached to it. In the case of this engine, and the still bigger type of 1,488 c.c. capacity (bore and stroke 90×117 mm.), which it resembles in most details, the crankshaft, disc, and pin are machined from the solid, the disc being recessed in and bolted to the flywheel. This method of construction ensures rigidity and elimination of torsional stresses.

With the exception of the models referred to, M.A.G. engines will remain unaltered as to their principal features, but the balance of the 45° twins has been so altered that the critical period has been raised to a point occurring at speeds which are seldom used.

The following is the range of engines manufactured by this firm: Single-cylinders, 2½ h.p. (248 c.c.), 64×77 mm.; and 2¾ h.p. (295 c.c.), 64×92 mm. Twin-cylinders (45°), 4 h.p. (496 c.c.), 64×77 mm.; 5 h.p. (592 c.c.), 64×92 mm.; 6 h.p. (740 c.c.), 72×91 mm.; 8 h.p. (992 c.c.), in both air and water-cooled models



A partly sectioned view of the 6 h.p. M.A.G. engine showing the internal working parts. The magneto is the Scintilla, recently described in *The Motor Cycle*.

THE NORTH LONDON M.C.C. ANNUAL DINNER.

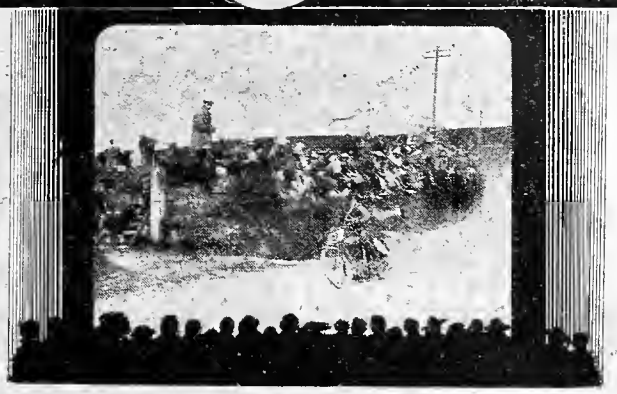
AN innovation which might well receive the consideration of club secretaries was introduced during the prize distribution at the North London Motor Cycling Club annual dinner at Pagani's Restaurant, London, on Saturday last.

Competitors who had received secondary awards in the club's competitions during the season were given the option of the usual gold and silver medals or useful equivalents in the form of matchboxes, ashtrays, silver spoons, and the like. Needless to say, these latter were much appreciated, since, whilst remaining a record of the achievement, they could also serve a useful purpose.

The proceedings were conducted by Mr. B. Staley, the founder of the club, who presided in the unavoidable absence of the chairman, Mr. G. W. Townshend. A letter of regret was read from the new president, Major Sir Philip Lloyd-Greame, K.B.E., M.C., M.P., whose aid they were most grateful to have obtained.

THE MOTOR CYCLE FILM

A Year's Motor Cycle History On the Screen.



GREAT enthusiasm has been shown for *The Motor Cycle* film. Nearly a hundred clubs have made enquiries regarding it, and it is already booked up well into March. No charge is made for the loan of this interesting record of the big events of the year—the only expense we ask the various clubs to bear is its carriage to its next destination—and our wish is that as many motor cyclists as possible should see it during the winter social season.

The film will make a first appearance next week, when it will be shown at the Polytechnic Cinema, Regent Street, W., for the benefit of visitors to the motor cycle show at Olympia. In this case it is being included in the ordinary programme of the house, and will be exhibited twice daily, at 3.30 and 8.30 p.m. Prices of admission are from 1s. 3d. upwards. The Polytechnic Cinema is in the upper part of Regent Street—a few minutes from Oxford Circus.

Immediately the Show is over (December 3rd), the film comes to the Midlands, visiting Coventry, Cheltenham, Gloucester, and Stafford on the following week.

Record of 1921 Events.

The Motor Cycle film is the only complete screen record of the chief motor cycle competitive events of 1921, and includes scenes in the Junior and Senior T.T., the A.C.U. Six Days Trials, and the 500 Miles race at Brooklands. Incidents in the French Grand Prix and the 200 Miles Race at Brooklands arranged by *The Autocar* are included, bringing the total length of the film to just over 2,000ft., which takes approximately forty minutes to run through. The exact time may be varied at the discretion of the operator.

In most cases, where dates have already been booked, the club secretary concerned has made arrangements with his local picture house to show the film either in addition to the ordinary programme or as a special private entertainment. In the former event, complimentary tickets are usually arranged for club members. Many clubs, however, prefer to make the event exclusively their own, and have arranged for the hire or loan of suitable halls, projectors, etc. Some exceedingly successful little social gatherings are expected to result, with a consequent increase of interest in club doings generally.

Readers who are not members of a motor cycle club should watch both the columns of *The Motor Cycle* and their local press for details of how and where the film will be shown in their districts. On this page will be found a list of clubs that have already booked dates; and when possible *The Motor Cycle* will publish more exact details as to *venue*, etc., from week to week. Clubs in all parts of the British Isles have shown their interest, and already an enquiry has reached us from the Continent.

Keen Anticipation Throughout the Whole of the Club World.

The following forty-four clubs have now had dates allotted as follows:

Coventry and Warwickshire M.C.	December 5th and 6th.
Cheltenham and District M.C.C.	December 7th.
Gloucester M.C. and L.C.C.	December 8th.
Stafford and District M.C.C.	December 10th.
Princess Mary's Convalescent Centre (Redhal)	December 12th.
West Birmingham M.C.C.	December 13th.
Western M.C.C. (Glasgow)	December 15th, 16th, and 17th.
Worcester and District M.C.C.	December 19th, 20th, and 21st.
York and District M.C.	December 23rd and 24th.
Truro and District M.C. and L.C.C.	December 29th.
Falmouth and District M.C. and L.C.C.	December 30th.
Barrow and District M.C.	January 1st.
Cardiff M.C.C.	January 5th.
Neath and District M.C.	January 6th.
Dewsbury and District M.C.C.	January 9th.
Clitheroe and District M.C.C.	January 11th.
Colne and District M.C.C.	January 12th.
Leeds and District M.C.	January 14th.
University of Liverpool	January 17th.
Liverpool M.C.	January 18th.
Newcastle and District M.C.	January 20th.
Oxford M.C.	January 23rd.
Keighley M.C.	January 25th.
Bradford and District M.C.C.	January 26th.
Peterborough M.C.C.	January 27th.
Newport and County M.C.C.	January 30th.
Stocksbridge and District M.C. and L.C.C.	February 2nd.
Sheffield University M.C.C.	February 3rd.
Cork and District M.C.C.	February 8th.
Middlesbrough and District M.C.	February 11th.
Blyth and District M.C.	February 13th.
Ripon and District M.C.C.	February 14th.
Doncaster and District M.C.C.	February 15th.
Blaina and District M.C.C.	February 22nd
Eastern Valley M.C.C.	February 23rd.
Gorseinon and District M.C.C.	February 24th.
Brynmawr and District M.C.	February 25th.
Herts M.C. and L.C.C.	February 28th.
Aberdare and District M.C.C.	March 2nd.
Wellingborough, Rushden and District M.C.C.	March 4th.
Birmingham M.C.C.	March 8th.
Central Cornwall M.C.C.	March 11th.
Beith and District M.C.C.	March 17th.
Portsmouth and District M.C. and L.C.C.	March 22nd.

In addition, dates are being "reserved" (pending completion of arrangements) for the following clubs:

Yeovil and District M.C.C.	December 28th.
Aonfield Plain and District M.C.	January 21st.
Sheffield and Hallamshire M.C. and L.C.C.	February 1st.
Derby and District M.C.	February 4th.
Leicester and District M.C.	February 17th.
Hull A.C. and L.C.C.	March 15th.
Plymouth and District M.C. and L.C.C.	March 23rd.

Applications or enquiries have also been received from the following:

Glasgow (M.C.C.), Kelso, Marlow, Mansfield, Leinster, Blackpool and Fylde, Lancaster, Morecambe, Chester, Chorlton-cum-Hardy, N.W. London, Essex County and Southend, Cumberland County, Halifax, Kirkby Stephen, Falkirk, Eccles, Kidderminster, Exeter, Larkhll, Levis Athletic, University College of North Wales, Redditch, Standard (Coventry), Coventry Triangle, Shipley, Wath, and Rotterdam.

Current Chat

Times to Light Lamps.

Nov. 25th	... ...	4.58 p.m.
,, 27th	... ...	4.56 ,,
,, 29th	... ...	4.54 ,,
Dec. 1st	... ...	4.53 ,,

Number-plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Next Thursday.

The special Show report number of *The Motor Cycle*.

The M.C.C. Annual Dinner.

The fifteenth annual dinner of the Motor Cycling Club will be held at the Wharnecliffe Rooms, Hotel Great Central, on Thursday, December 1st, at 6.30 p.m. A particularly fine musical programme has been arranged in which some of the leading music hall artistes will appear.

What shall we See at the Show?

How many eager motor cyclists are asking this question? In four days they can see for themselves, but in the meantime this issue of *The Motor Cycle* will solve the problem, in so far as a solution is available without personal inspection.

Third Army D.R.'s Reunion.

Ex-D.R.'s of the 3rd Army who wish to attend the third annual reunion dinner at the Trocadero on December 2nd should communicate with Mr. Cyril F. Earl, 3, Kildowan Road, Goodmayes, Essex. Those who belonged to "neighbouring" signal companies are also invited this year.

Death of a T.T. Rider.

We regret to record the death, following an accident last week, of Leslie Mitchell, the promising Norton rider, of Oldham. Only twenty-six years of age, Mitchell was connected with Bullough's Motors, Ltd., of Oldham, and a familiar figure in Northern speed events. His riding in last year's T.T. practising was most spectacular. During the war Mitchell served as a flying officer in the R.A.F.

Meeting of A.C.U. Centre Secretaries.

The Auto Cycle Union always rightly regards the annual Motor Cycle Show as providing unique opportunities for social and helpful meetings of its representatives and supporters from all parts of the country. In this connection it should be observed by all concerned that a meeting of Centre secretaries will be held at the Royal Automobile Club, Pall Mall, London, at 5.30 p.m. on Wednesday, the 30th November, which it is hoped all Centre secretaries will be able to attend.

NEXT THURSDAY

THE MOTOR CYCLE

SHOW REPORT.

A stand-to-stand description of the exhibits Olympia, written and illustrated by "The Motor Cycle" staff, will appear in the next issue. Of enlarged size, this Olympia Show Report Number will be preserved for years to come.

Coloured Cover - . 4d.

New 8 h.p. Outfits.

Several manufacturers are introducing 8 h.p. sidecar outfits for 1922. Among these may be mentioned the B.S.A., Ariel, Bradbury, and F.N.

Special Features.

FORECAST AND GUIDE TO THE SHOW.
NEW MODELS.
HOW TO GET TO OLYMPIA.

New Models.

Many further new models are described in this issue.

Will the Two-stroke Grow?

At the present moment there is only one single-cylinder two-stroke of 500 c.c. on the market, but this has already proved its worth, and there is a steady tendency towards increasing cylinder sizes. Amongst the smaller engines two-strokes of 350 c.c. will be common, and a new Connaught exceeds this capacity.

Money Value.

Prices have dropped very appreciably since the last Show, and, considering the present lower purchasing power of the pound, many manufacturers are offering better value than in pre-war days. This fact, together with the reduction in prices of oil, petrol, and tyres, should materially increase the market for the "cheapest form of travel."

NOMINALLY FOUR-HORSE POWER.

All sidecar passenger carrying records are broken by this miniature railway train, propelled by a 4 h.p. Douglas motor cycle engine, which serves the Esk Valley during the winter months. Eight adults, three children, and some luggage were piled-on on one occasion.

Rear Lights.

It has been resolved by the R.A.C. to urge the Government to compel all vehicles to carry a rear light.

The Olympia Show.

The Motor Cycle Exhibition opens on Monday next, November 28th, and will continue from 10 a.m. to 10 p.m. throughout the week, closing on Saturday, December 3rd. The price of admission is 2s.

Switching Off Head Lights.

The R.A.C. has passed a resolution urging motorists to discontinue the practice of switching off head lights when meeting other traffic on the open road, on the score of danger.

Important Meetings during Show Week.

Friday, November 25th.—B.C.M.C. M.T.U. Banquet.
Monday, November 28th.—B.M.C.R.C. Dinner.
Monday, November 28th-Saturday, December 3rd.—*The Motor Cycle* Film at the Polytechnic Cinema, Regent St., W.
Wednesday, November 30th.—A.C.U. Centre Secretaries' Meeting.
Thursday, December 1st.—N.W. London M.C.C. Meet at Olympia.
Thursday, December 1st.—M.C.C. Annual Dinner.
Friday, December 2nd.—Third Army D.R.'s Reunion Dinner.

The Scottish Show.

For the first time motor cycle manufacturers will exhibit at a Scottish show, which will be held at Glasgow in January. The makers of the Connaught, Beardmore-Precision, Barr and Stroud, Douglas, Dunelt, Enfield, Indian, Humber, James, Martinsyde, Rover, Norton, A.J.S., Triumph, and Victoria have stands.

Entries for the London-Exeter Run.

Up to the time of going to press, the entries for the London-Exeter-London run, starting from Staines on Boxing Day, amount to ninety-five. The start will take place at 8 p.m. from the Bridge House Hotel, Staines, and an early breakfast will be served at the White Hart Hotel, Salisbury, and breakfast at the de Rougemont Hotel, Exeter. Entries (£2), which close on December 7th, must be sent to Mr. F. T. Bidlake, 84, North End Road, Golders Green, London, N.W.11, but it is now too late for intending entrants who are not members to join the club specially for this event. Sidecar outfits largely predominate among the entries at present received.

IMPORTANT RECORDS BROKEN.

As is usual just before the Show, there has been considerable activity at Brooklands lately, and several important records were broken last week.

On Thursday H. Le Vack (7-9 Indian) raised the flying kilometre speed to 107 m.p.h., and on the following day improved his own sidecar record by over two miles (speed, 69.08 m.p.h.). In addition he broke eight records. F. B. Halford on the o.h.v. 3½ h.p. Triumph gained four in the 500 c.c. class, including the flying mile at 87.80 m.p.h., and R. N. Judd on a 2¼ h.p. Velocette secured the Class A flying kilometre at 71.70 m.p.h. This latter record was previously held by a four-stroke. C. G. Pullin (3½ Douglas sc.) and E. B. Ware (Morgan) also made successful attempts on their class times.

CLASS A. (250 c.c. Solo).

November 17th, 1921.—R. N. Judd (2¼ Velocette):
Flying km. ..... 31.2 sec.=71.70 m.p.h.
Flying mile ..... 51.2 sec.=70.31 m.p.h.
November 18th, 1921.—R. N. Judd (2¼ Velocette):
Flying 5-mile .. 4 min. 34.34 sec.=65.61 m.p.h.
Equipment: Shell spirit, Speedwell oil, Dunlop tyres, Binks carburetter, C.A.V. magneto, K.L.G. plugs, and various makes of chains.
During the flying 5-mile record, one lap was recorded at 66.11 m.p.h., being the fastest lap made at Brooklands in the 250 c.c. class.

CLASS C. (500 c.c. Solo).

November 17th, 1921.—F. B. Halford (3½ Triumph):
Flying mile ..... 41.0 sec.=87.80 m.p.h.
Mean speed flying mile . 42.9 sec.=83.91 m.p.h.
5-mile flying ... 3 min. 40.1 sec.=81.78 m.p.h.
10-mile standing. 7 min. 29.48 sec.=80.09 m.p.h.

CLASS E. (1,000 c.c. Solo).

November 17th, 1921.—H. Le Vack (7-9 Indian):
Flying km. ..... 20.8 sec.=107.55 m.p.h.
Flying mile ..... 35.2 sec.=102.27 m.p.h.
Mean speed flying mile . 36.4 sec.= 98.90 m.p.h.

CLASS F. (600 c.c. Sidecars).

November 17th, 1921.—C. G. Pullin (3½ Douglas sc.):
Flying km. ..... 29.0 sec.=77.14 m.p.h.
Equipment: Pratt's spirit, Speedwell oil, E.I.C. magneto, Lodge plugs, Amac carburetter, Hans Renolp chains, and Hutchinson tyres.

CLASS G. (1,000 c.c. Sidecar).

November 17th, 1921.—H. Le Vack (7-9 Indian sc.):
Flying km. ..... 25.8 sec.=86.70 m.p.h.
Flying mile ..... 42.4 sec.=84.91 m.p.h.
November 18th, 1921.—H. Le Vack (7-9 Indian sc.):
50 miles ..... 40 min. 47.8 sec.=73.53 m.p.h.
1 hour ..... 69 miles 150 yds.=69.08 m.p.h.
100 miles .. 1 hr. 25 min. 33.24 sec.=70.12 m.p.h.
Flying 5 miles .. 3 miles 49.48 sec.=78.45 m.p.h.
Standing 10 miles 7 min. 54.81 sec.=75.82 m.p.h.
Equipment: Shell spirit, Castrol oil, K.L.G. plugs, Bosch magneto, Schebler carburetter, Coventry chains, and Hutchinson tyres.

CLASS H. (1,100 c.c. Cycle Cars).

November 17th, 1921.—E. B. Ware (Morgan):
Flying km. ..... 26.0 sec.=86.04 m.p.h.
Mean speed flying kilog. . 27.0 sec.=82.24 m.p.h.

ANNUAL DINNER OF THE YORKSHIRE CENTRE A.C.U.

Importment Announcement at Leeds by the Secretary of the Auto Cycle Union.

In May, 1920, a preliminary meeting at York resulted in the conception of the idea of a Yorkshire Centre of the A.C.U. In October of the same year eight clubs provisionally organised themselves as a centre; and in January, 1921, nineteen clubs officially formed the Centre, which held its first annual dinner at the Victory Hotel, Leeds, on Saturday last, after a general meeting, which took place in the afternoon.

Having a four-figure membership, the number present (under one hundred) was a little disappointing, several of the clubs in the Centre being unrepresented.

The Centre prize distribution was carried out by Lt.-Col. F. S. Brereton. C.B.E., who also responded to the toast of "The A.C.U.," proposed by Mr. W. R. Haggas (president of the Yorkshire Centre). "The Centre" was proposed by Mr. T. W. Loughborough (secretary A.C.U.), and response made by Mr. J. N. Longfield (chairman).

In proposing "The Yorkshire Centre," Mr. T. W. Loughborough asked that all motor cyclists should work to spread the motor cycle movement and to endeavour to gather all motor cyclists into the clubs affiliated to the A.C.U., so that a strong representative body may be assured. Only by having a compact and unanimous front could motor cyclists expect amelioration of certain legal requirements.

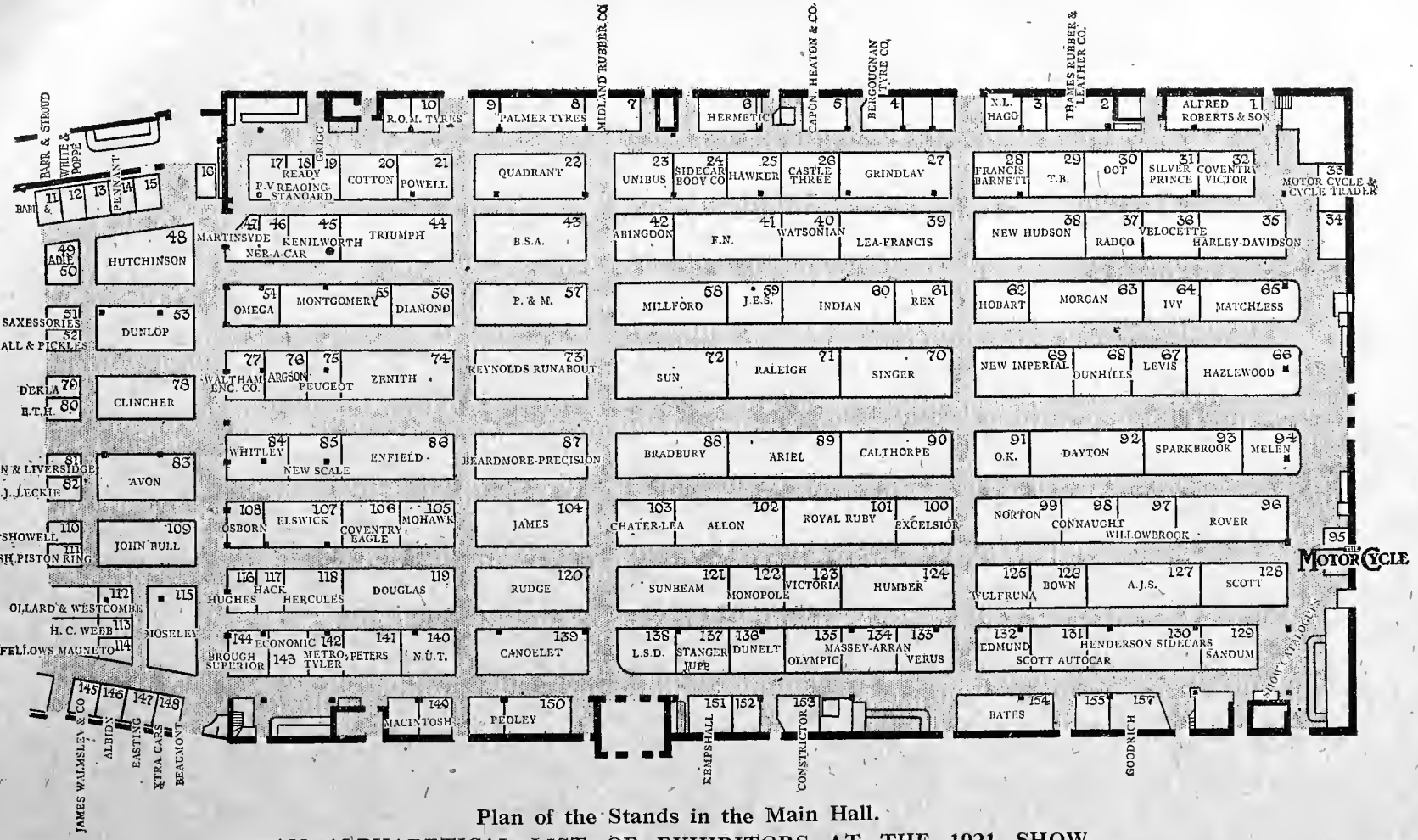
Of still wider interest to all motor cyclists was Mr. Loughborough's reference to the cycle car movement. He indicated that it was likely that the small runabout of three or four-wheeled type would ultimately supplant the larger sidecar outfits, and he suggested that now was the time for the A.C.U. to seek from the R.A.C. the right to control and organise the cycle car movement. This would also include the endeavour to obtain more favourable taxation rates for the cycle cars. Machines of this type should be taxed as three-wheelers are, adopting the same weight limit of 8 cwt. as a basis of demarcation. Machines of this class Mr. Loughborough described as "the poor man's motor," and they could only be fostered by a live body, encouraging development, as did the A.C.U.; this type was inadequately covered.

During the course of the evening, the healths of "The Visitors," "The Press," and "The Chairman," were proposed and appropriately responded to. Musical items were provided by the Dewhirst Bros., excellent rag-timers, popular in Northern motor cycle circles.

An impressive moment was when the President called upon the company to stand in silence to the memory of the late L. Mitchell, B. Jefferies, and S. Seal who lost their lives during the pursuit of the sport.

A de luxe tandem, the latest form of Reynolds runabout, engined with a 2¾ h.p. J.A.P. and three-speed Burman gear.

A GUIDE TO THE EXHIBITS AT OLYMPIA.



Plan of the Stands in the Main Hall.

AN ALPHABETICAL LIST OF EXHIBITORS AT THE 1921 SHOW.

	Stand No.
Abingdon Works, Ltd.	42/225
Accles & Pollock, Ltd.	210
Adie, C. J., and Nephew, Ltd	49
Albion Engineering Co., Ltd.	146
Alldays and Onions, Ltd.	102
Allen Liversidge, Ltd.	81
Amac, Ltd.	209
Apex Inflator Co., Ltd.	177
Alfred Appleby Chain Co., Ltd.	212
Anti-Attrition Metal Co., Ltd.	315
Argson Engineering Co.	76
Ariel Works, Ltd.	89
Ashby F., and Co.	249
Atkey, A. R., and Co., Ltd.	241
Auster, Ltd.	318
Automobile Assoc. and Motor Union	10a
Auto-Cycle Union	1a
Avon India Rubber Co., Ltd.	83
Baker, F. E., Ltd.	87
Barr and Stroud	11
Bates, W. and A., Ltd.	154
Baxter, T.	262
Bayliss, Wiley and Co., Ltd.	230
Beaumont Motors (Leeds), Ltd.	148a
Bergougnan Tyre Co.	4
Best and Lloyd, Ltd.	251
Binks, C. (1920), Ltd.	166
Bluemel Bros., Ltd.	159
Booth Bros.	45
Bordesley Eng. Co., Ltd.	98
Bowden Brake Co., Ltd.	234
Bowden Wire, Ltd.	266
Bowns, Ltd.	126/204
Bradbury and Co., Ltd.	88
Brampton Bros., Ltd.	191
British Hub Co., Ltd.	216
Britisb Oil and Turpentine Corporation, Ltd.	235
British Piston Ring Co., Ltd.	112
British Thomson-Houston Co., Ltd.	80
Brooks, J. B., and Co., Ltd.	244
Brough, George	144
Brown Bros., Ltd.	102
Brown & Barlow, Ltd.	255
B.S.A. Cycles, Ltd.	43/188
Burman and Sons, Ltd.	179
Burney and Blackburne, Ltd.	220
Butterfields, Ltd.	67
Cake, Arthur, and Co., Ltd.	238
Canning, W., and Co.	258
Capon, Heaton and Co., Ltd.	5
Castle Motor Co., Ltd.	26
Challenge Oil Co., Ltd.	198
Chater-Lea, Ltd.	103
Clayton-Wright, Ltd.	173
"College" Leather Co.	231
Collier, H., and Sons, Ltd.	65
Components, Ltd.	243
Constrictor Tyre Co.	153
Cooper-Stewart Eng. Co., Ltd.	222
Cotton Motor Co.	20
County Chemical Co., Ltd.	219
Coventry Chain Co., Ltd.	163
Coventry Eagle Cycle and Motor Co.	106
Coventry Movement Co., Ltd.	261
Coventry Plating and Presswork Co., Ltd.	260
Coventry Victor Motor Co., Ltd.	32
Cowey Eng. Co., Ltd.	263
Cox Carburetters, Ltd.	197
Cuthbe, Chas. L., and Co.	3
Cyclists' Touring Club	148b

THE MOTOR CYCLE
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LIST OF EXHIBITORS (continued).

	Stand No.
Dance, E., and Co., Ltd.	168
Davenport, G., and Co., Ltd.	229
Day, Chas. H., Mfg. Co., Ltd.	92
Degory No-Jet Carburator Co.	312
Dekla, Ltd.	79
D.F. and M. Eng. Co., Ltd.	56
Diogley Bros.	207
Dot Motors	30
Douglas Motors, Ltd.	119
Dover, Ltd.	265
Dubied, Edouard, and Co., Ltd.	232
Dunford and Elliott (Sheffield), Ltd.	136
Dunhills, Ltd.	68/186
Dunlop Rubber Co., Ltd.	53
Easting Windscreens, Ltd.	147
East London Rubber Co.	250
Economic Motors, Ltd.	143
Edmund, C., and Co. (1920), Ltd.	132
E.I.C. Magnetos, Ltd.	237
Elephant Chemical Co., Ltd.	257
Elswick Hopper Cycle and Motor Co., Ltd.	107
Enfield Cycle Co., Ltd.	86
Etienne et Cie	316
Excelsior Motor Co., Ltd.	100
Fellows Magneto Co., Ltd.	114
F.N. (England), Ltd.	41
Forward Sparking Plug Co.	242
Francis and Barnett, Ltd.	28
Gloucestershire Aircraft Co., Ltd.	23
Goodrich, B. F., Co., Ltd.	157
Gough and Co., Ltd.	226
Green, W. J., Ltd.	54
Grigg Motor and Eng. Co., Ltd.	19
Grindlay (Coventry), Ltd.	27
Hack Eng. Co., Ltd.	117
Hagg Tandem Motor Cycle Co.	3b
Hall and Pickles, Ltd.	52
Harley-Davidson Motor Co., Ltd.	35
Hawker, H. G., Eng. Co., Ltd.	25
Hazlewoods, Ltd.	66
Hendee Mfg. Co.	60
Henderson Sidecars	130
Hercules Cycle and Motor Co., Ltd.	118
Heyst, J. B. van, and Sons	176
Hill, E. H., Ltd.	171
Hobart Cycle Co., Ltd.	62
Hobday Bros., Ltd.	172
Hoffmann Mfg. Co., Ltd.	245
Horton Hub and Eng. Co., Ltd.	227
Hughes, Thomas, and Sons	116
Humber, Ltd.	124
Humphries and Dawes, Ltd.	91
Hunt, A. H., Ltd.	253
Hutchinson Etablissements	48
Iliffe and Sons Ltd.	95
Inter-Continental Eng. Co., Ltd.	46
James Cycle Co., Ltd.	104
Jenson and Nicholson, Ltd.	233
Jupp Motors Co., Ltd.	136a
Kempshall Tyre Co. (of Europe), Ltd.	151
Kynock, Ltd.	240
Lamplugh, S. A., Ltd.	228
Lea and Francis, Ltd.	39
Leatheries, Ltd.	252
Leckie, John, and Co., Ltd.	82
Leicester Rubber Co., Ltd.	109
Line, F., and Co.	254
Lodge Plugs, Ltd.	193
Lombard Rim and Tube Co., Ltd.	180
Lowe, W., and Co., Ltd.	239
Lucas, Joseph, Ltd.	189
Lucas Electrical Co., Ltd.	190
Lycett Saddle and Motor Access. Co., Ltd.	183
Macintosh, Chas., and Co., Ltd	149
M.A.G. Engine Co., Ltd.	246
Manufacturers' Access. Co., Ltd.	247
March, Newark and Co., Ltd.	22
Marston, John, Ltd.	121
Martinsyde, Ltd.	47
Mason, Hugh, and Co., Ltd.	140
Massey-Arran Motor Co., Ltd.	134
Mead and Deakin	139
Mecredy, Percy, and Co., Ltd.	155
Mechanical Products Co. (M.P. Co.)	223
Melen, F. and H., Ltd.	94
Metro-Tyler Co., Ltd.	142
Middlemores (Coventry), Ltd.	196
Midland Gear Case Co., Ltd.	221
Midland Rubber Co., Ltd.	7
Miller, H., and Co., Ltd.	195
Mills-Fulford, Ltd.	58
Minstrel and Rea Cycle Co., Ltd.	90
M-L Magneto Syndicate, Ltd.	200
Mohawk Cycle Co., Ltd.	105
Monopole Cycle and Motor Co., Ltd	122
Montgomery, W., and Co.	55
Morgan Motor Co., Ltd.	63
Moseley, D., and Sons, Ltd.	115
Moss Gear Co., Ltd.	50
New Hudson, Ltd.	38
New Imperial Cycles, Ltd.	69
Newman, S. and A., Ltd.	64
New Rover Cycle Co., Ltd.	96
North and Sons, Ltd.	256
North British Rubber Co., Ltd.	78
Norton Motors, Ltd.	99
Ollard, Westcombe and Co., Ltd.	176a
Olympic Cycle and Motor Co., Ltd.	135
Osborne Eng. Co., Ltd.	108
Palmer Tyre, Ltd.	8
Patchquicks Patent, Ltd.	181
Peace, Harold E., and Co.	206
Pedley, J., and Son, Ltd.	150
Pennant Mfg. Co., Ltd.	14
Perry and Co., Ltd.	174
Perry, A. T., Cycle Co.	202
Peters Motor, Ltd.	141
Petrie, W., and Co., Ltd.	215
Peugeot (England), Ltd.	75
Phelon and Moore, Ltd.	57
Phillips, J. A., and Co. (1916), Ltd.	160
Powell Bros., Ltd.	21
Powell and Hammer, Ltd.	187
Prestwich, J. A., and Co., Ltd.	192
Price, Arthur R. (Aston Manor), Ltd.	248
Prices' Co., Ltd.	170
Pugh, C. H., Ltd.	211
P.V. Motor Cycles, Ltd.	17
Radnall, E. A., and Co.	37/182
Raleigh Cycle Co., Ltd.	71
Read, D., and Co.	18a
Reading Standard Co. (Inc.)	18
Renold, Hans, Ltd.	194
Rex Motor Mfg. Co., Ltd.	61
Roberts, A., and Son, Ltd.	1/201
Roberts & Hibbs	85
R.O.M. Tyre and Rubber Co. (1909), Ltd.	10
Rotax (Motor Access.), Ltd.	236
Rotherham and Sons, Ltd.	184
Ruby Cycle Co., Ltd.	101
Rudge-Whitworth, Ltd.	120
Runbaken Magneto Co., Ltd.	259
Ryley, J. A.	167
Sandham Eng. Co.	129
Saxelby's, Ltd.	51
Scott Autocar Co., Ltd.	131
Scott Motor Cycle Co., Ltd.	128
Self Sealing Rubber Co., Ltd.	6
Showell, E., and Sons, Ltd.	110
Sidecar Body Co.	24
Singer and Co., Ltd.	70
Skefko Ball Bearing Co., Ltd.	11b
Smith, Alfred	264
Smith, J. E.	59
Smith, S., and Sons (M.A.), Ltd.	199
Sparkbrook Mfg. Co., Ltd.	93
Sphinx Mfg. Co., Ltd.	208
Stanger Engine Co.	137
Stevens, A. J., and Co. (1914), Ltd.	127
Sterns, Ltd.	15
Stonehouse Works Co.	203
Stourbridge Rolling Mills, Ltd.	214
Sturmey-Archer Gears, Ltd.	161
Sumner, Vaughan and Co., Ltd.	317
Sun Cycle and Fittings Co., Ltd.	72
Surridge's Patents, Ltd.	217
Sykes and Sugden, Ltd.	138
Tan-Sad Works	175
Terry, H., and Sons, Ltd.	185
Thames Rubber and Leather Co.	2
Thompson Bros. (Bilston), Ltd.	29
Timperley, C. B., Ltd.	205
Trader Publishing Co., Ltd.	33
Triumph Cycle Co., Ltd.	44
Tryus Cycle Co.	31
Vacuum Oil Co., Ltd.	165
Vandervell, C. A., and Co., Ltd.	164
Veeco Cycle Mfg. Co., Ltd.	11a
Veloce, Ltd.	36
Victoria Motor and Cycle Co., Ltd.	123
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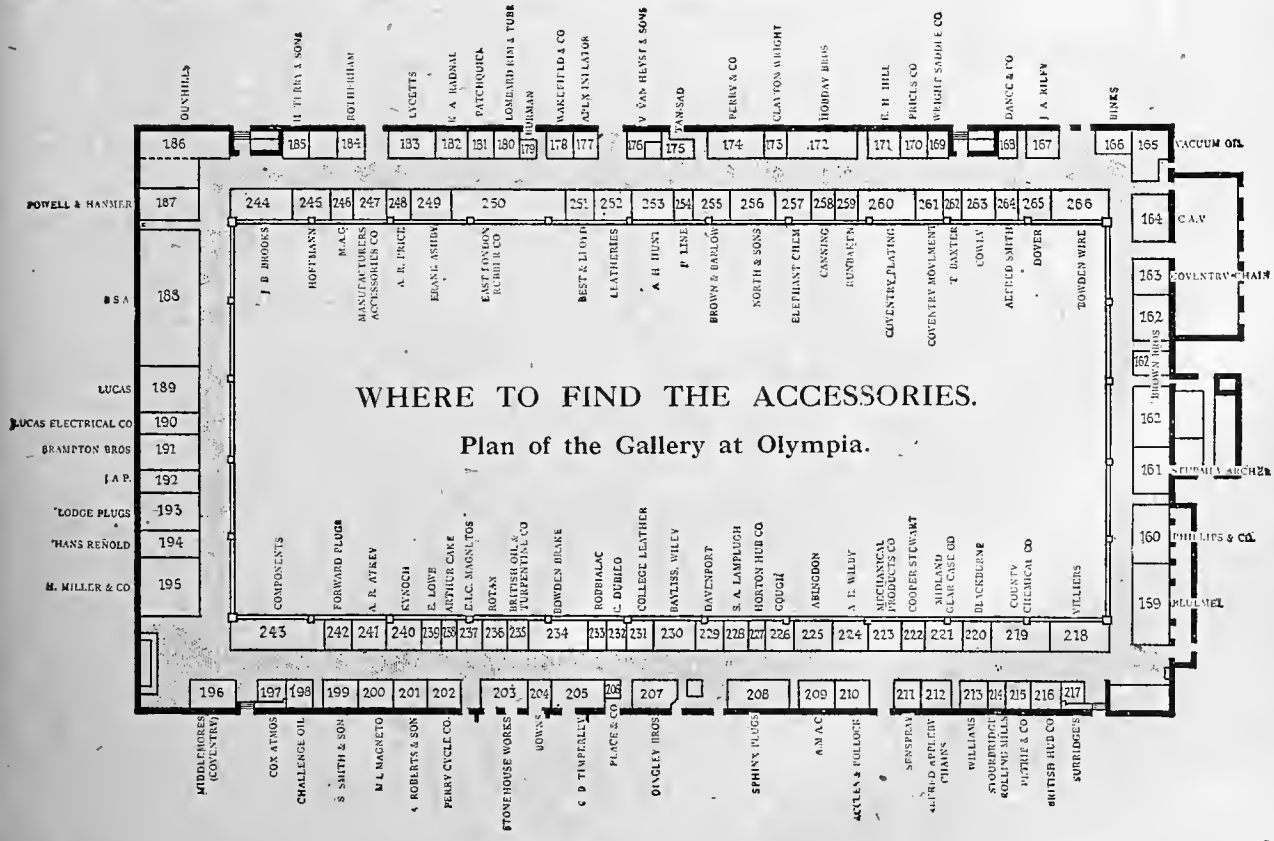
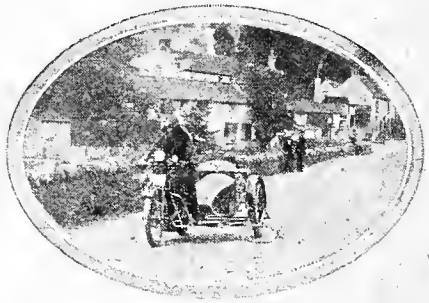
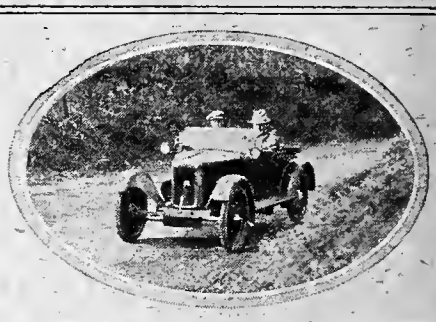




Sidecar or Miniature Car?

A Popular Fallacy exploded. Another Would-be Prophet forecasts the End of Big Sidecars.



WHEN, a decade ago, the cycle car was first exploited there were many who affirmed that the sidecar outfit was doomed. Every year without fail since that time, would-be prophets have expounded the same view, and to-day the now familiar phrases are heard in connection with the new type of miniature car that has so intrigued the lay press. What most fail to recognise is the obvious fact that if cars can be reduced in price, so can motor cycles and sidecars in the same proportion.

The cycle cars of 1912 and the miniature cars of 1922 are totally different propositions. The former were foredoomed by their poor mechanical principles and appearance; the latter may be accepted as roadworthy little vehicles, and as having everything in their favour to be a commercial success. Their prices, too, are low and the value good, and these facts are used to confirm opinions that they will oust the sidecar from its present proud position in public favour

From the Monetary Point of View.

Because it is possible to obtain a four-wheeler for, say, £250, it is asserted that the big sidecar outfit is no longer justified. Considered purely from the point of view of £ s. d., this view is probably near the truth, but the one important factor—the psychology of the motor cyclist—is often overlooked.

The writer of the motor cycling notes (so called) in *The Daily Mail* has revealed himself as one who is not a motor cyclist at heart. Writing on miniature cars at the last Show he penned these words:

(1.) "Drivers of the most expensive sidecar combinations would do well to visit the motor car Show . . . They will then see the future in a correct light. No car show has had greater lessons for this type of motor cyclist, and his reflections will be none too happy. Never has his class been so attractively catered for."

(2.) "The development in this direction (small cars) is the greatest we have yet seen, and must have its effect on the big sidecar market. . . . Comparisons, as I have said, will be none too happy for owners who visit the Show, for never has any car show made such an appeal to him. to foresake his present vehicle and invest in a 'baby' car."

Why should the motor cyclist's reflections be unhappy if his class was so attractively catered for? Continuing, "A Motor Cyclist" writes:

(3.) "What the makers of the big luxury sidecars are contemplating to meet this rapid cheapening of the miniature car . . . I do not know, but it will be an amazingly fine sidecar combination to lessen the great impression which the miniature cars at Olympia have made."

(4.) "Only an absolutely biassed and prejudiced sidecar owner could visit this show and be content with his machine after seeing such astonishing cheap products as the 7 h.p. Wolseley, the 8 h.p. Rover, the 7.5 h.p. Citroën, the 8 h.p. Talbot, and the Jowett and the Morris-Cowley, to mention but a few."

Before proceeding further with the requiem of the powerful sidecar outfit, let us examine the above statements to see whether they were written after careful and considered thought or inspired by the artificial enthusiasm generated by the Show itself.

We will take paragraph No. 4 first. The prices of the cars mentioned are as follows:

Wolseley	£310	Rover	£220
Citroën	£262	Talbot	£325
Jowett	£250	Morris-Cowley	£299

Not Only a Question of £ s. d.

It will be seen that only the Rover comes anywhere near the price of the most luxurious sidecar outfit. Prices will be about equal, but in the one case the sidecarist will have been extravagant and will glory in his extravagance. He will have absolutely the best in sidecars, while the same money invested in the small four-wheeler will only place him at the foot of another large class. Now the man who will go the limit on a sidecar will not be satisfied on four wheels unless he has something that will place him in a position, in relation to the rest of the car owners, similar to that which he enjoys by being at the top of his class—in owning the most luxurious outfit he can purchase.

That is where the mentality of the motor cyclist influences the question. The low-priced small four-wheelers are far more likely to compete against the slightly more expensive light cars. In other words, the manufacturer who makes both a light car and a miniature will, in some cases, find the latest type living at the expense of the older, which provides an answer to paragraph No. 3. Some motor cyclists will, of course, graduate to the car class; that evolution is constantly taking place, for it has long been recognised that motoring is often a matter of stages. But the average motor cyclist's view is that miniature cars will seriously become competitors of the sidecar when their first cost and running costs are approximately equal. Hitherto many family men have preferred sidecars on account of their greater seating capacity; the sight of heavily laden sidecars is common on our roads to-day.

Not Forgetting the £100 Sidecar.

The Daily Mail writer has forgotten that before the war he had small cars at less than twice the cost of a sidecar outfit. To-day the respective prices are just as far, if not farther, apart. Sidecar prices are falling; popular single-cylinder outfits will next year be marketed in the neighbourhood of £100.

Economy in running costs—the outstanding magnet of the motor cycle—is lost upon our enthusiast.

C.A.V. at the Motor Cycle Show

C. A. VANDERVELL & CO. LTD. are showing the following Electrical Productions especially applicable to the Motor Cycle world. Many detail improvements have been incorporated for the 1922 Season.

➡ MAGNETOS. The famous C.A.V. Magnetos, both light and heavy weight (Types K.U. and 3.U.). Renowned throughout the world as incomparable for reliability and speed. The Magneto with the biggest percentage of records and awards.

➡ The NEW C.A.V MOTOR-CYCLE DYNAMO LIGHTING SET. The latest type of machine, built on identically the same lines as the famous C.A.V. Car Lighting Dynamos.

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PATENTS, TRADE MARKS & DESIGNS

IN ALL COUNTRIES.

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5 CORPORATION STREET, BIRMINGHAM.

Sidecar or Miniature Car.—

The writer referred to admits that garage and taxes of the miniature car cost more, but actually takes upon himself to express the empty view in italics that *the miniature car wears longer and is greater value second-hand than the sidecar.* Considering that only two of the cars he mentions have been on the road in any numbers, this statement shows the enthusiasm with which he hurried home from Olympia to write his ill-considered notes to motor cyclists. The tone of the whole contribution suggests that in future *The Daily Mail* motor cycling column will be abandoned in favour of a weekly discourse on miniature cars.

But the ubiquitous sidecar is not yet done with, and many a tour will be enjoyed by its devotees. In saying this, we fully recognise the good qualities of modern small cars, which we are confident will grow in favour, but not necessarily to the exclusion of the economical sidecar outfit, to-day the most popular vehicle on the road.

THE T.T. RENDEZVOUS.

A Further Contribution from the Isle of Man on the Position concerning the T.T. Races.

IN last week's issue of *The Motor Cycle* we made reference to the negotiations between the A.C.U. and the Manx authorities concerning the T.T. races and gave the substance of an interview with the A.C.U. alongside a statement of the position from our Isle of Man correspondent. These statements did not exactly agree, and the paragraph on the London or A.C.U. view is the subject of the following further communication from Douglas. Our correspondent writes:

What are the Real Facts?

"The A.C.U. state that the guarantees promised by the Manx representatives at Leicester have not been made in a concrete form, that the A.C.U. are getting impatient, and that they have told the Manx authorities that they must have definite information before November 30th with regard to steamship facilities and unloading of machines at Douglas, and suchlike details which have been so unsatisfactory in the past.

"Now, what are the real facts? Directly the Leicester deputation returned to the Island the Steam Packet Co. wrote to the A.C.U. asking wherein they had been amiss in the matter of steamship communication, as their past letters from the A.C.U. both before and after the last T.T. races expressed satisfac- at the services provided, and particularly at the service provided during the last races during the coal strike. The A.C.U. presumably replied to this letter, because on October 31st last the A.C.U. intimated to their Local Consul in the Island that they had had a satisfactory letter from the Steam Packet Co., and this is again referred to in a letter from Mr. Loughborough dated November 2nd, and from that date to this no further requirement whatever has been asked from the Steam Packet Co.

"The Isle of Man Steam Packet Co., in their letter prior to October 31st, also detailed to the A.C.U. what it proposed to do with regard to embarking facilities at Liverpool.

"With regard to the unloading of machines at Douglas, this matter was set down to come before Tynwald on November 9th, and it came before Tynwald on that date, and Tynwald made a grant of £5,000 for the erection of an electric crane on the Victoria Pier. This was intimated to the A.C.U. the same day, and at the time of *The Motor Cycle* interview with the A.C.U. in London, the officials would know quite well what had been done with regard to the unloading of motor cycles at the Douglas end. In a letter dated November 10th, a date prior to the interview in London, Mr. Loughborough says, 'The ground is now much clearer. The main questions outstanding now are those of dates and the grant.' Both these points, it is admitted in the Isle of Man, are outstanding, and a long letter on the subject has been addressed to the A.C.U., urging upon them to apply for certain dates for the forthcoming T.T. races in the Island, namely, the Tuesday and Thursday following Whit-Saturday. It may interest the readers of *The Motor Cycle* to know that up to the time of writing, that is, November 17th, the Highway Board has not received any application from the A.C.U. for dates, although they have been repeatedly urged to do so from this end.

"It is true that the A.C.U. did deliver to those in the Island who have been endeavouring to arrange things satisfactorily for them, an ultimatum which expires on November 30th.

Procrastination.

"The opinion held in the Isle of Man, and it is regrettable to have to state it in print, is that certain officials in London belonging to the A.C.U. are not desirous of returning to the Island next year for the T.T. races. They have denied this assertion, but every act which they have done since the Leicester meeting points in the other direction. It would be most regrettable if these matters have to be thrashed out at the A.C.U. General Committee meeting at Bournemouth.

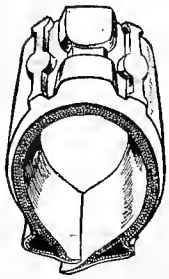
"The A.C.U. have expressed their complete satisfaction at the passing by Tynwald of a declaratory resolution in favour of the races, and with the withdrawal of 'Sad Sunday' and pillion seat restrictions, and also with the withdrawal of the tax on visiting motorists during race time."

THE MIDSHIPMAN MOTOR CYCLIST.

BARTIMEUS, the well-known writer on naval subjects, in an article which recently appeared in the daily press on the subject of midshipmen, states: "Mostly they own motor bicycles, not (as the conservative maintain) because they are the sons of rich *parvenus*, but because things mechanical are bred in their blood. A rough-and-tumble at the heels of a press-gang lieutenant once satisfied the midshipman's craving for excitement; now he seeks it in propelling a 'stink-bike' (every valve, bolt, and gear wheel of which he knows intimately) at grossly illegal speeds over tortuous thoroughfares." We look forward to seeing a number of these sporting young gentlemen in next year's Arbuthnot Trophy Trial.

NEXT YEAR'S TYRE DESIGNS.

A Review of Tyre Makers' Programmes for 1922, and a Forecast of the Tyre Exhibits at the Show.



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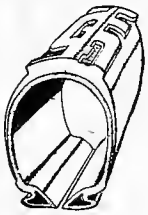

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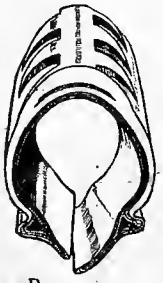
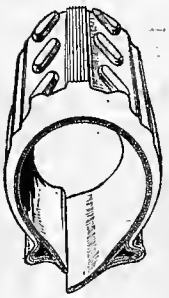
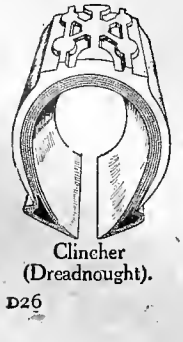


Bergougnan (Non-skid).



Bergougnan (Herring-bone pattern).



Clincher (Dreadnought).

THE present time shows a great improvement in the construction of motor cycle tyres. Riders are beginning to realise that far greater comfort and far greater tyre mileage are obtained if machines are fitted with the largest tyres they can possibly carry; consequently, motor cycle manufacturers are waking up to the fact that they must allow ample clearance, and the tyre makers are producing a variety of oversizes to meet the demand. Substantial initial outlay on tyres is money well spent; it renders the rider immune from punctures and other troubles for the extent of the average yearly mileage.

The number of patterns of treads is as great as ever, and the variety of their design is quite an interesting study. All tyre makers aim at making their tyres non-skidding, and their efforts to attain this end result in the multiplicity of patterns illustrated in this article.

Avon.

THE AVON INDIA RUBBER CO., LTD., 343-345, EUSTON ROAD, N.W.1. (Stand No. 83).—The chief novelty among various tyres shown by this firm will be a pattern known as the Durolith, which is claimed by its makers to be a marked advance in motor cycle tyre development, both as regards construction and quality. The tread consists of large lozenges with a groove on each side, and on the edge of each groove are alternate large and small studs. It is to be made in all sizes from 24×2in. to 28×3in., with three and four-ply casings. Other Avon tyres will be the three-ribbed studded and Stonehenge tread pattern in various weights suitable for all types of machines.

Bates.

W. AND A. BATES, LTD., ST. MARY'S MILLS, LEICESTER (Stand No. 154).—Bates tyres are moulded in the inflated shape, and are vulcanised under the tremendous pressure of 1,200 lb. to the square inch; consequently, it is claimed that the tyre is exceedingly difficult to puncture, and if cut the rubber is so responsive that the edges close instead of gaping apart. The tread of this tyre is unconventional, and should prove an efficient non-skid.

Bergougnan.

THE BERGOUGNAN TYRE CO., LTD., 10, SOUTH CRESCENT, STORE STREET, TOTTENHAM COURT ROAD, N.W.1. (Stand No. 4).—This firm favours two patterns of tread—one with a large central groove with lozenge-shaped studs arranged diagonally on each side of it, and the other a herring-bone pattern. These motor cycle covers are suitable for heavy work where great durability is required.

Clincher.

THE NORTH BRITISH CO., LTD., 204, TOTTENHAM COURT ROAD, W. (Stand No. 78).—One feature of interest in Clincher tyres is that the makers state in their booklet that their 28×3in. tyres will fit 28×2½in. rims. The peculiar cross pattern on the Dreadnought tread should make an efficient non-skid, as it is designed to give an adequate resistance at all angles. Another speciality is the popular three-ribbed type, which is extremely resilient. It is made in millimetre sizes to fit 65 mm. rims, which take 700×80 mm. and 26×3in. Yet another form of tyre is known as the Clincher de Luxe, with a tough white tread possessing excellent wear-resisting qualities as well as ample resiliency. It is made in two patterns, heavy and extra heavy.

Dunlop.

THE DUNLOP RUBBER CO., LTD., ASTON CROSS, BIRMINGHAM (Stand No. 53).—The Dunlop Rubber Co. has specially studied the requirements of motor cyclists this year, and, in addition to the ordinary motor cycle tyres, is introducing a series of heavy covers to suit flat base rims, with car type beads and constructed on car lines in the following sizes: 26×2½in., 26×3in., and 28×3in. They are also making Dunlop Magnum tyres to suit the following rims: 650×65 mm., 700×80 mm., and 26×3in. in cord. The Magnum cover consists of large staggered studs, with rows of small studs on the outside.

Goodrich.

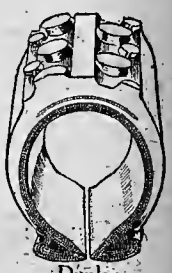
THE B.F. GOODRICH CO., LTD., 117-123, GOLDEN LANE, E.C.1 (Stand No. 157).—The peculiarity of the Goodrich tyre lies in the unconventional design of tread, consisting of a series of short ribs intercepted by transverse ribs, while extraordinary resiliency is claimed for this tyre.

Hermetic.

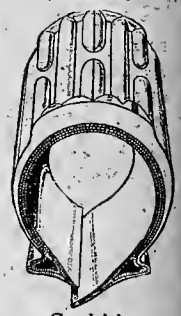
THE SELF-SEALING RUBBER CO., LTD., HERMETIC WORKS, RYLAND STREET, BIRMINGHAM (Stand No. 6).—The Hermetic tread consists of two ribs of Z pattern outside a straight rib. The tread is exceptionally thick and of excellent quality. Another speciality of this firm is the Hermetic tyre protecting band designed to be placed inside the cover. On its exterior are graduated rubber studs. The band is placed inside the tyre casing between the tube and the inside of the cover, and the inflation of the tube presses the band against the tyre casing so that the rubber studs spread and approach each other, leaving a series of small indentations between them; consequently, the band assumes the form of a resilient cushion of air and rubber supporting the tyre against road shocks and stresses. It also serves to protect the inner tube against puncturing agents.

Hutchinson.

ETABLISSEMENTS HUTCHINSON, 70, BASINGHALL STREET, E.C. (Stand No. 48).—Etablissements Hutchinson will always be remembered as a firm which has specially catered for the wants of motor cyclists. Their newest pattern will be a 29×3½in. cover to fit 28×3in. rims, having the new super-stud tread consisting of lozenges and large studs with ribs at the side. This tyre has met with great success after test. Another

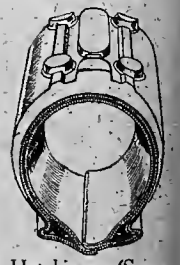


Dunlop (Magnum).



Goodrich (Non-skid).

Hermetic (Non-skid).



Hutchinson (Super steel-studded).

John Bull (Rib-stud).

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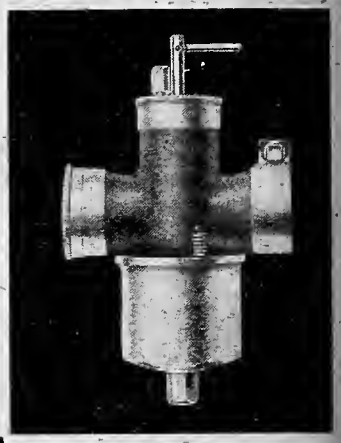

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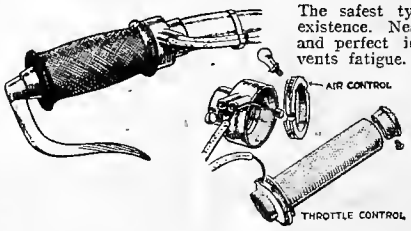

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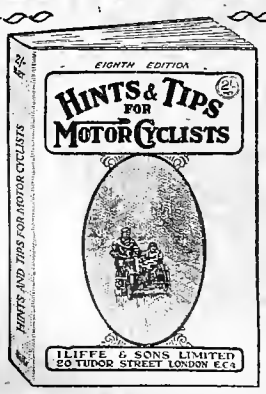

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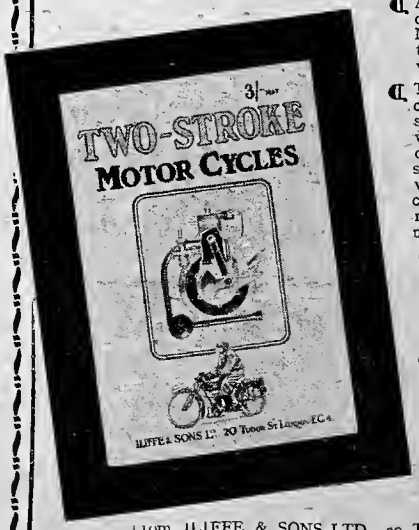

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Rochdale, 10th April, 1921.

I should like to let you know that I have now completed 2,000 miles on my Reading Standard machine I bought from you last August. During this time I have never touched it with a spanner; the engine is a marvel, and is still running splendidly. I still hope to do many more miles before taking the engine down, as it is at present not showing any signs of carbon. I may say I have ridden many machines, but none so easy and comfortable to drive, even over bad roads. Of course, when I say no trouble, I am excluding tyres, as I have had one or two punctures.

I remain, yours truly,
(Signed) R. H. T.

Leicester, 3rd June, 1921.

You will be pleased to know that the Plus One body has caught on with the A.J.S., and customers are enthusiastic about it. You still have one body to supply on order, in addition to the above. Do please let me have them as soon as you possibly can. I can see there is going to be a big demand for them. As I shall be requiring a lot for the A.J.S. chassis, do you not think you could make the body with the piece cut away to allow of the standard A.J.S. torque rod being used? This would be a great improvement, and would save a deal of trouble. Please give this your earnest consideration, I am sure it is worth it.

Yours faithfully,
(Signed) WILL CHAPMAN.

Normanton, 27th January, 1921.

I would like to take this opportunity of saying how pleased I am with the Reading Standard. My machine has been in constant use since May, and has always been thoroughly reliable. My greatest misfortune has been to break a chain. It is indeed surprising how a machine can stand the bad usage that has been the misfortune of this particular bicycle.

(Signed) G. D.

Diss, Norfolk, 6th May, 1921.

I have had one long run, and the whole thing is **quite** up to my expectations; in fact, I am quite satisfied. My garage people are coachbuilders as well as motor engineers, and the manager has remarked to me that it is a very nicely made thing. It is quite surprising the admirers it calls while out, apart from my own friends being charmed with it. It is a sidecar one can be justly proud of, and I must congratulate you on such a smart, light, compact, and comfortable 2-seater.

Yours faithfully,
(Signed) H. J. I.

London, 6th June, 1921.

As a matter of interest, I may say that during my trip I took four adults including myself) up Bonchurch Hill, between Ventnor and Shanklin, with power to spare.

Yours faithfully,
(Signed) C. W. C.

Consett, Co. Durham.

Machine is doing splendidly with load of two adults and three children in hilly district.

(Signed) J. J. S.

Guernsey, 4th October, 1921.

The machine has done very well during the year I have had it. Recently I did a tour of some 500 miles in the South of England. I carried my wife, two children, and myself, tent, eleven blankets, cooking utensils, ground sheet, sheet to cover sidecar and machine, two tyres, and a large bundle of clothes. I had the machine weighed with all on, and it was over 11 cwt. No trouble, except a puncture or two in the back wheel. Camped out several times. I thought it was pretty good carrying the weight it did.

(Signed) MAJOR H. M.

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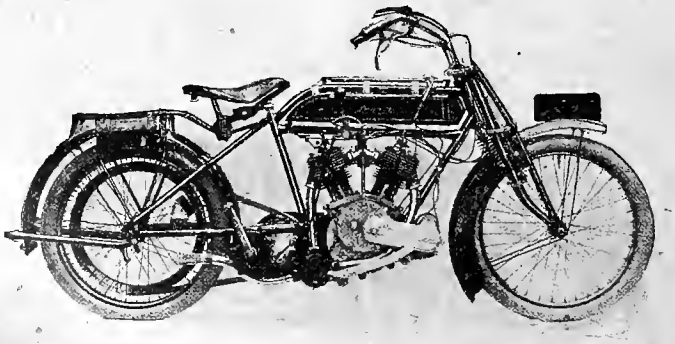

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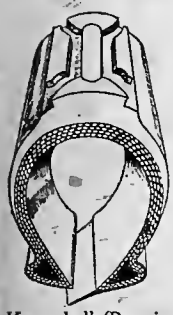
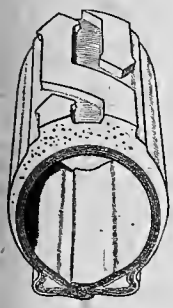
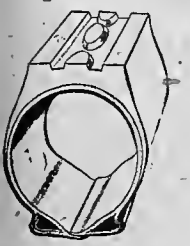
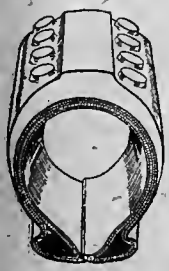
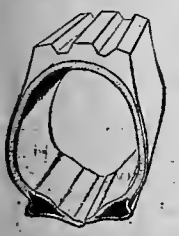

Kempshall (Premier Cover).


Macintosh (Non-skid).


Max (Cycar).


Midland (Ribbed and studded).


Moseley (Three-ribbed).

new pattern will be the 710×85 mm. to fit 65 mm. rims, and a smaller pattern of the tyre just described. Mention must also be made of the reinforced inner tube used with great success in the T.T. races, and of the wonderful successes on Hutchinson tyres in both T.T. events, and in the 500 miles races at Brooklands.

John Bull.

THE LEICESTER RUBBER CO., LTD., POST OFFICE PLACE, LEICESTER (Stand No. 109).—The pattern of tread favoured by the Leicester Rubber Co. in their popular John Bull tyre will be the ribbed stud, which is claimed to prevent roll and spin. Another speciality of this firm will be the Granby motor cycle tyre, which is built on a heavy three-ply canvas foundation with a tread consisting of large rubber studs and a row of smaller studs on each side. This particular pattern has been proved to be an efficient non-skid.

Kempshall.

THE KEMPSHALL TYRE CO. (OF EUROPE), LTD., 97-98, LONG ACRE, W.C.2 (Stand No. 151).—In addition to the Kempshall non-skid, a new pattern to be seen for the first time at Olympia will be the Premier cord cover, which was used by the P. and M. team on the occasion of winning the team prize in the Six Days Trials. This is the fifth occasion on which Kempshall tyres have been on machines winning the A.C.U. Six Days team prize; the racing Harley-Davidson, the first machine to do 100 m.p.h., was also fitted with Premier Kempshall covers.

Macintosh.

CHARLES MACINTOSH AND CO., LTD., 22-23, JEWIN STREET, E.C.1 (Stand No. 149).—This firm is placing on the market two patterns of treads—one with staggered indentations and projections, and the other with a peculiar Z pattern tread. These are made in all the usual sizes for motor cycles and cycle cars.

Max.

C. CUTHBE AND CO., 37, GREAT EASTERN STREET, E.C.2 (Stand No. 3).—The principal tyre sold by this firm is known as the Max Cycar, which is built on car lines, and consists of longitudinal ribs between which are lozenge-shaped studs forming the design of the tread. These are made in all sizes up to 710×90 mm. An innovation is known as the Cuthbe Elongaiter, made of Max plastic tread rubber, which presses from the inside into all holes, cuts, and interstices in the cover, while the special fabric reinforces the foundation or casing of the tyre. It vulcanises itself by heat, and eventually becomes part of the tyre. This should have a strong appeal to motor cyclists who wish to economise.

Midland.

THE MIDLAND RUBBER CO., LTD., RYLAND STREET, BIRMINGHAM (Stand No. 7), is specialising in a three-ribbed and a ribbed and studded tyre with a central rib and studs on each side. The Midland covers will be made in all standard sizes, including the old sizes and also oversizes.

Moseley.

DAVID MOSELEY AND SONS, LTD., 19-20, HOLBORN VIADUCT, E.C.1 (Stand No. 115), are chiefly favouring the three-ribbed pattern tyre for high-powered machines and a studded tyre for light-weight motor bicycles. Special attention has been paid in their motor cycle tyres to the shape of the tyre and the construction of the bead, to give, first, easy fitting, and, secondly, accurate attachment of the bead in the clinch of the rim. In the manufacture of these tyres, great attention is paid to the question of resilience.

Palmer.

THE PALMER TYRE, LTD., 119-123, SHAFTESBURY AVENUE, W.C.2 (Stand No. 8).—The Palmer exhibit will consist of two-ply motor cycle tyres in the three-ribbed pattern, which has so long been a speciality of this firm, and the Palmer four-ply motor cycle tyre, which is considerably stouter than the two-ply pattern, but cheaper in price, than the Palmer cord tyre. Among the latter class may be mentioned the Palmer cord extra heavy car pattern motor cycle cover, which is a car tyre in miniature, and has steel staples at the beads. This will be shown in the 28×3in. ribbed and 28×3in. combination patterns for the C.C.2 rim, 700×75 mm. ribbed, and 700×80 mm. made to fit 650×65 mm. rims.

Pedley.

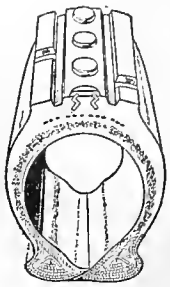
J. PEDLEY AND SON, LTD., OXFORD WORKS, GREAT CHARLES STREET, BIRMINGHAM (Stand No. 150).—This firm is still adhering to the popular three-ribbed pattern, which is shell moulded, but in addition to this it has produced a new heavy studded model, also shell moulded, which should be popular among sidecar owners.

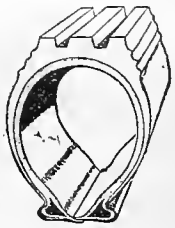
Roberts.

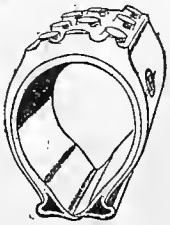
A. ROBERTS AND SON, LTD., DEYKIN'S AVENUE, WITTON, BIRMINGHAM (Stands Nos. 1-201).—Alfred Roberts and Sons are responsible for the revival of a promising form of tyre construction in the shape of their D.C. or double-clinch motor cycle tyre, the bead of which fits on either side of the clinch of the rim, thus preventing creeping and rolling. It is easily detachable, and stones cannot dent the rim, while the buttress prevents water getting into the beads. Another pattern in which this firm specialises is one with a central rib standing up between two grooves in which there are V-shaped indentations arranged diagonally round the tread—a pattern that prevents sideslip.

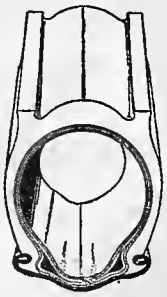
Rom.

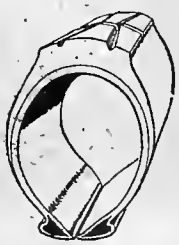
THE ROM TYRE AND RUBBER CO. (1909), LTD., 35-36, BROOKE STREET, HOLBORN, E.C.1 (Stand No. 10).—In addition to the combination Rom tyre so well known and tried over a number of years, the Rom Tyre Co. is specialising this season in the Polygon pattern tread, which will be all black and constructed of tough and resilient rubber. The tread consists of an inner line of hexagonal studs with ribs at the sides. These will be made in the usual sizes—26×2⅜in., 650×65 mm., 700×80 mm., and 28×3in.


Palmer (Steel-studded heavy).


Pedley (Three-ribbed heavy).


Pedley (Rubber-studded).


Roberts (Double clinch).


R.O.M. (Non-skid).

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

FORTY-TWO TURNS IN ONE ALPINE PASS.

Sir,—There are forty-two turns on the high road between Martigny and le Forclaz. This is in answer to Mr. Draper's inquiry in *The Motor Cycle* of November 3rd. D.L.G.

Montreux.

HEAD LAMP DIMMING ETIQUETTE.

Sir,—I have found that the simplest and cheapest anti-dazzle device is one's hand. Simply put one hand in front of the head lamp glass as you approach another vehicle. No motor cyclist has the slightest excuse for not dimming his lamps when necessary (unless minus an arm).

Geneva. S. N. TURNER.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—I have read the correspondence *re* the "World's Best Motor Cycle" in your columns with interest, and must say it sounds too "Yankee" to say "world's," as, of course, everything best in the world (in the opinion of those people who live across the border) emerges from that country. However, I do not think there is any one best solo machine, but there are quite a few each best suited to the conditions under which it is used.

Take a country like Canada, and you will find on travelling, outside the cities and larger towns, that solo riding is limited to very few roads, because these comprise cart tracks unknown in England, and often so thick with sand that solo riding would be more or less impossible.

Secondly, one has to take the conditions under which machines are ridden, if in a dry country, or one inclined to be wet, or a very hot climate, etc.

Thirdly, one has to consider the particular requirements of the individual rider. Some riders could not handle a fast 3½ h.p. solo mount or larger. Other riders would not be content to use a small lightweight machine. Also, the amount of riding to be done has to be taken into consideration, as the commercial traveller who rides all day long would want a different machine from the speed enthusiast, who only wants a sports model.

So that one can hardly say that any one machine is the "world's best," but there is no doubt that for all-round excellence, alike of finish, power output for its size, and never failing reliability, there is not a single machine that can surpass the 4 h.p. Triumph.

I have been using one in Canada for the past season, and can only repeat a Canadian Harley owner's remarks on seeing me out sixty miles in the bush, "Gee, I never thought one of those could stand our rough roads"—and I was still pushing further afield. The Triumph comes through smiling, and my only breakage has been two spokes in the rear wheel. I consider our English machines have the whole world beaten as regards quality of material and finish, also for pleasing appearance, but my experience has been so far that the Colonial wants a reliable machine, but finish does not matter; it can be painted all over, and as long as it goes must have plenty of power, large tyres, 30×3½in., electric lighting and electric horn, and must not be over $400 (£100) nominally as the present rate of exchange goes. One point I forgot to mention is that the drive must be all-chain, as he has no use for belts.

Wishing your paper every success; it is largely read here and liked, and to a certain extent is educating the Canadian motor cycle movement, which at the present time is very Americanised.

AN ENGLISH MOTOR CYCLIST IN CANADA.

Toronto.

Sir,—With reference to the present discussion as to the identity of the "world's best motor cycle," surely some of your correspondents overlook the fact that we are here concerned, not with matters of fact, but with matters of opinion, and, that being so, it is evidently logical to assume that that machine which can most justly lay claim to the title of "best" must be the one which is able to show a preponderance of owners, *i.e.*, people who presumably consider it the best.

I believe that more than half the total number of existing motor cyclists are mounted on Harley-Davidsons, so it would seem that we here have the answer to the riddle.

Mr. Norman Williams speaks of "the appalling splutter of any American V twin, except at fairly high speeds." The word "splutter" is of necessity somewhat indecisive in meaning when applied to anything of a mechanical nature, but, if misfiring is meant, I can assure Mr. Williams that the Schebler—most excellent of all carburetters—can, with a modicum of intelligence, be made to eliminate completely every symptom of "spluttering" from the engine.

London, N.W.1. HARLEY.

Sir,—Regarding the question of which is the best solo motor cycle, in my opinion there is no machine to come anywhere near the following for comfort and all-round efficiency, viz.: Lea-Francis, Humber, Sunbeam, Douglas, O.K. Junior, Harley-Davidson, Indian, Rudge-Multi, Raleigh, Triumph (1908 model), Zenith, Scott, F.N., A.J.S., B.S.A., James, Enfield, Beardmore-Precision, A.B.C., N.U.T., De Dion, Alldays, Ariel, Bat-Jap, Blackburne, Bradbury, Brough, Calthorpe, Chater-Lea, Clyno, Connaught, Coulson, Coventry Eagle, Coventry Victor, Diamond, Duzmo, Francis-Barnett, Ivy, Motosacoche, New Hudson, Norton, N.S.U., Omega, P. and M., Premier, Quadrant, Rover, Sun, Velocette, Verus, Wolf, Wooler, Ner-a-car, and any others that I have omitted to mention. NOIX.

Edinburgh.

ACCUMULATORS FOR SERIOUS LIGHTING SERVICE.

Sir,—I notice in your July 14th, 1921, issue in "Ixion's" "Comments," where he says, in speaking of electric lighting sets, "for example, a set which depends on a dry battery or an accummulator minus a dynamo must be designed for a very limited rate of discharge."

Evidently, "Ixion's" opinions of batteries are not very encouraging. On my motor cycle I am using an accumulator only, and it lights the following lamps: Head light (three bulbs, main light, 48 c.p.), dim light (12 c.p.), and light for using when the machine is stationary (2 c.p.), giving about a discharge of six and a half ampères. The main light is a half watt bulb; also spot light (12 c.p.), speedometer (2 c.p.), and tail light (2 c.p.)—another three ampères, giving a total of about ten ampères, besides an occasional four ampères through a horn. I have had this battery for about two years. It has had no attention, except the addition of water and charging, and I get about fifteen to twenty trips of ten miles on one charge. Should "Ixion" disbelieve me, I advise him to purchase a similar battery—a common American one—a six volt fifteen ampère reinforced Willard.

Now, is about ten ampères discharge a "very limited one" for a battery which has to be charged at only one ampère?

Perhaps "Ixion" will say it is foolish to use such heavy lighting equipment; but as the 'bus is a four-cylinder Militaire, weighing close on 5 cwt., he will see that it makes very little difference. C. KYLE.

New Zealand.

CONNAUGHT 1922 PROGRAMME

IN addition to the many radical improvements aimed at increasing both the efficiency of the machine and the comfort of the rider, we are also exhibiting our

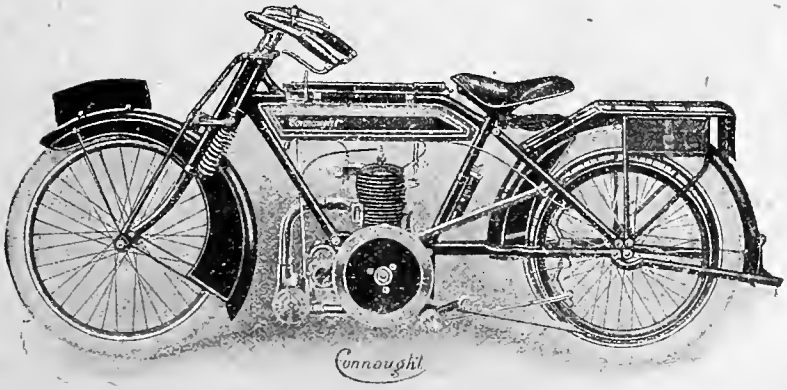
New 3½ h.p. Three-speed All-Chain drive model for heavier work. This model is sold complete with de luxe sidecar, and full equipment for £95 complete.

The 2¾ h.p. models now range in price from £45 Solo.

Our complete range of new models will be shown on—

STAND 98
GROUND FLOOR

May we send you our revised illustrated list if you are not going to the Show?



The BORDESLEY ENGINEERING Co., Ltd.
New Bond Street, BIRMINGHAM.

London Showrooms:
111, Gt. Portland Street, W.1.

THE MOTOR CYCLE Insurance Policy

Issued by The Autocar Fire and Accident Insurance Company, Ltd. (Incorporating "The Autocar" Insurance Dept. Established 1904).

COVERING MOTOR CYCLES or CYCLES and SIDECARS—
Used by Owner for private or professional purposes or personal business journeys.

SCHEDULE OF PREMIUMS.

Not exceeding.	A — Full Policy. All Sections 1 to 6.	B — Third Party, Fire, and Theft. 1, 3, 4, and 6 only.
2¾ h.p.	£4 0 0	£2 8 0
4 h.p.	£4 10 0	£2 14 0
5 h.p.	£5 0 0	£3 0 0
10 h.p.	£6 0 0	£3 12 0

Plus 10/- for each additional £50 or part thereof in excess of £100 value.

1. THIRD PARTY.
Legal liability up to an unlimited amount, including law costs. Also indemnifying Insured whilst driving any private motor cycle not belonging to him. Defence of any police summons for driving to the danger of the public when an accident as insured is concerned, free of legal costs

2. DAMAGE TO CYCLE
by accidental external means. Reasonable repairs may be put in hand at once.

3 FIRE
including tyres and accessories.

4. THEFT
including tyres and accessories when machine is stolen. Damage by attempted theft included.

5. TRANSIT
by road, rail, or inland waterway, also short sea journeys to continent, etc.

6. BONUS.
10% reduction off renewal premium if no claim.

EXTRAS.

To extend Policy to cover use by and to indemnify—one additional rider, 33⅓% extra. Any licensed rider, 50% extra.
Cycle used solo to carry passenger on pillion seat or luggage carrier—50% extra.

ACCIDENTS TO OWNER.
Benefits: Death £250.
Loss of two limbs, or sight of both eyes, £250.
Loss of one limb or sight of one eye, £125.
Total disablement, limited to 26 weeks each accident. £3 per week.
Premium 30/-

Half Benefits—Half Premium

PASSENGER IN SIDECAR.
Benefits as for Owner:
Covering any passenger not suffering from physical infirmity, and not less than 17, or more than 55 years of age. Premium 30/-

REDUCTIONS.

To be taken off premiums (A) only.
15% if Insured bears first 50/- of each accident.
20% if Insured bears first £5 of each accident.
33% if Insured bears first £10 of each accident.

PROPOSAL FORM. Particulars of Motor Cycles

Make of Cycle. State whether Sidecar attached and Seating capacity.	Makers' H.P. and Frame No.	Year of Make.	Date of Purchase	Price Paid by Owner.	New or Second. hand.	Present Value, including Accessories		Registered Letter and Number.
						Cycle.	Sidecar.	

1. Owner's name (in full).....
2. Address.....
.....
3. Occupation (if any)..... Age.....
4. Have you any physical defect or infirmity, defective vision or hearing?.....
5. Will Cycle to be insured be **solely** used for Private Pleasure Purposes?.....
If not, please give full particulars.....
6. Will passengers be carried otherwise than in sidecar?.....
7. Will Cycle be **solely** driven by owner?
If not, please give particulars.....
8. Have you been or are you now insured in respect of a Motor Vehicle?.....
Please state (a) Name of Company insured with.....
.....
(b) Whether any Company or Underwriter has ever declined, cancelled, or refused to renew your insurance, or required you to carry first amount of any loss, or increased your premium, because of claims experience?.....
9. What accidents during the past two years have occurred in connection with any Cycle owned by you?
19.....Number.....Amount paid £.....
19.....Number.....Amount paid £.....

I hereby declare that all the particulars stated above are true and correct, and I hereby agree that this proposal and declaration shall be the basis of the contract between me and The Autocar Fire and Accident Insurance Co., Ltd.

Date..... *Owner's Signature*.....

Immediate protection can be obtained by forwarding this form, filled in, and remittance for first premium to

The Autocar Fire and Accident Insurance Company, Limited
Telegrams—"Autoinsure, Cent, London." **77, Cheapside, London, E.C.2.** *Telephone—City 9831-2*
Branch Offices at Birmingham: Guildhall Buildings, Navigation Street. *'Phone: Midland* 2970-1. Cardiff: 15, High Street. *'Phone: Cardiff* 4156. Leeds: Calvert's Chambers, 8, Commercial Street. *'Phone:* 26238.

ROLLER BEARINGS AND THEIR ACTION.

Sir,—I cannot let the letter from Mr. N. A. Bloomer, in your issue of the 10th inst., pass without writing to point out to him a serious misstatement in his description of the action of a big end roller bearing.

He states, "The crank pin is running at the same number of revolutions per minute as the big end of the connecting rod." This is obviously incorrect, as the connecting rod has no rotary motion at all, but merely oscillates slightly.

In order to visualise the action of the bearing, the outer race attached to the connecting rod may be assumed to remain still and the inner one on the crank pin to rotate at engine speed.

If the diameter of the outer race is twice that of the inner one, the rollers will now roll round the outer race at half engine speed and in the same direction as the engine is rotating. No slip whatever need take place.

A. R. TURNER.

Sir,—Mr. N. A. Bloomer seems to be under some misapprehension as to the working of a roller bearing big end. He states that the crank pin runs at the same number of revolutions per minute as the big end of the connecting rod, but a little consideration will show that the big end of the connecting rod does not revolve relative to the crank pin.

It is true that the entire bearing revolves round the axis of the crankshaft, or flywheels, but this motion may be disregarded, as the bearing would behave in the same way (apart from the effects of centrifugal force, etc.) if we held the big end stationary and revolved the crankshaft round it.

If Mr. Bloomer will construct a model of a big end bearing, using gears instead of plain rollers, crank pin, and outer race, or, in other words, substitute an epicyclic gear for the plain rollers, etc., he will soon convince himself that there need be no slip whatever between any of the parts.

A. A. BEESLEY.

BORE-STROKE RATIO.

Sir,—I have no desire to reawaken the old long v. short stroke controversy, but *The Motor Cycle* of November 10th contains evidence of such a startling conversion that, as the public memory is so short, I cannot refrain from drawing attention to it. The Society for Conversion of the Heathen should really purchase a long stroke engine, preferably one designed about ten years ago.

At the time of the last bore-stroke ratio controversy (1916-1917) a certain eminent designer of square engines was twitted with the fact that he had produced a very successful long stroke 4 h.p. single at the open hill climb at Style Kop on July 17th, 1915. This gentleman took great pains to explain to the writer and the public, *via* the correspondence columns of *The Motor Cycle*, that for motor cycle engine work there was no virtue in the long stroke engine. The number referred to of *The Motor Cycle* contains the first illustrated description of this gentleman's long stroke T.T. motor cycle.

Let us have a revival meeting arranged at an early date, Mr. Editor, please, when we can all hear from the gentleman the story of his conversion.

A. LINDSAY, M.B.

THE FUTURE OF THE THREE-WHEELER.

Sir,—I read with much interest your article on the three-wheeler. You are right, I believe, in deprecating over-elaboration, and your warning is timely. The cycle car developed into the light car, and the light car ceased to appeal to the man of moderate means when it cost £500 or more. Now the light car is again appealing for popularity by greatly reduced prices. The past car exhibition may come to be known as the "price-cutting Show." Among the exhibits are eighteen cars listed at £250 or less. Of these eight are under £200, and there are three under £150. Few of those under £200 have as yet proved themselves, and some of them will certainly not appeal to the public taste. But if the three-wheeler is to hold its own and supply the acknowledged need of a link between the motor cycle and the less expensive light car, it must cost under £200. There is no doubt that the three-wheeler is simpler, and can therefore be made at less cost than the four-wheeler of the same class. It should not be impossible, therefore, to produce a simple but thoroughly efficient three-wheeler at a cost of £150 or thereabouts. Of course, there are, even of those who decide on a three-wheeler, some who are willing to pay for additional luxury, and the manufacturer should be ready to meet their requirements by offering more luxurious models.

A great deal has been written about the cheap low-powered car, which can jog along the level at 20 m.p.h., and for which an expectant and hitherto disappointed crowd is supposed to be waiting. The people who write of it are those who as yet know not motoring, and who, when they have once tasted its joys, will be the first to complain if their 'bus is left behind by everything else on the road! The three-wheeler must have a fair turn of speed. It must be essentially a light machine, with fair ratio of horse-power to weight. No one who has ridden a motor cycle is content to "potter," and a large number of the patrons of the three-wheeler are motor cyclists, who have come to consider their comfort. Every three-wheeler should be ready to face such trials as the Six Days or the A.C.U. "stock trial," for it must prove that it is able to hold its own in such competitions, not only with the four-wheeler, but with the sidecar over which it holds undoubted advantages as regards comfort and sociability.

H. GEORGE MORGAN.

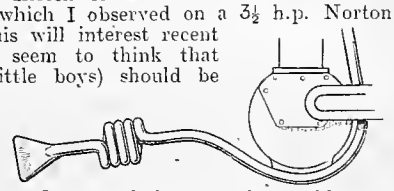
MATCH-LESS ACETYLENE LIGHTING.

Sir,—I myself have had on my machine for over a month one of the first Moss and White Redilites made, and so far have experienced no trouble. I should like to add that I do not take the precaution to open my lamp front, and the fact that the tail lamp glass was cracked before the lighter was fitted is a testimony that the explosion is not in any way violent, as the glass is still in precisely the same condition.

M. HUGH PALMER.

UNCONVENTIONAL SILENCING.

Sir,—The enclosed sketch is that of a rather unusual silencing apparatus, which I observed on a 3½ h.p. Norton recently. I think this will interest recent correspondents, who seem to think that motor cycles (like little boys) should be "seen and not heard." The exhaust pipe was of wire bore copper and polished, and at the time I observed it the rider was doing 15 m.p.h., so that whether or not the arrangement, which was very silent, sacrifices any m.p.h. is a matter of doubt.



One way of obtaining silence with an open exhaust pipe. (See accompanying letter.)

ALPHA.

Oxford.

BETTING ON MOTORING EVENTS.

Sir,—I am taking the liberty of forwarding the opinion held by myself and many others on the above subject. I refer, of course, to the betting conducted by "bookies." I think this state of affairs is diametrically opposed to the interests of the motor and motor cycle movement in general. Betting on horses and athletics is bad enough, but on motor races—well! These races, especially on the track, are all in the cause of the movement, while horse races are sordid financial undertakings. It is just as feasible to speculate on experiments conducted in the laboratories. We do not want the sport brought to the questionable level of horse racing, nor do we want the presence of "bookies" at our events. I consider that this matter should be investigated.

Tottenham. INDIGNANT.

TO HELP TRADE AND DECREASE UNEMPLOYMENT.

Sir,—I am one of those people who are either waiting to see what the Motor Cycle Show brings forth, or else for next spring, before making up my mind to purchase a motor cycle. It has occurred to me, considering how stagnant trade is and how widespread unemployment is, and probably will be for the next few months, that it might help things all round if would-be purchasers could be induced to make up their minds as quickly as possible, and those who do not (like myself) wish for delivery before next spring to make arrangements to pay fully for the machine now, the manufacturer to allow interest on purchase price paid until the date of the mutually agreed time of delivery expires, making the customer an allowance should prices be reduced. In this way many firms could get over some of the slack period, keep men employed, and avoid congested order books in the spring. The purchaser could get the same return on his money as if he left it in the bank, and do his bit in getting trade going.

T.T.

Chelmsford.

WHY NOT A T.T. FOR BIG TWINS?

Sir,—From time to time I have seen in your journal letters and articles bewailing the inferiority of the British "big twin."

I think I am right in stating that the chief object of the T.T. races is that of engine development.

Why cannot a 1,000 c.c. T.T. be arranged? I, for one, would be only too pleased to see a British "big twin" beat the Americans, who, at present, are having things all their own way. ZENITH 90 BORE.

Geneva.

FUEL ECONOMY AT THE EXPENSE OF POWER.

Sir,—With regard to a recent correspondent, "SK 696," I placed inside the jet of my 1919 4 h.p. Triumph a short length of a single strand of Bowden cable, then bent it over, and soldered it to the outside of the jet. Result: M.p.g. increased from 50 to 70; maximum speed decreased from 47 to 40 m.p.h., the machine, of course, being ridden solo. With regard to power, I certainly did notice a falling off riding solo, and with a sidecar I had to change gear so frequently that a new jet was fitted, and the other one kept in case the sidecar should be discarded.

R. C. CONSTABLE.

PURCHASE BY INSTALMENTS.

Sir,—As the purchase of a motor cycle by instalments is now becoming a common practice, it might be well for intending purchasers to scrutinise the method of charging interest on the balance due.

The usual method seems to be to demand a certain sum down and the remainder by twelve equal monthly instalments, which include interest varying from 4 to 7½%.

Now, after payment of the first instalment, the sum is a diminishing one, and the interest therefore should diminish.

A. FLEET.

TEN POUNDS DOWN AND TEN SHILLINGS A WEEK.

Sir,—I have been a reader of your paper now for ten years, and have during that time owned two motor cycles. On my discharge from the Army I bought with my gratuity a 1¾ h.p. Konkout, and during about six months' ownership spent all my small wages on getting it repaired, and in that time had at least ten miles riding on it. Result: Sold it in pieces for £6, with which I bought a new suit. I then saved up for about fifteen months and bought another machine "in running order" for £17. This has yet to run on the road, but I have bought a licence and spent my income every week since buying it, and would now be glad to take a "tenner" for it. Now to the point. When I sell this machine I shall have a £10 note to spare and perhaps 10s. per week. When will someone step in with a reliable machine about £30, which can be bought on the easiest "easy payment system" without having to let everybody know about one's business by having to get forms filled up?

Leeds. MOTOR CYCLIST ON PAPER.

COMPARATIVE INSURANCE RISKS.

Sir,—I note in a recent issue that a reader writes complaining that he has to pay a higher rate of premium for his 8 h.p. outfit than his neighbour, who owns one of 3½ h.p.

As a member of the insurance profession, I will try, without going into technicalities, to illustrate how and why the premiums differ in cases of this kind. A motor cycle of 8 h.p., generally speaking, covers more ground annually than its brother of less power, and, of course, in this fact alone the risk is greater. Moreover, an 8 h.p. motor cycle is heavier and capable of more speed, and in the event of a collision, the impact, and the resultant damage, is greater.

The primary factor in the calculation of premiums for insurance of motor cycles is the horse-power ratio; and when one realises that the extent of the damage done by any machine in a collision depends chiefly on the speed and the weight of the vehicle, and that both the speed and weight are indicated by the power of the engine, it will be easily seen why horse-power is such an important matter.

As a further example, it will be seen that the man who owns a 2¼ h.p. two-stroke, and uses it only for short runs locally, and whose average speed is round about 18 m.p.h., is infinitely a better risk from an insurance point of view than the man who owns an 8 h.p. sidecar outfit, and who travels long distances at an average speed of 25-30 m.p.h.

W. ATTWOOD-EVANS.

REVIVING THE AUTOMATIC INLET VALVE.

Sir,—There is no doubt whatever that the automatic inlet valve was looked upon as dead many years ago by all makers and experts, and the writer is quite prepared to find himself without any support when claiming that an automatic valve can be constructed to give as good results as its mechanically-operated brother. Perhaps it would be best to ask ourselves first if it is worth while? Having given the subject a great deal of deliberation, I unhesitatingly answer "Yes." Let us for the moment agree that, as regards power output and flexibility, an automatic valve can be made (without complication) to equal the results obtained by the mechanically-operated valve.

We should then be able to wipe out the following: (1.) Inlet cam. (2.) Tappet guides. (3.) Rocking lever and pins. (4.) The noise which emanates from these parts. And, in consequence, we get a much simpler engine.

What do we expect of the mechanically-operated inlet valve? We expect that the mechanism will open the valve just as the pressure in the cylinder becomes less than atmospheric pressure, keep it open whilst there is any tendency to a vacuum, and that it will *allow* the valve to close as soon as the pressure inside the cylinder is equal to the pressure outside. Now, in view of the fact that the modern motor cycle engine is capable of performing a revolution, say, 6,000 times per minute, and of the unequal expansion or extension of the cylinder in relation to the tappet rods, the writer is of the opinion that a *mechanical impossibility* is being aimed at, and that the nearest approach to perfect timing that will be obtained will be by a properly constructed automatic valve.

Now, about the disadvantages of the automatic inlet valve, these may be given as follows: (1.) Restriction to ingoing charge. (2.) Cotter frequently shearing. (3.) Blow back of carburetter. (4.) Increase of lift owing to cotter gradually shearing.

Those *were* the disadvantages years gone by, when the automatic valve enjoyed its first life, and when it received little or no consideration beyond strength of spring.

We are now producing a properly constructed automatic inlet valve, in which none of the old (or new) faults exist. By constant trials on the bench and road, the writer's experience of the *advantage* of the new automatic inlet valve over the mechanically-operated one has created such confidence as to result in the cutting out of the mechanism in our four-stroke model and substituting the new automatic valve. I foresee a great possibility in the near future of the automatic valve becoming a serious rival to its now more popular brother. J. E. SMITH.

[If our correspondent can produce an automatic inlet valve which will provide easy starting and function correctly without causing restriction to the gas flow between speeds of 500 to 5,000 r.p.m., he will have accomplished a most useful work, and we shall be interested to hear further details of this new development.—ED.]

Books & Maps for Motor Cyclists.

Issued in conjunction with *The Motor Cycle.*

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The standard handbook on the motor cycle.
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Yes, Colmore — the earliest Agents — the most enthusiastic Agents. Since we sold our first Douglas, we have sold over

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That *is why we think so much of the Douglas.*

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In answering this advertisement it is desirable to mention "The Motor Cycle."

C39

THE

NON-PINKING

MOTOR SPIRIT

No need to retard the ignition or to throttle down with "Shell."

"PINKING"—that ominous rattling within the cylinder which betrays a labouring and strained engine—can only be stopped by throttling down or *excessively* retarding the ignition, resulting in overheating and loss of power. TRY CHANGING TO "SHELL," the *non-pinking* spirit. A higher compression is possible with "Shell" than with any other petrol, "Shell" Aviation Spirit excepted.

"Shell" Motor Spirit is regularly and scientifically TESTED in a special variable compression research engine, in order that its superiority in power and mileage may be unfailingly maintained.

These tests are carried out under the supervision of well-known scientists in the Testing Laboratories and Works where the famous "tanks" and other machines of war were tested and developed, and where many motor manufacturers send their new units for efficiency tests.

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See the can is SEALED.

Shell Motor Lubricating Oil—Have you Tried it?

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BLUE CARTON

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Branch of The Imperial Tobacco Co.
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P.952

The B.T.H. "Sparklight"
Combined Ignition and Lighting Set

supplies lighting from the Magneto without absorbing extra engine power or affecting ignition efficiency.

See STAND 80 B T-H at Cycle Show.

The Set Comprises:

A high tension magneto; automatic charging switch; non-spillable battery in metal case with switch; head and tail lamps; bulbs, wiring and fittings.

Prices, complete:

Two-stroke single type ..	£13	10s.
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Write for list C.M.2411 on "Sparklight."

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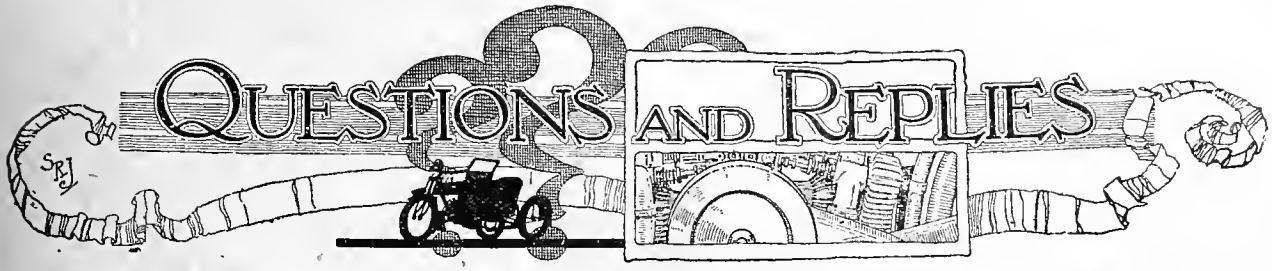


A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

ENGINE-SHAFT GEARS.

Will you give me a little guidance regarding a 1920 single gear Norton? I contemplate fitting some sort of gear, as I intend doing light, occasional sidecar work. Of the various makes of gear now on the market, which would suit me best? The points I have in mind as desirable are cost of upkeep, wearing qualities, robustness, and silence when running normally in top gear. The initial cost and fitting up are not of so great importance, to my mind, as durability.—J.O.M.F.

The makers of your machine have fitted at various times as standard on the direct-driven models both the Philipson pulley and the Bradbury epicyclic two-speed engine-shaft gear. You would find either to be quite satisfactory, but the latter is rather more noisy in the free engine and low gear positions. The Philipson pulley does not give a free engine position, but in action it is practically automatic, and provides a very flexible drive.

REDUCING MECHANICAL NOISES.

My motor cycle is a 1912 Arno, 83 mm. bore and stroke. The magneto is driven with two intermediate gear wheels, and the ball bearings in the crank case are in good condition, without play. There is a big end steel pin, with two nuts through the flywheels, and a phosphor-bronze bearing of ⅝in. diameter. The engine is very noisy, but good otherwise. Would the following benefit in my overhaul: Regrind the cylinder (What is the nearest size I can get standard rings to suit?); fit aluminium or gunmetal piston; convert the magneto drive to chain; increase the size of the crank pin, or fit roller bearings. I have fitted two new valves and rebored the guides. —E.B.

If the piston shows signs of wear, or there is considerable play between piston and cylinder, it would be advisable to have the cylinder reground and a new piston fitted: there would be no difficulty in obtaining 84 mm. piston rings to suit. It would not be advisable to experiment with aluminium or gunmetal pistons if you desire to reduce the noise. A chain drive to the magneto would probably give more silent running. A roller bearing big-end would tend to noisier running, but it might improve the engine to some extent if it can be applied without undue difficulty.

TWIN MISSING ON ONE CYLINDER.

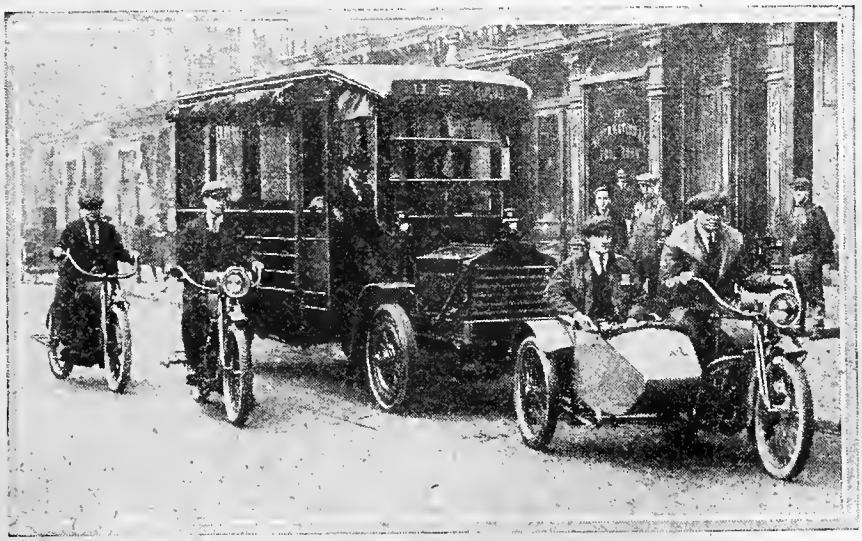
My 1912 2¾ h.p. Douglas sometimes gives trouble in starting, the engine firing on one cylinder only, and sometimes picking up on two and going for a short distance, then missing again, and finally stopping. I might have trouble like this one day, and another day no trouble whatever. The engine will sometimes go for miles with two up without a murmur or any sign of trouble. I have a fairly large jet (I do not know the size), and the engine takes full air and not much gas. I have taken it down, and everything is, or appears to be, in order. I get a spark at the plugs, my induction is not leaking, the valves are all right, and the compression good. It mystifies me, and I seek your advice on the matter.—S.E.J.

Irregular firing on twin-cylinder machines is almost invariably due to air leaks in the induction joints, and we should strongly advise you to check these over. You might make sure of the induction pipe's joints if you cover them with insulation tape. If, however, you are quite certain that the trouble is not due to air leaks, it is possible that the magneto is at fault. Examine the carbon brush holders, and make sure that they do not show any minute cracks, and also examine the contact breaker and notice whether the contact points separate an equal distance for each cylinder; if they do not, slightly wider adjustment may effect a cure. It would be advisable to find out which cylinder is missing. This, of course, you can do by detaching the sparking plug wires alternatively when the trouble commences.

TUNING FOR ECONOMY.

(1.) How may I cut down the petrol consumption of my 1920 2½ h.p. single-speed Hobart-Villiers? It is fitted with an Amac two-lever carburetter; at present I am using a 22 jet. The petrol level is at the makers' setting, and I am only getting between 50 and 60 m.p.g. The magneto timing and compression are all right. (2.) Do you think a variable jet would cut down the consumption appreciably?—E.W.R.

(1.) Your questions are too general to be dealt with in a short paragraph. Points to which you should pay special attention are: *(a)* That the petrol level should be on the low side. *(b)* That the ignition should be well advanced. *(c)* That the belt should be tightly adjusted. (2.) A variable jet adapter would be of great assistance in tuning experiments.



GUARDING THE MAIL. Armed motor cyclists escorting the van carrying registered mail in the streets of New York. This protective measure was adopted after a recent highway robbery of mail.

ENGINE-SHAFT AND HUB GEARS.

? Could I use the N.S.U. gear in conjunction with an Armstrong hub (provided the latter was left in top gear) or should I have to fit another back wheel? Should I be doing any damage to the Armstrong by using it with the N.S.U.?—J.G.W.

There is no objection to using an N.S.U. gear in conjunction with the Armstrong hub gear. Normally, of course, you can use the latter in its top gear, but you can also use the gears in conjunction, thus getting an extremely low gear when the low ratio of both is in operation at the same time.

CHOKED PETROL SUPPLY.

? I have a 1915 Revere, fitted with an Amac two-lever carburetter, the oil supply going through the side of the latter. Up to last year it used to take full air, but during the last few months it will barely take half air, and if I give it more it will start blowing back through the carburetter, and finally stop altogether unless I shut back to half. It only does 40 m.p.g. Is it time to scrap it, or can it be improved?—F.O.S.

The symptoms which you describe are those of partial restriction of the petrol supply. We should imagine this to be caused either by an obstruction in the jet or by the partial choking of the petrol pipe, or of any filters which may be fitted either at the petrol tank or in the carburetter float chamber union. Dismantle the petrol supply system entirely, and thoroughly clean every part, paying particular attention to any of the internal passages in the carburetter itself. It should not be necessary to scrap the machine after only six years' use. Correctly adjusted, the machine should still be capable of many years' excellent service.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"W.S." (Liverpool).—Best setting of Binks carburetter on 5-6 h.p. Rudge Multi sidecar.

"M.O.G." (Cambridge).—1921 T.B. three-wheeler: Especially reliability, speed, docility in traffic, leg room, stability on grease.

"F.C.A." (Manchester).—3½ h.p. Sunbeam: Accessibility of back wheel, chain adjustments, general running, and expense of upkeep.

"K.S." (Birmingham). — Ner-a-car: Reliability and general experiences.

"F.B." (Cambridge).—1922 models 2¾ h.p. New Imperial, Douglas, or Raleigh: Speed, reliability, climbing, consumption, and comfort.

"P. and M." (Oxford).—Flexekas or Ayrtite sleeves on 1920 P. and M. valves, Brampton spring chain for final drive as shock absorber, and if clearance in gear cases.

"W.R.A." (Pontefract). — 5-6 h.p. Raleigh: Speed solo or sidecar, general reliability, ease of handling solo, and petrol consumption.

"T.E.M." (Windsor).—1914 or later Connaught: Climbing, reliability, or petroil lubrication.

READERS' REPLIES.

BROKEN SPOKES.

I had the same trouble as "G.M." on my 6 h.p. Rover sidecar, and as fast as I replaced spokes the others would break off against the hub of my back wheel on the brake drum side. The only way I could cure it (9G spokes having failed) was to have the wheel rebuilt on the bad side with 10G butted spokes. I used A.J.S. spokes, the butted portion near the head being heavier and much stronger than the 9G. Incidentally, I never let my clutch in suddenly, or jammed my brakes on, nor let the engine snatch.—W. H. ALEXANDER.

Important Dates.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd, to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec. 31st — N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

Sun., Mar. 5th, 1922—Argenteuil Hill-climb (France)

Mon., Mar 6th, 1922—La Turbie Hill-climb (Nice).

OVERSIZE TYRES.

I hope your readers will not be put off fitting 28×3in. tyres on 26×2¼in. rims after reading the letter from the Palmer Tyre, Ltd., in your issue of November 10th. An ounce of practice is better than a ton of precept. Any original D.R. will tell you how "oversizes" were snapped up and fitted with success to all machines with 26×2¼in. rims in France.

A D.R. friend of mine advised me to fit a 28×3in. Kempshall on the 26×2¼in. rear wheel of my 6-7 h.p. Ariel when I was about to start on my last summer holiday tour. I had no difficulty at all in fitting—no creeping, no rolling at corners, no punctures, no re-inflating—and after 800 miles (including Devon and Cornwall) with three up and luggage, the tyre was as fitted, except the pattern of the tread was worn down. That was in July. It is on yet, and has had only (on one occasion) a few additional pumpfuls of air put in since it was fitted. The increase in comfort is wonderful; no rider thinking of fitting 28×3's should hesitate.—T. W. JURY.

After using tyres on cars and motor cycles since 1907 I cordially agree with your editorial reply to a letter from the Palmer Tyre, Ltd. I have found (with many others) that most tyre makers' remarks on the use of their products may be interpreted very liberally.

I have used 28×3in. tyres on 2¼in. rims, and find them easier to fit than the 2¼in.; the beads go into clinch more easily owing to the circumference of the tyre being greater. I have always found the 2¼in. or 2⅜in. tyre very tight, and the bead stays in the central hollow of the rim, and is difficult to force outwards.

All tyre makers advise inflation of tyres to an excessive degree, which advice, if followed, only causes discomfort and bursts.—F. O. PARSONS.

SPARKLETS

In Canada.

At the championship hill-climb of the Hamilton M.C.C. (Ontario), S. Shepherdson, riding a 4 h.p. Triumph, made fastest time in the "40in." capacity class.

A Change of Mount.

Mr. Gerald Browne, who rode a New Scale in the last Junior T.T., will, in future, be associated with the Edmund machines as sales representative in the Midlands and Southern Counties.

British Sidecar Screens in America.

Manufacturing rights for Easting windscreens in the U.S.A. and Canada have been secured by Shillan, Beck and Co., Inc., of New York. Their product is known as the American Easting, and although only introduced two months ago over 500 have been sold already.

Emerson's Equipment.

When J. L. Emerson secured the one and two hour and fifty and hundred mile records on his 3½ h.p. Douglas on the 11th of this month, the following equipment and supplies assisted his efforts: E.I.C. magneto, K.L.G. plugs, Hutchinson tyres, Flexi carburetter, Pratts' spirit, and Wakefield oil.

A Useful Paste Solder.

For small soldering, jobs are better carried out by means of paste solders rather than by the more usual strip solder and copper bit. Bowden nipples and petrol pipe unions are especially in this category. The advantage of the paste solder is that it contains a fluxing material, and will run at low heat—even by a match flame on emergency. A sample and L. and K. paste solder recently tested was very satisfactory. It is made by Livermore and Knight, Ltd., 180, Fleet Street, London, E.C.

For Tyre Repairs.

A member of our staff recently purchased for trial a tin of U-Nead-It, and the test has proved entirely satisfactory. The package consists of two tins soldered together. One contains cement, the other a glutinous rubber-like substance. Procedure: Rasp the puncture, coat with cement, knead in the paste, and blow up the tyre. There is no waiting "until tacky," and it appears to be lasting. It answered well in a gash on a sidecar tyre tread, and is equally good for punctures in the inner tube.

Catalogues Received.

Rudge-Whitworth, Ltd., Coventry. This firm's series of handbooks "Rudge Wrinkles" is added to in number and excellence by a new one dealing primarily with the three-speed gear box and chain transmission. Much information is also included on timing, ball bearing sizes, and balance.

1922 MODELS.

If you have already made your choice, then secure the added value of real and continuous service by placing your order through—

GODFREY'S

If you have not already made your choice, Godfrey's long experience is yours for the asking. An experience not restricted to the mere selling of machines but broadened and widened by a long record of successes on road and track, including two successive victories in the SENIOR TOURIST TROPHY RACE in the ISLE OF MAN.

WE ARE ALWAYS TO BE FOUND ON THE

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(10 different models.)

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Complete with coverall apron.. **£8**

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Complete with coverall apron.. **£8**

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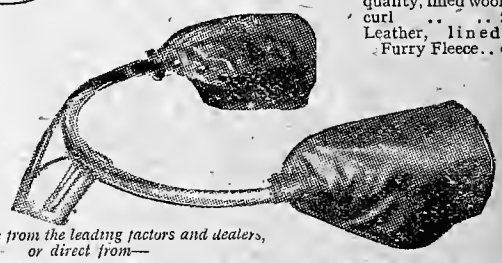
Leatherette, warm lining, retail **42/-**
Best quality, ditto, fur lined „ **69/-**
Detachable Rugs to match, combining Hand Muff, retail **29/11** and **55/-**

"Robi" Handle-bar Muffs, afford Perfect Freedom and Protection. Cover hands and sleeves. Are kept in position by flat steel springs, well lined, and are attached by metal clips.

CYCLE.	Per Pair.
Rainproof	7/9 & 13/9
Astra Curl, Cloth	8/6
Caracul „	12/6
Mole Plush „	17/6

MOTOR CYCLE.

Rainproof Khaki, lined cloth	13/6
Rainproof, Black, lined cloth	14/6
Rainproof, Black, lined wool Tweed	17/6
Rainproof, best quality, lined wool curl	22/9
Leather, lined Furry Fleece	47/6



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Exhaustive tests prove that their use ensures Complete Protection, Increased Power and Fuel Economy, Through Engine Cooling without wind resistance.
THROUGH YOUR AGENT OR DIRECT.

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THE HARPER RUNABOUT

(All main features covered by Patents)

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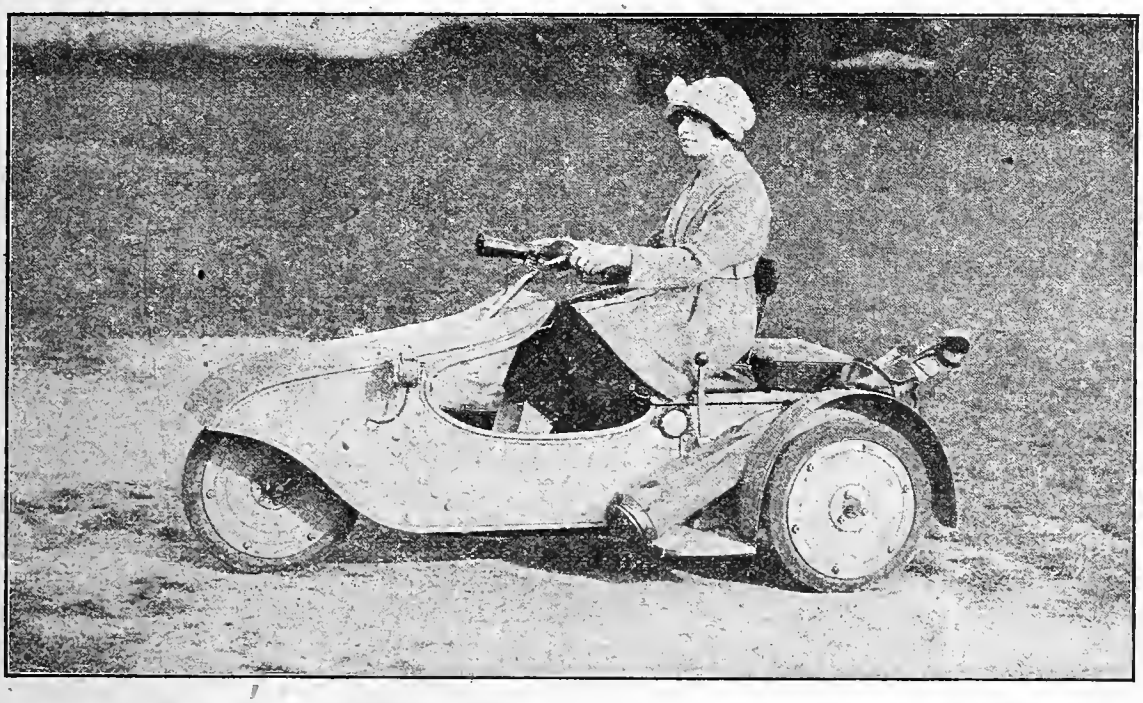
NOT A CAMOUFLAGED MOTOR CYCLE, AND NOTHING LIKE A SCOOTER!



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The HARPER RUNABOUT is a real *car-de-luxe*, but miniature in size, initial cost, and upkeep, — can be garaged in your Hall.

Absolutely safe on greasy roads, with the comfort, cleanliness, and ease of control of a car.

Body on graceful lines, substantially built of aluminium, hickory, and ash, — pillion seat for extra passenger, with footrest, which also acts as a stand for jacking up. Speed—35 m.p.h.

The first and only practical vehicle for use anywhere and everywhere, at **below** motor cycle cost, with absolute reliability.

Brief Specification:

Engine.—2½ h.p., Two-stroke, 70×70, by Villiers. Cylinder and piston to R. O. Harper special design, giving increased power. **Clutch and Engine Sprocket.**—Single disc Ferodo lined, easily adjustable. **Carburetter.**—Special Zenith controlled by hand throttle and pedal accelerator. **Transmission.**—Entirely enclosed by body, giving three speeds. Renold roller chains easily adjusted. Direct drive on each speed. **Brakes.**—Independent foot and hand brakes of disc design operated by ball cams and with special adjustment which is independent of control rods. **Bearings.**—One size only of Hoffman journal ball bearing used throughout the machine. **Springing.**—Specially resilient ¾-elliptic leaf springs to back axle, and also to the front wheel, carry the body and all mechanism. **Wheels.**—Three pressed steel disc pattern, detachable and interchangeable, fitted with bolt detachable rims, making tyre fitting easy without the necessity of using levers. **Tyres.**—Straight-sided Dunlop Non Skid, 18in. × 2¼in. **Running Costs.**—Under ¾d. per mile. Specially silent, yet free from back pressure. Hand-starter.

Price £100 Delivered Manchester.

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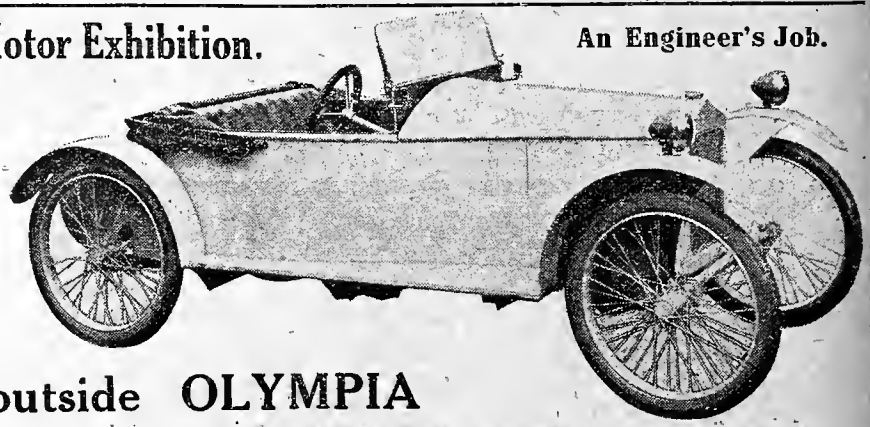

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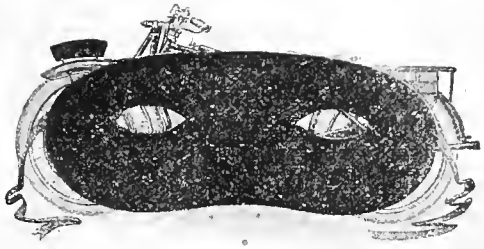
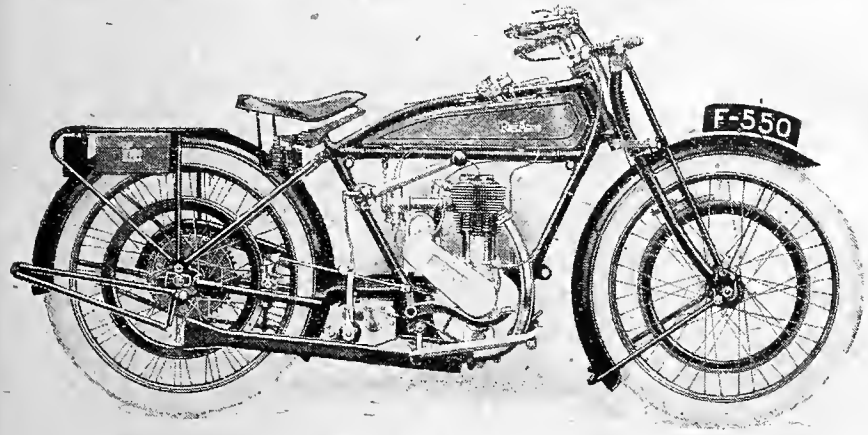


Write for copy now.

To all those who have already written, "Impy" extends his thanks, and trusts that the desired particulars have been received and proved interesting. A hearty invitation is extended to everyone to visit "Impy"



AT OLYMPIA

Stand No. 61

OR AT

HOLROYD'S MOTORS,
WARWICK STREET,
REGENT STREET,
LONDON

AN ATTRACTIVE RANGE OF OTHER MODELS WILL ALSO BE SHOWN.

THE REX MOTOR MANUFACTURING CO., LTD., COVENTRY

London Motors

Offices and Showrooms:
61, Holborn Viaduct,
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Proprietors: THE ENGINEERING PRODUCTS CO. LTD.

Have pleasure in announcing they have been appointed **Sole Distributing Agents** for

OMEGA MOTOR CYCLES

by MESSRS. W. J. GREEN, LTD., of Coventry,

for the following Counties: Kent, Surrey, Sussex, Hampshire, Berkshire, Oxfordshire, Buckinghamshire, Northamptonshire, Bedfordshire, Huntingdonshire, Cambridgeshire, Rutlandshire, Norfolk, Suffolk, Essex, Hertfordshire, Middlesex with the exception of 20 miles radius of London.

One of our representatives will be on the Omega STAND No. 54 at Olympia.

TRADE ENQUIRIES INVITED.

REMEMBER

WAUCHOPE'S for next season's Motor Cycle, Combination, or Light Car. Best medium for Easy Terms and Exchange. Any of the leading makes supplied promptly. Write for terms.

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Phone: Holborn 5777

9, Shoe Lane, Fleet St., LONDON.

'Grams: 'Opificer, London."

THE NEW

GNOME & RHONE MOTOR CYCLE

The SENSATION of the PARIS SHOW

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TOO LATE FOR THE SHOW

THE CHEAPEST
THE BEST
THE MOST RELIABLE

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Built by the Famous Aero-Engine Specialists

GNOME-RHONE

Come and Inspect it, always on view at

THE CONCESSIONNAIRE FOR U.K. & COLONIES:

A. PICARD,

4, New Burlington St., LONDON, W.1.,

also at Paris, 28, Rue Bergere.

'Phone: Regent 5210, Gerrard 2304. 'Grams: "Nieuplane, London."

Some Agencies are still available, apply now.

The "DELUGE" TRIPLE PROOFED.

Free from Rubber or Oil. Soft and Warm.

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72/-

Wear for Years.

Does not condense the perspiration.

Double-breasted coat, smartly cut, four-fold covering to the chest, the seamless yoke protects the back and shoulders and acts as a shield to cover the opening; the points of yoke and collar button down; Bishop shaped sleeves with cuff and spring button; seatless overalls cut well up in front with side openings and water insulator, terminating in a neat fitting gaiter.

Sent on approval, carriage paid against cash. Send full height and breast measure over the coat.

The DELUGE RAINPROOF CLOTHING COMPANY,

CANNON STREET, MANCHESTER.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/-, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted, Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., & Co. and crossed Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

19 20 A.B.C., equipped, acetylene lighting, horn; £80.—Victor Horsman, 7, Mount Pleasant, Liverpool. [X2555

AT OLYMPIA

By the courtesy of Messrs. H. Collier and Sons, Ltd., our Representative will be upon the **Matchless" Stand (No. 65)**, during the Motor Cycle Show next week, and we shall welcome appointments to meet our customers there.

For the coming season we have contracted for all the well-known makes of motor cycles, and are, therefore, in a position to supply the machine of your choice and give early delivery.

To customers requiring a second-hand or shop-soiled motor cycle, our list offers an excellent range to select from, and both new and second-hand machines can be paid for under our "Deferred System" if desired.

The Eastern Garage Co.

(Official Repairers to R.A.C., A.C.U., A.A., and M.U.).

418, ROMFORD ROAD, FOREST GATE, E.7.

Telephone ..... 490 East Ham.
Telegrams....."Egaraco, London."

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., dynamo lighting, kick start, tax, tools, spares, done 500 miles, absolutely as new; £80.—Fitt, near Pike's, Church St., Chelsea. [9346

£80.—Dynamo lighting 1920 A.B.C., speedometer, electric horn, overhauled Sopwith's, registered.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1 [8148

A.B.C. Combination, with dynamo lighting, Cowey horn; £105, or exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9204

A.B.C. 1921 Combination, special body, Easting wind screen, standard chassis, dynamo lighting, speedometer, horn, usual equipment, licence, spares; £120.—Derrington, Grafton Rd., New Malden. [8009

A.B.C., late 1920 model, recently overhauled by makers at cost of £26, in absolute perfect condition, new tyres and re-enamelled, no lamps, owner bought A.B.C. car; £95, or nearest offer.—F. Wessel, Royal Victoria Hotel, Newport, Salop. [8736

Abingdon.

ABINGDON 4h.p., 1914, 2-speed, lamps, £39; N.S.U. gears, late pattern, £6.—2, Appian Rd., Bow. [8863

19 20 Abingdon King Dick Combination, 6-7h.p., countershaft 3-speed, Miller lamps, Klaxon, tools, tax, insurance, mechanically perfect, new 3in. Dunlop; bargain, £105, or nearest; exchange good lightweight and cash; Midlands.—Box 7,462, c/o *The Motor Cycle.* [8618

A.J.S.

LOOK Out For Julians of Reading on A.J.S. Stand. [8701

CROSS, Effingham Sq., is agent for A.J.S. motors for Rotherham and district. [X2649

A.J.S.—All 1922 models; early deliveries from Sam E. Clapham (Motors), Greenwich. [9246

A.J.S. Motors.—Make appointment at Olympia with Geo. Merrick, 174, Listerhills, Bradford. [4577

"WAIT and See" Jack Healy of Cork on A.J.S. Stand, rider and agent. Garage: Drinan St. [X2545

A.J.S. 1916 Combination, faultless, full equipment, pillion, low mileage; £98.—18, Kent House Rd., Penge. [8850

A.J.S. 2¾h.p., shop-soiled, equipped, insured, licensed; bargain, £80.—Ayers, Garage, Kensington Palace. 'Phone: Park 86. [8882

A.J.S. 6h.p. Combination, sidecar, October, 1920, nearly new.—On view, Calder, 20, Williams Mews, Lowndes Sq., S.W. [8642

2¾h.p. A.J.S., 2-speed, clutch, all chain, Binks, Dunlop heavy, horn, etc.; £35.—Louis, Southwood Lodge, Ramsgate. [8718

19 20 A.J.S. Combination, spare wheel, hood, lamps, tools, etc.; £165; scarcely used, as new.—Garratt, Surveyor, Market Drayton. [8656

19 14 6h.p. A.J.S. Combination, acetylene lighting, Easting wind screen; £80.—Victor Horsman, 7, Mount Pleasant, Liverpool. [X2561

19 21 Model New Shop-soiled 7h.p. A.J.S. Combination, with spare wheel, etc.; to clear, £175.—Carnforth Motor Co., Carnforth. [9064

A.J.S. 6h.p. Combination, 1920, complete with lamps, speedometer, horn, hood, etc.; £150.—H. J. Marston, 50, Argyle St., Birkenhead. [8693

A.J.S. 6h.p. Combination, 1919, fully equipped, perfect, trial; £130, or offer.—Dr. Morlet, Queen Charlotte's Hospital, Marylebone Rd. W. [9093

19 20 A.J.S. Combination, Lucas dynamo lighting, horn, spare wheel, screen, hood, envelope, original tyres; £160, offer.—Careless, Cartwright St., Wolverhampton. [X2641

19 20 A.J.S. Combination, hood, screen, spare wheel, spring pillar, speedometer, electric lighting, condition excellent; price £120.—Welford, James St., Brighton. [8786

A.J.S., 1921, new, 2¾h.p., 2-speed, clutch, kick starter, all on, shop-soiled; £85, offers.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

D. and S. AUTOCAR Co. are agents for A.J.S. motor cycles, one 2¾h.p. 1922 semi-sporting model, delivery immediately after show; £85.—33, The Parade, Golders Green. [9244

A.J.S. 1920 Combination, hood, side curtains, spare wheel, speedometer, Klaxon, Lucas lamps, Tan-Sad, petrol carrier, spares, perfect condition; any trial; £130.—Philcox, 7, Albion St., Lewes. [8726

A.J.S. Combination, dynamo lighting, interchangeable and spare wheels, perfect mechanical condition; £110, or nearest offer; owner purchased car.—Dr. Finny, 4, Dulwich Village, S.E. [9294

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue. C55
Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

A.J.S.

1920 A.J.S. 6h.p. Combination, King of the Road lighting set, spare wheel, hood, screen, horn, guaranteed perfect; price £125.—Apply, Williams, Woodside, Wettenhall, Winsford, Cheshire. [9378

A.J.S. Lightweights, 2½h.p. Can now supply from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. [3695

A.J.S. (1921) Combination, hood, side screen, discs, horn, speedometer, dynamo lighting. April insurance; cost £260, price £180, or offer; seen appointment.—Brooks, Shrubbery House, Wellington, Salop. [8823

A.J.S. 1920 6h.p. Combination, perfect condition, recently overhauled, registered Jan., 1921, acetylene lighting, spare wheel, Stewart trip speedometer, Tyneside, fully equipped; £120.—S., Idlehour, Avenue Gardens, Horley, Surrey. [9380

A.J.S. 1920 Combination, with Lucas dynamo lighting set and horn, and speedometer fitted, licence and insurance paid, spare wheel never used, only done 1,600 miles, difficult to distinguish from new; £170.—George Wray, 4, Virginia St., Southport. [8621

1920 5-6h.p. A.J.S. Coachbuilt Combination, 3 speeds, kick start, hand clutch, Lucas dynamo electric lighting, all equipment, including spare wheel, storm apron, hood and screen, Cowey speedometer, machine delivered 1921, only ridden 1,000 miles; £180.—337b, King St., Hammersmith, W.6. [7870

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [8631

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [7901

Alldays.

£23.—2¾h.p. Alldays 2-stroke, ride away.—181, Newton Rd., Burton-on-Trent. [9029

ALLDAYS Allon, 1921, clutch, kick starter, splendid condition; £59.—Walls, Outfitter, Dartmouth. [9086

1918 Alldays Allon, lamps, just overhauled; £29/10.—Coad, 122, Maida Vale (House Garage). 'Phone: Hampstead 1353. [8906

1919 Alldays Allon 2-speed Clutch Model, lavishly equipped, insured, excellent condition; bargain, £27/10.—4, Elm Gardens, Hammersmith. [8878

ALLDAYS Allon 1921 4-speed Combination, kick starter, clutch, fully equipped, speedometer, mudshields, insured, tax paid; £75; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [8953

American X.

AMERICAN X, brand new 1920 model, fitted with Millford sidecar to match; £100.—George Wray, 4, Virginia St., Southport. [8623

1920 American X Electric Model Combination, 1,000 miles only, equipped regardless; £110; unscratched.—Grocer, 193, Lancaster Rd., Notting Hill, W.11. [9288

AMERICAN X 1920 7-9h.p. Combination, dynamo lighting, screen, very good condition; £95.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9210

1920 American X, electric model, brand new condition, Grindlay super sidecar, equipped lavishly, many spares, hood, speedometer, screen, etc., insured £200; accept £110.—13, Grenfell Rd., Notting Hill, W.11. [9286

£62 below list price; final reduction to clear of last two combinations.—Brand new American X, latest model, royal blue finish, 27×3½ tyres, etc., fitted with special Millford bulbous back sidecar; £155; easy payments 4% extra. Write for end of season clearance list.—The Premier Motor Co., Aston Rd., Birmingham. [X2623

Ariel.

ARIEL 1919 3½h.p. and Swan sporting sidecar, lamps, tools, etc., condition excellent; £75, or offer.—126, The Grove, Ealing. [9117

ARIEL 3½h.p., new Aug. last, all on, solo; £80; owner leaving for India.—Jeffery, 26, Sussex Sq., Brighton. [7853

3½h.p. 1920 Ariel, newly sold in March last, speedometer, lamps, tax paid, done 1,300 miles; bargain, £77.—Ross, 86, High Rd., Lee. [8669

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Winecycle Co., Ltd., 236, High Holborn, W.C.1. [0704

ARIEL 3½h.p. 1920 Combination, Cancelet sidecar, all lamps and accessories, tyres very good; £68.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [9372

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £139; no extra charge for easy terms. [9253

1919 (Sept.) 6h.p. Ariel, with £35 sidecar, almost new, hood, screen, lamps, horn; a smart outfit; £85.—Attfield, 2, South Cottages, York Rd., Weybridge. [9085

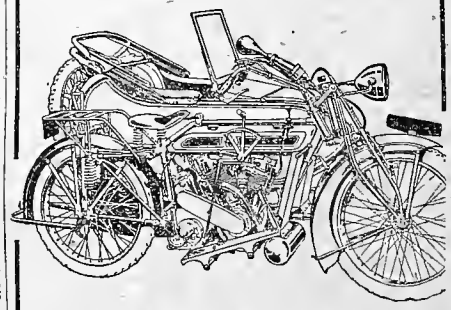
H. F. EDWARDS & CO.,
50, Harrington Rd., SOUTH KENSINGTON.

Phone: Kensington 3709.

All New 1922 Models Now Arriving:

B.S.A. **Harley-Davidson**
Douglas **Matchless Sports**
Enfield **Triumph**
Matchless **Zenith.**

If a 1922 MORGAN is your choice, consult us on the Morgan Stand!!



BRAND NEW 1921 MODELS AT SPECIALLY REDUCED PRICES.

MATCHLESS 8 h.p. Standard Combination	£157
MATCHLESS 8 h.p. Standard Combination, dynamo	£175
MATCHLESS 8 h.p. 2-seater Combination	£168
MATCHLESS 8 h.p. 2-seater, dynamo	£182
ENFIELD 8 h.p. Combination	£135
COULSON 2¾ h.p. Sports Model	£65

SECOND-HAND BARGAINS.

1921 3½ h.p. **P. & M.** Combination, Demonstration Model	£112
1921 4 h.p. **VERUS,** Blackburne engine, 3-speed	£78
1920 4 h.p. **BLACKBURNE** Combination, Lucas dynamo	£100
1920 2¾ h.p. **FRANCIS-BARNETT** 2-speed	£56
1920 6 h.p. **MARTINSYDE** Combination, 3-speed	£103
1920 3½ h.p. **RUDGE** and 35 guinea sidecar	£78
1921 **AERO-MORGAN,** special M.A.G. engine, front handle starter	£195 Gns.

Exchanges or Deferred Payments.

MOTOR CYCLES FOR SALE.

Ariel.

ARIEL 6-7h.p. Twin 3-speed Combination, horn, lamp, screen ready for the road; £57.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9212

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

Bat.

BAT Combination, 1920, 6h.p., 3-speed clutch and kick start, all-chain drive, accessories, splendid running condition; £65.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [9104

BAT-J.A.P., T.T., 90 bore, o.h.v., enamelled red, nickel-plated cylinders, nickel exhausts, Lucas accessories, just been thoroughly overhauled, posh, will paddle off, very fast 'bus; £70, or exchange.—F. Hill, The Grove, Love Lane, Oldswinford, Stourbridge. [8925

Beardmore.

1920 3½h.p. Beardmore-Precision Combination, electric and acetylene, insured, splendid condition; exchange more power; £65.—4, Elm Gardens, Hammersmith. [8877

Blackburne.

1920 Blackburne, full accessories, tax paid; £74.—Ross, 86, High Rd., Lee. [8670

1920 (late) 4h.p. Blackburne, 3-speed, clutch, K.S., all chain, lavishly equipped; £68.—24, Balliol Rd., North Kensington. [9138

1921 2¾h.p. Blackburne-engined Beaumont, 2-speed, kick starter, new, shop-soiled; to clear, £85.—Carnforth Motor Co., Carnforth. [9065

BLACKBURNE 1920 4h.p. Solo, semi-T.T. bars, 3-speed, kick start, fast, small mileage, splendid condition; £80, or best offer.—130, Inchmery Rd., Catford, S.E.6. [8749

Bown.

£36.—1920 Bown-Villiers, 2-speed, perfect, ride away, 2 up.—Ewers, Newton Rd., Burton-on-Trent. [9026

Bradbury.

4h.p. Bradbury, clutch model, £18; sidecar £4; licensed.—47, Leigh Rd., East Ham. [8928

BRADBURY 1922 Models.—Agents: Bright and Hayles, 78, Church St., Camberwell, London. [8791

BRADBURY Motor Cycle and C.B. Sidecar, 2-speed, free engine, accessories, engine No. 9778; price £45 the lot.—Below.

BRADBURY Motor Cycle and wicker goods carrier, 2-speed free engine, accessories, engine No. 9367; price £35 the lot.—Apply to the Purchasing Agent, Great Eastern Railway, Liverpool Street Station, E.C.2. [857

BRADBURY 4h.p. Coachbuilt Combination, tax paid, 3-speed, fully equipped; £38.—Speechley, 86, Churchfield Rd., Acton, W.3. [892

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Bradbury, new 1921, £70; and 6h.p. Bradbury combination, new 1921, £136; no extra charge for easy terms. [925

BRADBURY 4h.p. Combination, countershaft 2-speed, kick start, Easting, luggage grid, lamps, etc., tax and insurance paid, perfect order; any trial; £40.—Garaged, 78, Church St., Camberwell. [880

Spare Parts:

BRADBURY Spare Parts.—See our adverts under "Parts and Accessories.—Bright and Hayles, Camberwell. [879

Brough.

1921 Model W 3½h.p. Brough, 3-speed S.A., clutch and K.S., all chain, guaranteed 70 m.p.h., mileage 200; cost £135, accept £85.—24, Balliol Rd., North Kensington. [913

BROUGH (late 1920) 6h.p. Combination, Easting speedometer, electric lighting, insurance, terrific acceleration, all as new, cost £200; sell £127, or without lighting and speedometer £118; exchange for 1921 A.B.C. solo and cash.—Deane, Carnaby Chambers, Carnaby St., W.1. 'Phone: Regent 3703. [858

Brough Superior.

1921 Brough Superior and Montgomery Sporting sidecar, wind screen, Lucas lamps, miles 1,300, tax paid, speedometer; quick sale, £115.—Rootes, Ltd., Maidstone. [921

ALLEN-BENNETT Motor Co., Ltd., Service Depot and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 192 models at reduced prices. Mark I., 90×77½, o.h.v., 4-speed, clutch, and kick starter, £150; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [07

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MOTOR CYCLES FOR SALE.

Norton.

1919 Norton, B.R.S., Philipson, replated, re-enamelled, lamps, speedometer, all accessories, tools, fast; £80.—Tyler, 22, Stonway Rd., Coventry. [X2610

NORTON Big Four, July, 1921, excellent condition, complete, up-to-date improvements; £120, or exchange new 16H and £5.—11, Frankfort Rd., Herne Hill. [8691

1921 Special 3½h.p. Norton, racing gears, plated tank, guaranteed over 75 m.p.h., like new, and guaranteed for 3 months, electric lamps, special bars, etc.; cash £90.

1921 Norton Big 4 Solo, tax paid, guaranteed perfect; first £88.

1921 Norton, 17C, Lucas lamps, speedometer, etc., as new, and perfect; £105.

1916 Norton, 3-speed, chain-cum-belt, in sound order, lamps, tax paid; any trial; cash £69.—A. Jackson, East Parade, Keighley. [8666

1921 Big 4 Norton, £45 Henderson sidecar, £21 extras, including Easting, speedometer, cantilever saddle, Lucas lighting; nearest £120.—3, Kildowan Rd., Goodmayes. [9158

B.S. Norton 3½h.p., 1921, as new, 700 miles, 75 m.p.h., Philipson, discs, fast, but easy in traffic; £76, or exchange 16H, cash adjustment.—Tansey, 47, Shearbridge Rd., Bradford, Yorks. [8686

NORTON 1921 Big Four Combination, electric lighting, disc wheels, wind screen, speedometer, only done 5,000 miles, condition as new; £130.—Gascoyne, 7, Shakespeare St., Nottingham. [9089

NORTON.—Full representative stock 1922 models; immediate deliveries. Cash or exchanges; deferred payments 4% extra on balance.—Maudes', 100, Gt. Portland St., London; Walsall Garage, Walsall. [9387

NORTON 1921 Big Four, sporting sidecar, Lucas Magdyno, Lucas horn, Cowey speedometer, oversized tyres, as new; £160; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [8944

1921 Special I.O.M. 3½h.p. Norton, with Norton sports sidecar, 3-speed close ratio gear box, electric lighting, screen light, the outfit practically new and unscratched, mileage about 500; £125.—Pangbourne, 64, York St., Twickenham. [8717

ONE of the fastest Nortons in the country, having won 17 gold medals, March, 1921, special 3½h.p., close ratio gear box, complete with special racing Norton sidecar, etc., guaranteed over 80 m.p.h., condition new; £130.—Lyons, West St., Blackpool. [9032

1921 Big Four Norton and sporting sidecar, Lucas King of Road set, Lucas horn, everything complete, licence paid, absolutely as new, late owner just purchased car; cost over £182 August, 18th, 1921; sacrifice £115; any trial.—Gibb, Northgate, Gloucester. [9053

1921 Big Twin Norton and Henderson Elite sidecar, Lucas Magdyno, 700×80 oversize tyres all round, spare tyre, tubes, lighting bulbs, plugs, horn, wind screen, apron, and numerous spares, mileage 2,000, in perfect and spotless condition, and like new; price £145.—Walter Southworth, Smithy Lane, Holmeswood, near Ormskirk, Lancs. [8641

UNIQUE Opportunity to Speedmen and others.—1921 3½h.p. Norton, special competition model, fitted with Ricardo racing piston and close ratio 3-speed gear box, in new condition throughout, winner of many prizes in open competitions; price 97 gns. for quick sale; good reason given for selling.—Hackney, c/o Fidgeon, Fazeley, Tamworth. [X2666

1921 Norton 3½h.p., 3-speed, with brand new Canoelet sporting sidecar, aluminium colour to match tank, electric lighting, wind screen, horn, knee grips, and accessories, recently tuned at O'Donovan Motors, mileage about 1,000, smartest outfit in neighbourhood; £125, or near offer; absolutely perfect in every respect; call mornings.—54, Richmond Gardens, Shepherd's Bush, W.12. [9136

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, have every Norton part in stock; complete illustrated list post free. [9400

N.U.T.

1920 N.U.T., Magdyno, speedometer, splendid condition; £85; exchange.—Maynard, Lea Bridge, Leyton. [8138

N.U.T., T.T., o.h.v. twin, like lightning, as new; £50; cash wanted.—Write, R.H.H., 90, Rutland Rd., Forest Gate. [8848

N.U.T.-J.A.P. 3½h.p., 1920, overhead valves; £35; excellent order.—68, Gloucester Rd., Regent's Park, N.W. [9046

N.U.T.—Sole distributing agents for London, Surrey, Middlesex, Hertfordshire, Essex, Cornwall, Devon, Somerset, and Staffordshire; particularly attractive terms and sole districts being offered to sub-agents for 1922; immediate deliveries; cash or exchange; deferred payments 4% extra on balance.—Maudes, London, Exeter, and Walsall. [9388

O.K.

£29/10.—O.K.-Union 2¾h.p., 1921, perfect; would exchange.—8, High St., Wandsworth. [9305

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MOTOR CYCLES FOR SALE.

O.K.

1916 2¾h.p. 2-speed O.K. Model, good condition; £27.—Carnforth Motor Co., Carnforth. [9067

O.K. Junior 2-stroke, new April 21, condition excellent, tax paid; first reasonable offer.—Shorland, Babsham, Bognor. [7089

O.K. 4-stroke, M.A.G., Albion 2-speed, lamps, licence, new condition; £35; exchanges.—63, Solon Rd. Brixton. [8979

Omega.

1921 Omega, brand new, shop-soiled, 2¾h.p. Villiers, Mark IV. 2-speed gear; list £58; one only, £47/10.—Below.

1921 Omega, brand new, shop-soiled, 2¾h.p. Villiers, Mark IV. Sturmey-Archer 2-speed, clutch and kick starter; list £68; one only, £58.—Below.

1921 Omega, brand new, shop-soiled, 2¾h.p. J.A.P., 2-speed gear; list £75; one only, £60.—Below.

1921 Omega, brand new, shop-soiled, 2¾h.p. J.A.P., 2-speed, kick starter and clutch; list £83; one only, £66.—Bartletts, 93, Gt. Portland St., London. [9233

1917 Omega-Jap 2¾h.p., 2-speed, lamp, horn, taxed, excellent condition; £37.—182, Horninglow St., Burton-on-Trent. [8862

1920 2¾h.p. Omega-Jap, 2-speed, clutch, kick start, licensed, low mileage, electric lighting, also acetylene, big saddle, back-rest, Klaxon, speedometer, splendid condition; £56; exchange older high powered combination.—Carey, Home Farm, Basildon, Pangbourne, Berks. [8739

P. and M.

P.M. Combination, good order; trial; £48, offer.—38, Wallhutton Rd., Brockley, S.E. [8748

1918 P. and M. Combination, lamps, horn, tax paid, new condition; £62.—Ross, 86, High Rd., Lee. [8678

BARGAIN, 1918 P. and M., requires reassembling, good order; £34.—1, Bellingham Terace, Catford. [8934

£97.—P. and M., Millford sidecar, mileage 1,462.—Rev. Alwyn, St. Andrew's Vicarage, Hoyland, Barnsley. [X2638

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—3½h.p. P. and M. combination, late 1919, tax paid; £75. [9261

P. and M. 1918 Combination, replated and enamelled, taxed; £55; would separate.—50, Haverstock Hill, London, N.W.3. [8975

P. and M. Combination, in especially nice condition, accessories; £80.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9214

P. and M. 1919 and Sidecar, Cameo, pillion, accessories, spares; £85, or reasonable offer; licensed, insured £110; genuine bargain.—Bay Cottage, Cornsall, near Kidderminster. [8602

P. and M. Combination, 1918, Lucas lighting set, tyres new, Easting, Tan-Sad, all accessories, in perfect mechanical order; £50.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [9369

P. and M. Motor Cycles (ex-R.A.F.), rebuilt, fitted with new parts, including mag., B. and B. carburetter, tyres, etc., £40; combination £55; sidecar reupholstered, painted and new tyre, fully equipped, £60.—Porter, High St., Whitchurch, Salop. [8013

Precision.

£15.—2¼h.p. Precision, 2-speed, good tyres, running order.—King, Egreve Farm, Oxford. [X2663

Premier.

£15.—Premier, 3½h.p., T.T. Model, splendid condition; exchanges.—63, Solon Rd., Brixton. [8980

PREMIER 3½h.p., 3-speed, smart, perfect, £23; coachbuilt sidecar, £5/10.—17, Heaton Rd., Mitcham. [9126

PREMIER 1914 3½h.p. Combination, 3 speeds, kick starter, clutch, fully equipped, tax paid; £50; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [8947

PREMIER 3½h.p. 2-speed Combination, speedometer, hood, screen, new lamp, all spares, splendid condition; any trial; £55, or offer; owner buying car.—69, Berkshire Gardens, Palmer's Green, N. [8771

Spare Parts:

PREMIER Spares and Repairs. — We are the specialists, late with the manufacturers; stamped envelope for reply per return.—Forfield Motors, Forfield Place, Leamington Spa. [X2675

Quadrant.

1920 Quadrant Combination, aluminium disc wheels, very smart; £80.—Ross, 86, High Rd., Lee. [8679

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—Quadrant Combination, 5h.p., new 1921; £115; no extra charge for easy terms. [9263

SEVERAL 1921 Quadrant Combinations, all overhauled, £75 each. Orders now being booked for the 1922 "one hundred pounds combination." Sole wholesale distributers, repairers, and spare stockists, Clifford Wilson Mfg. Co., 177, Westminster Bridge Rd., S.E.1. Tel.: Hop. 210. Stand 22 Olympia. Exchanges, deferred payments. [8149

MOTOR CYCLES FOR SALE.

Radco.

RADCO 2-stroke, tax paid; £22.—P., 602, King's Rd., Fulham, S.W.6. [9034

Raleigh.

PREMIER Motor Co. for Raleighs.

IMMEDIATE delivery at 1922 reduced prices.

5-6h.p., 3-speed, spring frame, detachable wheels, £130; standard sidecar, £35; De Luxe sidecar, £42; spare wheel and tyre, £6. The Raleigh is now the best value in high-grade combinations. Easy payments only 4% extra.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0626

1922 Raleigh.—All models; book now with Sam E. Clapham (Motors), Greenwich. [9247

RALEIGH 1921 5-6h.p., with Grindlay club sidecar, very special outfit; £150, or exchange.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9205

RALEIGH 2¾h.p., 3h.p., and 5-6h.p. solos and combinations for earliest delivery, machines always on view; call for trial run. Cash, exchange, deferred payments; quite near to Olympia.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9196

THE New Raleigh 2¾h.p. 4-stroke Lightweight, 2-speed, with clutch and kick starter, at £68, is the best value offered the motor cyclist for the 1922 season; orders now booking for January delivery.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0737

Rex

REX 1914 6-8h.p. Twin Combination, 2-seater sidecar, wind screen, lamps, etc.; £57/10.—Edwardes, 277, Camberwell Rd., S.E. [8995

1920 8h.p. Rex-Blackburne Combination, complete, lamp, screen, spare wheel; great bargain, 90 gns.—White, 46, Chalk Farm Rd., N.W. [X2350

REX 6h.p., Matchless sidecar, screen, electric light, handle start, spares; £45, or offer.—Spencer, 2, St. Mary's Rd., Merton Park, S.W.19. [9345

Roc.

3½h.p. Roc and Sidecar, gears, less unit; exchange cycle or sell; offers.—Box 173, c/o *The Motor Cycle*. [9107

Rover.

1920 (Aug.) T.T. Rover, as new, Philipson pulley, all accessories; £65.—Heady, 44, Alma Rd., Carshalton. [9010

1919 3½h.p. Rover, 3-speed, countershaft, P.H. lamps, indistinguishable from new; £62/10.—37, Arlington Rd., Surbiton. [9128

ROVER, 1921, 5-6h.p. J.A.P., Gloria sidecar, screen, hood, luggage carrier, splendid condition; sacrifice £90.—Lydia, High St., Dunmow. [9154

ROVER 3½h.p. T.T. Speed Model, complete with lamps, horn, etc., condition as new; £68.—H. J. Marston, 50, Argyle St., Birkenhead. [8694

ROVER 3½h.p., single-speed model, first-class running order; £22.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9208

THIS Week's Bargain.—1920 5-6h.p. Rover combination, luxuriously equipped, cost £200, perfect; sacrifice, 95 gns., lowest.—1, Priory Rd., Kew Green. [9133

1919 6h.p. Rover Combination, as new, very low mileage, new limousine sidecar, lamps, horn, etc., beautiful outfit; £82/10.—10, Rockbourne Rd., Forest Hill. [9092

ROVER Combination, 1913-14, 3 speeds, 3½h.p., lamps, etc., luggage grid, splendid condition; £35.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

1914 3½h.p. Rover Combination, countershaft variable gear, clutch, K.S., Binks, Best mechanical lubrication, electrics, Cowey horn, etc., licensed; £39.—81, Richmond Rd., Thornton Heath. (D) [X2635

ROVER 6h.p. Combination, 3-speed, countershaft, all-chain drive, lamps, etc., absolutely unscratched, mileage 2,400; bargain, £80, or exchange lightweight with cash.—Snow, Laurel St., Dalston, E.8. [9340

1920 (late) Rover 5-6h.p. Combination, perfect, fully equipped, small mileage, wide leg, wheel guards, long exhaust, mat, apron, screen, tools; £130, or exchange with cash 2-seater.—R.B., 62, Hindes Rd., Harrow. [8753

Royal Ruby.

ROYAL RUBY, Jap 4h.p., latest Sturmey gear, kick start, clutch; £60; exchanges.—2a, Queen St., Fenton, Staffordshire. [X2655

1918 8h.p. Royal Ruby-Jap Combination, fully equipped, engine overhauled by J.A.P. Oct. 12, splendid condition; offers.—Wride, Kingswood, Bristol. [8593

Rudge.

3½h.p. Rudge, fixed, sound, Binks, discs; £25.—Hickman's Garage, Crown St., Acton. [8833

RUDGE 3½h.p., Cox Atmos, good condition; £28.—Leaver, 23, Church Rd., Teddington. [8613

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MOTOR CYCLES FOR SALE.

Rudge.

3½h.p. I.O.M. Rudge Multi, all on, licence, perfect; £32/10.—17, Heaton Rd., Mitcham. [9124

£45.—1919 3½h.p. I.O.M. Rudge, in perfect order; any trial; tax paid.—116, Albert Rd., Ilford. [9155

RUDGE 3-speed Coachbuilt Combination; £27, bargain, no offers.—635, Harrow Rd., Paddington. [8889

1921 Rudge 7-9h.p. Twin Combination, ridden 200 miles only; bargain, £110.—Bartletts, 93, Gt. Portland St., W. [9236

1921 3½h.p. semi-T.T. Rudge Multi, electric, tax paid, not done 500 miles; bargain, £80.—Rootes, Ltd., Maidstone. [9223

RUDGE 3½h.p. T.T. Multi, 1921 model, with Lucas lamps, horn, etc., slightly used; £65.—H. J. Marston, 50, Argyle St., Birkenhead. [8698

1916 Rudge Multi, 3½h.p., C.B. sidecar, lamps, spares, etc., splendid condition; London; £55.—Box 7,498, c/o *The Motor Cycle*. [9278

1921 3½h.p. Rudge Multi Combination, Rudge sidecar, all accessories, done less than 500 miles; £85.—Pangbourne, 64, York St., Twickenham. [8716

1916 3½h.p. Rudge Multi, clutch, kick starter, lamps, licence, accessories, speedometer, new condition; £50; exchanges.—63, Solon Rd., Brixton. [8981

RUDGE Multi 3½h.p., T.T. footrest model, late 1920, complete with Lucas lamps, Klaxon horn, first-class condition; £55.—H. J. Marston, 50, Argyle St., Birkenhead. [8692

RUDGE Multi, 1921, new, shop-soiled, Isle of Man model, pedal start; bargain, £72/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

RUDGE Multi 3½h.p. 1917 Sporting Combination, C.B., splendid condition; exchange solo Douglas, Brough, etc., condition immaterial.—14, Ecclesbourne Rd., Islington, N.1. [9112

3½h.p. Rudge Multi, late 1919, sporting model, T.T. handle-bars, fitted with polished copper exhaust pipe, and lighting set, excellent condition; accept £50.—5, Beauty Bank, Old Hill, Staffs. [8684

RUDGE 3½h.p., Isle of Man model, Bonniksen, electric lamps, horn, absolutely as new, £75; also 1920 model, £65.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9206

1920 Rudge Coachbuilt Combination, 5-6h.p., Multi gear, clutch, kick starter, lamps, speedometer, Easting screen, almost new, written guarantee; sacrifice £79/15, close offer; appointment.—24, Granard Rd., Wandsworth Common, S.W.12. [9185

RUDGE Multi, sports, bought last March, mileage 3,000, Lucas head lamp, electric tail, overlap and standard cams, long Coulson type exhaust pipe, mechanically perfect, well looked after; £60.—F. H. Bevan, Shortacres, Nutfield, Surrey. [9062

Spare Parts:

RUDGE Multi Spares.—Try Banister and Botten; half list; good stock. — 341, Upper St., N.1. 2480 North. [9099

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Rudge parts in stock; complete illustrated list post free. [9401

Scott.

CROSS, Effingham Sq., is agent for Scott motors for Rotherham and district. [X2650

SCOTT 3¾h.p., 2-speed, mechanically perfect, good appearance; £26.—17, Heaton Rd., Mitcham. [9127

F.O.C.H. have a 1920 Scott Combination and nearly new solo.—5, Heath St., Hampstead (nr. Hampstead Tube Station). [8839

£40.—Scott combination, 1915, lamp, speedometer, 2-speed, kick start, machine perfect.—H. Clark, Spring Rd., Littlemore, Oxford. [8761

1919 Scott Combination, engine 3862, electric lighting, genuine Scott car, condition good; price £65.—Welford, James St., Brighton. [9787

SCOTT 3¾h.p. Combination, very late model, special to clear; £72.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9211

1920 Scott Combination, complete, as new, original tyres, not done 500 miles, guaranteed perfect £120, or offers.—Whitchurch (Hants) Engineering Works. [8766

SCOTT late 1920, very little mileage, condition as new, Lucas lamps, horn and, all accessories; £75.—Colonial Motors, 104a, Finchley Rd., Hampstead. 7822. [9371

3¾h.p. Scott, new lamps, horn, carburetter, and tool kit, guaranteed first-class condition, any inspection or trial, tax paid; special offer; £48.—Rootes, Ltd., Maidstone. [9223

Spare Parts:

SCOTT Motor Cycles, Scott Sociables, Scott spares, Scott repairs, Scott gears overhauled.—Cathedral Motor Works, 99, Gt. George St., Liverpool. [939

SCOTT Parts.—We can quote you promptly for any thing in the Scott line, new or second-hand.—Ward Motors, Ltd., the Scott Specialists, 32, Hustle St., Bradford. [073

MOTOR CYCLES FOR SALE.

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Spare Parts:

VERY, Very Seldom are we asked for a Triumph or Sturmey-Archer part which we cannot supply at once, even to the smallest nuts. But no ex-Army dump stuff.—Gray and Levin, 5, The Boulevard, Balham, S.W. Tel.: Streatham 2417 [7902

TRIUMPH Parts, 1904 to 1921.—Every part, any year, in stock, new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X2676

Trump.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—2¾h.p. Trump-Jap, 2-speed model, new 1922 £60; easy terms arranged. [9259

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—New late 1921 3½h.p. Trump-Jap, fitted with latest J.A.P. engine, overhead valves, 3-speed model, road racing machine; £75; no extra charge for easy terms. [9260

Velocette.

"WAIT and See" Jack Healy of Cork on Velocette Stand, rider and agent. Garage: Drinan St. [X2547

19 19 Velocette, 2-speed, acetylene lighting, horn; £35 —Victor Horsman, 7, Mount Pleasant, Liverpool. [X2564

19 22 Velocette, clutch and kick starter.—Early delivery from the Premier Motor Co., Aston Rd., Birmingham. [X2625

19 21 Velocette, 2-speed, perfect condition, ready to ride away; £50.—Victor Horsman, 7, Mount Pleasant, Liverpool. [X2558

VELOCETTE New 1920 2-speed Model, shop-soiled only, with lamps and horn complete; 50 gns.—Farrer, 1, Princes Parade, Church End, Finchley. [7019

VELOCETTE, 1921, 249 c.c., 2-speed, small mileage, many refinements, particularly sound and attractive machine; good reason for sale; £45; seen London district any time.—Box 7,446, c/o *The Motor Cycle*. [8580

NEW Velocette 1921 Models at enormous reductions, all with internal expanding brakes to both wheels, and other latest improvements; 2-speed £55, 3-speed £62. ladies' open frame 2-speed £55; sent on approval; easy payments 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X2626

Verus.

19 20 Lightweight Verus, Burman gear box, kick starter, lamps, horn, tax paid, original tyres; £40.—Rootes, Ltd., Maidstone. [9224

19 20 Verus 2¼h.p., single speed, good as new, electric light outfit, good accessories, suit overalls (5ft. 6in.), tax paid, insurance; lot cost over £70; best offer over £45 accepted; London, S.W. district.—Box 7,378, c/o *The Motor Cycle*. [7905

Werner.

WERNER 2½h.p., good tyres, low position, less magneto; £6.—7, Davids Rd., Forest Hill, S.E. [8866

WERNER 2½h.p., mag., Senspray carburetter, running order; £6/10.—Bunclark, Chapel Rd., Tadworth, Surrey. [8756

Wilkin.

19 20 4h.p. Wilkin-Blackburne Combination, Magdyno lighting; £105.—Victor Horsman, 7, Mount Pleasant, Liverpool. [X2556

Wolf.

WOLF 1½h.p., perfect running order; bargain, £13. —66, Dalmeny Av., Norbury, S.W.16. [9115

WOLF.—Sole agents for London, South of Thames, and district. We are now fixing sub-agencies, and invite enquiries.—Burlington Motors, Ltd., South Side, Clapham Common, S.W.4. 'Phone: Brixton 1417. [0508

Wooler.

19 20 2¾h.p. Wooler, lamps, horn, done about 3,000 miles; offers.—Lane, Beanacre Rd., Melksham. [8762

WOOLER, late 1920, 3h.p. twin, lamps, etc., guaranteed mechanically; bargain, £45.—Elce, Ltd., 5-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

Zenith.

LOOK Out For Julians of Reading on Zenith stand. [8705

19 20 Zenith Combination, as new; £82.—24, Balliol Rd., North Kensington. [9143

TIPPEN, Marden, Kent, for immediate delivery of 1922 Zenith Bradshaws; price £118. [8082

F.O.C.H. for 1922 Zeniths.—5, Heath St., Hampstead (near Hampstead Tube Station). [8841

ZENITH 5h.p. Sports, 1916, equipped, good condition; £70, or offer.—8, The Avenue, Chingford. [8915

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Zenith-Bradshaw, new 1922; £118; easy terms arranged. [9265

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John W. Tollady—to his friends.

DEAR MEN,

It has always been customary for me to ask all our friends who visit the Show to give me a look up whilst they are there, and this year I extend the most cordial invitation to you all to spend a few minutes with me at either the **Enfield** or the **Triumph** Stands, at one of which I shall generally be found. My invitation applies to those old friends of ours who I have met year after year, and, of course, equally to those other friends who, so far, I have only met by post.

I shall be prepared, and shall have difficulty, because of my enthusiasm, in preventing myself from talking Motor Cycles; but my principle object in asking you to come along is really—as I think you know—because I wish to thank you for your kindness to me and my firm. From all parts of the country letters of thanks for what we have done have come to us, and I want to tell you how grateful I am to **you** for the help **you** have given **us**, and to prove to you that, as I grow older, I realise more the meaning of the word "friendship."

Many of you know I shall definitely look for you personally, and I know you won't disappoint me; but the more of you that come, the happier I shall be, and the very last thing that will be in my mind will be to introduce or force a sale. It is **you** I want, and your order must go just where you think best.

If we do talk Motor Cycles, I have many interesting things to tell you. Amongst others, about my 1921 stud of Racing Motor Cycles, which is now for sale. The machines include my winning Scott (the first Scott that ever won at Brooklands). I am also prepared to sell a very special Works Sunbeam, capable of touching thereabouts 80 m.p.h., and if someone who will be kind to the machine comes along, I will even dispose of my little Velocette, which, apart from three awards at Brooklands, has a small hatfull of medals to its credit. Additionally, I can offer a special Velocette that was built for the 1921 Tourist Trophy Race, and I can assure you that if you intend to take up competition work for next season, any one of these machines should carry you home a winner without any special tuning whatever. Anyway, the machines are for sale, and I shall be glad to give you any details at the Show.

Our Agencies for 1922 are cut down considerably, as I intend to offer you the best lines only. The list includes:

ARIEL, B.S.A., DOUGLAS, ENFIELD, HUMBER, MATCHLESS, NORTON, RUDGE, SCOTT, TRIUMPH, and **VELOCETTE;**

but we shall be able to supply any other make that interests you, and will be happy to advise you impartially regarding any make.

Additionally we are Agents for **BELSIZE-BRADSHAW, CROUCH, ROVER,** and other, Light Cars, and, as you may be considering the purchase of something of this type, my advice and experience are at your disposal, and Exchanges can be arranged if you wish.

Still, the most important point is that you should come and talk to me—and I feel sure you won't disappoint me.

Kind regards to you all. Yours faithfully,
JOHN W. TOLLADY, General Manager.

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MOTOR CYCLES FOR SALE.

Zenith.

19 22 Zenith-Bradshaw, Gradua gear model; £113.

19 22 Zenith-Bradshaw, 3-speed, all chain; £119.

ALLAN GRUZELIER offers the following deliveries: Gradua gear model, immediately; 3-speed chain model, January.

IF You Want Early Delivery you must order to-day. The show at Olympia will make all the difference to deliveries, because Stand 74 will be the centre of attraction.

WRITE To-day for detailed specification, or, better still, call and see me and let me describe it, and remember when you purchase from me you have a specialised Zenith service always at hand, backed by 10 years' practical experience of these machines.

ALLAN GRUZELIER; London office, 168, Regent St., W.; showrooms and works, Reeves' Garage, High St., Purley. 'Phones: Regent 205, Purley 1178. [9269

£70 Only.—1919½ 5h.p. Sports Zenith, well equipped, beautiful condition.—H.E.G., 33, Graham Rd., Wimbledon. [8108

19 14 8h.p. 90 bore Zenith Combination, side-by-side, acetylene lighting, Easting wind screen, aluminium sidecar; £80.—Below.

19 20 2¾h.p. Flat Twin Zenith, like new; £75.—Victor Horsman, 7, Mount Pleasant, Liverpool. [X2559

19 15 5-6h.p. C.S. Zenith Combination, new aluminium sidecar, electric lighting; £65.—Ross, 86, High Rd., Lee. [8681

19 21 5-6h.p. Zenith, run 500 miles, in new condition, complete; £95. — Carnforth Motor Co., Carnforth. [9069

ZENITH, 5h.p., 1920, in beautiful condition, special trials machine; £75.—Ratcliffe Bros., 200, Gt. Portland St., W. [9074

19 20 8h.p. Countershaft Zenith Combination, good condition, speedometer, carefully used; £115.—53, Brixton Rd., S.W.9. [8195

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw, price £118. [0711

£60.—1915 8h.p. Zenith C.B. combination, complete all accessories, licence paid, new tyres and belt.—F. Grout, Milgate Park, Maidstone. [8923

ZENITH 5h.p. 1917 Combination, clutch, K.S., 2 new tyres, electric lighting, fine condition, any trial; £62; offers.—30, Canonbury Park North, N.1. [9044

ZENITH Combination, wicker sidecar, electric lamps, horn, speedometer, excellent condition, 6h.p. J.A.P.; £65, or near.—202, Trinity Rd., S.W.17. [9315

19 20 5h.p. Zenith Combination, countershaft, new Cancelet sidecar, Eastings, electric lighting, Cowey horn, speedometer, disc, spares; £130.—Fison, Sudbury, Suffolk. [8765

ZENITH 1919 5h.p. Sports, perfect, equipped, low mileage, only taxed this month, stored all year; genuine bargain, 65 gns.; deliver 100 miles.—486, Radcliffe Rd., Bolton. [8658

ZENITH-BRADSHAW 1922 Models in Stock, all models supplied. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9199

ZENITH 3½h.p., countershaft model, clutch and kick start, with good sidecar, really excellent condition; £57.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9213

19 20 Zenith Combination, 8h.p., very little used, condition as new, electric light, speedometer, etc.; £120, or near offer, exceptional bargain.—C.M.I., Ltd., 118a, Finchley Rd., N.W.3. 'Phone: Hamp 1971. [8791

ZENITH 1921 8h.p. Clutch Combination, electric horn and lighting, Easting, speedometer, special pillion, grid, spare belt, etc., fast, perfect bus; £145; trial after 6 p.m.—252, St. Ann's Rd., Tottenham. [8998

19 22 Zenith-Bradshaw in stock for immediate delivery; £118; cash, exchange, or extended payments.—Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0734

ZENITH 1920 6h.p. Sporting Combination, Lucas head, rear and sidecar lamps, Cowey speedometer, knee grips, Ace discs, luggage grid, as new; £140; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [8949

ZENITH Combination de Luxe, 1920, 8h.p., countershaft, clutch, kick start, speedometer, disc wheels, F.R.S. electric lighting, condition as new, mileage 1,500; £120.—Ayers, 254a, Portobello Rd., North Kensington, London (10 minutes from Olympia). 'Phone: 643 Park. [9360

ZENITH 8h.p. Sporting Model, 1920 competition (side valve) engine in 1919 frame, in perfect condition and very fast, Senspray carburetter, horn, full toolkit, spare partly worn cover, etc., recently overhauled and re-enamelled grey; must sell; no reasonable offer refused.—Mallet, 16, St. John St., Oxford. [8641

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Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths' Motories, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10; 1919 6h.p. James combination, lamps, speedometer, £89/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 2 speeds, clutch, kick starter, lamps, speedometer, £42/10/6; free engine Triumph, £22/10/6.—Booths' Motories, Halifax.

BARGAINS.—1916 O.W.K. light car, detachable wheels, £139/10/6; 1920 Williamson combination, dynamo lighting, £115/10/6.—Booths' Motories, Halifax.

BARGAINS.—8h.p. Premier combination, £55/10/6; 1914 P. and M., £35/10/6; late model twin N.S.U., speed gear, £19/10/6.—Booths' Motories, Halifax.

BARGAINS.—1919 4h.p. Douglas combination, £89/10/6; another, electric lighting, £95/10/6.—Booths' Motories, Halifax.

BARGAINS.—1920 Morgan, M.A.G. engine, speedometer, £165/10/6; 1920 Wooler, £49/19/6; 1920 3½h.p. Ariel combination, £87/19/6; nearly new O.K. Union, £29/19/6.—Booths' Motories, Halifax.

BARGAIN.—Harley-Davidson combination, mileage 300, £139/10/6; 3h.p. Humber, £10/10/6; 3h.p. Enfield, speed gear, £29/10/6; 8h.p. Chater-Lea, Grade gear, £19/19/6.—Booths' Motories, Halifax.

BARGAINS.—5h.p. 1921 shop-soiled Quadrant combination, £115/10/6; 1917 4h.p. Douglas, £59/15/6; 1915 Douglas, £35/17/6.—Booths' Motories, Halifax.

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths' Motories Portland Place, Halifax. Tel.: 1062. [8198

HALIFAX Motor Exchange, Horton St., Halifax.—A.J.S. 1919 combination, £135; Ariel 3½h.p. 1920 combination, £97/10.

HALIFAX.—Ariel 3½h.p., 1920, £79/10; 1920 Alecto 3½h.p. 2-speed combination, £79/10.—Below.

HALIFAX.—Alecto 1920 3½h.p., 2-speed, £62/10; 1921 Beardmore-Precision 3½h.p., spring frame, £69/10.—Below.

HALIFAX.—B.S.A. 1915 4¼h.p. combination, £79/10; Bradbury 3½h.p. 3-speed combination, £59/10.—Below.

HALIFAX. — Chater-Lea 8h.p. combination, £85; 1919 2¾h.p. Calthorpe-Jap, 2 speeds, £45; Excelsior 1920 2½h.p., 2-speed, £42/10; Edmund 1920 2¾h.p., spring frame, £65.—Below.

HALIFAX.—Harley 1920 electrical combination, £155; Harley, 1918, with 1920 Henderson sidecar, £115.—Below.

HALIFAX.—Henderson 4-cyl. combination, £165; Humber 1914 3½h.p. combination, £49/10.—Below.

HALIFAX.—Very smart 1920 Indian Scout, £95; 1916 O.K. 2¼h.p., 2-speed, £35.—Below.

HALIFAX.—2¾h.p. New Imperial, 2 speeds, £35; 1921 Beardmore-Precision, £65.—Below.

HALIFAX.—Rex 6h.p. 2-speed combination, £49/10; Rudge 1920 7-9h.p. combination, £105.—Below.

HALIFAX. — Scott 1920 3¾h.p. combination, £115; Triumph 1913, handle-bar controlled clutch, £42/10.—Below.

HALIFAX.—Triumph 4h.p. 3-speed combination, £69/10; Peugeot, 7-9h.p., 2-speed, £37/10.—Below.

HALIFAX.—1920 3½h.p. I.O.M. Rudge, £65; 3½h.p. 2-speed Humber, £25; 1920 Kingsbury Junior, 2-speed, £45.—Below.

HALIFAX.—Sunbeam 8h.p. Magdyno combination, very special equipment, £197/10, like new.—Below.

HALIFAX.—1921 P. and M. speedometer, etc., like new, £92/10; Indian 7-9h.p. 2-speed combination, £55.—Below.

HALIFAX.—1916 Rudge Multi 3½h.p., £47/10; 1920 2¾h.p. Wooler, £55.—Address below.

HALIFAX.—Zenith-Gradua 6h.p. twin combination, £57/10; 8h.p. countershaft Zenith combination, £85; deferred payments quoted.—Halifax Motor Exchange, Horton St., Halifax. [8859

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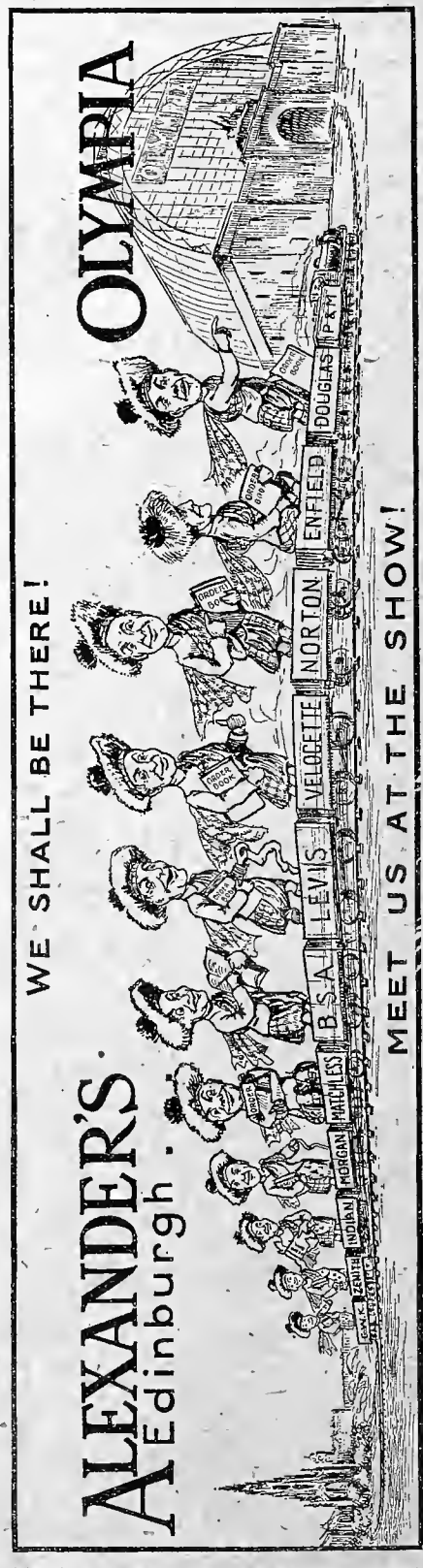

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WANDSWORTH.—Wolf, 2½h.p. J.A.P., mag., 3 speeds, drive away; 29 gns.; easy terms.

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WANDSWORTH.—1918 O.K., 2¾h.p. J.A.P., 2 speeds, kick, lamp; 42 gns.; easy terms.

WANDSWORTH.—1920 Kenilworth 1¼h.p., lamps, licensed, starts walking, beauty; 25 gns.; easy terms.

WANDSWORTH.—Motosacoche, 2½h.p., mag., variable gear, licensed, runs splendidly; 23 gns.; easy terms.

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8h.p. Combination, £105; late 1919, Middleton spring wheel touring sidecar, Bluemel's wind screen, all-black and gold, Low generator, electric rear, speedometer, Tan-Sad, lamps, etc., special frame, fast, exhaustive test; private owner.—S. and B. Motors, King's College Rd., Swiss Cottage, N.W. [8933

2¼h.p. Levis Motor Cycle, running order, tax paid, £24; 1914 Crouch cycle car, 3-speeds and reverse, hood, screen, lamps, etc., running order, £75; American-X Combination, 7-9h.p., good running order, £90.—Scotia Motor Works, 80, Upper Tooting Rd., London, S.W.17. 'Phone: Streatham 2707. [8985

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1921 Grand Prix Morgan, lavishly equipped, unscratched; £150.—(Side bell), 9, Wallingford Av., North Kensington, W.10. [8963

COVENTRY Premier, 1922, 4-wheel model; £250; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

G.N., 1920, red, black, dynamo lighting, discs, over-size tyres, repainted, upholstered, etc., as new; bargain, £155.—1, Kingston Grove, Leeds. [9008

1921 Tamplin, with lamps and tools, only run 200 miles; £115, or near offer.—C.M.L., Ltd., 118a, Finchley Rd., N.W.3. 'Phone: Hamp. 1971. [8789

READING-STANDARD 10h.p. Twin, 3 wheels, 3-speed, carrier, used 3-4-seater, perfect, any trial; £48.—Hedges, 21, Chichester St., Paddington. [9090

MORGAN Water-cooled de Luxe, 1916, discs, lamps, horn, tax, etc.; £97/10 cash; worth £135.—Maude's Motor Mart, 100, Paris St., Exeter. [9226

MORGAN, G.P., 1921, M.A.G., £140; also Bleriot Whippet, hand starter, £100; offers, exchanges.—1, Netherhall Gardens, N.W. Hampstead 566. [8880

3-WHEELED Runabout, friction drive, water-cooled, good condition, for Clyno or high power solo or combination.—8, Eastholme, Hayes, Middlesex. [8883

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MORGAN Grand Prix, 1921-22, M.A.G., special gear ratios, discs, speedometer, aluminium dash, Lucas dynamo lighting, mileage 200; cost £240; sacrifice £215 cash, or exchange.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

HALIFAX.—G.N., 1920, dynamo lighting, £165; Morgan 8h.p., £105; another, with hood and screen, £95.—Halifax Motor Exchange, Horton St., Halifax. [8658

HARDEN 2-seater, 1921 (Aug.), hood, wind screen, electric lighting, all accessories, tax paid; £110. Chatsworth House, Derby Rd., Ponders End, N. [9123

NEW and Second-hand Light Cars and Cycle Cars all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn W.C.1. [0673

CYCLE Car, 8-10h.p. J.A.P. engine, friction and chain drive, complete with lamps, tools, etc., requires small adjustments; £50, close offer.—Bond, Crasted. [8783

1921 Coventry Premier W.C. Super Runabout, electric lighting, excellent condition, for modern 4-seater car; cash adjustment.—Box 7,504, c/o *The Motor Cycle*. [9285

BAYLISS-THOMAS, 1922 10h.p. model, 4-cyl. water-cooled engine, 3 speeds, Magdyno; 300 gns; immediate delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0736

MORGAN 1921 G.P., M.A.G., water-cooled, special body and engine, hood, screen, discs, lamps; trial; open any time; bargain, £155.—Nicholson, Ebchester, Co. Durham. [8727

1920 De Luxe Morgan, M.A.G. water-cooled engine, small mileage, fully equipped; £140.—Hillier, Thorpe Mews, Cambridge Gardens, North Kensington, W.10. [8964

MORGAN 1918 de luxe Model, electric lighting, perfect order and condition, 70 miles per gallon; kept 100 gns.—Martin, 10, Herbrand St., W.C. Museum 6594. [8582

MORGAN, G.P., 1919, w.c. J.A.P., just repainted, new hood, 4 lamps, licensed, new spare cover and tube, splendid condition; £145.—Hardy, 45, Beauchamp Rd., Leamington. [X2640

1921 G.N. Touring, dynamo lighting, spare wheel, fullest equipment, brand new condition; £190; or 1921 Triumph S.C. part payment.—294, Kennington Park Rd., S.E.11. [9018

1922 G.N. Cars, latest models for immediate delivery. Buy of the authorised agent. Extended payments or exchanges arranged.—A. P. Rey, 378-384, Euston Rd. 'Phone: Museum 6436. [8425

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A.C., splendid 2-seater, wheel steering, 5-6h.p., 2 speeds, hood, screen, licensed, very smart; bargain, 58 gns.; exchange combination; also easy terms.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). [9185

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£350 cash secures genuine 15.9h.p. 1914 Theo. Schneider ¾ landaulet, Bedford cord, magnificent order.—Palmer's Garage, Tooting.

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£425 cash secures 11h.p. 1921 Peugeot 4-seater, self-starting, dynamo lighting.—Palmer's Garage, Tooting. [9193

PERRY 8h.p. Twin 2-seater, 5 wheels, equipped; £95.—Hillrise, Surbiton Hill Rd., S.W. [X2609

MATHIS 1914 8h.p. 2-seater, dynamo, 5 good tyres; £125; exchanges.—54, Coval Rd., Mortlake. [X2607

G.W.K. 1915, every part and appearance as new, 5 wheels, equipped; £125.—54, Coval Rd., Mortlake. [X2608

ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

G.N., 1920, dynamo, spare wheel and parts, in good running order, licensed; £145.—Cannel, Cove, Farnborough, Hants. [9000

10h.p. 2-cyl. De Dion, Bosch, Zenith, body incomplete; £65, or exchange combination.—Bonner, 1, Bridgeway, Wembley. [9313

1920 2-seater, 8h.p., 4-cyl., C.A.V., perfect, £175; accept single or combination in part.—Miss Watts, c/o 77, Acre Lane, S.W.2. [9057

COVENTRY PREMIER, 1921, dickey seater, dynamo lighting, spare wheel, as new; £165.—Ratcliffe Bros., 200, Gt. Portland St., W. [9079

6½h.p. Humber Car, good running order; trial; £35, or nearest reasonable offer; cash needed.—F. Godwin, Hill Ridware, Rugeley, Staffs. [6646

ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220; terms cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0729

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1914 Humberette, water-cooled, hood, screen, lamps, speedometer, Stepney, just overhauled, drive 50 miles to purchaser; £120.—Such, Prestbury, Cheltenham. [X2634

CADILLAC 30h.p. 8-cyl. Touring Car, dynamo lighting and starting, 1917; £275; accept motor cycle in exchange.—J. Daniels, 8, Crowhurst Rd., Brixton, S.W.9. [9056

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WEST NORWOOD.—10h.p. 1915 Whiting-Grant light car, 4-cyl., monobloc, £120; 12h.p. 4-cyl. Darracq torpedo, detachable wheels, £125.

COX.—Coupe light car, 8-10h.p., 1913, exceptionally smart, £125; G.W.K. 2-seater, good, £135.

WEST NORWOOD.—12h.p. Gladiator 4-seat torpedo, £145; Ford 1-ton, £145; 18h.p. 6-cyl. streamline torpedo, £150.

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P. and M. Engine, frame, and gear, late, perfect; £10/10.—1, Springfield Park Cres., Catford, S.E.6. [9274

7-9h.p. Harley Engine, 1919, perfect, with Schebler and mag.; £32.—7, St. Mark's Mansions, N.4. [9406

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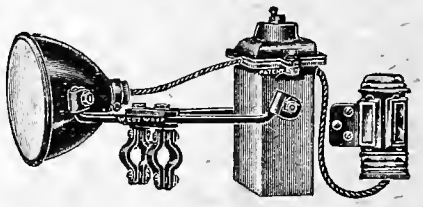

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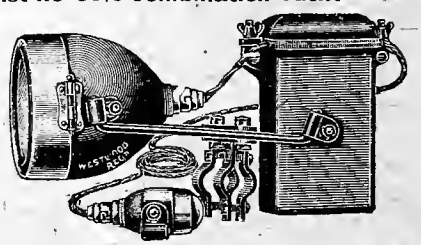

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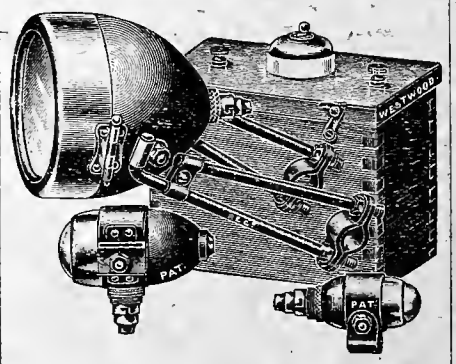

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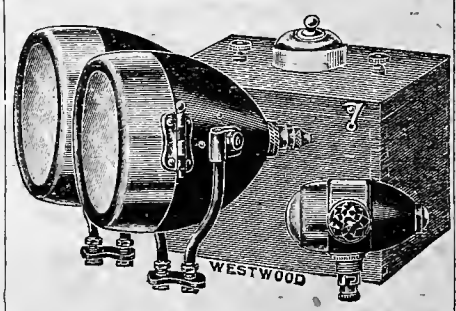

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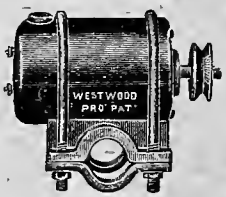

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1919 5h.p. J.A.P. Engine, very little used, in perfect condition throughout, complete with mag.; £20.—R. B. Pullin, The Warren, Northolt Junction, Middlesex. [9061

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PARTNER required for small cinema, capital about £250.—Garage, Keal Cotes, Spilsby. [X2437

YOUNG Man desires working partnership in motor cycle business; invest small capital.—49, Well St., Hackney. [8751

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SALESMAN wanted to specialise in Ford cars; also several best English car agencies; first-class opportunity for the right man; South Cheshire.—Apply, stating wages and commission required, Chetwood's Garage, Nantwich, Cheshire. [9379

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WANTED.

1 and M. Twin Engine, good condition.—Davies, 59, Piccadilly, Manchester. [X2438

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CYCLECAR Wanted, light, about 8h.p., or unfinished.—24, Lettia Rd., Selly Oak. [8585

N.S.U. Gear, fit Triumph, any condition; cheap.—250, New John St., W. Birmingham. [X2486

ENGINE, 6h.p., n.i.v. J.A.P. preferred; other makes considered.—49, Westbury Rd., E.17. [8836

CRANKSHAFT and cylinder for 4-cyl. T.A.C.—Shackleton, 27, Midland Terrace, Keighley. [9011

WANTED, 1914 Henderson cylinder and piston, cheap.—Brown, 5, Forgate, Kilmarnock, Ayrshire. [8687

CRANK Case, flywheel, pulley, and exhaust release, for Baby Levis.—Longhurst, Sunnybank, Ewell. [8873

WANTED, acetylene lamp; exchange new saddle or electric lamp, or sell either.—28, Elgin St., Sheffield. [9311

LARGE Sidecar for Indian, left side starter; lowest price.—Billingsley, 140, Gt. Western Rd., Westbourne Park. [8846

WANTED, second-hand Morgans, in good condition.—A. P. Rey, 378-384, Euston Rd. 'Phone: Museum 6436. [8427

WANTED, magneto, carburetter, and engine pulley, for 1910-11 3h.p. Enfield twin.—Benson, 17, Porter St., Hull. [9145

SECOND-HAND Triumph Parts wanted, any quantities, any condition; state price.—Box 7,495, c/o *The Motor Cycle.* [9321

WANTED, scooter; exchange typewriter, Roneo duplicator, or jewellery.—Denbigh, Osborne Gardens, Monkseaton. [X2593

MORGAN, Grand Prix preferred, late model; particulars and price for immediate purchase.—2, Park Avenue, Sale. [9023

COUNTERSHAFT Triumph or Douglas parts, Sturmey gear boxes, damaged 1911 Douglas.—Simpson, Engineer, Sunbury. [8938

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SPOT Cash Paid for any spares; bankrupt stocks or W.D. goods; large or small lots.—Full particulars to Jackson, 106, East Parade, Keighley. [6336

INCOMPLETE P. and M.'s or parts, W.D. spares, tyres, bankrupt stocks, etc.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [7243

WANTED, pair of spring forks suitable for 3½h.p. Singer bicycle, steering column diameter 1in., stem 8in.—T.C., 4, Thomson St., Kilmarnock. [X2552

WANTED, lightweight magneto (single) and Amac carburetter (clockwise), cheap, for early type Motosacoche.—Duncan, 58, Cambridge St., Swansea. [8825

£2,000 Cash Waiting for quantities of motor cycle parts and accessories.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [6112

WANTED, countershaft Triumph engine or crank case and flywheels, also bottom bracket stays for gear box.—Hole, 129, Park Lane, Carshalton. [6516

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

P. and M. C.B. Sidecar, complete, or other, suit Triumph; cheap; exchange new 4h.p. J.A.P. engine for treadle lathe.—19, Audrey Rd., Ilford, Essex. [9113

2h.p. Humber, forks, tank, back wheel, or complete, less engine.—Rankine, Milton, Northfield Av., Ayr. [9100

WANTED, readers of this paper who contemplate purchasing or exchanging a motor cycle, to peruse the classified advertisements and compare our prices. We cannot be beaten for value.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9217

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6h.p. J.A.P. Combination; £38; or Levis, similar.—10, Boundary Rd., Merton. [8881

6-8h.p. Combination, fully equipped, and cash for G.P. Morgan.—Wilding, Argoed, Mon. [8607

1920 Cyclomobile, 2-seater, for good combination; cash £110.—72, High Rd., Streatham. [8685

1919 4h.p. Douglas Combination for late lightweight and cash.—9, Fleet St., Torquay. [9084

CABINET Gramophone, mahogany, 40 gn. model, for motor cycle.—76, Cromwell Rd., Luton. [9167

ARIEL 1920 Combination, unmarked, for lightweight and cash.—68, Bingham Rd., Croydon. [9161

EXCHANGE.

1920 New Imperial Combination for small car; offers.—Thompson, 253, Munster Rd., Fulham. [9135

SIXTY Cars for Exchange; postcard procures list. Call.—Douglas S. Cox, Motors, West Norwood. [8974

INDIAN 5h.p., 1918, 3-speed, K.S., for Scott, not earlier 1916.—Stuart, 84, Warley Rd., Blackpool. [X2665

1916 Clyno Combination, 3-speed, 6h.p., for solo mount, about 3½h.p.—202, Trinity Rd., S.W.17. [9314

RUDGE Multi Combination and cash for higher power.—Mosedale, 30, Canterbury Rd., Kilburn, N.W.6. [8157

RUDGE Multi 5-6h.p., coachbuilt; £52; exchange cheaper machine.—32, Balfern St., Battersea, S.W. [9120

1919 Sidecar, value £25, and cash, for motor cycle offered.—Thompson, 32, Clarence Rd., Kentish Town. [8845

5-6h.p. Combination and cash for 2-seater. Details under Rovers for sale.—R.B., 62, Hindes Rd., Harrow. [8754

EXCHANGE 3¼h.p. N.S.U. engine, good condition, for 4h.p. Bradbury, tank same.—125, Albert Rd., Harrogate. [8728

1918 Douglas, O.K., Rudge (see adverts.); exchanges considered; cash either way. — 63, Solon Rd., Brixton. [8984

CROUCH 2-seater, 3-speed, reverse; exchange motor cycle and cash.—Newman, 1, Brantwood Parade, Wealdstone. [8962

5-6h.p. Rex Solo, overhauled, good as new, and cash, for combination; London.—Box 7,449, c/o *The Motor Cycle.* [8592

MORGAN wanted; exchange late 1917 4h.p. Douglas combination, tax paid.—27, North Side, Streatham Common. [8589

1918 Countershaft Triumph, equipped, taxed, for 1920 P. and M.; cash adjustment.—1, Othello St., Liverpool. [8820

PREMIER Combination, 2-speed, twin; wanted higher power ditto, or sell.—2, Oaktree Villas, Thames Ditton. [8959

EXCHANGE Offers Wanted for lady's and gent's 24in. new Alldays cycles, list £30.—Hutchinson, Boroughbridge. [9041

EXCHANGE coachbuilt sidecar body and free engine wheel for good gent's 3-speed cycle.—Box 168, c/o *The Motor Cycle.* [X2592

SUN-PRECISION 1914 4h.p., 3-speed, for Indian. Coachbuilt sidecar, less wheel, spring, £2/5.—2, Appian Rd., Bow. [8861

PREMIER, 3½h.p., T.T. Model, £15 new parts fitted, for countershaft machine; cash adjustment.—63, Solon Rd., Brixton. [8983

OMEGA-J.A.P. 2¾h.p., 2 speeds, almost new, perfect, fast, with cash for Triumph.—42, Cecil Terrace, Horton, Bradford. [8612

6h.p. w.c. Humber Engine, clutch, gear box, for P. and M. engine and magneto.—West, 150, Amyand Park Rd., Twickenham. [8711

EXCHANGE 1914 G.W.K. for lightweight and cash, or sell £85.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [8902

£25 and 1914 Singer, Sturmey (3) countershaft, coachbuilt combination, for Norton or Scott.—Fletcher, 100, Exeter St., Bradford. [8733

EXCHANGE Renault Landaulet, 16h.p., in perfect running order, for combination or motor cycles. —39, Brunswick Rd., Poplar. [8486

ALLDAYS Allon, 2-stroke, 2-speed, perfect condition, complete: £40; exchange combination.—Ratcliff, Butcher, Wadhurst. [9156

1916 5-6h.p. Indian Combination, 3 speeds, kick start, new condition; £95, or exchange for solo and cash.—3, Parker Lane, Burnley. [X2599

EXCHANGE 1920 L.J. Light Car, all accessories, as new, for combination and cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [9006

HALIFAX.—50 second-hand machines and combinations. Keen exchanges. Get list. Halifax Motor Exchange, Horton St., Halifax. [8857

HARLEY Combination, 7-9h.p., hood and wind screen, etc.; exchange lightweight and cash.—Snow, Laurel St., Dalston, E.8. [9341

4-CYL. Covered Ton Van, smaller van, runabout, combination; part sell; £100.—Electric Pram Works, Brighton Rd., Surbiton. [8958

1920 2¼h.p. Hobart-Villiers, 2-speed, equipped, taxed, for countershaft Triumph, cash adjustment.—1, Othello St., Liverpool. [8819

EXCHANGE Late 1920 3½h.p. Rudge Multi, good condition, for lightweight and cash.—R. Davies, Kingcoed, Llandenny, Usk, Mon. [9020

EXCHANGE 1920 Paragon, 2-speed, 2-stroke, spring frame, for good class household furniture.—Cooper, 8, Waveney Rd., Lowestoft. [9175

BOOT Repairers.—A Crowe nailing machine, perfect order; exchange for good motor cycle, sell £45.—99, Dartmouth Rd., Forest Hill, S.E. [8648

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EXCHANGE 2¾h.p. Enfield for 3½h.p. 2-speed Rudge or Rudge Multi, or sell £30, cash adjustment if required.—Riley, Elkstone, Buxton. [9305

LIGHTWEIGHT and cash wanted for Indian combination, 3-speed, etc., fully equipped, exceptional condition.—259, Putney Bridge Rd., Putney. [8367

1920 5h.p. Zenith, C.K.S., Swan sporting sidecar, electric lights, discs, fully equipped: for 1921 A.V.—438, Wargrave Rd., Earlstown, Lancs. [8581

EXCHANGE 2¾h.p. Douglas, 1920, complete with accesories, for light car, preferably Rover, cash adjustment.—Brandt, New College, Oxford. [8551

RUDGE Multi 3½h.p., 1919, T.T., discs, lamps, horn, speedometer; exchange good lightweight and cash or sell £55.—Phillips, Albion, Llandrindod Wells. [8775

CLYNO Combination, 6h.p., assembled 6 months ago; exchange Metro-Tyler (E. type) or Velocette and £20.—Hurren, 48, Pulteney St., Barnsbury, N.1. [8666

EXCHANGE two good coachbuilt combinations for good Ford ton lorry, mag. ignition; must be sound and perfect.—Box 167, c/o *The Motor Cycle.* [X2591

1916 5-6h.p. Enfield Combination, Binks, good tyres, engine just overhauled, for Ford van, or sell. —Forrest, 39, Palmerston Rd., Walthamstow. [8711

1921 90 bore o.h.v. Zenith, as new, in exchange for H16 Norton, Sports Sunbeam, or similar 1921 model.—Offers to Zenith, 11, High St., Purley. [9277

GENUINE H.M.V. Gramophone, Exhibition sound box, complete, 50 selections; £10; exchange cash, motor cycle.—65, Linden Av., Thornton Heath, Surrey. [8656

1920 Tamplin 2-seater, licensed, good running order. Light modern combination, guaranteed sound, wanted.—Letters, Dawkins, 230, Underhill Rd., Dulwich. [8665

1914 P.V., 3½h.p. twin J.A.P., Zenith type clutch, splendid condition, for 4 h.p. Douglas engine, gear box; cash.—10, Francis St., Barnbury, N.1. [9114

NEW IMPERIAL 2¾h.p., 2-speed, clutch, kick start, exchange Triumph or P. and M. combination, cash adjustment.—Allston, 8, Etna Rd., St. Albans, Herts. [9171

EXCHANGE Wolf 2½h.p., 2-stroke, Albion 2-speed, tax paid, and £30 for combination, Triumph preferred; no twins.—Cormack, Nigg, Ross-shire, Scotland. [8727

EXCHANGE Brand New Triumph-Gloria Combination, all-chain drive, and cash, for late dynamo model 2-seater.—Cooper, 6, Waveney Rd., Lowestoft. [9170

HENDERSON, 4-cyl., 10h.p., splendid order, owner nervous; £58; Triumph or lightweight and cash adjustment.—57, Kenbury St., Camberwell, London. [8995

EXCHANGE 1915 2¾h.p. Douglas, splendid condition, lamps, recently overhauled, etc., to £3[illegible] (receipts shown).—15, Sheep St., Bicester, Oxon. [9311

STUDEBAKER Touring Car, dynamo lighting, detachable rims, for late 2-seater or combination and cash.—Chambers, The Holt, nr. Cheadle, Staffordshire. [X2611

£15 and 1918 Triumph, Montgomery sidecar, value £90, all almost like new, higher power combination wanted, 1919 or later.—111, Walsgrave Rd., Coventry. [X2614

EXCHANGE Campion Combination, J.A.P. 4h.p. Ang., 1920, perfect condition, for Humberette and cash, or sell £100.—Box 7,502, c/o *The Motor Cycle.* [9261

1921 B.S.A. Combination, 4¼h.p., cost £160, condition as new; exchange good light car, Morgan or G.N., cash adjustment.—Porritt, Tunstall Rd., Sunderland. [8515

WHAT Exchanges?—1920 special 3½h.p. T.T. B.S.A. with Philipson pulley, as new in every way, as like new, very fast; or sell, cash £55.—A. Jackson, Fa[illegible] Parade, Keighley. [8661

F.O.C.H. are noted for fair exchanges.—Fair Offer Co. House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-[illegible] including Saturdays. [8880

1920 B.S.A. Combination, purchased Feb., 1921, [illegible] new, complete with electric lights, for good twin Morgan, or light car, cash adjustment, or sell £95.—Hope St., Maidstone. [8[illegible]

TRUMBULL Light Car, 4-cyl., dynamo, dickey, spare wheel, splendid order, like new; exchange late Matchless combination, cash adjustment, or sell. —Manning, Stowmarket. [90[illegible]

10h.p. 4-cyl. W.C. Dorman 2-seater with dickey, fully equipped, 5 detachable wheels, electric light, smart; exchange good combination, sell £185.—[illegible] Hestercombe Av., Fulham. [85[illegible]

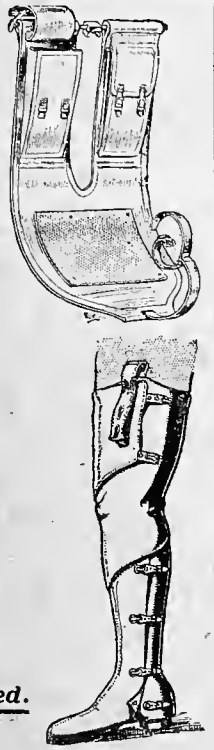
ZENITH 1921 8h.p. Countershaft Combination, only used a few times, complete, all accessories, spares, etc.; what offers; or exchange for car. Seen London. Box 7,494, c/o *The Motor Cycle.* [88[illegible]

If you would ride in Comfort

ALL WEATHERS

see the

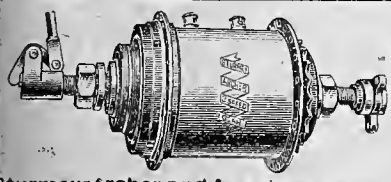
COLLEGE Weather Protection Devices.



STAND 231 GALLERY.

All Prices Greatly Reduced.

COLLEGE LEATHER CO., NORTHAMPTON.



Sturmey-Archer and Armstrong Gears. Immediate Repairs All parts for all types in stock.

Quotations despatched same day as gear is received.

STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock wholesale and retail—2-speed £11, 3-speed £17.

CROMWELL ENGINEERING CO., 327, PUTNEY BRIDGE ROAD, S.W.15.

Telegrams and Telephone—Putney 1601.

Send Repairs to Putney Station (L. & S.W.R.)

For the convenience of customers we have altered our business hours as follows:—Weekdays, including Saturdays, 8 a.m. to 7 p.m., Sundays 9 a.m. to 1 p.m.

MUD SHIELDS

20/- set, reduced to **16/-** post paid.

REG. SAMSON,
Ladywood Road, BIRMINGHAM.
Send for list.

REPAIRERS.

PISTONS for Every Type of Motor Cycle, ancient and modern in stock, prices complete with rings and gudgeon pins, from 15/- each; all fully guaranteed by us.—C.M.D. (below).

CYLINDERS Reground on the same machinery as used by the leading motor cycle manufacturers. Triumph, J.A.P., Rover, Singer, Premier, B.S.A., etc., cylinders reground and fitted with new piston, complete with rings and gudgeon pin, 35/-; 2¾h.p. J.A.P., Singer, Humber, etc., 32/-; returned in 48 hours.—C.M.D. (below).

2¾h.p. Douglas two cylinders reground and fitted with two new pistons complete, 50/-; other twins, Indian, J.A.P., etc., 55/- to 68/-; compression and satisfaction guaranteed.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [7116

G. W. HALL (Canada), foreman to Harley-Davidson, Ltd., from March 20 to August 21, overhauls of every description, satisfaction guaranteed.—38, Chiddingstone St., Fulham. [8565

WELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve seatings, welded and machined complete; scored bores filled in and ground to existing pistons.—Below.

CYLINDERS Reground, new pistons fitted complete, in cast iron or aluminium.—West London Welding Co., Essex Place, Chiswick. 'Phone: Chiswick 536. [0415

TRIUMPH Cylinders Reground and fitted with genuine Triumph oversize pistons, complete with rings and gudgeon, 40/-; J.A.P., Rover, B.S.A., etc., same price. Compression and accuracy guaranteed.—Below.

WE Specialise in repairs, and guarantee same; complete overhauls, machining; any part made to pattern or drawing. No waiting.—Harvey's, 47, South Lambeth Rd., S.W.8. (Near Vauxhall Station.) [9152

SEND Your Engine to me to be thoroughly overhauled and rebushed; singles 40/-, twins 60/-; other repairs quoted for.—Terry, 16, Grove Parade, East Finchley. 'Phone: Finchley 2261. [9410

WHY Wait for Repairs?—Engines overhauled, cylinders reground, new pistons fitted in few days, and spare rings by return; accuracy guaranteed—Bowser, 30, Summer Row Parade, Birmingham. [8341

SEND Your Work to the firm who make the Blackburne motor cycle. Tanks any make, frames and all details, also repairs to all parts; tip-top work, prices right. Try us.—Osborn Engineering Co., Gosport, Hants. [0652

HARLEY-DAVIDSON.—Overhauls and repairs by expert, late foreman Harley-Davidson, Ltd. Terms moderate; satisfaction guaranteed.—Ajax Motors, 154, Longborough Park, Brixton, London. [8847

2¾h.p. Twin Douglas Cylinders reground and fitted with 2 new pistons, rings, pins, and valve seatings refaced, 37/6; every job guaranteed; pistons 10/-.—Rosefield Motors, Rosefield St., Leamington Spa. [9001

HARLEY-DAVIDSON Repairs and Overhauls.—We are now able to put work in hand without delay; skilled staff under careful supervision.—Harley-Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0043

WE can bring your machine up to date and make it into a countershaft model by fitting a new back, with Sturmey-Archer gear box; any machine converted.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [7257

CYLINDER Grinding and new pistons at cut prices. We specialise in high-class work and quick deliveries for all classes of engines. Discounts to traders.—Kellett and Collinson, Ltd., Havelock Works, Great Horton, Bradford. [8629

CYLINDERS Reground, accurate finish, compression guaranteed: Triumph, Rover, Premier, etc., 37/-; all 2¾h.p. single, 33/-; twins, 2¾h.p. Douglas, 55/-; J.A.P., Indian, James, 60/-; complete with pistons and rings.

PISTONS.—Every pattern, standard or oversize, in stock; low price.

PISTON Rings, high grade; none better; thousands of testimonials; oversize or step cut 2/-, standard 1/6 each; return post.—Patent Rings, 30, Wigan Rd., Atherton [5191

V.S. Motor Cycle Agency, supplying spare parts and overhauling V.S. 2-speed gears, which are also fitted to Matchless machines, etc. New and second-hand V.S. gears in stock.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [9374

HUB Gear Machines Converted to Countershaft, or complete conversion sets supplied to suit all makes; recommended by the leading motor cycle manufacturers.—Sheldon Engineering Co., Bayley Lane, Coventry. 'Phone: 634. [2679

WELDING, Welding, Welding.—Welding done by experts; cylinders, crank cases, gear boxes, pistons, cranks, flanges, etc.; aluminium a speciality. No cure no pay, and all work returned in 6 days.—H. Heap, 105, Bissell St., Birmingham. [0023

BEACH Engineering Co., 42, Earl St., Coventry.—Engines rebushed, cylinders reground, aluminium or C.I. pistons fitted from £2; connecting rods rebushed; valves 5/-, guides 3/6; pistons complete from 25/-, rings 2/-; valve caps 4/6; other repairs quoted for. [0593

THE SCOTT SQUIRREL

Beat all comers in the 500 c.c. Handicap

SPEED .. .. 74.5 m.p.h.

THE "WINNER'S HANDICAP."

SPEED .. .. 76.43 m.p h.

at Brooklands, Nov. 5th.

Undoubtedly the most comfortable machine on the road.

Guaranteed petrol consumption 80 to 100 miles per gallon.

Reduced Prices:

3½ h.p. Squirrel	**£105**
3¾ h.p. Standard ..	**£110**
Standard Combination	**£145**

See our Representative on the Scott Stand at Olympia.

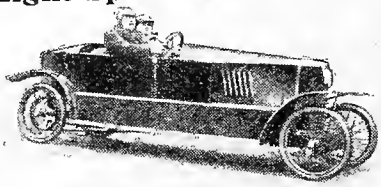
NOW BOOKING ORDERS—Cash or Instalment system.

ROSCOE MOTOR CO., 295, Poulton Road, Wallasey, Cheshire.

Telegrams: "Ignition," Wallasey. 'Phones: Wall 199. Wall 13X.

PALMER'S GARAGE
TOOTING.

THE NEW 1922
"BEDELIA"
Light Sports Two-seater.



8-10 h.p., 2-cylinder, Air-cooled motor, Three Speeds and Reverse, Adjustable Side-by-Side seats.

Price - - £185

Complete with pump, jack, tool-kit, horn, and four lamps. Speed up to 50 m.p.h.
Petrol consumption 50 m.p.g.

The comfort will **PLEASE YOU**
The luxurious springing will **DELIGHT YOU**
The simple and efficient transmission will **APPEAL TO YOU**
The low cost of upkeep will **SURPRISE YOU**
The flexibility and speed will **TEMPT YOU**
A trial run will **DECIDE YOU.**

Your old car or motor cycle taken in part payment.
Catalogue and full Details free from:
Sole Concessionnaire for the British Empire (all the British Isles, Dominions and Dependencies:—
L. N. PALMER (Proprietor), Palmer's Garage, Tooting.

MOTOR · CYCLES
Upwards of 100 in Stock.

Selected Bargains:

3¾ h.p. **SCOTT**	£28
3½ h.p. **B.R.S. NORTON**	£70
2¾ h.p. **DOUGLAS**, 1916	£30
2¼ h.p. **O.K.**, 1921	£30
INVICTA, and Sidecar, 1921	£85
3 h.p. **IVY**, 1919	£30
6 h.p. **BROUGH**	£30
7-9 h.p. **RACING HARLEY**	£75
A.B.C., Comb. 1921	£105

AUCTION SALE EVERY WEEK
on Thursdays at 2 o'clock.
Entries invited. Catalogues free.

PALMER'S GARAGE, TOOTING
The pre-eminent place for disposing of motor cycles.
Will make you a cash offer at sight.
You will be sure of a good cheque if you sell your machine at Palmer's Garage.
Thousands of men have sold their machines here.
Make a speciality of motor cycles in the weekly auction sale every Thursday at 2.
Auction fee for motor cycles under £50 reserve, 5/-; over £50 reserve, 10/-. No garage charge is incurred until 7 days notice is given.
Will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

Sole Address:
PALMER'S GARAGE TOOTING.
Phone— 208 Streatham. 'Grams— "Palmer's Garage, Tooting."

REPAIRERS.

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machinery of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Enfield Engineering Co., 31, Silver St., Enfield. [8049

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 14, Miller St., Camden Town, N.W. ('Phone Museum 2434), which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [0639

ROC 2-speed Wheels, Humber, Rex, V.S., Matchless, Campion, J.A.P., thoroughly overhauled. All spares in stock. Repairs recommended by manufacturers. When forwarding wheels, leave on outer cover—protects the rim. Rex V pulleys in stock.—J. Connolly, 13, Carmelite Rd., Coventry. [X2693

ACETYLENE and Electric Welding.—Broken flanges, cracked water jackets, scored bores, worn bearings built up; aluminium gear boxes, crank cases, any broken motor part welded and machined up and returned in 7 days; 14 years' experience.—Lincoln Jeffries, Jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. 'Phone: Central 729. [2818

WHITE and Watson, Motor Cycle Repair Specialists. Douglas riders now is your opportunity. 2¾h.p. Douglas cylinders reground and fitted with two new pistons complete, and valves refaced, for £2 per pair. Other cylinders at the following rates: Up to 65 mm. 25/6, 70 mm. 29/-, 80 mm. 34/-, 85 mm. 37/-, and over 39/6; 2-strokes extra; aluminium pistons. Engine rebushed, rebalanced, and overhauled; gear boxes overhauled, and replacements machined.—White and Watson, 80, Belvedere Rd., S.E.1. [8831

IF only the best will satisfy you, then the Tennant Engineering Co., 238, Bristol St., Birmingham, alone can please you. Super-critical you may be, but their work will pass your inspection down to the last detail. No firm has more experience, no firm has keener workmen, no firm has greater or better facilities for turning out perfect work, and no firm will strive more to give you satisfaction. Cylinders rebored and fitted new pistons. Rebushing of every description. Engines completely overhauled and returned full of vigour and vim. Frames altered and repaired. Everything fully guaranteed and at competitive prices. Official repairers to A.C.U. and R.A.C.—'Phone: Mid. 1928. [0047

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

A.

VALVES.—Triumph pattern, inlet and exhaust, 2/6; other patterns, suiting most engines, 3/3.—Below.

LAMPS.—Powell and Hanmer No. 128 55/-, 127 67/6; tail lamps, 8/6, 6/6, and 4/6; spot lights, 40/- and 55/-.—Below.

LAMPS.—Special line of soiled Powell and Hanmer 120 lamp sets, slightly soiled, only 25/-; approval.—Below.

SEATS.—Tan-Sad, 38/6; backrest, 9/-; side footrest, 6/-; astride footrest, 5/-.—Below.

GEARS.—All Sturmey-Archer countershaft gear parts in stock; N.S.U. 2-speed gear, £10; Philipson pulleys, 147/-.—Below.

CLOTHING.—Special line of extra double-breasted motor coats, astounding value, 21/-, approval; R.A.F. gauntlet gloves, special line, 5/6.—Below.

CHAINS.—Large stock of chains. Renold and Coventry, ½in.×3-16in. 4/11, ½in.×.30 (¼in.) 5/5, ⅝in.×¼in. 6/1, ⅝in.×⅜in. 6/6; magneto chains, ½in.×⅛in., 2/8 per foot; Hans Renold chains, special for 2¾h.p. Douglas, ½in.×3-16in., 68 links, 13/6 per length; stud extractors, 5/- and 8/- each.—Below.

GOGGLES.—R.A.F. Aero Triplex glass, highly recommended, 12/6; rubber pattern, 2/-; other types from 3/6.—Below.

BRAKES.—Special line of Bowden front brakes for 2¾h.p. Douglas, 20/-; P. and M., 22/-.—Below.

DISCS.—Ace discs, spun aluminium, 35/- per wheel; suitable for most machines.—Below.

MISCELLANEOUS.—Easting wind screns, Baby type 70/-, Standard 90/-, Royal 110/-; Cowey speedometers, 115/- and 130/-; Watford, 115/6 and 125/-.—Below.

HORNS.—Special line of mechanical horns, 10/6 and 12/6; car type, 15/-; bulb horn, 15/6; Clayrite, 22/6; large French type, 22/6.—Below.

MAUDES' Motor Mart, 100, Gt. Portland St., London, W.1 (Museum 581); 100, Paris St., Exeter (Tel.: 833); and Walsall Garage, Walsall (Tel.: 444). [9385

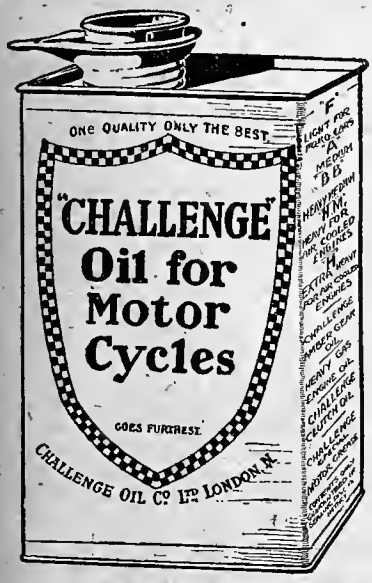
AMAZING OFFER

ABSOLUTELY BRAND NEW
6 h.p. and 8 h.p.
ENFIELD
COMBINATIONS
110 gns.
Complete Hood, Screen, etc.
List Price about £170.

ABSOLUTELY BRAND NEW
4¼ h.p.
B.S.A.
COMBINATIONS
Complete Hood, Screen, etc.
85 gns.
Makers' List Price about £150.

Skootamotas
Only 15 gns.
List Price about £75.

SHORT & GLASS, Ltd.
487, 489, 491 & 493, UPPER RICHMOND RD. EAST SHEEN, London, S.W.14.
Write, 'phone or call. 'Phone: Richmond 2362



GRADES H.M., S.F., H.

CHALLENGE
OIL Co. LTD
STOKE NEWINGTON
LONDON. N.16.

LADIES AND GENTLEMEN,

We claim to have solved the problem regarding Sidecars and the protection of the passenger. This Sidecar is proclaimed the most wonderful and luxurious Sidecar yet produced. Read what "The Motor Cycle" of September 8th, 1921, says: "A **really weatherproof** Sidecar, neat, simple, practical, and giving **all** the advantages of the permanent coupé top; also its invisibility when in the down position."

We are now placing upon the market an improved design of the Brookes Patent All-weather-Sidecar Coupé, embodying the same principles, but on more classic lines. This Body is nothing more or less than a luxurious open Sidecar in fine weather, but, in wet weather, can be instantly converted into a totally enclosed Coupé Body, **no leather or canvas hood being used.** This gives complete protection from rain, wind, and draughts, etc. At the same time allowing of sufficient fresh air by means of adjustable side wings, screen, and a ventilator fitted to the top portion of the head. The whole is finished in **first-class coach** style, and mounted to a specially designed Mills-Fulford Model De Luxe Chassis, suitable for machines of 5 h.p. and upwards. You will be well advised to make a point of seeing this Sidecar before placing your order elsewhere.

We shall not be at Olympia, but shall be demonstrating in the immediate vicinity, and shall be showing at all the principal Motor Cycle Agents in London.

Price, complete, £65.

For further particulars, apply to your Agent or direct to the Sole Manufacturers and Patentees:

BROOKES & HARRIS,
Bishop Street, and 126, Merridale Street
WOLVERHAMPTON.

PARTS AND ACCESSORIES.

COPPER Exhaust Pipe, polished, all sizes stocked, straight, from 2/3 ft.; bending a speciality.—Evans.

TRIUMPH Pipes, special offer, complete with clip; copper 14/6, steel 13/-, plated 18/-.—Evans.

DOUGLAS, 2¾h.p.; copper 12/6 pair, steel 10/-, plated 17/6.—Evans.

RUDGE, Sunbeam, Rover, Norton, copper 20/-, steel 16/-; New Imperial, Omega, Levis, etc., copper 14/-, steel 10/6; all T.T. bends.—Evans.

MUFFLER Ends, detachable, fish-tailed, to suit above, various sizes stocked, from 2/6.—Evans.

FOOTBOARDS, solid aluminium, opcurved front and heel piece, with adjustable clips, 16/6 pair; with fittings for Douglas, 16/6; for Triumph, 17/6.—Evans.

WHEELS from 42/- pair; specials built to order; any parts supplied.—Evans.

TOOL Boxes, armoured, suit Triumph, etc., 10/9 pair; with locks, 13/- pair.—Evans.

HANDLE-BARS, plated, Triumph pattern, W.D. or D.R., ⅞in. 14/-, 1in. 15/-.—Evans.

LEGSHIELDS, suit all machines, enamelled and gold lined, complete, 13/6 pair; aluminium, 15/- pair.—Evans.

BELT Rims, any size to order, 16/6; spring forks from 60/-.—Evans.

CARRIAGE Free, cash with order, discount to trade.—Evans Bros., Brougham St., Hockley, Birmingham. [X2658

TWO-SPEED Gear Box (Chater-Lea), condition as new; £3/10.—8a, Culverden Down, Tunbridge Wells. [9170

P. and M. Engines, frames, gears, and practically all parts (not junk); stamp.—1, Bellingham Terrace, Gatford. [8935

ALBION 2-speed, kick starter, clutch, complete with controls; £8.—114, Osborne Rd., Sparkhill, Birmingham. [9299

GEAR Box, 3-speed and clutch, latest type, practically new; price £12/10.—Sinclair, 32, Charing Cross, S.W. [9009

SEND for our Helmet and Tyre Price List.—Emanuel and Co., Tyre Factors, 37a, Balls Pond Rd., Dalston, N.1. [0733

TRIUMPH, less cylinder, £6; Bosch 45°, £3; B. and B., 15/-; Amac automatic, 20/-.—Tonge, Holmsfield, Sheffield. [8993

SPEEDOMETERS; bargains.—250 Jones trip model, 70/-; trade supplied.—Pioneer, 211, Shaftesbury Av., London, W.C. [9184

150 SCREWS, nots, washers, set screws, 3/-; 144 bright steel bolts, 2/6; 72 bright hexagon nuts, 2/6.—See below.

72 BEST Spring Washers, 3-16in. to ½in., 1/9; 36 castle nuts, ¼in. to ½in., 1/9.—See below.

144 COPPERED Bifurcated Rivets, 8d.; 12 8in. hack-saw blades, 1/6; any of the above carriage paid.—Wood, Titheburn St., Preston. [X2271

STURMEY-ARCHER Countershaft Gears; all parts in stock at makers' prices.—Bartletts, 93, Gt. Portland St., W. [9239

DOUGLAS 2¾h.p. Amac carburetter, controls and 6 jets, scarcely used; 25/-.—Innes, 261, Rookery Rd., Birmingham. [9007

SPEEDOMETER, Bonniksen, isochonous (Rotherham, Coventry), new; £5; approval.—Lancaster, Heeley Rd., Birmingham. [X2590

NEW Sturmey Gear Box, ball races 4/-, clutch worms 1/-, Ferodo rings 3/10.—Simpson, Engineer, Sunbury-on-Thames. [8940

ALBION 2-speed Gear Box, engine sprocket, chain, and belt, nearly new; £5/5.—28, Fraunfield Rd., Highbury, N.5. [8918

FOOTBOARDS, solid aluminium, fit Triumph, P. and M.'s, without alteration; 10/6 pair; carriage 1/-.—Below.

P. and M.'s, cast aluminium chain covers; the set, polished, 29/-, carriage 1/3.—Below.

NUMBER Plates, cast aluminium, raised silver polished letter and border; cycle 10/6 pair, car 15/6. Send for folder.—Towler, 22, Thorn St., Burnley. [8288

LEGSHIELDS, with side valance, black, gold lined, with fittings; 14/6 pair.—114, Osborne Rd., Sparkhill, Birmingham. [9300

ELECTRIC Horn, 12 v., black oxidised, new, with wire and switch; 20/-; approval.—3a, Alcester Rd., Moseley, Birmingham. [8608

ALUMINIUM, cast iron, and steel piston manufacturer; any pattern.—W. Cole, 53, Sarehole Rd., Sparkhill, Birmingham. [7276

RENOLDS Chains, ⅝×¼, 96 links 20/-, 56 links 12/-; soiled, but unused; approval.—56, Sutton St., Aston, Birmingham. [X2597

SALE.—Frame 25/-, saddle 12/6, 26×2¼ front wheel 10/-, tank 17/6, 2 good tyres 8/-, 12/-.—37, St. Luke's Rd., Maidstone. [8776

FRANK B. ROPER

Has for Immediate Delivery the undermentioned

NEW MODELS

7 h.p. **A.J.S.** combination ..	£195	0
7 h.p. **A.J.S.** comb., with dynamo	£223	0
7 h.p. **INDIAN** Powerplus comb.	£175	0
4 h.p. **INDIAN** Scout combination	£145	0
3¾ h.p. **SCOTT** combination ..	£145	0

SOLO MACHINES

7 h.p. **A.J.S.**	£144	10
7 h.p. **INDIAN** Powerplus ..	£140	0
4 h.p. **INDIAN** Scout	£120	0
3¾ h.p. **SCOTT** Squirrel ..	£110	0
2¾ h.p. **A.J.S.**..	£95	0
3½ h.p. **P. & M.** (shop-soiled) ..	£95	0
2¾ h.p. **EDMUND**, spring frame	£90	0

1922 model **LAGONDA COUPE** Light Car, C.A.V. lighting and starting, speedometer and clock .. **£395**

166 & 168, London Road, SHEFFIELD.

'Phone: 2802. Wires: "Roper, 2802 Sheffield.

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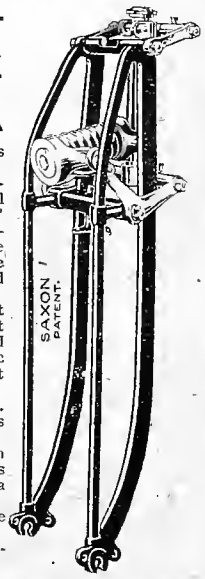

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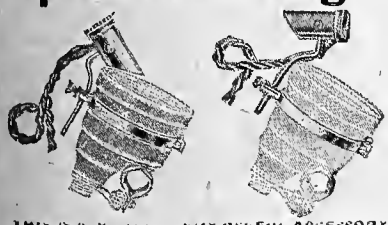

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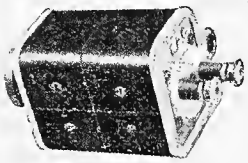

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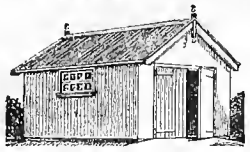

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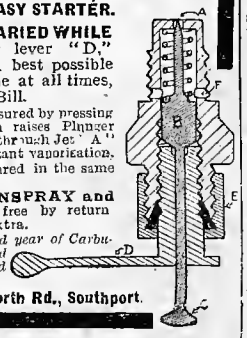

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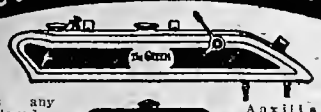

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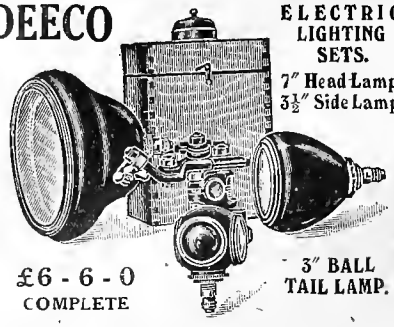

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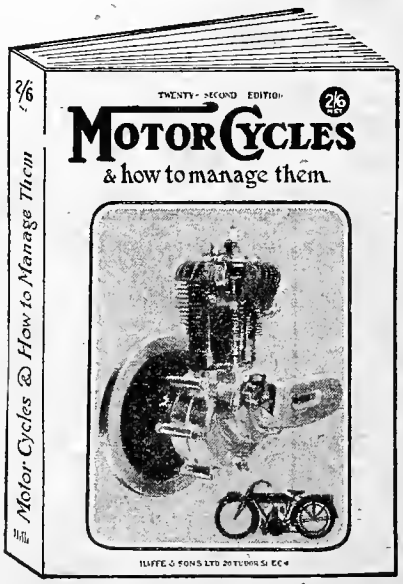

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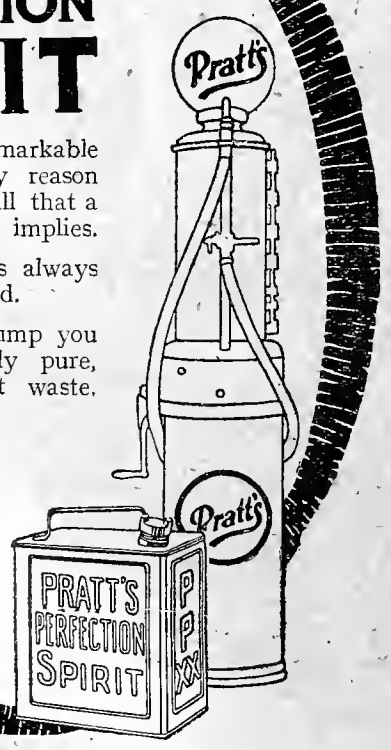

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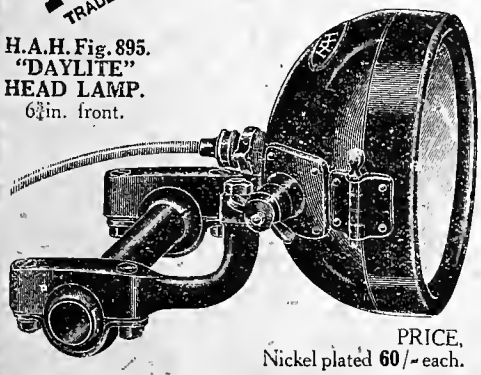
H.A.H. Fig. 895. "DAYLITE" HEAD LAMP. 6¾in. front.



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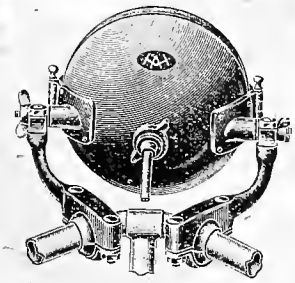
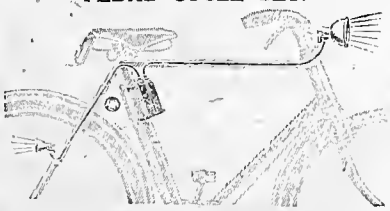


Diagram showing attachment to acute bars.

H.A.H. NEW MODEL PEDAL CYCLE SET.

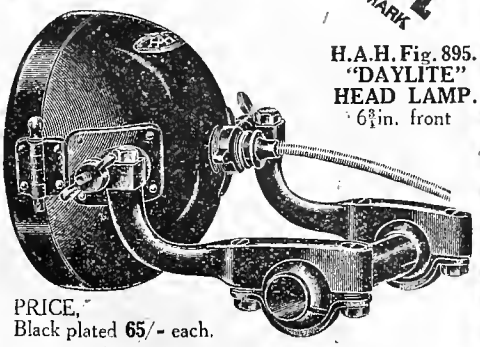


Codeword "PEDALSET." Price **33/-** complete.

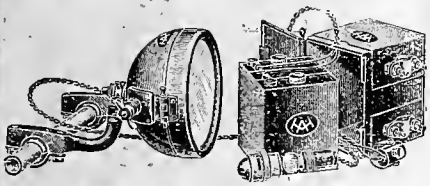
H.A.H. SWITCHES.

Fig. 428. One way. **2/-** each.

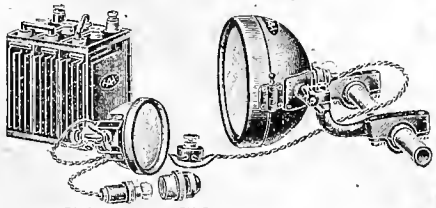
H.A.H. Fig. 895. "DAYLITE" HEAD LAMP. 6¾in. front



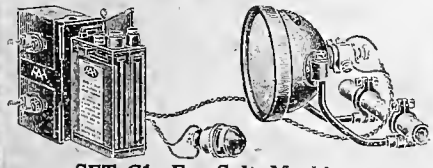
PRICE, Black plated **65/-** each.



SET A1—For Solo Machines. PRICE, less bulbs and wire, **123/6** complete.

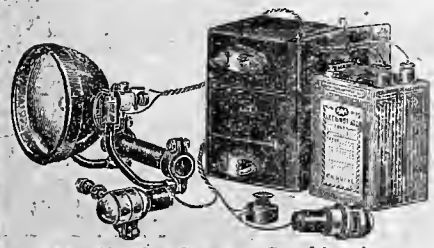


SET B1—For Sidecar Combinations. PRICE, less bulbs and wire, **135/-** complete.

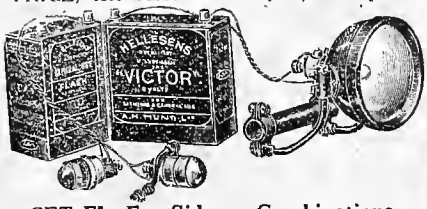


SET C1—For Solo Machines. PRICE, less bulbs and wire, **75/-** complete.

SET D1—For Solo Machines. PRICE, less bulbs and wire, **66/6** complete



SET E1—For Sidecar Combinations. PRICE, less bulbs and wire, **81/-** complete.



SET F1—For Sidecar Combinations. PRICE, less bulbs and wire, **80/-** complete.

Fig. 561. Side Lamp. Price **6/6** each.

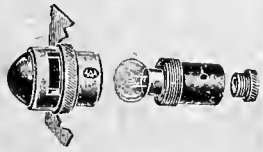


Fig 576. Rear Lamp. Price **4/9** each.

Fig. 410. Cut-out. **2/-** each.

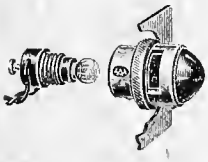


Fig. 574. Rear Lamp. Price **5/9** each.

Fig. 560. Side Lamp. Price **7/6** each.

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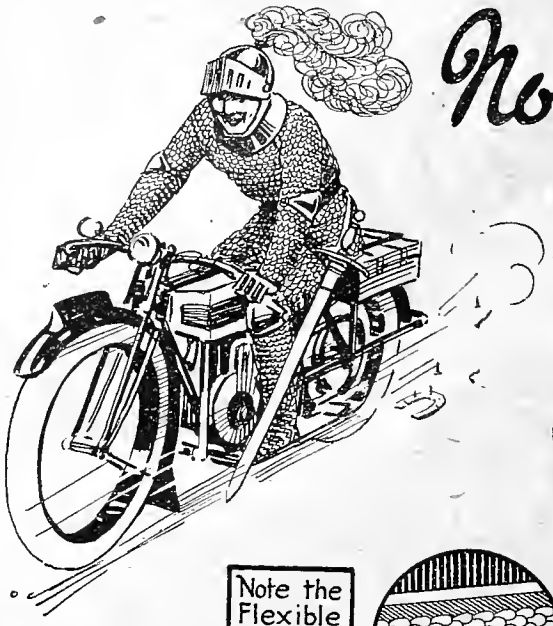

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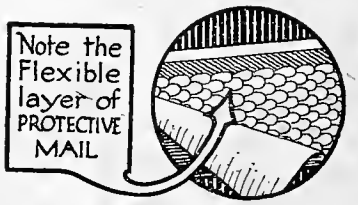
Ask your dealer to fit TUBE PROTECTORS to your motor cycle tyres



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The Motor Cycle Show.

AN unqualified success! That is the verdict upon this year's annual Show, for every one of the 265 exhibitors displays something of real interest to the motor cyclist.

A cursory examination of the exhibits indicates in unmistakable fashion that designers are still profitably expending energy to develop the most economical form of motor vehicle. That there is still scope for the designer and the inventor who will look far enough ahead no one will deny, for who can judge the ultimate limits of the motor cycle in an age that has brought the science of engineering to its present high estate? Less than twenty years ago the motor cycle was a vehicle in embryo. To-day at the Olympia Show there are hundreds of machines of such design and quality that the novice, after an hour's tuition regarding the controls, could employ any one of them to take him from one end of this country to the other at a cost of less than a penny per mile.

That this fact is becoming more appreciated every day is evidenced by the enormous increase this year in the number of motor cycles on the roads (approximately 100,000), and if 1922 is not another record year, it will not be on account of lack of interest.

Great Detail Improvements.

As regards the exhibits, the seasoned motor cyclist observes the many indications that attention has been paid to the small, but important, points where 1921 machines could be improved. Refinements in almost every direction are embodied, and what, perhaps, is the most important feature, prices are considerably reduced. Not only is value substantially better than it was a year ago, but the low prices quoted for a large number of really first-class machines are such that a little consideration of facts convinces the buyer that value is even better than it was before the war. £100 for a 4 h.p. sidecar outfit and under £70 for a 2½ h.p. sidecar place the pleasures and conveniences of the motor cycle within the reach of thousands who never before have been able to purchase.

Every type of engine is exhibited and every size from a little more than 100 c.c. to twelve times the capacity. Valve systems are represented by the conventional poppet type—both at the side of the cylinder and overhead—sleeve valves and rotary valves, not to mention the unnoted examples of valveless engines, while every modern type of cooling system is employed.

Utilitarian and Sporting Mounts.

At Olympia there are motor cycles for every class of rider—the range of types has been extended by the introduction of miniature machines following more or less conventional motor cycle lines, as distinct from the so-called scooter type. A new public will also be attracted by several two-wheelers which differ from standard practice.

These machines include models which have their mechanism entirely enclosed or embody open frames rendering them suitable for the use of either lady or gentleman. Nor is the sporting machine neglected; in fact, no Show has ever contained so many specimens of that type of mount.

From the utilitarian standpoint, there is ample evidence to demonstrate how the modern motor cycle has taken its place as a family vehicle and also in the useful sphere of light delivery.

The workmanship and finish of all exhibits call for general admiration, which is not always inspired entirely by the glitter of Show models—the experienced motor cyclist discriminates between the superficial gloss and the finish he may expect in the production he purchases in the usual way.

Development of the motor cycle for the million proceeds apace, and all interested in the movement should visit Olympia this week and examine for themselves the 1922 models; those who cannot do so will find a fitting substitute in *The Motor Cycle* Show Report contained in this issue, and which has been written after a personal inspection of the exhibits.

The Show—and After.

THE Show is always most excellently timed. Just when rain and frost and mud and Arctic weather have momentarily dashed our ardour for the queen of sports, Olympia opens. We rush up to Town, dazzle our eyes on a lot of glittering new 'buses, soak ourselves in unlimited petrol talk with crowds of the boys whom we last met on a freak hill fifty miles from nowhere, decide that the old 'bus really will not do for another season after all, and so home. Then the really strenuous work begins. Simultaneously we have to raise the needful from somewhere; that may mean the exercise of weeks of diplomacy upon papa, or reconciling Matilda to a reduced housekeeping allowance, or persuading the boss that we are worth a great deal more than he has been in the habit of paying us, or selling the family tiara and substituting the products of Ciro. The other half of the "simultaneously" with which this clumsy sentence began is, of course, concerned with the selection of the new machine. There is the Bradshaw-Zenith. There is the Barr and Stroud sleeve valve. There are all the old pals which have already transported us thousands of miles—the potter-buses more comfortable than ever, the hogbuses rather hoggier than before. So the interest gets sharpened up, winter is over almost before it had begun, and the timidest of us is soon out sampling the thrills of a new jigger on the old familiar roads.

Pour Moi.

EACH year one's ideal specification gets altered or expanded by the experience of the past season. There are four items anent which I personally have taken the most solemn vows this summer. No. 1. I am going to have 3in. tyres (to flatten the bumps, and exorcise punctures). No. 2. I am going to have some form of automatic oiling, and relieve myself of the necessity for watching my speedometer with one eye and a "greeny-yallery" sightglass with the other. No. 3. I am going to have a super-saddle. No. 4. I am going to have electric lighting.

Do not take me too seriously. When it comes to the point, I shall lose my heart to somebody's engine, or quite possibly to the dinky little kink in somebody else's T.T. handle-bar; and you will meet me on the road about January with board-hard 2¼in. covers, the familiar green stains round an oozy nickelled joint on my tank top, a path-racing push saddle, and several yards of red rubber tubing festooned round my frame tubes. But it is just as well to start with an ideal. By next Monday my ideal will probably have thirteen points like President Wilson's famous manifesto; but the above quartette have been simmering in my brain all this year.

Dead Easy.

AT the car show at the White City last month I met a brother of the pen who momentarily resembled Don Quixote in that he had a rueful countenance. He met my concerned enquiries with the explanation that he had been commissioned to write up the fuel and oil exhibits, and guessed he would have a job to make them interesting. Being by nature friendly, and also an ingenious liar, I offered to accompany him. We arrived at the Shell stand, and half an hour later my friend departed with sheaves of notes and a bursting skull. The exhibit included a model of the Ricardo variable compression single-cylinder engine, on which Shell spirit is tested for pinking. Next to that stood another model, which—between you and me and the printer—I do not believe the stand attendant knew much about. At any rate, it apparently began by heating Shell oil up to 1,000° F., squashing it under a pressure of 35,000 lb. to the square inch, and then testing the *débris*, if any. Round the walls were various models to amuse the children—lorries, aeroplanes, and such like, which apparently only need a penny in the slot to make them rev. furiously. Some stand!

About Tyre Repair Outfits.

A READER wants to know how I carry my French chalk. I do not know. Till last week I mounted a Patchquick outfit in one of the special leather wallets supplied for the purpose, and anchored to my carrier. The Patchquick tin (like several others) is so arranged that the box of chalk is well jammed in position, and cannot disgorge its contents. Unfortunately, like many other riders, I often have to leave my bicycle unattended; and a

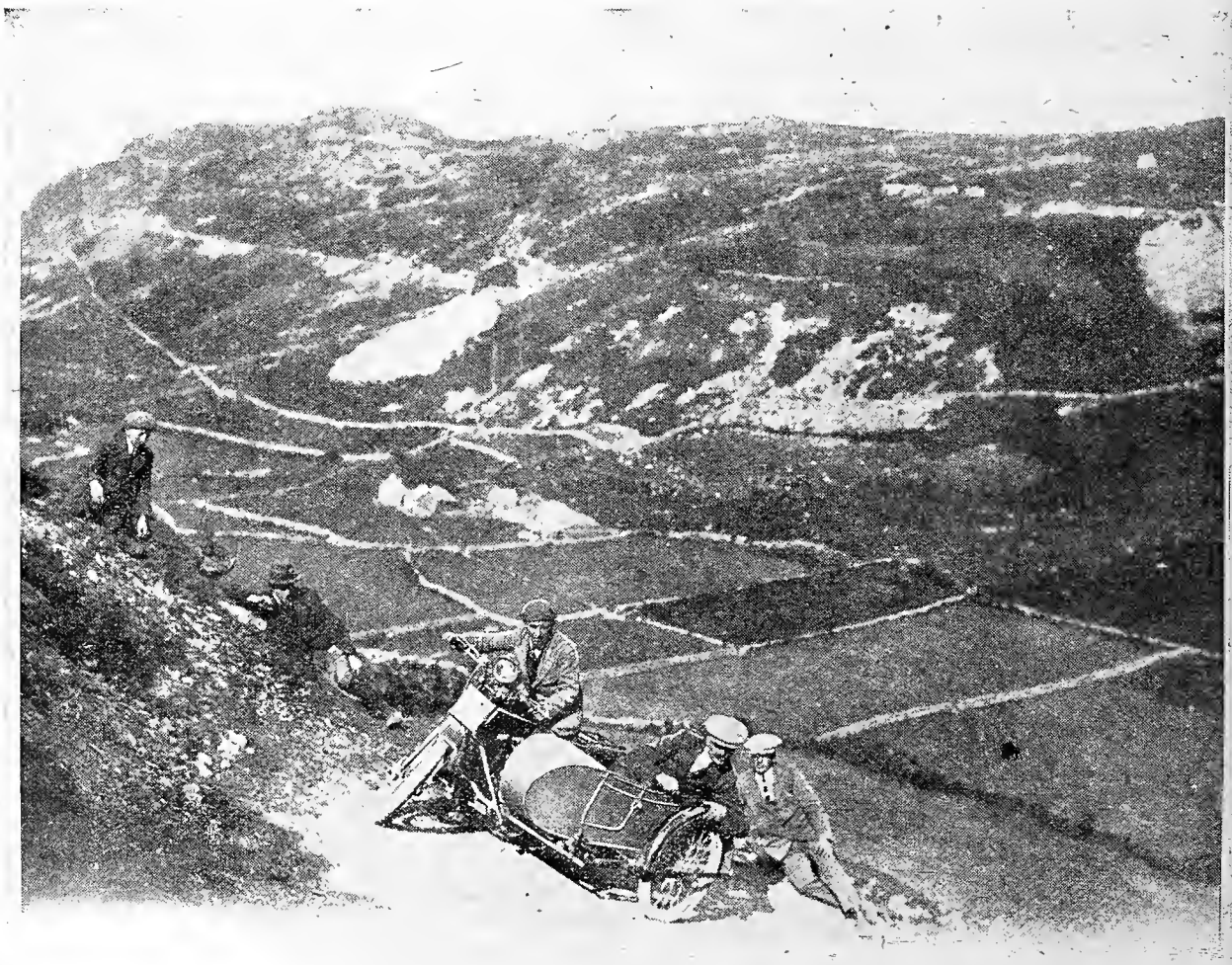
Some Show Impressions
SOMEBODY'S PASSENGER
THE INEVITABLE SMALL BOY WHO INSISTS ON SEEING EVERYTHING.
TOMKINS MINOR FINDS HIS IDEAL.
AN INSPIRATION FOR A NEW SIDECAR DE LUXE.
TOO OLD AT SIXTY? NOT IN THE YEAR 1921
CONTRASTS IN HEAD GEAR.
AN OBJECT LESSON WHY ALL SPORTING SIDECARS SHOULD HAVE EITHER A DOOR OR A STEP.
T.R 1921
SIDECAR OR SOLO? WHO WILL DECIDE?

Occasional Comments.—

new breed of pilferer has come into existence. He knows that a Patchquick outfit is a good thing, and when he sees one of the tiny rectangular leather cases, he opens it, annexes the tin, and departs hotfoot. So at present my Patchquick lives in my side pocket, and I have generally got the wrong coat on when I puncture. (Happy thought: keep a Patchquick tin in *all* my coats.) While I am on the subject, let me recount how I was mending a puncture in my garage, viz., the coalhole, the other day, and chanced to use an extremely ancient Patchquick tin, which had lain there for generations. The patch slid off the tube while I was refitting the cover. Never having struck such an experience before, as soon as I arrived at the car Olympia I went round to interview Mr. Patchquick at his stand, previously arming myself with a club. He told me what we all ought to know. Somewhere about eighteen months after manufacture a chemical action is set up in all rubber solutions which quite undermines their natural glutinosity. I was not aware that aged solution might look perfectly normal, and yet be about as much use as beer for affixing a patch. Moral: renew your tin of solution annually.

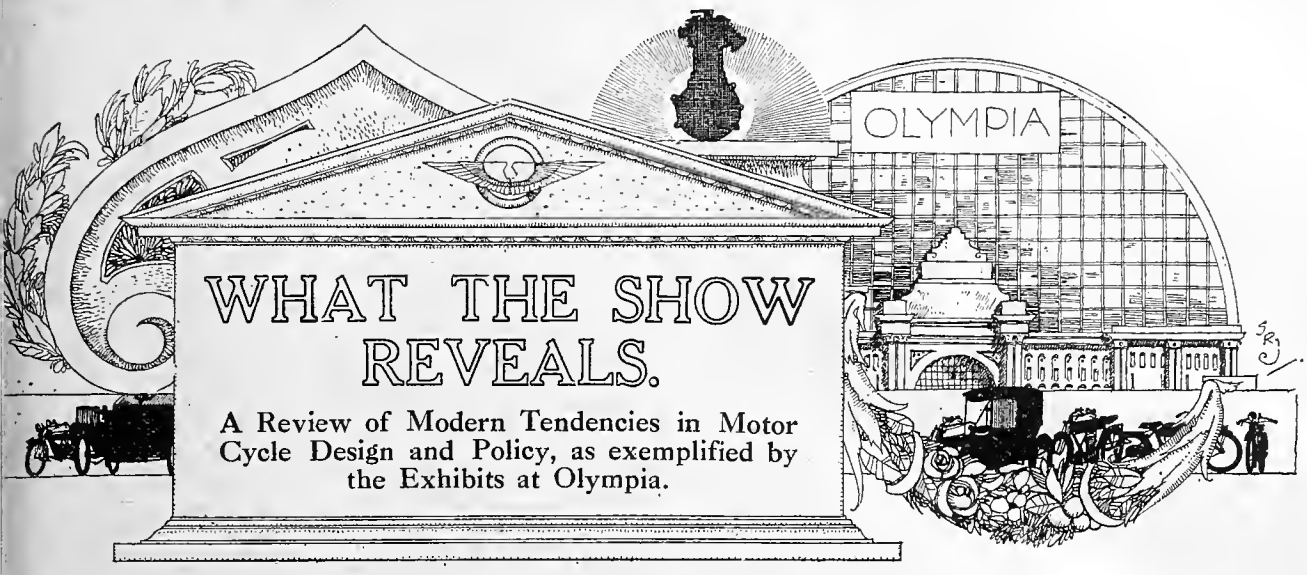
Caravans for me.

I DO not think I should buy a super-car if the Editor ever recognises my merit at its proper worth. I should buy a caravan. There is one on the market designed by a person named Eccles. It only weighed 7 cwt., and I should be inclined to try whether my baby Cedos would not tow one, if I was sure that my A.C.U. "get-you-home" chit would apply if the baby bust in the attempt. Four beds. Windows which open. Automatic brake, which applies itself going down hill—gently on a coasting grade, and Hindenburgly on a freak slope. Cupboards ready fitted with unbreakable crockery in spring clips. Cost: about that of a good sidecar outfit. Construction: plywood, to which waterproofed canvas is cemented. The joys of touring in it would be intense, but even greater would be my glee at ostentatiously towing it past one or two hotels where I have been overcharged for very indifferent fare. There is one hotel past which I should enjoy towing a whole procession of caravans. Before I die, I *will* make its proprietor's teeth gnash somehow, if I have to bribe the Caravan Club to encircle it for seven days, as the Israelites once encircled the walls of Jericho.



ON THE WORST HILL IN WALES.

Screw Road (the famous North Wales test hill "find" of *The Motor Cycle*) is so steep on the corners that the spectators of the sidecar attempt depicted above did not sit down; they simply leaned against the hillside! Incidentally, the hill is becoming a very popular testing ground for new models.



WHAT THE SHOW REVEALS.

A Review of Modern Tendencies in Motor Cycle Design and Policy, as exemplified by the Exhibits at Olympia.

THOUGH novelty at the Motor Cycle Show is by no means absent, there is possibly less of an unconventional nature at Olympia this week than was revealed at the Car Show. Motor cycle design as a whole has reached a stage of perfection that permits a temporary halt while detail work on engines and frames, works production questions, and general points of convenience are brought into line.

This remark should not be interpreted as implying that there are no important innovations in 1922 models, for the observer will find an abundance of interesting improvements to reward his search. The fact remains, however, that with the exception of a few daring spirits (and there are always advanced thinkers) who have defied convention, progress has taken place chiefly along sound and well-tried lines.

We have to thank the recent industrial depression more than any other cause for this state of affairs, since manufacturers have not been in a position to branch out suddenly along unorthodox lines, and under the conditions existing it is obviously wiser to improve rather than to experiment. It has long been agreed that change for the sake of change is an unsound and undesirable form of progression.

Every year a number of enthusiasts visit Olympia to learn something of the trend of modern design, and every year a large proportion leaves in a state of "confusion worse confounded." In addition to forming a convenient record of developments which have taken place during 1921, the accompanying article will help the potential purchaser to crystallise his ideas.

If we exclude the very considerable all-round drop in prices, one may summarise the tendencies for 1922 as:

(1.) An important increase in the number of big singles for passenger purposes.

(2.) The introduction of several 8 h.p. machines by manufacturers of 5-6 h.p. machines.

(3.) Increasing popularity of lightweight motor bicycles.

(4.) The increasing use of three-speed gear boxes and all-chain drive for lightweights.

(5.) The employment of miniature two-stroke-engined machines for passenger-carrying purposes.

Features 4 and 5 are, of course, inter-related, but we have now reached the stage when the 350 c.c. engine, fitted with a three-speed gear box, is capable of the speed, hill-climbing, and endurance of most 500 c.c. pre-war machines. Had the lightweight three-speed gear box been developed earlier, this state of affairs might have come to pass at least a year ago, but for some obscure reason it has hitherto been the rule to fit three-speed gears to the larger solo mounts, and to use only two-speed gears in conjunction with the lower-powered engines. Price has certainly been a controlling factor in the matter, but a few far-seeing manufacturers have already demonstrated that a three-speed lightweight is capable of the required performance, and is cheaper to buy and maintain than a heavier machine with similar transmission.

With regard to the big single: there have, in the past, been so many first-class manufacturers engaged in the production of this type that it has become one of the most popular forms of motor cycle, but the addition of the Sunbeam, P. and M., and Abingdon, and the return of the New Hudson, Precision, and Excelsior have set the seal on the matter.

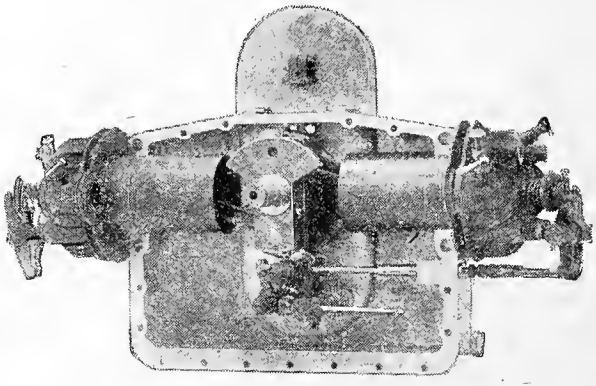
In addition, two of our best-known engine manufacturers, J. A. Prestwich and Co. (J.A.P.) and Burney and Blackburne, Ltd., have introduced single-cylinder engines of over 500 c.c. for 1922. These power units are found on many new models, which augment the list of big singles on the market.

ENGINES.

Compared with modern car practice, there are but few overhead valve engines, although there are more of this type of engine in the Show than at former exhibitions. It is the opinion of many Brooklands devotees that overhead valves give a 5 m.p.h. advantage when other things are equal.

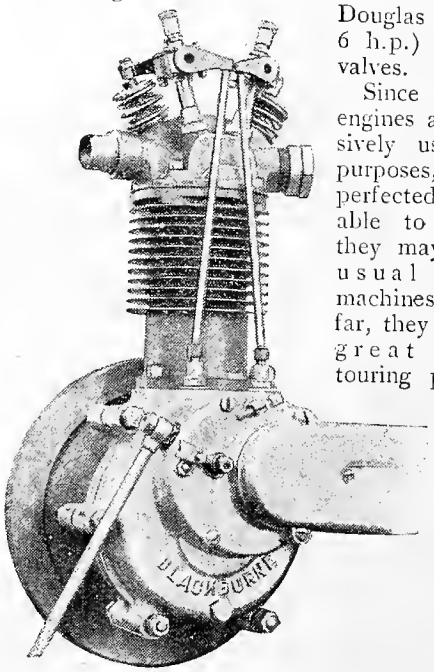
What the Show Reveals.—

The increase is largely due to the fact that several motor cycle manufacturers now market models fitted with the 2¾ h.p. overhead valve Blackburne engine, which performed so conspicuously in the last T.T. Races. The overhead valve sporting Triumph makes its public *début*, while the Brough Superior (one model of which has an overhead valve engine) is a newcomer to Olympia, but last year's overhead valve N.U.T. has been abandoned in favour of a side valve engine.



One half of the crank case of the Zenith-Bradshaw removed to show the oil-cooled cylinder barrels and the timing gear.

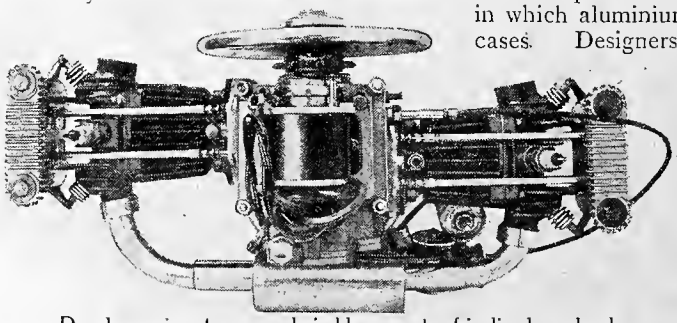
It is significant that the two latest models of the Douglas (3½ h.p. and 6 h.p.) have overhead valves.



Very successful in competitions this year, the o.h.v. 2¾ h.p. Blackburne will be fitted as standard to several sports models for 1922.

Since overhead valve engines are being extensively used for racing purposes, and thereby perfected, it is reasonable to suppose that they may become more usual on standard machines, though, so far, they have not found great favour for touring purposes. Recent events have demonstrated that overhead valve gear is not necessarily unreliable or unduly noisy.

During the year, great improvements have been effected as regards cylinder and piston cooling, and, generally speaking, the arrangement of ribs and air passages is very much better than at previous Shows. These points, though of considerable importance, are often overlooked by the non-technical buying public; yet it is largely by reason of improved cooling methods that the small engine has been able to some extent to approach the performance of larger capacity engines.



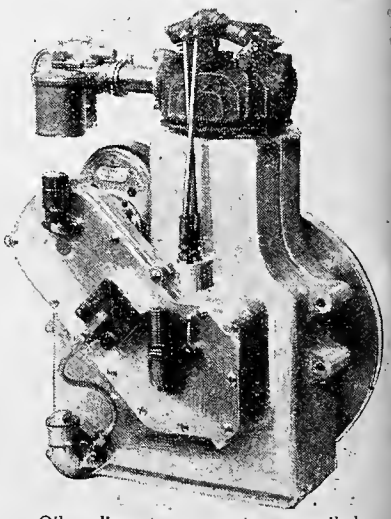
Douglas engines form an admirable example of inclined overhead valve gear—a type which has a future.

To overcome the overheating of the exhaust valve cap—the troublesome hot spot of every side valve engine—all J.A.P. engines are this year equipped with aluminium "fir cones," while the overhead valve engines fitted to the Coventry Eagle and the Brough Superior have cast exhaust outlets which bear circumferential fins. In the case of the new Abingdon engine, extraordinarily deep fins are cast on the exhaust pocket, while on the inlet pocket there are no fins at all. Both pockets are well clear of the cylinder.

The cylinder casting of the new 4¼ h.p. Sunbeam engine is well worth close examination, the sweep of the inlet and exhaust passages being very easy, which brings the induction and exhaust pipe joints somewhat lower than is usual.

A new design—the C.A.M.—is distinctive as having circumferential fins on a separate head.

Comparatively long-stroke engines are on the increase. Almost without exception the new engines at the Show are of this type, while the detachable head, too, is finding new sponsors.



Oil-cooling has now been applied to a 350 c.c. single Bradshaw engine. The clean external appearance is commendable.

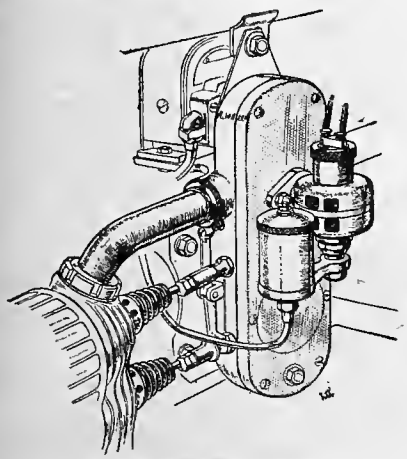
Among the new engines so constructed are the C.A.M., 4¼ h.p. Sunbeam, and Beardmore.

There appears no decided tendency to alter well-established piston practice. Cast iron pistons still hold their former position on all but sporting machines, in which aluminium pistons are used in some cases. Designers, however, are inclined to favour narrower piston rings, and more roller and ball bearings are being used than hitherto. In this connection, however, it is not without interest that the New Hudson engine has plain bearings throughout.

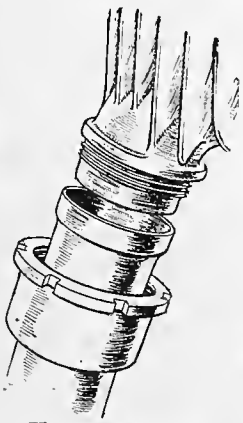
For the first time we find a sleeve valve engine coming into open and

Details of 1922 Engines at Olympia.

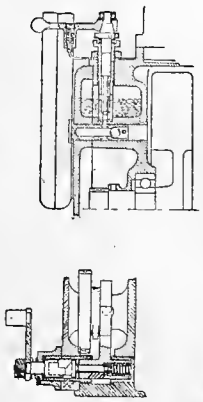
Two exit pipes are used on the silencer of the 4¼ h.p. B.S.A., sports model.

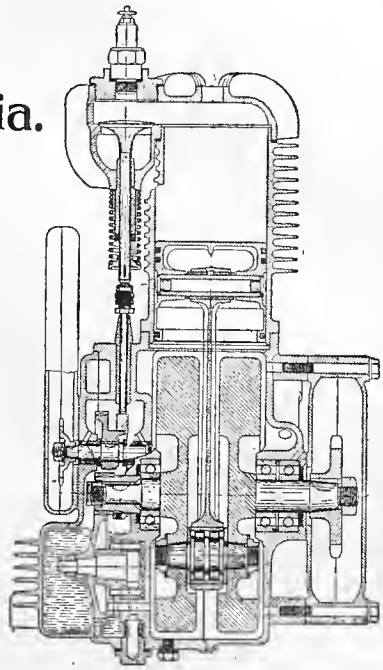


On the twin Raleigh the carburetter is fitted immediately in front of the timing case, in which the induction manifold is cast.

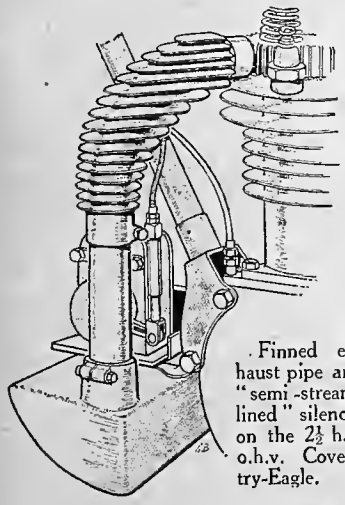


This ingenious exhaust pipe fixing has been adopted on the 1922 7 h.p. A.J.S.

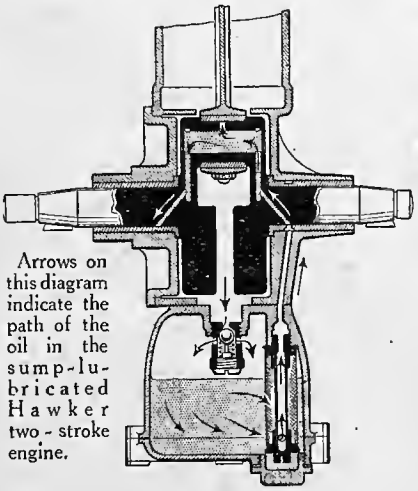




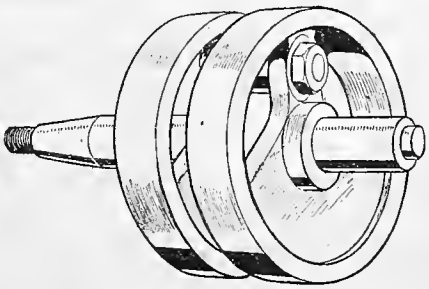
A section of the 4¼ h.p. Beardmore-Precision is typical of average single-cylinder design, except for the mechanical lubrication, in which it is in advance of the majority.



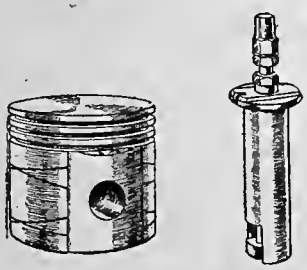
Finned exhaust pipe and "semi-streamlined" silencer on the 2½ h.p. o.h.v. Coventry-Eagle.



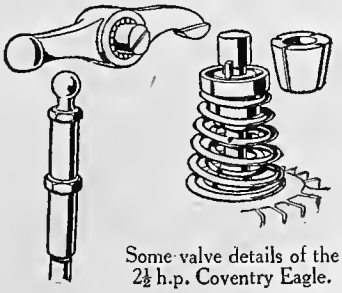
Arrows on this diagram indicate the path of the oil in the sump-lubricated Hawker two-stroke engine.



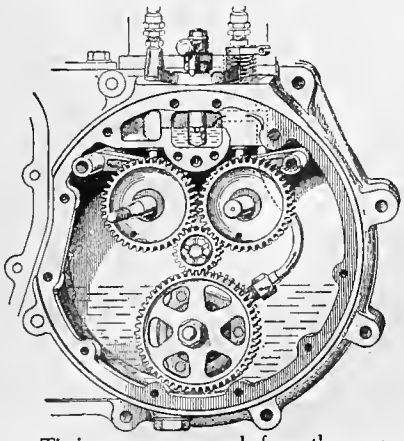
The crankshaft of the Liberty engine, built up from steel stampings.



(Left) Three rings are fitted above the gudgeon pin, the lower portion of the Abingdon piston being relieved. (Right) Long cast iron tappet guides are employed.



Some valve details of the 2½ h.p. Coventry Eagle.

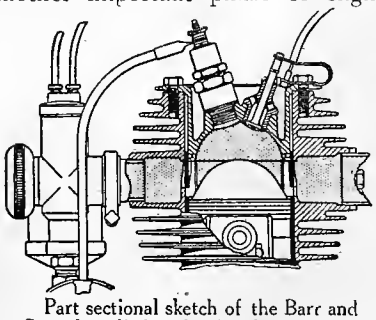


Timing cover removed from the new 4¼ h.p. Beardmore-Precision engine, showing the mechanical oil pump.

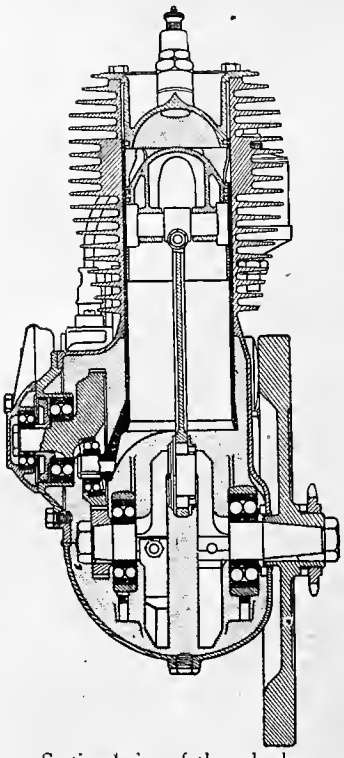
What the Show Reveals—

serious competition with the more usual poppet valve type; to wit, the Barr and Stroud single-sleeve engine, which promises to become a worthy rival to existing types on account of its silence and simplicity.

Steady growth in the number of two-stroke engines continues, and, among others, the White and Poppe, Liberty, Omega, and Morris may be mentioned as newcomers. The Dunelt remains the sole example of the 500 c.c. single-cylinder two-stroke, but, having proved its capabilities, it is not unlikely that its lead will be followed by others, especially for passenger work. Another important phase of engine design is the Bradshaw oil-cooled engine, of which a complete range is now available.



Part sectional sketch of the Barr and Stroud cylinder head, showing the auxiliary release valve.



Sectional view of the only sleeve valve motor cycle engine, the $2\frac{3}{4}$ h.p. Barr and Stroud, demonstrating its simplicity and symmetry.

TRANSMISSION.

All-chain transmission continues its steady progress. In the case of lightweights, this tendency is significant; it is found that a small section belt running over comparatively small pulleys with short centres is by no means the ideal form of drive. Notwithstanding this fact, chain-cum-belt drive has many staunch adherents, whilst a number of firms offer a choice of either form of transmission.

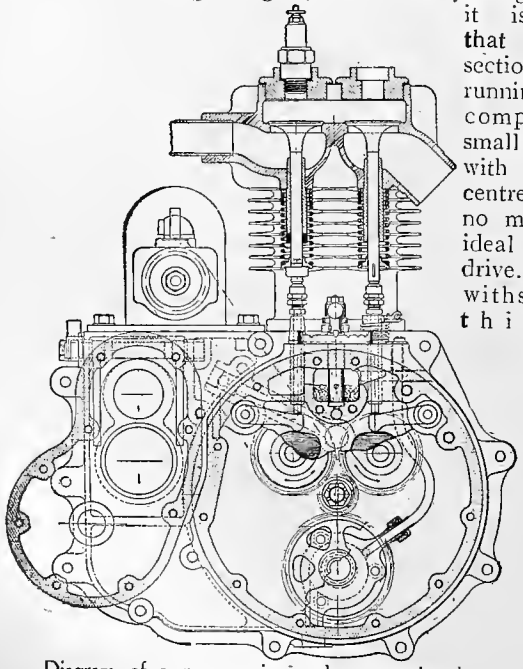
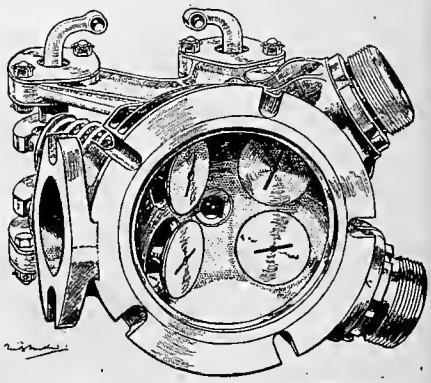


Diagram of a new engine and gear unit—the $4\frac{1}{2}$ h.p. Beardmore-Precision.

There is a small but clearly defined movement in favour of the adoption of engine and gear units, and, though in most cases the parts are really distinct and separate from each other, being merely carried on common engine plates or brackets, the Beardmore-Precision firm for 1922 has designed a combined gear unit to suit the internal parts of a standard make of proprietary gear box.

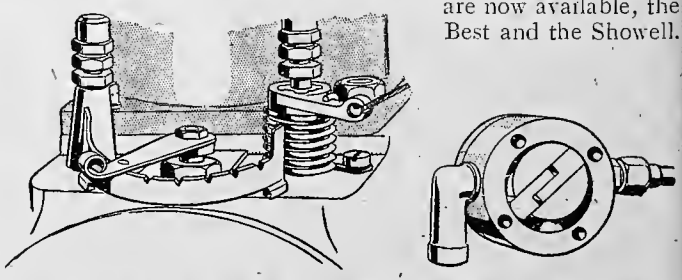
We have already recorded the fact that lightweight three-speed gears are becoming increasingly common, to which remark we may add that almost every manufacturer of gears for the trade now lists a gear of this class, whilst many motor cycle manufacturers themselves produce their own gears of this type. Some have close gear ratios when intended for sporting mounts. A novelty, as far as motor cycles are concerned, is the inverted tooth chain gear box exhibited by the Coventry Chain Co.



Cylinder head of the four-valve Triumph, which is approximately hemispherical in shape.

LUBRICATION.

Year by year more firms are won over in favour of mechanical lubrication, and the present exhibition is no exception to the rule. It is only fair to mention, however, that one firm who last year standardised a mechanical attachment have this year decided to omit it from their specification. Sight-feed drip lubrication is still the most generally adopted method, but the plain hand pump still has influential supporters. On the T.T. model Sunbeam a hand pump replaces the sight drip feed. Two proprietary mechanical pumps are now available, the Best and the Showell.

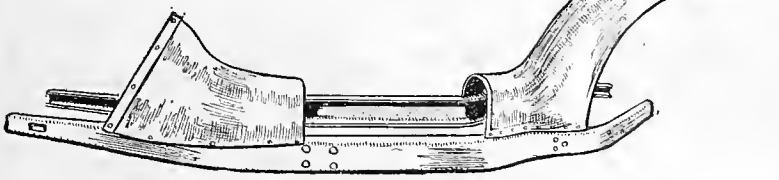


An addition to the ranks of mechanically lubricated engines: the Beardmore-Precision vane pump (right), and oil regulator (left).

What the Show Reveals—

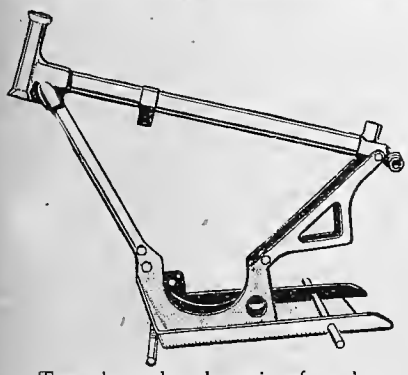
FRAMES.

There is little general change in frame design, the conventional diamond pattern still holding sway, with sundry variations. Most of the exceptions are already well known, but the New Imperial has introduced a neat loop frame, and the Omega employs a wide duplex frame somewhat on the lines of that used on the A.B.C. The Dot and the McKechnie-Coventry Victor are strikingly unusual spring frame designs.

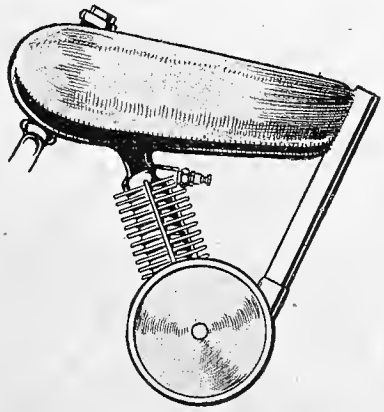


On the Ner-a-car a pressed steel frame embodies the fixed front mudguard shown on the right.

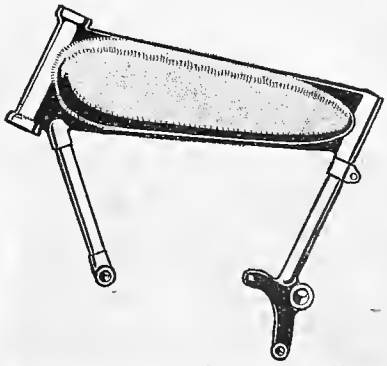
The Peters, hailing from the Isle of Man, has perhaps the most unorthodox form of frame construction, and one which has many points in its favour. In this design, the tank and engine form two sides of a triangle, of which a single tube forms the third side. Undoubtedly, this construction lends itself to cheap production, and, if ever the Ford type of motor cycle materialises, it may be somewhat on these lines.



Two tubes and steel pressings form the main portion of the Hagg frame.



One tube, a tank, and an engine form the three sides of a triangle in the Peters design.



A pressed steel tank forms the backbone of the Beardmore-Precision frame.

The main frame of the Hagg, too, is interesting, while the Beardmore-Precision is now a thoroughly proved proposition, which, with its new 4¼ h.p. engine, will appeal to a larger section of the public.

As an example of the complete elimination of tubular construction, the Ner-a-car deserves examination, for here automobile practice is clearly followed.

Several new types of spring frames are shown, notably the Peters and Hagg. The concealed front spring, contained within the steering head of the former, is extremely ingenious.

Steel lugs are much more common, and the Beardmore and new proprietary frame unit have no cast lugs in the whole frame construction.

Saddle tanks are popular, but tank fittings remain much as usual. There are, however, two instances of a new type of fixing. In the case of both Excelsior and Omega light models, the tanks are pressed up against the top rail by plates operated by jack screws in special lugs. This fixing is neat, simple, and provides a large bearing area. On a number of lightweights the tanks are secured by horizontal bolts to the web of the head lug and similarly at the rear.

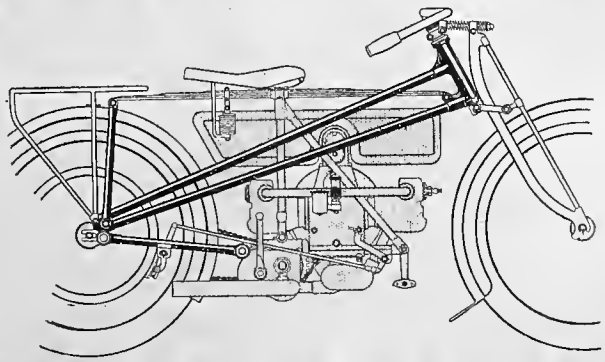
A few manufacturers of sporting models provide a fork stop to limit the steering lock, and thus prevent the handle-bars from scratching the tank enamel.

WEATHERPROOFING.

A steady improvement in mudguarding is noticeable, and the wide flat guard has made considerable headway. Added to this, many machines are fitted with legshields as part of the standard equipment. There is also a tendency towards weatherproofing, which may cause a complete change from the conventional diamond frame. The Hagg, Omega, and Reynolds are noticeable examples of frames designed purely from this standpoint.

IGNITION AND LIGHTING.

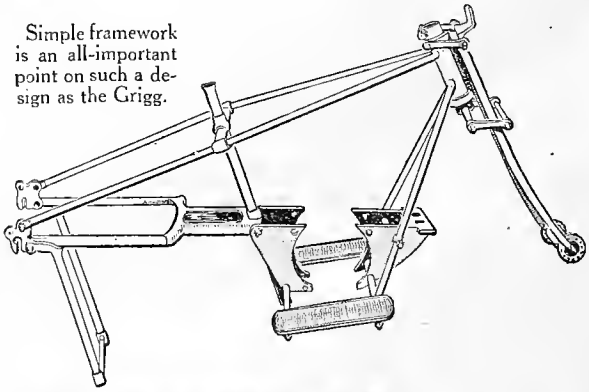
Magnetos still hold their sway, but, as far as two-stroke engines are concerned, their supremacy is challenged by the flywheel type of magneto, which is growing increasingly popular. Villiers, Runbaken, and B.T.H. are three well-known makes available for the market. This type of ignition has certain advantages, since it saves an auxiliary drive, saves weight, and can be adapted so as to form a simple lighting set in addition to its primary function.



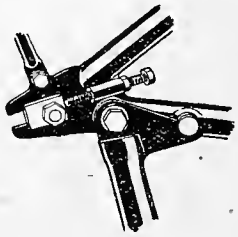
There is not a large increase in the number of spring frames, but the McKechnie-Coventry Victor suspension makes up in originality for the lack of numbers.

The M-L Maglita and B.T.H. Sparklight are well-proven examples of combined lighting and ignition

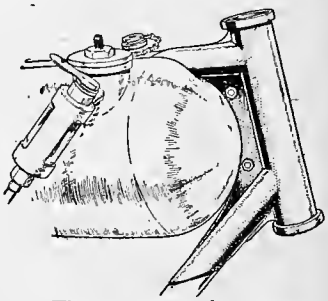
Some Modern Tendencies in Frame Design.



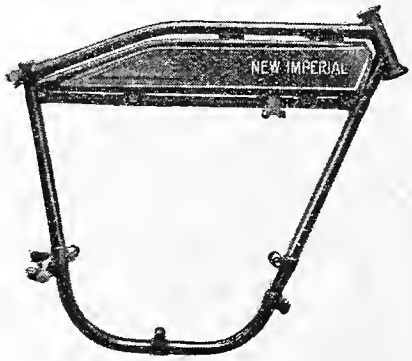
Simple framework is an all-important point on such a design as the Grigg.



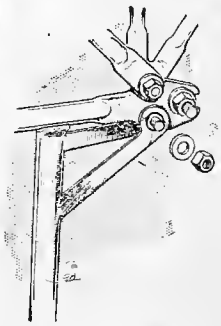
Chain tensioning arrangements on the $2\frac{3}{4}$ h.p. New Imperial sports model.



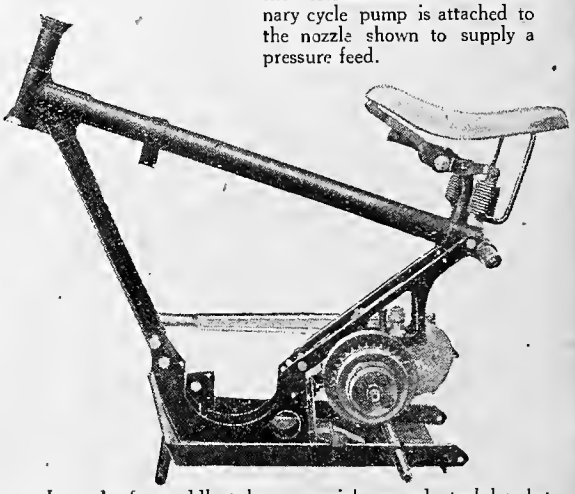
There is an entirely separate oil compartment in the tank of the Victoria-Villiers. An ordinary cycle pump is attached to the nozzle shown to supply a pressure feed.



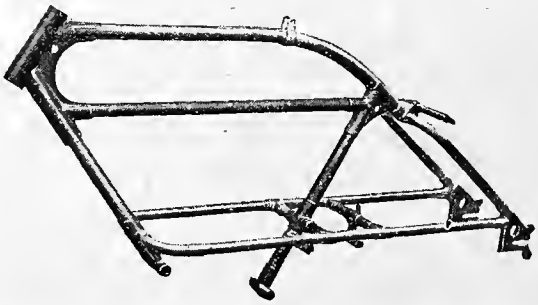
Complete engine and gear assembly is secured by three point attachments in the New Imperial lightweight loop frame design.



Method of attaching the rear stand on the Wolf-Villiers

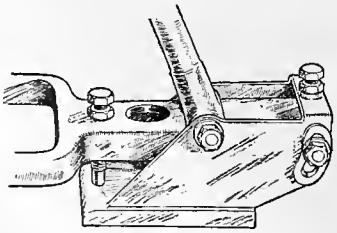


Instead of a saddle tube, a special pressed steel bracket supports the engine cradle, underscreen and gear box on the Hagg tandem.

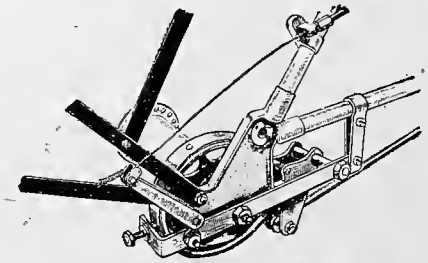


On the XL frame the rear chain stays are continued forward to form a cradle for the power unit.

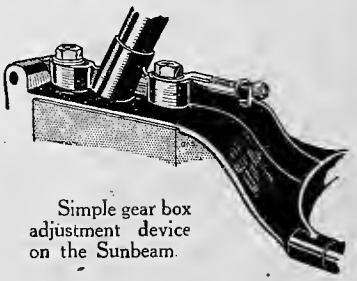
Distinctive points on the Powell frame are a cradle for the engine and an auxiliary stay to the rear of the gear box bracket.



Swinging gear box bracket for the adjustment of the primary chain on the Olympic.



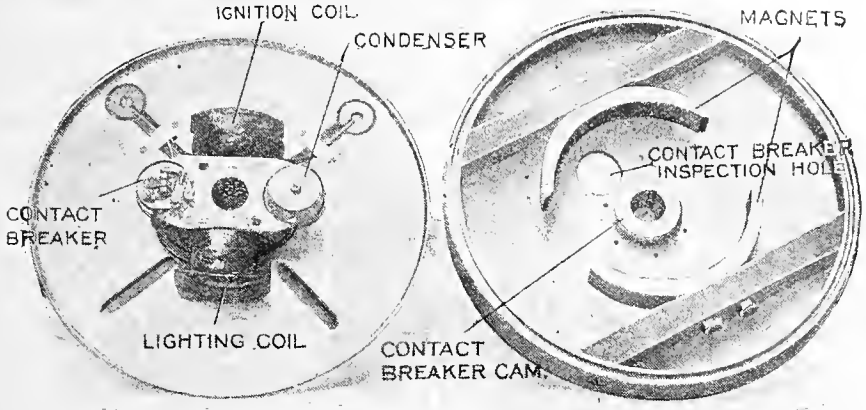
Anchorage and operating gear of the external contracting band brake on the XL.



Simple gear box adjustment device on the Sunbeam.

What the Show Reveals.—

devices of the simple but efficient types. Among newcomers to motor cycle lighting sets is the well-known firm of C. A. Vandervell, and from the growth in the number of electric lighting outfits, it would appear likely that electricity will become the standard means of illumination in the future, but at the moment acetylene is the cheapest form of lighting set applicable to all types.



Flywheel magnetos are increasing in popularity. This one fitted on the Hawker shows the simplicity characteristic of the type.

SIDECAR CHASSIS.

Sidecar chassis show decided improvement, and are becoming more mechanical, and strength and simplicity are taking the place of a multiplicity of fantastically curved tubes. The Girdex pressed steel chassis is one of the simplest and soundest productions.

TYRES.

Except for the all-important question of price, there is no doubt whatever that larger tyres would be fitted on almost every machine. Manufacturers have at last realised that larger tyres provide greatly increased comfort for the rider and comparative immunity from trouble. In these days, however, the increase in price inherent on the fitting of big tyres is apt to hinder the good intentions of the manufacturers, but many firms, however, have decided to fit larger tyres as standard, while others offer an option of oversize tyres. In this connection, it is interesting that nearly all the larger sizes of tyre are made for light cars, and, consequently, are unnecessarily expensive and heavy for motor cycle loading. A large section but comparatively lightly constructed tyre would be a boon to solo riders.

The Highest Road in Great Britain.

Is it in Aberdeenshire? Describing a Climb to an Altitude of 2,350 Feet.

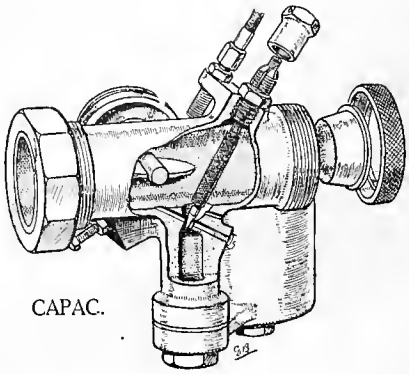
WHICH is the highest metalled road in Great Britain? According to an Aberdeen reader it runs from a point on the main Deeside road some 400 yards east of Invercauld Inn to the road from Balmoral on to Loch Builg, the junction with the latter road being near the fort at the east end of Loch Builg. This record road rises to 2,350 feet above sea level, and our correspondent would be interested to hear if any reader knows of a higher metalled road in our islands. Messrs. George Cumming, of Aberdeen, and Douglas Sangster explored this track during the summer. It is about eight miles in length, and was made by Mr. Farquharson, of Invercauld to replace a road across his estate which he wished to close in order that his deer forest might remain undisturbed. Mr. Cumming attempted the first pathfinding expedition with a Harley sidecar, and on several occasions he had to lift the chassis over boulders, heather, etc. Later on our two readers made a fresh attempt, mounted on a sports Sunbeam and a 3½ h.p. twin-cylinder James respectively. They took nearly two hours to climb the 3½ miles to the summit. There are a few Inverfarigaig pattern hairpins, but the vile surface constitutes the chief obstacle, though the scenery amply compensates for the difficulties of the road. It is alleged that a car of unknown make and ownership is the only motor vehicle which had previously attempted the climb. If any Scottish club is planning a "find a winner" competition for next summer, this road should be of interest; but it is considered far too arduous for a Scottish Six Days.

It is claimed by the two motor cyclists who rode the above machines up that this is the summit of the highest road in Great Britain.

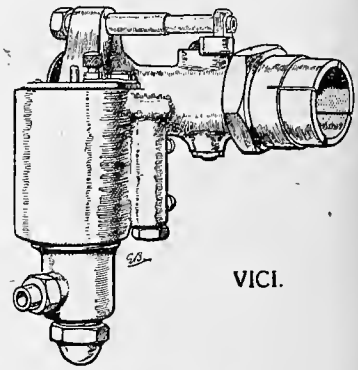
The explorers took a copy of *The Motor Cycle* with them, and read it ceremonially on the summit. They also deposited copies in the lounge of the highest hotel in Great Britain (the Tomintoul Hotel) and in a farm on the highest agricultural land in Great Britain (Mr. Downie's farm at Tomintoul).

Some Carburetters at the Show.

A Preponderance of Single Lever Instruments on the Market Next Year.



CAPAC.

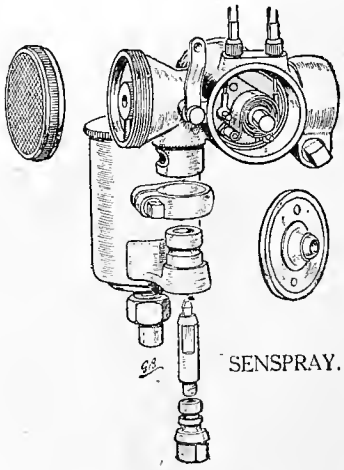


VICI.

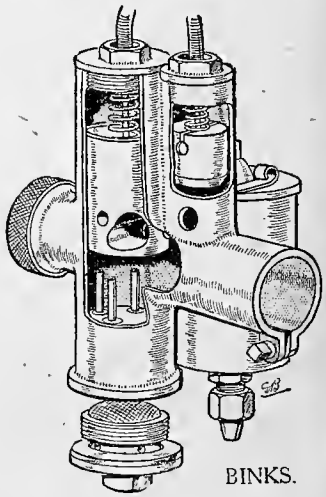
PETROL engines demand a perfect or nearly perfect explosive combination of air and petrol vapour to function to the best advantage.

Perfection, however, in anything is difficult of human attainment, and for that reason, no doubt, the problem of the ideal carburetter has attracted and worried almost everyone interested in motor cycle design. Almost every carburetter designer has claimed perfection for his production, but the fact that no one type or make has superseded all others indicates that, in this field as in most others, the ideal is not to be attained by one path and one method.

Tendencies, however, go to indicate that the older methods of carburetting air by means of a plain "jet in pipe" and separately controlled air and gas throttles are moribund; advantage is being taken of all the known and many guessed-at laws of pneumatics and hydraulics, and we have for 1922 a greater range of automatic (single control) carburetters than ever before.



SENSPRAY.



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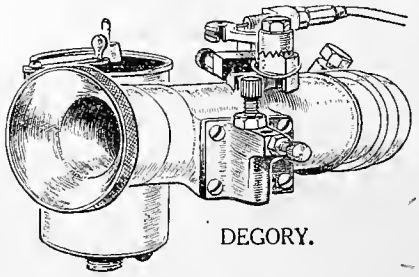
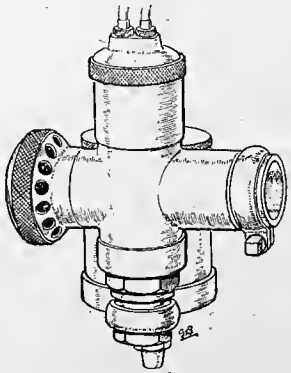


DEGORY.



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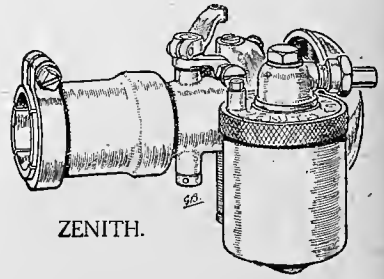

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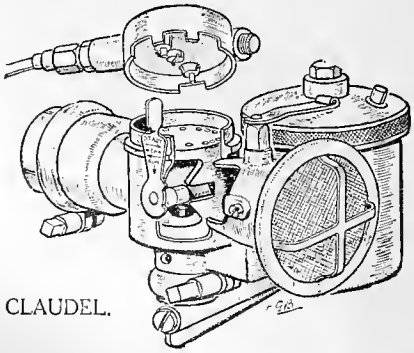

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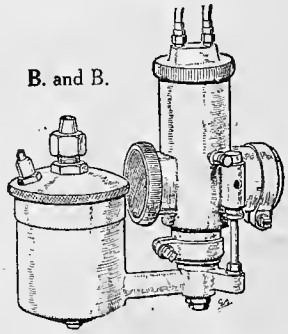
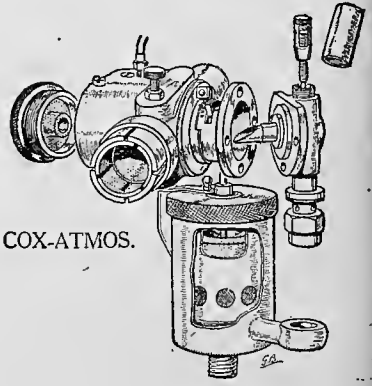


B. and B.



COX-ATMOS.

Current Chat

Times to Light Lamps.

Dec.	2nd	... ...	4.53 p.m.
,,	4th	... ...	4.52 ,,
,,	6th	... ...	4.51 ,,
,,	8th	... ...	4.50 ,,

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Rock-bottom Prices.

Price appears to be a more important factor with the potential buyer at this Show than ever before. But he has little to complain of in this respect.

Popular Show Week Entertainment.

Have you seen *The Motor Cycle* film? This is a common question at Olympia this week, and by Saturday night we think there will be few answers in the negative. The film, as already announced, is showing all this week at the Polytechnic Cinema, at the upper end of Regent Street, about one minute's walk from Oxford Circus. It is included in the ordinary programme of the house, and appears at 3.30 p.m. and 8.30 p.m.

Provincial Release of "The Motor Cycle" Film.

Next week *The Motor Cycle* film starts on its round of the clubs, and will be seen at Coventry (Monday and Tuesday), Cheltenham (Wednesday), Gloucester (Thursday), and Stafford (Saturday).

Not at the Show.

A reader recently asked our Queries department whether, in the event of a four-stroke being purchased, there was any apparatus on the market for instantly converting it into a two-stroke when extra power was required, as when fitting a sidecar for occasional runs.

To New Readers.

This number of *The Motor Cycle* is enlarged, and is devoted chiefly to the all-important Olympia Show. With next week's issue we shall resume the characteristic features which have been so popular and which have helped to make *The Motor Cycle* the only motoring journal with a circulation exceeding 100,000.

Written and illustrated by keen motor cyclists of experience, our pages are practical and entertaining. They form a weekly record of the development of the motor cycle and all that assists to this end. In addition, *The Motor Cycle* contains special features of interest to the novice and the lady motor cyclist, and authoritative articles on technical subjects written so that they may be understood by all.

£20 per Day Penalty.

The registration fee for a motor cycle in New Zealand has been fixed at 5s., and the annual licence £1. The penalty for using an unlicensed vehicle is £20 per day.

High Speeds in Belgium.

Our Belgian correspondent sends us the official results of the recent Dreghem flying kilometre trials, which are as follows: Amateur Solo Championship.—M. Cauchy (Norton). Trade Class (1,000 c.c. sidecars).—1, Piérara (American X); average speed, 65 m.p.h. 1,000 c.c. Solo.—1, De Mulder (7-9 Indian), 89 m.p.h. mean speed (Belgian record); 2, Taymans (American X), 142.458 km.p.h. mean speed. Taymans on one run attained the highest speed ever attained in Belgium (91 m.p.h.). 1,000 c.c. Sidecars (Amateur).—M. Brachin (7-9 Harley), 44 m.p.h.

Special Features.

STAND-TO-STAND SHOW REPORT.

WHAT OLYMPIA WILL REVEAL.

A New Fashion?

Sidecars painted in well-known public school colours are offered at Olympia attached to Brough Superiors.

Where is the Highest Metalled Road?

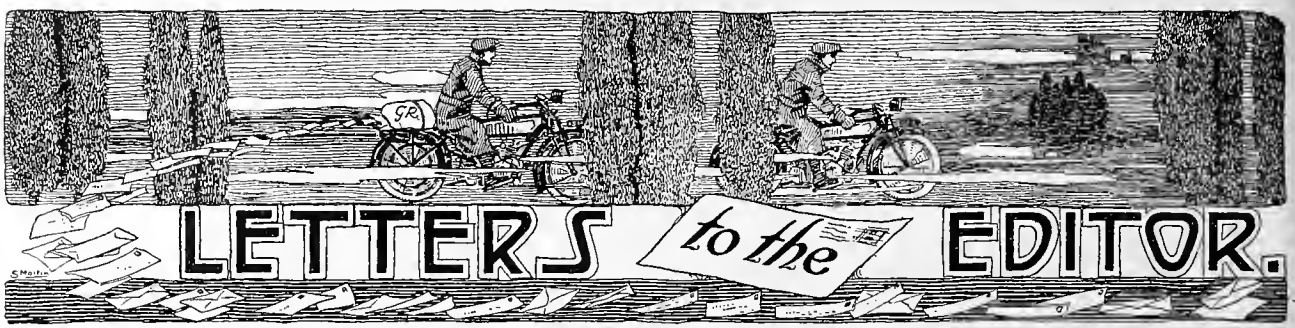
On another page will be found a description of a motor cycle ascent of what is claimed to be the highest metalled road in Great Britain. It is in Aberdeenshire, and reaches an altitude of 2,350ft. Does any reader know of a higher?

Defining "Sports Model."

There appears to be considerable latitude in the exact definition of a "sports model." Any solo machine on which the handle-bar grips are not more than 9in. higher than the top tube, according to a cynic, may be catalogued as a super-sporting model.

A STRENUOUS TEST FOR AN ULTRA-LIGHTWEIGHT.

Although only weighing 75 lb., this little machine—the McKenzie—successfully accomplished an A.C.U. observed test from London to Exeter and back. The illustration shows the rider, W. E. Smith, at the finish of his ride.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

"MERCURIAL FRENCH CHALK."

Sir,—In reply to the query of "BL9232" (Woking), in your issue for November 17th, as to how to carry French chalk, I am not aware how "Ixion" overcomes the dusting nuisance, but I carry a piece of solid French chalk, such as tailors use, and when required scrape a little off with a penknife or piece of rough glass paper. It is the acme of French chalk economy and cleanliness. FX 3462.

Cornwall.

TAXATION AND THE SAILOR

Sir,—Whilst not in the least begrudging the Revenue tax, which it is necessary for us to pay to possess the means of indulging in our sport, I certainly am of the opinion that some rebate should be made in this matter of taxation when the possessor of a machine is serving in His Majesty's Forces, more especially the Naval branches, as we have to pay the full taxation, and enjoy perhaps fourteen days or a month per year, using our machines on the highways for a total of approximately half this period, whilst our more fortunate brethren can exact their full toll from the roads, not to mention the enjoyments and benefits derived from it.

I have never seen this mentioned before in your columns, and I would like to know how it appeals to you, and your views on the subject. W.A.P.

London.

DOES THE SPARE WHEEL JUSTIFY ITSELF?

Sir,—The statement is frequently made that the modern sidecar is over-developed and needlessly elaborated. This must manifestly be rather a question of opinion than of demonstrable fact, but it may well lead to some enquiry as to how far some recent developments actually justify themselves in everyday service.

It has now become quite usual to see the powerful outfit equipped with a spare wheel, thus following car practice. No rider is obliged to carry one, of course, and many unprovided with this refinement may feel that they have reason to envy their more fortunate friends of the road.

What I would like to discover, however, is just how often that spare wheel is used; just how much of inconvenience it has really saved its owner; whether, in fact, it actually justifies itself. SIDECAR WHEEL.

Newbury.

IMPROVING AN A.B.C.

Sir,—May I trespass on your space to ask "A.B.C. Rider" (Pinner) (1.) The name of the carburetter that makes an A.B.C. tick over like a Leyland? (2.) Will he let me know his "proper gudgeon pin fixings," or where I can get the job done, or the materials to do it myself?

These questions are put in the best spirit, and not in any sarcastic sense. The slow-running device on the Claudel precludes it from taming an engine like the A.B.C., and the gudgeon pins—well, I have just tracked down a loss of power to a neat little gulley in my No. 1 cylinder wall! and I find the gudgeon pin has lateral movement in the piston. Only the brass plates on the gudgeon end seem to hold it on.

I endorse all "A.B.C. Rider" says about his machine, as its comfort and charm are such that I do not want any other (bar the French "3½"). F. MASON.

[Several other correspondents also ask these questions.—Ed.]

RELATIVITY—AND THE PROP STAND!

Sir,—An article entitled "Prop Stands," which appeared in November 3rd issue of your popular journal, is my reason and excuse for wandering into your correspondence columns.

I think I have rightly gauged the psychology of the average motor cyclist when I suggest that at least 80% of the soloists who fit prop stands will use them to support their pet "speed iron" when in the garage resting from its labours.

Now, I gather that when the prop is in action the machine leans towards it, at a slight angle θ, from the vertical.

I was in the habit of using a stout bar (a length of T iron to be exact) to prop up the machine in the garage. This when in action fitted comfortably in the junction of the tubes below the saddle, while the lower end rested on a rough concrete floor; the 'bus was put in low gear, and the coefficient of friction at either end of the bar was great, and there was no chance of anything slipping or moving, and the 'bus leant at the same small angle θ, about 10° or 15° from the vertical.

Here comes the snag which might equally apply to prop stand. I said, "Good night, old darling," and propped it up in the usual manner, but next morning my horrified gaze rested upon the sight of the old 'bus huddled up on the floor with the front wheel and bars at an uncomfortable angle. A hasty inspection revealed the fact that not much damage had been done beyond a battered A.A. sign and a bent control. Further examination led to the discovery of the deflated and dejected aspect of the back tyre, which had, as tyres will, attached to its person a tintack, the pneumatic equivalent of a slow puncture.

Now with the decrease in size of the tyre was a corresponding diminution in the angle θ till θ = zero; then things happened.

The moral to be drawn is "Leave not thy two-wheeled wife too long to meditate on one leg, lest, peradventure, she should 'tyre and sigh.'" HUMBER 1st.

Shortlands.

TWO-STROKE RATTLE CURED.

Sir,—I own a Villiers-engined machine, which was new in February, 1921. Up to a couple of months ago it was very satisfactory, and then it started an unpleasant rattle when climbing a long hill on top gear or when driven hard on the level.

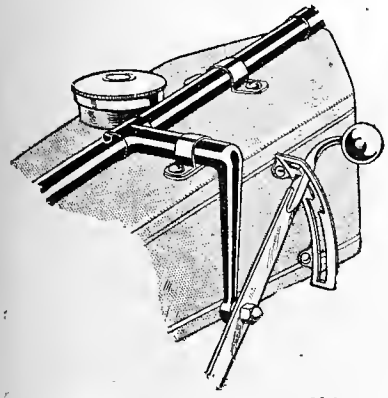
This noise would disappear after decarbonising, but would come again within about 200 miles. I may say that all bearings are perfect, the rings have no up and down play in the grooves, and the gap between the ends is correct, so I thought I would go into the matter thoroughly.

After filing the sides of the deflector head with no appreciable improvement, I found that there were several very bright spots on the sides of the piston, so I took these down with emery, and reassembled. The difference is remarkable. The engine has now a maximum speed of 44 m.p.h. (timed, and by Bonniksen), and can be driven indefinitely at 28-30 m.p.h. or more with no sign of a rattle.

In conclusion, users of two-strokes will find immense benefit if they regularly use Spots. After not being touched for 1,000 miles, my engine was remarkably free from carbon, and both top rings absolutely free in the grooves.

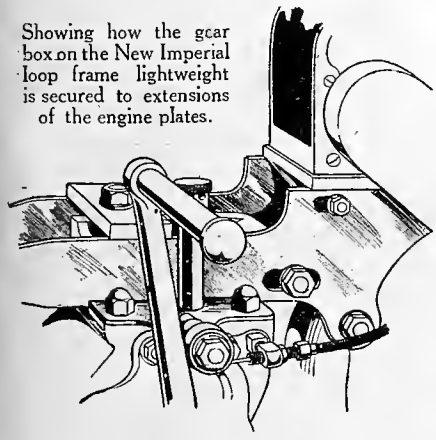
G. R. PETTINGER.

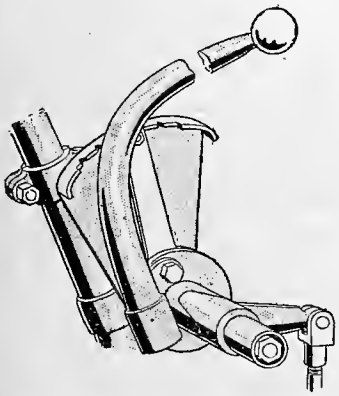
NOVEL GEAR DETAILS ON 1922 MOUNTS.



Gear control on the three-speed Velocette is now effected by the usual gate, which is fixed to the tank, instead of the novel rotating knob arrangement of last year.

Showing how the gear box on the New Imperial loop frame lightweight is secured to extensions of the engine plates.

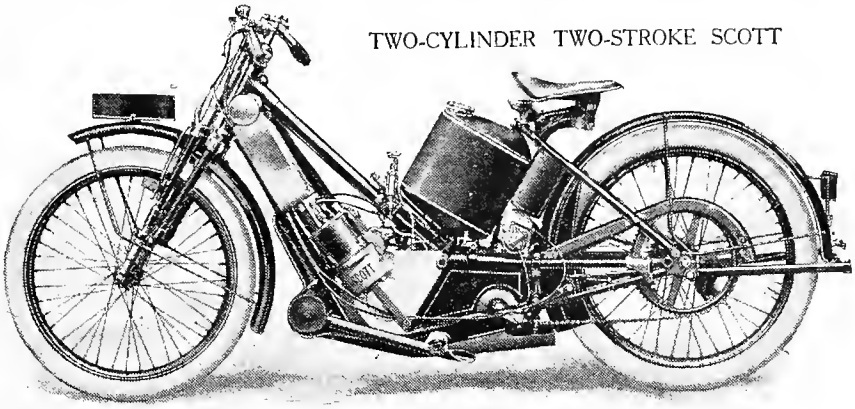




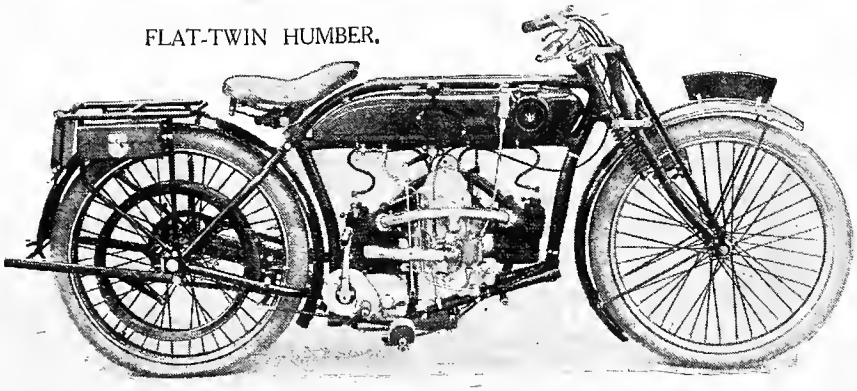
A modified form of Sturmey-Archer gear control employed on the 4¼ h.p. Beardmore-Precision.

Four Types of Sporting Mounts.

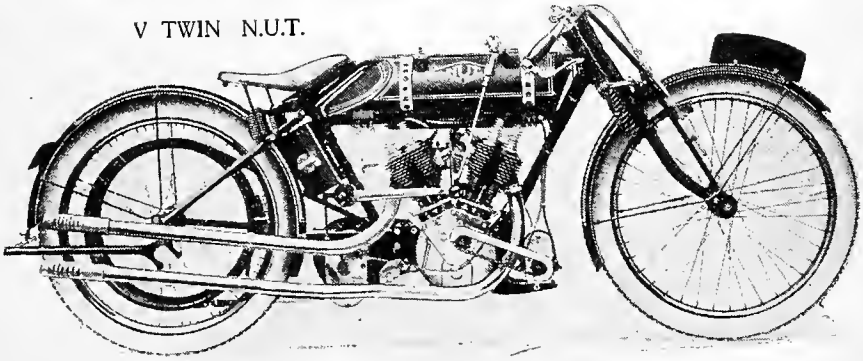
TWO-CYLINDER TWO-STROKE SCOTT



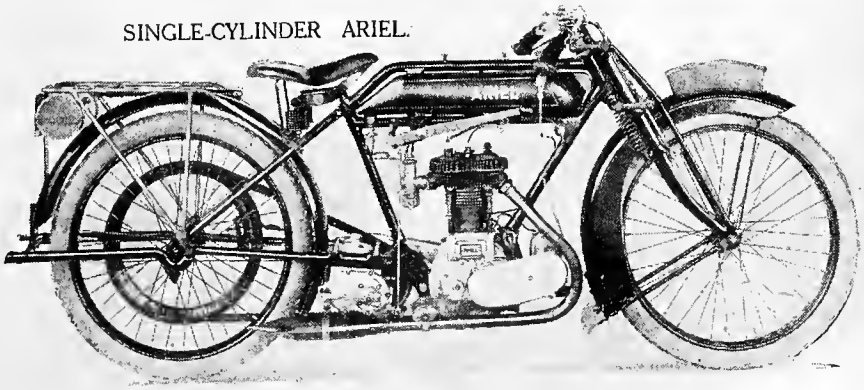
FLAT-TWIN HUMBER.



V TWIN N.U.T.



SINGLE-CYLINDER ARIEL.



IS THE MODERN SIDECAR TOO POWERFUL?

Sir,—I enclose a photograph which may possibly be of interest, as it illustrates the capabilities of a 1920 7-9 h.p. outfit. I may say that I do not make a habit of carrying this load (about 53 stone), but, owing to a friend having had bad tyre trouble one Sunday, and there being no trains, we all managed to get fairly comfortably seated on and in my outfit, and travelled from Noss Mayo to Plymouth, a distance of about sixteen miles. This included four bad hills, one hairpin of nearly 1 in 4, and also the well-known Puslinch Hill. We once attained a speed of 28 m.p.h. on half throttle, and we arrived home with neither passengers nor machine any the worse.

On a difficult journey, with five up. (See accompanying letter.)

An exceptional reserve of power may be useful on such an occasion, but, for ordinary touring conditions, is it necessary? It is, however, interesting, and proves what the modern heavy motor cycle will do.

Devonport. A FRIEND IN NEED.

TWO-STROKE FAILINGS.

Sir,—Can any reader tell me of a two-stroke that does not burn its top piston rings? Having ridden three well-known makes, I find that this is the one great fault, which becomes rather expensive when one has to keep renewing them, and it also means time and trouble fitting them.

London, S.W.6. TWO-STROKE.

ELIMINATING MECHANICAL NOISE.

Sir,—Under this heading "Multi Gear" asks for the advice of readers on reducing the noise of the valve gear of the 3½ h.p. Rudge-Multi. I am only a prospective motor cyclist, but, as my fancy is the Rudge-Multi, I naturally take an interest in that machine. I presume "Multi Gear" is referring to the inlet valve gear, which seems to be generally reckoned to be on the noisy side. My theory to account for this is that, whereas a side valve engine has only one point of external impact (between tappet and valve stem), the Rudge has three (tappet to inlet valve rod, inlet valve rod to overhead rocker, and overhead rocker to inlet valve stem). The obvious cure is to spring-load the rocker to hold both ends of the inlet valve rod in constant contact with the tappet at the bottom and the rocker at the top. This should give silence equal to that of a side valve engine, as the gap allowed for clearance is now definitely confined to one spot, instead of distributing itself between three. Moreover, the inlet valve spring now merely has to close the valve only, allowing the use of a lighter spring, and consequently reducing wear and tear on the valve seat. Hoping this will be of some assistance to "Multi Gear."

London, S.E.18. RUDGE IT.

Sir,—I know of an instance where a covering was placed over the overhead gear for experimental purposes, and the result was that it simply lowered the tone of the sound; this was attributed to the fact that the covering was already placed upon an intermittent vacant space (the cylinder).

I should like to suggest that "Multi Gear" try a small spiral spring, the tension of which would not materially affect the pressure of his inlet valve spring, and fit the same so that it fits over the adjustable tappet and presses against the operating rod, to which it must be connected so that the spring will constantly keep the operating rod rocker arm and valve stem as one unit.

This being done, fit a small fibre disc in the cup in which the operating rod resides, that is, between the bottom of the operating rod and the top of the adjustable tappet.

STAN HEALES.

Sir,—When I first had my Rudge I experienced a "clatter" from the valve gear, but on advice had the adjustable overhead rocker fitted by the Rudge-Whitworth Co. This, I find, does away with the noise, as the rocker can be adjusted after the engine has got hot. There is, I think, no need to explain the effect of the expansion of the cylinder on the valve gear. RUDGE-MULTI.

Radnorshire.

MISLEADING HORSE-POWER RATINGS.

Sir,—With the Show here once again, it may not be out of place to say a few words about the present rather misleading relation between the horse-power of an engine as given by the makers and its cubical capacity. Take the 4 h.p. class. Several engines of widely different capacity are rated at this power. We have the Blackburne of 499 c.c., the Triumph 550 c.c., and the Norton 633 c.c. This anomalous rating might cause a novice a good deal of confusion as to the size and power of the respective machines. He might be led to believe that the 4¼ h.p. B.S.A. is a larger and more powerful machine than the Big Four Norton, though the latter has a considerable advantage in the matter of c.c.

One notices a similar state of affairs in the smaller classes. Here we have the two-stroke Precision engine rated at 3½ h.p., and numerous four-strokes, such as the little A.J.S., which is at least the equal of the Precision in speed and power, rated at 2¾ h.p., though the two engines are of the same capacity.

I learn on good authority that one of our leading manufacturers intends rating his 499 c.c. 3½ h.p. single at 4 h.p. for 1922, giving as the reason that various improvements in design justify the increase. This is where I think he is wrong. Makers' horse-power has always been an arbitrary term, bearing very little on the actual b.h.p. developed, and used as a guide to the size of the engine. Let the makers all agree to adopt some standard formula (not the R.A.C. one), or else keep to the old-established ratings. Nearly everyone realises that modern engines give b.h.p.'s far in excess of those of ten years ago. SPEEDWELL.

Tonbridge.

SIDECAR FUEL CONSUMPTION PERFORMANCES.

Sir,—I should like to state that during September, on a trip to Bath and back, with a 14 st. passenger, I did 168 miles on a tin of No. 1 Shell—79 m.p.g.—this on a 1920 8 h.p. New Imperial sidecar. Can any of your New Imperial or other readers beat this? E. A. PRATT.

Sir,—I am very much interested in the letter from "Ignoramus," wherein he stated that he averaged 92 m.p.g. with Triumph and sidecar (two up).

There are at least half a dozen of my friends who own late models of Triumphs and sidecars, but none of us can obtain more than 55 m.p.g. with two up, although a few of us claim to be "experts" in tuning engines, and generally competent in adjusting brakes, wheel cones, etc.

Personally, I have tried nearly all the recommended economy stunts—W.S.R. jet, extra air gadgets, etc—but cannot get more than 55 m.p.g. with two up on the Portsmouth Road. I only carry standard equipment, an 8 st. passenger, and my own weight is 10 st. The sidecar is a Gloria Special, and is absolutely in line with the machine, and all parts, gear box, wheels, engine, and valve clearances are attended to regularly. The compression is good, and no leaks are present in the induction pipe of the Triumph carburetter.

Now, can "Ignoramus" give your readers a few hints, such as type of carburetter, valve clearances, type and weight of sidecar, weight of driver and passenger, blend of spirit used, type of screen (if any), etc.? H. S. B. BOOTH.

WHY NOT RUBBER?

Sir,—I wish the A.A. could invent a new badge. I get caught up in mine about twice a week. HUMBER 1ST.
Shortlands.

STANDARD ENGINES AT BROOKLANDS.

Sir,—Under "Occasional Comments" in your issue of October 27th "Ixion" mentions the fact that the two Indians entered for the scratch races at the last B.M.C.R.C. meeting had, according to Mr. W. H. Wells, absolutely standard engines. I have been present at most of the meetings at Brooklands this year, and have noticed that the Indian machines usually arrive at the track in a motor van, with mechanics *ad lib.*, and perhaps Mr. Wells will explain why it is necessary to keep his engines covered with a blanket, both before and after the race. Is he afraid of his wonderful engines being too closely inspected by an admiring public? F.E.L.
Dulwich.

ACCIDENTALLY INTENSIFYING THE SPARK.

Sir,—Having read with much interest the letter in your valuable columns from Mr. W. H. Massey, and duly noted that this gentleman has apparently got static electricity well between his fingers, I should be obliged if you would kindly publish the few queries herewith, in order that Mr. Massey might see them, and let me, together with some friends who are interested, have his opinion upon the matters in question.

Although the topic is not in connection with auxiliary spark gaps, Mr. Massey will probably be somewhat interested.

A friend of mine has a baby two-stroke of well-known make, in which he used an old pre-war Bosch plug until quite recently. Having the misfortune to crack the insulator on this plug one afternoon, I lent him a plug of a well-known British make. After covering about two miles his engine petered out quite without warning, and upon our examining the plug we found that it was bridged across the gap by a large piece of carbon. We cleaned the plug and replaced, only to have the same occurrence one and a half mile further on. This continued throughout the day. Upon arriving home, my friend attached an old O. and J. plug protector, which is a small cup shaped aluminium object, being made with numerous radiating fins around its sides; it drops over the top of the central pole of the plug, and is held down by the terminal screw. This thing he had long ago thrown aside, upon my advice, as being useless.

After fitting it he rode for the whole evening without any sign of the trouble, and has continued to do so without trouble for the past three weeks.

What we want to know is, What effect did this plug protector have on this plug to prevent it from sooting up? My friend says that it is owing to the protector keeping the central electrode cool; but, in my opinion (based upon the use of condensers in the wireless service), the large aluminium surface extending right down the body of the insulator to within ⅛in. of the metal body of the plug, forms a sort of condenser with air di-electric across the points of the plug, thus intensifying the spark and preventing the carbon from forming on the points. SPARKLET.
London, N.2.

HOW "FORTY-FIVE" AVERAGES ARE MAINTAINED!

Sir,—In these days of high speeds and non-stop runs, the following little episode is somewhat amusing and instructive.

I was running North a few days back, and stopped at the Red Lion *café* at Stamford about 10 a.m. for some refreshments. The shop was soon after invaded by four "speed merchants," and the air was full of "non-stops,'" "50 (to) 70 m.p.h.," etc. They left just before I did, riding respectively a Triumph, Rudge, 2¾ h.p. Douglas, and Levis. I was riding a 4 h.p. Douglas sidecar, and overtook them the other side of Grantham. They were all well down to it, doing between 55 and 60 m.p.h. (?) My speedometer was at "31 m.p.h.," but I have always had my doubts about that instrument. I thought nothing more about it, and arrived at the Three Greyhounds at Boroughbridge at 7.30 p.m. At 9.15 in walked the four gentlemen, and we entered into conversation.

I will say this for them, they told the tale well. They had left Finchley about two o'clock that afternoon, and came through non-stop at an average of 45 m.p.h. No! more than that, as one of them remembered that they had stopped for tea at Doncaster. I enjoyed the chat, and am afraid rather led them on.

The next morning I was just leaving when one of them appeared. I was in warpaint again, and he looked hard. "Weren't you at Stamford yesterday morning?" I slipped in my clutch. E.L.S.
London, E.C.4.

SNOW BOOTS FOR WINTER RIDING.

Sir,—It has always surprised me that so few motor cyclists make use of snow boots in conjunction with overalls during winter riding. I have always done this, and can thoroughly recommend the practice to other motor cyclists who may suffer from cold feet. The advantages are that you arrive at your destination with feet that are warm and cleanly clad. Also it is possible to ride in the worst weather using an ordinary pair of light house shoes. COLD PAWS.
Cambridge.

ETHICS OF THE A.A. SERVICE.

Sir,—One often sees correspondence in the motor press from people who wonder what benefits they derive from belonging to the A.A. Such people evidently expect a scout to spring up from the earth, like a benevolent genii of the Arabian Nights, every time they have a breakdown. I have just completed 4,000 miles on my sidecar, my travels taking me to all parts of the country, and I can honestly say that the silent service of the A.A. in indicating the names of towns and villages with the yellow discs, giving intermediate distances, and erecting notices of warning and advice, etc., has been of invaluable assistance and worth ten times the amount of the subscription. Moreover, the facilities afforded at garages showing the A.A. sign have done much towards making the season's riding so pleasurable.

I have never needed the assistance of a scout, for I regard such help as "sick benefit" from the A.A.; and I try to emulate the veteran member of the Ancient Order of Foresters, who boasted that he had paid in for fifty years and drawn nothing out! In other words, I keep the machine in such a healthy condition that it needs no doctoring on the road. I was led to join the A.A. by participating in its silent service, as indicated above, for nothing, and suddenly realising that it was time I paid something for it. There are thousands of motor cyclists who benefit from this A.A. service without a twinge of conscience at taking something for nothing. I have no connection with the A.A. except being a satisfied member. TRIUMPH.
Northampton.

SUMMARY OF CORRESPONDENCE.

"G.G." (Hove) complains of an extraordinary run of bad luck with brand new tyres. Five covers only gave him 1,500 miles.

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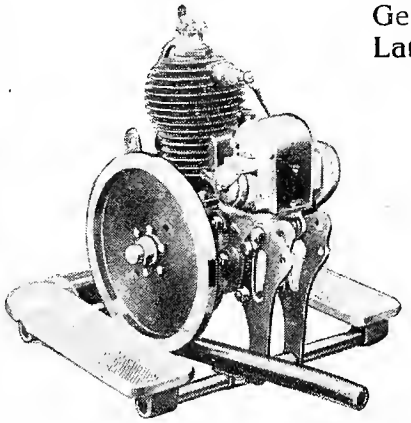
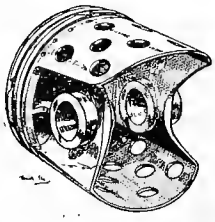
IMPROVEMENTS IN DETAILS.

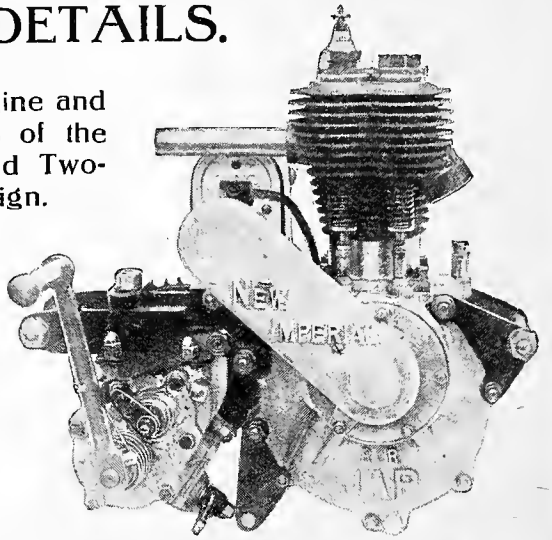
Unit Assembly of Engine and Gear Box. Examples of the Latest Four-stroke and Two-stroke Piston Design.



Engine, footboards, magneto and engine plates may be removed as a unit from the Chater-Lea two-stroke.



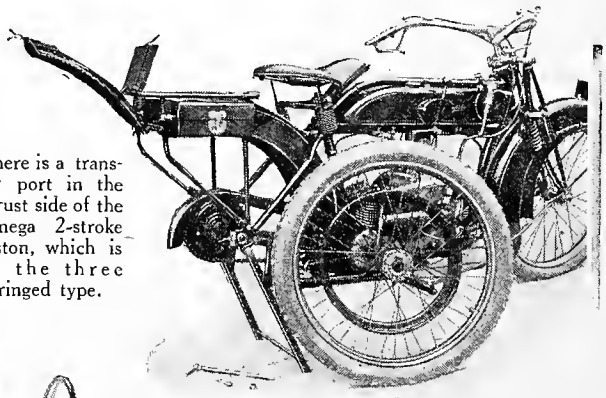
With gudgeon pin and rings the aluminium slipper piston on the o.h.v. Triumph weighs but 14 oz.



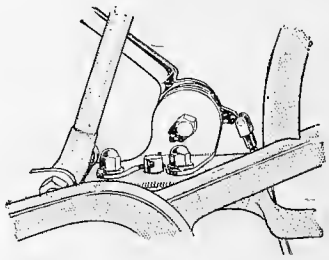
Following a practice which is yearly becoming more popular, the New Imperial engine and gear box are assembled as a unit.

A PORTED TWO-STROKE PISTON.

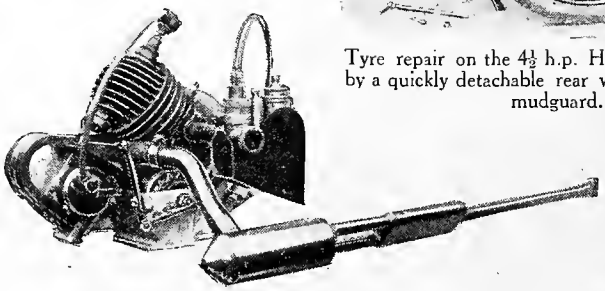
There is a transfer port in the thrust side of the Omega 2-stroke piston, which is of the three ringed type.



Tyre repair on the 4½ h.p. Humber is facilitated by a quickly detachable rear wheel and a hinged mudguard.

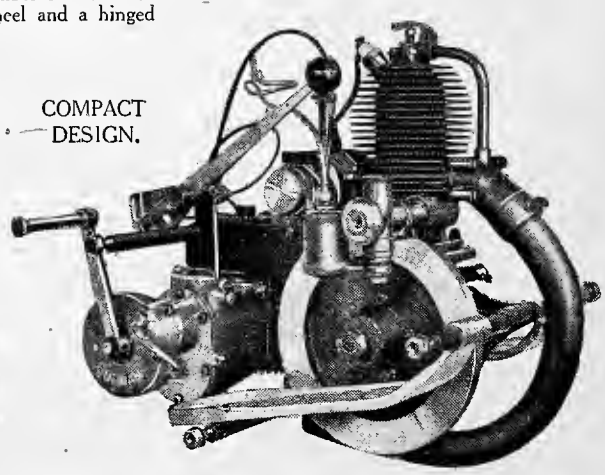


Chain adjustment does not upset the Sturmey gear control on the sports model Francis-Barnett; the quadrant moves with the gear box.

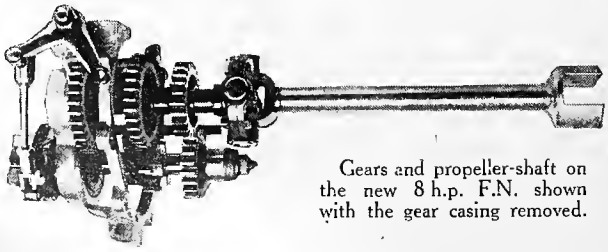


Power unit and silencer of the Hack miniature.

COMPACT DESIGN.



On the new duplex frame Omega the engine and gear box are assembled as a unit.



Gears and propeller-shaft on the new 8 h.p. F.N. shown with the gear casing removed.

East London M.C.C.

A club has recently been formed as above. The entry and subscription fee is 10s. 6d., which will carry the member up to December 31st, 1922. Application for entry should be made to Mr. J. R. Watkins, "The Old Three Colts," 450, Old Ford Road, Bow, London, E.3.

Shepley and District M.C.

In order to maintain interest in the club during the winter months a series of three social evenings are being arranged, to be held on the second Friday in each month. The first will be held in the United Methodist School, Shelley, on Friday, December 9th. There will be no charge for admission, and all motorists and their friends will be welcomed.

Tiverton M.C. and L.C.C.

The committee is arranging an attractive social programme in order to provide members with wholesome entertainment during the long and dreary winter months. Efforts are being made to acquire "headquarters," and as soon as they are obtained whist drives, dances, concerts, etc., will be held on best possible lines. There are now over 100 members. The first annual club dinner will be held on January 5th.

Worcester and District M.C.C.

Results of the one day sporting trial held at the end of October have now been announced:

ERIC WILLIAMS CUP AND FIRST-CLASS CERTIFICATE.—Best solo performance: J. A. Newman (3½ Douglas).

PRESIDENT'S CUP.—Best performance by a passenger machine under 1,100 c.c.: Tie, R. Brown (3½ Sunbeam sc.) and B. Bladder (8 New Imperial sc.). In view of this tie, the cup is to be held by the winners for six months each, and in consideration a club medal is awarded to each instead of a certificate.

RUNNERS UP.—Special gold medals: Solo, F. Main (8 Zenith); passenger, F. Morrall (4¼ B.S.A. sc.).

FIRST-CLASS AWARDS.—Club medals: J. Cave (8 G.N.), W. A. Carr (8 Morgan), J. M. Dosher (8 Enfield), A. G. Silk (8 G.N.), J. L. Shaw (8 Morgan), C. Rogers (3½ Sunbeam), and S. W. Lewis (6-7 B.S.A.).

TEAM PRIZE.—Worcester team.

Winter Social Events.

Tuesday, Dec. 6th.—Lewes and District M.C.C Annual Dinner.
Wednesday, Dec. 7th.—Clitheroe and District M.C. Lecture on "Carburation."
Wednesday, Dec. 7th.—Kidderminster M.C.C. Annual Dinner.
Friday, Dec. 9th.—Shipley and District M.C. Social Evening.
Thursday, Dec. 15th.—Redditch and District M.C.C. Annual Dinner.
Friday, Dec. 16th.—Bradford M.C. and L.C.C Annual Dinner.

West Birmingham M.C.C.

At a recent general meeting it was decided that the club should continue solely as an amateur club. A new committee and officials were elected, including a lady secretary, Mrs. H. G. Gale, 49, Rookery Road, Bournbrook.

North London M.C.C.

The closing event of the year consisted of a short paperchase, which was won by L. P. Walters (4 Triumph). Tea was taken at Radlett, and a very pleasant social evening was spent there.

The club has formed a football team to play during the coming winter, and would like to arrange matches with any other motor cycle club which has a similar team. The football secretary is Mr. R. H. Baxter, 6, Methuen Park, Muswell Hill, N.10.

TO CLUB SECRETARIES.

"The Motor Cycle" Film will shortly be available for loan to enterprising clubs who are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials and the Grand Prix Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates, preferably in April or after.

Sutton Coldfield and North Birmingham A.C.

A. W. Thrush (3½ Sunbeam) was the winner of the Sutton Cup in the recent trial for that trophy. R. G. Beesley (3½ Sunbeam sc.) made the best sidecar performance.

The club's annual dinner will take place on Friday, January 20th, 1922.

Birmingham M.C.C.

Provisional fixtures for next year have now been announced. The most important event, the Victory Cup trial, will be held on either March 25th or April 1st. A final trial for this year will be held on December 27th.

Cumberland County M.C.C.

A lecture was held recently in the Crown and Mitre Hotel, Mr. W. Theodore Carr, M.P., presiding. The lecturer, Mr. E. H. Spence, Chief Constable for the city, chose as his subject "Road Traffic," and treated his audience to a thoroughly able and well-delivered discourse.

Eccles District M.C.C. (Proposed).

A suggestion has been made to form a club as above, and judging from the enquiries already made, the membership promises to be extensive. Those interested should communicate with E. Mees, 40, Church Street, Eccles.

Dublin and District M.C.C.

At the annual general meeting of the Dublin and District Motor Cycle Club, held on the 16th ult., the reports of the hon. treasurer and hon. secretary for the past year were adopted. The committee was able to report that, despite the troubled state of affairs in Ireland during the past year, nine competitions were held during the season. The treasurer's report showed a substantial balance in hand after discharge of all liabilities. It was decided to make an effort to induce the Cycle and Motor Cycle Manufacturers and Traders Union to recognise officially the annual twenty-four hours reliability trial of the club.

ABBREVIATIONS EXPLAINED.

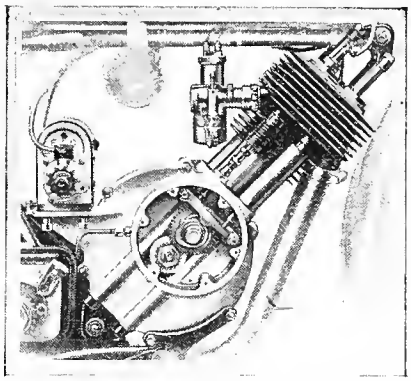
NEWCOMERS to motor cycle matters must often be puzzled by various technical abbreviations which continually crop up wherever any phase of the pastime is discussed.

The following table explains a few of the most common:

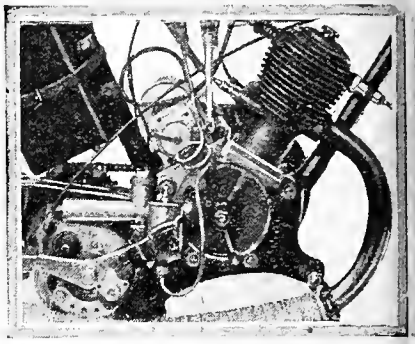
h.p. = horse-power.
b.h.p. = brake-horse-power.
c.c. = cubic centimetres (often erroneously used to denote the words "cubic capacity").
mm. = millimetre.
o.h.v. = overhead valve.
o.h.i.v. = overhead inlet valve.
o.h.e.v. = overhead exhaust valve.
a.i.v. = automatic inlet valve.
V twin = a two-cylinder engine with the cylinders set radially, but not at 180°.
flat twin = a two-cylinder engine with the cylinders set at 180° (sometimes called "h.o.," or horizontally opposed).
two-stroke = an engine (usually valveless) on which the cycle of operations is completed in one up and down movement of the piston, *i.e.*, two strokes.
four-stroke = an engine in which the cycle of operations is completed in two up and down movements of the piston, *i.e.*, four strokes.
t.d.c. = top dead centre (used to signify the position of the piston when it is at the upper extremity of its stroke).
r.p.m. = revolutions per minute.
m.p.h. = miles per hour.
km.p.h. = kilometres per hour.
k.s. = kick-starter.
h.b.c. = handle-bar controlled.
m.e.p. = mean effective pressure (signifying the average pressure in the cylinder throughout the whole cycle of operations).

Interesting Engines fitted to 1922 Motor Cycles.

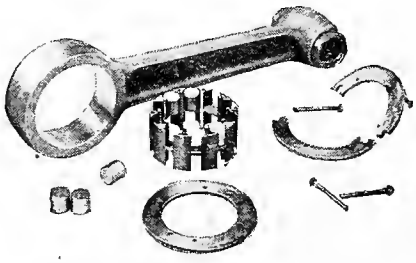
Details of Three New "Big Singles," a Four Valve Speed Engine, a Rotary Valve Two-stroke, and Two Flat Twins.



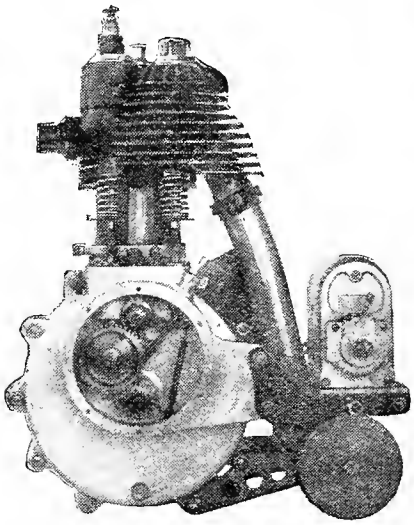
Of increased capacity (555 c.c.), the 4½ h.p. P. and M. engine is a very clean design The timing cover has been removed to show the simplicity of the valve gear.



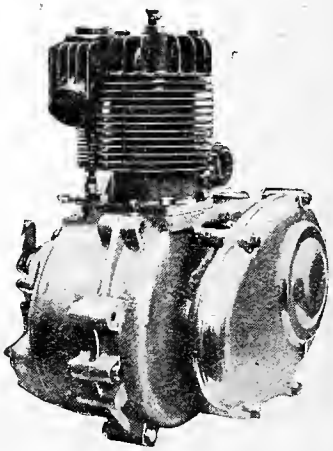
An inclined cylinder has long been a feature of the 2½ h.p. San-Vitesse two-stroke engine.



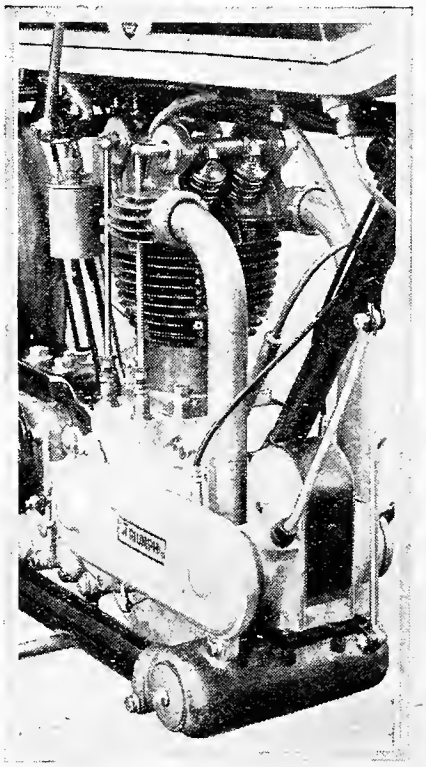
Connecting rod and roller bearings used in the 3½ h.p. sports model Douglas



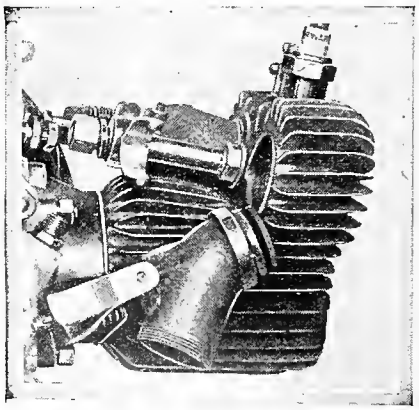
There are no radiating fins on the inlet valve pocket of the 4½ h.p. Abingdon engine.



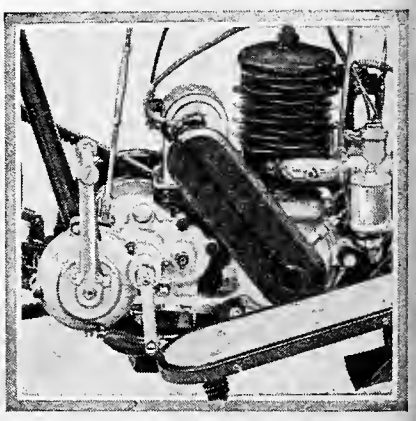
Although the 4½ h.p. Beardmore-Precision engine is in a unit with the gear box, the primary drive follows "non-unit" practice, being by chain.



Few engines at the Show are attracting as much interest as the four-valve Triumph. This view shows the rocker gear, twin exhaust pipes, and the neat detachable silencer.



Detachable valve pockets have long been a feature of the flat twin Humber.



In one form the 2¼ h.p. James lightweight is fitted with a two-speed gear box, with clutch and kick-starter.

5 mins. from Olympia

BARKERS

'Buses 9, 27, 28, 33 & 73

LEATHER UNDERJACKETS...10/-

(Sleeveless as illustrated)

VISITORS TO OLYMPIA

for the Cycle and Motor Cycle Show, should make a point of visiting the great Barker Store at Kensington. The great offer of sleeveless leather under-jackets (described here) is only one of the many bargains available for motor cyclists. If it is impossible to visit the Barker Store, post orders may be sent with every confidence. Post 1/- extra. Two or more post free.

N.B.—Special prices quoted to the trade for quantities.

10/- EACH

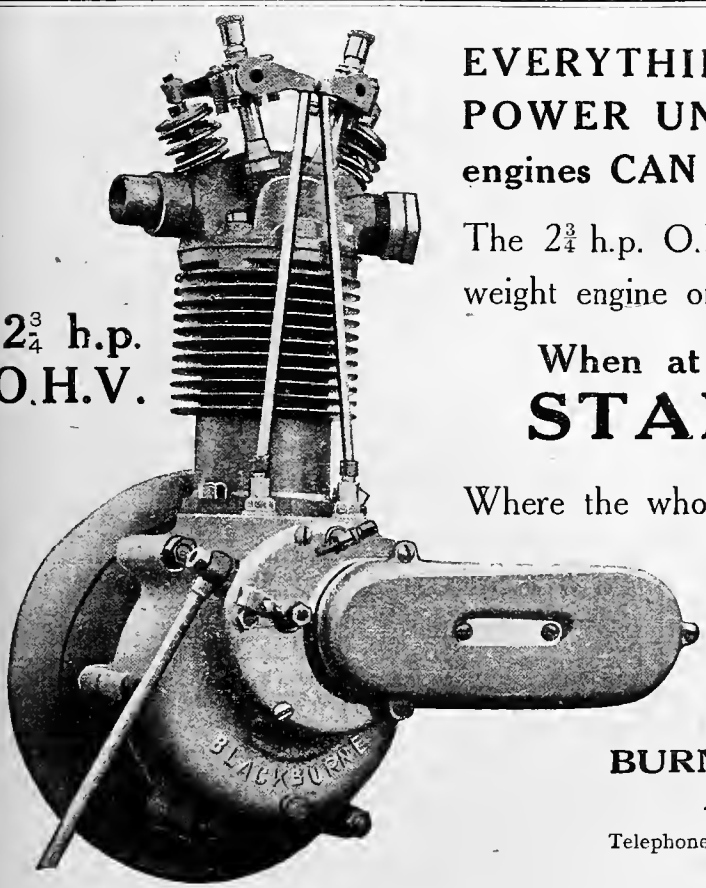
IN CHROME LEATHER

Made in fine quality chrome leather in a nut-brown shade, lined throughout wool tweed. Sold in pre-war days at 25/- to 30/- each. Made in one size only, which may be adapted to any figure. It should be pointed out that these jackets can be worn equally well by ladies as by gentlemen The garment is worn over the lounge jacket and under the overcoat.

N.B.—Special prices quoted to the trade for quantities.

10/- EACH

JOHN BARKER AND COMPANY, LTD., KENSINGTON, W.8.



2¾ h.p. O.H.V.

EVERYTHING DEPENDS UPON YOUR POWER UNIT, and the "BLACKBURNE" engines CAN BE DEPENDED ON.

The 2¾ h.p. O.H.V. model is really the fastest light-weight engine on the market.

When at OLYMPIA be sure to visit

STAND 220 (Gallery).

Where the whole range of BLACKBURNE engines can be seen.

Blackburne

BURNEY & BLACKBURNE, LTD.,
Atlas Works, Bookham, Surrey.

Telephones: Bookham 44. Telegrams: "Engines" Bookham.

TO INTRODUCE

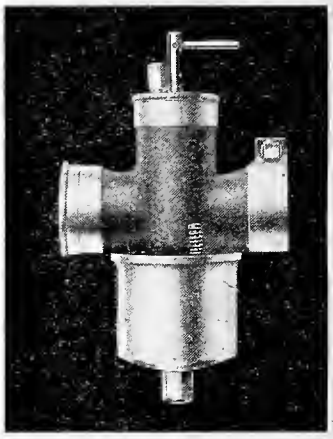
THE MILLS

PATENT

SINGLE LEVER

Carburetter

Price £3



FOR ONE MONTH, WE WILL

ALLOW up to £1 for your OLD CARBURETTER

IF INTERESTED, WILL YOU PLEASE DROP A P.C. FOR BOOKLET EXPLAINING ABOVE AND

FREE TRIAL.

We claim to have the Finest Testimonials ever received by a Carburetter Manufacturer. (*See Booklet.*)
Manufacturers and Trade Enquiries Solicited.
VERY LOW TERMS QUOTED.

We guarantee our Carburetter saves petrol, gives slower running, more power and speed, and is lighter, neater, and cheaper. It emphatically improves Singles and Twins, both 2 and 4 stroke

F. A. MILLS, Patentee & Manufacturer, 90, East Street, FARNHAM SURREY.

TRIED & TESTED PHILIPSON'S

REGISTERED PA PH GO PY TRADE MARK

Patent Automatic Governor Pulley and Variable Gear Combined

For 4-stroke Direct Belt Driven Motor Cycles

PHILIPSON'S Latest Patent Automatic Flywheel Governor Pulley and Variable Gear Combined

For 2-stroke Direct Belt Driven Motor Cycles

The Lightest, Speediest, and Simplest Gear on the market for direct belt-driven 2-stroke and 4-stroke engines — THE LEADING PULLEY.

ONLY ADDS 2 lbs. (approx.) TO THE WEIGHT OF A 2-STROKE MACHINE, AND 6 lbs. (approx.) TO THE WEIGHT OF A 4-STROKE MACHINE.

OLYMPIA SHOW.
Nov. 28th—Dec 3rd.

We are exhibiting the Flywheel Governor at Stands No. 266 (Bowden Wire Co.) and No. 162 (Brown Bros.) The Standard Pulley will be exhibited at Stand No. 99 (Norton Motors, Ltd.)

RENDERS HILL CLIMBING A PLEASURE.
GREATER DRIVING POWER.
MORE SPEED.

During the past week we have fitted the following machines:

2-stroke.	4-stroke.
LEVIS,	TRIUMPH,
O.K.,	NORTON,
CALTHORPE,	ROVER,
VILLIERS,	SINGER,
etc.	COULSON-BLACKBURNE.

We are now in a position to supply the Philipson Pulley to fit J.A.P. engines without any alteration to the machine or "staggering" of the engine.

Our Flywheel Governor converts a single-speed 2-stroke into a speed model —*the lightest speed model on the market.*

No alteration to the machine; just takes the place of present flywheel or pulley
THE ONLY GEAR WITH NO END THRUST.

Send for Illustrated Booklet.

REDUCED PRICE £7 7 0 Carriage Paid.

Philipson & Co., Ltd., Astley Bridge, BOLTON, Lancs. (Established over 50 years.) 'Grams: "Safety, Bolton." 'Phone: 147 Eagley.

Facts and Figures Respecting the Industry.

130,000 British Motor Cycles Produced Annually. Future Prospects Discussed at the Annual Manufacturers' Banquet.

ON the eve of the Show, the seventh annual banquet of the British Cycle and Motor Cycle Manufacturers and Traders Union was held at the Hotel Cecil, Sir Harold Bowden, Bart., presiding over a large and distinguished attendance. Lord Morris, in proposing the toast of the manufacturers, drew attention to the value of the cycle and motor cycle industry to the country, instancing the fact that in a normal year, 600,000 pedal cycles and nearly 130,000 motor cycles are manufactured. Wages paid are approximately sixteen millions, and the capital invested somewhere in the neighbourhood of thirty millions. He pointed out that competition abroad was keen, and must be realised by home manufacturers, who do not experience the same foreign competition at home. The love of motor cycling, he pointed out, constantly increases, and he expressed the opinion that within ten years a million motor cycles would be on the road. Replying, the Chairman mentioned that the 357 members of the Union gave employment to something like 110,000 men and women. One of the features of the industry was its valuable export trade, now unhappily affected by the general trade slump. He quoted figures to show that exports had fallen away sadly since 1920, £6,000,000 representing the loss in export trade to the end of September compared with the corresponding period of 1920. This he ascribed to (1) the policy and action of trade unions toward industry since the war, (2) the collapse of the German mark, and (3) the intolerable burden of taxation. He calculated that the loss represented in wages would be sufficient to keep an army of 30,000 men employed for a year at £4 per man weekly.

Modern Prices.

To solve the problem confronting manufacturers, the Chairman stated that manufacturing costs were being reduced by arrangement with workpeople, and profits cut to the bone by anticipating possible reductions. Such a course was necessary, he said, to secure next year's business, the object being to inspire confidence in the buying public, and enable them to place their orders without fear of further reductions in price. Manufacturers, too, looked to the Government to assist by stabilising Exchanges and co-operating with the banks.

The Chairman added that certain tariff adjustments have been secured from Spain and Belgium as a result of the joint effort of the Union, the F.B.I., and the British Ambassadors in the countries concerned. Turning to the question of roads, he pointed out that road users felt that the attitude of the Ministry of Transport and of the police is still tinged with the acerbity and lack of understanding which has too long been usual in connection with official control of mechanical vehicles. Local byelaws, too, he considered of an incessantly interfering character. The revenue extorted from the industry is considerable, and it is the only industry called upon to pay a direct tax (for general identification plates) in addition to the rates and taxes imposed upon any commercial venture.

Administration of the Road Fund.

Reconstruction and improvement of roads, Sir Harold Bowden urged, is not proceeding as fast or as efficiently as ought to be the case. He was not satisfied that the Road Fund is being wisely spent, or that the cost of reconstruction had been brought down to the lowest possible figure. To-day, 16s. per square yard was paid —the pre-war figure being 3s. 6d. per square yard.

If more efficient methods could not be adopted, he contended that the balance in the hands of the Government created by motor taxation should at once be returned to the user in the shape of substantial reductions of tax, since at the end of this year motorists will have paid £11,000,000 in taxes instead of £8,000,000 estimated as required.

In conclusion, he drew attention to this week's Exhibition as the greatest cycle and motor cycle show the world has ever seen, and the exhibits represented the best value offered in this country.

Mr. W. G. Bower (vice-president) proposed the Guests, responded to by Mr. Arthur Neal, M.P., Parliamentary Secretary Ministry of Transport (who referred to the new quarterly licences for motor cycles in 1922), and Sir Ernest Wild, K.C., M.P., Chairman of the British Empire Union.

1921 OLYMPIA IN FIGURES.

96 exhibitors of motor cycles and miniatures.

2-stroke engines are staged by 49 makers of motor cycles.

Four-stroke engines are seen on 62 stands.

THE BATTLE OF TYPES.

1921-22 engines classified.

	1921.	1922.
V twins	50	44
Single-cylinder four-strokes	48	63
Single-cylinder Two-strokes	46	50
Flat twins	11	9
*Four-cylinder	3	2
†Two-cylinder 2-strokes	2	4
Water-cooled motor cycles	1	1

*Including Castle-Three Runabout.
†Including Scott Sociable.

LUBRICATION.

The trend in oiling systems is indicated by the following figures, which show the number of Models equipped with the various forms of oiling:

Mechanical	25	Drip Feed	101
Hand Pump	18	Petroil	12

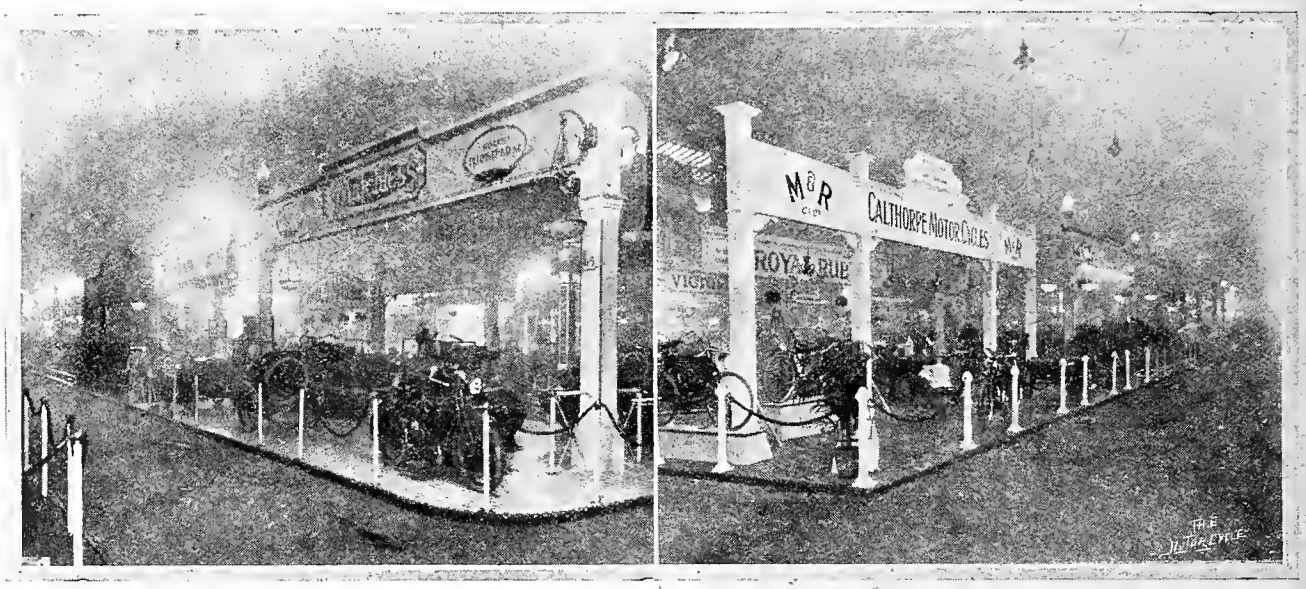
TYRE SIZES

fitted on different models.

	1921.	1922.
*28×1¾	3	1
16×2½	1	0
16×2⅜	3	0
18×2	1	3
24×2	4	5
24×2¼	17	9
550×65	1	0
26×2	7	1
26×2¼	32	57
26×2⅜	3	6
26×2½	27	30
26×3	8	9
650×65	21	13
700×80	12	19
28×3	22	17

*Pedal cycles with engine units.

Monday at the Olympia Show.



THE OLYMPIA MOTOR CYCLE SHOW ON THE OPENING DAY.
Impressions of the exhibits at this week's annual Show at Olympia. Although thick fog prevailed there were a great many visitors immediately the turnstiles started to click at 10 a.m.

OLYMPIA opened at 10 a.m. on Monday in a thick fog of almost unprecedented density. As a result, the attendance during the first hour was rather meagre, but the hall gradually filled as the day wore on. The interior of the building was almost as foggy as it was outside in the street, and it was difficult to see across the hall. At midday Olympia was fairly full, and at lunch time the fog had cleared off, and bright sunshine graced the opening day.

Several firms reported good business even on the opening day. In the Accessory Section, stall-holders assumed a cheerful attitude, and people are certainly of opinion that the corner has been turned.

Several of the better-known stands attracted great crowds, and it was difficult to get near the more popular makes of machines. The Show is open from 10 a.m. to 10 p.m. each day, and the price of admission is 2s.

A Royal Visit.

Yesterday (Wednesday) at 10.30 a.m. H.R.H. the Duke of York was due to visit the Motor Cycle Show at Olympia. It was arranged that the visit would be less formal than is usually the case, since the Duke of York, as a keen motor cyclist and car owner, desired to rove about the hall at his free will and examine various makes of machines. H.R.H. is a keen supporter of motor cycle racing.

DELAYED IN TRANSIT.

SEVERAL exhibits were not complete at the time of our visit on Monday, and at least two had not arrived. These were the Cedos, which we learned were on the way, and promised to be something startling in the way of value; the other was the Peugeot motor cycle exhibit, which, it was expected, would not arrive before this issue of *The Motor Cycle* was on sale in Olympia.

Quite a number of stand holders had a very anxious time on Sunday. Several trucks containing exhibits from the North were "mislaid," and, evidently anticipating this trouble, one exhibitor sent his machines by road under their own power.

Approximately 400 photos and drawings are used to illustrate this SHOW REPORT NUMBER —of— THE MOTOR CYCLE

Sir Harold Bowden, Bart., President of the British Cycle and Motor Cycle Manufacturers' and Traders' Union, organisers of this week's Motor Cycle Exhibition at Olympia. He presided at the banquet on Friday evening last. *See page 703.*

26,729 motor cycles were registered in Germany on July 1st, 1921. Cars on the same date numbered 60,966.

The possibility of a petrol price war is discussed in *The Autocar.*

LONDON TO EXETER ON A 75 lb. LIGHTWEIGHT.

A SUCCESSFUL trial has just been completed under A.C.U. observation by an ultra-lightweight called the McKenzie. The rider, W. F. Smith, rode from London to Exeter in a day, and finished the journey on Thursday afternoon at about 1.50 at the Marble Arch, having voluntarily taken two days over the return journey. He reported a no-trouble ride, and only assisted the machine with the pedals on very few occasions. The main road to Exeter was taken, including Chard Hill.

A Lady's Attempt.

The engine is 60 × 60 mm. (160 c.c.) two-stroke, driving direct by belt to the rear wheel. It closely resembles a lady's motor cycle so far as the frame is concerned, and is fitted with pedals and a chain guard. A lady, Mrs. MacFarquhar, of Earl's Court, also attempted the journey on a similar machine, but, not having ridden a motor cycle before, skidded three times on the tramlines shortly after the start and perforce had to retire.

The A.C.U. report will be published in due course.

Motor Cycle Manufacturers

By Appointment to H.M. The King

AMAZING SPEED!!!

Douglas

3½ h.p. SPORTS and SIDECAR

C. G. Pullin.

Marvellous times were put up by MR. C. G. PULLIN, riding a 3½ h.p. Standard Sports Model and Sidecar at Brooklands on the 18th November, when he broke the

WORLD'S KILOMETRE SIDECAR RECORD

in the 600 c.c. class at a speed of

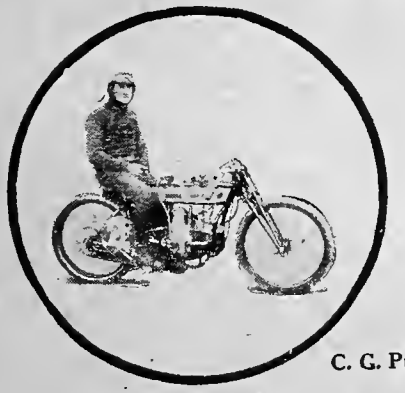
77.14 M.P.H.

(Subject to A.C.U. Confirmation).

C. G. Pullin.

For a standard production model this speed with a sidecar is truly astounding. The machine was fitted with the usual detachable wheels, three-speed gear, etc., etc.

At the last B.M.C.R.C. Meeting of the season, held at Brooklands on Saturday, November 5th, MR. C. G. PULLIN, riding a standard DOUGLAS, won the event of the day—the 750 c.c. Championship Race, at a speed of



C. G. Pullin.

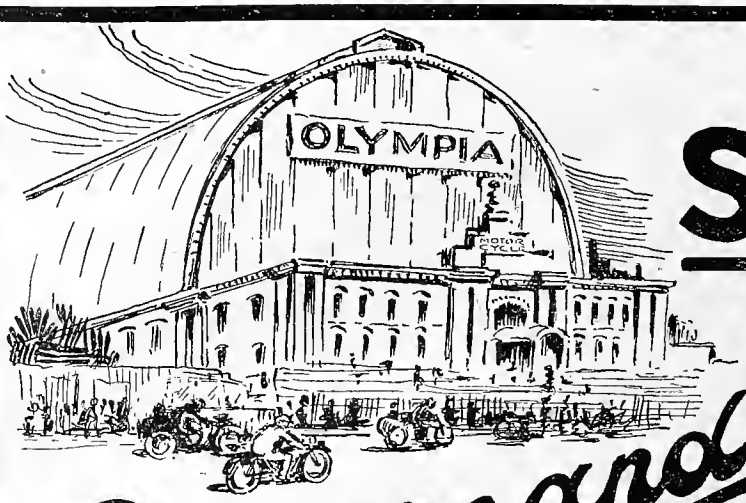
76.49 M.P.H.

SENSATION OF THE SHOW IS THE 1922 PROGRAMME

C. G. Pullin.

STAND 119.

DOUGLAS MOTORS, LTD., Kingswood, BRISTOL.



STAND No. 192

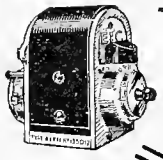
Be sure and visit

JAP

BRITISH & BEST

ENGINES

J. A. PRESTWICH & CO., LTD.,
NORTHUMBERLAND PARK,
TOTTENHAM, LONDON, N.17.



"UNQUESTIONED"

Reviewing the exhibits at Olympia in its issue of December 9th

"THE MOTOR CYCLE" states—

"As the standard ignition unit on a number of first rank machines, the E.I.C. magneto is unaltered, since the reliability of its design is **unquestioned.**"

29 World's Records

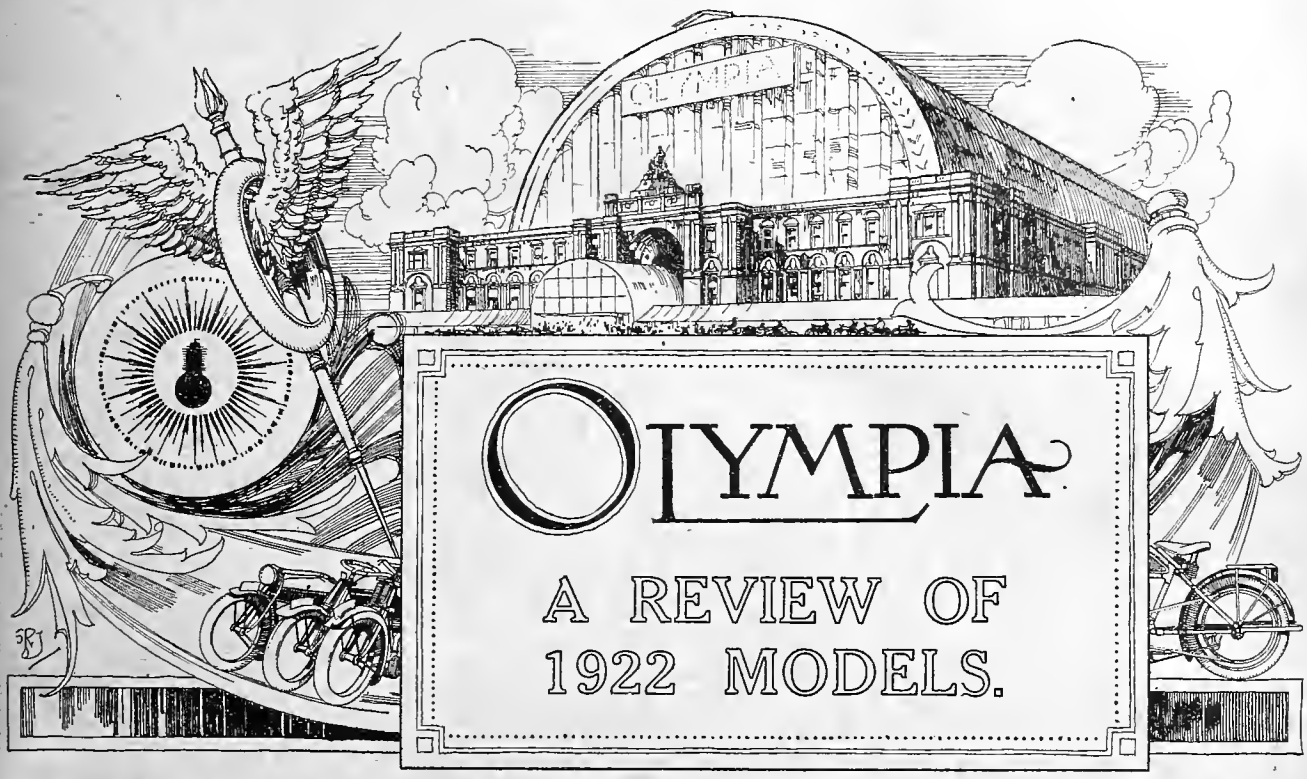
(Subject to A.C.U. Confirmation)

J. L. Emerson, 9/9/20, broke the 300 miles, and 4 and 5 hour on a 3½ h.p. A.B.C.
B. Kershaw, 2/7/21, broke the 100, 200, 300, 400, and 500 miles, and the 1, 2, 3, 4, 5, and 6 hour on a 2¼ h.p. New Imperial.
N. Norris, 2/7/21, broke the 500 miles on a 2¾ h.p. Ivy.
T. Thompson, 21/9/21, broke the 200, 300, and 400 miles, and the 3, 4, 5, and 6 hour on a 2¾ h.p. Douglas.
T. Thompson, 30/9/21, broke the 100 mile on a 3½ h.p. Douglas with Sidecar.
J. L. Emerson, 8/10/21, broke the 10 miles on a 3½ h.p. Douglas.
J. L. Emerson, 11/11/21, broke the 50 and 100 mile, 1 and 2 hour on a 3½ h.p. Douglas.

E.I.C. MAGNETOS, Ltd.,
SAMPSON ROAD NORTH, BIRMINGHAM.

OLYMPIA STAND No. 237

"BRITISH MAGNETOS —The best in the world" The Times



OLYMPIA

A REVIEW OF 1922 MODELS.

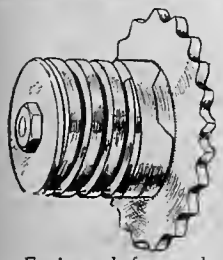
A STAND-TO-STAND DESCRIPTION OF MOTOR CYCLES, SIDECARS, AND THREE-WHEELERS ON VIEW AT OLYMPIA (Nov. 28th to Dec. 3rd).

The reports and illustrations have been prepared by the staff of "The Motor Cycle" after personal examination of the exhibits.

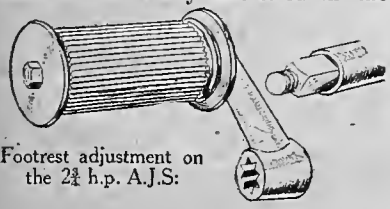
A.J.S. (127.)

2¾ H.P. MODEL.—74×81 mm. (349 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick starter; chain drive; 26×2¼in. tyres. Prices: Solo £85, with sidecar £110.

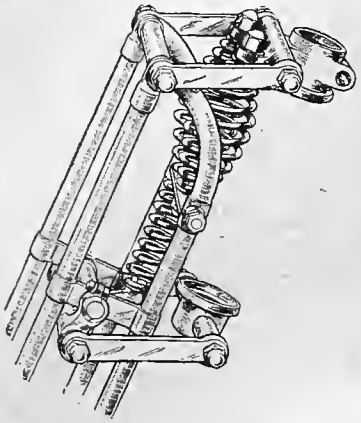
A. J. STEVENS AND CO. (1914), LTD., Wolverhampton.—For 1922 the famous 2¾ h.p. A.J.S. will be marketed in three models—touring, semi-sporting, and sporting, the last model capable of approximately 60 m.p.h., and being one of the principal attractions of the Show. The phenomenal double victory of the A.J.S. in this year's T.T. has induced many veteran riders to regard the 350 c.c. engine as ample for all touring purposes; and those who have come to this decision are naturally interested in the machine which is principally responsible for the change. The stripped sporting model is specially lightened, has a flat bar, narrow mudguards, no kick-starter, and footrests instead of footboards. All three models have much larger tanks than formerly, and the gear lever is now sloped forward to clear the knees of a long-legged rider. The long exhaust pipe is supplied with an aluminium expansion box and detachable fish-tail. All reciprocating parts of the sporting engine are specially lightened, and some details of the A.J.S. secrets of tune are embodied in it. The semi-sporting model



Engine-shaft shock absorber fitted to the 7 h.p. and 2¾ h.p. A.J.S.



Footrest adjustment on the 2¾ h.p. A.J.S.



Fitted to the 2¾ h.p. A.J.S. machines, this new type of Druid fork provides for direct and tangential shocks.

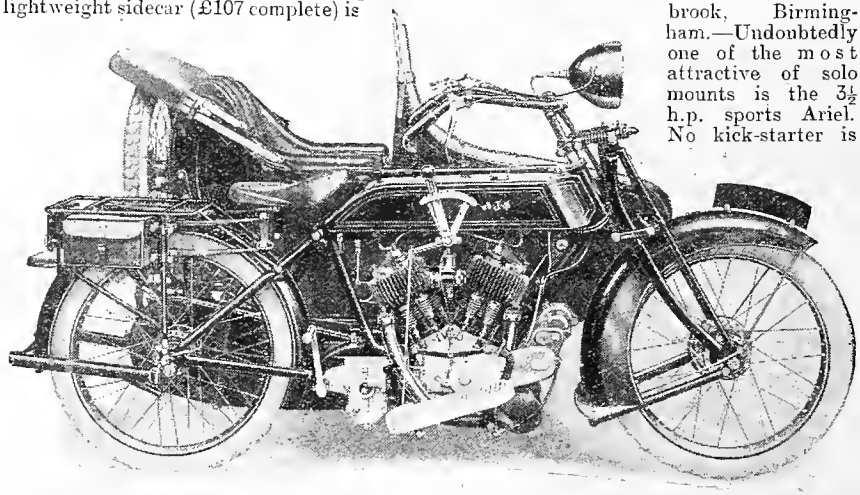
Modern Tendencies.

PROGRESS in design is discernible in every type of motor cycle for 1922. The article "What the Show Reveals" (page 687) reviews these improvements in detail. Further to assist readers who are visiting Olympia to assimilate the main items of interest, the outstanding features are summarised below:

(1) Increased number of big single motor cycles.
(2) Lightweight sidecars.
(3) The vogue of the sporting model.
(4) Unique frame design.
(5) Motor cycles with open and duplex frames.
(6) New 8 h.p. outfits.
(7) New lightweight three-speed gears.
(8) Sleeve and rotary valve engines.
(9) Oil-cooled engines.
(10) The value offered in runabouts.
(11) New miniature motor cycles.
(12) Popularity of saddle tanks.

The Olympia Show—

is a little lighter than the standard, and has a special engine. All three models contain the familiar A.J.S. specialities—detachable head, detachable wheels, internal expanding brakes, etc. A special lightweight sidecar (£107 complete) is marketed, and can be stored in a space 6×5ft.



Detail alterations in mudguarding, lighting equipment (now a Magdyno), and exhaust pipe fittings, have not greatly altered the appearance of the 7 h.p. A.J.S. sidecar.

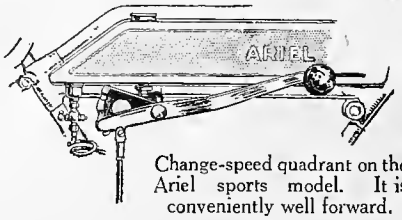
7 H.P. MODEL.—74×93 mm. (799 c.c.); twin-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price, with sidecar £175.

As their competition records would suggest, these machines have undergone practically no change for next year. Ferodo has now superseded cork inserts in the clutch. There is a new cush drive on the engine-shaft. The exhaust pipes are now attached to the cylinder head by external nuts, and mudguarding has been improved. Coachwork remains much the same. A notable addition is an unbreakable side screen for clipping on to the off side of the sidecar, and prevents draught being deflected into the seat by the driver's body. A large double-seated sidecar attracts the attention of the family man; but, since the A.J.S. is one of the best known sidecar outfits on the market, further details are unnecessary. A Lucas Magdyno may be obtained as an extra.

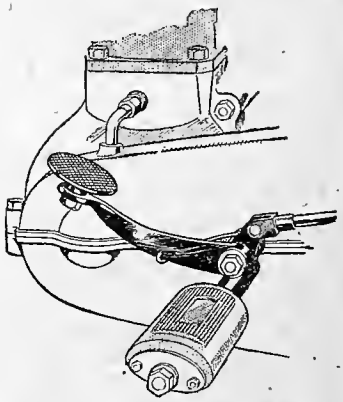
ARIEL. (89.)

3½ H.P. MODEL.—86.4×85 mm. (498 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch; chain-cum-belt drive; 26×2⅜in. tyres. Price, solo £87 10s.

ARIEL MOTORS, Ariel Works, Bournbrook, Birmingham.—Undoubtedly one of the most attractive of solo mounts is the 3½ h.p. sports Ariel. No kick-starter is fitted, but a very efficient decompressor ensures easy starting. The comfortable low riding position, in conjunction with wide T.T. bars, gives the rider a feeling of perfect control. With a wheelbase of 56in., the ground clearance is 4½in., and the weight of the machine is approximately 235 lb. Druid spring forks are fitted to this model. The 3½ h.p. touring model is very similar as regards the general specification, but a kick-starter is incorporated in the transmission. Large comfortable aluminium footboards are provided, and a spring seat pillar carries the saddle. The price is £95, or with sidecar £125.



Change-speed quadrant on the Ariel sports model. It is conveniently well forward.



A toe-operated brake is fitted to the sports model Ariel. Note the oil lead to the chain case.

4½ H.P. MODEL.—92×100 mm. (665 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Prices: Solo £105, with sidecar £140.

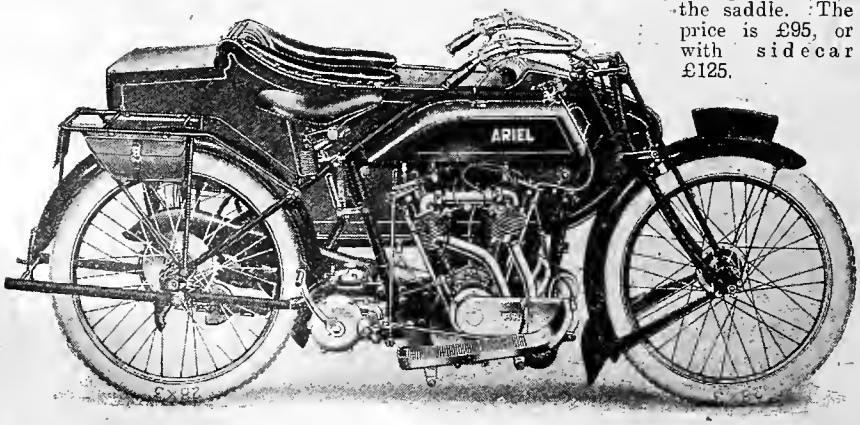
A dual-purpose mount which has already made its mark is the 665 c.c. big single-cylinder Ariel. The engine follows Ariel practice, inasmuch as the valves are spaced widely apart, and a decompressor is fitted to ensure easy starting. All-chain transmission is adopted through a three-speed gear box. The frame is specially designed with a long steering head and low saddle position, but at the same time the ground clearance is 5¾in. Internal expanding brakes are fitted to both front and rear wheels, which are of 28in. diameter. The comfort of the driver is ensured by the spring saddle pillar. With its all black finish and Royal blue tank, this machine is particularly handsome.

6-7 H.P. MODEL.—73×95 mm. (796 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Cox carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½ tyres. Prices: Solo £110, with sidecar £140.

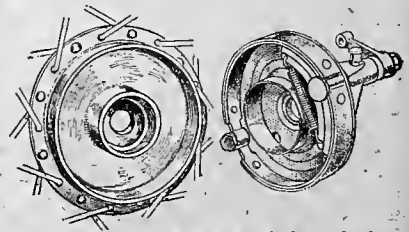
For the rider who prefers a twin-cylinder engined outfit, the 6-7 h.p. model is provided. It is similar in its general specification to the 3½ h.p. single-cylinder model.

8 H.P. MODEL.—82×94 mm. (994 c.c.); twin-cyl. four-stroke; overhead inlet valves; drip feed lubrication; Cox carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Prices: Solo £125, with sidecar £160.

An interesting new model is the 8 h.p. outfit with the well-known M.A.G. engine, having overhead inlet valves arranged directly above the exhaust. Except for the engine, the machine is on



Fitted with an 8 h.p. M.A.G. engine, this Ariel replaces last year's chain-driven 6-7 h.p. model.



"Internals" of the Ariel front brake. An oil trap prevents lubricant working up to the shoes.

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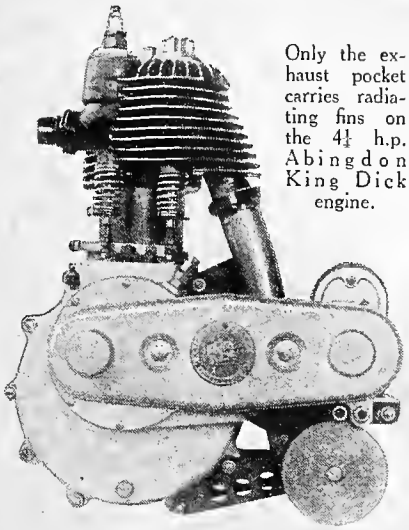
similar lines to the 4½ h.p. single-cylinder model, and has the internal expanding brakes and all-chain drive which are found on that model. If desired, the clutch may be arranged for both hand and foot operation at slight extra charge, while the *de luxe* model, which includes Lucas Magdyno lighting, electric horn, and metal leg shields, is priced at £181.

ABINGDON. (42.)

4¼ H.P. MODEL.—85×110 mm. (624 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Senspray carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres.

ABINGDON WORKS, LTD., Tyseley, Birmingham.—One of the many big singles shown at Olympia, and among the most attractive exhibits there, the 4¼ h.p. Abingdon was primarily designed for heavy passenger work; consequently, the engine is simple in design and sturdy in construction. The valves are actuated by a single cam, the inlet valve having direct lift through a tappet housed in a long cast iron guide, while the exhaust is worked through a bell crank rocker. There are only two gear wheels in the timing gear, and these are of exceptional width, so as to ensure quiet running. The lubrication of engines is a matter to which the designer has for many years given careful attention. The oil is led through a large plain bearing on the timing side, and forced inwards by the action of the timing-shaft, on the bearing of which a special spiral groove is cut. The escaping oil is caught in a thrower ring, and flung by centrifugal force to the big end, which has a bronze bush of exceptional area. The driving side of the crankshaft runs in a large diameter Skefko bearing, the outer race of which is housed in a steel ring, and not in the aluminium of the crank case. Particular care has been taken to render the bearing oil-retaining. A cast iron piston is employed with three top rings and a lower ring acting as a scraper, the oil return holes being provided leading directly into the gudgeon pin bosses. The connecting rod is of I section, and is split at the small end, and when tightened up grips the centre of a large diameter hollow gudgeon pin. Cooling has been carefully studied, the fins being of large size, and there are wide air spaces between the ports and the cylinder.



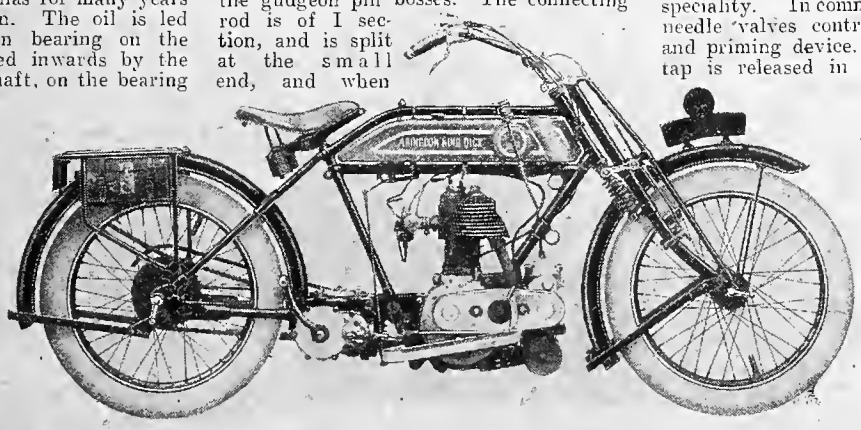
Only the exhaust pocket carries radiating fins on the 4¼ h.p. Abingdon King Dick engine.

3½ H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres.

A thoroughly useful double-purpose mount equipped with well valanced mudguards, footboards of ample size, Webb front brake, and the new M-L magneto. The forks are the Maplestone, specially made for this model. The 3½ h.p. T.T. sports model closely resembles the former, except that it has belt drive, footrests instead of footboards, and a silencer with a large expansion chamber and an exit pipe reaching to the level of the rear spindle. It has the same tyres, but a Senspray carburetter.

6-7 H.P. MODEL.—73×95 mm. (795 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Cox-Atmos carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres.

The 6-7 h.p. Abingdon King Dick is a fine sidecar machine, its engine following the excellent lines, so far as the lubrication is concerned, which have for a long time been Mr. Blumfield's speciality. In common with other models, needle valves control the petrol supply and priming device. The petrol priming tap is released in the same manner as the petrol tap to the carburetter, but no petrol flows therefrom unless the plunger is depressed after the opening screw has been screwed down. Detachable and interchangeable wheels are fitted to this model. An excellent car pattern internal expanding brake is fitted to the front wheel, and Druid forks are used. The ground clearance is ample for Colonial service.



28×3in. tyres, sturdy frame construction, and a large "slogging" engine, eminently suit the 4¼ h.p. Abingdon for sidecar work.

INDEX TO OLYMPIA EXHIBITS.

Descriptions of the various 1922 models at Olympia will be found on pages indexed below

Abingdon	707	Diamond	735	Ivy	729	N.U.T.	713	Sheffield-Henderson	730
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Argson	732	Dunelt	748	Jupp	744	Omega	712	Stanger	752
Ariel	706	Dunhill	719	Kenilworth	743	P. and M.	723	Sun	720
Beardmore-Precision	739	Economic	746	Lea-Francis	716	Peters	743	Sunbeam	740
Blackburne	742	Edmund	714	Levis	717	Powell	715	T.B.	713
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Calthorpe	722	Grigg	745	Metro-Tyler	731	Reading-Standard	719	Victoria	734
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Dayton	748	Humber	732	New Scale	747	Scott	728	Zenith	727
		Indian	710	Norton	720	Scott Sociable	730		

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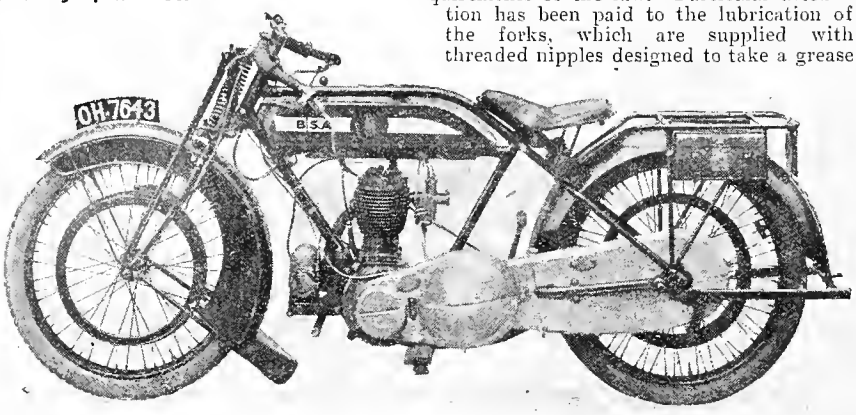


In general aspect the 4¼ h.p. B.S.A. sports model closely resembles its touring prototype, but footrests and "flat" handle-bars make it essentially a solo machine.

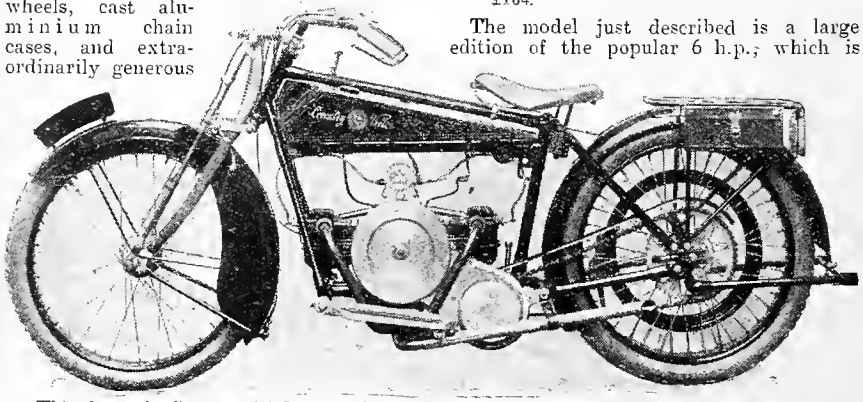
B.S.A. (43.)

8 H.P. MODEL.—80×90 mm. (985 c.c.); twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price with sidecar, £185.

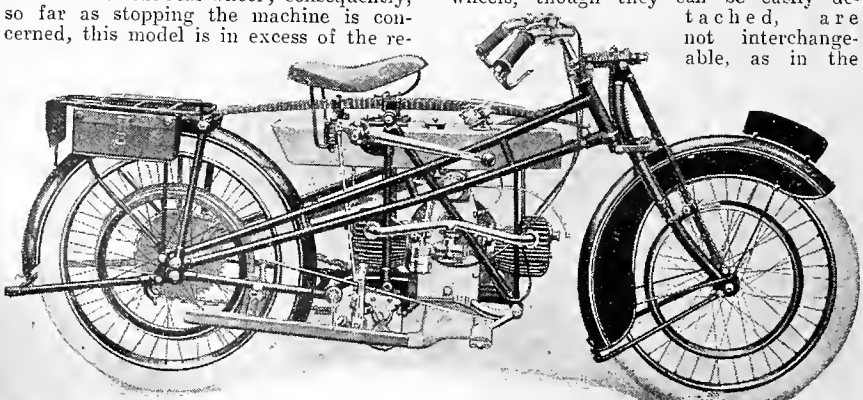
B.S.A. CYCLES, LTD., Small Heath, Birmingham.—A machine highly suitable for sidecar touring, with interchangeable wheels, cast aluminium chain cases, and extraordinarily generous mudguarding. The equipment is particularly good; the rear brake is of the internal expanding pattern, whilst the front brake works on a dummy belt rim, and there is also an additional dummy belt rim brake on the rear wheel; consequently, so far as stopping the machine is concerned, this model is in excess of the requirements of the law. Particular attention has been paid to the lubrication of the forks, which are supplied with threaded nipples designed to take a grease gun; consequently the fork spindle can always be adequately lubricated. The sidecar is carried out on luxurious lines, and has ample luggage accommodation.

6 H.P. MODEL.—75×85 mm. (770 c.c.); V twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-driven 26×3in. tyres.—Prices: Solo £132, with sidecar £164.

The model just described is a large edition of the popular 6 h.p., which is now fitted with a lighter frame. This model is known as the Light Six. It is provided with the same type of sidecar body as the 8 h.p., but the chassis is rather simpler in construction, and the wheels, though they can be easily detached, are not interchangeable, as in the case of the larger machine, while both brakes are of the dummy belt rim type. On this model the third brake is not fitted.



This short wheelbase model flat twin Coventry Victor is intended as a dual-purpose mount.



Springing on novel lines is incorporated in the 5-6 h.p. McKechnie-Coventry Victor. The engine and gear unit pivots at the rear axle.

4¼ H.P. MODEL.—85×98 mm. (557 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B.S.A. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½×2¼in. tyres. Prices: Solo £107, all-chain £110; with sidecar £139, all-chain £141.

An excellent double-purpose machine, fitted with chain-cum-belt drive, is the 4¼ h.p. B.S.A. The finish throughout is good, and the mudguarding is luxuriously carried out, the front being well-valanced, and the rear of great width (9in.) The belt rim screws on to the hub flange, and is secured by a locking ring, whilst there is a dummy belt rim on the opposite side of the wheel for the rear brake, the front brake being of a similar type. To facilitate starting, a decompressor is fitted. There is also a sports model of this type, which is fitted with lighter piston and connecting rod. The exhaust pipe is of large dimensions, and the expansion chamber has a dual exit pipe, while slightly lighter flywheels with polished rims are used. The lubrication is by Best mechanical oil pump, and a special racing carburetter forms part of its equipment. Footrests are supplied instead of footboards, and the handle-bars are of the T.T. pattern.

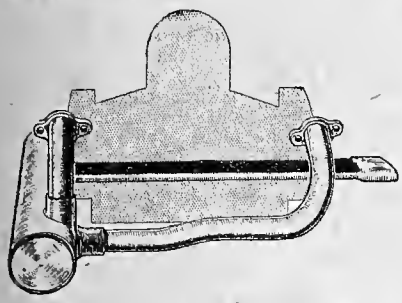
A bold attempt to solve the problem of weather protection for London-Exeter competitors: the new B.S.A. shields, complete with celluloid screen.

COVENTRY VICTOR. (32.)

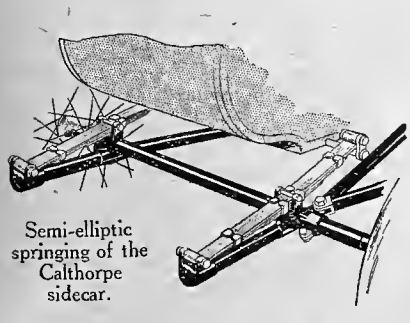
5-7 H.P. MODEL.—75×78 mm. (688 c.c.); flat twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac 2-lever carb.; M-L chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres.

COVENTRY VICTOR MOTOR CO., LTD., Coventry.—As anticipated in *The Motor Cycle* last week, this stand is of more than usual interest. Since it is an

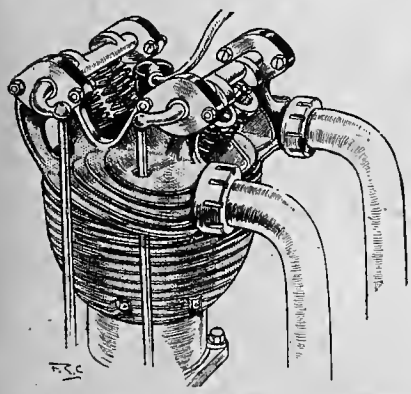
The Olympia Show—



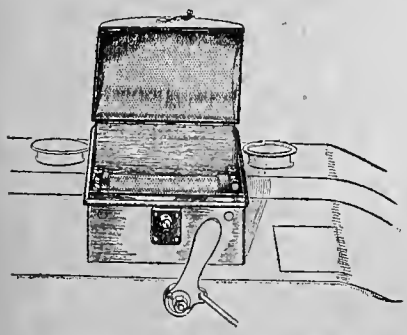
Instead of the original silencer above the engine, the silencing arrangements on the chain-driven Zenith-Bradshaw have been re-designed as indicated above.



Semi-elliptic springing of the Calthorpe sidecar.



Arrangement of overhead twin inlet and exhaust valves and valve gear on the 3½ h.p. Triumph.



Easily accessible, the Matchless metal tool box is located on the tank.

What NOT to miss at Olympia—

The Berthron boat sidecar in the Annexe.

£67 sidecar outfit on the Verus stand.

A new Connaught two-stroke of 370 c.c.

The long stroke Sports Sunbeam.

Hawker's new 2¾ h.p. sporting model.

The record-breaking four-valve Triumph.

The miniature M-L cobalt steel magneto.

The sectioned rotary valve Sun two-stroke.

A J.E.S. lady's miniature on orthodox motor cycle lines.

A primrose coupé sidecar attached to a four-cylinder F.N.

A two-speed gear hidden away in the crank case of the J.E.S.

The sectioned Barr and Stroud single sleeve valve engine.

4½ h.p. P. & M. four-speed sidecar at £130.

The numerous Canoelet sidecars of every shape and hue.

Parcel tray in dashboard of Morgan and Scott Sociable, *à la* car practice.

B.S.A. aluminium windshield for the driver, with removable "look out" window.

The £145 Scott sports sidecar, sold with a guarantee of 60 m.p.h.

The workmanlike "all-steel" Beardmore-Precisions.

The new Smith top tube instrument board in the Gallery.

The three methods of clutch operation on the Reading Standard sports model.

The original Peters two-stroke, now made in the Isle of Man.

The cunning kinks in the Sheffield-Henderson tank tube.

The Indian camp—notably the Chief and his Princess.

The various improved saddle suspension systems.

The aluminium-bodied New Hudson runabout.

The side-by-side two-seater and also a convertible one-two-seater sidecar on the Royal Ruby.

710 × 85 mm. tyres on the new 6 h.p. Douglas, as well as its novel saddle suspension.

A natty sliding windscreen on the Douglas sidecar, which may be clamped in any position.

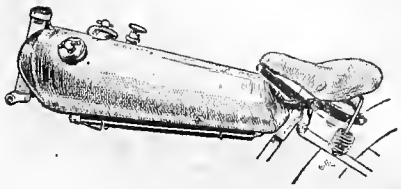
The examples of artistically rounded tanks on the Francis-Barnett, Brough Superior, and Quadrant.

The Harley-Davidson saloon sidecar at £275. A most ambitious production of its kind.

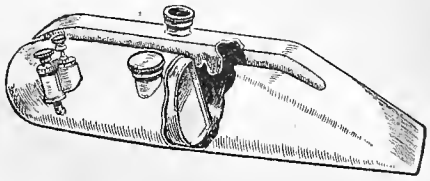
"The Motor Cycle" photographic enlargements of 1921 events—and the cinema film!

A new 350 c.c. single-cylinder Bradshaw oil-cooled engine on Walmsley & Co.'s stand.

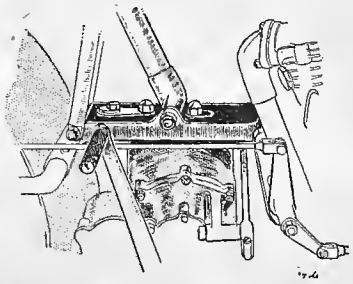
An extraordinary O.E.C. landaulet sidecar, which alone costs 130 guineas, and complete with a wheel-steered 8 h.p. machine, 252 guineas.



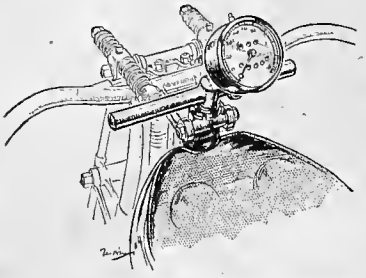
Saddle tank used on the Coventry Eagle models.



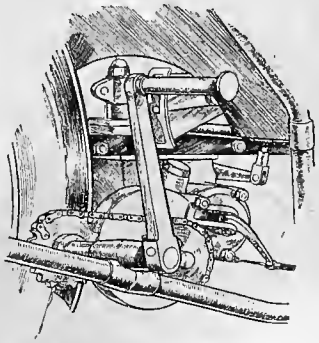
Cut-away view of the Martinsyde tank showing the separate oil compartment.



Eccentric adjustment for the primary chain on the Martinsyde.



A subsidiary bar for carrying instruments on the 350 c.c. sports model Edmund. The bar can be rapidly detached.



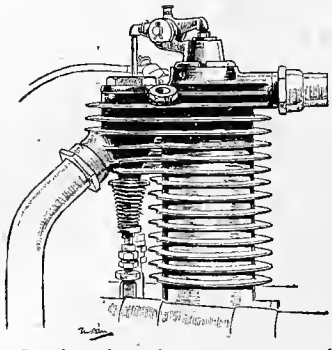
Chain extension to kick-starter on the duplex-framed Omega.

The Olympia Show—

entirely novel design, we will deal first with the model embodying the McKechnie spring frame (for which the above specification of the standard rigid frame short wheelbase model holds good). Instead of the rear wheel being pivoted on the chain stays, in effect the chain stays (and incidentally the power unit, gear box, saddle, and footrests) pivot on the rear wheel, which is held rigidly in relation to the steering head by a cross-braced duplex tubular member. The inner subframe, which carries the spring portion, is suspended from the centre of a single long leaf spring, allowing an unusually wide range of vertical movement. Every provision has been made to ensure that the engine unit, etc., does not lose lateral rigidity. All the main working joints are mounted on self-aligning ball bearings.

The standard touring Coventry-Victor is an attractive machine for either solo or sidecar service, while, in view of its success in the 500 Miles Race, the new sports model should appeal to the soloist who craves speed. Footboards and a large silencer are fitted to the touring model; footrests and straight-through pipes to the sports, these being wrapped with asbestos to prevent burning the rider's leg. Naturally, the mudguarding is more extensive on the former.

A fourth Coventry-Victor, with a longer wheelbase, is essentially a sidecar machine.



So that the exhaust system on the 3 h.p. F.N. may get the maximum amount of cooling draught, the pipe is led out at an angle; there is also an ample air passage behind the valve pocket.

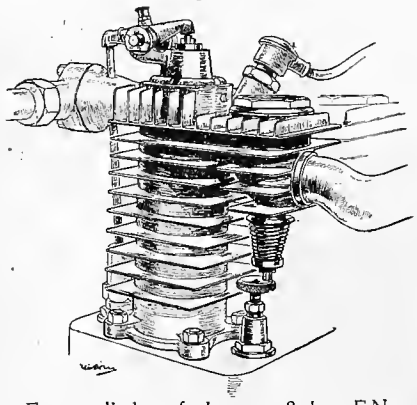
F.N. (41.)

8 H.P. MODEL.—52×88 mm. (748 c.c.); four-cyl. four-stroke; overhead inlet valves; forced lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; shaft drive; Clincher 28×3in. tyres. Prices: Solo £135, with sidecar £167.

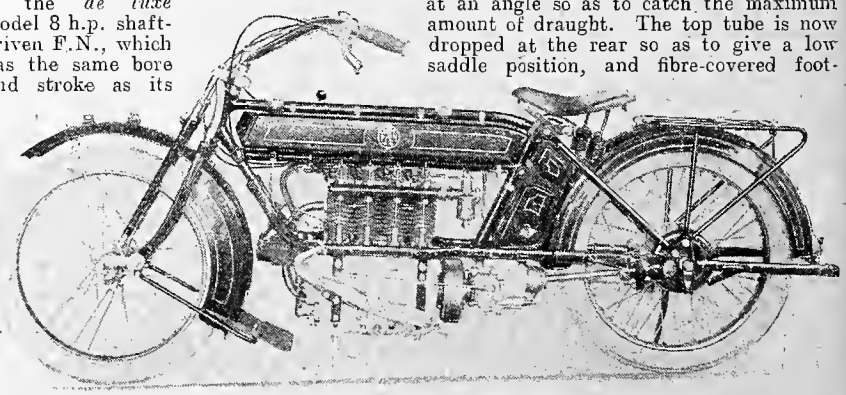
F.N. (ENGLAND), LTD., Kimberley Road, Willesden Lane, N.W.6.—One of the chief novelties at the Show is the *de luxe* model 8 h.p. shaft-driven F.N., which has the same bore and stroke as its predecessor, but the engine follows closely on the lines of the pattern which competed in the 1914 T.T. races. The overhead inlet valves are situated directly in the centre of the cylinder, and are controlled by means of tappet rods and rockers. The cylinders have large square fins and ample air passages between cylinders and ports. An important alteration has been made in the design of the change-speed gear, the top gear dogs being in the shape of a Maltese cross, thus ensuring perfect engagement and contact throughout the whole of their surface. The older type of side valve model of the same bore and stroke is retained. The cylinder heads are of T formation and the valves interchangeable. A mechanical oil pump draws oil from a large sump at the bottom of the crank case, and forces it into a tray which forms an oil well beneath each connecting rod big end. The multiple disc clutch is actuated by hand, and is self-contained in the flywheel. A kick-starter is provided. The change-speed gear box combines an exceedingly ingenious cover for the universal joint of the propeller-shaft at its rear.

3 H.P. MODEL.—65×85 mm. (369 c.c.); single-cyl. four-stroke; overhead inlet valves; pump lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; clutch and kick starter; shaft drive; 26×2¼in. tyres. Price, solo £72.

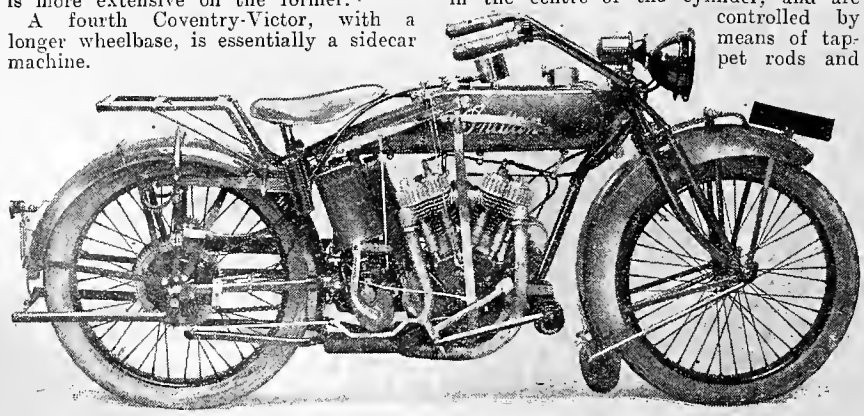
The same procedure has been carried out in the new 3 h.p. F.N. as in the *de luxe* model four-cylinder. More power has been obtained from this engine by placing the inlet valve in the centre of the cylinder. The exhaust valve is set at an angle so as to catch the maximum amount of draught. The top tube is now dropped at the rear so as to give a low saddle position, and fibre-covered footboards are provided. An alternative machine is offered in Model A, which resembles the type just described, except as regards the design of the engine and the fact that the top frame tube is dropped at the rear. The older type of side valve engine is fitted. So far as F.N. sidecars are concerned, these form quite an interesting portion of the exhibit. One body, which is manufactured in Belgium, has beautifully finished and luxurious upholstery, while the wheel is sprung, the spindle being mounted between main springs and recoil springs, so that the rebound is absorbed. A neat limousine sidecar is also exhibited.



Front cylinder of the new 8 h.p. F.N. Noteworthy points are: the operating rod of the inlet valve, which passes through a guide in the induction pipe; the air passage between the exhaust pocket and the cylinder wall; the large offset exhaust tappet; and the taper valve springs.



In several points the new 8 h.p. F.N. differs from the 1921 7 h.p. model. Both engine and gear box have been modified, the former on the lines of the 1914 T.T. machine.



For the comfort-seeker the spring frame 7-9 h.p. Powerplus Indian is retained, mainly unaltered.

INDIAN. (60.)

8 H.P. MODEL.—79.3×100.8 mm. (997.64 c.c.); V twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; spiral gear and chain drive; 750×75 mm. tyres. Prices: Solo £170, with sidecar £210.

HENDEE MFG. CO., LTD., Indian House, 366, Euston Road, N.W.1.—The handsome new Indian Chief is certainly one of the attractions of the Show, as it is

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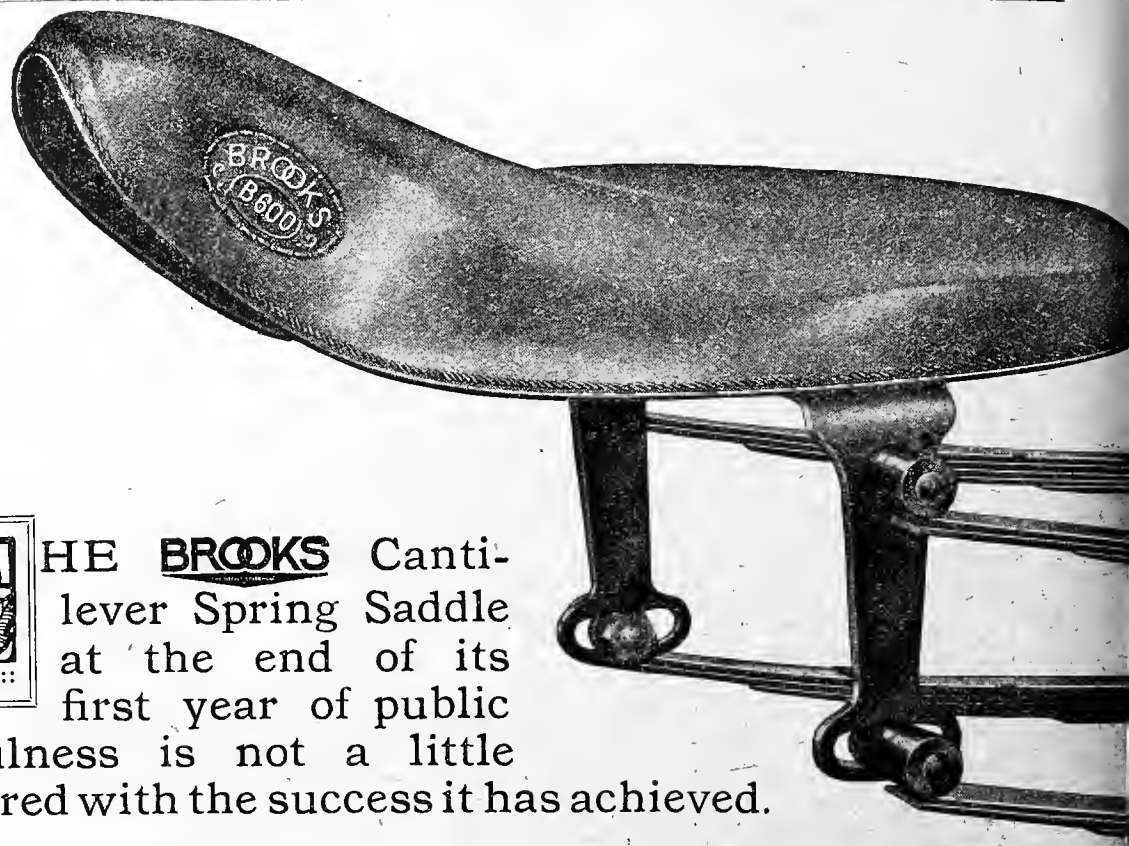

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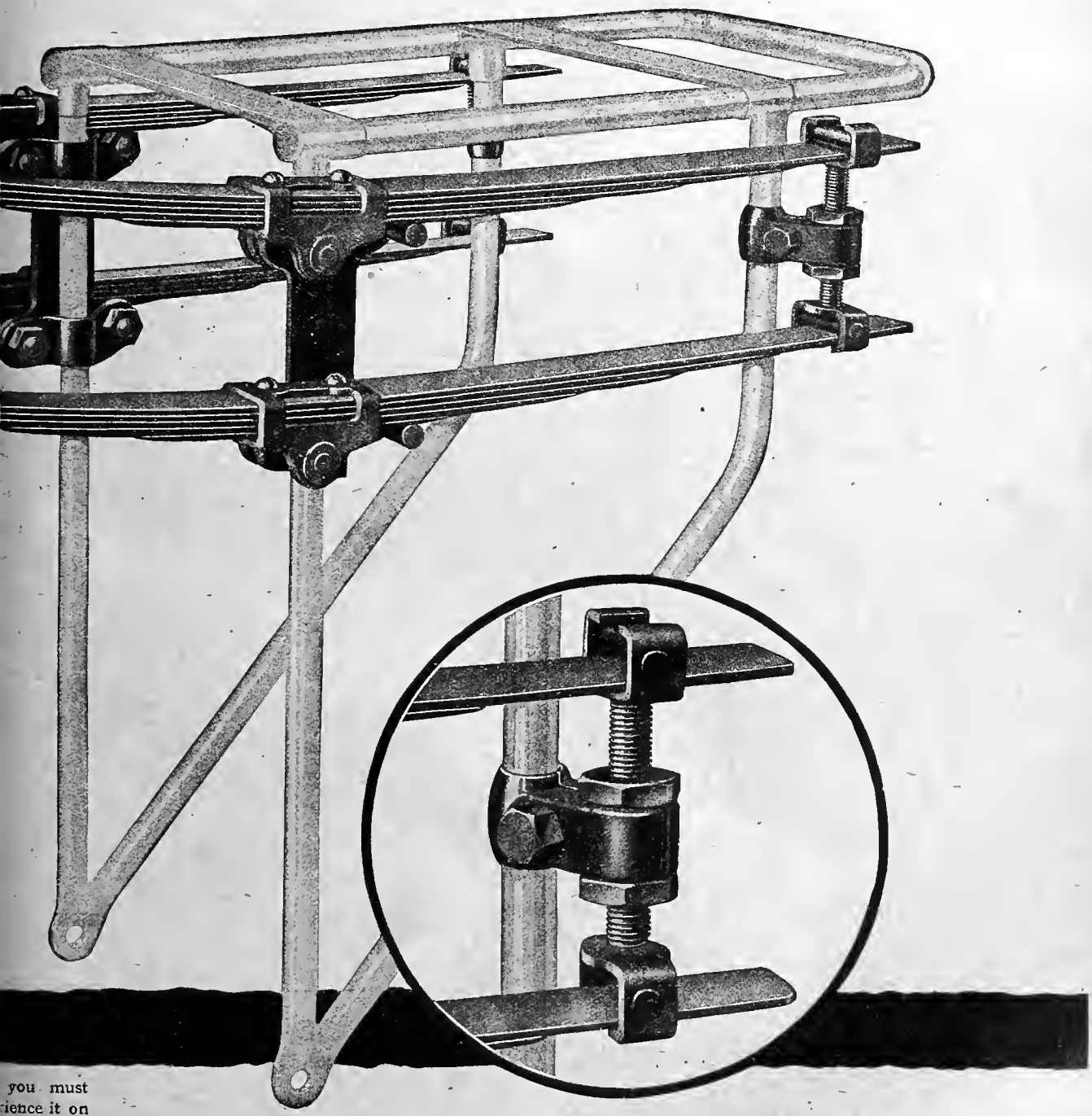

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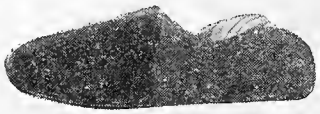

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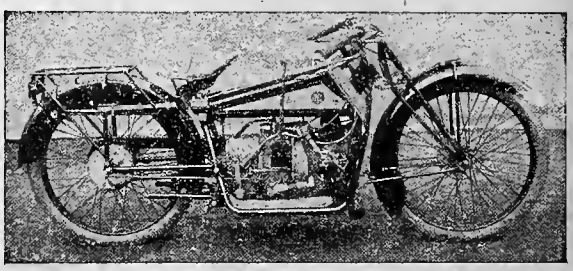

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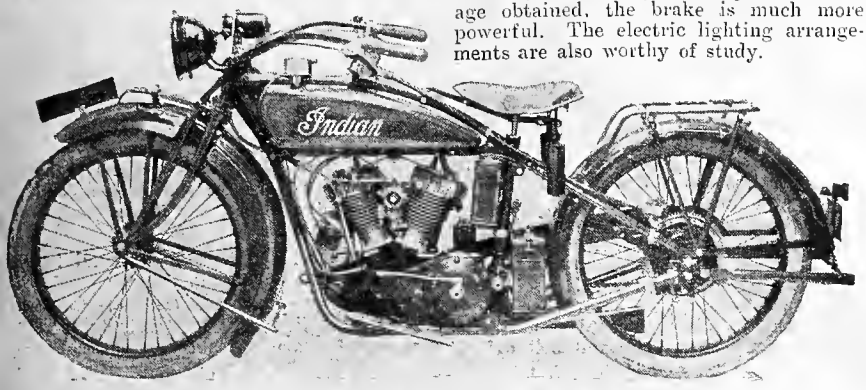
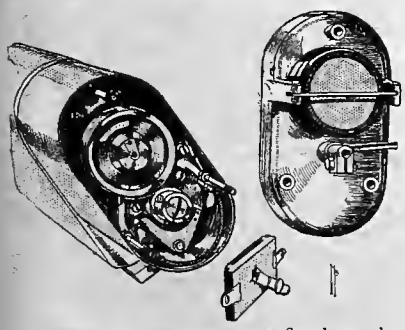


A new Indian model—the Chief, which closely resembles, but is larger than, the popular Scout.

an entirely new model, though somewhat on the lines of the popular Indian Scout. Among the principal features of the Chief's engine are larger radiating fins, which are brought down over the exhaust outlets. There are no bends in the exhaust pipes. The new engine closely resembles the type used for record breaking during the past season. Great care has been exercised in the design of the machine, and, as an example of this, it may be mentioned that the kick-starter main bearing passes through a lug in the frame, having a 5in. bearing surface. Following the lines of the Scout, the transmission is by spiral gear wheels of generous dimensions. Some improvement has also been made in the brake transmission, and, owing to the greater leverage obtained, the brake is much more powerful. The electric lighting arrangements are also worthy of study.



Showing the new magneto fitted to the Indian models, with condenser and cover removed.

4 H.P. MODEL.—70×78 mm. (596 c.c.); twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; Goodyear 26×3in. tyres. Prices: Solo, £139 (fully equipped), with sporting sidecar £169.

The popular Indian Scout has undergone very little alteration for 1922. It is a thoroughly practical two-purpose machine, not at all uncomfortable as a solo mount, the steering being very easy, and the comfort being considerably enhanced by the fitting of a spring seat-pillar. One of the models shown is fitted with the Splitdorf dynamo driven by a leather belt off a pulley from the spiral gear drive. The mudguarding has been well carried out, and care shown in many other details; for instance, mechanical lubrication, which has been so long a feature of Indian machines. The valve springs are enclosed with telescopic covers.

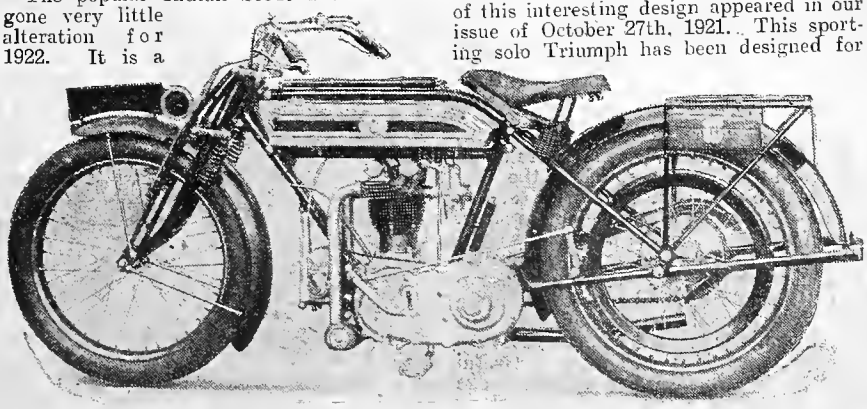
7 H.P. MODEL.—79.5×100.8 mm. (997.64 c.c.); twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres. Prices: Solo £150, with sidecar £185.

The spring frame model remains much the same as last year, but such improvements have been fitted as extra wide mudguards, giving adequate protection to the driver.

TRIUMPH. (44.)

3½ H.P. MODEL.—80.9×97 mm. (499 c.c.); single-cyl. four-stroke; four overhead valves; hand pump lubrication; Triumph carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; Dunlop 26×3in. tyres. Price, solo £120.

TRIUMPH CYCLE CO., LTD., Coventry.—There are few more interesting exhibits in the Show than the four-valve Triumph, a modified model of the machine which has created such a sensation during the past season, and has a number of fine records to its credit. A full description of this interesting design appeared in our issue of October 27th, 1921. This sporting solo Triumph has been designed for hard use, and not merely for speed events. Dunlop tyres with round base rims form part of the equipment. So far as the transmission is concerned, the machine follows standard lines, but higher gear ratios are adopted, these being 4.34, 7.02, and 11.72 to 1. So as to obtain greater controllability during fast touring, Druid forks and W.D. type handle-bars are fitted.



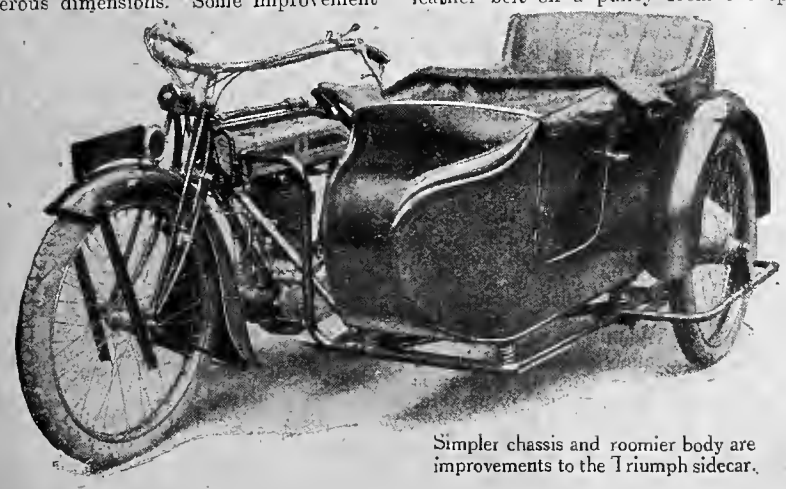
Three-inch tyres in no way detract from the well-balanced appearance of the new o.h.v. Triumph. The brake pedal is worthy of note.

4 H.P. MODEL.—85×97 mm. (550 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; Triumph carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres. Prices: Solo £105, with sidecar £145.

The popular 4 h.p. chain-cum-belt drive model remains practically unaltered for 1922. It is an ideal double-purpose machine, being amply powerful for sidecar work and suitable as a solo mount. The same remarks apply to the all-chain model, which, with a gear-box of Triumph manufacture, is offered at £115 solo.

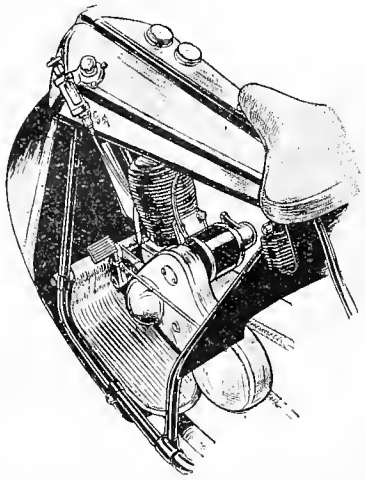
2¼ H.P. MODEL.—64×70 mm. (225 c.c.); single-cyl. two-stroke; petroil lubrication; Triumph carb.; chain-driven mag.; 2-sp. gear, without clutch and kick-starter; chain-cum-belt drive; 24×2½in. tyres. Price, solo £65.

A popular two-stroke, which has remained practically unaltered since 1921. An excellent example is shown fitted with the M-L Maglita lighting unit.



Simpler chassis and roomier body are improvements to the Triumph sidecar.

The Olympia Show—

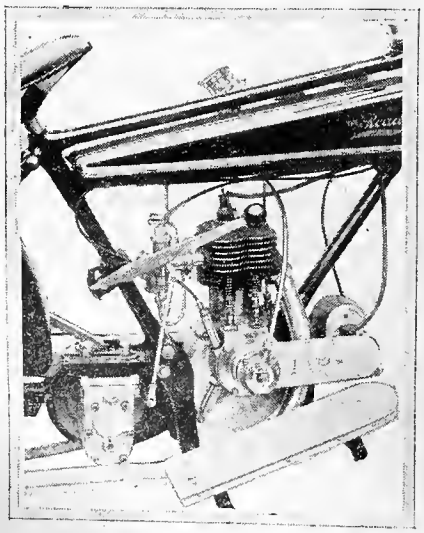


Duplex frame construction of the Omega, showing how the engine-gear assembly and footboards are carried.

OMEGA. (54.)

3 H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. Burman gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price £73 10s.

W. J. GREEN, LTD., Omega Works, Coventry.—Undoubtedly the centre of interest on the Omega stand is the new 3 h.p. two-stroke with its wide duplex frame and ample protection for the rider. New forks in which the unsprung weight is reduced to a minimum, a novel system of tank attachment whereby "drumming" is largely eliminated, and a quickly detachable engine and gear unit are outstanding features, though there are many details which well repay a careful study. Both brakes are of the wedge type acting in dummy belt rims. A two-stroke engine of 348 c.c. is manufactured by the firm, and is a fine piece of work with excellent cooling arrangements.



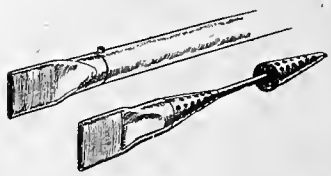
Power unit of the two-speed 2¾ h.p. Ready-Jap, which has a Best mechanical oil pump.

This machine may be fitted with a light sidecar, or for solo purposes may be obtained with two-speed gear.

5-6 H.P. MODEL.—70×88 mm. (680 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. Burman gear; clutch and kick-starter; chain drive; 700×80 tyres. Price £120 15s. solo.

A purely sporting machine, the 5-6 h.p. Omega has a J.A.P. engine installed in a more or less conventional frame. The fittings and finish are excellent, and the specification is admirably suited to the requirements of the fast solo rider. Saddle, tank, large tyres, and all-chain drive are attractive features.

The two-stroke engine before-mentioned is also sold in a conventional frame with two-speed gear and chain and belt drive, the price being £55 13s.; while two J.A.P.-engined lightweights are obtainable, viz., a 250 c.c. engine with three-speed Sturmey-Archer gear, clutch, and kick-starter, at £78 15s., and a 293 c.c. engine with two-speed gear, clutch, and kick-starter, at £65 3s. These models are both fitted with chain and belt drive.

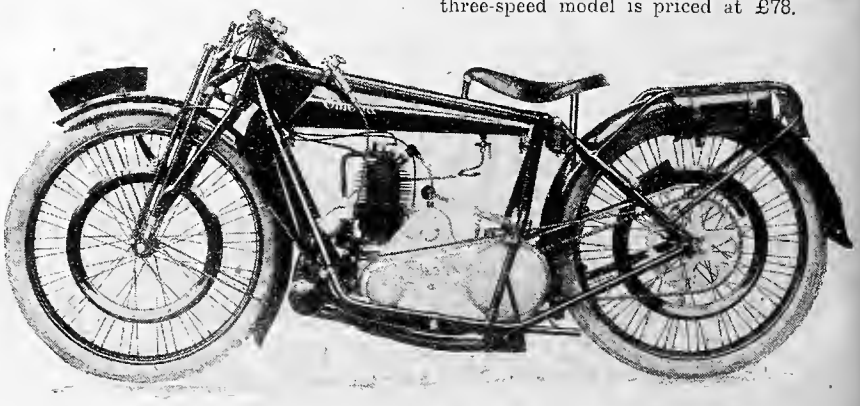


The silencer that fits into the end of the exhaust pipe of the Ready motor cycle, and which can be detached and cleaned easily.

Bax sidecar fitted has an all-metal body and coil rear springing.

2½ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; Burman 2-sp. gear, without clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price, solo £61.

Although shown in three forms, the lightweight Ready machines have generally the same specification throughout. For example, the above model is also offered with a clutch and kick-starter at £65, and with a three-speed gear box at £68. Similarly, a 350 c.c. J.A.P.-engined three-speed model is priced at £78.



Many excellent features are incorporated in the 1922 duplex-frame Omega.

READY. (18a.)

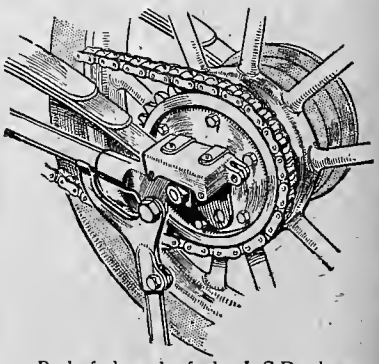
5-7 H.P. MODEL.—75×78 mm. (688 c.c.); flat twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; gear-driven mag.; Burman 3-sp. gear; clutch and kick-starter; all-chain drive; 700×80 mm. tyres. Prices: Solo £110, with sidecar £139.

D. READ AND CO., Weston-super-Mare.—Although a great many machines may make use of the same component parts, almost every make has one or two quite distinctive points. On the Ready motor cycles—newcomers to Olympia, but not new to the road—perhaps the most interesting feature is the silencing arrangement, which is shown in different forms but embodying the same patented "internals." These consist of one or two truncated cones, copiously drilled and the narrow diameters facing the engine. When two of these cones are used, a small bore pipe runs through the centre, serving to support the baffles. The overall dimensions of this silencer are not at all unwieldy, and a considerable degree of silence, with a minimum of back pressure, is claimed. For the rest this model, which is shown as a sidecar outfit, is adequately described in the specification. The engine, of course, is a Coventry Victor. It is worthy of note, however, that reinforced double duplex down tubes are used in the frame, making actually four front down tubes. The

L.S.D. CYCLE CAR. (138.)

8 H.P. MODEL.—85.5×85 mm. (976 c.c.); twin-cyl. four-stroke; side-by-side valves; pump and drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. and reverse gear; clutch and handle starter; shaft and chain drive; 26×3in. tyres. Price £165.

SYKES AND SUGDEN, LTD., Linthwaite, Huddersfield.—The L.S.D. cycle car has been developed on the rough setts and macadam of the Yorkshire mill area, and has thus been designed to tackle continuous hard work without giving any



Back fork end of the L.S.D. three-wheeler, showing the cover over the sliding end of the rear spring.

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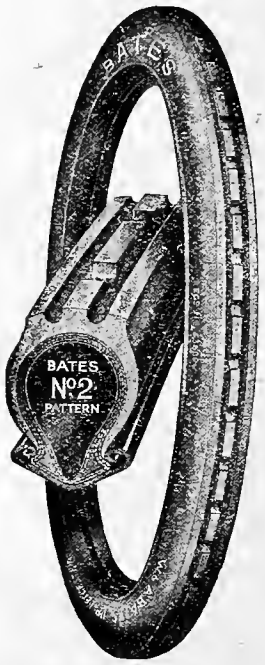


Bates' help to smash another Record!

The long list of BATES' successes has received another notable addition. This is the JOHANNESBURG—DURBAN Solo Record which has just been broken by Nicholl on an Indian machine fitted with Bates tyres. This rider travelled

410 Miles over some of the worst roads in the world, reducing previous record by no less than 61 minutes. AVERAGE SPEED 35.5 m.p.h.

Bates

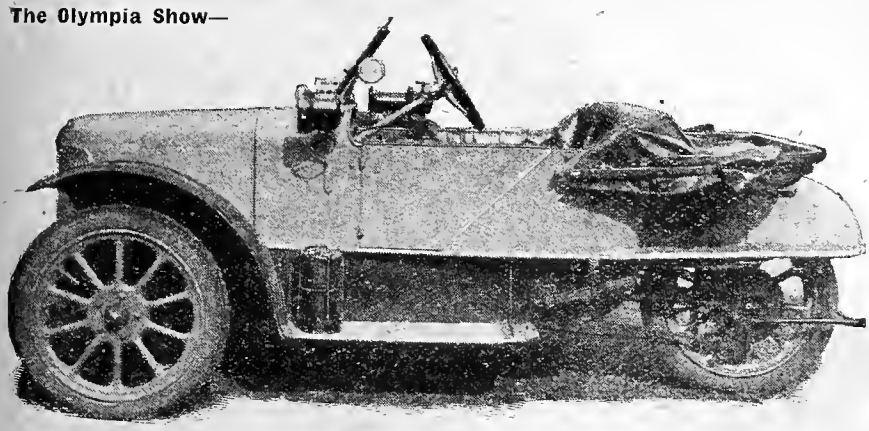
MOTOR CYCLE TYRES

Experts pin their faith in BATES TYRES—why not you.

COLONIAL WHOLESALE STOCKHOLDERS:

AUSTRALIA: A. G. Healing & Co., Ltd., 354, Post Office Place West, Melbourne; Bennett, Barkell, Ltd., Meagher and Chippen Streets, Chippendale, Sydney; Cornell, Ltd., 122, Pirie Street, Adelaide, S.A. BRITISH EAST AFRICA: Sultani, Kampala, Uganda. BURMA: Skippers & Co., Ltd., 51, Barr Street, Rangoon. F.M.S. AND S.S.: A. C. Davis, Penang. INDIA: Skippers & Co., Ltd., 86/1, Clive Street, Calcutta; Elphinstone Circle, Bombay; and at Cawnpore. NEW ZEALAND: Cycle and Motor Supplies, Ltd., Featherstone and Johnstone Streets, Wellington; 140, Lichfield Street, Christchurch. SOUTH AFRICA: H. E. A. Smith, London House, Loveday Street, Johannesburg. WEST INDIES: Frederick N. Martinez, Barbados. CANADA: Associated British Industries (of Canada), Ltd., 149, Victoria Street, Toronto, Ont.

The Olympia Show—



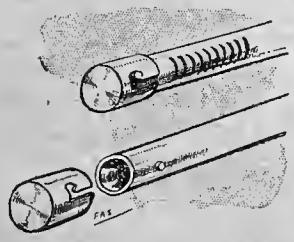
A three-wheeler that has been thoroughly tried out: the L.S.D., fitted with J.A.P. air-cooled engine and final chain drive.

trouble. Fitted with either J.A.P. or M.A.G. 8 h.p. engine, it drives through a clutch and propeller-shaft to a gear box amidships. The two forward speeds are controlled by a side lever, and the reverse is controlled by a separate lever mounted on the front of the driving seat, the main lever being immovable when the reverse is in operation. The sturdy construction of the frame is an index to the character of the machine, for the main frame is composed of angle steel welded together, no bolts being used, and stiffened by deep oak side pieces, which are thoroughly well braced. The engine is started by means of a long pedal prominently mounted on the near side and engaging the layshaft, which gives a multiplication of 2 to 1. The steel artillery wheels are detachable and interchangeable, the rear wheel mounting being particularly neat; on slackening the rear spring nuts and rotating the rocking washers, the rear wheel drops out; on removing the five bolts securing the wheel, the hub falls into two halves, and the wheel comes away. Front springs are of the enclosed coil type. With acetylene lighting and full road equipment, this three-wheeler is priced at £165, option being given between the two-seated touring body and the commodious light delivery van.

N.U.T. (140.)

3½ H.P. MODEL.—64.5×76 mm. (498 c.c.); V. twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; Lucas chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres. Prices: Solo £100, chain drive, £110.

HUGH MASON AND CO., LTD., Derwenthaugh, Newcastle-on-Tyne.—Very little alteration has been found necessary in the 3½ h.p. J.A.P.-engined N.U.T., which was designed essentially as a smooth-running speedy solo mount; all-chain drive, however, is now offered as an alternative to the original chain and belt layout. A small item of the specification is the leading of the crank case relief valve outlet from the timing gear to the primary chain case, thus keeping the engine cleaner, and at the same time lubricating the chain. Generally, the policy of the designer is to clean up details and to aim at standardising nut and bolt sizes, etc. A well thought out toolkit has been got together, and an oil gun is carried in the handle-bar stem, while a squirt is fitted in the petrol-filler cap.

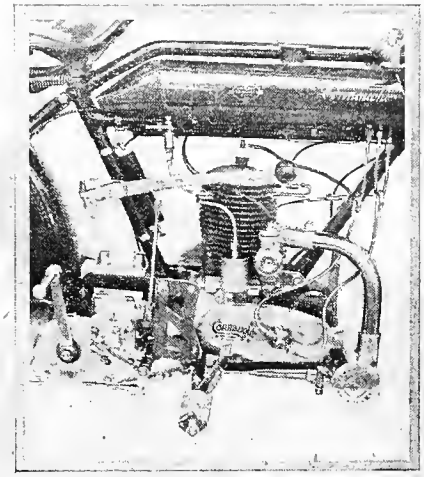


Bayonet caps, detachable for speed events, on the end of the exhaust pipes of the N.U.T. sports model.

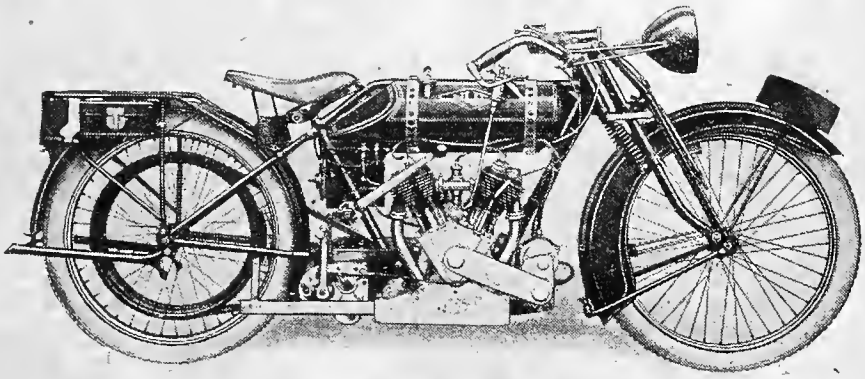
A sports model is also staged, having the latest type of J.A.P. engine, with improved cylinders and "fir-cone" valve caps. This model is of the stripped variety, with no carrier, narrow guards, and long exhaust pipes, the latter having bayonet fitting end caps for ordinary riding. The driving and magneto chains are guarded on the top runs only; this machine costs £125 in the all-chain model with close ratio gear box and no kick-starter.

Another machine following exactly the same specification, but having a 70×88 mm. (678 c.c.) twin J.A.P. engine, is staged with a light sidecar; this model is an admirable double-purpose mount, and follows the usual graceful outlines and pleasing finish of its forerunners. With chain drive the price is £120, the sidecar costing £30 extra, and a Magdyno may be had on all touring models at £20 extra.

A well thought out sidecar chassis is fitted, this being coupled to the machine by means of ball and socket joints permitting a considerable amount of flexibility, and rendering severe bending stresses on the connections almost impossible.



Carburetter side of the 370 c.c. Connaught. Observe the Showell oil pump on the magneto chain case and its leads.

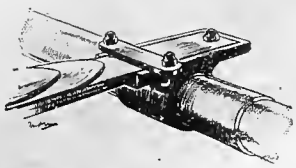


An electrically equipped model of symmetrical and compact appearance—the 5.6 h.p. N.U.T.

T.B. (29.)

8 H.P. MODEL.—85×88 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac or B. and B. carb.; gear-driven mag.; 3-sp. and reverse gear; clutch; shaft drive; 700×80 mm. tyres. Price £215.

THOMPSON BROS. (BILSTON), LTD., Bradley Engineering Works, Bilston.—It is difficult to classify the T.B., except under the very general heading of "three-

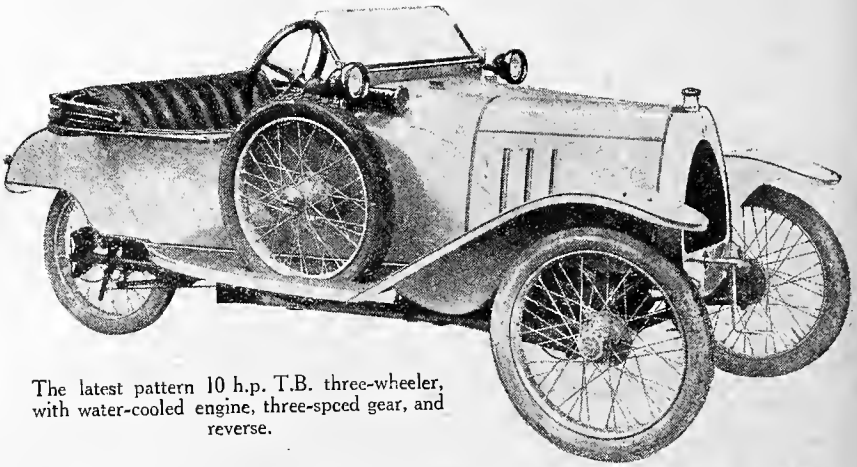


New method of attaching the front springs on the T.B. three-wheeler.

The Olympia Show—

wheeler." While the sliding pinion type of gear box and the final shaft transmission are typically automobile practice, the engines are all V twins closely allied to motor cycle design. Although tubular, the chassis is braced in such a manner as to be equal to the most severe road stresses. Rear springing is by a pair of semi-elliptic springs acting, however, more on the cantilever principle. In front there are two quarter-elliptic springs with an improved mounting. All three wheels are interchangeable. The model specified above is water-cooled, but an air-cooled engine may be fitted to the same chassis, when the complete car sells at £175, less spare wheel.

Two types of the water-cooled model only are shown with bodies, the second being a *de luxe* machine finished in blue (with a guaranteed nickel silver bonnet) and fitted with a speedometer and dashboard lamp. The price in this case is £235. All the T.B.'s have a separate Lucas dynamo lighting outfit, and all of them also weigh less than 8 cwt. Screens and hoods are, of course, standard.

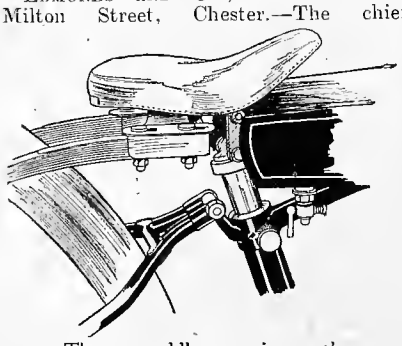


The latest pattern 10 h.p. T.B. three-wheeler, with water-cooled engine, three-speed gear, and reverse.

EDMUND. (132.)

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. or 3-sp. Burman gear; clutch and kick-starter; chain or combined drive; 26×2¼in. tyres. Prices: Solo from £75, with sidecar £23 10s. extra.

EDMUNDS AND CO., Milton Works, Milton Street, Chester.—The chief

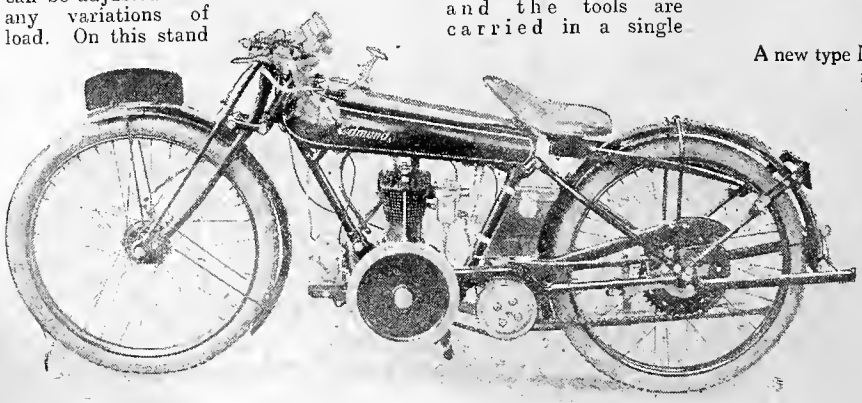


The neat saddle mounting on the Sporting Edmund.

novelty on the Edmund stand consists of the application of the firm's suspension system to chain drive. Not only is the frame extremely rigid laterally, but it can be adjusted in a few minutes to suit any variations of load. On this stand are staged several touring models fitted with J.A.P. or Blackburne engines, and either of chain or combined drive. There is also a 4¼ h.p. touring model with Blackburne engine, designed to relieve the single-cylinder sidecar enthusiast from road vibration. A saddle tank is fitted.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. or 3-sp. Burman gear; clutch and kick starter; chain or combined drive; 26×2¼in. tyres. Price, solo £90.

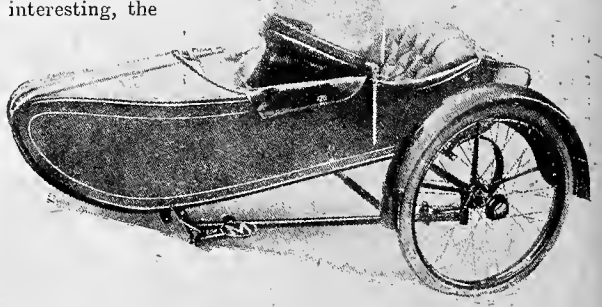
Perhaps the most interesting machine in the exhibit is the 2¾ h.p. sports model with Blackburne engine. The handlebar is underslung so that the driver can get his head well down; this creates difficulties in carrying accessories, so a special quickly detachable "accessory bar" is mounted in the steering head, and can be withdrawn in a few minutes complete with lamps, speedometer, etc. The speedometer drive is interesting, the large pinion being mounted on the flange of a Webb brake, while the small pinion is mounted so as not to interfere with the removal of the wheel. A Bowden lever on the handle-bar controls the oil pump. Internal expanding brakes are fitted to both wheels, and the tools are carried in a single capacious bag under the saddle. All the Edmund machines are very handsomely finished in black and gold, and have saddle type petrol tanks of very large capacity. From the appearance point of view, the little sports model is one of the most attractive of its type.



An attractive sports model Edmund with 2¾ h.p. Blackburne engine and three-speed gear. Although no carrier is fitted, there is a capacious tool-bag.

MONTGOMERY SIDECARS. (55.)

W. MONTGOMERY AND CO., Coventry.—The *modèle de luxe* Montgomery sidecar is certainly an attractive proposition. It is mounted on a special chassis, is beautifully finished, well upholstered, and has a Triplex glass screen mounted on a hinged scuttle. A cover is supplied to protect the body when unoccupied by a passenger, and a hood with hood cover is provided. There is a large locker at the rear. The type known as No. 1 is not quite so luxuriously fitted up as the model just referred to, but is a thoroughly comfortable sidecar. The sporting sidecar is of aluminium varnished over, and is of quite attractive appearance. A lightweight model is mounted on a chassis composed mainly of the rear axle, an extension to the front tube, and another connecting it to the saddle tube of the motor bicycle frame. This forms a triangular frame attached to the machine at three points. A speciality is made of painting sidecars in the colours of well-known public schools to which their purchasers may belong. Weather protection by means of aprons and windscreens has received much attention.



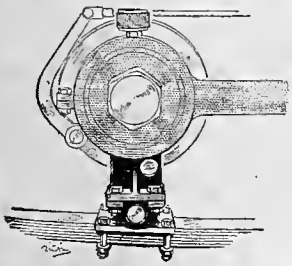
A new type Montgomery sidecar with apron and screen, notable for its deep upholstery.

The Olympia Show—

CASTLE THREE. (26.)

10 H.P. MODEL.—62×100 mm. (1,207 c.c.); four-cyl. four-stroke; side-by-side valves; mechanical lubrication; Solex carb.; Smith combined ignition and lighting generator; epicyclic 2-sp. and reverse gear; shaft and bevel drive; 26×3in. tyres. Price £225.

CASTLE MOTOR CO., LTD., Kidderminster.—Excepting that it has only three wheels, the Castle Three runabout bears no relation to the motor cycle—and even the wheels are of the artillery pattern! It has the only water-cooled four-cylinder engine in the Show, and the vehicle complete with a commodious body of striking appearance is not at all unwieldy. The other big point wherein the Castle Three differs from the rest of the

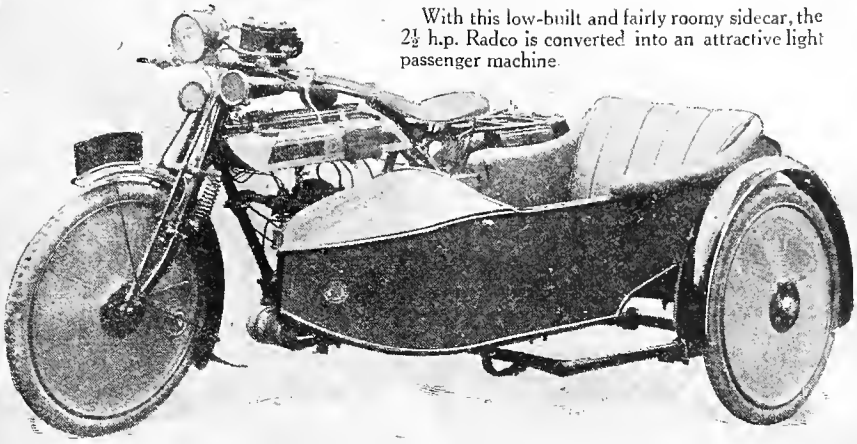


Showing the special hinged joint between the rear springs and back axle of the Castle Three. This feature provides extra flexibility in the rear springing.

three-wheelers is that the rectangular pressed steel chassis completely encloses the rear wheel, which is supported on long, semi-elliptic springs. This does not interfere with the detachability of the wheel, however; all three are interchangeable, and a spare is supplied. A transverse spring is fitted in front. Accessibility and ease of removal are strong points in the layout of the engine and gear box. Lubrication is on approved automobile lines—pump and trough—and there is even an oil pressure gauge on the well-equipped instrument board. Cooling is on the usual thermo-syphon principle, and the radiator is of handsome contour, blending well with the body lines. The price specified above includes very complete equipment.

Chief improvements for next year lie in the addition of diagonal bracing members to the chassis and a new universal joint in the transmission. Much friction is avoided by the efficient lubrication of this joint, which is ingeniously effected by a single grease cup.

The complete car shown has a dickey seat—a £5 extra.

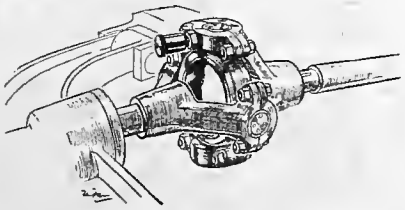


With this low-built and fairly roomy sidecar, the 2½ h.p. Radco is converted into an attractive light passenger machine.

RADCO. (37.)

2½ H.P. MODEL.—67×70 mm. (247 c.c.); single-cyl. two-stroke; sight drip feed lubrication; B. and B. carb.; chain-driven mag.; Burman 3-sp. gear; clutch and kick starter; chain-cum-belt drive; 24×2¼in. tyres. Price, solo £42.

E. A. RADNALL AND CO., Dartmouth Street, Birmingham. — Last year the



Universal joint on the shaft transmission on the Castle Three. A single grease cup lubricates all four bearings of the joint.

Radco was shown for the first time with an engine of slightly increased capacity, but even now, at 247 c.c., it is by no means an oversize in two-stroke lightweights. The design of the whole machine is also on the simplest lines, and, therefore, the small sidecar outfit exhibited must necessarily be among the lightest and least complicated at the Show. It is by no means the least fully equipped, however; nor is the sidecar fitted the most absurdly small. The body has an extremely rakish appearance, accounted for by its low position on an outfit with only 24in. wheels. A surprisingly capacious locker is embodied in the streamline-tail, and aluminium disc wheels and an M-L Maglita add to the usefulness and completeness of the specification.

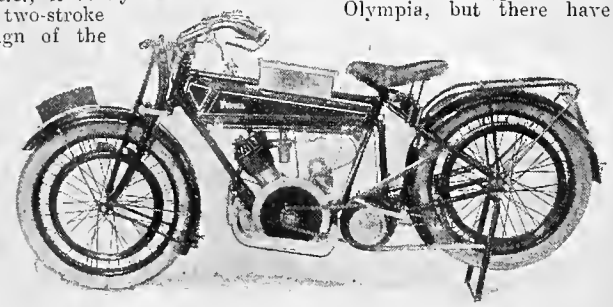
Another new departure for this year is the ladies' open frame model, which differs from the above by having an inclined engine, dressguards over the belt and power unit, and a two-speed Burman gear box with clutch and kick starter. This model is priced at £57 15s.

Also shown is a utility model, in several variations, with petroil lubrication. In all, nine models are staged.

POWELL. (21.)

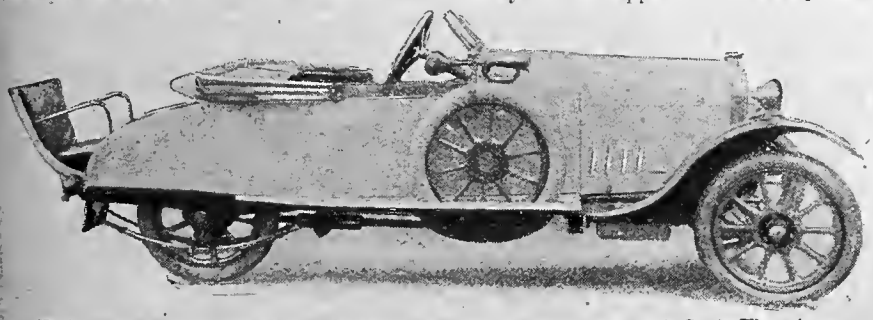
4 H.P. MODEL.—85×96.5 mm. (547 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; M-L chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick starter; chain and belt drive; 26×3in. tyres. Prices: Solo £107, with sidecar £135.

POWELL BROS., Wrexham.—This is the Powell's first appearance at Olympia, but there have



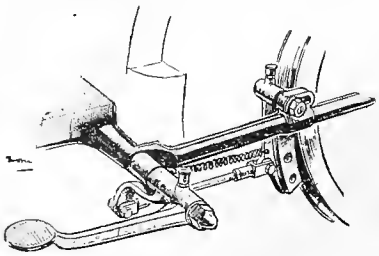
The 4 h.p. Powell has been improved in many details for 1922.

been, nevertheless, several important improvements since it was first described in *The Motor Cycle* last year. The timing gear has been entirely redesigned; there are now two separate cams, and it is claimed that the new arrangement renders it perfectly noiseless. The pinions run in an oil bath, for the main oil lead to the engine goes first to the timing case. From there it finds its way into the crank case sump, where it is picked up by the big end, which, as the engine is inclined, reaches to a lower level in the crank case than it would if the cylinder were vertical. Centrifugal force sends the lubricant from the crank



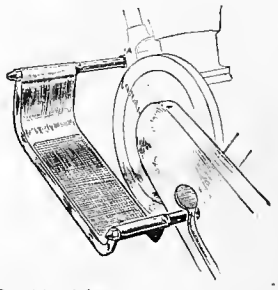
With folding dickey seat and spare wheel, the four-cylinder water-cooled Castle Three is an attractive model.

The Olympia Show—



Rear brake operation on the 4 h.p. Powell—a newcomer to Olympia.

webs into the big end plain bearing. The main bearing on the outside flywheel side is of the double-row Skefko type, pressed into a bronze bush which in turn is held in the crank case by studs. This prevents difficulties with a ball bearing cage that may be too small for, or loose in, its housing. An exceptionally neat exhaust lifting mechanism, which involves only one additional part, and a swivelling magneto bracket, providing easy chain adjustment, are other improvements to the power unit. The detachable cylinder head is retained. An aluminium silencer with an extended exhaust pipe, a top rail tool box of the same metal, and a more comfortable shape of handle-bar are the chief changes in the machine itself. A chain-driven model at £110 could not be prepared in time for exhibit.

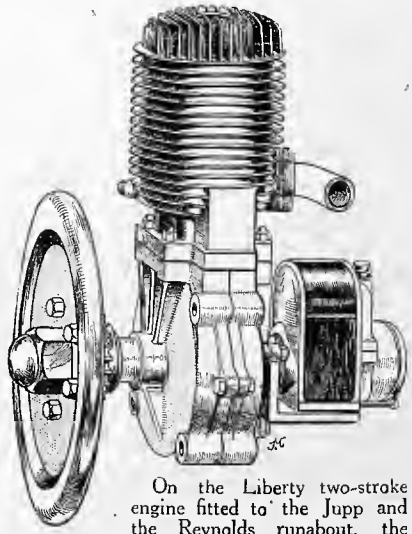


Combined footboard and footrests of the Powell.

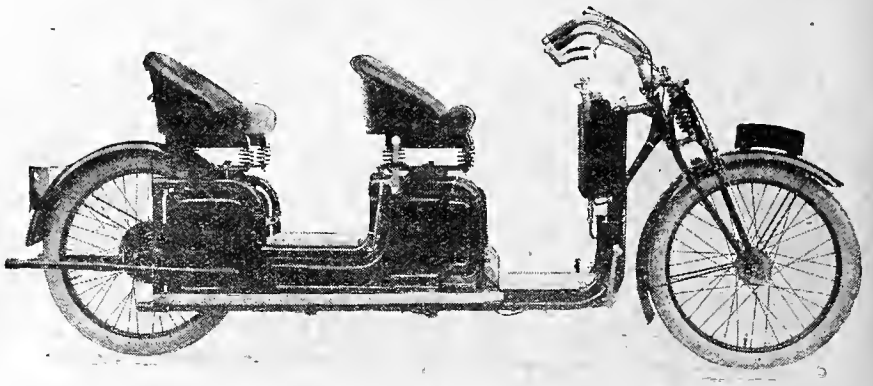
REYNOLDS. (73.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Cox carb.; direct driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 24×2½in. tyres. Price, solo £78 15s.

A. W. WALL, LTD., Tyseley, Birmingham.—Already well-known by reason of its unorthodox appearance the Reynolds may be regarded as a useful type of machine for the man who requires a mount for runabout purposes. With its open frame and comfortable sprung bucket seat it is particularly suitable for lady drivers, or for those who take up motor cycles late in life. It is extremely well mudguarded, and with its Liberty two-stroke engine, two-speed gear and chain drive, it is essentially a sturdy little machine capable of hard work and quite suitable for long runs when occasion arises. The springing of the seat platform is particularly interesting, for long quarter-elliptic springs are anchored to the rear of the frame, and support at their forward ends the front of the platform on which the driver's seat is mounted. A second bucket seat can be accommodated at the rear end of the platform if need be. A very easily operated rear wheel stand is another interesting point.



On the Liberty two-stroke engine fitted to the Jupp and the Reynolds runabout, the magneto is driven by an extension of the crankshaft.



"Comfort first" must have been the maxim of the designer of the de luxe tandem Reynolds runabout. A 2¾ h.p. J.A.P. engine and Burman three-speed gear are used.

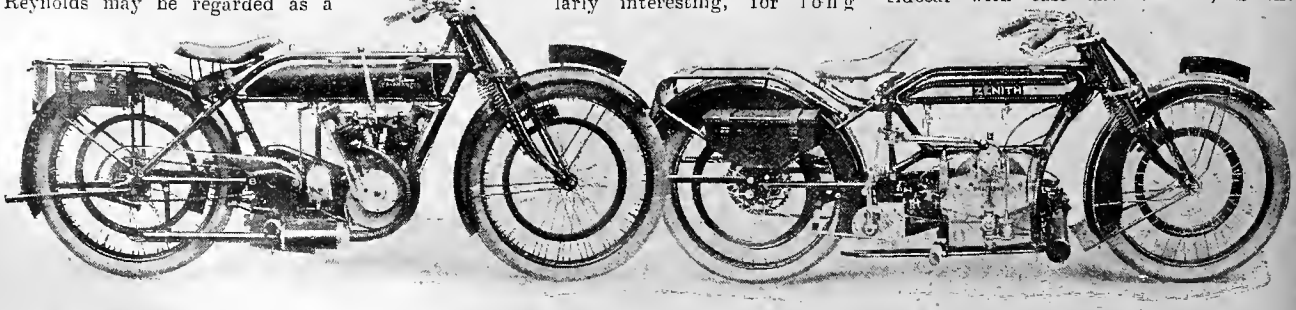
2¾ H.P. MODEL.—70×90 mm. (349 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Cox-Atmos carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price £105.

As a *de luxe* passenger machine the larger edition of the Reynolds runabout has many attractive features; for instance, the weight and space of a sidecar outfit is saved. A very complete specification includes Maplestone forks, internal expanding brakes in both wheels, and fully sprung bucket seats for both driver and passenger. Beautifully finished in every detail, the floor and running boards are covered with rubber and have moulded beadings. Either seat is suitable for a lady, since there are no tubes to interfere with dress position. The tubular frame is reinforced at the bends, and the whole machine presents a novel appearance which attracts much attention from the general public.

LEA-FRANCIS. (39.)

3½ H.P. MODEL.—64×77 mm. (496 c.c.); V twin-cyl. four-stroke; overhead inlet valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2⅜in. tyres. Prices: Solo £110, with sidecar £135.

LEA-FRANCIS, LTD., Lower Ford Street, Coventry.—A useful double-purpose mount of moderate horse-power, quite ideal for solo use, and yet capable of taking a sidecar with ease and comfort, is the



A Lea-Francis sporting model is now available with a 3½ h.p. engine.

The chain-driven Zenith-Bradshaw, the silencing arrangements of which have been amended for the Show.

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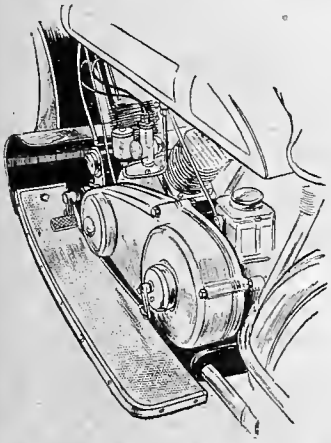
3½ h.p. V twin Lea-Francis. Among the chief features may be mentioned the entirely enclosed chains, the flexible tubing exhaust pipes, and the three-speed gear enclosed on a circular bottom bracket. Throughout the design, the rider's comfort has been carefully studied. The footboards are of ample size, and running transversely across them is a metal guard made in one with an under-shield—a very excellent idea, which not only protects the rider's feet, but also the

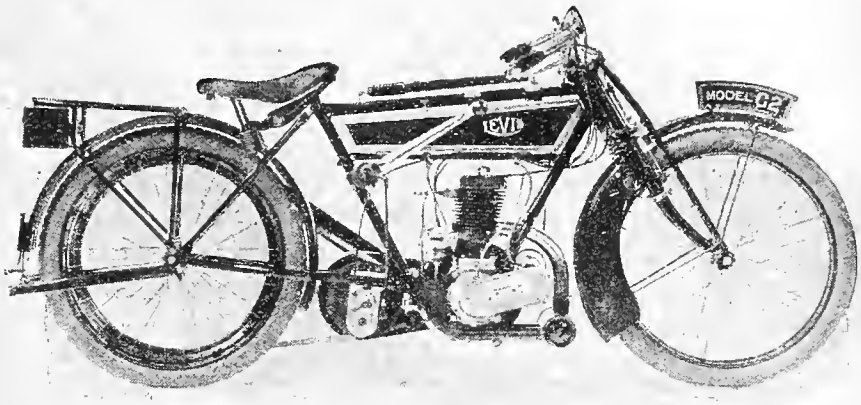


New arrangement of footboards and mud-shield on the Lea-Francis machine.

mechanism from mud and wet. The magneto is neatly stowed away at the rear of the engine, and is in a most thoroughly protected position.

The sports model is a most attractive little mount fitted with wide handle-bars, narrow and lighter mudguards, a totally enclosed front chain, and a rear chain protected by a guard. Footrests instead of footboards are supplied. In all other respects this machine resembles the 3½ h.p. pattern just described. M.A.G. engines are used throughout Lea-Francis models, which are conspicuous for their business-like appearance and excellent all-weather finish in which the plating has been reduced to a minimum.

5 H.P. MODEL.—64×92 mm. (592 c.c.); V twin-cyl. four-stroke; overhead inlet valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×3in. tyres. Prices: Solo £125, with sidecar £157 10s.



That simple lines may result in a graceful whole is exemplified on the redesigned 2½ h.p. Levis.

What first strikes the eye on the 5 h.p. model is the workmanlike appearance of the handsome cast sand-blasted aluminium chain case, which also encloses the countershaft clutch. There is a neatly arranged inspection cover through which the adjustment of the chain may be verified. A normal type of three-speed gear is mounted above its bracket instead of being hung from a bracket as is more usual. The rear chain guard is of sheet metal, and excellent mudguarding is provided. In this case the magneto is carried at the front of the engine, but is perfectly protected from wet.

LEVIS. (67.)

2½ H.P. MODEL.—67×70 mm. (247 c.c.); single-cyl. two-stroke; drip feed lubrication; Senspray carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 24×2¼in. tyres. Price, solo £68.

BUTTERFIELDS, LTD., Stechford, Birmingham.—The above is the most fully-equipped form of Levis. It is a thoroughly practical lightweight capable of going anywhere. It has a sloping top tube which greatly enhances its appearance, while the tank is supported on a detachable platform. The front chain is protected by a guard, the side of which is also extended to protect the greater portion of the top run of the belt. The same model is shown in a simpler form single geared.

2¼ H.P. MODEL.—62×70 mm. (211 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch; chain-cum-belt drive; 24×2¼in. tyres. Price, solo £58.

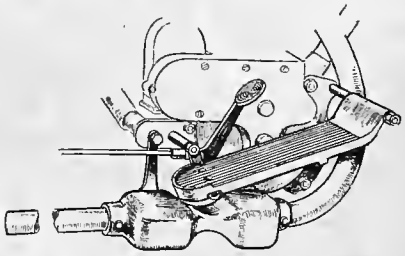
A very useful lightweight, sold at a moderate figure, the weight of the 2¼ h.p. is only 135 lb. If fitted with a two-speed gear, no district in Great Britain need be closed to it. The lubrication follows a principle adopted by Messrs. Butterfields for some considerable period, leading the oil from the Best and Lloyd drip feed to the cylinder and main bearings, whence it passes to the big end through a drilled crankshaft. On this, and on the model just described, a simple form of direct-acting heel-operated brake is fitted.

The Levis Popular is a replica of the foregoing model, except that no two-speed gear is fitted. It weighs only 120 lb., and is sold to the public at £48.

QUADRANT. (22.)

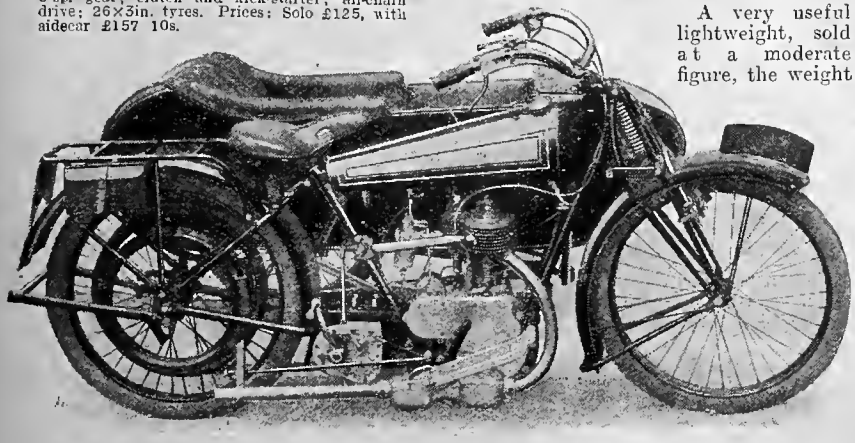
4½ H.P. MODEL.—85×110 mm. (624 c.c.); single-cyl. four-stroke; side valves; hand pump lubrication; Amac or Senspray carb.; gear-driven mag.; Sturmey-Archer 3-speed gear; clutch and kick-starter; all-chain drive; 26×2½in. tyres. Prices: Solo £85, with sidecar £105.

QUADRANT MOTORS, LTD., Lawley Street, Birmingham.—As a thoroughly tried and amply powerful sidecar outfit, at a very reasonable price, the 4½ h.p. Quadrant occupies a secure position in its class. Allowing for its large capacity—large, that is, for a single—the engine possesses quite a remarkable top gear performance. At a casual glance, too, it



Made of aluminium, this novel double expansion chamber replaces the "canister" type of silencer on the Quadrant.

impresses one as being cleanly and soundly designed. Mechanically, its only unconventional feature is in the position of the inlet valve behind the cylinder and the exhaust midway at the side; and this may account in no small measure for the engine's cool running and "slogging" capabilities. Instead of the old canister type of silencer hanging across just in front of the crank case, two neat aluminium expansion chambers are fitted,



An exceedingly attractive big single Quadrant outfit marketed at a popular price.

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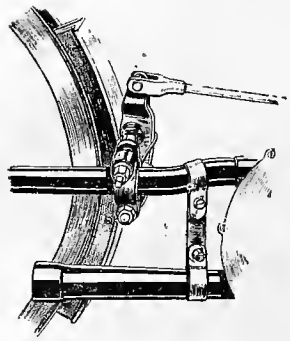
forming bulges in an open exhaust pipe which leads to the rear of the machine. Another noticeable detail improvement has been effected by rounding off the saddle tank. Quadrant spring forks, which are of conventional design, but embody a recoil spring, are retained, as is an ordinary horseshoe type front rim brake. Aluminium chain cases are fitted to both chains, and on the chain-cum-belt model (which costs £5 less) to the primary drive. There is a transmission shock absorber in the rear hub of the chain-driven machine. The sidecars shown are commodious and strongly built, and have capacious lockers at the rear.



A very long V type shoe is used on the 8 h.p. New Imperial rear brake.

NEW IMPERIAL. (69.)

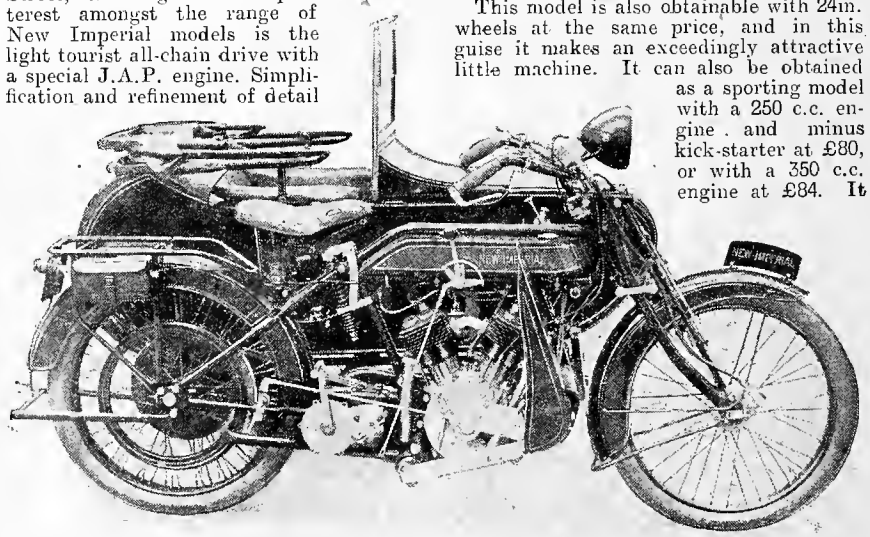
2¾ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, solo £73.

NEW IMPERIAL CYCLES, LTD., Princip Street, Birmingham.—Of particular interest amongst the range of New Imperial models is the light tourist all-chain drive with a special J.A.P. engine. Simplification and refinement of detail are the keynotes of the design, for the engine and gear box unit are mounted in a loop frame, of which strength and lightness are distinct features. A shock absorber is incorporated on the engine-shaft. A refinement is seen in the method of rear brake adjustment by means of a wing nut on the end of the tension rod. Internal expanding brakes are fitted to both wheels. Very neat legshields are attached to the front of the aluminium footboards, and serve also to deflect air on to the engine.

This model is also obtainable with 24in. wheels at the same price, and in this guise it makes an exceedingly attractive little machine. It can also be obtained as a sporting model with a 250 c.c. engine and minus kick-starter at £80, or with a 350 c.c. engine at £84. It was a 250 c.c. New Imperial that won *The Motor Cycle* Cup in the last T.T.

A somewhat similar model is available with chain-cum-belt transmission, but without the loop frame, the price of which is £69, or without kick-starter £63.

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, with sidecar £145.



Amongst the most attractive of the big outfits—the 8 h.p. New Imperial, with dynamo lighting and a very completely equipped sidecar.

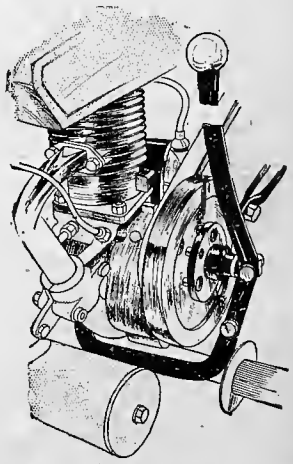
To the family man the sidecar model will appeal by reason of its sturdy construction, although refinement is not lacking, as instanced by the fitting of Timken roller bearings to the back wheel. A spring seat-pillar ensures the comfort of the driver, while the passenger is adequately provided for by deep, well-sprung upholstery, and, if desired, by a hood, screen, and side curtains, which transform the sidecar into a coupé, the extra cost being £9.

Of interest to the sporting rider is the 8 h.p. sports model with a special J.A.P. engine, having lightened reciprocating parts and aluminium pistons. The kick-starter is omitted on this machine, the price being £132.

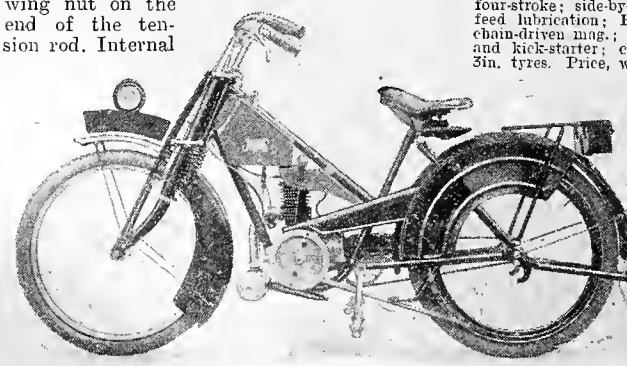
J.E.S. (59.)

1¾ H.P. MODEL.—60×60 mm. (169 c.c.); single-cyl. two-stroke; drip feed lubrication; J.E.S. carb.; gear-driven mag.; 2-sp. gear, without clutch and kick-starter; belt drive; 24×2in. tyres. Price, solo £48.

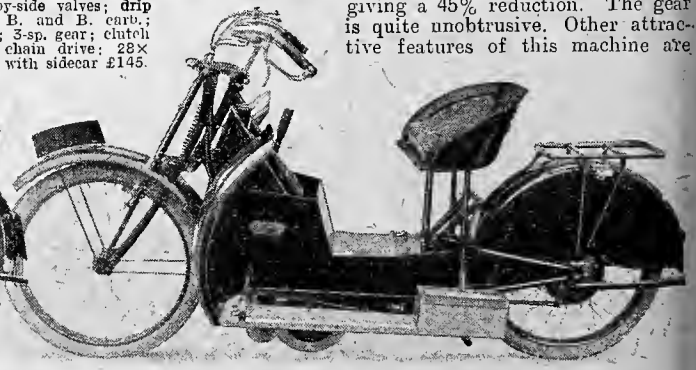
J. E. SMITH, LTD., J.E.S. Works, Gloucester.—Weighing only 98 lb., this is a very interesting little lightweight, and one of the genuine variety. It is interesting to note the fact that it incorporates a two-speed gear in the engine. In top gear the pulley is running at the same speed as the crankshaft, but when on low gear the drive is taken through a train of gear wheels on a countershaft mounted underneath the crankshaft, giving a 45% reduction. The gear is quite unobtrusive. Other attractive features of this machine are



On the J.E.S. lightweight, a two-speed gear is incorporated in the crank case, operated by a rod through the mainshaft.



A lady's miniature two-stroke, the 1¾ h.p. J.E.S.



Another open frame mount—the 2¾ h.p. Jupp two-stroke.

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the lubrication by drip, which is actuated by pressure in the crank case leading oil to the hollow crankshaft and web to the crank pin, then through the centre of the connecting rod directly to the hollow gudgeon, and thence to the cylinder walls.

The single-speed model is a simplified replica of the machine just described. It weighs 88 lb., and costs £38.

1¾ H.P. MODEL.—60×60 mm. (169 c.c.); single-cyl. four-stroke; automatic inlet valves; pressure feed lubrication; J.E.S. carb.; gear-driven mag.; 2-sp. gear, without clutch and kick-starter; belt drive; 24×2in. tyres. Price, solo £49.

This machine closely resembles the two-stroke, two-speed model previously described, but is fitted with a four-stroke engine, which, like the two-stroke, incorporates the two-speed gear in the crank case. The engine is fitted with an automatic inlet valve, as Mr. J. E. Smith is a strong supporter of the modern form of this type of valve. The chief feature of this valve is its large diameter. It is fitted with two springs—a light spring enabling it to open at the slightest suction, and a stiff spring to ensure its rapid closing at high speeds, and to form a stop to prevent the shearing of the cotter. The crank case can be taken apart in the case of this engine without interfering with the magneto timing. It is also worthy of note that the pedalling gear in this machine can be used either for kick-starting when the stand is up or alternatively for assisting the engine, while by undoing a stop the pedals may be brought level and used as footrests.

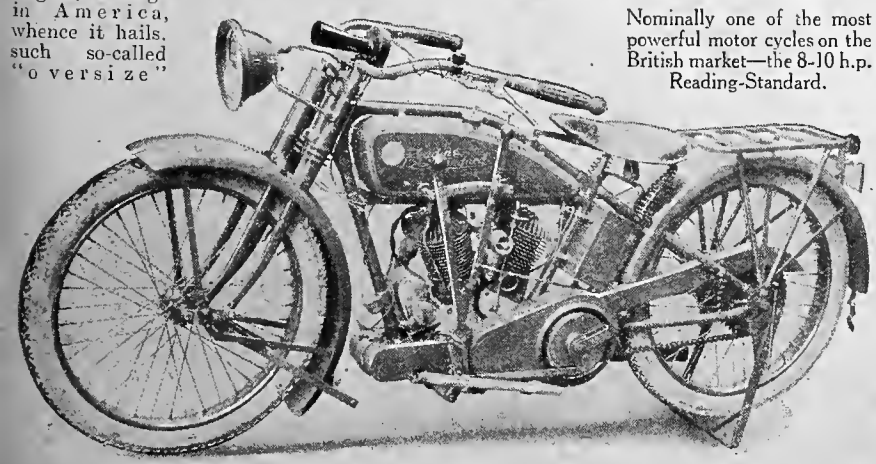
The lady's model is certainly an interesting proposition. The frame is built on the same principle as a lady's pedal cycle. It is provided with an efficient belt guard and special valances to the rear guards, so as to keep the rider's skirt free from mud and clear of the transmission.

READING-STANDARD. (18.)

8-10 H.P. MODEL.—85.5×101.6 mm. (1,170 c.c.); V twin-cyl. four-stroke; side-by-side valves; mechanical pump lubrication; Schebler carb.; gear-driven mag.; own 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres. Prices: Solo £135 (with dynamo lighting), with sidecar £175.

COPPEN, ALLAN AND CO., 89, Great Portland Street, W.1. — Probably the most noteworthy feature of the Reading-Standard is the large capacity of its engine, although in America, whence it hails, such so-called "oversize" power units are proportionately as common as 250 c.c. lightweights in this country. The machine is, therefore, in no sense a freak, and, indeed, in general lines, is exceedingly conventional, the design being a blend of standard American and British practice, but mainly the former. It may be recollected, however, that the Reading-Standard was the first American machine to make an appearance on the British market with side-by-side valves. It was also one of the earliest designs to embody completely enclosed valve springs and tappets. Such typically American features as twist grip control and interconnected hand and foot clutch operation naturally find a place in the specification; and—another excellent idea from across the Atlantic—the tank holds 3½ gallons of petrol. Mudguarding has been improved since last year, and a transmission shock absorber is now fitted at a slight extra cost. The prices in both cases include dynamo lighting.

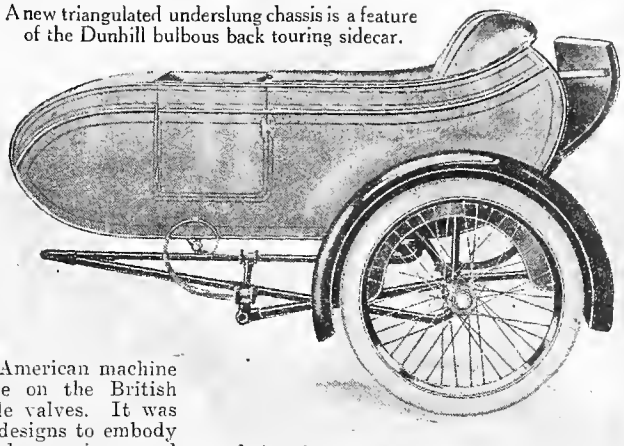
With dropped handle-bars, higher gear ratios, and a handle-bar clutch control (making three alternative methods of clutch operation), the same model is sold as a sporting solo or sidecar mount. The standard single-seated sidecar is an M.P., but one machine is also shown with a "Plus One" tandem sidecar attached. With the latter sidecar (single or two-seated at will) the price is £188.



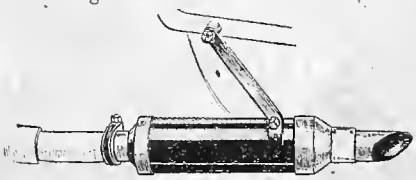
Nominally one of the most powerful motor cycles on the British market—the 8-10 h.p. Reading-Standard.

DUNHILL SIDECARS. (68.)

DUNHILLS, LTD., 359, Euston Road, N.W.1.—Sidecars for every power and type of machine are offered by this well-known firm. Ten different models are on show, but three merit particular attention, as they have been but recently introduced. Of these, the featherweight model is particularly attractive, and with its simple triangulated frame and robust construction, it should be capable of good service. The triangulated frame construction is a speciality of Dunhill's productions, and is seen in varying degrees of strength on the other models. In the new touring model and in the new two-seater model it is observable how the frame is strengthened up by additional cross members. The two-seated model exhibited is particularly sturdy, and provides ample accommodation for two passengers sitting tandemwise. One very good feature of all these sidecars is the strength and rigidity of the mudguard, which is held by three stout tubular stays. On all models, from the lightest to the heaviest, springs from the famous house of Terry are fitted, and a refinement on the large two-seater model is the provision of a very neat wheel stand, which, when out of use, hinges up and forms an additional support for the mudguard.



A new triangulated underslung chassis is a feature of the Dunhill bulbous back touring sidecar.



"Carbjector" silencer fitted on the tail of the exhaust pipe of the two-stroke Velocette.

VELOCETTE. (36.)

2¼ H.P. MODEL.—62×73 mm. (220 c.c.); single-cyl. two-stroke; mechanical lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 24×2½ (for 2¼in.) tyres. Price, solo £72 10s.

VELOCE, LTD., Victoria Road, Aston, Birmingham.—For nearly a decade now the resources of the Velocette factory have been concentrating on one type—almost one model—of motor cycle, and; although this year's trials have proved the 1921 machine to have reached an advanced stage of development, the makers are by no means content to rest on their laurels. A new three-speed gear box, with clutch and kick-starter, modifications to the internal expanding rear brake, more accessible chain cases, and wider front forks are among the points that will make the 1922 Velocette even better than its predecessors. A self-contained mechanical pump lubrication system, embodying a crank case sump, has long been a satisfactory feature, and, generally speaking, the power unit is quite unaltered. Pedal cycle type "lubricators" have been discarded in favour of generous grease cups, and a most interesting silencer known as the Carbjector is fitted. It is claimed that, far from causing back pressure, this device actually assists in scavenging the cylinder. A

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Brooks cantilever saddle is fitted to this model, but on the two-speed gear machines the seat is one of the new pattern Terry spring top saddles. Other Velocette models are priced as follows: With two-speed gear, with clutch and kick-starter, £65; a similar lady's model, £63; a two-speed (50 m.p.h. guaranteed) sports model, with 249 c.c. engine, £68. A Maglita combined lighting and ignition set may be fitted as an extra.

NORTON. (99.)

3½ H.P. MODEL.—70 × 100 mm. (490 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. or Binks rat-trap carb.; chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, solo £115.

NORTON MOTORS, LTD., Bracebridge Street, Birmingham.—Probably the most interesting exhibit on the Norton stand is the stripped racing model with B.S. engine, open chain drive, and Binks rat-trap carburetter. This machine is sold with a guarantee that it has exceeded 75 m.p.h. on Brooklands. This engine can be supplied with any model at an extra charge of £22, while the B.R.S. engine (70 m.p.h. guarantee) can be fitted at an extra charge of £12.

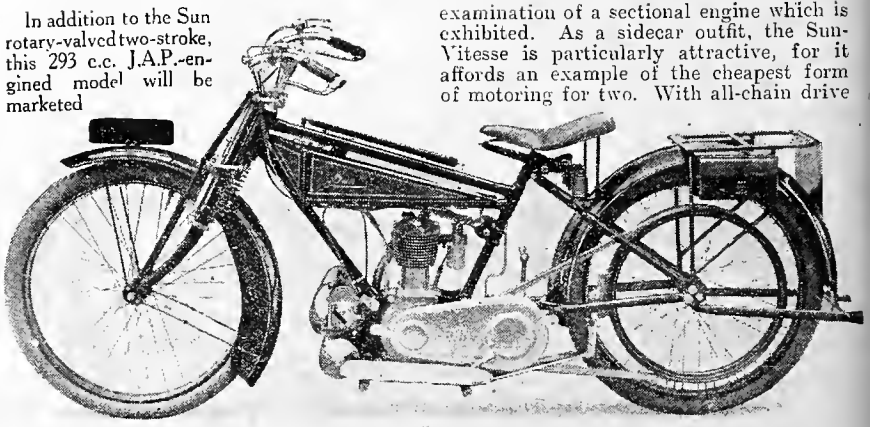
Another interesting model is the 3½ h.p. Colonial, which has a crank case clearance of 6in. Chain adjustment is effected by means of a single nut occupying an accessible position at the rear of the gear box brackets. Domed nuts are fitted throughout. The price of this model is £117.

On the £115 16H 3½ h.p. a lower riding position is obtained by reducing the ground clearance to 4in., but in other respects it is almost a counterpart of the Colonial.

The Model 9 3½ h.p., single gear, direct belt drive will appeal specially to the lover of a fast and simple machine. A straight through exhaust is employed. The standard ground clearance is 4in., but a Colonial design, having a clearance of 5in., can be supplied. A Philipson pulley is fitted at an extra charge of £7 7s. Price £80.

4 H.P. MODEL.—82×120 mm. (634 c.c.); single-cyl. four-stroke; poppet valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Prices: Solo £120, with sidecar £154.

The almost classical Big Four sidecar model is shown variously equipped both for touring and commercial purposes. The No. 1 touring is fitted with oil-tight chain cases, special aluminium footboards, and artistic legshields (£2 2s. extra). An electrically equipped sidecar outfit, fitted with Lucas Magdyno (£21 extra) is a centre of interest, the handsome outfit being provided with a specially attractive sidecar containing a folding seat for a child. On all Norton models adjustable tappets are now standard.

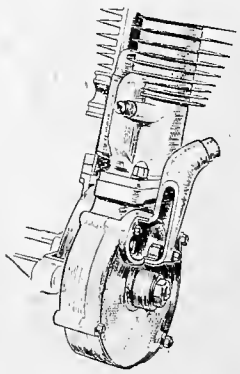


In addition to the Sun rotary-valved two-stroke, this 293 c.c. J.A.P.-engined model will be marketed

SUN AND SUN-VITESSE. (72.)

2¾ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; rotary valve; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Prices: Solo £61 19s., with Maglita lighting and ignition £96 12s.

SUN CYCLE AND FITTINGS CO., LTD., Aston Brook Street, Birmingham.—Of the two models shown, the Sun-Vitesse two-stroke perhaps attracts the greatest attention by reason of the rotary valve with which it is fitted. This valve is formed on the right-hand side of the engine, and takes the form of a disc, in which is a suitably-shaped port, working against the cast iron end plate of the crank case. In this plate is incorporated the induction pipe and port. On the flywheel side of the engine is a piston-operated air valve under the control of the driver through the medium of a Bowden wire. An excellent idea of the action of this valve may be gained by an examination of a sectional engine which is exhibited. As a sidecar outfit, the Sun-Vitesse is particularly attractive, for it affords an example of the cheapest form of motoring for two. With all-chain drive and a three-speed gear, it should be capable of a good road performance. The price of this little outfit with magneto lighting and ignition is £95 12s. An innovation, so far as the Sun is concerned, is the 2¾ h.p. J.A.P. model, the main specification being the same as that of the Sun-Vitesse. Both two and four-stroke engined machines are available with two or three-speed gears, the price of the two-speed J.A.P.-engined machine being £63. A normal three-port two-stroke model is also listed with similar specification to that described above.

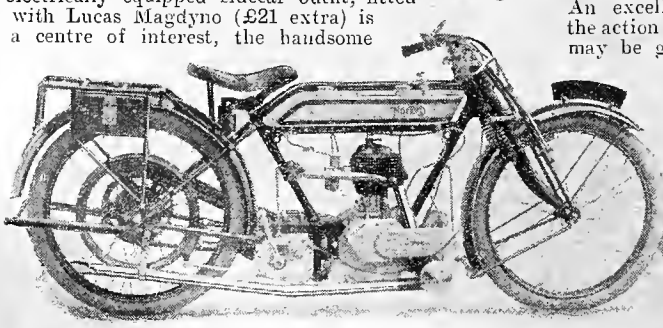


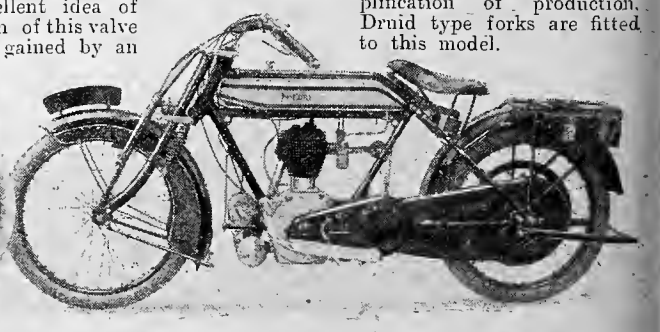
Section of the Sun engine, showing the rotary inlet valve in the crank case.

HAWKER. (25.)

4¼ H.P. MODEL.—85×97 mm. (548 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; M-L chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼ tyres. Price, solo £89 15s.

H. G. HAWKER ENGINEERING CO., LTD., Kingston-on-Thames.—Considering the familiar ring the name now has in the ears of the average motor cyclist, it is somewhat surprising to recollect that the Hawker had not made its appearance at the time of the last Show. This model, however, is quite new, although the frame follows very closely the lines of the 1921 two-stroke type. The engine is a standard Blackburne. Internal expanding brakes are fitted to both wheels, and the Hawker type of saddle mounting is used, the saddle-pillar being entirely dispensed with, since the seat portion is hinged on the top tube in front and supported on coil springs attached directly to the frame stays in the rear. The carrier and cylindrical metal tool box forms another instance of the aim of the designers—simplification of production. Druid type forks are fitted to this model.





(Left) On the 1922 three-speed 3½ h.p. Norton a silencer is fitted instead of the plain exhaust pipe. (Right) A popular single-cylinder sidecar mount—the "Big 4" Model

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Other four-stroke models with Blackburne engines shown are a 2¾ h.p. type with plain two-speed gear (£75 12s.), and clutch and an o.h.v. sports model with all-chain drive through a three-speed box (£99 15s.).

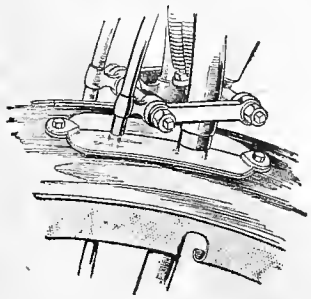
2½ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. two-stroke; crank case pressure lubrication; Claudel carb.; flywheel mag.; 2-speed gear; chain-cum-belt drive; 26×2¼in. tyres. Price, solo 50 gns.

Whatever else the Hawker lightweight does it will always be remembered for hauling a sidecar and passenger up the six mile climb at Applecross unaided. Its *motif* is simplicity, and it was not expected that it would show much change on its first appearance at Olympia—for it certainly could not be simplified much more! With its flywheel magneto and twin chain and dog clutch gear it truly deserves the title of lightweight. It differs from the new "4¼" in its brakework—two on the rear belt rim—and its forks of the hinged (barrel spring) type.

VERUS AND SIRRAH. (133.)

5-6 H.P. MODEL.—71×88 mm. (696 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; M-L chain-driven mag.; 3-sp. gear; clutch and kick-starter; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 26×3in. tyres. Prices: Solo £135, with sidecar £162 10s.

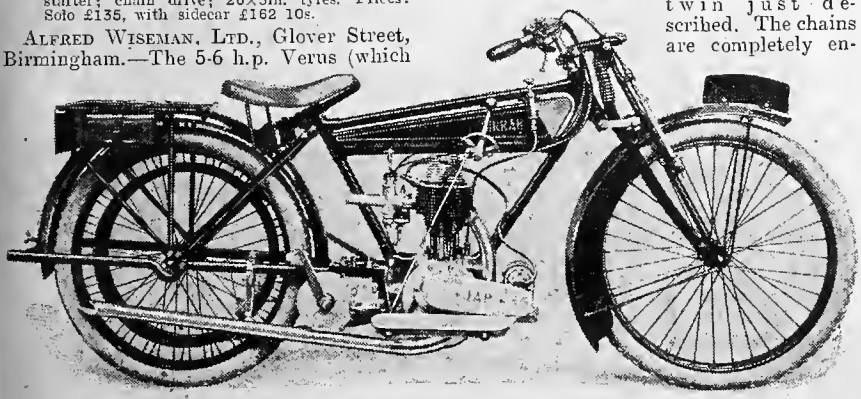
ALFRED WISEMAN, LTD., Glover Street, Birmingham.—The 5-6 h.p. Verus (which is also offered with 8 h.p. engine, 85×88 =998 c.c., at the same price) is a splendidly conceived machine assembled around the Blackburne engine and Sturmey-Archer gear box. Sloping top tube frame construction has been followed and Brampton forks are used. A saddle tank is fitted, and oiling is by means of a semi-automatic drip feed. Exceptionally wide dome section mudguards are employed, and the front one encircles the fork blades, aluminium plates sealing the apertures. Cast aluminium is also used for the magneto shield, footboards, and the complete chain cases, which are massive and amply provided with inspection plates.



Aluminium plates neatly cover the gap for the fork blades in the front mudguard of the 5-6 h.p. Verus.

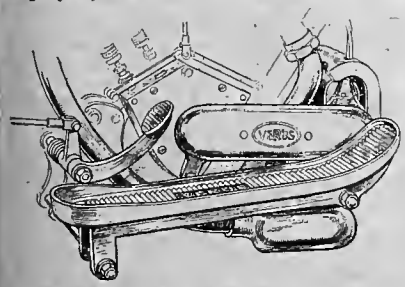
2¼ H.P. MODEL.—70×64.5 mm. (248 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; C.A.V. chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; chain drive; 26×2in. tyres. Price, solo £95.

This lightweight model is an attractive light solo model, having a very similar general specification to the big twin just described. The chains are completely enclosed and the brakework is similar, there being a front hub expanding brake and one acting on a dummy belt rim at the rear. A 2¾ h.p. model, also J.A.P.-engined, costs £92; and a two-speed Blackburne model with chain and belt drive is £77.



A 2¾ h.p. J.A.P. engine-three-speed Burman gear box and final belt transmission are features of the Sirrah.

By the same makers are also displayed the following Sirrah machines: A single-speed two-stroke with Union engine of 70×76 mm. (292 c.c.), price £38; and the same machine with two-speed, kick-starter, and clutch, at £50, or £67 with a miniature sidecar. A Blackburne-engined 2¾ h.p. Sirrah also costs £67 solo with two-speed gear; and a bigger machine with a 5-6 h.p. J.A.P. twin engine is also staged—this costs £125. The Sirrah models follow the general lines of the Verus range, but are not so well equipped, having lighter tyres, mudguards, etc.; they are also fitted with chain guards only.



Footboards, silencer and magneto cover on the 5-6 h.p. Verus are of aluminium.

OLYMPIC AND NEW COURIER. (135.)

2¾ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac or Vici carb.; flywheel mag.; 26×2¼in. tyres. Prices: Solo, from £45.

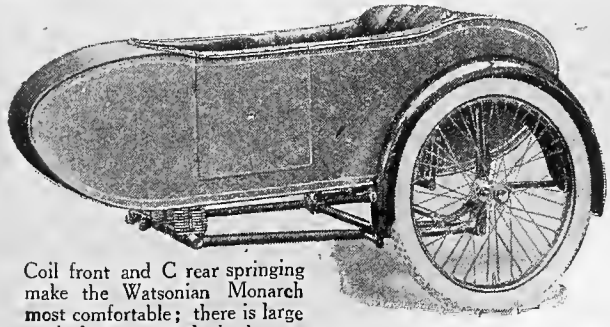
OLYMPIC CYCLE AND MOTOR CO., LTD., Wolverhampton.—For 1922 this firm is concentrating on medium-powered machines, considering that more than 2¾ h.p. is unnecessary. It is impossible to give any very close specification of either the New Courier or Olympic models, for the whole point of the exhibit is a specially designed frame into which practically any engine and any gear box can be fitted without additional cost. Substantial construction is the second motive of the frame design, exemplified by the use of butted and reinforced tubes free from bends and of oversize lugs. The New Courier models are planned to be as cheap and as sound as engineering principles allow. 350 c.c. J.A.P. or Blackburne engines may be fitted at option.

2¾ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac or Vici carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, solo £70.

The Olympic models are intended as machines *de luxe*. On the latter range the most interesting feature is the registered swinging bracket from which the gear box is suspended. This is worth the closest study. The chain cannot get out of line. Any variety of gear box can be mounted to the requisite chain line for any make of engine. The driving chains can be adjusted very quickly and with extreme accuracy. Moreover, since the range of about three links is provided in the adjustment, the breaking of the chain on the road would matter but little, as the rider could easily remove the broken links provided there was sufficient adjustment available in the final drive. In addition, this model may be fitted with either Villiers or Blackburne engine.

WATSONIAN SIDECARS. (40.)

WATSONIAN SIDECAR CO., 129, Conybeare Street, Birmingham.—Features of this stand are the sidecars intended for business people. One of these is a commercial box carrier on a triangular chassis, which will carry loads up to 3 cwt., while the truck sidecar with a float pattern body should be highly suitable for farmers, builders, carpenters, plumbers, and persons occupied in suchlike trades. Since it is constructed of



Coil front and C rear springing make the Watsonian Monarch most comfortable; there is large locker space at the back.

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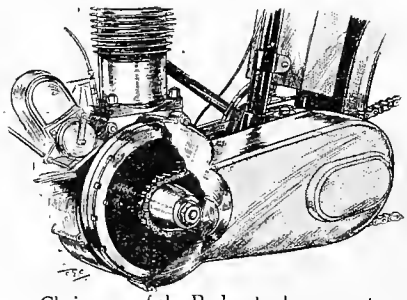
oak, this body will carry two standard milk churns, small live stock, or any heavy and awkward loads. Among the touring sidecars may be mentioned a streamline polished aluminium body mounted on a light triangular chassis, and weighing 60 lb., known as the Model A, and the sporting model (R34 type), built on airship lines. The Monarch is a touring sidecar of ample dimensions, with large locker space, giving plenty of comfort while being light in weight.

Another attractive feature of this stand is the Watsonian sidecar-taxi, mounted on a chassis composed of double D section reinforced weldless steel tubes, and having a ground clearance of 8½in. It is fitted to an Excelsior motor bicycle at five points, and is fitted with a 5in. domed mudguard attached to the wheel frame. The body is of the landaulet type, so constructed that the top half of the upper screen opens. Triplex safety glass is used. The seat accommodates two adults, and adjustment of the hood, windows, and door light can be operated from inside. The spare wheel is carried in a locker at the rear, and behind it there is a spacious luggage platform.



Chain case of the Rudge broken away to show the new design of plate clutch.

RUDGE. (120.)

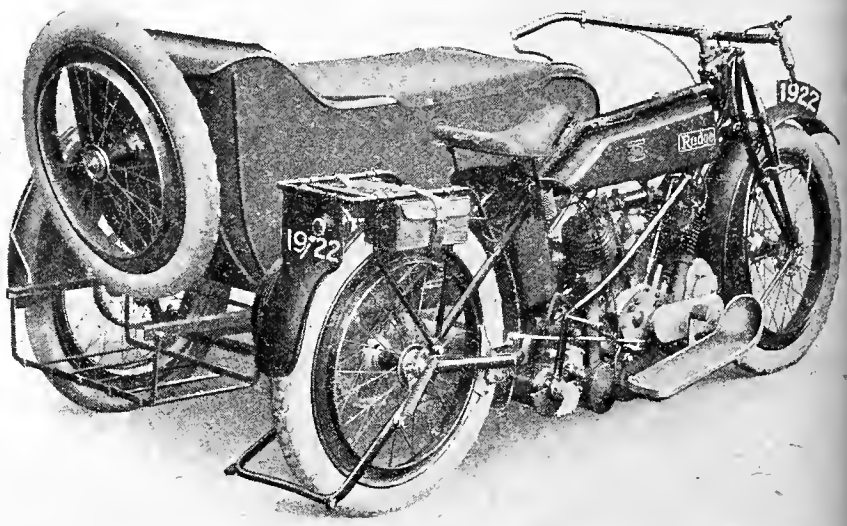
3½ H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; overhead inlet valve; foot pump lubrication; Senspray carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive, 650×65 mm. tyres. Prices: Solo £100, with sidecar £120.

RUDGE-WHITWORTH, LTD., Coventry.—Very little change has been made in the well-known Rudge models. A new stand (of course, of the spring-up type) is fitted, and with large diameter engine-shaft clutch, three-speed gear, and chain drive, the 3½ h.p. Rudge is a thoroughly practical double-purpose machine. At a slight extra charge, interchangeable wheels may be fitted. In spite of the attractions of this latest model single-cylinder, the sporting rider is bound to have a *penchant* for the famous 1914 T.T. winner with belt drive and multi gear. A roadster model on the same lines, but with pedal starter, is also listed, both at the very moderate price of £85.

7-9 H.P. MODEL.—85×88 mm. (998 c.c.); twin-cyl. four-stroke; overhead inlet valves; foot pump lubrication; Senspray carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Prices: Solo £120, with sidecar £150.

The 7-9 h.p. Rudge twin is similar to the chain-driven single, except for the engine, which follows the same lines, but has two cylinders, each of the same capacity (total, 998 c.c.). It is a fine example of the British big twin. For interchangeable wheels, £1 extra is charged.

Both light and touring sidecars are shown, and Messrs. Rudge-Whitworth, Ltd., have for some time past specialised in attachments to suit their own make of motor cycle, with admirable results.



Spare wheel and luggage grid are now both mounted on the body of the 7-9 h.p. Rudge sidecar.

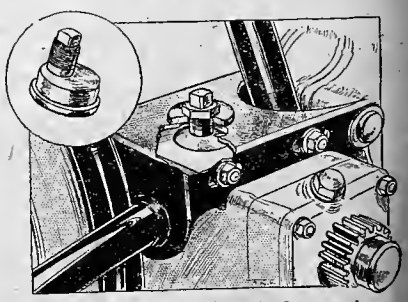
CALTHORPE. (90.)

4 H.P. MODEL.—64 5×76 mm. (496 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres.

CALTHORPE MOTOR CYCLES, Barn Street, Birmingham.—Of the two types of Calthorpe motor cycles exhibited by this firm, the chief interest is centred upon the new 4 h.p. V twin model. In weight and size this machine is very little larger than the two-stroke models, and probably it is the smallest V twin-engined mount in the Show. It is fitted with an oil-controlled spring seat-pillar, and is eminently suitable for those who require a solo mount but have occasional use for a sidecar. The sidecar is particularly neat in its body design, and the chassis is of simple construction, having rear extensions from the main tubular members which support two cantilever springs.

5 H.P. MODEL.—75×79 mm. (350 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; chain-cum-belt drive: 26×2¼in. tyres. Price, with sidecar £89 15s.

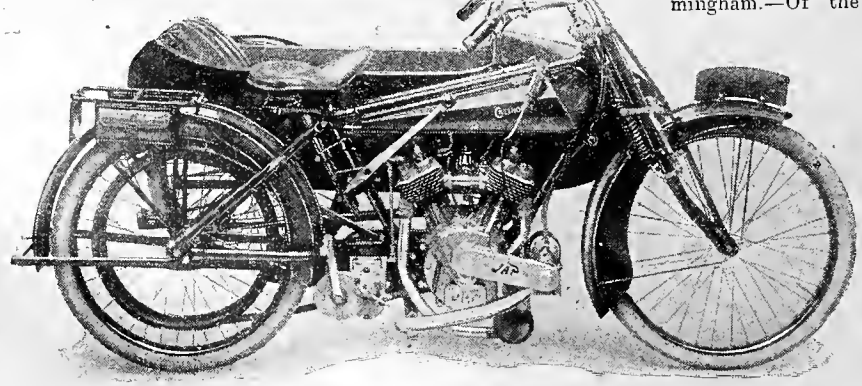
It is not without interest that the Calthorpe 350 c.c. engine was one of the pioneers of this now popular size. Very few alterations have been made in this model for 1922, the details of which are very much on the lines of the model previously described.



Eccentric adjustment of the Rudge gear box, showing bearer bracket broken away.

A solo model of this machine with plain two-speed mount is priced at £60, or with clutch and kick-starter £65; another solo model is fitted with a 2¾ h.p. J.A.P. engine, and is offered at £65 and £70, with plain two-speed and two-speed, clutch, and kick-starter respectively. A 2½ h.p. two-stroke with direct belt drive is also listed.

One of the few 4 h.p. twins at the Show—a Calthorpe model of pleasing appearance.



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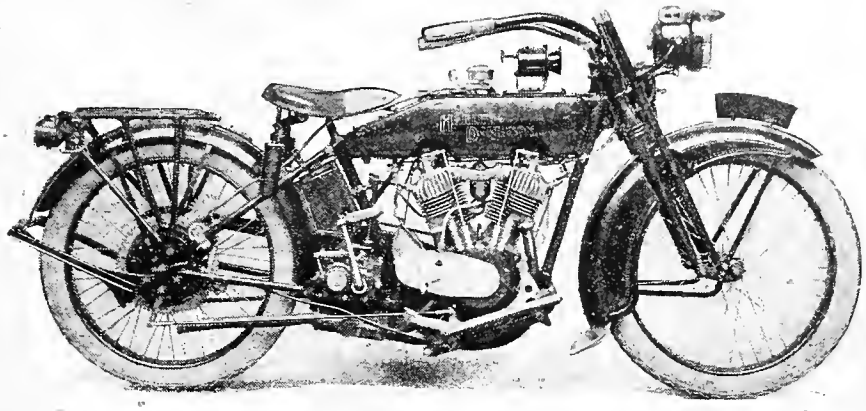
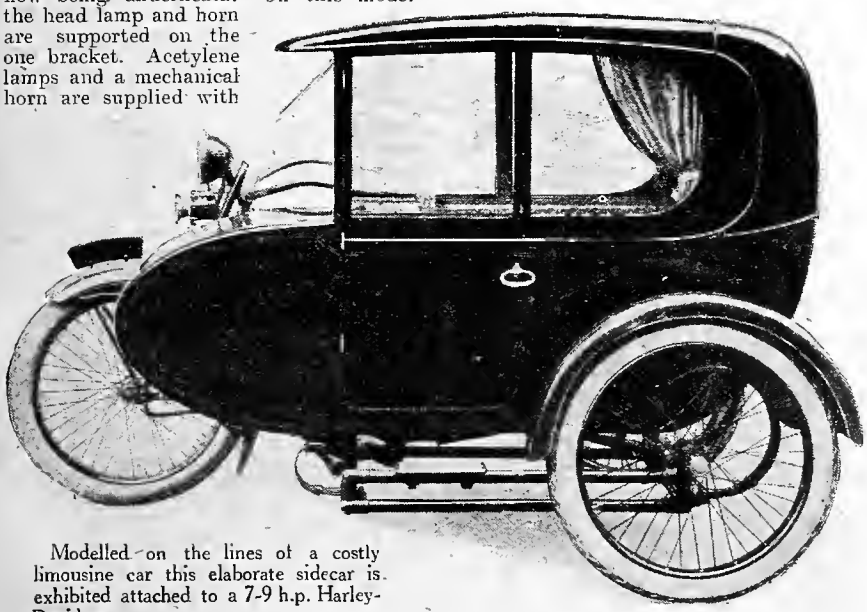
HARLEY-DAVIDSON. (35.)

7-9 H.P. MODEL.—84.1×88.9 mm. (998 c.c.); V twin-cyl. four-stroke; overhead inlet valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres.

HARLEY-DAVIDSON MOTOR CO., LTD., Newman Street, W.1.—The Harley-Davidson, which has been improved in minor details for 1922, has attained much popularity in this country during its comparatively short sojourn. Opinion appears to differ regarding the new colour—a very dark olive green; but from the purely æsthetic point of view, it is perhaps an improvement on the more utilitarian khaki. Engine, gear box, and transmission are unaltered; but several years' experience of an "electrified" model has suggested a more complete weatherproofing of the combined lighting and ignition distributer, the terminals now being underneath. On this model the head lamp and horn are supported on the one bracket. Acetylene lamps and a mechanical horn are supplied with the magneto type, and Bonniksen speedometers with a rear wheel drive are standard on all models. Twist grip control, an inter-connected hand and foot clutch lever, and a massive steering head and loop frame are typically American features worth noting. Mudguarding, too, appears to be most efficiently carried out. An imposing sidecar of the miniature limousine type, attached to an electrically-equipped model, attracts much attention from potential sidecar passengers.



Although primarily a sidecar machine, the magneto model 7-9 h.p. Harley-Davidson is often used solo. It is sold fully equipped with lamps, etc.



Modelled on the lines of a costly limousine car this elaborate sidecar is exhibited attached to a 7-9 h.p. Harley-Davidson.

4 H.P. MODEL.—70×76 mm. (584 c.c.); flat twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; Schebler carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; gear and chain drive; 700×80 tyres.

Intended as a solo machine, the flat twin sports model should appeal to those to whom weight is a secondary consideration to reasonable comfort and smooth running. Nevertheless, although 700×80 mm. tyres are fitted, and the equipment—electric or acetylene lighting—is very complete, it is not an unduly heavy machine; the centre of gravity of the power unit is also extremely low. At the same time it possesses the requisite power for sidecar haulage, and a special attachment is provided.

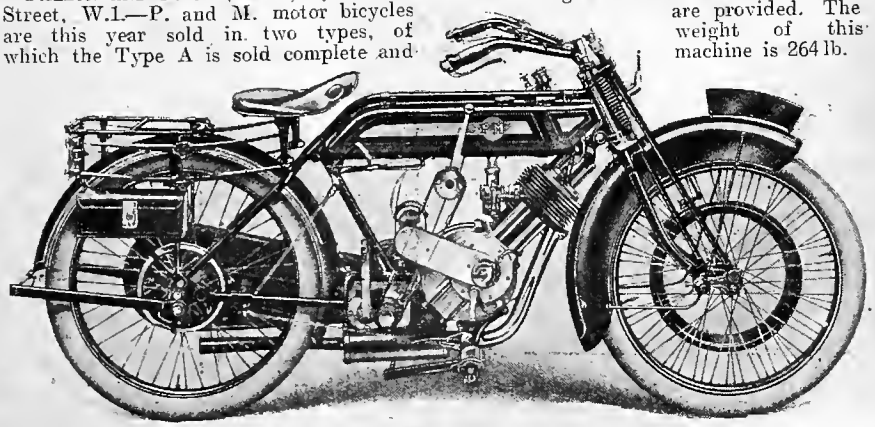
P. AND M. (57.)

4½ H.P. MODEL.—84.5×100 mm. (555 c.c.); single-cyl. four-stroke; side-by-side valves; mechanical lubrication; B. and B. carb.; chain-driven mag.; 4-sp. gear; clutch and kick-starter; all-chain drive; 26×2½in. tyres. Prices: A Model, solo £120 10s., with sidecar £149 10s.

PHELON AND MOORE, LTD., 4, Berners Street, W.1.—P. and M. motor bicycles are this year sold in two types, of which the Type A is sold complete and ready for the road. It is an extremely handsome machine, fitted with a cast aluminium front chain case and sheet metal rear chain case, both chains being entirely enclosed. The chief features for 1922 are a larger engine, increased cooling surfaces by increasing the size of the fins (now at right angles to the bore of the inclined cylinder instead of parallel with the ground as in last year's model), an improved timing gear, and a ratchet brake, so as to hold the machine when at rest on a hill—a very commendable point when a sidecar is used, and one that may well be imitated by other designers.

The finish of these machines is excellent. This model without lamps weighs 282 lb., but, fitted with a lighter sidecar, a saving of 20 lb. is effected on last year's model, and this notwithstanding a larger engine and a four-speed gear box. *Apropos* of the gear box, it must be pointed out that the change to the higher ratios is effected by means of dog clutches, but the friction clutches incorporated in the expanding P. and M. gear are operative on all speeds. The machine is luxuriously equipped in every detail, and is provided with a Brooks B 600 cantilever saddle.

So far as details are concerned, the B Type (sold at £102, solo) is identical with the types described, except that it is supplied without accessories and that a Brooks 170 saddle is fitted. There is no ratchet side brake, only one toolbag, and chain guards instead of chain cases are provided. The weight of this machine is 264 lb.



Many years' experience is behind the latest 4½ h.p. P. and M., now fitted with a four-speed gear.

E.

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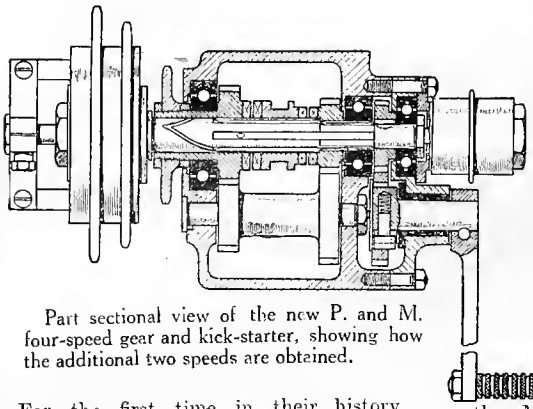
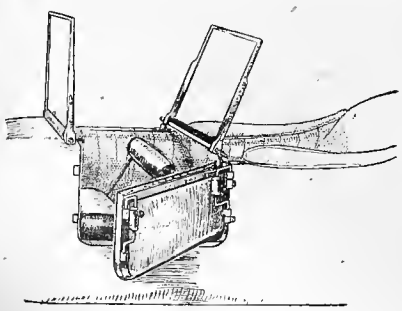


Part sectional view of the new P. and M. four-speed gear and kick-starter, showing how the additional two speeds are obtained.

For the first time in their history, Phelon and Moore, Ltd., have made their own sidecar chassis. It is of simple design and attached to the machine at four points. The C springs are anchored to the duplex axle tube beneath the axle proper, while the fore part of the sidecar is attached to leaf springs under the parallel side members. The front cross member is curved so as to allow for movement of the body. To prevent rattle, a loose sleeve or floating washer is fitted to the forked sidecar couplings, the washer being always kept up against the spigot portion of the coupling, provided the nut is kept tight. It is worth recording that both types of P. and M. machines can be fitted with 3in. tyres, and, to conform with Continental conditions, the sidecar may be fitted to either side of the motor bicycle.



For the convenience of the front passenger the door of the Matchless tandem-seated sidecar ingeniously opens at each side. The combined catch and hinge is shown.

MATCHLESS. (65.)

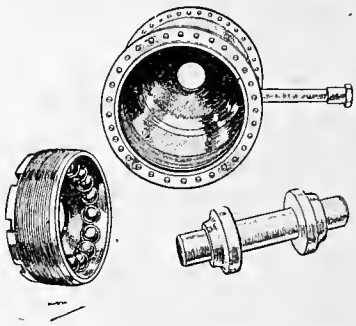
7 H.P. MODEL.—85.5×85 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×3in. tyres. Price: Sports model, Type J, solo, £130.

H. COLLIER AND SONS, LTD., Plumstead Road, Woolwich, S.E.18.—Having given up the manufacture of solo machines since the war, Collier and Sons have now re-entered this market with their 7 h.p. sports model, which should strongly appeal to the rider who leans to the fast and powerful mount. Either the J.A.P. engine as specified above or the M.A.G. (82×94 mm.) may be fitted. In this model the frame is rigid, and, while the front chain is enclosed, the rear is protected by means of a guard. In this machine the clutch is hand-controlled, and the handle-bars are wide. Footrests instead of footboards are fitted. Naturally, special attention is paid to the tuning of the engine, while the gear ratios are 4.1, 7½, and 10½ to 1. Stands are fitted to both wheels, and such a well-appreciated feature in former Matchless models as the combined kick-starter and exhaust lifter is retained. The machine is also a capital double-purpose mount of the go-anywhere type.

Originally intended as a fast solo mount the rigid-frame 8 h.p. Matchless is also marketed with a low rakish sidecar.

7 H.P. MODEL.—82×94 mm. (998 c.c.); V twin-cyl. four-stroke; overhead inlet valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres.

No mechanical alterations have been made in the spring frame model Matchless, but a new bearer arm for the sidecar body allows the seat to assume a lower position, and the battery box is now so arranged that it may be carried below the level of the floorboards. Mention has already been made of the sports model sidecar outfit. This is fitted with a well-upholstered body, a foot-controlled clutch, and kick-up stand with self-fastening clip, the sidecar stand forming part of the wheel frame, while there is a large tool box on the top tube, held by clips inside the tool box.



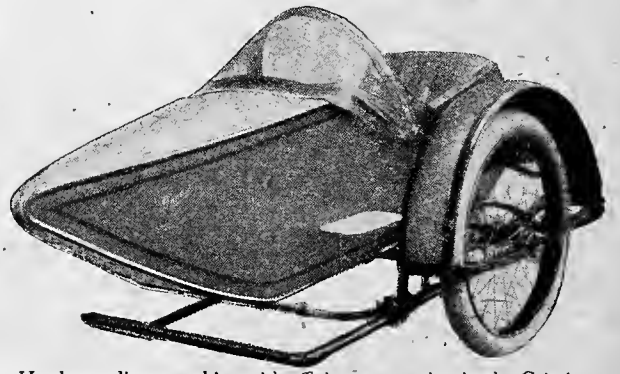
Components of the Matchless front hub.

So far as the spring frame model is concerned, one of the most interesting exhibits is the double-seated sidecar, equipped with screen for both passengers and a combined hinge and fastening on each side of the door; consequently either side of the door may be opened, and egress or ingress are easy for either front or back passenger. The sidecar has a collapsible front floorboard, so that when the front seat is unoccupied the floorboard may assume its normal position. Another of the Matchless exhibits is shown fitted with a box carrier.

GRINDLAY. (27.)

GRINDLAY, LTD., Spon End, Coventry.—The fact that practically no alteration has been made in the chassis construction of the well-known Grindlay range of sidecars is a tribute to its design. Newcomers to the pastime should examine the system of springing the wheel in addition to the body suspension. This considerably reduces road shocks before the body springs are called upon for service.

Grindlay sidecars are exhibited in many different styles, ranging from a



Handsome lines combine with efficient suspension in the Grindlay Club model sidecar.

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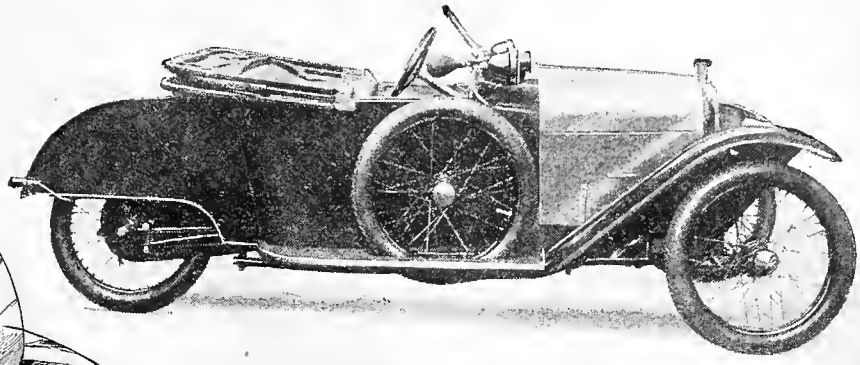
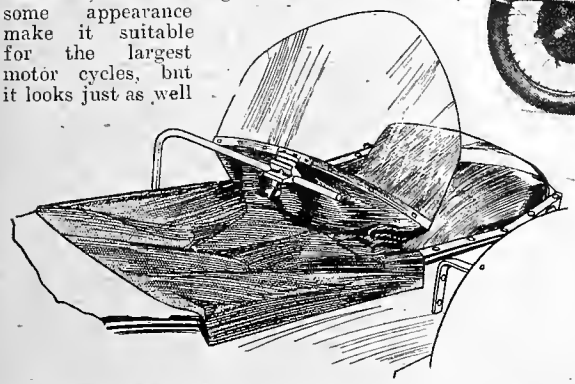
lightweight model which costs £17 to the full touring type priced at £38. Of these, a blue sporting model and a larger type—finished in black with an aluminium "deck"—named the club model, at once attract the eye of the fast sidecarist. The latter model especially has a strong appeal to owners of powerful machines, for its large size and handsome appearance make it suitable for the largest motor cycles, but it looks just as well on the mediumweight 4½ h.p. Humber to which it is fitted.



The last word in three-wheelers, the New Hudson re-appears at Olympia with a M.A.G. engine.



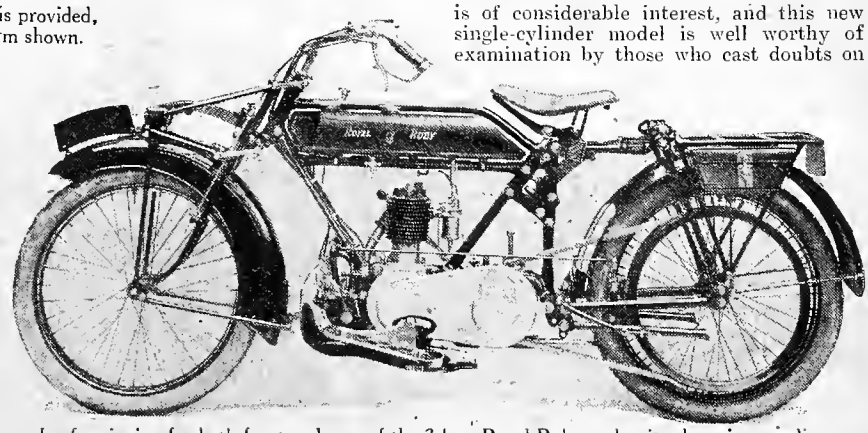
On one of the Grindlay sidecars a face screen is provided, adjustable as to position by the supporting arm shown.

The touring types, too, are attractive, and have deeply padded spring backs and plenty of locker room.

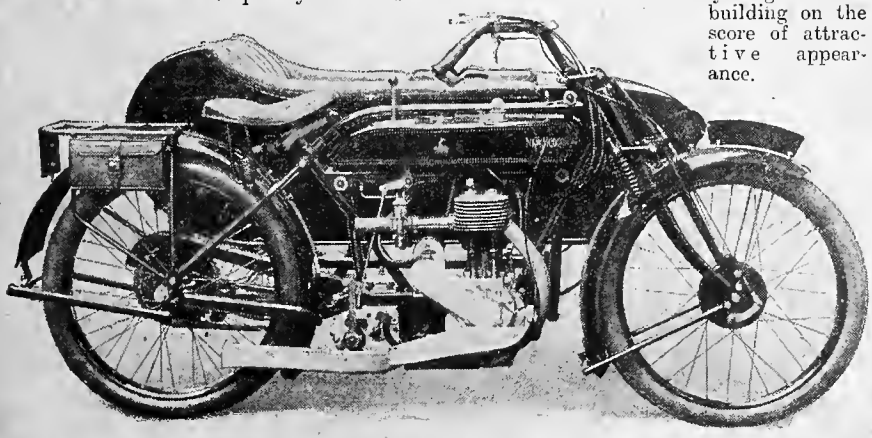
NEW HUDSON. (38.)

10 H.P. MODEL.—82×94 mm. (996 c.c.); V twin-cyl. four-stroke; overhead inlet valves; drip feed lubrication; Cox-Atmos carb.; Lucas gear-driven Magdyno; 3-sp. and reverse gear; clutchshaft and final chain drive; 700×80 mm. heavy tyres. Price £230.

NEW HUDSON, LTD., Icknield Street, Birmingham.—Those who consider that the three-wheeler has great possibilities will view this exhibit with satisfaction, for the New Hudson runabout represents clean design, reasonable simplicity, and is yet as elaborate as this type of vehicle is ever likely to be with success. Neither motor cycle nor car practice has been followed blindly, and, although the design takes a little from both, it is, first and last, a three-wheeler. Transmission is by shaft from the water-cooled M.A.G. engine to the car-type gear box, and then by chain to the rear wheel. All three wheels are quickly detachable and interchangeable, and a permanent jack is incorporated in the rear frame. Steering is by rack and pinion, and the front suspension is on quarter-elliptic springs. The bodywork is very handsome, and the seating accommodation roomy and comfortable. Electric lighting by Lucas Magdyno is standard. Priced at £250, a finely streamlined sporting model with an aluminium body at least holds its own with anything in the building on the score of attractive appearance.



Leaf springing for both front and rear of the 3 h.p. Royal Ruby makes it a luxurious medium powered mount. The new Royal Ruby engine is of 375 c.c. capacity.



After an absence of many years, a New Hudson 4½ h.p. sidecar outfit is exhibited at the Show.

4½ H.P. MODEL.—87×100 mm. (594 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Prices: Solo £100, with sidecar £125.

The revival of the name of New Hudson on the tank of a sidecar outfit is of considerable interest, and this new single-cylinder model is well worthy of examination by those who cast doubts on the actual progress made since pre-war days. There is nothing unconventional about the machine or its power unit. A single cam operates both valves, plain bearings are used throughout, the valve ports are arranged for efficient cooling, and the magneto is carried behind the engine. These are perhaps the most noteworthy points of an exceedingly straightforward plant. A modified control, consisting of a gate in the tank, has been adapted to a standard Sturmey-Archer gear box, and a transmission shock absorber is carried on the engine-shaft. Leg shields and footboards are standard, and, although the machine does not look high, the ground clearance is actually 6in. The tyre size (see above) is particularly noteworthy.

2¼ H.P. MODEL.—62×70 mm. (211 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; all-chain drive; 24×2¼in. tyres. Price, solo £63.

Little alteration has been made to the New Hudson two-stroke. In addition to the model specified above, there is a chain-cum-belt machine at £60, and an all-chain racing model with "semi-discs" at £70. The general proportions of this model are in keeping with the 24in. wheels.

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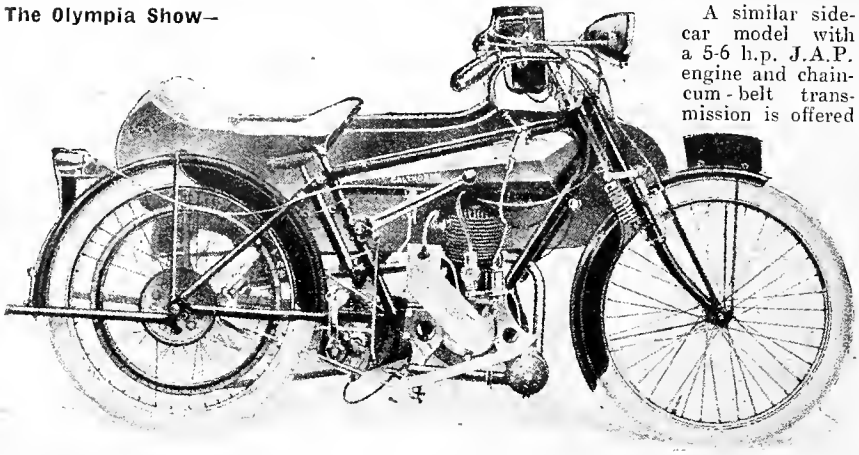
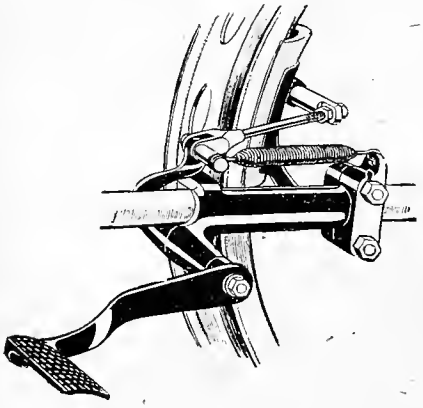


Of interest to those seeking a passenger outfit of low upkeep costs—the 2¾ h.p. two-stroke Calthorpe two-stroke. The engine is 75 × 79 mm. = 350 c.c.

HAZLEWOOD. (66.)

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, with sidecar £176.

HAZLEWOODS, LTD., West Orchard, Coventry.—Two sidecar machines, a dual-purpose mount and a lightweight, form the Hazlewood range. The 8 h.p. model is a chain-driven machine with internal-expanding rear brake and a front brake of the dummy belt rim type. A spring saddle pillar is a feature of this model, and a saddle tank is fitted on this size only.



Particularly suited for a lightweight is the detachable brake unit on the new 2¾ h.p. Hazlewood.

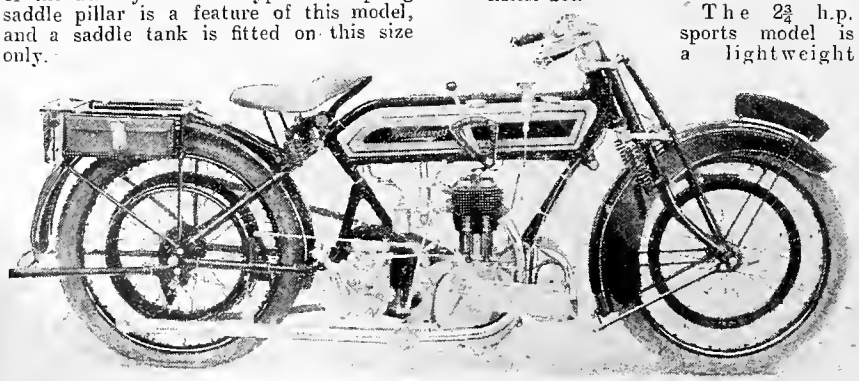
A similar sidecar model with a 5-6 h.p. J.A.P. engine and chain-cum-belt transmission is offered at £118, at which figure it is extremely good value.

On both models the gear box is of Messrs. Hazlewood's own manufacture, and bears an excellent reputation.

Although intended chiefly as a solo mount, the 4 h.p. single-cylinder model attracts the attention of those in search of a dual-purpose machine. It follows the same general lines as the twin models, and, with chain-cum-belt transmission and 650×65 mm. tyres, is sold at £98.

2¾ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Prices: Solo £67, with sidecar £86.

The 2¾ h.p. sports model is a lightweight capable of an excellent turn of speed. In this case, a two-speed gear with clutch and kick-starter is fitted, and a special heel brake, acting directly on the inside diameter of the belt rim. On the cast aluminium cover protecting the front chain an opening is cast, leaving the letter H, the initial of the makers, which opening also allows access for the adjustment of the clutch.



An addition to the Hazlewood range, a machine with 4 h.p. J.A.P. engine and Sturmey-Archer three-speed gear

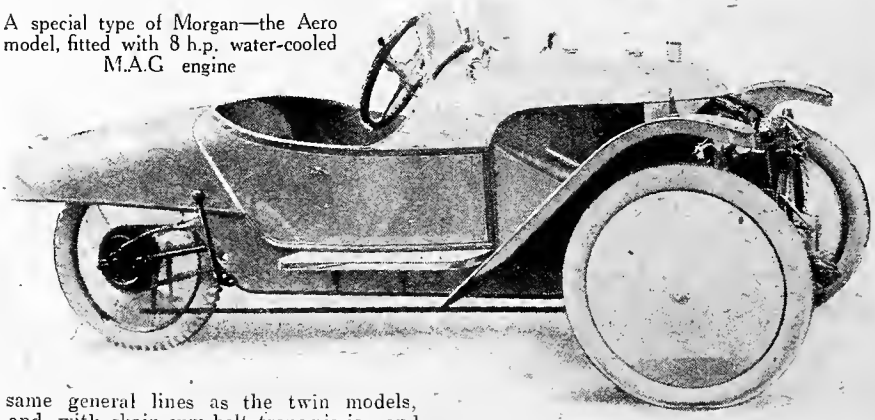
MORGAN. (63.)

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; gear-driven mag.; 2-sp. gear; clutch and handle starter; chain drive; 700×80 mm. tyres. Price, solo £150.

THE MORGAN MOTOR CO., Malvern Link.—This is a special model Morgan sold at a moderate price, which includes complete equipment. The chassis is somewhat shorter than the standard, and a straight dash without cowl is fitted. An air-cooled J.A.P. engine is used.

An interesting portion of the exhibit is a chassis, a useful reminder that the extreme simplicity so long peculiar to one of the oldest and most successful of three-wheelers is retained.

A special model, which is built only to order, and is known as the Aero, is another attractive exhibit. The radiator is nickel plated, as is the polished tank. Aeroplane type windscreens are fitted, while a graceful domed back gives an admirable finish to the whole. The particular model shown is provided with Lucas electric lighting, speedometer, and clock. It is a very handsome machine, highly suitable for fast touring, and costs £235.



A special type of Morgan—the Aero model, fitted with 8 h.p. water-cooled M.A.G engine

Another interesting type is the "family" Morgan, which accommodates two adults in the front and two children at the rear. It is sold at £191, including a full equipment.

No fewer than nine examples of this popular three-wheeler and a chassis are shown. The *de luxe* model has a spring cushion, and the instrument board is of polished aluminium, while underneath it is a tray for odds and ends.

FRANCIS-BARNETT. (28.)

2¾ H.P. MODEL.—70×90 mm. (350 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, solo £85.

FRANCIS AND BARNETT, LTD., Lower Ford Street, Coventry.—Two cooks given the same ingredients would not necessarily produce equally tasty dishes. In

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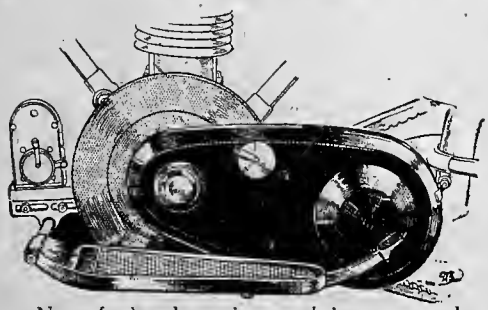
the same way, two motor cycle designers evolving machines with exactly similar specifications in the more important component parts may not both succeed in producing equally attractive mounts. The sports model Francis-Barnett illustrates the point, for it displays much useful originality for a machine embodying proprietary units, and is distinctly pleasing in appearance. A saddle tank is naturally a feature, as it has been on this make for some considerable time now. Brampton forks are fitted and have a positive stop to prevent the handle-bars from fouling the tank. Another instance of nice detail design is provided by the ingenious way in which the Sturmey-Archer gear quadrant is mounted on the bottom bracket, being held down by the gear box nuts. Thus adjustment of the primary chain does not upset the gear control. Footrests, of course, are fitted to this model, and they are adjustable in five different positions. The front chain is protected by a neat aluminium cover and the rear by a light guard. Finished in black, this machine fully earns the title of "sports model," without resorting to freakishness. For an extra £5 a specially tuned speed machine will be supplied.

2½ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; Sturmey-Archer 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price, solo £73.

5-6 h.p. Raleigh spring-framed three-speed double-purpose mount.

A sporting model of the 8 h.p. Zenith-Gradua.

This well-known model of the Francis-Barnett has been little altered since last year and differs only from the sporting mount in the points enumerated above. With an M-L Maglita set, the price is £88. Finally, a simple model of two-stroke (with a Villiers engine) is shown, and, although the tank is not of the saddle type, the rest of the machine is typical of the more expensive models. Prices: Single-speed, £50; clutch, £52 10s.; two-speed gear, with clutch and kick-starter, £62.



Neat footboards, primary chain case and convenient brake pedal on the Raleigh lightweight.

RALEIGH. (71.)

5-6 H.P. MODEL.—77×75 mm. (698 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres.

RALEIGH CYCLE CO., Nottingham.—Although the range of Raleigh models now comprises two single-cylinder lightweight machines in addition to the famous flat twin, it is on the latter that interest centres by reason of the detail refinement incorporated. An excellent feature is the spring frame, quarter-elliptic springs insulating the rear portion of the machine from road shocks. The engine has roller bearing big ends, and a shock-absorbing device is fitted to the engine-shaft, transmission being by enclosed chains. The lubrication of the engine is automatic, being suction-operated by a rotary valve. Detachable wheels are an additional refinement.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £68.

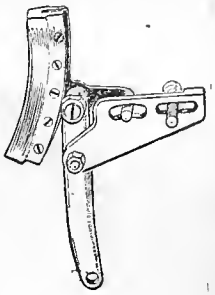
Raleigh quality at a moderate price is the *raison d'être* of this small model. It is on standard lines with a rigid frame, single-cylinder engine, two-speed gear, and chain-cum-belt transmission. Stands are fitted to both front and rear wheels, and mudguarding has been well carried out. Aluminium footboards and touring bars are fitted, but the sports model has footrests and special bars. A large tool bag is mounted on the seat-pillar tube.

This lightweight model is also available with a larger engine of 76×88 mm. (399 c.c.), and, so equipped, it is principally intended for sidecar use. The main specification is otherwise the same, but either model can be fitted with a three-speed Sturmey-Archer gear box for £5 extra. The price of the larger model, rated at 3 h.p., is £75, the sidecar costing £25.

ZENITH. (74.)

3½ H.P. MODEL.—68×68 mm. (498 c.c.); twin-cyl. four-stroke; inclined overhead valves; forced lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, solo £119.

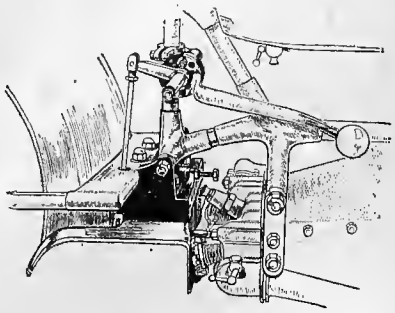
ZENITH MOTORS, LTD., Hampton Court.—Described in detail in the last issue, the new chain-driven Bradshaw-engined Zenith is the cynosure of all eyes, and is, indeed, one of the most interesting machines in the Show. The engine is, of course, oil-cooled; a pump in the sump forces oil to the bearings and over the cylinders, which are sunk into the crank case for that purpose. In addition to the unorthodox engine, chain drive throughout is another important innovation for the Zenith Co., while the new position and construction of the silencer, which is now placed forward of the engine, is also worthy of inspection. A Sturmey gear box is fitted. Models are also shown with belt transmission and the Gradua gear on the engine-shaft, the price in this case being £113.



Arrangement of the horizontally acting rear brake on the 3½ h.p. Zenith-Bradshaw.

5 H.P. MODEL.—70×88 mm. (654 c.c.); twin-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; chain-driven mag.; Gradua gear; clutch and kick-starter; chain-cum-belt drive; 650×65 mm. tyres. Prices: Solo £118, with sidecar £147.

The attractions of belt drive with the Gradua gear are many, and the 5 h.p. model is very popular as a dual-purpose machine. The initial drive to the countershaft is by chain, and the countershaft is mounted in front of the engine, so that a long belt drive is obtained, the sweetness of this transmission being a distinctive feature. This machine can be obtained with the 8 h.p. J.A.P. engine for £7 extra, while both models are also available without the countershaft gear at £110 and £121 respectively. The two-



The gear box mounting and method of adjustment on the Zenith-Bradshaw.

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latter models are particularly suitable for the sporting rider. It will thus be seen that the Zenith range could hardly be more complete, for every type of rider is catered for, from the mediumweight enthusiast to the family man, who finds it necessary to have a high-powered and commodious sidecar outfit.

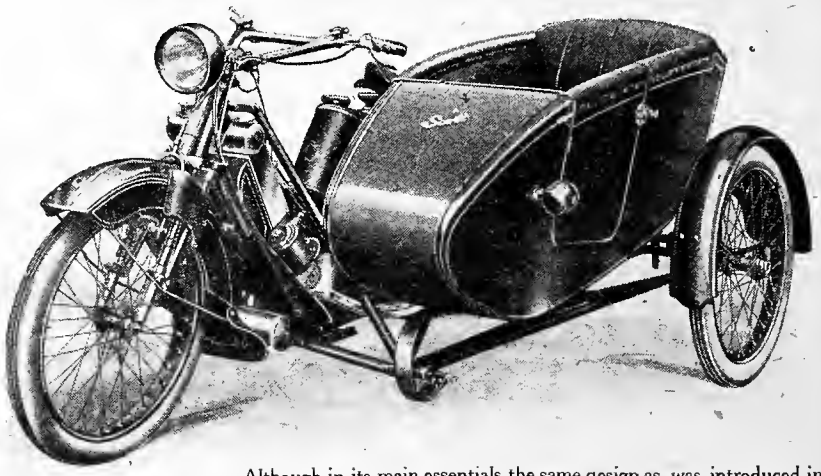
SCOTT. (128.)

3¾ H.P. MODEL.—73×62.5 mm. (532.5 c.c.); twin-cyl. two-stroke; mechanical lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Prices: Solo £110, with sidecar £145.

THE SCOTT MOTOR CYCLE CO., LTD., Saltaire, Yorkshire.—This year the famous Scott is made in three models, viz., standard touring, the speed model Squirrel, and the new Colonial edition with 3in. tyres and 8in. road clearance. The standard model has long been pre-eminent for its road-holding qualities, comfort, and silence, and has not been appreciably altered since last year, as one would expect from the number of votes it received in our "Best Solo Machine" correspondence. A number of discerning readers have been in the habit of fitting 3in. Palmer cords to their Scotts for some years past, asserting that they thus attain the absolute maximum road comfort. The new Colonial model is thus equipped as standard, and its high engine clearance permits of negotiating very rough roads at speed. The familiar Royal purple sidecar is retained as standard on the firm's unique triangulated chassis.

3½ H.P. MODEL.—70×62.5 mm. (481 c.c.); twin-cyl. two-stroke; mechanical lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Prices: Solo £105, with sidecar £135.

During the past year the Squirrel has done much to enhance the interest which its *début* created in 1921. Though it is sold under a speed guarantee of 60 m.p.h., it has very considerably exceeded this figure at Brooklands during the past summer. It weighs under 200 lb. stripped, and owes its name to its unique agility in corner work by reason of its frame design. Although the low gear is as high as 5.4 to 1, it is perfectly feasible to fit a sidecar to this model, and two specially light examples in polished aluminium are staged; one of the Zeppelin and one of the slipper type. 75 m.p.g. is given as the minimum fuel consumption for solo work.

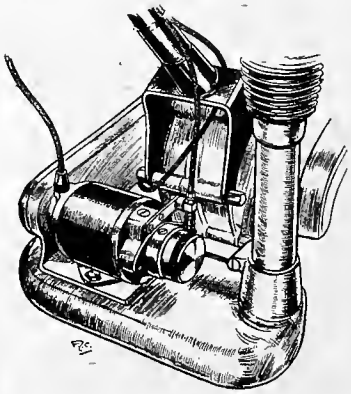


Although in its main essentials the same design as was introduced in 1910, the Scott is still one of the most distinctive machines at Olympia.

COVENTRY EAGLE. (106.)

5-6 H.P. MODEL.—70×88 mm. (678 c.c.); twin-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Prices: Solo £125, with sidecar £150.

COVENTRY EAGLE CYCLE AND MOTOR CO., Coventry.—Celebrated for excellence of detail and beautiful standard finish, the 5-6 h.p. is the only twin-cylinder machine listed by the firm. With its sloping top tube and rounded saddle tank finished in dull black, it presents a striking appearance, and the dark colours are relieved by heavily plated cylinder bases and fittings. As with all other models, an Eagle mascot occupies a prominent position on the handle-bar stem, the bars themselves being part of the head clip lug.



Well-rounded and symmetrical, the capacious aluminium silencer of the 2¼ h.p. Coventry Eagle enhances the appearance of the engine unit.

Fitted in a similar frame is a machine with the 4½ h.p. J.A.P. engine (85×95 mm.). This machine has a neat cast aluminium silencer, long footboards with rubber rests at the front, and internal V brakes on both wheels. A third and similar machine is the 3½ h.p. sports model, with special sporting 85.5×85 mm. J.A.P. engine, aluminium piston, footrests, and a sporting specification. Both these models sell at £110.

2¾ H.P. MODEL.—70×90 mm. (349 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 2 or 3-sp. gear; clutch and kick-starter; chain drive; 26×2⅜in. tyres. Price, solo £88 10s.

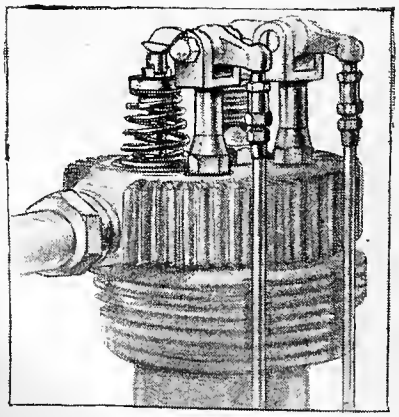
Known as the utility model, this little machine is thoroughly practical, and is fully equipped with aluminium number plates, Lucas acetylene lamps, horn, and licence holder. Adjustable footrests and internal expanding brake are also specified, and a particularly long leverage is arranged for the wedge rear brake.

The same machine is obtainable in a sports type with special engine and long exhaust pipe, price £90.

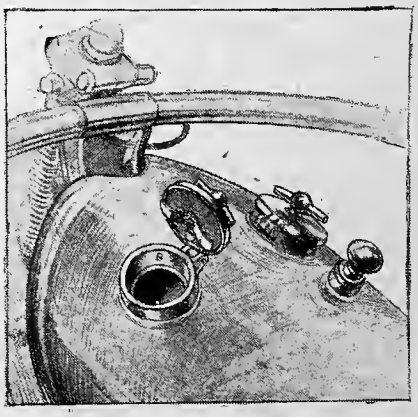
A thoroughly competitive machine as regards price is the 2¾ h.p. (293 c.c.) model, with two-speed gear, chain and belt drive, and not quite such a high finish; the price is £69 6s.

2¼ H.P. MODEL.—70×64.5 mm. (249 c.c.); single-cyl. four-stroke; overhead valves; hand pump lubrication; Amac carb.; chain-driven mag.; 2 or 3-sp. gear; clutch and kick-starter; chain drive; 26×2⅜in. tyres. Price, solo £105.

The luxury model is again complete with all necessary road fittings and a very complete tool kit. It is intended to



Overhead valve gear of the 2¼ h.p. Coventry Eagle. The rockers are mounted on roller bearings.



Large, quick-opening filler caps are used on the bulbous saddle tank of the 2¼ h.p. Coventry Eagle.

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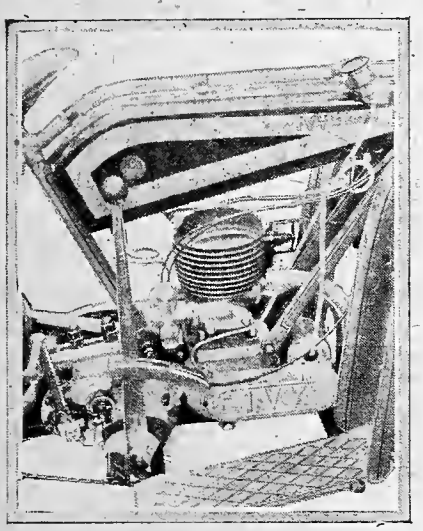
be an ideal for its class, and is perhaps the most highly finished machine in the Show. A distinctive finned exhaust branch is of cast aluminium, and even the silencer extension pipe is of aluminium tube. An internal expanding front brake is fitted. A careful study of this machine is well merited. Extra



Carburetter side of the 350 c.c. two-stroke Ivy, showing gate change gear.

heavy tyres are fitted to nearly all models, and every type is equipped with an oil gun behind the saddle tube.

IVY. (64.)

3 H.P. MODEL.—75×79 mm. (348 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Prices: Solo £77, with sidecar £103.

S. A. NEWMAN, LTD., 49, Lichfield Road, Birmingham.—The 3 h.p. Ivy is a very attractive two-stroke fitted with brakes applied to dummy belt rims on both wheels and an improved form of fork which gives vertical as well as oscillating motion. Legshields are fitted to protect the rider. Either wheel may be removed without interfering with the brakes. The filler caps are hinged directly on to the tank and are secured by means of expanding leather rings.

3 H.P. MODEL.—75×79 mm. (348 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, solo £81.

This machine is especially intended for competition work and is fitted with a carefully tuned engine with internal as well as an external flywheel, lighter piston and connecting rod, and a flywheel with a tapered rim. Flexible oil and petrol pipes are fitted. A Moss three-speed gear box is also fitted, in which the change of gear is operated by foot, and there is a device on the handle-bar to prevent one changing down from top and over-running middle gear. This machine is a replica of the 3 h.p. machine which won the 350 c.c. class in the 500 Miles Race.

The model shown with a sidecar is practically identical with the chain-driven Ivy first described, but is fitted with a hand-controlled Moss gear. A chain-cum-belt model is also shown.

2½ H.P. MODEL.—64×70 mm. (224 c.c.); single-cyl. two-stroke; pump-cum-drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £62.

The Ivy ladies' machine should certainly attract motor cyclists of the fair sex, as it is a thoroughly practical mount and has been on the market since 1913. It preserves many of the features of the model previously described, including the excellent spring-up back stand. The 2½ h.p. is sold at the same price as the ladies' model; it is fitted with an identical type of engine and gear box, and only differs so far as the frame is concerned.

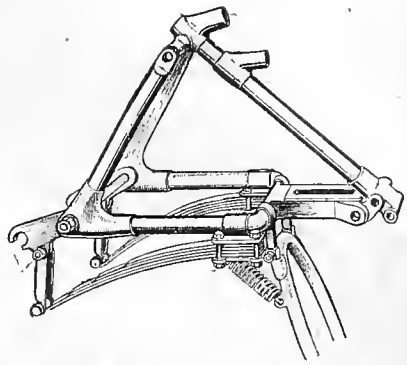
COULSON. (73.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Cox carb.; direct driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼ tyres. Price, solo £67 10s.

A. W. WALL, LTD., Tyseley, Birmingham.—Amongst spring frame machines the Coulson has established a sound reputation. It is now offered with a 2½ h.p. Liberty two-stroke engine, and, with a two-speed gear and chain-cum-belt drive, it forms a notable addition to the number of lightweight machines now on the market. As with other Coulson models, it has two internal expanding brakes in the rear wheel.

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; Cox carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres. Price, solo £78.

As a mediumweight machine the 2¾ h.p. Coulson is attractive, since few other



Stand and gear box bracket have been modified on the Coulson spring frame.

machines of the same power and specification offer to the rider the advantages of a sprung frame. The Blackburne engine adopted for the power unit is sufficiently well known to need no further comment. Undoubtedly the sporting rider is well catered for, since a similar model is offered with the new overhead valve Blackburne engine. In this case a three-speed gear is incorporated, and the drive is by chain and belt. A clutch is fitted but no kick-starter.

The Coulson range is well rounded off by the 4¼ h.p. model. A Blackburne engine is employed with a three-speed gear and chain-cum-belt transmission. As on the other models, a Cox carburetter is fitted, controlled by a single lever. An unusual point is the retention of hand

(Left) Induction pipe on the Brough Superior. (Right) Method of attaching handle-bar to head clip.

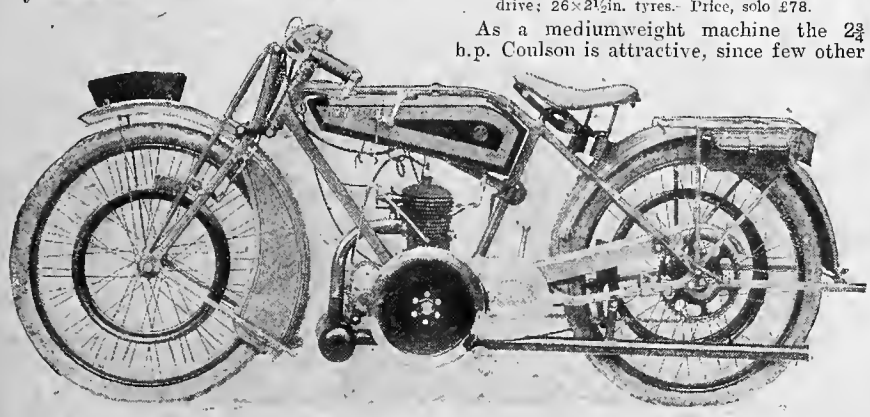
pump lubrication. This machine is eminently a dual-purpose mount, and is exhibited as such. New features on Coulson models are internal expanding brakes on each side of the rear wheel and splayed aluminium footboards. The finish in black and blue has been considerably improved.

BROUGH SUPERIOR. (144.)

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; M-L chain-driven mag.; 3-sp. gear (close ratio); clutch and kick-starter; chain drive; 26×3in. tyres. Prices: Solo £150, with sidecar £180.

G. BROUGH, Haydn Road, Nottingham.—Starting out as a super-luxurious speedman's o.h.v. big twin, the Brough Superior is now shown with the new side-by-side valve J.A.P. engine, although the o.h.v. model (at £160), with its 90×77.5 mm. engine, is also shown. In addition, there is a 5-6 h.p. M.A.G.-engined model, which is in a somewhat lighter category, although all embody the same general specification.

It is a sound policy of the designer to maintain his original idea in providing only the special highly finished and tuned mounts now associated with his name, for there is always a market for



A sports model two-stroke—the 3 h.p. Ivy. It has chain drive, and sidecar lugs are built into the frame.

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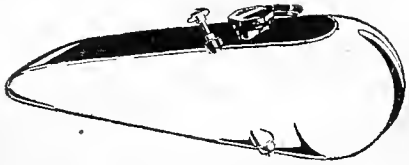
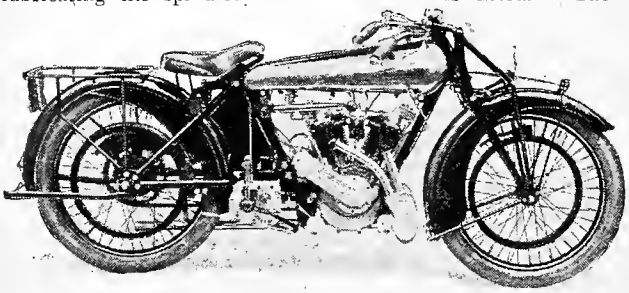
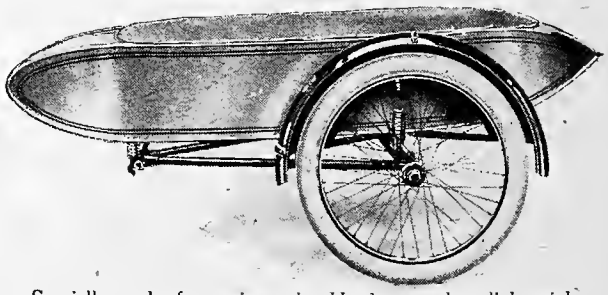


The tank of the Brough Superior is noticeably clean in design.

superlatively finished productions. The plated tanks, exhaust pipes and fittings, and the polished aluminium valve cap radiators and exhaust branches and silencers, make these machines into a resplendent display. In detail there are small improvements. The majority of the models are equipped with a new leaf spring front fork of the Montgomery type, which has special provision for lubricating the spindles and for eliminating side play. There is a Webb front brake, but the rear brake is of the dummy belt rim type. Lubrication is by a drip-feed pump operated from a Bowden lever on the handle-bar. On one of the machines a beautifully finished Toronda sidecar is fitted; this is of mottled aluminium, and embodies a disappearing hood.



A new and smaller model of the Brough Superior, the engine in this case being a 6 h.p. twin, driving through a Sturmey-Archer three-speed gear box. Observe the new-type Montgomery spring fork.

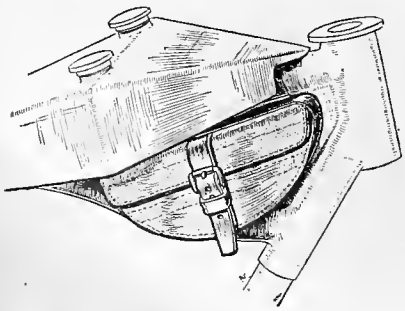


Specially made for racing: the Henderson ultra-lightweight sidecar. Note that the mudguard is mounted on the body

SHEFFIELD-HENDERSON. (130.)

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; overhead valves; hand pump lubrication; B. and B. or Amac carb.; chain-driven mag.; 3-sp. gear; clutch, without kick-starter; chain drive; 26×2¼in. tyres. Prices: Solo £110, with sidecar £130.

HENDERSON SIDECARS, Sheffield.—The speed model Henderson is sold under a written guarantee that it has actually exceeded 70 m.p.h. on the road. The engine is the 2¾ h.p. overhead valve Blackburne with special modifications. When delivered, it is fitted with a cast iron piston, but a special high-compression aluminium piston is included gratis for use in sprint events. The machine is a replica of those in preparation for the 1922 T.T. Races. It weighs no more than 185 lb., and the saddle position is particularly low. A neat featherweight prop stand, fixed to the footrest is supplied for use when the machine is stripped. A bronze racing sidecar is fitted to one of the machines exhibited.



The neat arrangement of the tool bag on the Sheffield-Henderson sporting model.

4¼ H.P. MODEL.—85×97 mm. (548 c.c.); single-cyl. four-stroke; side valves; drip feed lubrication; Amac or B. and B. carb.; chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Prices: Solo £110, with sidecar £132 10s.

The 4¼ h.p. Henderson is designed throughout as an extremely robust touring mount, a notable feature being the elimination of all small parts; nothing less than ½in. bolts are used. The Blackburne engine is fitted. The front of the machine deserves special attention, the handle-bar being trebly bolted to the forks, so that it cannot twist, whilst ½in. balls are used in the steering head bearings. Several types of sidecars are staged, of which the most interesting are the spring wheel model and the detachable dickey type.

SCOTT SOCIABLE. (131.)

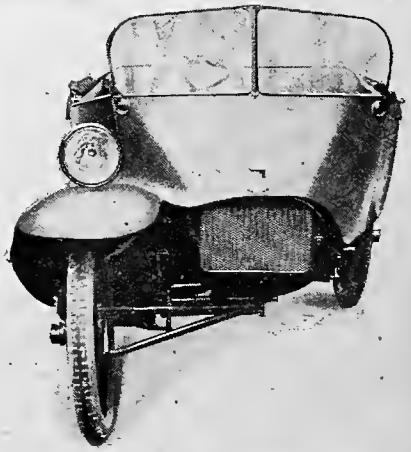
5 H.P. MODEL.—76.2×63.5 mm. (578 c.c.); twin-cyl. two-stroke (water-cooled); petroil lubrication; Zenith-Scott carb.; gear-driven mag.; 3-sp. gear; clutch and hand starter; spiral bevel drive; 700×80 mm. tyres. Price, solo £215.

SCOTT AUTOCAR CO., Bradford.—The real aim of the Scott Sociable is to supply the public with the comfort, convenience, and performance of a car at the cost of a motor cycle and sidecar. During the last year its price has dropped from £273 to £215, and if this latest figure is slightly above the typical sidecar level, it must be remembered that the Scott Sociable embodies every conceivable fitting. It is impossible to detail all the refinements, but they include a clear-view windscreen, four interchangeable wheels, dashboard parcels rest, a capacious dickey which can be used for luggage, and many other items. The principal changes since last Show consist of a slight stiffening up of the transmission, the addition of an M-L dynamo, the substitution of a solid for a hollow propeller-shaft, and a higher windscreen. The car was always silent, but has been further quietened by the use of a spiral bevel, with which a spring drive is incorporated. The radiator has been enlarged, so that there is no fear of overheating even at sustained speed with a following wind. The raising of the screen results in greater head room when the hood is up. A very neat addition, the M-L dynamo switchboard, is mounted just beside the control levers. Readers familiar with the car will remember that the engine is enclosed in a compartment on the off side of the chassis. The shuttering of this compartment has now been improved, so that its contents can be laid bare in a few seconds.

MILLFORD SIDECARS. (58.)

MILLS-FULFORD, LTD., Crown Works, Coventry.—One of the features of this stand is the Millford Rock chassisless sidecar, an Australian invention which made its appearance in England for the first time at the last Show. The usual two-wheeled chassis is dispensed with, and is replaced back and front by two steel members attached directly to the body; at the front the sidecar is suspended from the member attached to the down tube of the machine by means of an enclosed coil spring. This chassis has now stood a whole year's testing on English roads, and has given every satisfaction.

As regards other models, every sidecar is fitted on the standard Millford chassis, which has duplex members throughout; that is to say, duplex axle tubes and side members. The difference in types, therefore, lies in the style of body fitted. Naturally, in the case of the heavier machines four-point attachment is utilised, and three-point for the lighter ones. A difference is also made in the mudguards: the lighter and less expen-



Front aspect of the new Scott Sociable, the guard of which has been considerably extended, and the radiator modified in design.

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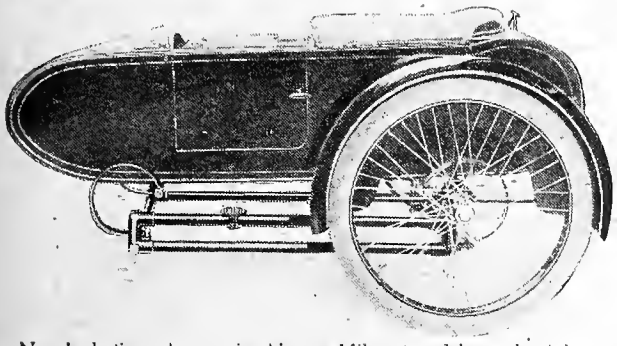
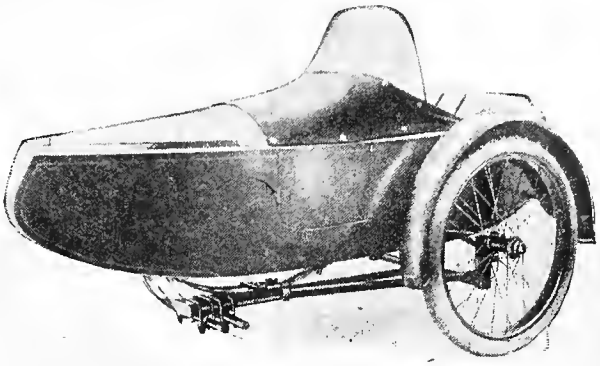
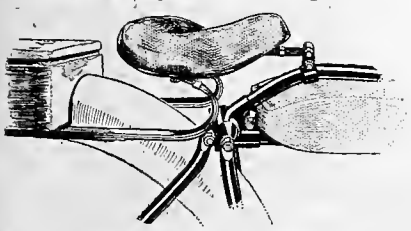


Neat body lines characterise this new Milltord model; an aluminium step is fitted to the top side member of the duplex chassis.



One of the many examples of Canoelet sidecars in the Show. It has a luggage rail over the rear locker.

sive sidecars being fitted with ordinary domed mudguard, while the higher-priced models have a guard 6in. wide. The *de luxe* model is exceptionally well upholstered and most comfortable. Special attention is paid to the requirements of the family man, and this fact is brought to light in the design of the



Unique method of saddle suspension adopted on the 6 h.p. Douglas.

sidecar body, which will comfortably take two adults. Another body has ample room for the child's seat provided with it.

CANOELET SIDECARS. (139.)

MEAD AND DEAKIN, Tyseley, Birmingham.—In addition to the well-known Canoelet sidecar, such as the MM4, the Minor, the taxicab, and the box carrier models, there is an entirely new production on semi-sporting lines. Distinguished by the uninspiring title of the A4, this is better described as a canoe-shaped body mounted on a trident-like chassis, which is slightly underslung; the three main tubes converge to the front, where they support the two quarter-elliptic body springs. The back of the body is carried on a transverse leaf spring. The canoe shape of this sidecar is enhanced by a small railed deck and "tumble home" stern at the back of the seat. Beneath the deck, which is hinged, is a most capacious locker. This model is priced at £25 15s. Several modifications have been made in the K4 sporting type, such as the inclusion of a shallow locker in the tail of the body, a permanent back rest to the seat, and the attachment of the mudguard to the body, a feature which is incorporated in all Canoelet models; the price is £20 5s., while the smaller lightweight sidecar, the model P, weighing but 85 lb., is shown at £18 5s.

DOUGLAS. (119.)

2¾ P.H. MODEL.—60.8×60 mm. (348 c.c.); flat twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; gear-driven mag.; 2-sp. gear, without clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £75 (fully equipped).

DOUGLAS MOTORS, LTD., Kingswood, Bristol.—There are no alterations in the standard two-speed 2¾ h.p. Douglas, but in the three-speed model (priced at £90) new cylinder castings are employed, ensuring better cooling. The usual three-speed clutch and kick-starter gear box unit is on exhibit, and the machine is turned out with such refinements as wide mudguards with valances and a belt guard. This model, like all other Douglas machines, is presented fully equipped.

3½ P.H. MODEL.—68×68 mm. (494 c.c.); flat twin-cyl. four-stroke; overhead valves; semi-automatic pump and sight feed lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 650×65 mm. tyres. Price, solo £130.

It would be difficult to conceive a more attractive machine than the Douglas sporting model. It is fitted with overhead valves with wick lubricated rockers. The kick-starter and foot brake (internally expanding Ferodo lined) are on the right-hand side, and a "friction spring" shock absorber is contained in the flywheel in addition to a rubber block shock absorber in the rear wheel. Knock-out spindles are employed as in the other larger models. As turned out, this machine is capable of being tuned to very high speeds.

4 P.H. MODEL.—74.5×68 mm. (595 c.c.); flat twin-cyl. four-stroke; side-by-side valves; mechanical oil pump sight feed lubrication; Douglas automatic single lever carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2⅜in. tyres. Prices: Solo £110, with sidecar £135.

Detachable cylinder heads are this year employed on the 4 h.p. Douglas. The rather inaccessible oil filler cap is superseded by a telescopic filler. The Douglas automatic carburetter is a specially neat job, and, as in the 3½ h.p. model, the induction pipe is jacket-heated from the exhaust. An under-shield is standard.

6 P.H. MODEL.—83×68 mm. (733 c.c.); flat twin-cyl. four-stroke; overhead valves; semi-automatic lubrication; Amac carb.; gear-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 710×85 mm. tyres. Price, with sidecar £165.

This machine is practically a large edition of the 3½ h.p. sporting model. Aluminium footboards, an efficient under-shield, and laminated leaf spring saddle strike the eye as the chief points of external difference, while the cylinder heads are held down by lengthened bolts instead of the simple stud and nut method of the "3½." On last year's 3½ h.p. an ordinary fish tail end was used for silencing; this year a large aluminium silencer box is fitted. The gear box is fixed per-

Contrasts in Douglas models. (Left) The 6 h.p overhead valve type fitted with the new Douglas saddle suspension (Right) Marketed at a popular price—the 2¾ h.p. mount.

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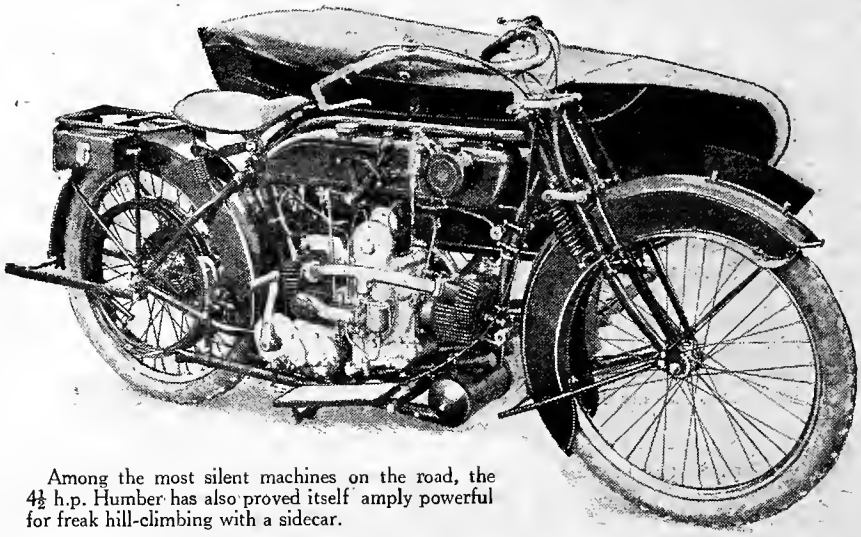
manently, and chain adjustment is obtained by sliding the engine in its housing. The sidecar is a specially fine piece of work, coil sprung forward and supported aft by means of a single laminated leaf spring. The wheels are interchangeable, and there is a sliding dash containing a locker.

HUMBER. (124.)

4½ H.P. MODEL.—75×68 mm. (600 c.c.); flat twin-cyl. four-stroke; side-by-side valves; mechanical lubrication; Claudel-Hobson carb.; E.I.C. gear-driven mag.; Humber 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, sports solo £100.

HUMBER, LTD., Coventry.—In a business-like all-black finish, the 4½ h.p. Humber makes a strong appeal to both soloist and sidecarist, and in either guise the machine is quite distinctive on many counts. This is a remarkable testimony to the all-round efficiency of the engine, for with minor modifications the same power unit is used in the 70 m.p.h. sports model and the notably silent and smooth-running sidecar outfit; and, excepting price and tyre dimensions, the above specification of the former machine applies equally to the latter. Since last described in *The Motor Cycle*, the sporting mount has been improved in detail. For example, the oil compartment in the main tank has now been moved forward, allowing a new gear quadrant position, which bares the rear of the tank for knee grips. A light guard protects the top run of the rear chain, and the twin open exhaust pipes are now clipped together at the rear. A breather in the crank case ejects surplus oil on to the inside of the primary chain, and a more visible type of Best and Lloyd drip feed is fitted. To lower the saddle position, the Brooks racing saddle is clamped directly to the frame lug. Aluminium pistons, modified timing, interchangeable valve pockets, and narrower mudguards are the other features wherein the sports model differs from the £110 touring solo mount. With a handsome and commodious Grindlay sidecar, the latter machine sells at £144. Such additions as a Brooks cantilever saddle and an A.L. lighting set (which are both shown on the stand) may be obtained at an extra cost. An all-black machine, looking extremely serviceable and roadworthy, completes the exhibit. The low price of the sports model represents extremely good value in view of its power.

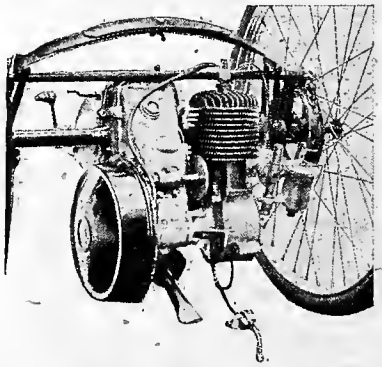


Among the most silent machines on the road, the 4½ h.p. Humber has also proved itself amply powerful for freak hill-climbing with a sidecar.

ARGSON INVALID TRICYCLE. (76.)

2 H.P. MODEL.—60×60 mm. (174 c.c.); single-cyl. two-stroke; petroil lubrication; Cox-Atmos carb.; flywheel mag.; 2-sp. or 3-sp. gear; gear drive.

ARGSON ENGINEERING CO., LTD., George Street, W.1.—A machine which is, unfortunately, only too likely to interest many is the Argson invalid tricycle. Interest lies principally in the power unit, a single-cylinder two-stroke engine, with flywheel magneto, which drives a back axle of the chair through the medium of a two or three-speed gear box, the latter forming part of the ordinary transmission from the hand levers. The controls are so arranged as to be perfectly convenient for an invalid who is unable to leave the chair, a compression release being fitted to the steering handle on the right-hand side of the machine in such a position that it is operated by a downward movement of the wrist. A contracting band brake of ample size is fitted to each rear wheel, and the single front wheel is carried by a spring fork attachment.



Method of attaching the power unit of the Argson to the axle of the machine.

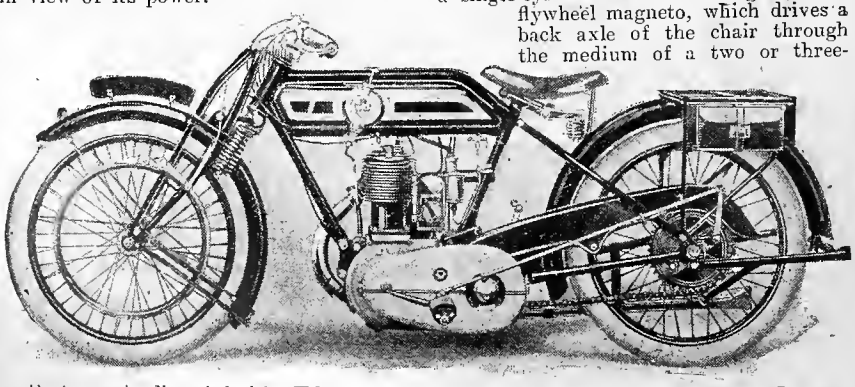
2 H.P. MODEL.—60×60 mm. (170 c.c.); single-cyl. two-stroke; petroil lubrication; Amac carb.; chain-driven mag.; chain drive; 16×2⅜in tyres. Price, solo £35.

A simple motor scooter for runabout use is also produced by this firm, the same two-stroke engine being employed and mounted at the front end of a light but strong frame. Power is transmitted to the rear wheel by chain *via* a countershaft, and two contracting band brakes are carried on the rear wheel hub. An ingenious type of spring fork is used. One short cantilever spring is rigidly attached to a lug at the base of the steering column and bearing on the front end on a stirrup carried over the wheel on the axle ends. The wheels are built up from two steel pressings, and combine the virtues of strength and lightness. As a small delivery vehicle, with a box of 3 cu. ft. capacity arranged over the rear wheel, the machine offers facilities for cheap transport of goods.

ROVER. (96.)

5-6 H.P. MODEL.—70×88 mm. (678 c.c.); twin-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; E.I.C. chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Prices: Solo £120, with sidecar £155.

NEW ROVER CYCLE CO., LTD., Coventry.—Rover motor cycles are examples of good sound design, and the single and twin-cylinder models exhibited near the main entrance are magnificently finished. Various minor improvements have been effected for 1922, notably by the provision of a hand-controlled clutch for the three-speed gear. On the sidecar the mudguard is now mounted directly on the body, where it receives the full bene-



Replacing the direct belt-drive T.T. model, this three-speed, chain drive, sports model Rover should be almost as speedy, while possessing an extended range of action.

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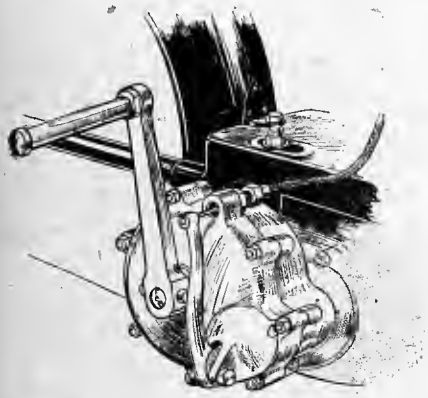
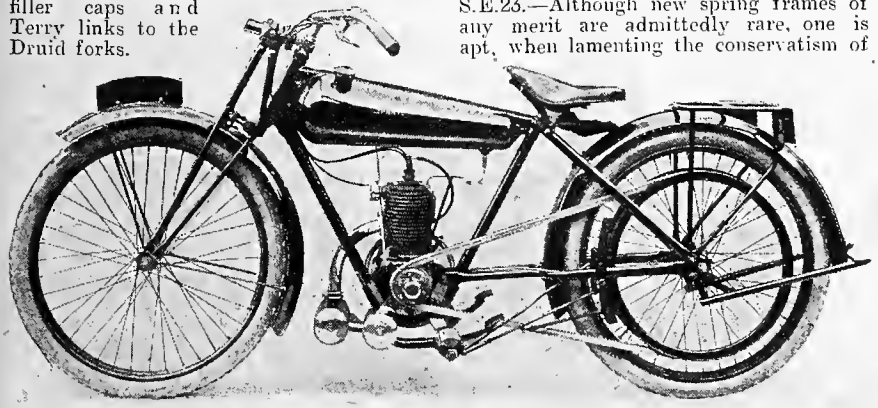


Great leverage is provided by the clutch operating arm on the Rover gear box.

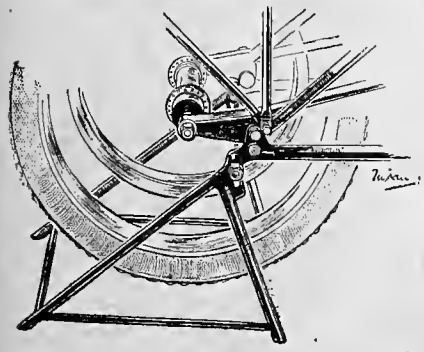
fit of the body suspension—a growing practice incidentally. Rover machines are notable for the fact that they have their gear levers projecting through the red and black finished tank, glass-topped filler caps and Terry links to the Druid forks.



Pneumatic pressure lubrication is used on the Villiers-engined Spark lightweight This system is fitted to many two-strokes at the Show.

4 H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; E.I.C. chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½ tyres. Prices: Solo £100, with sidecar £135.

The single-cylinder Rover, now rated at 4 h.p., is available in two types, an innovation being the sports model offered with or without a sidecar attachment, which is in entire keeping with the design. In the case of the new sporting model (£110) the change-speed lever is arranged on the right-hand side of the tank, and the oil pump on the left. A straight through exhaust pipe is used for the engine which differs only from the standard article in that a lightened piston and connecting rod are used. The guards, too, have been modified, for whereas dome guards with valances figure on the standard model, the sports mount has plain guards minus valances. An extremely attractive low-built sidecar is adopted having a neatly upswept scuttle which lifts up to permit easy entry despite the absence of a door. The back rest also folds forward to give access to a capacious compartment arranged in the tail of the body. Altogether the 3½ h.p. Rover sports sidecar outfit is an exhibit worthy of careful inspection.

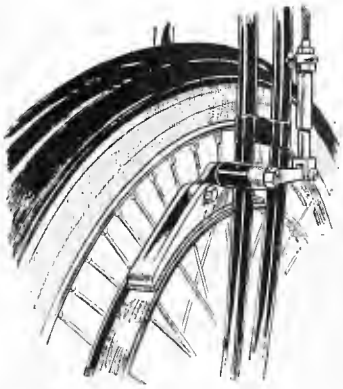


The triangular stand on the P.V. machine provides alternative positions. The longer legs are used in case of the necessity of changing a wheel.

P.V. (17.)

4 H.P. MODEL.—64.5×76 mm. (500 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres.

P.V. MOTOR CYCLES, LTD., Forest Hill, S.E.23.—Although new spring frames of any merit are admittedly rare, one is apt, when lamenting the conservatism of motor cycle manufacturers in this matter, to forget the well-tried designs that have existed for years without necessitating constant changes or fresh experiments. The P.V. is one of these, and the very fact that it has undergone no great alteration since its inception probably accounts for the fact that it is perhaps not so widely known as it deserves to be. In principle it is simple. Forward extensions of the forks upon which the rear wheel pivots terminate in a lug in the correctly arched saddle tube which encloses shock and rebound coil springs. The model specified above is offered as a sports mount, and has a 500 c.c. J.A.P. engine, with the now familiar conical radiating valve caps, but the equipment is by no means that of a stripped racing machine. H.H. accumulator lighting is standard.



Instead of a V section drum, the Rover front brake operates on a flat rim.

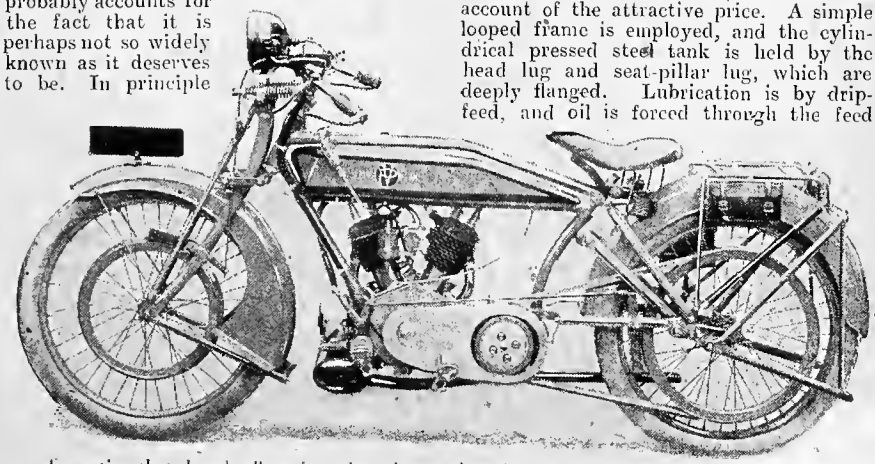
A 350 c.c. J.A.P.-engined model is similarly equipped, excepting that it has a B. and B. carburetter and footrests instead of footboards. Also shown are a lady's spring frame lightweight and a plain two-speed lightweight, both with Villiers engines.

The Jackstand fitted to all the P.V.'s also makes a special appeal to the lady motor cyclist. This ingenious device is simply a triangular "two-step" stand, which acts as a prop in the first position, and holds the wheel well clear of the ground for tyre repair in the second. A minimum of exertion is required to operate it.

SPARKBROOK. (93.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; no valves; drip feed lubrication; B. and B. carb.; flywheel mag.; belt drive; 26×2¼in. tyres. Price, solo £39 18s.

SPARKBROOK MFG. CO., LTD., Sparkbrook Works, Coventry. — As a new light model, the Villiers-engined Sparkbrook attracts attention, not only by reason of its specification, but also on account of the attractive price. A simple looped frame is employed, and the cylindrical pressed steel tank is held by the head lug and seat-pillar lug, which are deeply flanged. Lubrication is by drip-feed, and oil is forced through the feed



Excepting that the wheelbase is perhaps longer than the average, the spring frame 4 h.p. P.V. is commendably neat. Note the triangular Jackstand.

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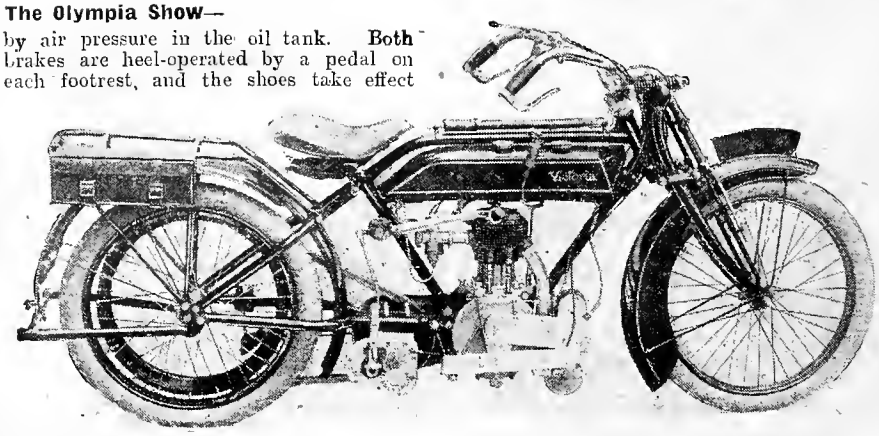
by air pressure in the oil tank. Both brakes are heel-operated by a pedal on each footrest, and the shoes take effect



With 4 h.p. J.A.P. engine and three-speed Sturmey-Archer gear, the Victoria should serve well as a double-purpose mount.

inside the V of the belt rim. A novel double silencer is worthy of notice, and the all-black finish with green tank is both workmanlike and attractive. This model can also be obtained with the Villiers engine-shaft clutch.

The standard Sparkbrook two-stroke is retained, and may be had with the Sparkbrook two-speed gear box, with or without clutch, or with the Sturmey-Archer two-speed box, clutch, and kick-starter.

On very similar lines is another model with a 350 c.c. J.A.P. engine. A Sturmey-Archer three-speed lightweight gear with clutch and kick-starter, and chain-cum-belt drive. The frame is slightly different, as the top tube slopes towards the saddle. Its novel point is the fitting of spring footrests. A front wheel stand is also fitted to this model, the price of which is £84.

VICTORIA. (123.)

4 H.P. MODEL.—35×95 mm. (550 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price, with sidecar £100.

VICTORIA CYCLE CO., Glasgow.—Although English proprietary units mainly go to make up the various Victoria models, the machines on this stand are actually the only complete motor cycle representatives from Scotland. Nothing startling has been attempted, and the dual-purpose model specified above is typical of the whole range. It is sturdily and sensibly designed for economical motoring, solo or with sidecar, and the chief improvements on last year's equivalent model consist of modifications in the various proprietary units used. The sidecar attached (it is not shown solo) is well-sprung and roomy. The engine is a J.A.P., as the cylinder dimensions may indicate.

2¾ H.P. MODEL.—70×90 mm. (350 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; Albion 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres.

Lighter all round than the preceding model, this J.A.P.-engined lightweight sidecar outfit nevertheless resembles it closely. As the machine itself weighs less than 200 lb., the tax payable is only 50s.

Five other models, one each with 2¾ h.p. J.A.P. and Blackburne engines and three with 2½ h.p. Villiers, are also staged.

HACK. (117.)

1¼ H.P. MODEL.—52×52 mm. (110 c.c.); single-cyl. two-stroke; petroil lubrication; Amac carb. gear-driven mag.; single speed gear; clutch; chain drive; 20×1¾in. tyres. Price, solo £42.

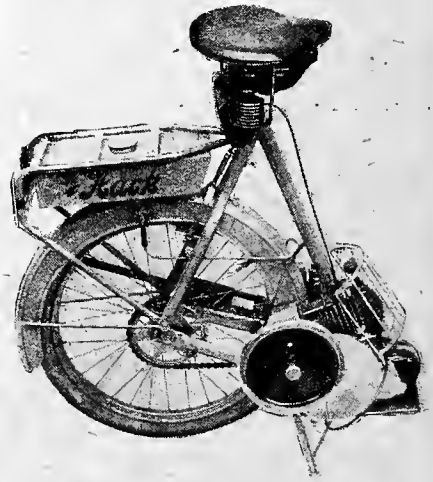
HACK ENGINEERING CO., 44, Victoria Road, Hendon.—Two examples of this very light and simple miniature are on view. Engined with the Simplex two-stroke with a primary gear reduction, this little machine is perhaps the lightest in the Show. An open frame provides ample room for a long coat or lady's dress, and a new silencer, having two expansion chambers, is used to reduce exhaust noises. A clutch is fitted to enable the machine to be wheeled easily. The petrol tank is fixed below the carrier, and a light prop stand is supplied. In front of the engine is a light dressguard, and long aluminium foot plates are provided. Both brakes are of the cycle type acting on the wheel rims.

METRO-TYLER. (142.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; B.T.H. chain-driven mag.; Albion 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Prices: Solo £55, with sidecar £69.

METRO-TYLER CO., LTD., Banister Road, Kilburn, W.10.—The model specified above is of the sports type, and, although engined by the two-stroke M.T., is equipped with a proprietary two-speed gear box; for an extra £5 a three-speed box may be substituted. Excellent detail work is a feature of these machines, and all nuts are either capped or split-pinned. The Metro-Tyler engine is well designed, having a one-piece crankshaft running on ball bearings and carrying a roller bearing big end for the connecting rod; the assembly of the latter is the subject of a patent. Externally the engine follows conventional lines, except that the three top radiating fins are of aluminium.

Another model incorporating the same engine is the "all enclosed" type, on which the transmission to the firm's own two-speed gear box and the magneto and its drive are all encased beneath aluminium covers extending from the back of the engine. A special spring-loaded gear change mechanism is provided, and the final belt drive is on the off side of the machine. The front down tube of the frame is duplex, and a metal



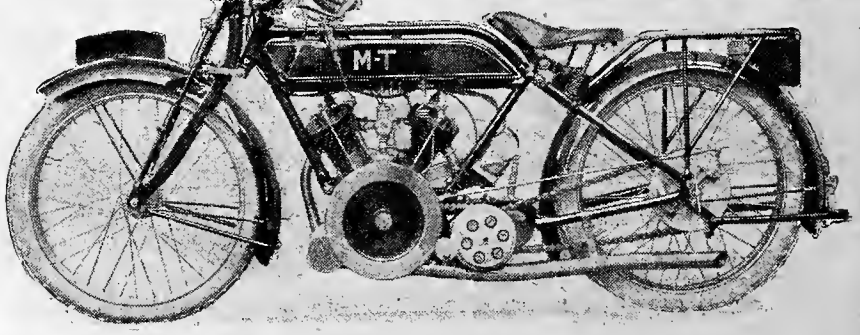
This illustration shows the rear portion of the Hack. The 1½ h.p. two-stroke engine is mounted low down as shown, the petrol tank being suspended from the carrier.

tool box with spring lid, common to all the machines of this make, is fitted.

5-6 H.P. MODEL.—71×88 mm. (698 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac. carb.; B.T.H. chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, solo £125.

Built as a powerful and speedy solo model, this Blackburne-engined machine bearing the Metro-Tyler name has a most compact and handy appearance, the wheelbase being kept short by mounting the magneto behind the engine. A quick

In sharp contrast to the usual Metro-Tyler models—a 5-6 h.p. machine, suitable for solo or sidecar work.



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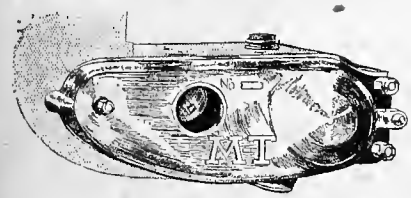


On the Metro-Tyler "all-enclosed" model the contact breaker is adjusted from an inspection aperture on the side of the transmission case.

detachable back wheel is fitted, the hub being dogged to the combined sprocket and brake drum. A practical item is that the rear mudguard stay is arranged to swing out of the way when the wheel is being removed.

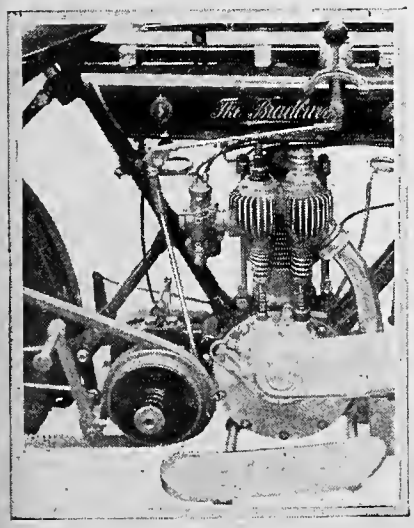
BRADBURY. (88.)

2¾ H.P. MODEL.—74.5×80 mm. (350 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2⅜in. tyres. Price, solo £80.

BRADBURY AND CO., LTD., Wellington Works, Oldham.—As the Bradbury name is now carried by a 2¾ h.p. lightweight, a big single of 554 c.c., a 750 c.c. twin, and the new 996 c.c. twin, the range of models is very complete, and provides for the taste of all riders. The 2¾ h.p. model is available either with direct drive, two-speed gear and clutch, or with two-speed gear, clutch, and kick-starter. A point of interest is the employment of double tubes for the front down member of the frame, while the engine crank case is formed integrally with the frame. The cylinder has a detachable head, and is held down to two long bolts.

4 H.P. MODEL.—89×89 mm. (554 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price, solo £92.

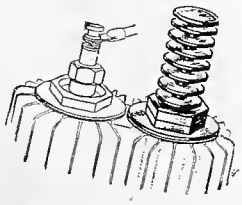
The big single is on very much the same lines as the lightweight model, the Bradbury feature of a crank case formed integrally with the frame, of course, appearing. Transmission is by chain throughout, and an internal expanding brake is incorporated in a drum formed with the rear wheel chain sprocket. Large domed mudguards are a good feature, and the unusual frame construction renders the machine extraordinarily robust.



Power unit and two-speed gear of the 2¾ h.p. Bradbury.

6 H.P. MODEL.—74.5×86 mm. (750 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, solo £117.

Very similar are the two twin models, but in this case the engine crank case does not form a part of the frame. Detachable cylinder heads are fitted, and ribbed aluminium plugs are carried in the exhaust valve caps in order to aid cooling. Deep fins are a characteristic of all the Bradbury engines, and on the twin models the valve ports are noticeable in that vertical fins are employed. Chain transmission through a heavy three-speed gear box is fitted, and the rear brake is internal expanding in a large drum in the rear wheel chain sprocket. The front brake also is of the internal expanding type. The dimensions of the 8 h.p. engine are 80×99 mm. bore and stroke (996 c.c.), and the price of the larger model is £135 without sidecar.



Air-cooled valve cap on the 8 h.p. Bradbury.

DIAMOND. (56.)

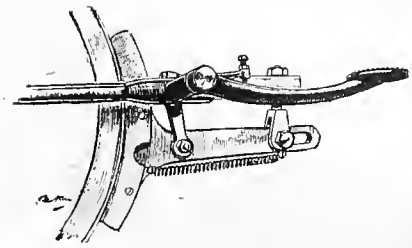
2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; belt drive; 26×2¼in. tyres. Price, solo £42 2s.

D.F.M. MFG. CO., LTD., Vane Street, Wolverhampton.—A simple single-cylinder model very moderate in price is the 2½ h.p. Diamond. The frame is the Diamond pattern, with duplex down tube and detachable lower tank rail. Steel stampings are used wherever possible. The rear mudguard is 5½in. across. The same pattern frame is used on all Diamond models.

A similar model sold at £56 14s. has cast aluminium footboards, a Sturmey-Archer two-speed gear box with clutch and kick-starter, and chain-cum-belt drive. A well-known Diamond feature, the heel-operated back brake applied directly to the belt rim, has been retained. No loose clips are to be found on any of the Diamond machines.

2½ H.P. MODEL. — 70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; pump and drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. selective clutch gear; chain-cum-belt drive; 26 × 2¼in. tyres. Price, solo £57 17s.

This model somewhat resembles the previous machines except so far as the engine and gears are concerned. The chain case is of cast aluminium, and entirely encloses both front chains, being mudproof and oiltight. If the top half of the chain case is removed the chains may be inspected and the gears adjusted, and this is done by the removal of two pins.



A direct operated brake having a parallel action on the Diamond.

A similar machine, identical with that just described except for the fitting of a Sturmey-Archer two-speed gear with clutch and kick-starter, is sold at £60 18s. On this model footrests are fitted. A three-speed gear can be fitted at a slight extra charge.

2¼ H.P. MODEL.—64.5×76 mm. (250 c.c.); single-cyl. four-stroke; 2-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Price, solo £78 15s.

This machine is fitted with the T.T. type J.A.P. engine, has entirely enclosed chains, and is a really well designed and useful sporting lightweight, to which a three-speed gear box can be fitted at an extra cost of four guineas. As a sporting machine this model has no carrier proper, but a special arrangement is fitted for carrying the toolbags and supporting the rear mudguard.

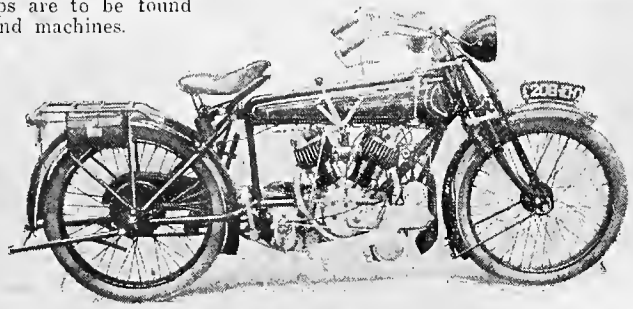
2¾ H.P. MODEL.—70×90 mm. (350 c.c.); single-cyl. four-stroke; side-by-side valves; pump-cum-drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick starter; all-chain drive; 26×2¼in. tyres. Price, solo £84.

Known as the "Super Standard," this 2¾ h.p. solo mount, weighing approximately 196 lb., is intended for serious touring, being fitted with aluminium footboards and entirely enclosed chains.

MARTINSYDE. (47.)

3½ H.P. MODEL.—60×88 mm. (496 c.c.); twin-cyl. four-stroke; overhead exhaust valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 650×65 mm. tyres. Price, solo £110.

MARTINSYDE, LTD., Maybury Hill, Woking.—This is a sports model which should become very popular during the coming season. It is fitted with an exceptionally cool running engine, wide handle-bars, footrests, and efficient silenc



A new 8 h.p. Bradbury three-speed machine makes its first appearance at Olympia.

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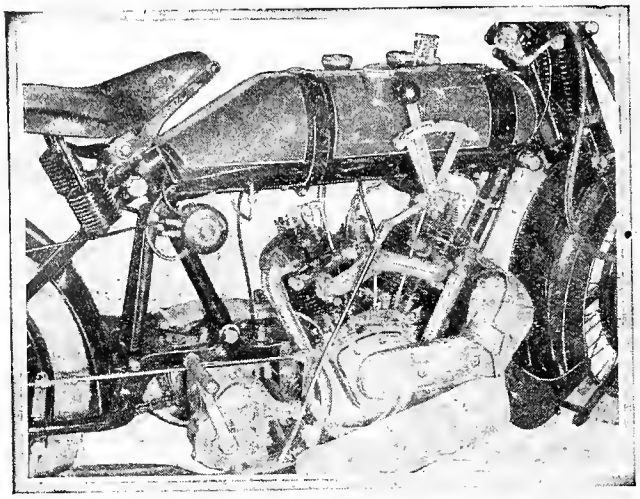
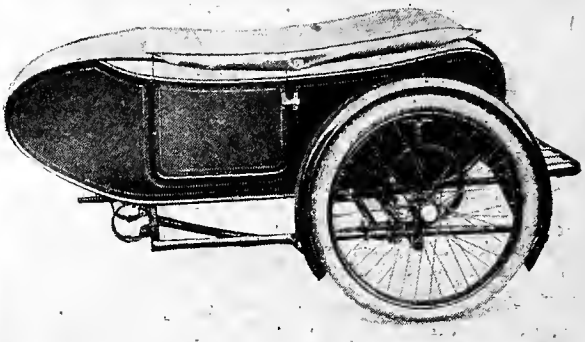


The power-unit of the 6 h.p. Martinsyde. On this engine the exhaust valves are directly over the inlet valves—an unusual arrangement. The rounded tank has twin compartments, reducing the possibility of the rider inadvertently running out of petrol.



Sound bodywork and a strong and simple chassis distinguish the Whitley touring model.

ing arrangements. It is similar to the larger type on which H. H. Bowen recently gained the fifty miles and one hour records. Foot brakes are applied to dummy belt rims. Since this model was first brought out a kick-starter has been incorporated, and the wheelbase has been slightly shortened.

6 H.P. MODEL.—70×88 mm. (678 c.c.); twin-cyl. four-stroke; overhead exhaust valves; pump-cum-drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×3in. tyres. Prices: Solo £120, with sidecar £160.

This is very similar to the smaller model just described. It has more efficient mudguards and a saddle tank. The gear box is fitted with an eccentric form of adjustment. Two pairs of footrests are fitted. The sidecar has particularly attractive lines, being of the streamline pattern fitted with a small aeroplane windscreen and a sporting type hood.

A *de luxe* model is also shown fitted with Lucas Magdyno, a luxuriously fitted sidecar, with hood and screen, with spare wheel carried at the rear. It has a longer frame than the model described, a wide front mudguard with valances and a flap, an aluminium cover for the Magdyno, large footboards, and more efficient silencing arrangements, a large expansion chamber being fitted to the rear of the exhaust pipe.

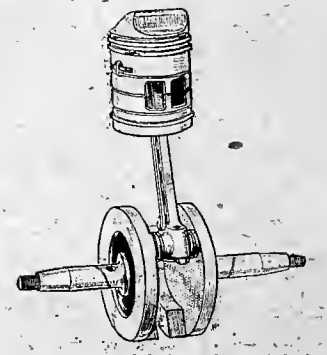
WHITLEY SIDECARS. (84.)

WHITLEY MANUFACTURING CO., LTD., Coventry.—Of the Whitley range of sidecars, perhaps the most interesting exhibit is the new Girdex chassis. This is built up of pressed steel members, and, while light in weight, it should be extremely strong and rigid. Two pressed steel girders are arranged to form a cross, and a pressed steel front member unites two of the extremities of this cross. The rear extremities of the main cruciformed member are united by a tubular cross member, which carries the stub axle and the wheel. The coachbuilt body is of pleasing shape, and is suspended by C springs at the front and by quarter-elliptic springs at the rear. The mudguard is rigidly attached to the body. This model undoubtedly presents an innovation in sidecar design. Three other models are displayed, these being the standard productions of the company, with tubular frames, in which castings are replaced by stampings, and high carbon steel tubing is employed. The prices are £25 for the sports model, £29 10s. and £32 10s. for the touring models.

ALLON. (102.)

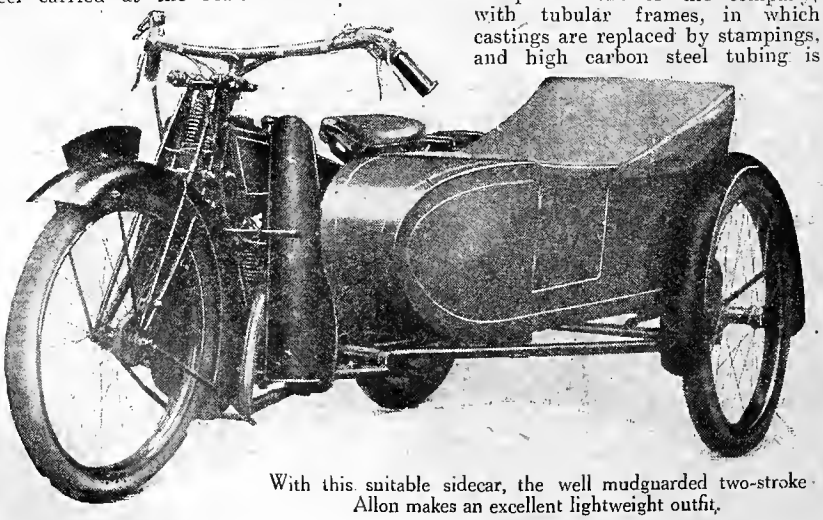
2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Prices: Solo £60, with sidecar £85.

ALLDAYS AND ONIONS, LTD., Matchless Works, Birmingham.—A very serviceable touring two-stroke with a big reputation to back it is the Allon. Several important modifications have taken place for 1922. Amongst these must be mentioned a general increase in bearing sizes, a modified piston and cylinder head, and improved oil pipe layout. The conventional magneto has given place to a Villiers flywheel unit, and greatly improved mudguarding is now fitted. Legshields have for long been a standard fitting, and these are, of course, retained. One of the outstanding Allon features is that the cylinder and top half of the crank case are cast in one piece, the lower half of the crank case being detachable. This permits the whole of the working parts to be removed without taking the engine out of the frame. A saddle tank, and contracting band brakes on both wheels, are still fitted.



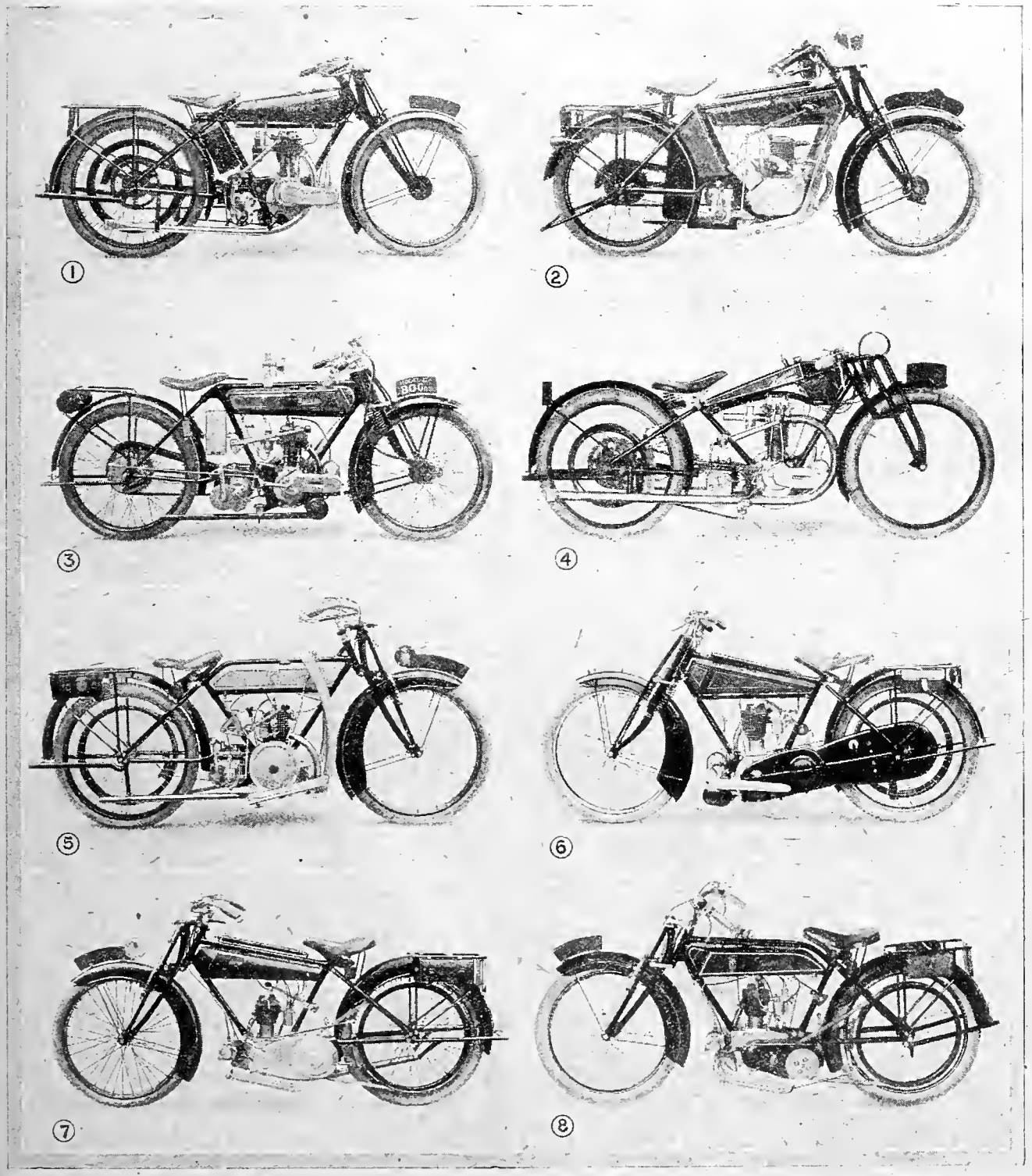
New piston and balanced crankshaft on the Allon two-stroke engine. Observe the ports in the side of piston.

Equipped with a three-speed Sturmey-Archer gear box and Senspray carburetter, this little machine is shown attached to a useful lightweight sidecar, which it is fully capable of propelling over reasonable country. A new silencer is fitted, and is placed behind the gear box.



With this suitable sidecar, the well mudguarded two-stroke Allon makes an excellent lightweight outfit.

Some Fine Examples of Solo Mounts under 350 c.c.



1. $2\frac{3}{4}$ h.p. Francis-Barnett three-speed sporting model.
2. A 1922 Velocette two-stroke with M-L Maglita and Brooks cantilever saddle.
3. Hawker $2\frac{3}{4}$ h.p. four-stroke two-speed mount.
4. A Sheffield-Henderson sporting model with Blackburne overhead valve engine.
5. A chain and belt-driven two-stroke Silver Prince with leg guards.
6. An all-chain-driven three-speed Diamond-Jap.
7. A new model at the Show is the $2\frac{3}{4}$ h.p. Kenilworth-Jap.
8. A $2\frac{3}{4}$ h.p. Olympic with chain and belt transmission.

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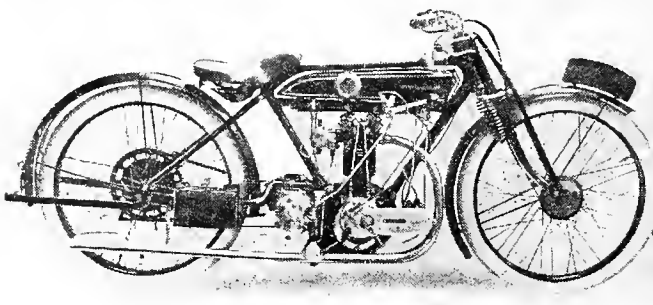
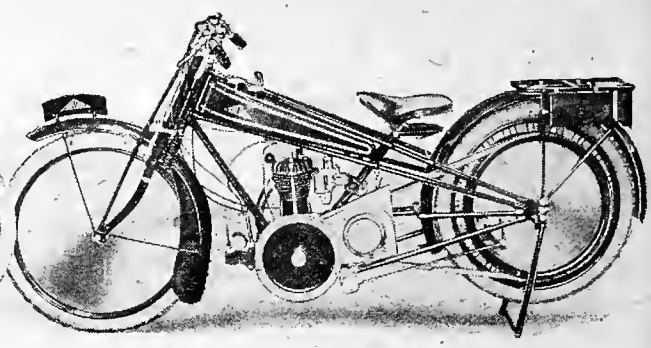


A sporting $2\frac{3}{4}$ h.p. mount has been added to the Massey-Arran range, the engine adopted being an overhead valve Blackburne.

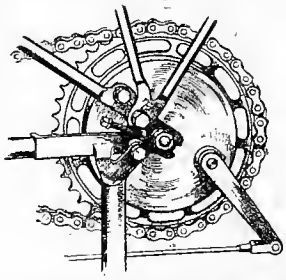


A feature of the Cotton motor cycle is the duplex triangulated frame construction. This particular model has a $2\frac{3}{4}$ h.p. Blackburne engine.

COTTON. (20.)

$2\frac{3}{4}$ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; B.T.H. chain-driven mag.; Sturmey 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×$2\frac{1}{4}$in. tyres. Price, solo £68 2s.

COTTON MOTOR CO., Gloucester.—Too often the unconventional machine tends also to look freakish and ungainly; particularly is this so when a new design of frame is attempted. The Cotton is an exception, and, although in this case the



Internal expanding brake on the rear wheel of the Massey-Arran.

design has been in existence since pre-war days, none may accuse its triangulated frame construction of jarring with accepted standards of appearance. Indeed, it is singularly neat; and it has demonstrated in recent reliability trials that, in addition to its theoretical advantages, it gives the machine wonderful road-holding and non-skidding properties. Besides being unusually low, the saddle position is appreciably further forward than usual, thus balancing the main weight well between the wheel centres. The Blackburne-engined machine specified above is a new model only in its power unit, as it has not been found necessary to alter the original frame layout since its inception. A two-stroke (Villiers) type is similar in essential details. Improvements for next year have been made to the primary chain case (now aluminium), to the tank (a separate welded oil compartment), and to the attachment of the tank to the frame.

Both the Cotton models are finished in a nice shade of maroon, which, on account of the straightforward frame lines, should easily be kept in its pristine brightness by the average owner. Three-speed models may be obtained at an extra cost.

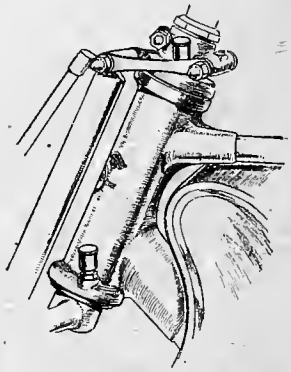
MASSEY-ARRAN. (134.)

$2\frac{3}{4}$ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; inclined overhead valves; mechanical pump lubrication; Cox-Atmos carb.; M-L chain-driven mag.; Burman 3-sp. gear; clutch; chain drive; 26×$2\frac{1}{4}$in. tyres. Price, solo £99 15s.

MASSEY-ARRAN MOTOR CO., LTD., 52, Bordesley Street, Birmingham.—Chief in the Massey-Arran products is a replica of the machine on which J. Whalley made such a fine showing in the Junior T.T. race. It has the overhead valve $2\frac{3}{4}$ h.p. Blackburne, and is fitted with all-chain drive. The saddle position is low, and the total weight has been kept well down, the figure being given as 170 lb. The drip feed lubrication has been supplemented by a Showell mechanical pump, driven from the magneto sprocket, thus doing away with the necessity for releasing the bars at speed to operate a hand pump.

There are internal expanding brakes to both wheels, and the long exhaust pipe terminates in a small aluminium expansion chamber, having internal baffles which free the owner from any anxiety as to the legality of his silencing system.

For the more sedate rider, a Blackburne side valve-engined model is produced. The equipment of this machine is much more lavish; the three-speed gear box has a kick-starter. Great care is bestowed upon the details of the Massey-Arran

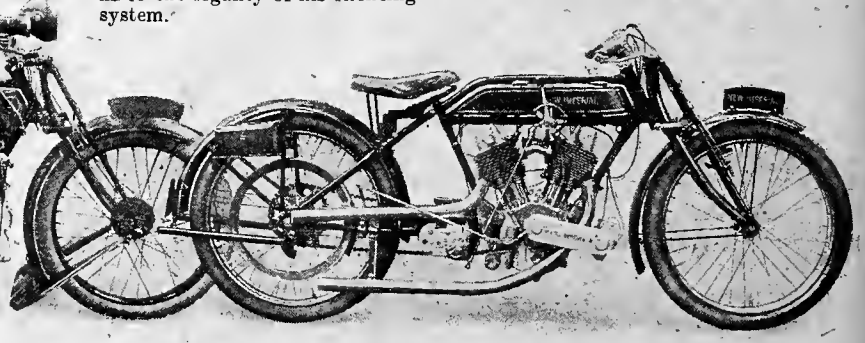


Exceptionally large bearings, lubricated by grease cups, are fitted to the Massey-Arran steering head.

machines, and the provision for lubricating the steering head is an instance. This model costs £83 10s., and a 350 c.c. J.A.P. engine may be had for the same price. There is also a two-speed model at £72 10s., and here again the choice of J.A.P. or Blackburne engines is allowed.

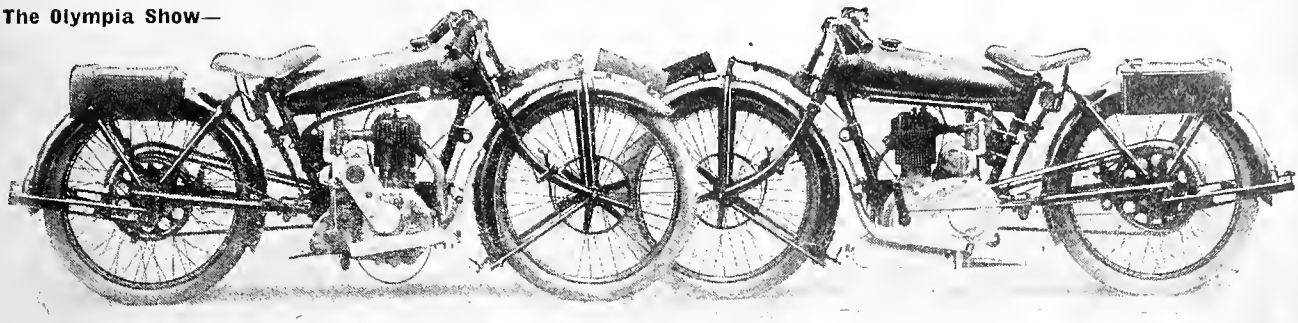
Although in Massey-Arran machines great use is made of standard components, such as engines and gear boxes, they stand amongst the select few of assembled machines which are distinctive in design.

The new 8 h.p. Ariel three-speed chain-driven sidecar machine, fitted with M.A.G. engine.



A new mount for speed men is the 8 h.p. New Imperial sporting model.

The Olympia Show—

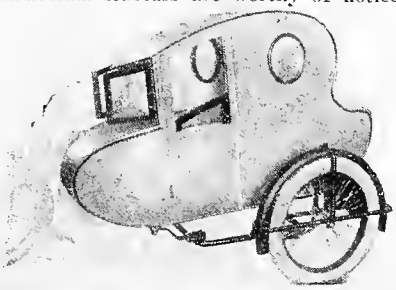


Unit construction of engine and gear box is only one of the several excellent features embodied in this new 4¼ h.p. Beardmore-Precision.

BEARDMORE-PRECISION. (87.)

4¼ H.P. MODEL.—89×96 mm. (597 c.c.); single-cyl. four-stroke; side-by-side valves; mechanical pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Prices: Solo £105, with sidecar £135.

F. E. BAKER, LTD., King's Norton, Birmingham.—Of the Beardmore-Precision models it is difficult to determine whether the new big single or Barr and Stroud-engined machine is the more interesting. Both are magnificent engineering jobs. The 4¼ h.p. model retains the laminated spring frame, but the engine and gear box unit are entirely new. The crank case and the gear box housing are formed in one aluminium casting, although there is no actual communication between the two. A detachable cylinder head is employed, and a good feature is the provision of a large spigot for the head. Lubrication is effected by a vane pump which delivers oil to a small reservoir, whence it is fed to the crank case by a needle valve which can be readily set according to the needs of the engine. In the gear box compartment are housed the shafts and gear wheels of the Sturmey-Archer gear set, the primary drive being by a chain enclosed in an aluminium case. External contracting band brakes are fitted to both front and rear wheels. The silencing arrangements are particularly well carried out, and when the sidecar is in position use is made of a secondary silencer carried on the sidecar chassis. Points to be noticed are the tank and frame construction and the entire absence of castings. In particular the sporting aluminium sidecars are worthy of notice



This coupé sidecar, with side "port-holes" and V windows opening as desired, is finished in primrose colour, and is a centre of attraction on the F.N. stand.

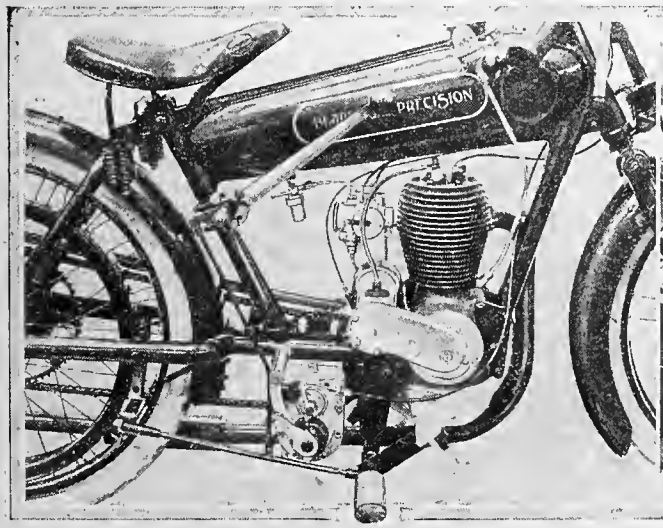
both for their attractive lines and the comfort provided.

2¾ H.P. MODEL.—70×91 mm. (350 c.c.); single-cyl. four-stroke; sleeve valve; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £85.

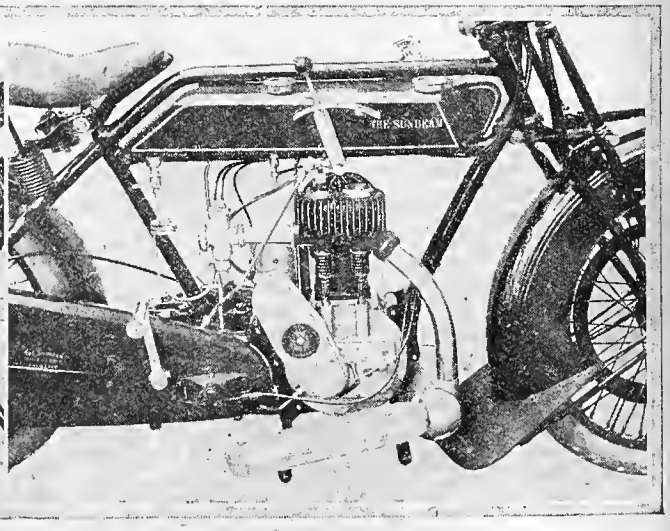
A particularly neat sports solo mount is the model with the Barr and Stroud single-sleeve valve engine. The same constructional features of the tank, frame, and front forks are found, but a rigid rear frame is employed. The front brake is an external contracting band, but the rear brake acts on the belt drum. This model may also be obtained with the 350 c.c. Precision two-stroke engine for £75.

3 H.P. MODEL.—74×81 mm. (350 c.c.); single-cyl. two-stroke; automatic lubication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Price, with sidecar £105.

For the man who requires the cheapest form of conveyance for two, the sports sidecarette is particularly suitable. The construction of the machine itself is identical with that of the sports solo models, but the Precision two-stroke engine-gear unit is fitted. Final transmission is by chain with a shock absorber in the rear wheel, and, in addition to the contracting front brake, a countershaft band brake, running in oil, is enclosed in the gear box and operated by a pedal on the right footboard. Footboards and legshields are formed in one and provide an ample measure of protection. The coachbuilt sidecar is light and of attractive streamline form. It is of sporting appearance and finished to harmonise with the bicycle. A feature of all Beardmore-Precision models is the very high finish obtained. A three-speed all-chain drive model with Barr and Stroud engine is offered.



A 350 c.c. Barr and Stroud single-sleeve engine, already described in detail in "The Motor Cycle," fitted to a Beardmore-Precision.



The new 4¼ h.p. Sunbeam single-cylinder sidecar engine, which has semi-circular fins at the head and vertical fins round the valve pockets.

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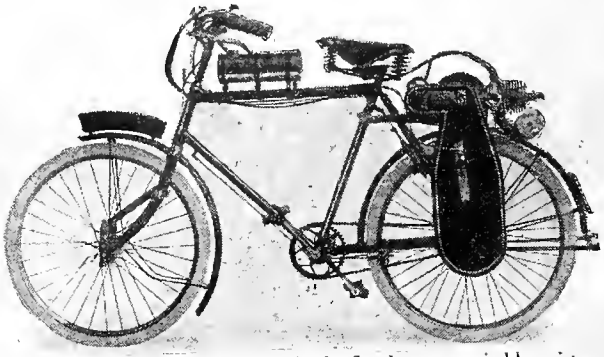
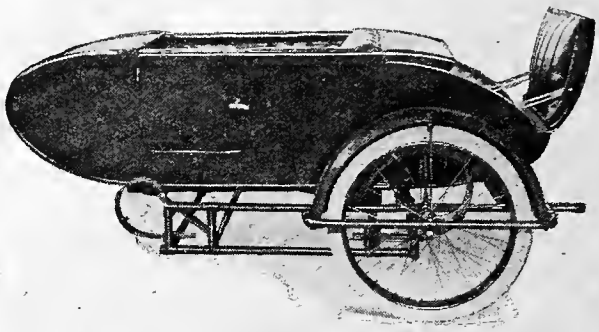


A complete power unit that may be fitted to any suitable existing bicycle—the Young motor attachment. The capacity of the engine is 130 c.c.



An attractive sidecar attachment by the Sidecar Body Co. The dickey seat is another instance of the adoption of car practice in motor cycle design.

YOUNG. (77.)

1¾ H.P. MODEL.—54×57 mm. (130 c.c.); single-cyl. two-stroke; petroil lubrication; W.E.C. carb.; chain-driven mag.; chain drive.

WALTHAM ENGINEERING CO., LTD., Waltham Cross, N.—A very neat power unit for pedal cycles is the Young motor attachment. A small single-cylinder two-stroke engine is mounted horizontally in a cast aluminium cradle, which also carries a chain-driven M-L magneto. An interesting point is that an aluminium cylinder is employed with a cast iron liner. A short cast aluminium exhaust pipe leads the exhaust gases to the silencer, and, as an aid to cooling, deep ribs are formed on the exhaust pipe casting. Transmission is by chain, arranged in two steps through a countershaft in which a handle-bar controlled clutch is incorporated. Various examples of the attachment are shown on both diamond and open frame cycles, and also on a tricycle. A simple but ingenious form of spring fork attachment is now produced, and should add materially to the rider's comfort.

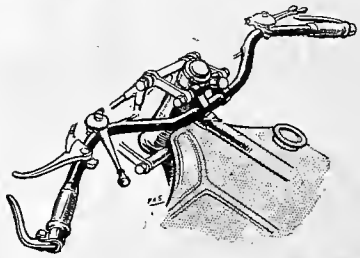
RIDEEZI SIDECARS. (24.)

THE SIDECAR BODY CO., 25, Upper Clapton Road, S.E.5.—Nine sidecars are actually exhibited on this stand, and eight of them are different models. As among these eight, however, there are only four different chassis, it will be seen that this company goes in for specialisation to a greater extent than a first glance would indicate. In all cases the suspension is by means of two pairs of C springs fore and aft; and there is nothing unconventional in either the body or chassis design. A feature common to all the Rideezi sidecars is an enclosed wheel, but easy detachability of this model has been well provided for. The most expensive of the range, a two-seater (side-by-side), is remarkably neat, and provides exceptional locker space. This type is priced at £37, and the other models in various very striking colours vary from this figure down to £16 10s. Many sidecar components are also shown.

SUNBEAM. (121.)

3½ H.P. MODEL.—77×105 mm. (489 c.c.); single-cyl. four-stroke; side-by-side valves; pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch without kick-starter; chain drive; 26×2½in. tyres. Price, solo £136 10s.

JOHN MARSTON, LTD., Wolverhampton.—The interest centred upon the Sunbeam stand is even greater than usual. This is due perhaps to the introduction of two new models, of which the new T.T. type is making a strong appeal to sporting soloists. This machine has a long-stroke engine of the type which, it is expected, will be used for the 1922 T.T. races. Slightly longer in wheelbase, it is not fitted with the Sunbeam oil bath case over the rear chain, but retains it for the primary drive. An aluminium piston and light reciprocating parts help to make the engine particularly speedy. The excellent detail work is beyond reproach.



Method adopted to obtain lower handle-bar position of the sports model Sunbeam.

3½ H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Prices: Touring £126, sports £136 10s.

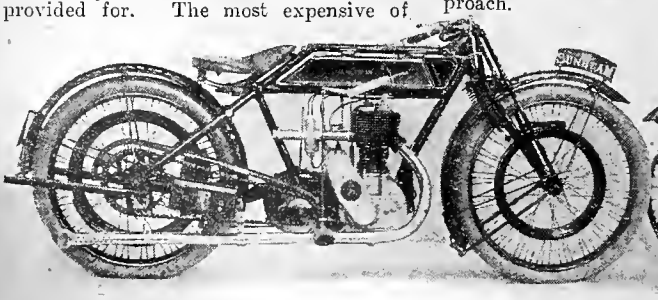
Two Sunbeams with the standard type of single-cylinder engine are included in the range. The first is known as the standard model, and is intended as a dual-purpose mount, while the second is a slightly modified edition of the sports model of 1921, which was ridden to victory in the French Grand Prix, and a machine with which we have enjoyed extensive experience without an atom of trouble.

4¼ H.P. MODEL.—85×105 mm. (596 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Price, solo £141 15s.

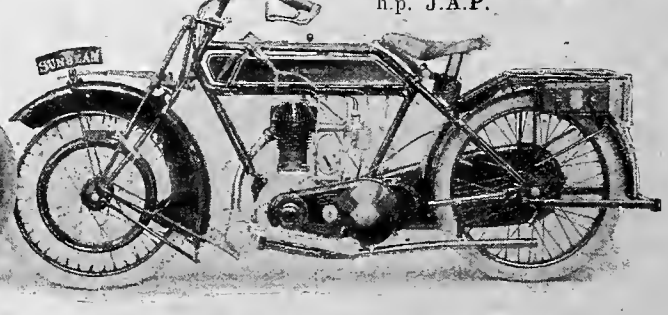
The second of the entirely new Sunbeam models is the big single, which has been developed from experience in the most important competitions of the past two years. A worthy addition, both to the Sunbeam range and to the big single sidecar class generally, this machine has a long-stroke engine with detachable head, the fins on the head forming a dome, those around the valve ports being arranged vertically. The Sunbeam oil bath cases, leaf spring forks, quickly detachable and interchangeable wheels, internal expanding rear brake, and wide mudguards form part of the specification.

8 H.P. MODEL.—85.5×88 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carburetter; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive. Price, solo £168.

Except for minor improvements, the Sunbeam big twin remains unaltered. With its oil bath cases and full touring equipment, it retains its place in the front rank of big twin sidecar outfits. The engine fitted is the new 8 h.p. J.A.P.



One of the most attractive of the many "speed" models, the 3½ h.p. T.T. Sunbeam. The engine has a considerably longer stroke than last year.



Essentially a sidecar machine—the new 4¼ h.p. Sunbeam. Interchangeable wheels and oil bath chain cases are useful items.

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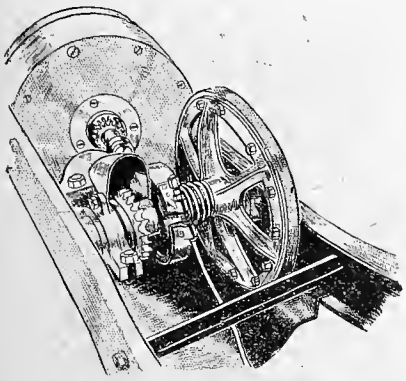
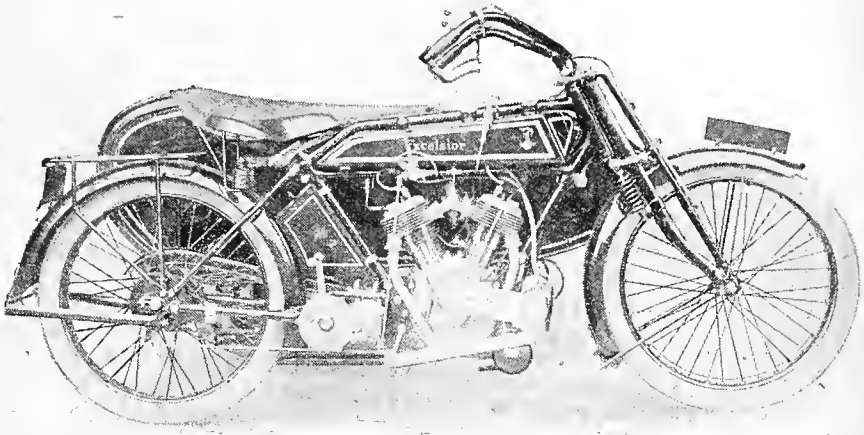


Driving and driven discs of the Ner-a-car friction transmission.



The 6 h.p. Excelsior "Popular" model, fitted with J.A.P. engine and Burman three-speed gear box.

NER-A-CAR. (46.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; petroil lubrication; B. and B. carb.; flywheel mag.; 5-sp. gear; clutch and kick-starter; friction and chain drive; 26×2¼in. tyres. Price, solo £69 6s.

INTER-CONTINENTAL ENG. CO., Berners Street, W.C.—A thoroughly unconventional machine, provided with a channel steel frame containing a two-stroke engine with flywheel magneto and a specially designed crank case bolted across the frame. At the rear of the flywheel there is a disc with which a friction wheel engages, carrying also the external contracting brake. The friction discs are disengaged by means of a twist grip on the left handle-bar. Final drive is by chain. There are no forks proper, but the front end of the chassis is splayed out to allow of a reasonable amount of lock, and the steering follows more or less car lines, the wheel being pivoted in the centre and supported on arms hinged to the fore ends of the chassis, and insulated from road shocks by means of coil springs. The mechanism is entirely enclosed, and an enormously wide front mudguard is fitted, which does not move with the front wheel. The machine, of course, is highly suitable for use by the fair sex, and recently a lady accomplished 1,000 miles in very bad weather on one of these machines under A.C.U. observation.

EXCELSIOR. (100.)

4½ H.P. MODEL.—86×112 mm. (650 c.c.); single-cyl. four-stroke; poppet valves; crank case suction drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Prices: Solo £89, with sidecar £119.

BAYLISS, THOMAS, AND CO., LTD., King's Road, Tyseley, Birmingham.—An outstanding amendment in this well-known big single is in connection with the transmission. All-chain drive is employed, the necessary damping effect being obtained by means of two rubber block shock absorbers, one contained in the engine sprocket and the other in the rear wheel. The clutch of the Burman three-speed gear box is handle-bar-controlled, and the spacious box for tools occupies a position behind the saddle down tube.

Practically a duplicate of the 4½ h.p. single is the 6 h.p. twin, with, of course, the exception of its power unit. Also an internally expanding brake is a new feature of several of this year's Excelsior exhibits, though it has not been adopted for the single-cylinder machine. The price is £103 solo, £133 sidecar.

8 H.P. MODEL.—85.5×85 mm. (997 c.c.); twin-cyl. four-stroke; poppet valve; drip and splash feed lubrication; carb. to order; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres. Prices: Solo £115, with sidecar £155.

The 8 h.p. J.A.P. *de luxe* model has many refinements, the single nut system of chain adjustment being among them. An internally expanding Ferodo-lined brake is here employed, and the model exhibited is fitted with detachable wheels and Lucas lighting set. With spare wheel, screen, and full electric equipment, including electric horn, it is priced at £195.

2¾ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; flywheel-driven mag.; direct belt drive; 26×2¼in. tyres. Price, solo £39 18s.

Three lightweights are on the Excelsior stand, the 2¾ h.p. Villiers single-gear sporting model being typical of the simplest form of motor cycles. The second lightweight is on the same lines, but equipped with Burman two-speed gear box and kick-starter, priced at £53. The third is a lady's model, with 2¾ h.p. Villiers engine, and having a Sturmey-Archer two-speed gear box, clutch, and kick-starter. In this case 24in. wheels are fitted, in order to obtain a low riding position.

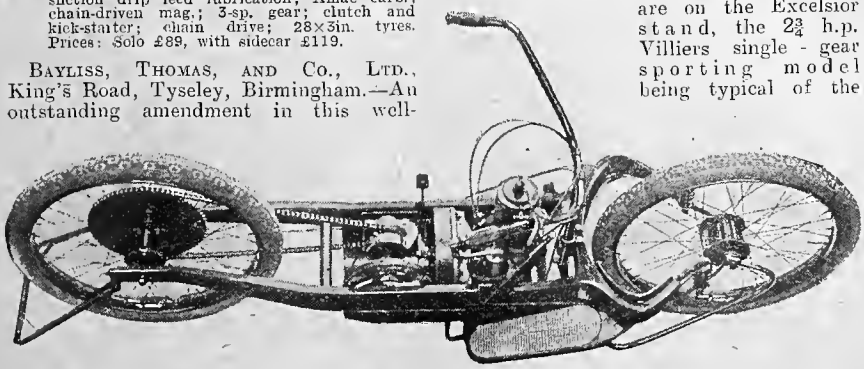
2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; poppet valves; drip feed lubrication; Amac carb.; chain-driven mag.; Burman 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Price, solo £75.

A sporting little machine which will doubtless attract much attention. The frame is sloped towards the saddle, and the finish is excellent, though we are compelled to think that more generous provision in the way of ground clearance would be beneficial. To obtain this, however, the low riding position would have to be, to some extent, sacrificed.

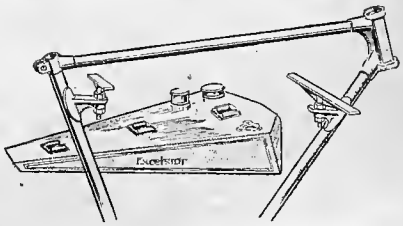
ROYAL ENFIELD. (86.)

2¼ H.P. MODEL.—64×70 mm. (225 c.c.); single-cyl. two-stroke; petroil lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 24×2¼in. tyres. Price, solo £55.

THE ENFIELD CYCLE CO., LTD., Enfield Works, Redditch.—Few alterations have been made in the Royal Enfield models for 1922. As regards the lightweight, the saddle is now anchored to the top tube and to the carrier, giving a very low riding position. The neat cast aluminium footboards are provided with legshields, which, nevertheless, should not interfere with the passage of air to the cylinder. The simple but efficient selective two-speed gear with all-chain drive is, of



Semi-plan view of the frame of the Ner-a-car, a single-cylinder machine with friction gear and final chain drive.



On the sports model 2¾ h.p. Excelsior the tank is held against the top tube by the pressure of two brackets screwed up from underneath.

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course, a feature of the machine, a cush drive being fitted to the rear wheel.

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; automatic lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain drive; 700×80 mm. tyres. Price, with sidecar £140.

As regards the 8 h.p. sidecar machine, detail alterations affecting the equipment only are to be noticed. A point of interest is the fitting of large tyres, which should not only tend to reduce running costs, but should materially enhance the driver's comfort. The power unit is, of course, built for the Royal Enfield Company by Vickers, Ltd., and, although on standard lines, is chiefly remarkable for an automatic lubrication system, by means of a mechanical pump, a hand pump being fitted in the oil tank to augment the supply of oil if necessary. Entirely new sidecar bodies have been produced, particular attention being paid to the accommodation of luggage by means of a large locker at the rear. A large tandem-seated sidecar is also shown.

VINDEC. (162.)

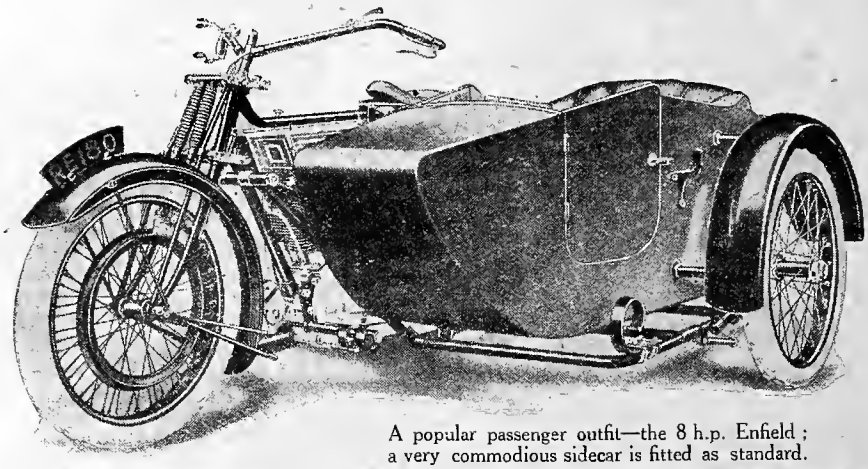
2¼ H.P. MODEL.—66×70 mm. (239 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear, without clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £60.

BROWN BROS., LTD., Great Eastern Street, E.C.2.—This is a sound little lightweight of good design, having several attractive features. The whole of the lower part of the unit, including the gear box, is neatly enclosed, the magneto chain cover forming part of this scheme. This renders the general appearance of the machine highly attractive. It is fitted with large footboards, wide handle-bars, and is a thoroughly practical little mount.

BLACKBURNE. (108.)

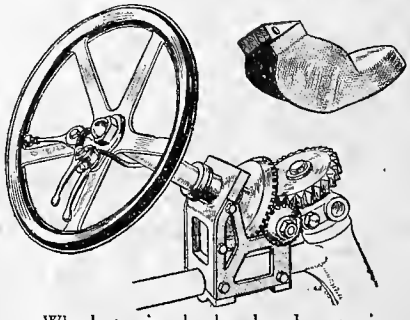
8 H.P. MODEL.—85×88 mm. (998 c.c.); twin-cyl. four-stroke; side-by-side valves; B. and L. semi-automatic drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres. Prices: Solo 95 gns., with sidecar 125 gns.

OSBORNE ENGINEERING CO., LTD., Gosport, Hants.—The chief exhibit on the Osborne stand is a sidecar taxi having an all-steel chassis and mounted on cantilever springs. It is attached to an 8 h.p. Blackburne motor cycle, equipped with wheel steering, which gives it rather a grotesque appearance. The price of this sidecar alone, which is designed to carry three, is 130 gns., so it will hardly appeal to the ordinary tourist.



A popular passenger outfit—the 8 h.p. Enfield; a very commodious sidecar is fitted as standard.

Other sidecars on exhibition include such interesting features as a tandem seater having an ingenious arrangement in the way of extensible and collapsible back and a sliding forward seat. All are handsomely finished and exceptionally well-sprung. No alterations have been made in the Blackburne motor cycles this year. The cylinder heads are detachable, and the power unit, most remarkable for its hard and steady pulling at low speeds, conveys a general impression of sturdiness and good workmanship. The rear brake is internal-expanding, and the chains well protected. Screen (£5), luggage grid (£3 10s.), and spare wheel (£6 10s.) are extras.



Wheel steering by bevel and worm is employed on the Osborne three-seater limousine sidecar model.

4 H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; side-by-side valves; sight drip feed lubrication; Amac carb.; chain-driven mag.; Sturmey-Archer or Burman 3-sp. gear; clutch and kick-starter; all-chain drive; 26×3in. tyres. Prices: Solo £89 5s., with sidecar £126.

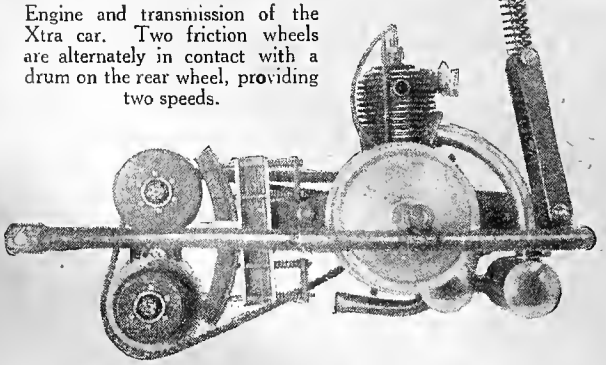
Solidity of construction, which should lead to exceptional durability, is the most characteristic feature of this well-known machine. Brampton patent biflex forks and Thomson-Bennett magneto are fitted as standard, and the drive is conveyed from the Sturmey-Archer gear box by $\frac{5}{8}\times\frac{3}{8}$in. open chain. Though an excellent dual-purpose machine, the 4 h.p. single is regarded by the makers as a solo mount, and brazed lugs for sidecar attachment are not included.

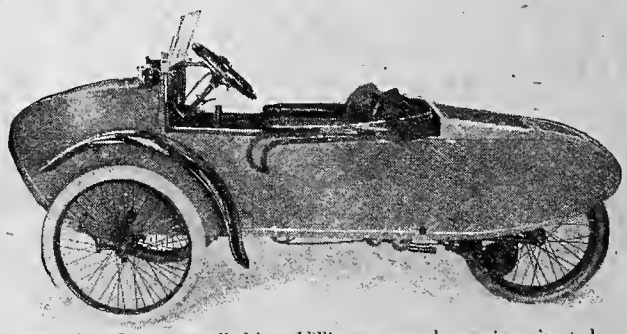
XTRA CARS. (148.)

2½ H.P. MODEL.—70×76 mm. (269 c.c.); single-cyl. two-stroke; petroil lubrication; Senspray carb.; flywheel mag.; 2-sp. gear; clutch and hand starter; chain and friction drive; 26×2¼in. tyres. Price £95.

XTRA CARS, LTD., London Road, Chertsey.—Weather protection at light-weight motor cycle running costs is the aim of this single-seated three-wheeler, which is driven by a 2½ h.p. Villiers engine. This engine drives by single chain over three sprockets, and the spindles of the driven pair carry friction wheels of different diameters. Either may be brought into engagement with the inner side of a rim attached to the rear wheel, thus giving two gear ratios and a clutch action. The further end of the frame, which is pivoted in a direct line with the engine mainshaft, is suspended on coil springs. In the front the wheel axles and pivots are suspended from the outer ends of two pairs of transverse flat springs. The engine and gear are entirely enclosed, and a hand starter is provided. The price quoted includes hood, screen, lighting equipment, and a well-filled toolkit.

Engine and transmission of the Xtra car. Two friction wheels are alternately in contact with a drum on the rear wheel, providing two speeds.





The Xtra Car is propelled by a Villiers two-stroke engine, situated behind the seat, through chain and friction transmission. It is a weatherproof three-wheeler of special appeal to the business man.

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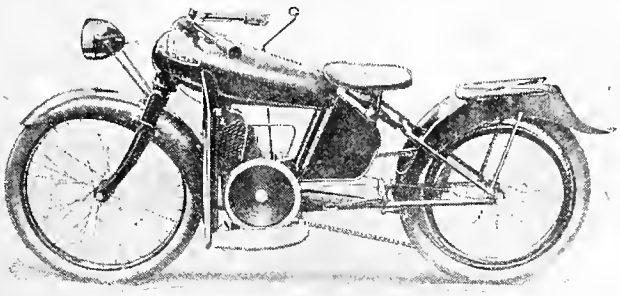
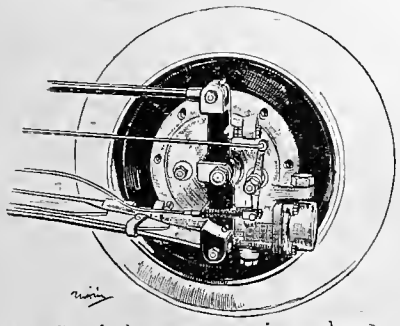
PETERS. (141.)

3½ H.P. MODEL.—76×76 mm. (347 c.c.); single-cyl. two-stroke; pressure feed lubrication; Cox carb.; flywheel mag.; variable belt gear; belt drive; 26×2½in. tyres. Price, solo £63.

PETERS MOTORS, LTD., Ramsey, Isle of Man.—Perhaps the most completely novel machine in the Show is the Peters two-stroke, which hails from the Isle of Man. In itself, the frame is worthy of careful study, since the main frame consists of a pressed steel tank, a large diameter saddle tube (which also forms a petrol sump), and the slightly inclined engine. The head tube, enclosed within the fore part of the tank, is of very large diameter, and in its turn encloses a leaf spring attached to the forks, the latter hinging at the base of the head. The rear portion of the frame is sprung, being hinged on short links about the bottom bracket, and sprung below the saddle by two coil springs. The action of these springs is progressive, and the inner spring also absorbs rebound shocks by becoming a tension spring after a limited amount of travel. The variable pulley gear is operated by a lever passing through the tank, and this lever also adjusts the belt tension by shortening or extending the wheelbase. Convex pulley flanges are arranged to provide the best possible belt grip. Lubrication is effected by pressure from the cylinder, and is entirely automatic. Both brakes are on the belt rim, one internal and one external, and both are operated by light pedals. Pressed steel guards are used front and rear, the latter being splayed out to form a carrier and number plate. The machine is sold with full equipment, with lamps lit from the flywheel magneto dynamo, and a battery carried in part of the capacious steel tool box placed behind the saddle tube. The engine is of the four-port type, and is a fine piece of work. Incidentally, the bottom bracket forms the silencer.



The Peters strikes a distinctive note both in appearance and design. The 350 c.c. two-stroke engine forms the support between the crank bracket and the under-side of the tank, displacing the usual down tube.



Details of the rear suspension and worm drive of the Unibus.

UNIBUS. (23.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; B. & B. carb.; chain-driven mag.; 2-sp. gear; clutch and handle starter; shaft drive; 16×2½in. tyres.

GLOUCESTER AIRCRAFT CO., Cheltenham.—Whatever may be said of the possibilities of the Unibus, it is quite a unique little vehicle. If we admit that the few ex-scooter miniatures at the Show form a class of themselves, then the Unibus is at the top of its class. One might even go further and say that the Unibus is in a class by itself, for it follows automobile practice on the whole more closely than anything else on two wheels. The pressed steel "chassis" with its leaf spring is excellently laid out, and final drive is by shaft and worm. The "body," if it may be called such, is of polished aluminium, and completely encloses every mechanical detail, excepting the handle starter and the controls. Cooling for the engine is provided by a wire net window in front of the steering head. The stripped chassis merits careful study.

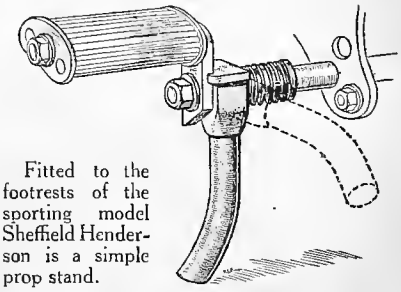
KENILWORTH. (45.)

1½ H.P. MODEL.—55×60 mm. (142 c.c.); single-cyl. four-stroke; overhead valves; drip feed lubrication; Vici carb.; direct driven mag.; single-speed gear; clutch; belt-cum-chain drive; 16×2in. tyres. Price, solo £48 6s.

BOOTH BROS., Coventry.—The Kenilworth miniature has now been on the market for two years. It is fitted with a small high efficiency four-stroke engine. The drive to the countershaft is by belt, and from countershaft to rear wheel by chain, reversing the usual order, as it is held that the belt drives better at high speeds. The whole of the engine and countershaft is carried on the bottom portion of the frame, and all the mechanism is enclosed, the rider being efficiently protected from mud. The rear seat is sprung in conjunction with the footboards.

2¾ H.P. MODEL.—71×88 mm. (349 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Prices: Solo £68, with sidecar £90.

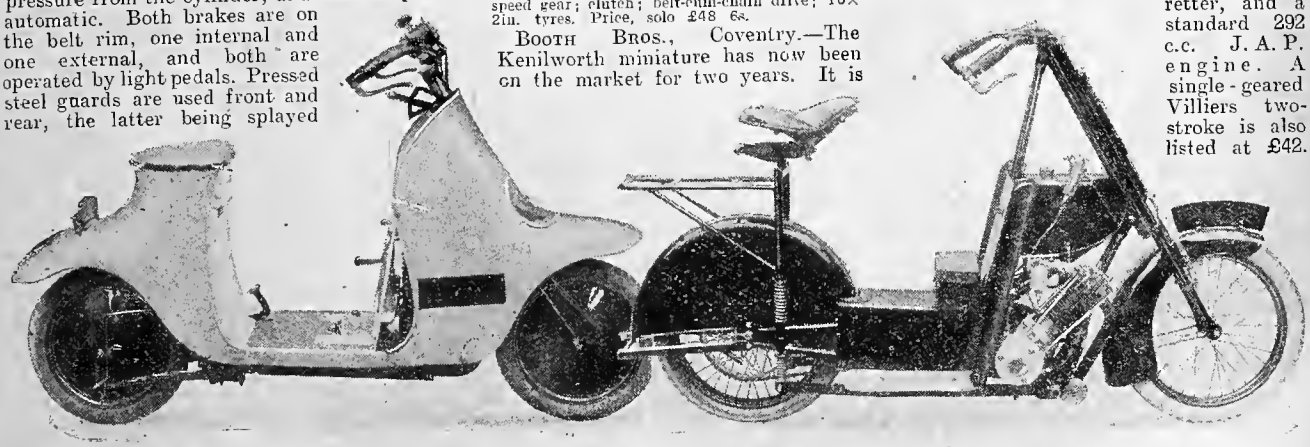
An entirely new machine embodying standard components is shown here. This may be described as a fairly fast light touring mount; it is well equipped with wide flat handle-bars, studded aluminium footboards, well-balanced mudguards, and a comfortable saddle. The motive power is the popular 2¾ h.p. Blackburne, which exhausts into a small expansion chamber terminating in a large diameter long exhaust pipe, which has a standard plated finish.



Fitted to the footrests of the sporting model Sheffield Henderson is a simple prop stand.

2¾ H.P. MODEL.—70×76 mm. (292 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick starter; chain and belt drive; 26×2¼in. tyres. Price, solo £62.

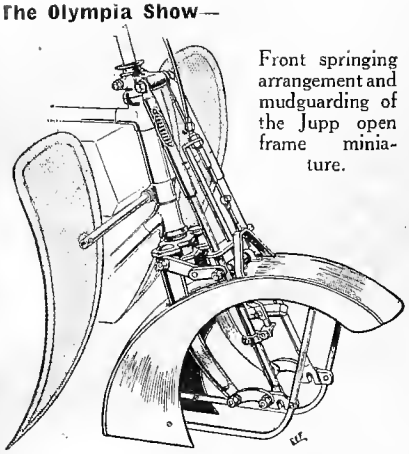
This machine is practically identical with the model to which we have previously referred, except that a new type M-L magneto is fitted, a Brown and Barlow carburetter, and a standard 292 c.c. J. A. P. engine. A single-geared Villiers two-stroke is also listed at £42.



The novel Unibus in its latest form.

The Kenilworth miniature with overhead valve four-stroke engine.

The Olympia Show—



Front springing arrangement and mudguarding of the Jupp open frame miniature.

JUPP. (136a.)

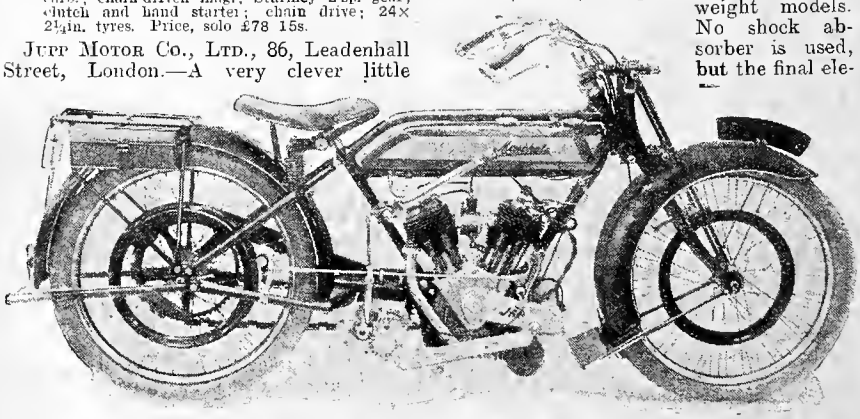
2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; petroil lubrication; Cox or Mills carb.; chain-driven mag.; Sturmey 2-sp. gear; clutch and hand starter; chain drive; 24×2¼in. tyres. Price, solo £78 15s.

JUPP MOTOR CO., LTD., 86, Leadenhall Street, London.—A very clever little open frame machine is the Liberty-engined Jupp. A bucket seat is provided for the rider, and this is sprung together with the rear end of the long aluminium-covered footrests. The engine is carried low down, and with the gear box and transmission is entirely shielded, so that it is impossible for the rider's coat or skirt to be soiled by contact. The rear wheel also is enclosed for half its diameter, and a very wide guard is fitted round the Brampton front forks. Instead of a kick-starter an ingenious form of hand starter is supplied, and an internal expanding brake is fitted to the rear wheel. Leg shields are also standard fittings. Three models of this ingenious and beautifully protected little machine are shown, two being single-seated, while the third has a bucket seat mounted on coil springs fixed to the carrier by a simple and quickly detachable mounting. Amongst a number of unorthodox machines the Jupp is one of the most practical and attractive. A prop stand is part of the specification.

MONOPOLE. (122.)

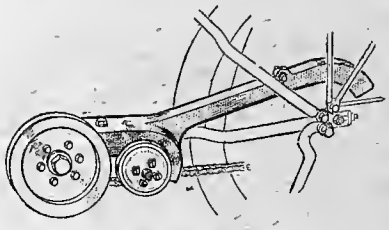
5-6 H.P. MODEL.—70×88 mm. (696 c.c.); V twin-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; M-L chain-driven mag.; Sturmey-Archer 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres.

MONOPOLE CYCLE CO., LTD., Coventry.—This machine is in the medium twin category, and should be satisfactory both as a solo mount or for light sidecar work with an attachment such as that shown with it on the stand. A heavier specification characterises this machine, and it has wider (domed) mudguards than the light-weight models. No shock absorber is used, but the final element of the transmission is the Brampton spring chain which, in conjunction with the even torque of the comparatively small twin-cylinder engine, should give a smooth drive. Brampton forks are fitted, and dummy belt drum brakes are applied to both wheels. A practical feature on the front forks is the provision of two stops which prevent them damaging the nose of the tank when swung over at full lock.



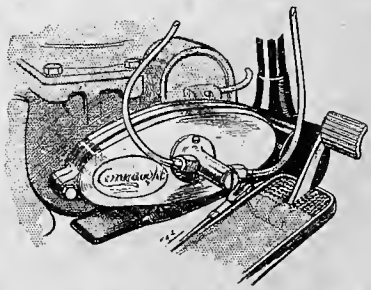
One of the Monopole range—the 5-6 h.p. dual-purpose mount—with J.A.P. engine and three-speed Sturmey-Archer gear.

2¼ H.P. MODEL.—64.5×76 mm. (248 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; C.A.V. chain-driven mag.; Sturmey-Archer 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres.



A one piece aluminium transmission cover of neat design on the Connaught sports model.

This exhibit contains two single-cylinder machines built up of standard components; the transmission is by chain and belt. The front brake is of the rim variety, and there is a back brake acting on the back of the belt drum. Aluminium foot plates are used, and the machines, which are finished in a dark shade of green, appear to be carefully built up, without any effort at departures from standard practice. There is also a single-speed model with Villiers engine and flywheel magneto.

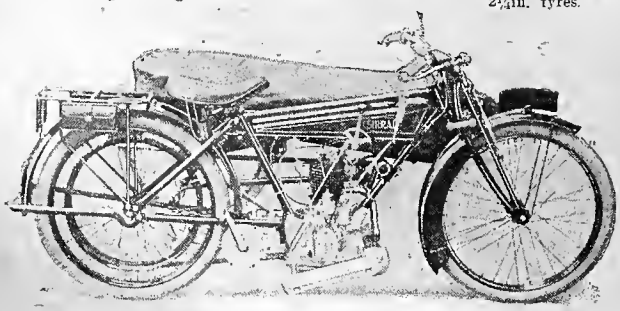


On the Connaught 3½ h.p. sidecar outfit the Showell pump is fitted, driven from an intermediate sprocket in the magneto drive. Observe, too, the brake pedal neatly let into the footboards.

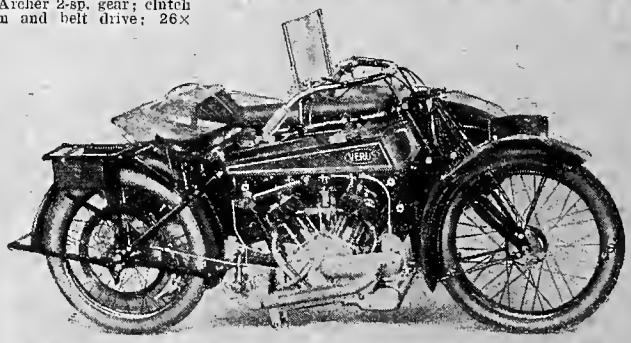
CONNAUGHT. (98.)

3½ H.P. MODEL.—370 c.c.; single-cyl. two-stroke; Showell mechanical and petroil lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Prices: Solo £75, with sidecar £95.

BORDESLEY ENG. CO., LTD., New Bond Street, Birmingham.—An interesting lightweight sidecar outfit is a new 3½ h.p. Connaught (370 c.c.), all-chain, three-speed Burman, clutch, and kick-starter model. Both brakes operate on a special rear wheel drum. Lubrication is by petroil assisted by a visible pump feed. The same machine fitted with T.T. bars

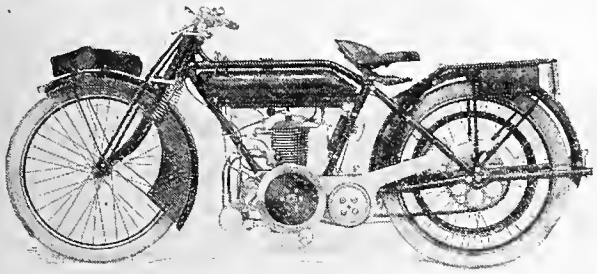


A sporting sidecar outfit of light weight is the 2½ h.p. two-stroke Sirrah. Incidentally its sponsors claim for it the unique distinction of being the lowest-priced passenger machine in the Show.

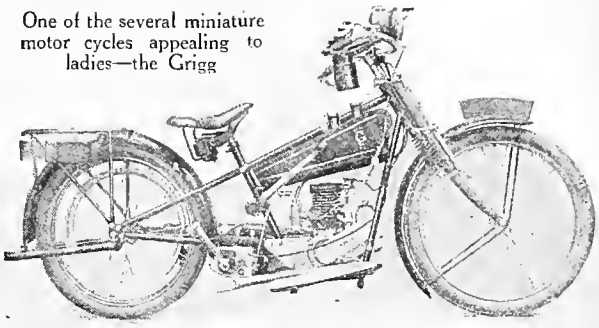


The Verus de Luxe twin-cylinder sidecar outfit. The power unit is a 5-6 h.p. Blackburne, the gear box a Sturmey-Archer, and the chains are entirely enclosed.

The Olympia Show—



The new chain-driven 370 c.c. Connaught which is supplied with or without a sidecar.



One of the several miniature motor cycles appealing to ladies—the Grigg

and footrests is on exhibition as a solo mount. In this case the gear ratios are higher.

2¾ H.P. MODEL.—73×70 mm. (293 c.c.); single-cyl. two-stroke; petroil lubrication; carb. to order; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 24×2¼in. tyres. Prices: Solo £57 10s., 26in. wheels £2 10s. extra.

The smaller 293 c.c. model is priced at £45. It has 24in. wheels and a direct belt drive. On this year's models, the magneto control rod passes through the tank instead of being externally attached. The makers claim that a special point of the lightweight engine is its petrol consumption, which can be fairly estimated at considerably over 100 m.p.g. The same machine fitted with Burman two-speed gear box, but without clutch and kick-starter, is listed at £57 10s.

On the Connaught stand is an interesting working model cut away to reveal its interior. By an ingenious arrangement of small electric lamps, the stages of ignition, induction, and exhaust are clearly illustrated. On this year's Connaught models both brakes operate on a rear wheel drum.

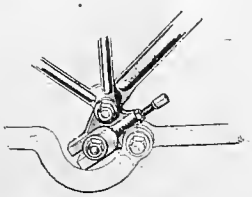
JAMES. (104.)

4½ H.P. MODEL.—86×103 mm. (598 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Senspray carb.; M-L gear-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres.

JAMES CYCLE CO., LTD., Greet, Birmingham.—Pride of place on the James stand must be given to the big single-cylinder model which has been before the public for so many years, following the same general lines with minor improvements from time to time. The engine has been improved in detail; the tappet guides are retained by a double dog held with one nut, and there is a decompressor operated by a small lever on the timing case. The engine generally is neat and the whole appearance is clean and simple. Transmission is by chain throughout, the rear element being of the Brampton spring variety covered by a light guard. This model is shown both with touring and tradesman's delivery sidecar.

7 H.P. MODEL.—73×89.5 mm. (749 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Cox-Atmos carb.; Magdyno chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres.

This model closely follows the lines of the above-described 4½ h.p. model, but the V twin engine has completely enclosed valves and the clutch control is duplicated for hand or foot operation. Detachable and interchangeable wheels are fitted, and an extremely rigid chassis is a feature of the sidecar attached. The mounting of the sidecar mudguard is excellent, as it is carried on an extension of the bearer bar of the body. Leg guards are fitted on the machine.



Chain adjustment on the sports model James.

3½ H.P. MODEL.—64×77 mm. (496 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Cox-Atmos carb.; Lucas chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres.

There are not a large number of small V twin sports models at Olympia, but the 3½ h.p. James certainly takes a high position amongst them. As staged, it is to all intents and purposes a replica of the T.T. and Grand Prix models, and should have no difficulty in attaining 60 m.p.h. As on the large twin, the Cox carburetter is fitted vertically above the induction pipe, and the gear box is movable by a draw bolt device to facilitate chain adjustments. This model has light mudguards and footrests, wide, flat bars, and general "sports" specification.

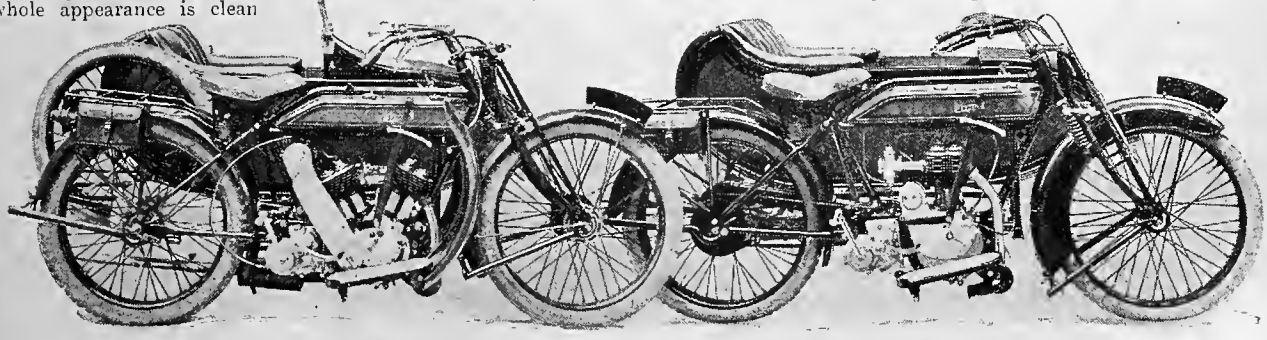
2¼ H.P. MODEL.—66×70 mm. (239 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; M-L chain-driven mag.; double chain 2-sp. gear; chain and belt drive; 26×2¼in. tyres.

In essentials the 2¼ h.p. two-stroke James remains unaltered; points worthy of notice are the triple-branched oil pipe leading to the piston and both main bearings, and the relief pipe from the compression release, which discharges below the engine. A model is listed with an ordinary two-speed gear box and all-chain drive.

GRIGG. (19.)

1¾ H.P. MODEL.—57×63 mm. (161 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; Sturmey-Archer 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 24×2in. tyres.

GRIGG MOTOR AND ENGINEERING CO., Winchester Road, Twickenham. — For some time now the company exhibiting on this stand has specialised in a scooter, and an illuminating comparison is afforded by the staging side by side of this scooter and a new and very neat miniature motor cycle embodying exactly the same power units. The frame construction is extremely simple and embodies a minimum of costly lugs, joints being welded where possible. A pair of tubes extend straight from the rear axle lug, converging at the steering head, and the front down frame member is also duplex; the chain stays are of the normal pattern and carry a bracket for the Sturmey gear box. Footboards are fitted, and the 24in. wheels keep the machine excellently proportioned and allow a very low riding position. The tiny two-stroke engine bears evidence of careful design; for example, the cylinder ports are bridged so that the piston rings are in no danger of fouling at this point. Single-blade Druid forks are fitted.



Representative of two classes of sidecar outfits—luxury and utility. (Left) The 7 h.p. James, which now has interchangeable wheels. (Right) The big single 4½ h.p. of the same name, which follows less elaborate lines.

The Olympia Show—

HOBART. (62.)

2¾ H.P. MODEL.—70×86 mm. (350 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2¼in. tyres. Prices: All-on solo £89 15s., with sidecar £108.

HOBART CYCLE CO., LTD., Coventry.—A very neat and serviceable little sidecar outfit is shown by this company. It has very full equipment, including a B.T.H. magneto, electric lighting, stands to both wheels, rubber aluminium footboards, with heel plates, and brakes to dummy belt rims on both wheels. The triangulated chassis has an extra diagonal cross stay to the member attached to the down tube of the frame. The body is mounted on semi-elliptic springs.

2½ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £67 15s.

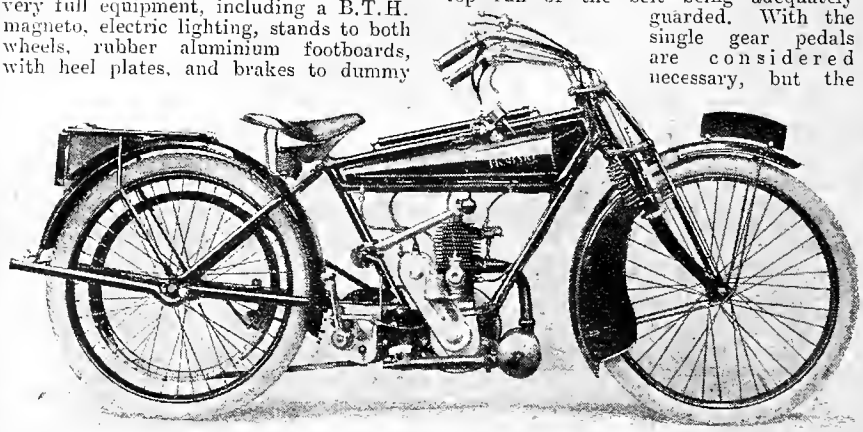
A semi-sports model is provided with the Hobart spring frame, which has four coil springs on each side. These are of different strengths and periodicity and interposed between the hinged back portion and the main frame. It is a very practical touring lightweight. The same machine, with rigid frame, is priced at £63.

2½ H.P. MODEL.—67×70 mm. (247 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £55.

A Hobart-Morris two-stroke engine is used in this case, with chain-cum-belt drive. The equipment is practically the same as the rigid frame model previously referred to. A simplified pattern of this model has the same engine, but is single-geared and costs £42.

1½ H.P. MODEL.—60×60 mm. (169.6 c.c.); single-cyl. two-stroke; petroil lubrication; Amac carb.; gear-driven mag.; direct belt drive; 26×1¾in. tyres. Price, solo £27 6s.

An ultra-light 1½ h.p. Mackenzie model, making its first appearance, has an open frame suitable for either a lady or gentleman. Direct belt drive is adopted, the top run of the belt being adequately guarded. With the single gear pedals are considered necessary, but the machine has a good road performance. We may mention that it is identical with the mount on which W. F. Smith lately completed an A.C.U. officially observed trial from London to Exeter, referred to in another part of this issue. Altogether, the Hobart exhibit is exceptionally comprehensive, representing a miniature show in itself.



Perhaps best known in its spring frame guise, the 2½ h.p. Hobart is quite popular in the simpler form. A Morris two-stroke engine is fitted.

O.K. JUNIOR. (91.)

2½ H.P. MODEL.—70×76 mm. (292 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; Moss 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres. Price, with sidecar £96 12s.

HUMPHRIES AND DAWES, LTD., Hall Green, Birmingham.—Naturally the most interesting model on this stand is the little sidecar outfit which did so well in the A.C.U. Six Days Trial. It is a thoroughly practical little machine—a full touring outfit in miniature. Chain drive, three-speed gear and sidecar with side door and lockers are all items found in the specification of much larger machines.

A solo model with the main essentials of this machine has been added to the range, and, with three-speed gear, chain-cum-belt transmission, sells at £69 6s. £71 8s. is charged for the chain drive model. Very complete is the solo range, which commences with a Villiers engined model selling at thirty-eight guineas.

The next in order is another single-gear mount at forty-three guineas, and has an O.K. 292 c.c. engine or Villiers as desired. With a plain two-speed, this model is fifty-three guineas, fifty-eight guineas with clutch and kick-starter, and sixty-two guineas with three-speed.

SILVER PRINCE. (31.)

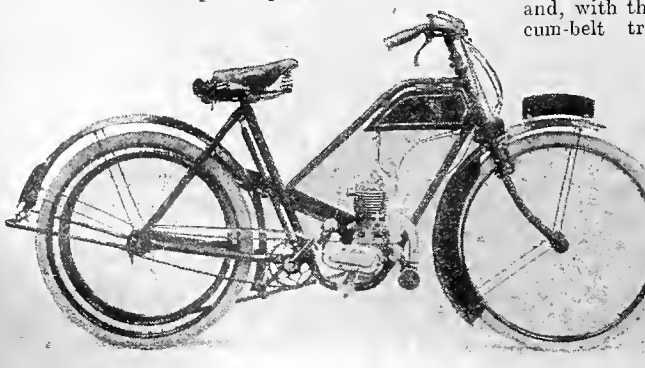
2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl.; two-stroke; mechanical pump lubrication; B. and B. carb.; flywheel mag.; Albion 2-sp. gear, without clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Price, solo £48 6s.

TRYUS CYCLE CO., Birchfields, Birmingham.—Very often when a single-geared lightweight is bought as a first mount, the purchaser desires to widen his range of action after some little experience on the road. A gear box is the obvious solution, but on the great majority of present-day machines to fit one of these is impossible without structural alteration to the bottom bracket, and usually the whole rear frame portion. Recognising this, the designer of the Silver Prince, and its more moderately priced companion machine, the Indian Prince, has made all his models easily convertible. The other point of interest on this stand is the price of the plain two-speed Indian Prince sidecar outfit, viz., £71 8s. The specification of this model is the same as that of the Silver Prince (above), excepting that lubrication is effected by a plain drip-feed and Saxon forks are substituted for Bramptons. On the Villiers-engined Silver Prince, an extension to the usual short exhaust pipe is fitted. Eleven machines are shown in all at prices from £44 2s. to £95 6s.

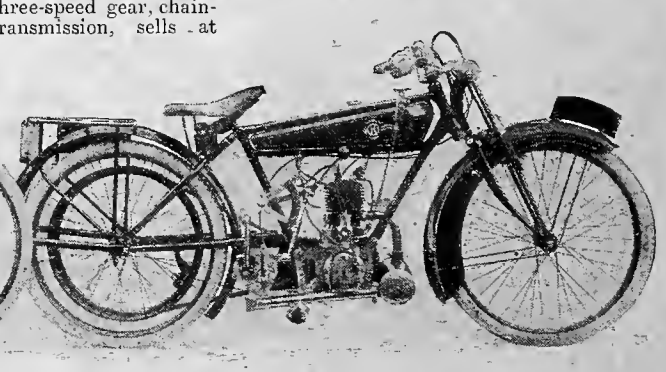
ECONOMIC. (143.)

1½ H.P. MODEL.—52.5×38.5 mm. (165 c.c.); flat twin-cyl. two-stroke; petroil lubrication; Capac carb.; flywheel mag.; chain drive; 26×1¾in. tyres. Price, solo £30.

ECONOMIC MOTORS, LTD., Wells Street, W.1.—An American design, the Economic attachment is now made in Great Britain. It is a flat twin two-stroke fitted with flywheel magneto, designed to be fitted over the rear of a pedal cycle and driven by means of a chain. The price quoted includes the cycle. A large sprocket is clamped round the wheel hub, and is connected to the wheel rim by three



One of the lightest machines in the Show is the 1½ h.p. two-stroke McKenzie, with direct belt drive, which scales 75 lb.



A simple O.K. two-speed two-stroke which has many competition successes to its credit.

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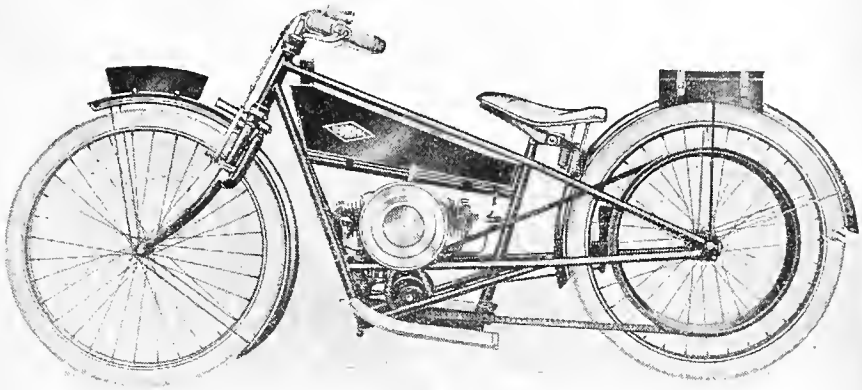
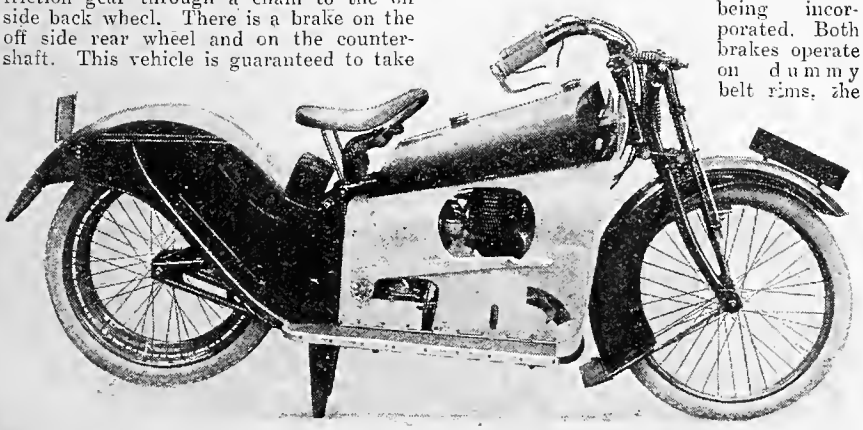
springs. The Economic unit serves a variety of purposes, as is demonstrated by the firm's exhibit, while the flywheel magneto enables any one of the vehicles shown to be electrically lighted. The attachment, complete with pedal cycle but without transmission shock absorber, is sold at £25.

An Economic unit is also fitted in a lightweight motor cycle, which turns the scales at 94 lb. It has a duplex frame, early Indian type forks, chain-cum-belt drive, and tool box and carrier combined over the rear mudguard. A ⅞in. belt is fitted. A two-speed gear can be easily fitted at a small extra cost. Naturally on so small a mount a clutch and kick-starter are not required. Price £34; with two-speed, £37 10s.

The Economic Buckboard is an unconventional three-wheeled runabout seating two persons, the power unit of which is similar to those previously described, but the engines are specially selected and guaranteed to develop about 4 h.p. The unit is fixed to the rear of the frame, and drives by a conventional type of friction gear through a chain to the off side back wheel. There is a brake on the off side rear wheel and on the countershaft. This vehicle is guaranteed to take two passengers at a speed of 30 m.p.h., and climb a single figure gradient with two up. The chassis is composed of ash slats, which also form the springing system. The price is £60.



The Economic miniature is on up-to-date lines, and embodies a tiny flat twin two-stroke engine.



A weatherproof mount—the Hagg, which embodies a unique frame construction concealed by its tank and side panels.

NEW SCALE. (85.)

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2¼in. tyres. Prices: Solo £80, with sidecar £105.

ROBERTS AND HIBBS, Bank Street Works, Droylsden, Manchester.—On standard lines, the New Scale machines are chiefly remarkable for the attractive finish, the colour scheme adopted being a bright cerise. The power unit is the Blackburne, and the transmission is by chain throughout, a three-speed Burman gear box with clutch and kick-starter being incorporated. Both brakes operate on dummy belt rims, the rear brake shoe having a parallel action. A good feature is that the brake pedal, which is arranged to be heel-operated, is suitably inclined, for the driver's foot can easily and naturally slide off the footboard on to the brake pedal. This machine is eminently suitable for use as a dual-purpose mount with a light sidecar. When so used, a four-point chassis attachment is provided, and a roomy body is fitted.

This model may also be obtained as a sporting solo mount with a 2¾ h.p. overhead valve Blackburne engine. In this case no kick-starter is included, and racing bars are fitted.

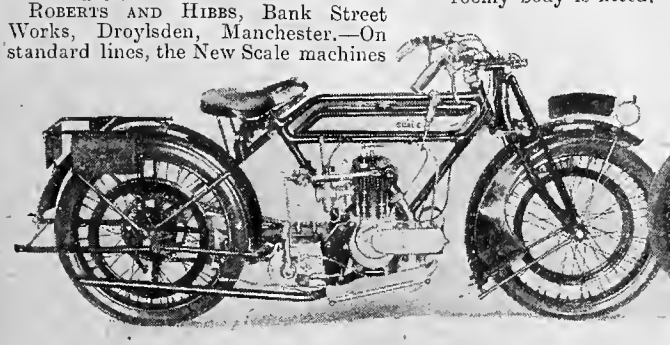
4¼ H.P. MODEL.—85×95 mm. (548 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 650×65 mm. tyres. Prices: Solo £100, with sidecar £133.

The larger New Scale machine is primarily designed for sidecar use, but nevertheless forms an attractive solo mount. In main outline and specification it follows the smaller model, but the new type 4¼ h.p. Blackburne engine is the power unit, and the Sturmey-Archer three-speed gear box is used. A good feature is the fitting of Brampton forks of the size used for 6 h.p. machines. In this case a shock absorber is incorporated in the rear wheel, and broad domed mudguards provide ample protection for the rider. The sidecar is well upholstered and sprung, and ample luggage accommodation is afforded by a locker in the bulbous back. Since the two-stroke has been discontinued, only four-stroke New Scale machines are marketed.

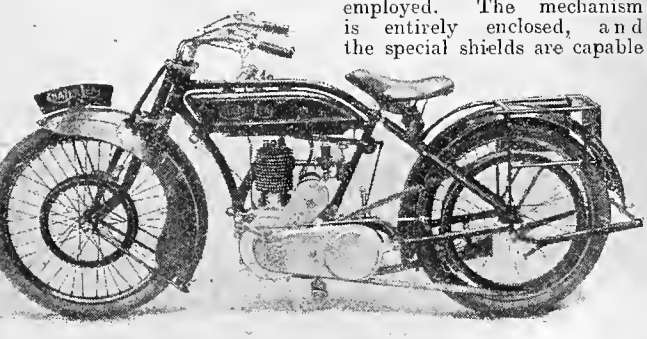
HAGG. (3b.)

3½ H.P. MODEL.—74×81 mm. (350 c.c.); single-cyl. two-stroke; mechanical lubrication; Cox-Atmos carb.; chain-driven mag.; 2-sp. gear; clutch and hand starter; chain-cum-belt drive; 26×2½in. tyres. Price, solo £95.

THE HAGG TANDEM MOTOR CYCLE CO., Park Street, near St. Albans.—An unconventional machine of quite original design, provided with a spring frame in which a single multi-leaf spring is employed. The mechanism is entirely enclosed, and the special shields are capable



The 4¼ h.p. three-speed chain-driven New Scale—a dual purpose mount.



One of the new models at the Show is the single-cylinder Chater-Lea chain and belt driven machine illustrated. It has a 4 h.p. engine.

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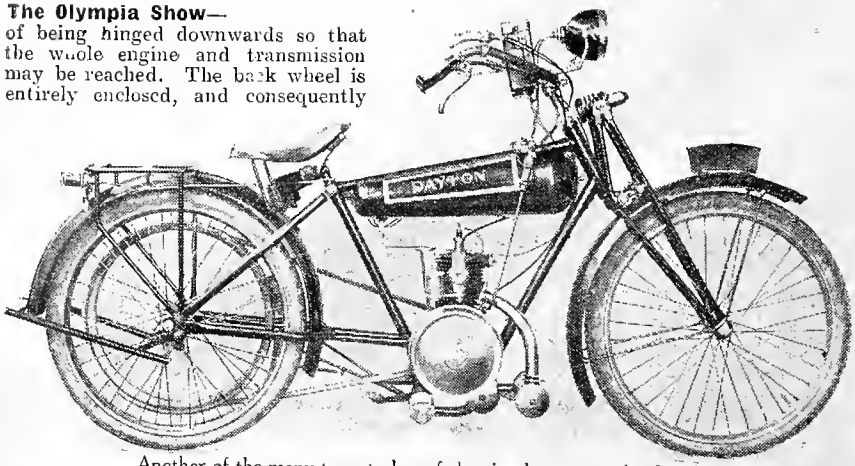
of being hinged downwards so that the whole engine and transmission may be reached. The back wheel is entirely enclosed, and consequently the rider is kept clean. There is a sloping saddle tank, and a quickly detachable and adjustable seat is provided, so that the machine may be used either solo or with an extra passenger at the rear. A hand starter is provided. The main frame is remarkable for its simplicity, consisting as it does of two main tubes and a number of steel pressings.



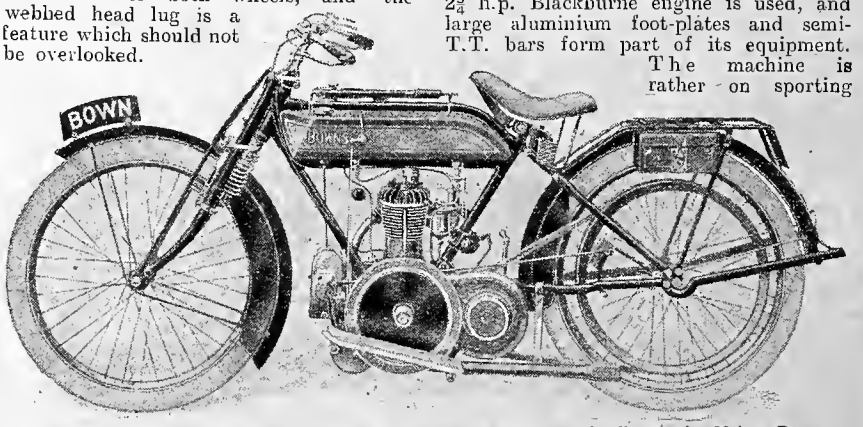
Another of the many two-strokes of the simplest type—the Dayton

DUNELT. (136.)

4 H.P. MODEL.—85×88 mm. (500 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; M-L chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Prices: Solo £86 2s., with sidecar £110 5s.

DUNFORD AND ELLIOTT (SHEFFIELD), LTD., Bath Street, Birmingham.—Unique in so far as it is the only 500 c.c. single-cylinder two-stroke on the British market, the Dunelt has nevertheless made good both in competition work and in the hands of private owners. A piston of two diameters is fitted, the larger portion being utilised to obtain a full crank case charge. With its sloping tank rails and special spring fork, the Dunelt has an imposing appearance, and that it is practical in every way we can state after prolonged experience. Very little change has taken place for 1922, but the footboards have been improved as regards comfort, a longer brake pedal is fitted, and for a small additional charge 28×3in. tyres may be obtained. Both wheels of the cycle and that of the sidecar are quickly detachable and interchangeable, and provision for carrying a spare wheel is made at the rear of the capacious sidecar.

The exhibit comprises two solo and three sidecar machines, one of the latter being fitted with a float body capable of holding two milk cans or small livestock. Belt rim brakes of the wedge pattern are fitted to both wheels, and the webbed head lug is a feature which should not be overlooked.

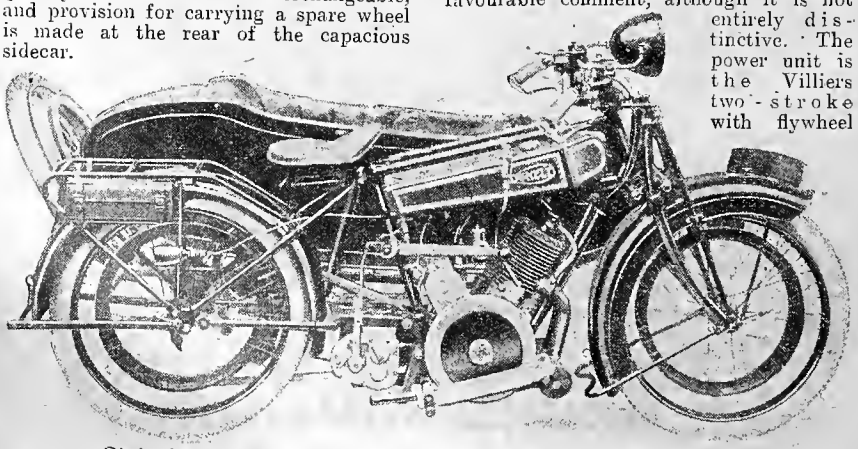


A Blackburne engined mediumweight, with comparatively short wheelbase—the 2¾ h.p. Bown.

DAYTON. (92.)

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; belt drive; 26×2¼in. tyres.

CHAS. DAY MFG. CO., LTD., 221, High Street Shoreditch, E.C.1.—As a simple lightweight, the Dayton attracts much favourable comment, although it is not entirely distinctive. The power unit is the Villiers two-stroke with flywheel magneto, mounted in a simple frame having substantially webbed lugs for the head. To these lugs is bolted a pressed steel tank of circular section tapering from front to rear. The lubrication system is ingenious, as air pressure in the oil tank forces lubricant through a visible drip-feed to the crank case. Both brakes operate on the rear wheel belt drum through a heel pedal on each footrest. This machine is available with a simple direct belt drive, with an engine-shaft clutch, or a Sturmey-Archer two-speed gear and kick-starter. Another interesting exhibit is a three-wheel single-seater with three-speed gear box and chain-cum-belt drive, the power unit being the 4 h.p. Blackburne engine. Wheel steering is employed.



Distinctive as the biggest two-stroke single at Olympia—the 4 h.p. Dunelt.

BOWN. (122.)

2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; Sturmey 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres.

BOWNS, LTD., Æolus Works, Summer Lane, Birmingham.—A well fitted mediumweight solo mount conforming in most respects with usual practice. A 2¾ h.p. Blackburne engine is used, and large aluminium foot-plates and semi-T.T. bars form part of its equipment. The machine is rather on sporting lines, being provided with straight-through exhaust. Transmission is by chain and belt through a Sturmey-Archer three-speed box.

A similar machine is fitted with the 293 c.c. J.A.P. engine, and is finished in chocolate and fawn with gold lining. This machine belongs to the middle-weight order, and is fitted with an Albion two-speed gear. The mudguards are of sensible dimensions, the rear guard being cut away to admit the belt. The clutch is handle-bar-controlled, and the M-L magneto by a tank lever.

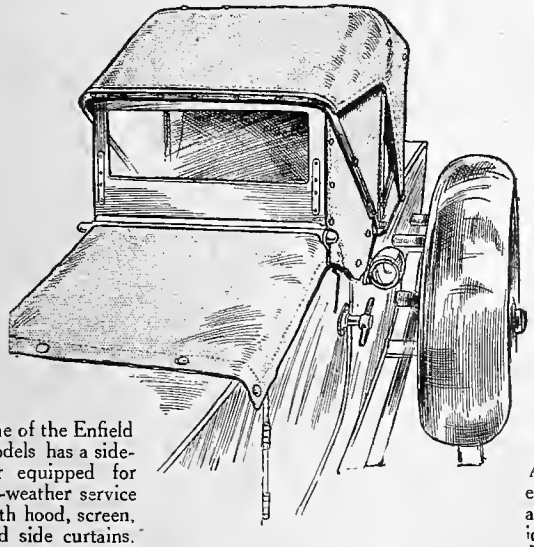
2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; flywheel mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres.

This model is in most respects identical to the Blackburne model, except that the employment of a smaller unit renders possible a general reduction in weight. The sparking plug, occupying a position in the cylinder-head, has necessitated a rather unusual design of frame tube, which is divided in order to accommodate the necessary component. The chain is shielded by means of a sheet steel case.

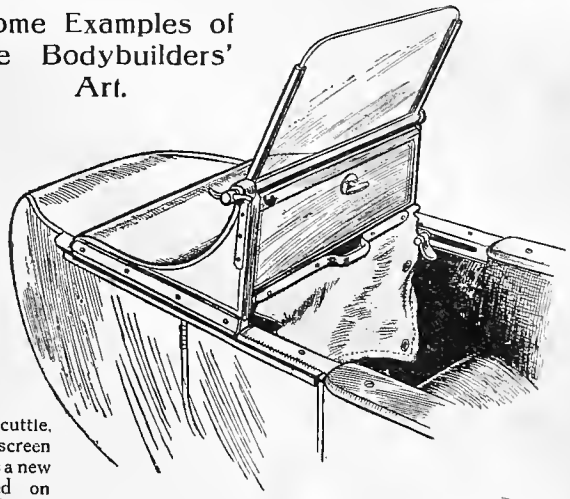
Fitted with the same engine, the Bownian is a graceful little machine

REFINEMENT IN SIDECAR COACHWORK.

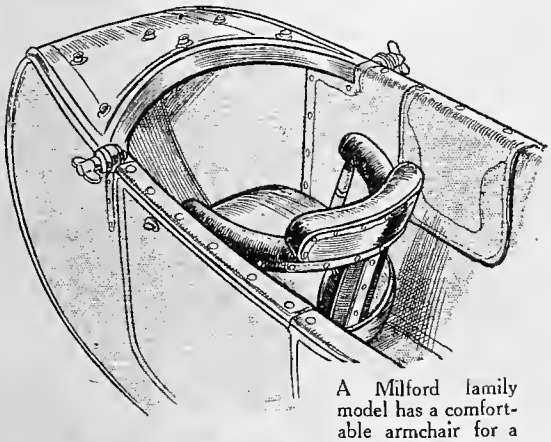
Some Examples of the Bodybuilders' Art.



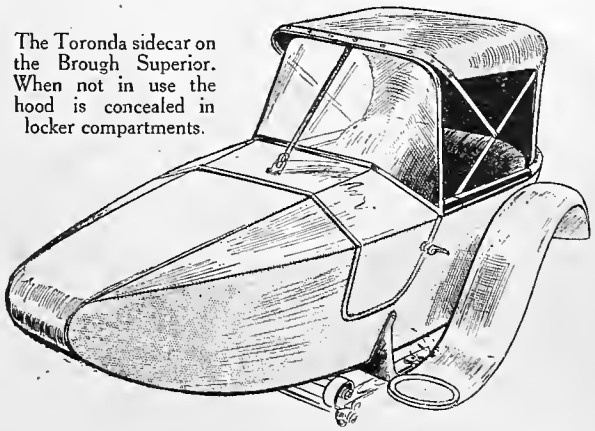
One of the Enfield models has a sidecar equipped for all-weather service with hood, screen, and side curtains.



A sliding scuttle, embodying a screen and locker, is a new idea adopted on Douglas sidecars.

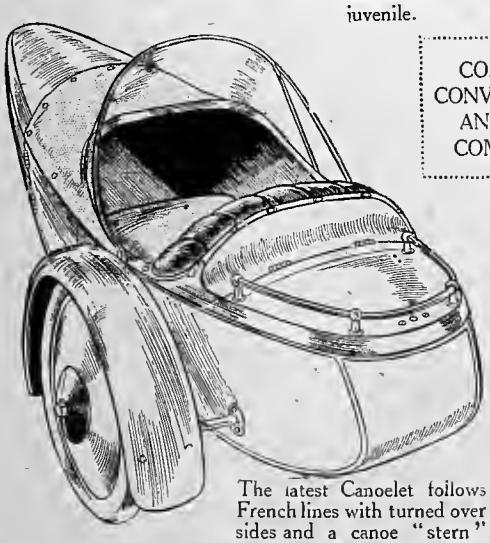


A Milford family model has a comfortable armchair for a juvenile.

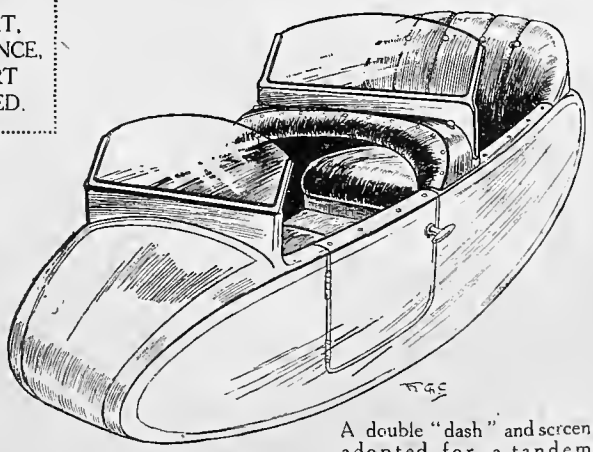


The Toronda sidecar on the Brough Superior. When not in use the hood is concealed in locker compartments.

COMFORT, CONVENIENCE, AND ART COMBINED.



The latest Canoelet follows French lines with turned over sides and a canoe "stern" with deck rail.



A double "dash" and screen adopted for a tandem seater attached to a Beardmore-Precision.

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finished in chocolate and gold; a torpedo tank is slung from the top tube of the simple diamond frame. The method of tank fixing is rather unusual, as it is bolted into the frame by means of extension lugs protruding from the ends of the seamless welding. The model on exhibition is fitted with Villiers flywheel lighting set and handle-bar clutch; both brakes operate on the rear wheel.

SANDUM SIDECARS. (129.)

SANDHAM ENGINEERING CO., LTD., 336, Gray's Inn Road, W.C.1.—Finely finished coachwork is only one of the features of the Sandum display of sidecars, for the chassis construction in every case is sound and along well-tried lines. All the heavier models have the wheel supported by an enclosing member of the chassis, and only the comparatively light and cheap models employ stub axles.

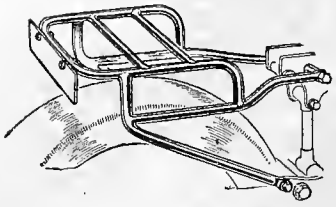
Dealing with the exhibits in particular, the model attracting most attention is the new double-seater, whereon a side-by-side body is accommodated on a chassis of normal width; this is done by arranging a foot well between the longitudinal chassis members, while the seat portion is allowed a certain amount of overhang. There are also tandem two-seated models, and in the lighter class an attractive semi-sporting type having a nicely rounded front panel and pointed tail. Another item attracting great attention is the Sandum-Easting windscreen, a V fronted celluloid panel, extended to form side shields and connected to the bodywork by an apron. Sliding and swivelling fixings (slotted plates on studs) give an enormous range of positions.

HUGHES SIDECARS. (116.)

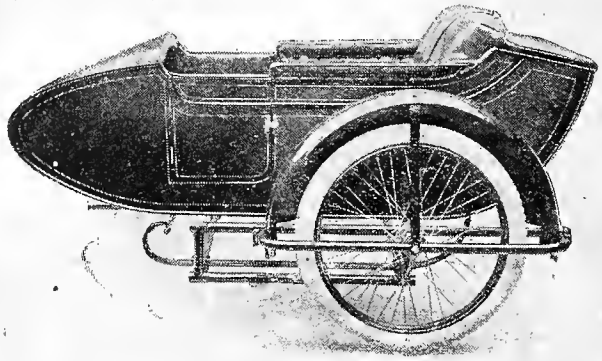
THOMAS HUGHES AND SONS, Baker Street, Sparkhill, Birmingham.—As proprietary sidecars, the Hughes products make their first public appearance at the Show, and are quite up to the standards by which even the most familiar attachments in the sidecar world are judged. A large variety of models is shown, from lightweights up to the heavy and luxurious equipages suited by their duplex chassis construction to the most powerful and speediest of motor cycles.

Probably the most attractive of these sidecars is the Cruiser *de luxe* model, which has very sporting lines, yet has such refinements as hinged dash with aero type windscreen, side door, and a cast aluminium step mounted on the side members of the chassis.

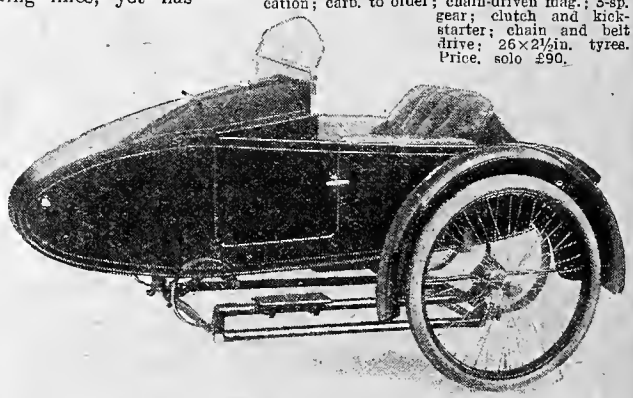
In addition, there is a very light sidecar suitable for use with the smaller sports type of machine.



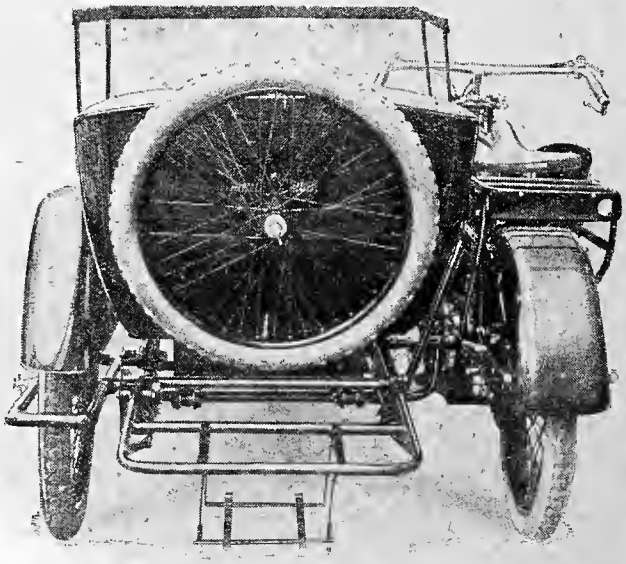
A one-piece carrier, of sturdy construction, on the 8 h.p. Royal Ruby



A Sandum model for use with large and powerful machines. It has a duplex chassis, and there is ample locker accommodation in the body.



The Hughes Cruiser model: a luxurious touring sidecar on sporting lines.



A side-by-side double-seated sidecar on the 8 h.p. Royal Ruby. The wide rear guard will be appreciated

ROYAL RUBY. (101.)

2¾ H.P. MODEL.—74.5×80 mm. (349 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain and belt drive; 26×2¼in. tyres. Prices: Solo £70, with side car £95.

RUBY CYCLE CO., LTD., Altrincham, near Manchester.—Their patented system of springing is the chief feature which characterises the exhibits of the Royal Ruby firm, but not the least interesting model has a rigid frame, the laminated leaf spring system being employed only for the front wheel. A substantial aluminium chain case takes the place of last year's sheet steel case. The same mount, fitted with a three-speed gear box, is exhibited as a sporting sidecar outfit, and is listed at £95.

3 H.P. MODEL.—74.5×86 mm. (375 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; carb. to order; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price, solo £90.

This machine is sprung fore and aft, and is fitted with various refinements, including adjustable foot-plates. The Royal Ruby system of springing provides for adjustment of the spring tension to suit any given load. A machine following the same lines, but having a rigid frame, is exhibited as a sidecar outfit, priced at £105.

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; carb. to order; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, with sidecar £185.

The standard sidecar outfit departs from the remaining exhibits in that the gear box and engine are not made by the Ruby Cycle Co. It is fitted with a Sturmey-Archer gear box and 8 h.p. J.A.P. engine. It is a luxurious machine, and is provided with ample locker space for luggage. All three wheels are sprung, car type mudguards being used throughout; leg shields and adjustable foot-plates are fitted. The laminated spring suspension of all the wheels is adjustable, and all the sliding shackle pins work in hardened steel housings. With a side-by-side two-seated sidecar of unique and interesting lines in place of the ordinary touring sidecar this machine is listed at £197.

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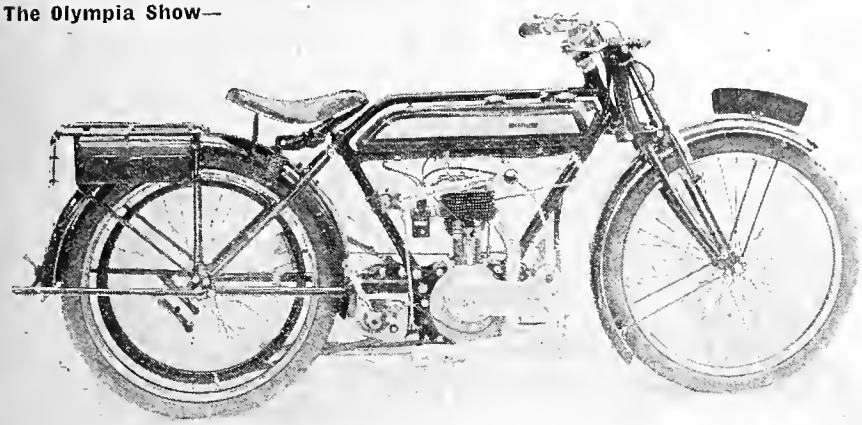


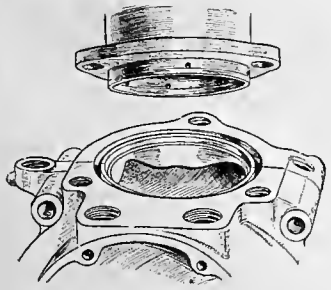
Of symmetrical and sturdy appearance, the 350 c.c. Mohawk, fitted with J.A.P. engine and Sturmey-Archer two-speed gear.

MOHAWK. (105.)

2¾ H.P. MODEL.—70×90 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres.

MOHAWK CYCLE CO., LTD., 2-6, Alexandra Road, Hornsey, N.—Attractively finished in green and yellow, with gold lining, the Mohawk exhibits present a pleasing appearance. In this model the J.A.P. engine is fitted with an unusually large cast aluminium silencer, and a Sturmey-Archer gear box is employed. The machine is provided with large aluminium footplates and mudguards of car type.

An identical mount, fitted with a 293 c.c. J.A.P. engine, is staged as an alternative model.



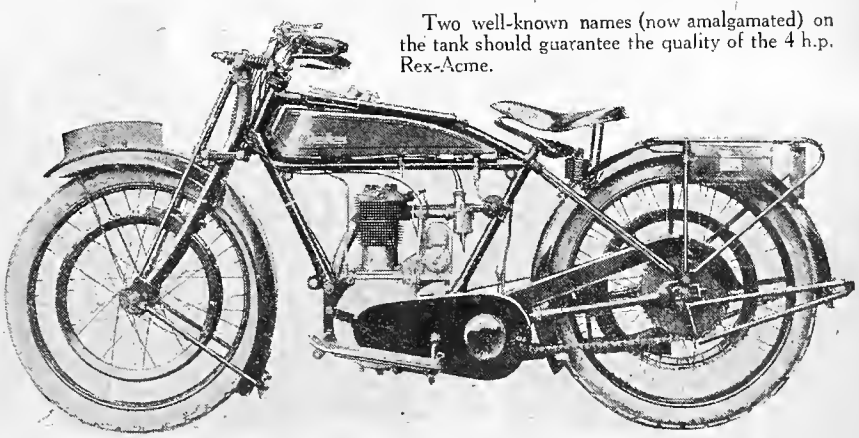
On the C.A.M. engine oil is led to a well surrounding the cylinder spigot, whence it overflows to the piston through holes in the cylinder wall.

In most details a Villiers model is similar to that just described. It is, however, of lighter construction, having a simple diamond frame, from the slanting top tube of which the tank is suspended.

3½ H.P. MODEL.—85×88 mm. (499 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres.

This is a sturdily-constructed machine, and the exhibition model is fitted with a commercial side carrier. The engine is an Abingdon, and an interesting feature is that both brakes operate on the rear wheel. These are actuated by the right and left feet of the rider, one being of the external contracting type and the other being an internal wedge. Wide mudguard valances and a Sturmey-Archer gear box are fitted.

A sidecar model is shown fitted with a 5-6 h.p. J.A.P. twin-cylinder engine.



Two well-known names (now amalgamated) on the tank should guarantee the quality of the 4 h.p. Rex-Acme.

The Brampton spring link chain is partially enclosed. Wide car type mudguards are used, and both brakes are of the wedge block type.

REX-ACME. (61.)

2½ H.P. MODEL. — 67 × 70 mm. (247 c.c.); single-cyl. two-stroke; drip feed lubrication; Amac carb.; chain-driven mag.; 2-speed gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £55.

REX MOTOR MFG. CO., LTD., Earlsdon, Coventry. — A new model Rex-Acme is a two-stroke lightweight of sound design, embodying the Morris engine, Druid pattern forks, a heel-operated brake, and a magneto neatly stowed away behind the cylinder. It is well mudguarded and has pleasing lines. The same pattern machine may be obtained, without clutch and kick-starter, for £50, and, with single gear, at £42.

2¾ H.P. MODEL.—70×76 mm. (293 c.c.); single-cyl. four-stroke; side-by-side valves; pump-cum-drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo £63.

Of similar design to the two-stroke is a J.A.P. engine model as above. Its all-black finish gives it a very smart appearance, and the silencing arrangements are well carried out. The same model can be had with three-speed gear, price £65 10s.

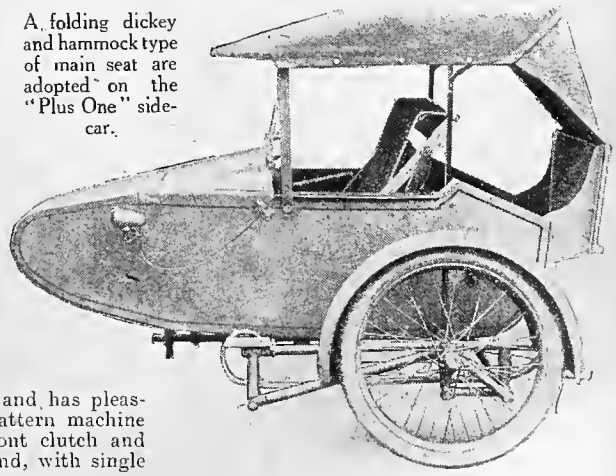
2¾ H.P. MODEL.—71×88 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Prices: Solo £69 15s., with sidecar £88.

This closely resembles the Rex-Acme just described, but is equipped with the Blackburne engine and Brampton forks.

In a more elaborate form, with all-chain drive and a three-speed gear, this model is priced at £77 5s., or, with a light sidecar, at £95 10s.

4 H.P. MODEL.—85×95 mm. (550 c.c.); single-cyl. four-stroke; side-by-side valves; pump and drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 26×2½in. tyres. Prices: Solo £110, with sidecar £135.

The 4 h.p. Rex-Acme has a sloping curved top tube giving a very pleasing appearance, very wide and well valanced mudguards, and dummy belt rim brakes on both wheels. It is shown with a comfortable sidecar attached, the body being suspended on long semi-elliptic springs.



A folding dickey and hammock type of main seat are adopted on the "Plus One" sidecar.

The Olympia Show—

A similar model to the above is fitted with a C.A.M. engine, which has an exceptionally heavily ribbed exhaust port. In all other respects it resembles the model to which we have previously referred. The Coventry-built C.A.M. engine is one of the features of the Show, and has a detachable head.

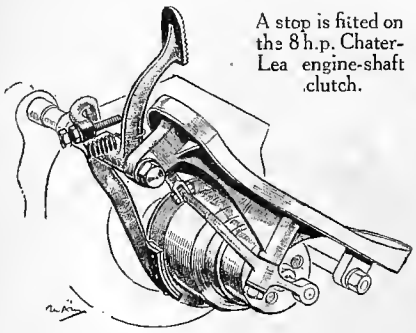
8 H.P. MODEL.—85.5×85 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; pump-cum-drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 28×3in. tyres. Price, with sidecar £150, spare wheel £7 5s. extra.

A powerful sidecar outfit intended for heavy work, and capable of going anywhere. It has all-black finish, cast aluminium cover for the front chain, and a chain guard of the same material. The mudguarding is particularly efficient, the rear mudguards being of great width. A comfortable sidecar is provided, at the back of which is a luggage platform, and at the rear of the platform the spare wheel is fixed.

CHATER-LEA. (103.)

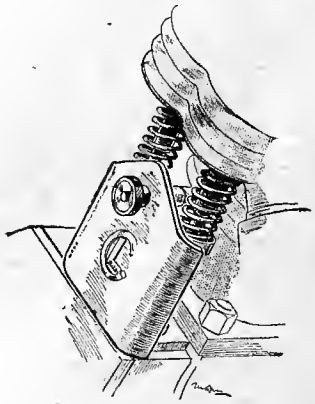
8 H.P. MODEL.—85.5×85 mm. (986 c.c.); twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; all-chain drive; 700×80 mm. tyres. Price, with sidecar £147.

CHATER-LEA, LTD., 74-84, Banner Street, E.C.1.—There are practically no alterations in this year's 8 h.p. models.



A stop is fitted on the 8 h.p. Chater-Lea engine-shaft clutch.

Sturdiness of construction is the chief feature of the outfit, and with its gold and black finish it at once attracts the eye. In the *de luxe* model the seat pillar is sprung, and the Lucas Magdyno is employed. Chater-Lea knock-out wheel spindles are used all round, and the spare wheel is mounted between the cycle and sidecar. Fully equipped with electric lighting set, sidecar screen, two-seater sidecars, and four wheels (all interchangeable), the price is £199.



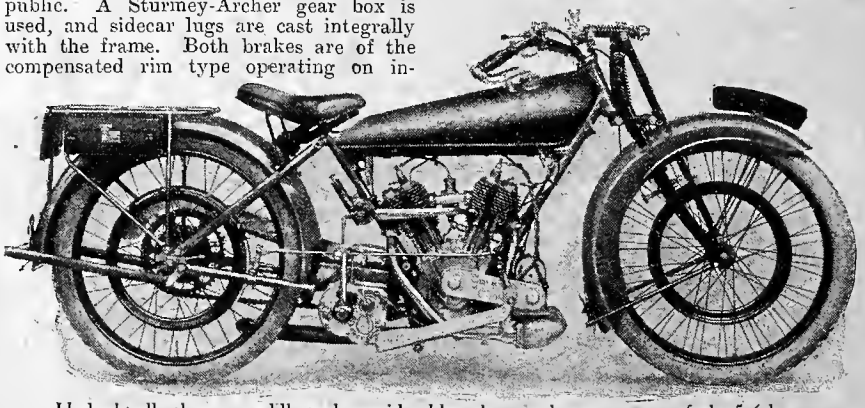
To allow adequate cooling of the valves, the tappet guard on the 8 h.p Chater-Lea is now curtailed slightly.

4 H.P. MODEL.—85.5×85 mm. (493 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; B. and B. carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres. Price, solo £105.

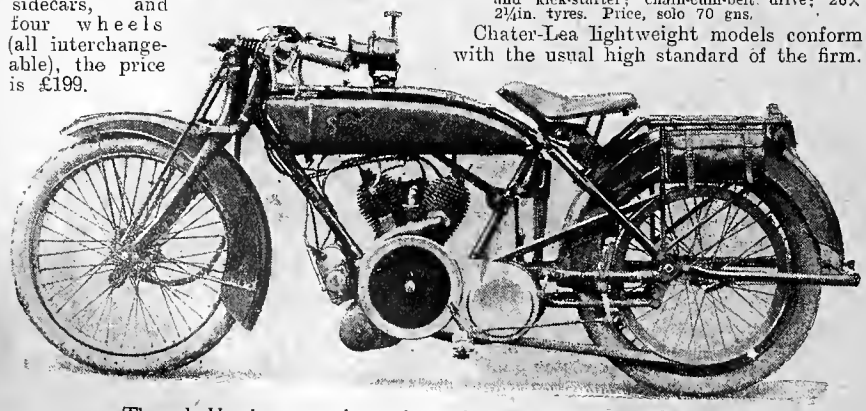
This is a sturdily constructed single-cylinder machine, which will be of interest to those who specially appreciate durability. The engine is made by the Chater-Lea firm, and this is its *début* to the public. A Sturmey-Archer gear box is used, and sidecar lugs are cast integrally with the frame. Both brakes are of the compensated rim type operating on independent drums, and the magneto and main drive are both taken direct from the crankshaft.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; drip feed lubrication; B. and B. carb.; chain-driven mag.; 2-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2¼in. tyres. Price, solo 70 gns.

Chater-Lea lightweight models conform with the usual high standard of the firm.



Undoubtedly the new saddle tank considerably enhances the appearance of the 5-6 h.p. Coventry Eagle—one of a fine range.



The only V twin two-stroke on the market—the spring frame Stanger.

The *de luxe* model, which is specified above, is fitted with Chater-Lea engine, one notable feature of which is the extension of cooling fins almost to the base of the cylinder. The gear operation is through a delay action mechanism, which ensures immediate engagement.

Greater resiliency has been obtained in the spring forks by the employment of two tension springs in place of the original single double-acting spring. An intermediate model, which conforms with the preceding in every respect, except that no kick-starter is provided, is listed at sixty-four guineas. A popular model at fifty guineas is fitted with a Villiers engine and Chater-Lea two-speed gear box, without clutch and kick-starter. In this latter the original system of front fork springing is retained.

STANGER. (137.)

5 H.P. MODEL.—70×70 mm. (538 c.c.); V twin-cyl. two-stroke; drip feed lubrication; Vici carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain-cum-belt drive; 26×2½in. tyres. Prices: Solo £110, with sidecar £140.

STANGER ENGINE CO., 13, Steele Road, Tottenham, N.17.—An exceedingly interesting proposition, the Stanger is the only V twin two-stroke on the market, and is conspicuous by being designed so that the cylinders fire at an interval of 180°. The engine is shown in section, and is worthy of careful study as it is full of attractive points. An improvement which has been introduced since we last saw this engine is the fitting of gauzes to the transfer ports. The silencer is of large dimensions, of cast aluminium, and divided into two chambers. The whole engine has been most carefully thought out, and the lubrication is highly effective. The frame has extremely pleasing lines, and the springing employed is of the laminated leaf variety controlling bell cranks which carry the axle. The machine is shown fitted with a sidecar for the first time. A rigid frame model is listed at £105 solo, £135 sidecar.

DOT. (30.)

2¾ H.P. MODEL.—70×90 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2⅜in. tyres. Price, solo £100.

DOT MOTORS, Arundel St., Hulme, Manchester.—The outstanding exhibit of Dot motors is a duplex spring-framed single-cylinder machine of 2¾ h.p., having all-

The Olympia Show—

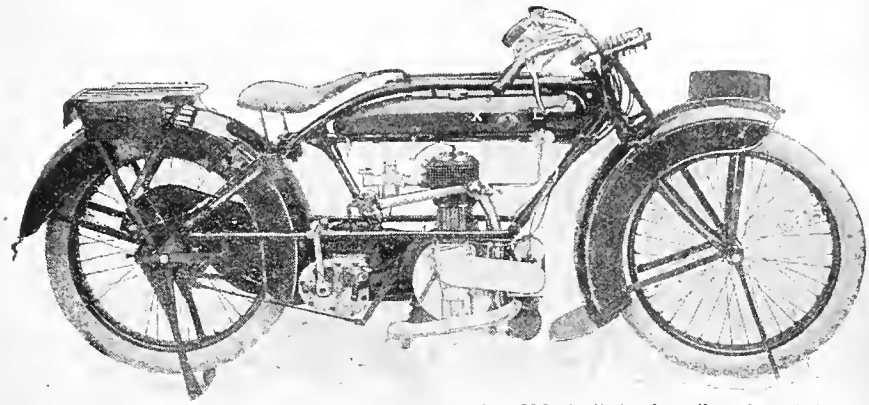
chain drive through a three-speed gear box. Very unusual construction is followed in the frame, which consists of a main duplex member and a quadrilateral after member hinged on ball bearings below the gear box: coil springs are introduced between these two members at the position of the seat lug. The saddle, however, is supported on long leaf springs, which are auxiliary to the coil springs.

8 H.P. MODEL.—85.5×85 mm. (986 c.c.); V twin-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 28×3in. tyres. Price, solo £150.

This machine is another of the increasingly popular big twin sports models equipped with one of the new J.A.P. engines, which are deservedly embodied in many attractive layouts. The designer of the Dot machines has had great experience in the production of high-powered solo mounts, and the machine exhibited is well up to his usual standard.

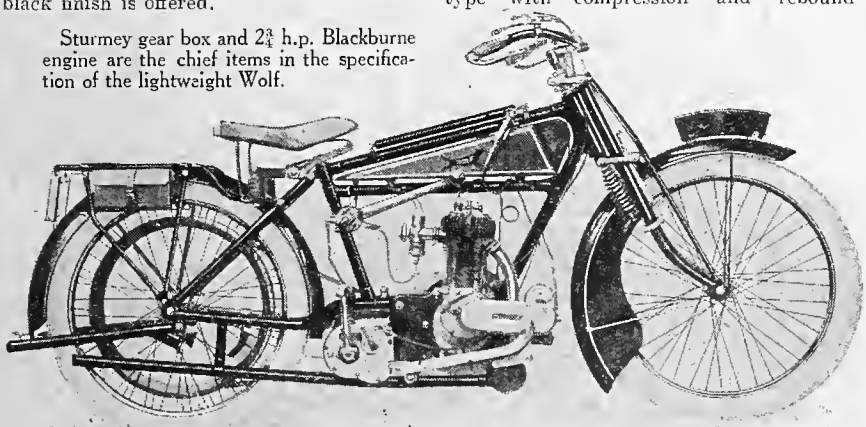
2¾ H.P. MODEL.—70×90 mm. (348 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch, without kick-starter; 26×2¼in. tyres. Price, solo £90.

Rigid framed lightweight machines under the Dot sign are staged with the new 350 c.c. J.A.P. engines, and also with the 500 c.c. V twin and the 293 c.c. single-cylinder of the same make. Saxon forks are fitted, and a general sports specification is followed. Either all red or black finish is offered.



In addition to its novel frame construction, the 4 h.p. X.L. is distinctly well mudguarded.

Sturmey gear box and 2¾ h.p. Blackburne engine are the chief items in the specification of the lightweight Wolf.



WOLF. (125.)

4¼ H.P. MODEL.—85×97 mm. (548 c.c.); single-cyl. four-stroke; side-by-side valves; hand pump lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain and belt drive; 26×2½in. tyres. Price, solo £95.

WULFRUNA ENG. CO. (1920), LTD., Wolverhampton.—There are in all seven exhibits on the Wolf stand, differing mainly as regards the power unit fitted. Chain and belt drive is fitted in each case, and the finish is well carried out in black and gold. The model specified above has a Sturmey-Archer gear and C.A.V. magneto. For 1922 Wolf models have wider mudguards and wider forks to admit of this refinement, but beyond this little change has been found necessary. A 4 h.p. J.A.P. engine may be obtained in a machine of similar specification at the price of £92 10s.

Altogether lighter and fitted with a 350 c.c. J.A.P. engine, Burman two-speed gear with clutch and kick-starter, the 2¾ h.p. model resembles its larger brothers in main features; it is, however fitted with 26×2¼in. tyres. This machine may also be fitted with a 2¾ h.p. Blackburne engine, and, at the price of £75, is an attractive proposition.

2½ H.P. MODEL.—70×70 mm. (269 c.c.); single-cyl. two-stroke; pressure lubrication; Amac carb.; flywheel mag.; single speed gear; kick-starter; all-belt drive; 26×2¼in. tyres. Price, solo £39 18s.

A popular model fitted with Villiers engine, a torpedo tank, and direct belt drive. The front fork is of the pivoted type with compression and rebound springs. Both brakes are foot-operated and actuate on the rear wheel. An alternative model turned out with two-speed gear box, footrests, and chain-cum-belt is listed at £60.

WILLOWBROOK SIDECARS. (97.)

WILLOWBROOK MOTOR CO., Leicester.—This Leicester concern has established a reputation for excellent coachwork, and many well-known sidecar outfits have bodies produced by this firm. A very complete range is shown for 1922, including a new lightweight in polished aluminium with a hammock seat, and another on more conventional lines. Both are carried on a simple triangulated chassis, which should be eminently strong, although of light weight. Standard touring models suitable for more powerful machines are also shown, and of considerable interest is the taxi-sidecar attached to an 8 h.p. Rex-Acme. A feature of this chassis is the employment of pressed steel girder side members of great strength. The body is suspended by very long semi-elliptic springs, and altogether the production should be well up to the work for which it is designed. The coachwork in particular is of excellent quality, and provision for luggage is arranged at the rear of the body.

X.L. (3a.)

4 H.P. MODEL.—85.5×85 mm. (498 c.c.); single-cyl. four-stroke; side-by-side valves; drip feed lubrication; Amac carb.; chain-driven mag.; 3-sp. gear; clutch and kick-starter; chain drive; 26×2½in. tyres.

X.L. MOTORS, LTD., 506, Ulster Chambers, 168, Regent Street, W.1.—The chief item of interest concerning the X.L. is the frame, which is somewhat unconventional. It has duplex bottom tubes, which extend from the bottom of the down tube right away to the rear axle, forming the chain stays. Handsome aluminium studded footboards with heel plates are fitted, and mudguards of great width, which are deeply valanced. The hand brake is of the internal expanding type, while the foot brake is of the external pattern, and as ample leverage is provided it should be very powerful. The gear box is mounted on a separate platform, and can be removed by taking away two drawbolts. Pressed steel forks pivoted near the top and fitted with a single coil spring are provided, while the carrier is of pressed steel, and flat steel strips are used for the mudguards. One model shown has attached to it one of the Rideezi sidecars. The weight of the machine solo is 240 lb.

The descriptions of 1922 Models in this issue, as well as the lengthy Illustrated Review of ACCESSORIES, were prepared by *"The Motor Cycle"* staff subsequent to a personal inspection of the Olympia Exhibits.

AMONG THE ACCESSORIES

A Classified Report of the Accessory Exhibits at Olympia, Reviewing the Components and Useful Fittings shown in the Gallery and in the Annexe.

CARBURETTERS.

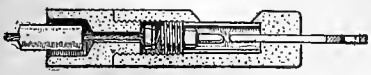
AMAC, LTD., Aston Cross, Birmingham (209).—A special model of interest to riders of American machines is the new Amac carburetter arranged for throttle operation by linking up with existing twist grip control mechanism. The air slide is worked by a separate wire control and the usual Amac handle-bar lever.

SUMNER, VAUGHAN, AND CO., LTD., 28-30, Victoria Street, S.W.1. (262).—On this stand the Vici carburetter is shown. It is an instrument designed to give a well-balanced mixture automatically. The adjustment is controlled by a correct setting of various jets and air orifices, which, once in order, do not require further attention or compensation for speed or temperature variations.

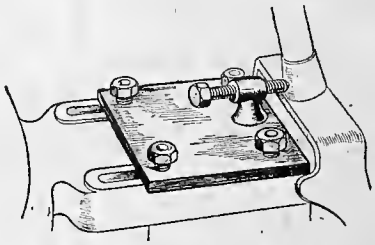
C. BINKS (1920), LTD., Eccles, Manchester (166).—A detail improvement to the Binks three-jet carburetter is the new main air adjustment, taking the form of a small shutter in place of the screw and slide device hitherto used. A new "mouse-trap" model has also been evolved embodying the characteristics of the well-known racing carburetter, but including also a pilot jet and throttle, so that it can be used for touring work. In addition, Binks plugs and spark gaps in several varieties are shown.

BROWN AND BARLOW, LTD., Witton, Birmingham (255).—Automatic jet control, in conjunction with the opening of the throttle, by means of a regulating needle depending from the latter, is a feature still retained in the leading B. and B. models. There are several models embodying this principle, also special two-stroke models on show.

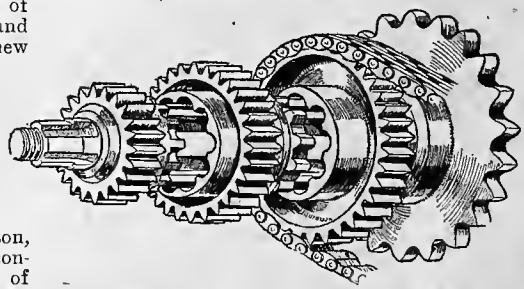
COX CARBURETTERS, LTD., Lower Essex Street, Birmingham (197).—Shown at Olympia last year, the Cox-Atmos carburetter reappears in a new and improved form, while remaining unaltered in principle and method of operation. It has been lightened by the use of aluminium, and the float chamber now contains a filter capable of stopping and holding, without detriment to the running of the engine, as much as one and a quarter ounce of water or foreign matter. The adjustable jet is now provided with a lock, so preventing unauthorised movement. We have used Cox-Atmos carburetters on various machines with excellent results.



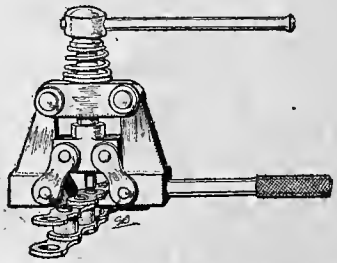
Sectioned sketch of the Binks spark gap



Whitley chain adjuster for use with Sturmey-Archer three-speed gear box.



Mainshaft of the Coventry Chain Co.'s silent chain gear box, showing unusual form of the dog clutch teeth.



A universal chain-rivet extractor made by the Coventry Chain Co.

DEGORY NO-JET CARBURATOR CO., Moore Park Road, Fulham, S.W.6 (312).—Very high claims are made for the performance of the Degory carburetter, which is of exceedingly simple design. Some improvements have been effected, notably in simplifying the operation of the control screw which regulates the petrol orifice between the float chamber and choke tube.

C. H. PUGH, LTD., Tilton Road, Birmingham (211).—The makers of the Senspray carburetter are showing their carburetters exactly as last year, no alterations being found necessary. This carburetter is made automatic or sensitive at will.

CHAIN SPECIALISTS.

ALFRED APPLEBY CHAIN CO., LTD., Tilton Road, Birmingham (212).—A display of Appleby and Atco roller chains.

BRAMPTON BROS., LTD., Oliver Street, Birmingham (191).—The principal item of interest to the private motor cyclist is the Brampton spring chain, which is now made in suitable sizes for the heaviest machines and for cycle cars.

COVENTRY CHAIN CO., LTD., Coventry (163).—In addition to the usual range of Coventry chains, including the duplex types with side-by-side rollers, a special feature here is the three-speed silent chain gear box with clutch and kick-starter; the gears are operated by sliding the intermediate main and layshaft pinions and their connecting chain bodily. This gear is the subject of the accompanying sketch.

PERRY AND CO., LTD., Tyseley, Birmingham (174), exhibit motor cycle chains and spring lid lubricators for motor cycle use.

HANS RENOLD, LTD., Didsbury, Manchester (194).—An exhibit of roller and inverted tooth chains suitable for all motor cycle applications.

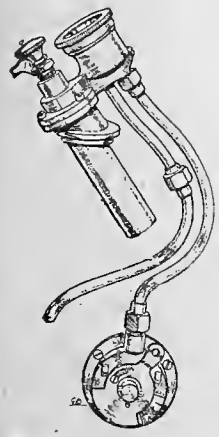
Brampton shock-absorbing spring chain.

Accessories at the Show—

OIL PUMPS, TANK PARTS, AND GENERAL BRASS FITTINGS.

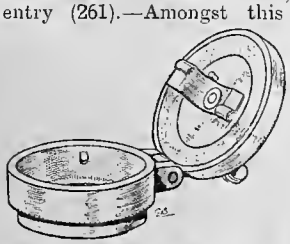
C. J. Adie and Nephew, Ltd., Warstone Lane, Birmingham (49), show hand and foot pumps, oil guns, mascots, and handle-bar mirrors in great variety.

Best and Lloyd, Ltd., Handsworth, Birmingham (251).—Of Best and Lloyd, Ltd., it may be said that they made possible the application of mechanical pump oiling to almost any standard machine. The Best pump has survived two years of public testing with credit, and has been fitted to a number of machines as a standard item of equipment. A slight improvement has been made in the capacity of the pump, but in essence it remains unaltered. We have used several machines so equipped, and fitted up two of our own machines with great satisfaction. A much improved and more compact semi-automatic (hand-operated) drip feed lubricator and pump is also introduced for the first time. Other lines are quick-grip filler caps, taps, and tank fittings. The work of Best and Lloyd, Ltd., is a by-word of accuracy and finish.



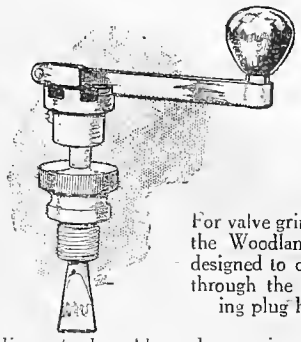
The Best mechanical oil-pump, with the new hand-pump and sight feed

Coventry Movement Co., Ltd., Coventry (261).—Amongst this exhibit of small fittings is a quickly operated filler cap, hinged to its tank collar and operated by a winged key on the top.



Quick release filler cap by the Coventry Movement Co.

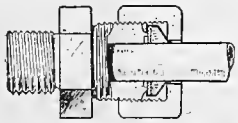
S. A. Lamplugh, Ltd., Tyseley, Birmingham (228).—Another firm specialising in brass goods and tank fittings. The Lamplugh mechanical, throttle-controlled pump has frequently been described in our pages. The sidecar heater, worked by hot air from a muff surrounding the exhaust pipe, is also a useful thing for the winter months. A small item for tuning enthusiasts is the Woodlam valve grinding tool. Also shown is a new mechanical oil pump of very simple construction, and a lighting dynamo and "switch" gear on equally straightforward lines.



For valve grinding: the Woodlam tool, designed to operate through the sparking plug hole.

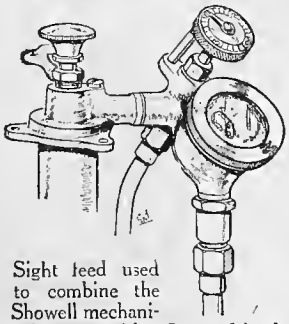
W. Lowe and Co., Ltd., New Street, Aston, Birmingham (239). — Inflators, petrol squirts, oil guns; and similar brass goods are exhibited on this stand.

A. R. Price, Ltd., Aston, Birmingham (248). — Another house exhibiting all manner of turned brasswork, inflators, grease guns, oilers, and the like; a useful gadget is the valve connector for [illegible] wheels.



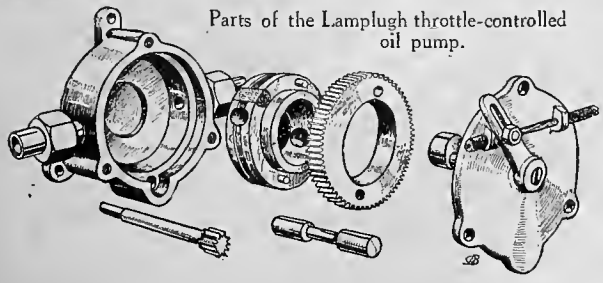
A solderless pipe union made by Rotherhams, of Coventry.

Rotherham and Sons, Ltd., Coventry (184).—Petrol taps, tank fittings, lubricators, petrol squirts, and the like, in brass, are exhibited, as well as the Bonniksen speedometer, which is famous for its dead-beat indications.



Sight feed used to combine the Showell mechanical pump with a Best & Lloyd lubricator.

E. Showell and Sons, Ltd., New Street, Birmingham (110).—Besides all the usual lines in brass tank fittings, the new Showell mechanical pump is a centre of attraction; its extreme simplicity, adaptability, and low price should result in its being installed by many motor cyclists. A full description of its construction and operation appeared in *The Motor Cycle* Show Guide last week.



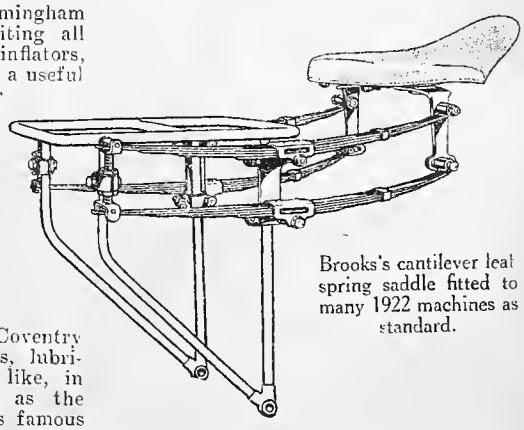
Parts of the Lamplugh throttle-controlled oil pump.

SADDLERY AND PILLION SEATS.

Frank Ashby and Co., Stirchley, Birmingham (249).—To motor cyclists the chief item of interest here is the Tan-pillion seat, arranged for the transport of a passenger on the carrier. Another useful accessory is a small step mat for cycle cars.

A pillion seat with leaf-springing—the Tan-pillion, by F. Ashby & Co.

J. B. Brooks and Co., Ltd., Great Charles Street, Birmingham (244).—Brooks's saddles need no other comment. A wide range is shown, including the cantilever saddle attached to the carrier by long leaf springs. There is also a varied assortment of toolbags, carrier cases, spring-on leggings, and all imaginable motor cycle equipment in which leather is used.



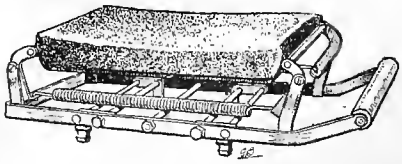
Brooks's cantilever leaf spring saddle fitted to many 1922 machines as standard.

College Leather Co., Castle Street, Northampton (231).—For machines not fitted with underscreens and leg guards, the College mudshield is a most useful device. There is also a smaller shield, protecting the lower part of the engine and the rider's feet. College foot overalls are also shown, and the Spick suède folding slippers in pocket case; the latter are useful for any traveller, and specially convenient for the motor cyclist on tour.

Gough and Co., Ltd., Park Road, Hockley, Birmingham (226).—A general display of saddles and toolbags. The Gough saddle is unusual in having the peak mounted on a long leaf spring.

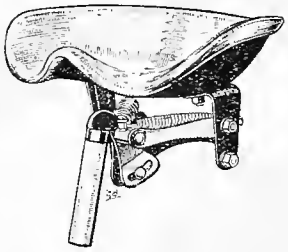
The Leatheries, Ltd., Sampson Road North, Birmingham (252).—Another house exhibiting a wide range of excellently finished leather goods, also the Townshend pillion seat, which has several excellent features.

Accessories at the Show—



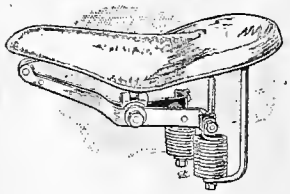
Long coil springs and bell crank levers control the movement of the Leatheries Townshend pillion seat

JOHN LECKIE AND CO., LTD., Walsall (82).—Although the first appearance of this firm at Olympia, the product exhibited is by no means unknown, for it is the XL-All saddle, which most riders who like saddle comfort already appreciate. A new item which was shown is a combined saddle and pillion with toolbag and tail lamp attached.



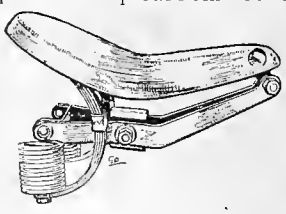
Showing the underframe of the XL-All saddle, made by J. Leckie and Co.

LYCETT SADDLE AND MOTOR ACCESSORIES CO., LTD., Bromley Street, Birmingham (183).—Lycett saddles are arranged with spring peaks and swinging spring mountings at the back, this permitting flexibility without twisting the springs. Many machines in the Show are equipped with the Lycett saddle system, wherein the peak is supported by a leaf spring mounted on the top tube and the rear springs are mounted on the carrier.



A leaf spring supports the peak of the new Lycett pan seat.

MIDDLEMORES (COVENTRY), LTD., Coventry (196).—This firm shows a comprehensive production of motor cycle saddlery, mudguards, and pillion seats. The Middlemore saddle, with combined leaf and coil springing, is an excellent design.



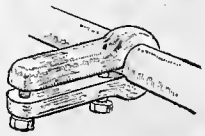
Leaf and coil springing is employed on the Middlemore saddle.

MIDLAND GEAR CASE CO., LTD., Bridge Street West, Birmingham (221).—Also a display of leather equipment. Some useful knee grips and inner tube cases are shown.

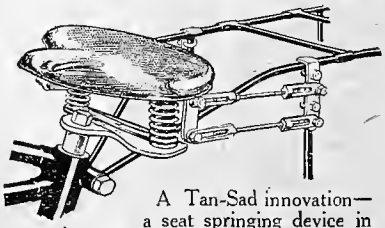
ALFRED ROBERTS AND SONS, LTD., Deykin Avenue, Witton, Birmingham (201).—A saddle on this stand, the Jelley, has a rubber top which, in addition to being waterproof, gives a very flexible seat. A new model has been introduced having a pan top. We have had considerable experience with this type and have found it most comfortable.

SAXELBYS, LTD., George Street, Coventry (51).—Saxessories are the products of this firm, and a variety of pillion seats and an extra child's seat for sidecars and cycle cars are shown; in addition are some useful chain rivet extractors.

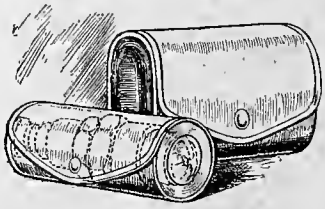
TAN-SAD WORKS, Freeman Street, Birmingham (175).—The Tan-Sad pillion seat is shown in a great variety of forms, all based on the standard model, with various additional accessories. A pair of footrests for clamping on the chain stays of a machine is also shown, this type being preferred by many pillion passengers in place of rests sprung with the Tan-Sad. A new motor cycle saddle, replacing the No Hurts saddle, is shown; it is greatly improved, so as to relieve the carrier of the machine from the stresses which the former imposed; moreover, the rider's old saddle top may be fitted if desired. The saddle springs are carried on a plate fixed to the seat-pillar, but the motion of the seat is controlled by parallel links swinging from the carrier.



Fixed footrests attached to chain-stays in conjunction with Tan-Sad pillion seats



A Tan-Sad innovation—a seat springing device in which existing saddles can be utilised. The springs are carried on the seat-pillar.



Leather cases for spare plugs, by A. E. Wilby, Ltd.

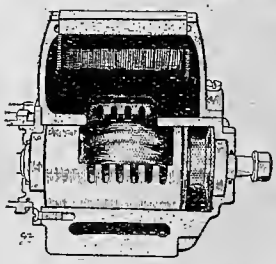
A. E. WILBY, LTD., Holloway Head, Birmingham (224).—A general range of leather goods, toolbags, knee grips, etc.

IGNITION AND DYNAMO EQUIPMENT.

BRITISH THOMSON-HOUSTON CO., LTD., Coventry (80).—Additional to the B.T-H. magnetos, there is, of course, the eminently successful Sparklight outfit, which has gone far to revolutionise electric lighting on two-stroke lightweights. The Sparklight is also available for four-stroke singles, the surplus spark obtained by the necessity for running at engine speed being "distributed" to earth *via* the spark gap. An innovation in the B.T.H. range is a combined magneto-generator, in which the lighting armature is driven at camshaft speed, and in turn drives the magneto, the two components being entirely independent. The same generator is also supplied in a separate dynamo installation. Last, but not least, is the B.T.H. flywheel magneto for two-stroke engines, which has been modified so as to provide lighting current for the lamps and accumulators.

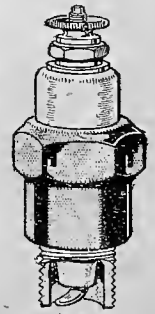
E.I.C. MAGNETOS, LTD., Sampson Road North, Birmingham (237).—One of the most interesting facts connected with the E.I.C. magnetos is that the parts of the machines exhibited are interchangeable with the firm's productions of eight years ago, no essential change in design having been necessary.

FELLOWS MAGNETO CO., LTD., Willesden, N.W.10 (114).—A range of magnetos for all types of machines, including a most compact lightweight magneto with internal contact breaker operating on the face cam principle; also 90° twin magnetos, having specially designed poles for providing an equal spark at both plugs. The Fellows Co. is also showing a new motor cycle carburetter having an automatic action depending upon three jets with corresponding choke tubes.

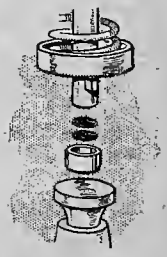


Comb-like pole pieces are used in the Fellows 90° magneto to distort the magnetic flux to give the necessary equal spark intensity for the unequal firing intervals

FORWARD SPARKING PLUG CO., Summer Row, Birmingham (242).—Plugs of excellent design, belt fasteners, punches, and steel and leather link belting, specially suitable for dynamo drives, are all exhibited; there are also some useful valve clearance adjusters for engines with plain tappets.



A single point T.T. pattern Forward plug.



Forward adjusters for engines with fixed tappets.

The Patent Jardine FOUR-SPEED Gear Box

may be fitted, without frame alterations, to the following makes of motor cycles:

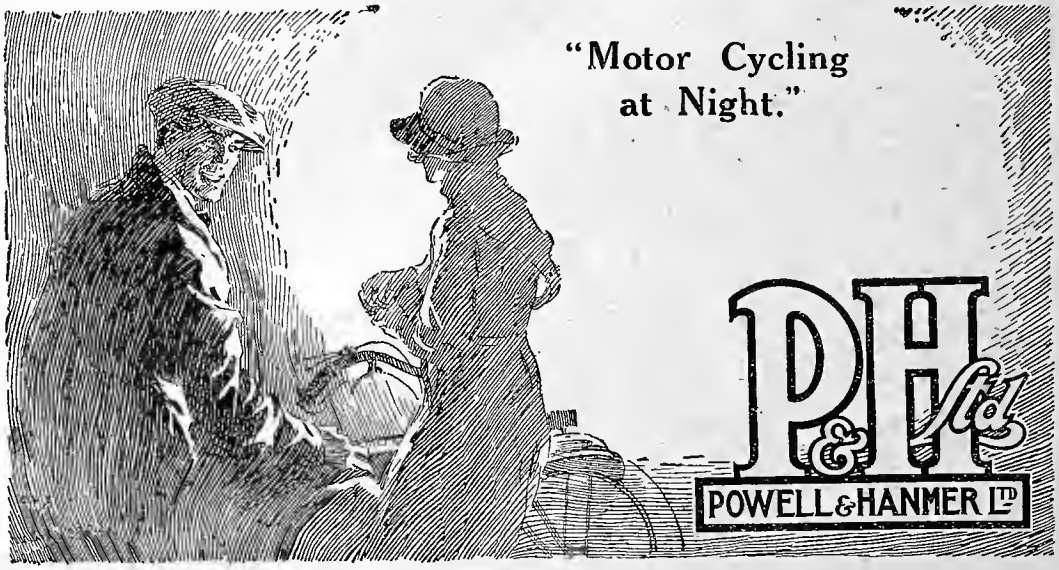
Armis.
Bat.
Beaumont.
Blackburne.
Brough.
Brough Superior.
Campion.
Carfield.
Coventry Acme.
Coventry Victor.
Coventry Eagle.
Coulson.
Dalton.
Dot.
Dunelt.
Duzmo.
Excelsior (British).
Edmond.
Endurance.
Francis-Barnett.
Glendale.
Hoskison.
Henley.
Invicta.
Lincoln Elk.
L.M.C.
Marloe.
Massey-Arran.
Mohawk.
Monopole.
Mountaineer.
New Comet.
Nickson B.
New Era.
New Scale.
Norton.
N.U.T.
Omega.
Overseas.
Pax.
Powell.
Quadrant.
Rex.
Royal Ruby.
Sheffield-Henderson.
Slaney.
Triumph.
Trump.
Verus.
Victoria.
Vindec.
Wilkin.
Wolf.

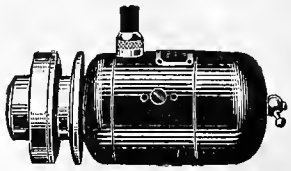
When you order a new machine, specify a

Jardine Four-Speed Gear Box

Catalogue and Particulars from

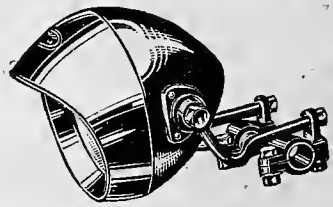
JOHN JARDINE, Ltd., Deering St., NOTTINGHAM



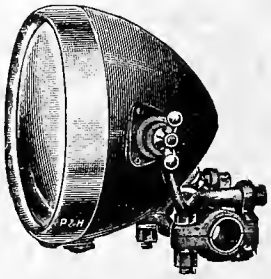


"D.S." Type Dynamo. £7-8-6

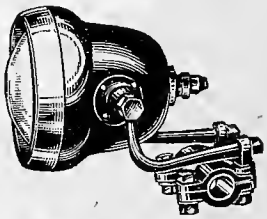
Dimmer, Cut-out, and Junction Box. £2-5-6



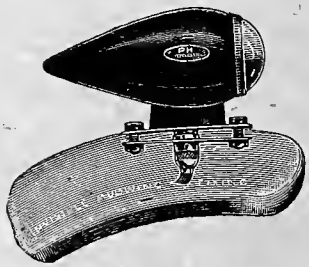
No. 150, £3-3-0 each



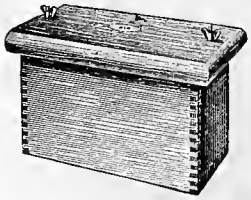
No. 132, £2-7-6 each



No. 133, £1-13-6 each

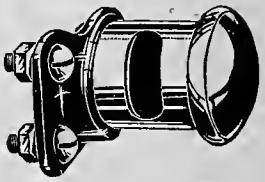


No. 670, M.G., £1-5-9 each



6-volt 30 amp. Battery, £4-7-6, or 6-volt 15 amp., in tin case, £3-9-0

Handle-bar switch, with 4ft. 6in. 5-way cabling, £2-5-6



No. 1343 8/6 each

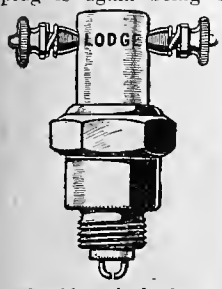
"THE HOUSE FOR VALUE"

POWELL & HANMER, LIMITED,

CHESTER STREET AND AVENUE ROAD, ASTON MANOR, BIRMINGHAM.

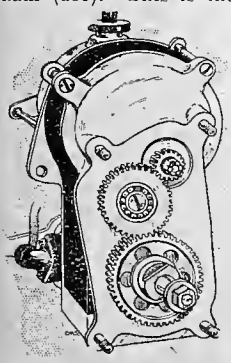
Accessories at the Show—

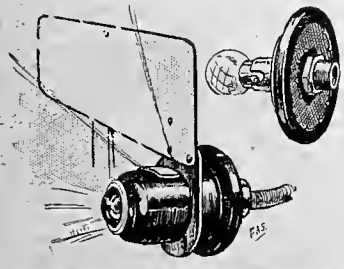
LODGE PLUGS, LTD., Rugby (189).—After a rather long lapse, a double-pole plug is again being shown. It is used in connection with an ordinary plug in another part of the cylinder, so enabling two sparks to be obtained simultaneously. For engines difficult to start there is a priming plug having a hollow electrode down which petrol may be injected. Then there is the usual range of ordinary Lodge plugs for all engines. A useful little plug gap gauge is being given away to motor cyclists who call at this stand.



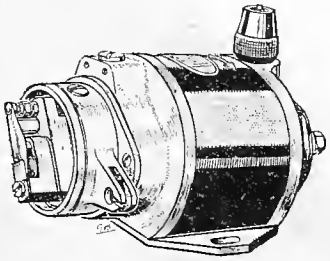
Double pole Lodge sparking plug.

LUCAS ELECTRICAL CO., LTD., Birmingham (190).—This is the electrical branch of Joseph Lucas, Ltd., which took over the productions of Thomson-Bennett Magnetos, Ltd. Exhibited are Lucas magnetos, the Magdyno sets, dynamo and plain accumulator lighting sets, and separate lamp and horn equipment. In addition are the Lucas impulse starters, invaluable for fitting to the magnetos of refractory cycle car engines, etc. The new electric tail lamp is worthy of note, the bulb holder being carried in a rubber diaphragm to minimise the effects of vibration.

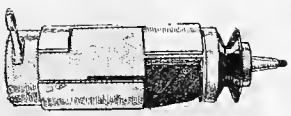

The Lucas Magdyno, showing the driving gear to the generator


The bulb carrier on the Lucas rear lamp is insulated from vibration by being mounted in a rubber disc.

M-L MAGNETO SYNDICATE, LTD., Coventry (200).—The designing department responsible for M-L magnetos is never content to rest upon its laurels. At the last Olympia Show the Maglita lighting and ignition equipment was just entering its stride, and it has been improved in slight detail since, while there is now a special lightweight set on which a very small battery is used. The ordinary magnetos also have been improved, and the square type for large twins of all angles has had a twelve months' successful use; in addition, there is a new line of miniature cylindrical magnetos for motor cycle engines. The weight is low, on account of the employment of cobalt steel magnets, while a face cam leaf spring contact breaker, similar to that on the Maglita, is fitted.

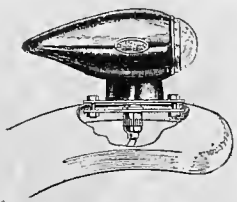

Compactness can scarcely be carried further in the new cobalt steel magnet lightweight M-L magneto

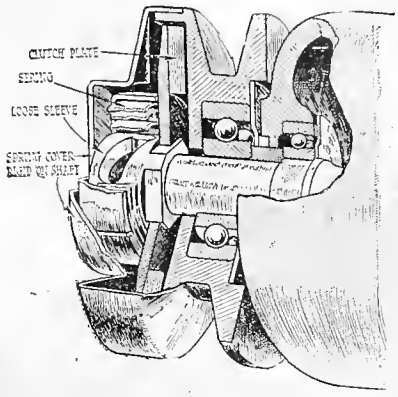
NORTH AND SONS, LTD., Soho Square, W.1 (256).—A method of magneto construction hitherto unused in motor cycle work is embodied in the new Watford magnetos for V twins. The armature is surrounded by an iron sleeve connected with the cam ring of the contact breaker, with which it moves when the latter is retarded; this sleeve is virtually a movable pole piece to the magnets, and so the "maximum position" is obtained throughout the range of advance and retard. Watford speedometers are also shown with improved driving arrangements; the gears are simplified and the flexible sheath over the driving cable is rubber-covered. In addition to the speedometers, a range of magnetos is exhibited.


Movable pole pieces of the Watford magneto

The Watford speedometer with new swivelling handle-bar clip.

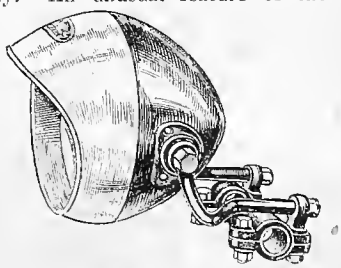
POWELL AND HANMER, LTD., Chester Street, Birmingham (187).—The acetylene lighting equipment shown is, of course, on the well-known lines associated with this name. Not so well known is the six-volt dynamo lighting set, which is on view at present for its second year.


P. & H. sid car lamp with concealed wiring lead to fit the mudguard or body side panels.

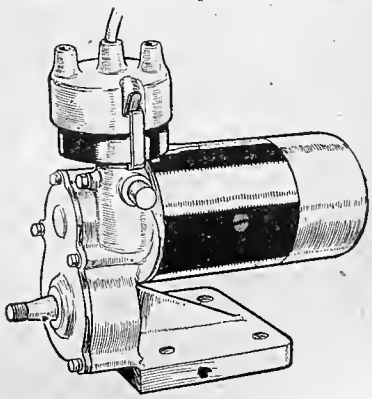


Speed-regulating clutch in the driving pulley of the P. and H. dynamo.

Regulation of output is obtained by means of a slipping clutch in the driving pulley. An unusual feature of the P. and H. electric head lamp is the cowled front.

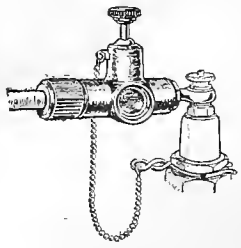

Electric head lamps with cowl fronts are unusual, but the P. & H. is so fitted.

ROTAX, LTD., Willesden Junction, N.W.10 (236).—No other British firm produces for motor cycle use a dynamo-battery ignition and lighting set like the Rotax Igdyno equipment; the system is popular in America, however. Although we have not had an opportunity of using this apparatus, it would appear to have many advantages, incorporating as it does the good qualities of accumulator ignition without the old-time defects. Other lines shown by Rotax, Ltd., are plain dynamo lighting sets and a big range of petrol taps, oil pumps, and motor cycle tool kits with special fasteners.

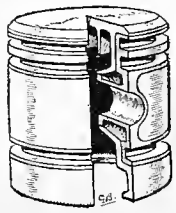

A dynamo battery ignition and lighting system: the Rotax Igdyno generator and distributer.

Accessories at the Show—

RUNBAKEN MAGNETO CO., LTD., Derby Street, Manchester (259).—New ideas are always expected from this progressive firm, and the exhibit is no exception to the rule. There is a flywheel magneto for two-stroke singles. The flywheel is of steel, brass being unnecessary in this design, and the coils are stationary; a standard type of contact breaker is fitted. Other Runbaken fittings are the spark gap and plug tester, the double-spark plug, and a dimmer switch (with handle-bar control) for head lamps, besides the usual magnetos for single and twin engines.

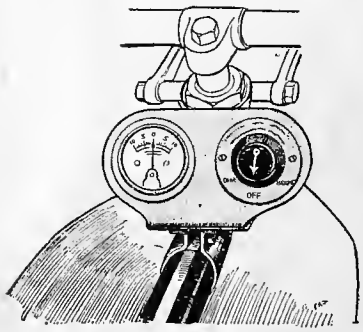


Combined spark gap and plug tester made by the Runbaken Magneto Co

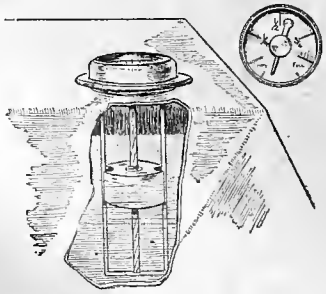


Unusual construction of the Runbaken Felco aluminium piston. The rings and gudgeon pin are carried in an "in cast" brass portion.

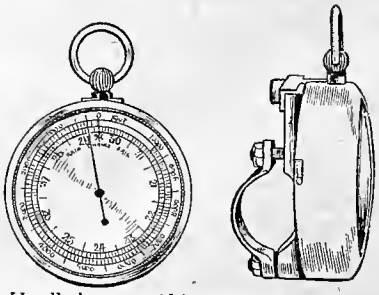
S. SMITH AND SONS (M.A.), LTD., Edgware Road, N.W.2 (199).—Most important on this stand is the Smith lighting dynamo, which has an exceedingly simple centrifugally-operated charging switch. M-L equipment and K.L.G. plugs are also prominent, while, in addition, there are Smith speedometers, handle-bar watches and aneroid barometers (altimeters), and a clock-face type of motor cycle petrol gauge combined with a filler cap. An excellent feature on this stand is a luxurious sidecar outfit equipped with dynamo lighting and every imaginable accessory, each item being indicated by a ribbon and label.



A neat motor cycle switchboard introduced by S. Smith & Sons. Ltd., for attachment to the top tube.

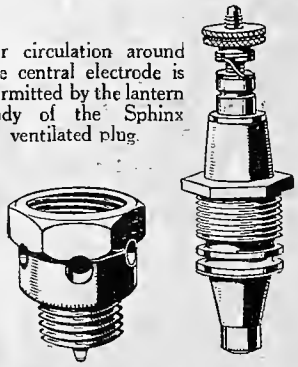


Smith's float and screw petrol gauge and combined filler cap.



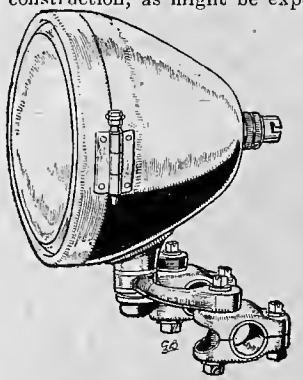
Handle-bar aneroid barometer and altimeter by S. Smith and Sons, Ltd

SPHINX MANUFACTURING CO., LTD., Bradford Street, Birmingham (208).—Twenty-one types of plugs are produced by this firm, which usually has an innovation in plug design. Last year the bar type was shown; this year there is a new "ventilated" plug, in which the electrode is surrounded by air, the plug body being of lantern construction. A.C. plugs are also shown here.



Air circulation around the central electrode is permitted by the lantern body of the Sphinx ventilated plug.

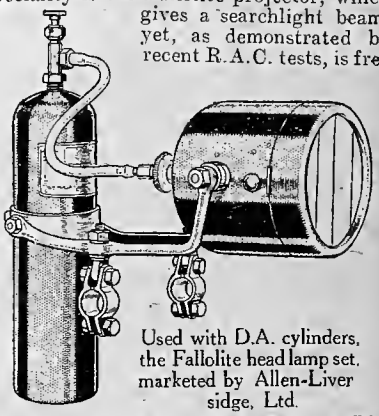
C. A. VANDERVELL AND CO., LTD., Acton, W.3 (164).—C.A.V. magnetos are too well-known to need description, but the new lighting dynamo outfit should be examined. It is on conventional lines, but is characterised by neatness and sound construction, as might be expected from a firm of car lighting specialists. The dynamo is a small cylindrical machine, and the switch box and ammeter are designed to clip on to the motor cycle top tube.



Neat universal handle-bar bracket of the C.A.V. head lamp

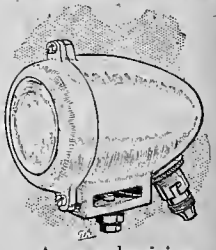
ACETYLENE AND BATTERY LIGHTING.

ALLEN - LIVERSIDGE, LTD., Victoria Street, S.W.1 (81).—Dissolved acetylene equipment for motor cycles. The chief speciality is the Fallolite projector, which gives a searchlight beam, yet, as demonstrated by recent R.A.C. tests, is free from dazzle under proper conditions. The Fallolite lamp is shown with handle-bar bracket mounting a D.A. cylinder in the place of the usual generator. It only requires a universal cylinder exchange service seriously to challenge electric lighting with this outfit.

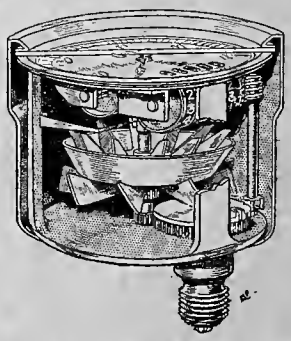


Used with D.A. cylinders, the Fallolite head lamp set, marketed by Allen-Liversidge, Ltd.

G. DAVENPORT AND CO., LTD., Clerkenwell Road, E.C.1 (229).—Motor cyclists who have envied lorry drivers their easily cleaned and substantial aluminium head lamps may inspect equipment of similar construction adapted for motor cycle use. Head, side, and tail lamps for either acetylene or electric lighting are shown. There is also the Imspecs speedometer, an ingenious device operated by the wind pressure of a small fan driven by the flexible cable from the road wheel.



A cast aluminium Davenport sidecar lamp of clean outline



Control by revolving vanes is a feature of the Imspecs speedometer marketed by G. Davenport and Co

Accessories at the Show—

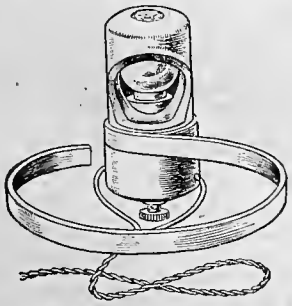
ETIENNE ET CIE, LTD., Great Eastern Street, E.C.2 (316).—A tail lamp with detachable bulb holder, a handle-bar mirror, and the Stadium handle-bar spot-light mounted on a universal bracket are all items shown on this stand appealing to the accessory collector.

Speedometer lamp (the Nesthill), by E. H. Hill, Ltd., of Sheffield.

Stadium handle-bar spot-light made by Etienne et Cie.

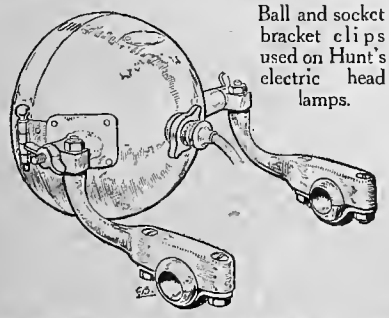
ERNEST H. HILL, LTD., Broomhall Street, Sheffield (171).—For those who do much riding at night, the Nesthill speedometer lamp is an exhibit to be examined. It is simple and inexpensive, and in emergency may be used as a temporary head light.

A. H. HUNT, LTD., Tunstall Road, East Croydon (253).—For many years the Hunt speciality has been dry battery or accumulator lighting sets; the former are good for occasional use, and the latter are equally good under the like



Tinted bulbs obviate dazzle on this Hunt speedometer lamp.

circumstances if a ready means of charging is available. In detail several of the items exhibited have been improved, and the ball and socket handle-bar brackets for head lamps, introduced



Ball and socket bracket clips used on Hunt's electric head lamps.

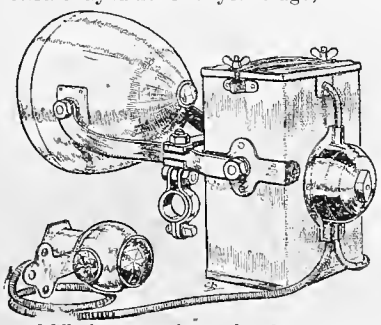
at the last Show and described in these columns, are again on view. A large variety of switches, tail lamps, and similar fittings are produced, and the speedometer light (a popular Exeter Run fitment) is also in evidence. A Hellesen dry battery hand lamp of this make, which we use continually in the garage, still functions well after a year's service.

JOSEPH LUCAS, LTD., Birmingham (189).—Acetylene lamp sets and bulb horns of the concealed twist pattern are exhibited

Handy pocket screwdriver of Lucas make.

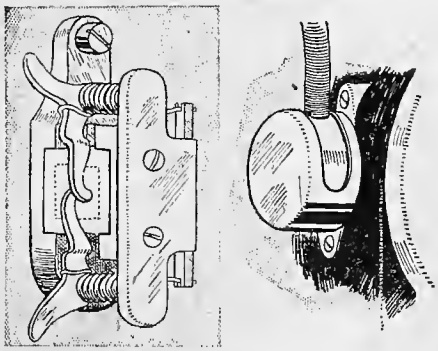
without alteration from previous models; indeed, the standard of excellence already attained precludes much change. There are also adjustable spanners and screw-drivers of excellent design, items that few practical riders can resist.

H. MILLER AND CO., LTD., Birmingham (195).—Despite having introduced a most excellent dynamo two years ago, with a



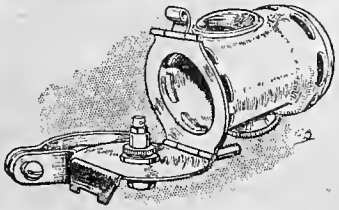
Miller's accumulator electric set with handle-bar mounting for solo machines.

unique system of regulation apparently devoid of the likelihood of trouble or derangement, this concern is apparently



(Left) Balanced pressure triggers on commutator brushes, and (right) rotatable wiring lead, on the Miller dynamo.

concentrating upon plain accumulator electric sets adapted for charging from an outside source. In acetylene equipment there is a new tail lamp with hinged burner holder, which can be



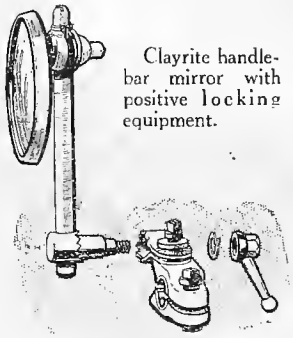
Hinged tail lamp of Miller make.

opened easily for lighting without risk of its accidentally coming adrift and being lost.

J. A. RYLEY, Weaman Street, Birmingham (167).—A mixed display, in which accumulator lighting sets figure prominently; there is also a new Vita sparking plug for two-strokes and a quantity of tools and mascots.

HORNS AND SPEEDOMETERS.

CLAYTON-WRIGHT, LTD., Great Hampton Street, Birmingham (173).—Handle-

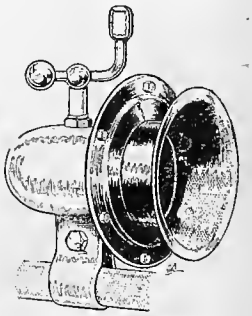


Clayrite handle-bar mirror with positive locking equipment.

bar mirrors and simply constructed electric and bulb horns are features of this exhibit.

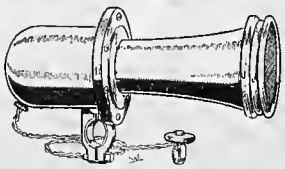
COOPER-STEWART ENGINEERING CO., LTD., 11, Broad Street, W.C.1. (222).—An exhibit of speedometers and mechanical horns bearing the Stewart name.

COWEY ENGINEERING CO., LTD., Kew Gardens (263).—The latest Cowey accessory is the simplified mechanical horn operated by rotating a handle at the top. It supplements, rather than supplants, the well-known press-down type of Cowey horn of polished aluminium. Cowey speedometers are also shown as usual.



Simple construction makes possible this cheaper model of the Cowey horn.

DEKLA, LTD., Hampton Street, Birmingham (79). — Bulb horns with concealed twists, Dekla electric horns (including a specially attractive one of polished aluminium), and



The Dekla electric horn.

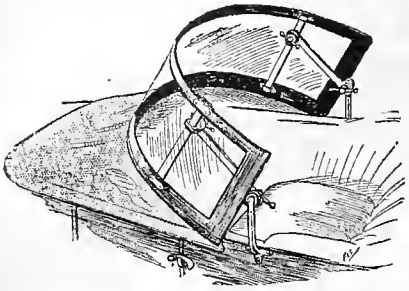
the Deklalite lever-operated pocket torch are all items which will attract the motor cyclist.

R. E. VOISEY, LTD., Factory Road, Hockley, Birmingham (13).—An exhibit of bulb horns and accumulator lighting sets.

Accessories at the Show—

SIDECAR HOODS AND SCREENS.

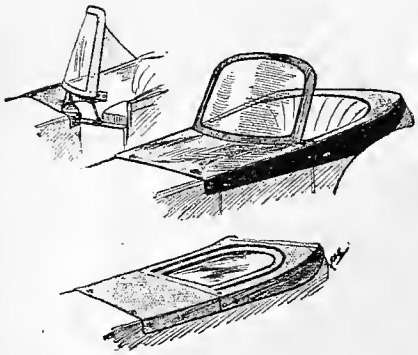
Apex Inflator Co., Ltd., Perry Barr, Birmingham (177).—Apart from inflators and similar small goods, the Thapex side-



A universally adjustable sidecar screen: the Thapex.

car windscreen and a folding hood are worth noticing; the latter may be packed up and stored under the sidecar seat.

Auster, Ltd., Barford Street, Birmingham (318).—Exhibiting a sidecar apron and screen of unconventional construction, the apron covers the sidecar body

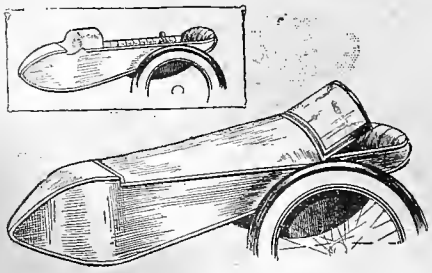


The Auster combined sidecar windscreen and apron; in the "down" position the screen is secured by a Lightning fastener.

as usual, and the screen is a central panel held in place by a Lightning fastener, which permits it to be erected quickly when required.

Bluemel Bros., Ltd., Wolston, near Coventry (159).—On the Bluemel stand are shown some excellent sparking plugs, a variety of celluloid ware such as inflators, and the three-panel Bluemel windscreen for sidecars.

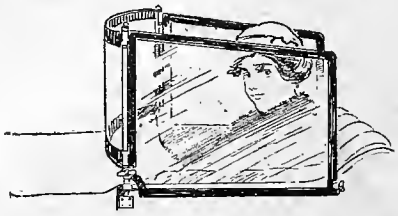
Easting Windscreens, Ltd., Steelhouse Lane, Birmingham (147).—Easting



For lightweight sidecars the Baby Easting is an excellent weather protection.

screens have again been improved in detail, and they have done admirable work in increasing sidecar comfort generally. The metal fittings of the Royal model are now of stamped steel in place of the brass castings which were used upon earlier types.

Ollard, Westcombe, and Co., Great Charles Street, Birmingham (176a).—The Cameo windscreen is shown this year



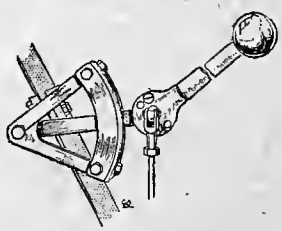
New leather-bound celluloid side wings are fitted to the Cameo windscreen.

with improved side panels of celluloid in place of the canvas side screen used previously.

COMPONENT PARTS.

Accles and Pollock, Ltd., Oldbury, Birmingham (210).—"Manipulators of weldless steel tubing" is the firm's own description of its capabilities, and a fitting one withal; wonderful things are done with tubing, and motor cyclists may see many tubular parts of their mounts in the "rough."

Albion Engineering Co., Ltd., Upper Highgate, Birmingham (146).—Albion gear boxes are almost too well-known to need comment, but the new three-speed model, which was tested out in the T.T., Scottish, and English Six Days Trials this year, must not be missed. The gear is of the constant mesh type, but the

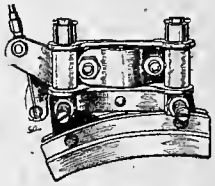


Clamped on to the seat-tube, the Albion three-speed control has an adjustable operating lever.

wheels run at low gear speed at all times. Special provision is made for taking up end thrust with putting pressure on the gearing; thus there is no drag on the pulley when the clutch is disengaged. A shock absorber is included in the clutch chain wheel when the box is arranged for all-chain drive.

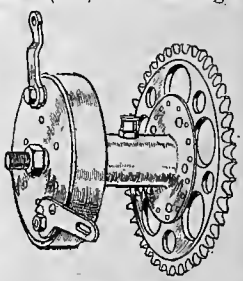
Bowden Brake Co., Ltd., Tyseley, Birmingham (234).—Hitherto specialising on handle-bars and Bowden control mechanism, a complete spring fork has now been added to the range of products. The suspension is controlled by C leaf springs, and designed for use with it is an expanding hub brake on straightforward lines, operated by Bowden lever and wire from the handle-bar.

Bowden Wire, Ltd., Victoria Road, Willesden Junction, N.W.10 (266).—A radial action cable-operated front brake is shown suitable for use on any standard spring fork which will pass a dummy belt rim attached to the wheel. Other specialities are hand control for Philipson pulleys, an extra air device for motor cycle induction pipes, and the usual variety of wire-controlling mechanism.



Radially acting front brake for use with a dummy belt drum.

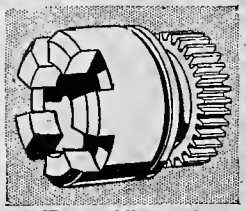
British Hub Co., Ltd., Weaman Street, Birmingham (216).—Exhibiting a range of hubs of all kinds, including chain-driven rear hubs and the well-known Carhubs for sidecars.



Chain-driven rear hub with expanding brake made by the British Hub Co.

British Piston Ring Co., Ltd., Holbrooks Lane, Coventry (112).—Piston rings for all engines is the trading ideal of this concern. The name is indicative of the exhibit, and the exhibit is in conformity with the well-known high standard of goods produced.

Burman and Sons, Ltd., Ryland Road, Birmingham (179).—In common with other gear manufacturers, the innovation of the Burman concern is a three-speed lightweight box. It incorporates the well-tried Burman shock absorber, and operates on the constant mesh principle; the gear positions are locked positively inside the box by a ratchet quadrant device.



The middle gear layshaft pinion of the Burman light three-speed box.

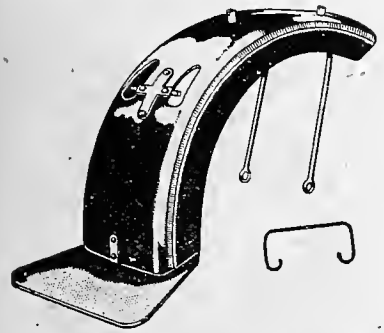
The heavyweight Burman box and the light two-speed gear are also exhibited.

E. Dubied and Co., Ltd., Edco Works, Sheffield (232).—Spindles, nuts, and similar repetition turning in brass and steel.

Horton Hub and Eng. Co., Ltd., Brearley Street, Birmingham (227).—Hubs of all kinds for sidecars and motor bicycles, including chain-driven models with knock-out spindles.

Coventry Plating and Presswork Co., Ltd., Coventry (260).—Hitherto catering for the trade only, this house is now prepared to undertake individual orders for specially wide mudguards to suit any machine. One speciality produced is a wide domed guard to fit Triumph machines, this particular fitment being in the hands of Clarke,

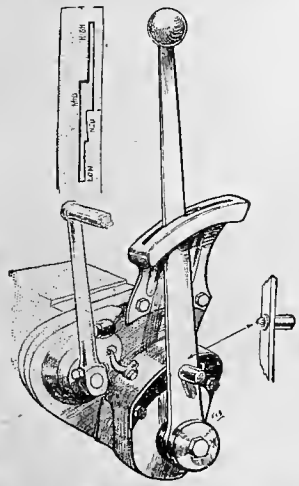
Accessories at the Show—



Wide front mudguard for Triumph machines, exhibited by the Coventry Plating and Presswork Co., Ltd.

Walters, and Co., of Little Park Street, Coventry, who are sole distributers.

Moss Gear Co., Ltd., Thomas Street, Aston, Birmingham (50). — This firm shows at Olympia for the first time, and its reputation in the car world should result in its three-speed lightweight gear



The change speed lever and quadrant of the Moss gear, a device being incorporated to obviate any strain on the lever when the dogs do not mesh.

being studied with close attention. One of the most important features is the wide support given to the sliding middle-gear layshaft pinion, while the enclosed operating and safety changing device is excellent.

Stonehouse Works Co., Houghton Street, West Bromwich (203).—Showing footboards and footrests, including a spring-mounted variety of the former and many examples of motor cycle brake-work.

Sturmey-Archer Gears, Ltd., Lenton, Nottingham (161).—Chief feature of the Sturmey-Archer exhibit is the new light-weight three-speed gear box, which, while retaining the familiar layout of constant mesh gears, with main and layshaft intermediate wheels sliding together, has been simplified by the use of the low gear wheels for the kick-starter train; by this method the three-speed box has no more pinions in its construction than the standard two-speed and kick-starter box, which, it would appear, is likely to be supplanted in public favour, especially so as the former is only about three pounds heavier.

H. C. Webb and Co., Ltd., Aston Brook Street, Birmingham (113).—This concern may well be said to have inaugurated a new era in contributing largely to the solution of the vexed question of front wheel brakes, for it has marketed an improved hub incorporating an internal expending brake operated from the handle-bar by Bowden mechanism. Naturally, the Webb front hub and brake is the outstanding exhibit; but a back hub with expanding brake, for chain or belt drive and with or without shock absorber, is also shown. Another interesting item is the Maplestone fork, an invention developed in Australia, and already popular in this country. The construction is practically of steel throughout. The springs permit the absorption of shocks in two directions, and the link spindles work in bushed holes.

MINOR EQUIPMENT AND TOOLS.

Brown Bros., Ltd., Great Eastern Street, E.C.2 (162).

E. Dance and Co., Ltd., Great Eastern Street, E.C.2 (168).

Dunhills, Ltd., Euston Road., N.W. (68).

East London Rubber Co., Ltd., Great Eastern Street, E.C.2 (250).

Hobday Bros., Ltd., Great Eastern Street, E.C.2 (172).

Manufacturers' Accessories Co., Ltd., Great Eastern Street, E.C.2 (247).

The firms above-mentioned are, with the exception of Dunhills, Ltd., factors handling all kinds of accessories, garage equipment, and motor clothing exclusively

A non-rattling stand-clip, named the L.B.C., and shown by Brown Bros., Ltd.

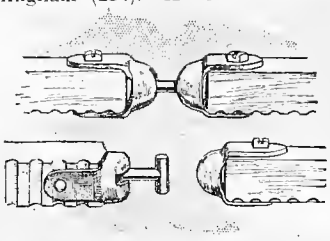
Obviously designed by a practical rider; a Dunhill glove, which gives freedom to the forefinger and thumb.

for the wholesale trade; the exception appeals to the private buyer also, and shows an excellent display of waterproof and leather coats, gloves, etc.

Abingdon Works, Ltd., Tyseley, Birmingham (225).—Apart from the 3½ h.p. and 6-7 h.p. Abingdon engines, there is a comprehensive show of excellent spanners—no need to name the King Dick in this respect—miscellaneous tools, and tank fittings.

Dover, Ltd., Northampton (265).—The fabrication of all kinds of articles in the celluloid-like Doverite and Exonite preparations, steering wheels, handle-grips, covered handle-bars, and inflators. A useful item is the Dover repair outfit for accumulator cases, containing strip and angle celluloid with the necessary cementing solution.

F. Line and Co., Buckingham Street, Birmingham (254).—A new belt fastener



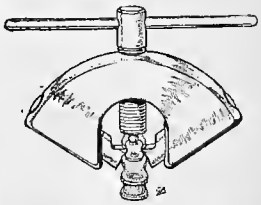
Simple pressings form the two halves of the Linco belt fastener.

of extremely simple construction is a feature to be seen here; its connecting link is of dumb-bell shape, engaging in hemispherical cups formed in the portions secured to the belt. Another handy accessory is the Linco set of spanners, a number of thin steel keys being riveted together.

A useful set of Linco spanners.

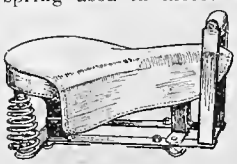
Pennant Manufacturing Co., Ltd., Watery Lane, Birmingham (14).—Some very practical tools are shown, including an aluminium - handled screwdriver and a useful "four-size" open-ended spanner; both these items will be coveted by practical motor cyclists. Another good thing is a mechanical horn with trumpet screwed into the body, thus dispensing with a ring of small screws and giving a clean (and cleanable) exterior.

Four standard sizes of nuts are dealt with by this Pennant spanner.



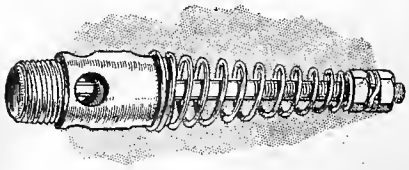
A useful chain rivet extractor, the Pennant.

Herbert Terry and Sons, Ltd., Redditch (185).—Besides every variety of spring used in motor cycle construction, an innumerable host of what the Americans call handy "kinks" are shown, ranging from spanners to pipe cleaners. Then there is the luxurious Terry spring seat, a super-saddle on the



In a slightly modified form, the Terry spring saddle is here shown arranged as a pillion-seat.

Accessories at the Show—

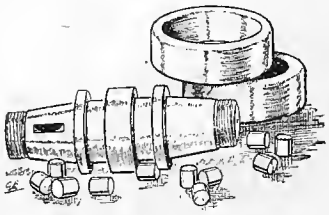


Terry's Auto-Xtra automatic extra air valve.

hammock principle sprung on countless tension springs radiating from the centre. Another useful item is the check spring for sidecars, an easily-applied fitting which prevents all bouncing when the sidecar is driven empty.

BEARINGS, METALS, AND MATERIALS

ANTI-ATTRITION METAL CO., LTD., Victoria Street, Westminster, S.W.1 (315).—Bearing metals and bushes for engine and gear box use.



Complete crank-pin and big end roller bearing by Hoffmans.

HOFFMANN MANUFACTURING CO., LTD., Chelmsford (245).—Ball and roller bearings for all motor cycle applications.

W. PETRIE AND CO., LTD., Tudor Street, E.C.4 (215).—Examples of Fibrax brake pads to suit all types of machines.

SKEFKO BALL BEARING CO., LTD., Luton (11b).—Self-aligning and normal types of ball bearings. Also shown here is the Dureff four-speed gear box, in which the reductions are made through sprockets and roller chains. A very neat gate change is provided, and the single-plate clutch has both hand and foot control.

OILS, ENAMELS, PATCHES, Etc.

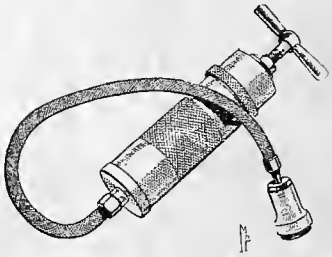
BRITISH OIL AND TURPENTINE CORPORATION, LTD., Chancery Lane, W.C. (235).—Speedwell oils.

CHALLENGE OIL CO., LTD., Stoke Newington, N.6 (198). — Challenge oils and carbide.

COUNTY CHEMICAL CO., LTD., Bradford Street, Birmingham (219).—In America, we are told, Chicago is a successful place

The Chemico blow-out patch. Method of fixing the spikes will be observed.

because it is the city of people who can. The Chemical people also can; they can anything that the motor cyclist uses provided it is possible to put it into tins; so we have oils, carbide, enamels, tyre paints, solution, etc., etc. An item not to be overlooked is the Chemico blow-out patch for inserting in burst covers; it is an admirable get-you-home device.



Enots grease gun with flexible connection (shown by the County Chemical Co.)

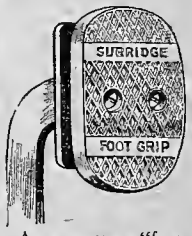
ELEPHANT CHEMICAL WORKS, LTD., Neate Street, Camberwell, S.E.5 (257).—All kinds of tinned preparations used by motor cyclists: oils, grease, carbide, solution, etc. Hand soaps and brazing materials are also exhibited.

JENSON AND NICHOLSON, LTD., Stratford, E.15 (223). — A great variety of Robbialac enamels, invisible lacquer, aluminium paint, etc. The stand itself is beautifully finished in white Robbialac.

PATCHQUICKS PATENT, LTD., Tiverton (181).—Year by year puncture preventers, punctureless tubes, and so on, are invented, yet Patchquick flourishes in the Gallery just the same; everybody knows it.

PRICES CO., LTD., Battersea, S.W.11 (231).—Prices oils, Belmoline greases and hub lubricants, and Rangraphine graphited grease for chains.

SURRIDGE'S PATENTS, LTD., Church Street, Camberwell, S.E.5 (217).—Holdtite patches, acetylene gas bags and connections, rubber pads for clutch and brake pedals and aluminium side and tail lamps.



A new pattern "foot grip," by Messrs. Surridge's Patents, Ltd.

VACUUM OIL CO., LTD., Caxton House, S.W.1 (165).—Gargoyle Mobiloil oils and greases.

C. C. WAKEFIELD AND CO., LTD., Cheapside, E.C. (178).—Castrol oils and greases.

SHOW TIME RECORDS.

JUST before the Show, there is usually a rush of aspirants for various coveted records. Crack riders congregate at Brooklands for special efforts to secure for their machines extra honours, and thus improve their Olympia propaganda.

This year has been no exception, as the crop of records given below will show. Chief among these is perhaps the 500 c.c. hour record, undoubtedly the most coveted. From the earliest days, this has been regarded as the blue riband of track achievements, since the 3½ h.p. machine has been the most popular type on the road for a good many years past. Soon after the track was opened, O. C. Godfrey, curiously enough on the eve of the Show, covered no less than 59 miles 1,350 yards in an hour, and his Rex machine was exhibited at the Stanley Show, Agricultural Hall, an interesting recollection of the exhibited machine being that it was displayed with a partridge which Godfrey killed during his meteoric ride. The first rider to cover more than sixty miles in as many minutes was Victor Surridge, riding a 3½ h.p. Rudge in May, 1911, his record standing for some considerable time.

F. B. Halford who, subject to official confirmation, now holds the coveted hour record in the 500 c.c. class. He rode a four-valve Triumph, his speed being 76.74 m.p.h.

This year the record has been broken several times, but last week's achievement of Major F. B. Halford, on a 499 c.c. Triumph with a Ricardo engine, is the first occasion that a four-valve engine has been credited with this honour.

The following successes were achieved just before the opening of the 1921 Motor Cycle Show:

NOVEMBER 22ND.

CLASS C (SOLO).—50 miles: F. B. Halford (single-cylinder Triumph, 80.5×98 mm.=499 c.c.), 38m. 53.36s.=77.14 m.p.h.

NOVEMBER 23RD.

CLASS A (SOLO).—10 miles, standing start: R. N. Judd (single-cylinder Velocette, 63×80 mm.=249 c.c.), 9m. 30.6s.=63.09 m.p.h.

NOVEMBER 24TH.

CLASS D (SOLO).—50 miles: H. H. Bowen (twin-cylinder Martinsyde, 70×96 mm.=745 c.c.), 38m. 33.2s.=77.81 m.p.h.—125.22 k.p.h.

CLASS D (SOLO).—One hour: H. H. Bowen (twin-cylinder Martinsyde, 70×96 mm.=745 c.c.), 77 miles 1,053 yards=77.58 m.p.h.—124.85 k.p.h.

CLASS F (SIDECAR).—8 miles: C. G. Pullen (twin-cylinder Douglas, 68×68 mm.=499 c.c.), 4m. 25.6s.=66.77 m.p.h.—109.06 k.p.h.

CLASS F (SIDECAR).—10 miles: C. G. Pullen (twin-cylinder Douglas, 68×68 mm.=499 c.c.), 9m. 2.4s.=66.37 m.p.h.—106.81 k.p.h.

CLASS C (SOLO).—50 miles: F. B. Halford (single-cylinder Triumph, 80.5×98 mm.=499 c.c.), 38m. 49.4s.=77.27 m.p.h.—124.35 k.p.h.

CLASS C (SOLO).—One hour: F. B. Halford (single-cylinder Triumph, 80.5×98 mm.=499 c.c.), 76 miles 1,301 yards=76.74 m.p.h.—123.54 k.p.h.

CLASS B (SOLO).—Flying kilometre: G. Dance (single-cylinder Sunbeam, 75×79 mm.=349 c.c.), 25.6s.=87.38 m.p.h. Mean speed average two ways: 27s.=82.85 m.p.h.

CLASS B (SOLO).—Flying mile: G. Dance (single-cylinder Sunbeam, 75×79 mm.=349 c.c.), 41.2s.=87.38 m.p.h. Mean speed average two ways: 43.8s.=82.19 m.p.h.

CLASS C (SOLO).—Flying kilometre: G. Dance (single-cylinder Sunbeam, 85×88 mm.=499 c.c.), 23.8s.=93.99 m.p.h.

CLASS H2 (WITH PASSENGER).—Flying mile: E. B. Ware (twin-cylinder Morgan-Jap, 85.5×98 mm.=1,096 c.c.), 43.8s.=82.19 m.p.h.

R. N. Judd, who beat the 10 mile record in Class A on a Velocette. Speed 63.09 m.p.h.

Come and see the "COULSON."

Being leaf-sprung like the limousine, it gives car-comfort in the saddle.

On View at STAND 73

"COULSON"

for COMFORT on ANY road.

The days of the RIGID frame are numbered! The advent of perfect suspension over *both* wheels marks a new era in motor cycle construction. Leaf-springing over the *rear* wheel—which is the principle of the Coulson Patent—gives to the motor cycle the *one* thing which it has always lacked!—COMFORT.

Now that saddle *pinion* suspension—as distinct from the springing of the saddle itself—is possible, and is a proved success, the *rigid* frame must go. What motor cyclist will tolerate the vibrating bumpiness of the "rigid"-frame when there is an alternative by which he can float over pot-holes as though they did not exist?

Come and see the Coulson at Stand 73. The Show will reveal to the world what only the exclusive coterie of Coulson riders now know, which is that the Coulson is the *most* comfortable mount in the world.

Before making your choice of a motor cycle for 1922, therefore, be sure you *see* the Coulson. Mount it, and *feel* for yourself the supreme comfort of the leaf-springing over the *rear* wheel. Then we have no doubt which make you will buy.

The 1922 Coulson is being made by A. W. Wall, Limited, of Tyseley, Birmingham—the motor cycle makers of longest experience. Its reliability is therefore beyond question.

Advance particulars, specification, etc., from

The Sole Concessionnaires:

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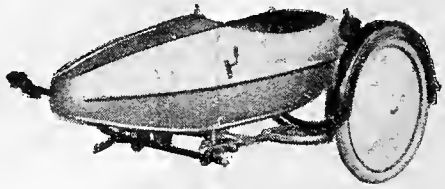
"SWAN" SIDECARS.

The "Swan"



"Sporting" Model.

You may hunt high and low—within or without the Show—There are no sidecars of such general excellence and grace as the "Swan"—Pay what you will, the Swan is still **"The finest thing on one wheel."**

NEW PRICES:

Sporting Model	(For all Standard makes of Motor Cycle, such as Triumph, Norton, B.S.A., Sunbeam, and similar machines)	**£23-0-0**
Standard Touring Model	do. do.	**£25-0-0**
De Luxe Touring Model	do. do.	**£28-0-0**

The above models can be supplied to suit American Motor Cycles, spring frame, or otherwise, and any other make of motor cycle prices on request

All Models on Show at London Agents: Robertsons Motors Ltd., Gt. Portland St. W.

Illustrated Catalogue with prices from the makers:

SIDECARS (OXFORD), LTD., OXFORD.

CONFIRMED!

BY AGENT AND RIDER.
NO BETTER PROPOSITION AT THE SHOW.

Rex-Acme 1922 Programme & Prices

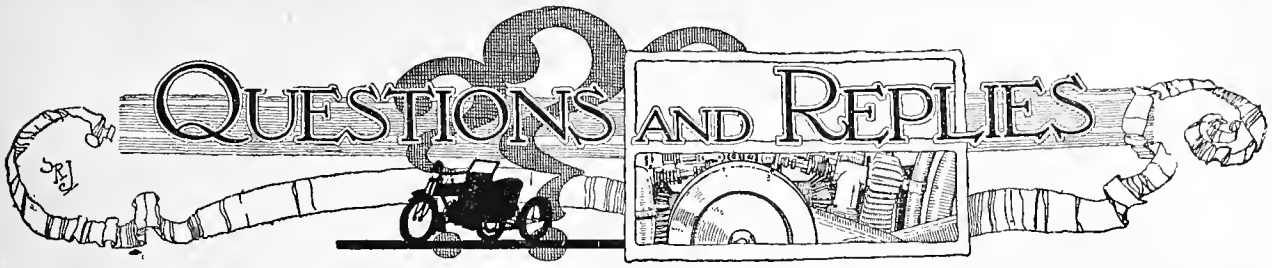
Each Model carefully thought out and designed especially for each class of rider.

Model	Engine.	Transmission	Gear Box	Price Solo	Combinati'n	Can be supplied as ELECTRIC All-on Model.
A	2½ h.p. MORRIS Two-stroke	Belt, Single-specd	—	£42-0-0	—	Extra
AB	Ditto	Chain-cum-belt	A	£50-0-0	—	Solo
AC	Ditto	Chain-cum-belt	B	£55-0-0	—	£6-10-0
B	2¾ h.p. J.A.P., 293 c.c.	Chain-cum-belt	B	£63-0-0	—	£8-15-0
	Ditto	Chain-cum-belt	C	£66-10-0	—	do.
C	2¾ h.p. BLACKBURNE, 348 c.c.	Chain-cum-belt	B	£69-15-0	£88-0-0	£8-15-0
			C	£73-5-0	£91-10-0	do.
D	2¾ h.p. BLACKBURNE, 348 c.c.	All-chain	B	£75-0-0	£93-5-0	£8-15-0
			C	£78-10-0	£96-15-0	do.
	Special Sports, 2¾ h.p. overhead BLACKBURNE	All-chain	C	£92-10-0	—	—
E	2¾ h.p. CAM, 348 c.c.	All-chain	B	£75-0-0	£93-5-0	£8-15-0
			C	£78-10-0	£96-15-0	do.
F	"IMPY," 4 h.p. Special J.A.P., 550 c.c.	All-chain	C	£110-0-0	£135-0-0	£8-15-0
G	8 h.p. Twin BLACKBURNE or J.A.P.	All-chain	C special clutch	—	£150-0-0	—

Note re gears: A. Chater-Lea 2-speed, plain box.
B. Sturmey-Archer 2-speed, clutch and kick-starter.
C. Sturmey-Archer 3-speed, clutch and kick-starter.

Send for Lists, post free on request.

THE REX MOTOR MANUFACTURING COMPANY, LIMITED, COVENTRY.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality

A RUSTY FRAME.

Would a frame which was allowed to get rusty be liable to be weakened thereby at the joints? I have seen no sign of it coming apart.—E.A.Y.

It is unlikely that the frame would be seriously weakened, unless the rusting process had gone on for some years. An ordinary amount of rust, such as can be removed by a few minutes' application of emery cloth, would have no deleterious effect on the strength of the frame.

FITTING A GEAR BOX.

I have a 1913 3½ h.p. Rudge (clutch single-speed model) and sidecar which has given satisfaction in a fairly flat district, but, moving to N.E. Yorkshire, I find the hills too numerous for a single speed. Will you tell me the most suitable two or three-speed gear box to fit with least structural alterations?—W.H.M.

It is rather difficult to fit a bottom bracket to the Rudge frame in order to carry a countershaft gear box, but there should be no insuperable difficulty. A number of firms of repair specialists announce their readiness to undertake this class of work. There are no two-speed gears for heavy-weight machines, but there is a choice of three and four-speed heavy boxes all of which are suitable.

A QUESTION OF NEGLIGENT REASSEMBLING.

I had the misfortune some time ago to break a piston, and had it renewed by an engineering company who, I now find, have omitted to fit the gudgeon pin springs, and, in consequence, the cylinder is very badly scored. Will you give me your advice on the subject, as I may add that I have witnesses to prove that the cylinder was unscored at the time of the repair?—L.H.F.W.

There certainly appears to have been negligence on the part of the mechanic who fitted the new piston and gudgeon pin without making any provision for the retention of the latter in place. In cases such as this, however, it is usually difficult to obtain any satisfaction, as cases of deficient or negligent workmanship are for the most part difficult to prove. If, however, you are able to produce witnesses to the effect that the cylinder was unscored before the work was undertaken, and can also prove that the gudgeon pin retaining springs were omitted, it might be worth while if you would consult a local solicitor.

OILING BY HAND-PUMP.

I have just taken over a 1914 hub gear model Triumph fitted with Best and Lloyd semi-automatic drip feed pump. (1.) Is it advisable, by unscrewing the needle valve to the fullest extent, to use this in the same manner as the pumps fitted to the later models? (2.) Also what mileage per pumpful am I to expect?—E.C.H.

(1.) You can use the drip feed as an ordinary hand pump in the manner you suggest if you so desire. (2.) One pumpful every six or eight miles at 20 m.p.h.

Important Dates.

Mon., Nov. 28th, to Sat., Dec. 3rd—The Olympia Motor Cycle Show.

Sat., Dec. 3rd, to Tues., Dec. 13th Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922 Scottish Car and Motor Cycle Show.

Sun., Mar. 5th, 1922—Argenteuil Hill-climb (France)

Mon., Mar 6th, 1922—La Turbie Hill-climb (Nice).

A BUILT-UP CRANKSHAFT.

A 2½ h.p. Villiers engine has been running quite satisfactorily until lately, when the two halves of the crankshaft that are held together by the crank pin came out of alignment. After truing up this happened again. I fitted a new crank pin and set of rollers, but with no success. The bearings are quite all right, except for a very little play in the gudgeon pin, which is not sufficient to cause any trouble. I recently had the flywheel shear its key, but this is on quite tightly now. How can I keep the camshaft in line?—W.A.

In all probability the crankshafts have been slightly strained when the crank pin came out of line, or it may be that the taper hole in the crank into which the pin fits is enlarged or not a good fit. By far the best plan would be to have returned the crankshaft complete to the makers for attention, as they may be able to regrind the engaging surfaces; if not, they will save you further trouble by advising you if repair is impossible and replacement is necessary.

FITTING A LARGER BELT.

(1.) Would you kindly inform me as to the advisability or otherwise of fitting a ⅞in. rubber belt on a 2½ h.p. two-stroke lightweight (two-speed countershaft gear), instead of a ¾in. one; the pulley on the gear box and belt rim being intended for ¾in. belt? (2.) Would it drive as efficiently as the correct size? (3.) Would it wear quicker than a ¾in. belt? (4.) Would it be less liable to slip in wet weather than a ¾in. belt? (5.) Any other advantages or disadvantages you can mention would be much appreciated.—A.T.H.

(1.) Provided the ⅞in. belt does not stand above the periphery of the pulley, there is no objection to its use. If it runs above the top of the pulley, however, it will probably wear very quickly, as the edges of the flanges may cut into the side. (2.) The drive would be quite as efficient. (3.) See No. 1 above. (4.) Liability to slip in wet weather would probably be slightly less. (5.) The ⅞in. belt is, of course, much stronger. You will appreciate, however, that the gear will be raised to some extent, and you must use your judgment as to whether the engine will pull a higher gear satisfactorily.

A BEGINNER'S QUESTIONS

As a motor cyclist I am only six weeks old, and I have bought a 1914 3½ h.p. P. and M. sidecar outfit (in good order) offered by a friend simply because I could go no higher in price for a more modern machine. What I should like to ask is: (1.) Is the P. and M. out of date? (2.) If not, how is it that one is seldom seen on the road? (3.) Have you any records of P. and M. machines entering any of the many tests, etc., which are continually taking place?—E.J.G.

(1.) P. and M. machines are amongst the best known makes; the manufacturers have been in the industry since 1903, and their machine was probably the earliest two-speed chain-driven machine on the market. (2.) There are great numbers of these machines on the road, and we cannot understand how it is that you see them so seldom. (3.) They have been consistent performers in all the big reliability trials, and took the solo team prize in four pre-war A.C.U. Six Days Trials, while as reported at the time a new four-speed model with sidecar gained the 600 c.c. class team prize in this year's Six Days Trials.

BANGING IN EXHAUST PIPE.

After fitting a long copper exhaust pipe to my 3½ h.p. Rudge-Multi, I notice that tremendous explosions occur in it when running slowly. I might add that I have a 42 jet in my Senspray carburetter, and that both valves shut correctly, and the springs were renewed about a month ago.—A.E.H.

The trouble is due in all probability to the mixture being too rich, thus causing misfiring. The explosions, of course, are caused by the remnants of the last unexploded charge being ignited in the exhaust pipe by the hot gases from the following explosion.

GIVING AUDIBLE WARNING.

Is it an offence not to blow the horn when turning corners at less than four miles an hour in country districts where there is scarcely anyone or any traffic about?—W.H.P.

The law is not very clear on the point which you raise; every machine must carry suitable apparatus for giving audible warning of approach, and there is an obligation on the driver to give this warning under all circumstances where it is reasonable to expect there will be other traffic on the road. The answer to this question depends entirely upon the particular circumstances involved.

SPEED ASPIRATIONS.

(1.) I understand that standard and overlap cams are interchangeable on the Rudge engine. In the case of the standard machine (1921 T.T. Rudge-Multi), is any noticeable advantage in speed obtained by substituting an overlap cam (timing spark accordingly), and making no other alteration? Would this show, say, 5 m.p.h. extra, or more? (2.) Is it necessary to raise the compression ratio with a dome piston in order to obtain an appreciable increase in speed with the overlap cam? Will this show, say, 10 m.p.h. increase? (3.) The Rudge-Multi in question, standard cam and flat top piston, will do 53 m.p.h. by Bonniksen. Is this considered good? (4.) Is it possible to tune a standard Rudge engine to anything approaching 70 m.p.h. with standard carburetter, but using high compression piston and overlap cam, etc.? (5.) Am I right in believing this to be a slow revving engine? (6.) Are Scott 500 c.c. Squirrels capable of speeds of 60-65 m.p.h.?—G.B.P.

(1.) The overlap cam might reasonably be expected to increase the speed by about 5 m.p.h. (2.) This is rather a matter for experiment, and it is very doubtful whether 10 m.p.h. would be gained by increasing the compression alone. (3.) 53 m.p.h. (actual) is by no means poor for a standard machine. (4.) It is very doubtful if 70 m.p.h. can be obtained unless you have special tuning facilities, although it might be done over comparatively short distances. If this speed was attained by special tuning it is doubtful whether it could be maintained for any length of time, if the machine was used for ordinary road work. (5.) Under ordinary conditions the engine pulls exceptionally well at slow speeds. This is a necessary feature with the type of gear used. (6.) From 55 to 65 m.p.h. ordinarily, although speeds in excess of 75 m.p.h. have been reached on Brooklands by C. P. Wood.

U.H MAGNETO ADJUSTMENTS.

(1.) Please instruct me how and when to lubricate the U.H. magneto on my two-stroke. It has no external oil holes. (2.) It is stated to be "most important" to place "a keeper of iron across the pole shoes before withdrawing the armature." In the U.H. this appears impossible, as a piece of iron cannot be inserted until after the armature is removed. Further, it does not appear to have pole shoes as ordinarily illustrated. (3.) Is grease packing necessary anywhere in addition to that on ball bearings? (4.) The Villiers engine is lubricated by petroil—10 ounces in one gallon of petrol. This appears sufficient when averaging 80 m.p.g., but should not more oil be added if one gets 90 to 100 m.p.g., for then the engine is doing more work? (5.) How are platinum points adjusted on a U.H.?—J.S.A.

(1.) This magneto does not require any other lubrication and the packing of the bearings with vaseline about every 10,000 miles. (2.) You should be able to arrange some form of "keeper" across the poles of the magnet, especially if you remove both end plates. There is no need to insert it in the armature tunnel. All that you need do is to ensure that the poles of the magnets are bridged by a piece of iron before the armature is completely withdrawn. If the magneto was held in the bare jaws of a vice it would answer. (3.) See No. 1 above. (4.) Within limits there is no need to increase the proportion of oil. If, however, the engine appears to require more lubrication, add a little. (5.) The points are adjusted by screwing in the centre screw of the contact breaker.

READERS' REPLIES.

MENDING A TANK.

In your issue of October 27th a query from "L.R.O." asked how to mend a leakage in the top of the petrol tank of a B.S.A. machine. May I be permitted to suggest an easier way out of the difficulty than resoldering, and one which at the same time should prove satisfactory? A little over two years ago I had a similar trouble with my 4 h.p. Triumph, the leakage taking place all round the collar. I cleaned the surfaces round it and applied a good coat of seccotine, which I allowed to stand for twenty-four hours or more to set hard. This I painted over with two coats of paint of similar colour to the tank. The paint protects the seccotine from atmospheric influence, and in my own case has now stood for two years without showing any signs of leakage. This is much simpler and less dangerous than soldering.—P. RADFORD.

ACCUMULATORS SPILLING ACID.

In reply to "G.L.G.'s" query as to any method of preventing acid spilling from his accumulator, I should very strongly recommend him to try packing his cell with glass wool, obtainable from any electrical accessory shop at a cost of a few pence. He will then find that by filling the accumulator with acid before charging he can empty it again when fully charged with no detrimental effect to the accumulator, as the glass wool absorbs part of the acid. He should, however, be careful not to pack the glass wool too tightly, as he may buckle the plates of his cell. I might add that I have packed several cells in this way, with very satisfactory results. It is in no way an expensive method, as the acid can be used over again; it is not at all necessary to throw it away after once using, as is done by some people.—J.G.C.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"L.S.L." (Brondesbury).—Zenith-Bradshaw and A.B.C.: Speed, reliability, and consumption.

"V.F.C." (Liverpool). — Watsonian featherweight sidecar attached to 3½ h.p. fixed gear machine: Stability when empty and reliability of three-point attachment.

"A.H." (Eccles).—Best type of accumulator (about 6 volts) for solo machine and head and tail lights.

"S.B.S." (Durham).—4 h.p. electrically-equipped Indian Scout: Reliability, speed, and power.

"J.B.H." (Harrogate).—3½ h.p. o.h.v. Douglas and A.B.C.: Durability, reliability, climbing, and petrol and oil consumption.

"M.C." (Harrow). — 1921 3½ h.p. Sports Sunbeam: Speed, tappet noise, and acceleration.

"A.C.L." (New Malden).—Millford Junior, Hughes torpedo, Canoelet, or Watsonian sidecar on 3½ h.p. Rudge Multi: Average speed, climbing, consumption, and acceleration.

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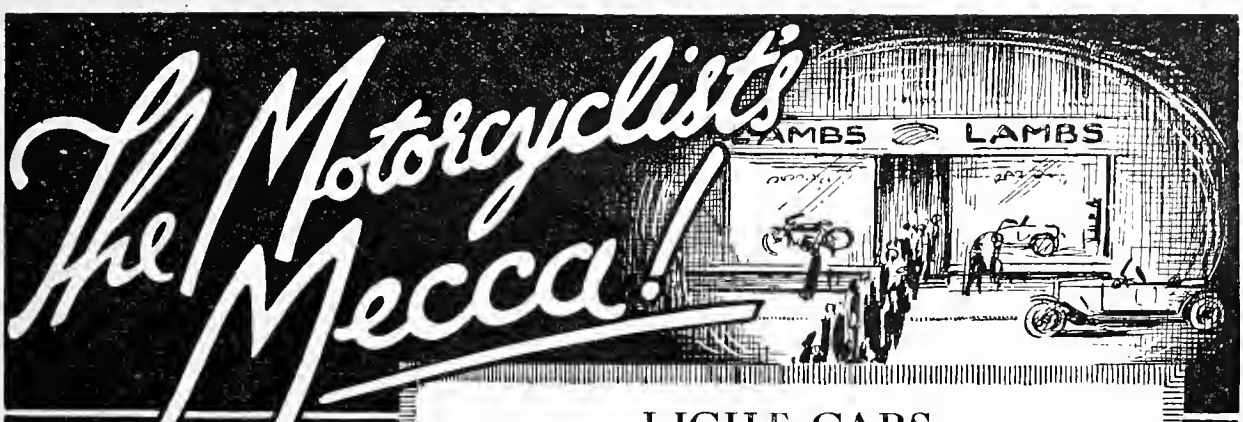

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LEVIS	B.S.A.	ENFIELD
CONNAUGHT	JAMES	NEW IMPERIAL
TRIUMPH	P. & M.	SUNBEAM
RALEIGH	HARLEY-DAVIDSON	ZENITH

Original Maker's Price.		OURS.
£185 4s.	ENFIELD, 8 h.p., 2-seat., dyno. ltg., hood, screen	£163 0
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£160	ROYAL ENFIELD, 8 h.p., comb.	£135 0
£155	JAMES, 4¼ h.p., comb.	£129 0
£155	P. & M., 3½ h.p., comb.	£120 0
£165	ARIEL, 6-7 h.p., comb.	£140 0
£250	CLYNO, comb.	£165 0
£168	AMERICAN EXCELSIOR, 7-9 h.p., comb.	£135 0
£75	ALLON, 2-speed, kick-starter	£62 10
£213	MORGAN, Family Model, fully equipped, tax free	£195 0

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1920	LEA-FRANCIS, "All on"	£49 10
1920	HARLEY-DAVIDSON, and H.-D. sidecar, acetylene lighting, equip., spdr.	£150 0
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BROUGH Superior, late 1921, Magdyno, speedometer, spares; £150.—17, Carey Place, Watford [9540

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B.S.A. 1922 6h.p. Twin and No. 3 sidecar in stock; £164.—Hucklebridge, 133, Sloane St., S.W.1. [X2659

19 12 3½h.p. 2-speed B.S.A., rebored and bushed by makers; £30.—3, Norwood Rd., Herne Hill, S.E.24. [9670

£70.—1920 4¼h.p. B.S.A. combination, speedometer, fully equipped, perfect.—King, Egrove Farm, Oxford. [X2974

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£75.—B.S.A. 3-speed combination, all accessories, tax paid, indistinguishable from new.—7, Norwood Rd., Herne Hill, S.E.24. [9668

19 15 B.S.A. 4¼h.p., countershaft, overhauled and renovated as new, and brand new sidecar complete; £65; exchanges.—Below.

19 14 B.S.A. Sporting Mount, discs, large exhaust, just overhauled, guaranteed; £35.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [9963

3½h.p. B.S.A. Motor Cycle, clutch, Philipson pulley, fast, all on; £35; any time after 6 p.m.—40, Foulser Rd., Upper Tooting, S.W.17. [1031

19 21 B.S.A. 4¼h.p. Combination, Lucas Magdyno, electric horn, hood, screen, all spares, as new; best offer.—Monk, Gunmaker, Chester. [9597

B.S.A. 1920 4¼h.p., complete with coachbuilt sidecar, hood, lamps, horn, splendid condition; £95.—Morris, Atlas Works, King St., Farnworth, Bolton. [9897

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. B.S.A. twin combination, 1921, shop-soiled only; reduced to £150; easy terms without extra charge. [1059

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B.S.A. 4¼h.p. Combination, 1920, full equipment; £75.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [9426

NOV., 1920, B.S.A. 4¼h.p. Combination, Easting screen, chain drive, tax paid; trial; cost £170, sacrifice, £95; buying car. — Walter, Newcastle Chambers, Angel Row, Nottingham. [9755

B.S.A. 1913 Combination, 2-speed, clutch and kick starter, all-chain drive, excellent condition, tax paid; £27/10.—Lewis, 139, Gt. College St., Camden Town, N.W.1. 'Phone: North 3679. [9818

B.S.A. Model H2 4¼h.p., with B.S.A. No. 3 sidecar, 1921 latest model combination, not done 50 miles, tax paid, new last month; great bargain, £125.—Wilkins, Simpson, opposite Olympia, London. [9677

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Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All B.S.A. parts in stock; illustrated list post free. [9396

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CALTHORPE Junior, 2-speed, smart, perfect, licensed; £18.—17, Heaton Rd., Mitcham. [9942

£40, or near offer.—1918-19 Calthorpe 2¾h.p., 2-speed Enfield gear, lamps, etc.—56, Craven Park Rd., Stamford Hill, N.16. [9554

19 20 3h.p. Calthorpe-Precision 2-stroke, Enfield 2 speed, automatic lubrication, Canoelet sporting minor sidecar; £48.—King, Willow Walk, Short St., Cambridge. [9421

CALTHORPE 2-stroke, 2-speed, new last August, lamps, horn, mechanical condition and appearance perfect; bargain, £47/10, or near offer; seen any time.—2a, Gleuham St., Southwark Bridge Rd., S.E. [9693

CALTHORPE 1921 Combination actually in stock for immediate delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd., Clapham Common, S.W.4 'Phone: Brixton 2417. [0509

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CHATER-LEA Combination, 1913 8h.p., fitted Easting Royal, D.A. lighting, Cox-Atmos, etc.; £60; Saturday afternoon and Sunday only.—9, Lansdowne Rd., South Woodford. [1114

Chater-Lea-Villiers.

£30.—Chater-Lea-Villiers 2¾h.p., 2-speed, 2-stroke, perfect condition, wonderful climber.—9, Clifton Rd., Finchley, N.3. [9686

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Clyno.

CLYNO Combination, 5-6h.p., late model; what offers?—79a, Clapham Rd., S.W.8. [9920

19 20 Clyno, 2½h.p., 2-speed, clutch, good condition; £40.—63, Clarence Rd., Teddington. [9913

CLYNO 5-6h.p. Combination; bargain, £58; first visitor buys.—Ashmore, 70, High St., Penge. [9994

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£23, or nearest.—5-6h.p. Clyno twin combination, 2-speed, clutch, countershaft, running order, sidecar damaged.—181, Newton Rd., Burton-on-Trent. [

CLYNO.—Absolutely unused 5-6h.p. Clyno combination, grey bulbous body; inspect; state your price and terms of payment; must clear.—Pugh Engineering Works, Shirley Rd., Croydon. [9649

CLYNO 5-6h.p. Bulbous Combination, 3-speed, K.S., spare wheel, electric lighting, speedometer, horn, hood, screen, luggage and petrol carriers, completely overhauled, many spares, tools, tax paid; £70.—23, Skelwith Rd., Hammersmith, W.6. [9974

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19 22 Connaughts.—Enquire of Sam E. Clapham (Motors), Greenwich. [9251

CONNAUGHT 1919 2-stroke; first reasonable offer secures.—79a, Clapham Rd., S.W.8. [9918

CONNAUGHT 2-stroke, 2-speed, take any hill, new tyres; £40.—Rees, Semley Rectory, Shaftesbury. [9415

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COULSON, delivered September, 1921, 4h.p., 3-speed, lamps, etc.; £55.—18, King St., Twickenham. [9618

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£35.—De Luxe 1920 2¾h.p. 2-stroke, 2-speed, fast, perfect.—73, Acacia Grove, New Malden. [9413

Diamond.

IMMEDIATE Delivery of all Diamond models.—Marks and Baron, Ltd., 215 and 217, Lancaster Rd., Preston. [X2912

1920 Diamond 2-stroke, fully equipped as new; £32/10.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [9880

DIAMOND-VILLIERS 2½h.p., enamel as new, lamps, horn, tools, good tyres, guaranteed sound throughout; £27, lowest, or exchange with cash for good 3½ h.p.—Price, Police Station, Wallingford. (D) [9475

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DOUGLAS 2¾h.p., 1919, all on, practically unused; £50.—9, Earleshall Rd., Eltham, S.E. [9617

1921 Douglas, 2¾h.p., 2-speed, all on, perfect; £59. —125, High St., Merton, S.W.19. [1001

1919 2¾h.p. 2-speed Douglas, mileage 1,000; £42.— —24, Balliol Rd., North Kensington. [9765

£48.—Douglas 2¾h.p., 1919, equipped, insured, perfect; appointments only.—134, Lodge Lane, Hyde. [X2933

DOUGLAS 2¾h.p., 1915, accessories, running order; £36. Tel.: Museum 579.—13, Maple St., W.1. [9488

4h.p. Douglas Combination, fully equipped; sacrifice, £65.—73, Windermere Rd., South Ealing. [9938

1918 Douglas 4h.p. Motor Cycle, recently overhauled, perfect, £65; sidecar, £10.—12, Nantwich Rd., Crewe. [X2888

4h.p. Douglas Combination, smart appearance; £60, or nearest.—156, Fulham Palace Rd., Hammersmith. [9954

DOUGLAS 4h.p. Combination.—Can we make this yours? It's cheap.—Bunting's Exchange, Wealdstone. [1011

DOUGLAS 2¾h.p., 2-speed, fully equipped. Tan-Sad; £23, or offer.—Easton, 34, Webbs Rd., Battersea Rise, S.W.11. [9489

1922 Douglases in stock for immediate delivery, 2¾h.p., 3½h.p., and 4h.p.—Gibb, Northgate, Gloucester. [1016

2¾h.p. Douglas, Oct., 1919, 2-speed, Miller's lamp, spare belt, etc., like new; £56.—Bateman, Y.M.C.A., Leicester. [9812

1920 Douglas 2¾h.p., 3 speeds, clutch, starter, practically brand new; £62.—37, Canterbury Rd., Holston, N.1. (D) [1111

1919 Douglas 2¾h.p., 2-speed, lamps, horn, spares, excellent condition; £48.—Winfield, 532, Kingston Rd., Raynes Park, S.W.20. [9629

DOUGLAS, 2¾h.p., 1913, good running order, all on, tax paid; £30, or near offer.—Russell's Garage, Thatcham, Berks. [9756

£32.—2¾h.p. 1916 Douglas, sound condition, unscratched, as new.—13, Somers Mews, Hyde Park, W.2. (Close Paddington Station). [9746

2¾h.p. Douglas, 2-speed, fully equipped, Tan-Sad, tax paid, excellent Christmas present; bargain, £35. —Stevens, 142, Cornwall Rd., Brixton [9852

1919 Douglas 2¾h.p., good condition, Lucas lamps, horn, aluminium chain case, disc wheel; trial; 55 gns.—Griffith, 20, High St., Oxford. [9527

1921-22 Brand New 4h.p. Douglas Combination, fully equipped, Triplex screen; £110.—Side bell, 9, Wallingford Av., North Kensington. [9829

DOUGLAS 2¾h.p., 2-speed, fully equipped, good condition, licensed; real bargain, £32/10.—Armstrong, 17, Goldhawk Rd., Shepherd's Bush, London. [9514

DOUGLAS 1919 4h.p. Combination, good lamps, horn, licensed, first-class mechanical condition; £90.—Herbert Robinson, Ltd., Green St., Cambridge. [9564

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LOOK.—For £37/10 a 1916 2¾h.p. Douglas, fitted with new parts, tank re-enamelled blue, just, and in perfect order; no offers.—Goddard, 38, Windsor Rd., Evesham. [9523

DOUGLAS Combination, Oct., 1917, engine 4955, Burberry sidecar, Cameo, Binks, capital order; £60, no offers.—Beamood, Chapel Fields, Olton, Birmingham. [9416

84 GNS., Exchange.—1920 Douglas combination, 4h.p., Easting screen, lamps, speedometer, smart, fast.—Sealbridge, Hansler Rd., East Dulwich. Sydenham 2452. [9336

DOUGLAS 1921 3½h.p. Sports Model, lamps, horn, licensed, little used for demonstration, fast machine, as new; £120.—Herbert Robinson, Ltd., Green St., Cambridge. [9567

4h.p. Douglas, 1918, absolutely as new, new mag., tyre, lamps, horn, clutch, etc.; £60; with new sidecar £70.—13, Somers Mews, Hyde Park, W.2. (Close Paddington Station). [9747

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DOUGLAS 1920 2¾h.p., 3-speed, clutch and kick starter, lamps, horn, speedometer, knee grips, licensed, as new; £67/10.—Herbert Robinson, Ltd., Green St., Cambridge. [9568

DUGS! Dugs! Dugs!—2¾h.p. W.D. models, shop-soiled, conditioned; £12 down and 12 monthly payments of £2/3/6.—Pugh Engineering Works, Shirley Rd., Croydon. [9645

DOUGLAS.—Immediate deliveries 1922 models; cash or exchanges; deferred payments 4% extra on balance only; trade supplied in London.—Maudes', 100, Gt. Portland St., London. [9657

DOUGLAS, 2¾h.p., excellent condition, engine just overhauled by makers, enamel perfect, lamps, horn, Dunlops, fast and very reliable, guaranteed; £40.—106, Highgrove St., Reading. [9785

GIBB, the Douglas rider, has several genuine bargains in Dougloses, new and second-hands, combinations, and solos, every one guaranteed. Write or call for list.—Northgate, Gloucester. [9054

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Douglas, 1922 models, prices £75 and £90; also 3½h.p. sports model, £130; all fully equipped; easy terms no extra charge. [1060

DOUGLAS 2¾h.p., 3-speed, 1920, full equipment, small mileage; £60.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [9425

DOUGLAS 2¾h.p., 1918, 2-speed, in excellent running order, fully equipped; £32.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1085

1914 Douglas 2¾h.p., 2-speed, £15 paid for overhauling (receipts shown), not W.D., Tan-Sad, lamps, Bosch mag., spares, licensed, must sell; nearest 38 gns., carriage paid.—Spinks, 2, East Cliff, Dover. [9533

DOUGLAS 4h.p. Combination, 1919, full equipment, Easting wind screen, good sound condition; £60, or close offer.—Vivian Hardie and Lane, Ltd., 23-4, Woodstock St. (off Blenheim St.), New Bond St., W. [9501

DOUGLAS 1914 2¾h.p., 2 speeds, with Grosvenor sidecar, fully equipped, tax paid, good condition; £50; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2950

DOUGLAS 2¾h.p., fast, reliable, early type, licensed, modernised, sound condition, new pistons, footboards, belt, head lamp, carburetter, copper exhausts and tail pipe, tank repainted, ride away; £19.—Box 7,592, c/o *The Motor Cycle*. [9636

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1920 2¾h.p. Douglas, 3-speed, kick starter, hand clutch, lamp set, horn, speedometer, Dunlop tyres, new condition, machine privately owned and in excellent condition throughout; £56.—King, 4, Willow Walk, Short St., Cambridge. [9422

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James.

JAMES 4¼h.p. Combination, 3-speed, kick starter, new tyres; £60.—Rees, Semley Rectory, Shaftesbury. [9414

£42.—4¼h.p. James, late model, 3 speeds, kick starter, hand and foot clutch, licence; snip.—63, Solon Rd., Brixton. [9845

JAMES 1920 5-6h.p. Combination, lamps, speedometer, etc.; 92 gns.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [1120

£27.—2¼h.p. James 2-stroke, 2-speed, 1918 (believed), perfect, good appearance, fully equipped. —Evers, Newton Rd., Burton-on-Trent. [9774

MAGNIFICENT 4h.p. James Coach Combination, 3-speed countershaft, Easting, given away; 29 gns. —Ramsden's, Maybell Av., Blackpool. [9891

NEW 1921 2¼h.p. 2-speed James Lightweight, reduced to £55. Write for special bargain clearance list.—The Premier Motor Co., Aston Rd., Birmingham. [X2982

1921 James 3½h.p. Twin, 3-speed, in new condition, very small mileage, original tyres, lamps, horn, licence; will sacrifice for £75, or near offer, cost £145. —Watkins, 8, Bryn-Henlog, Aberbeeg, Monmouthshire. [X2932

J.A.P.

J.A.P. 4h.p., 2-speed, good order, £13; Bradbury 3½ h.p., £12.—H. R. Hall, Hutton Grove, North Finchley, London. [9749

J.E.S.

J.E.S., good running order, can be seen and tried; £15.—Steward, Burley, Streetly, Sutton Coldfield. [9436

J.E.S. 1921 2h.p., 2-stroke, new Dunlops (26×2¼), new pan saddle, semi-T.T. bars with rubber grips, 2 belts, complete with new set lamps and mechanical horn, perfect condition, and splendid climber, ride away anywhere; £30, or near offer.—Manager, Gas Works, Montgomery. [9814

Kenilworth.

KENILWORTH Cyclette, 1921 model, licence paid. —Judd, 26, Monson Rd., Tunbridge Wells. [9719

Kingsbury.

2¾h.p. Kingsbury, 2-stroke, 2-speed, chain drive, all on, mileage 300; £40, or nearest.—45, King St., Alnwick, Northumberland. [X2917

BRAND New Kingsbury, 1921, 2¾h.p. 2-stroke, 2 speeds, all chain drive, Dunlop tyres, toolbags and tools, cost £65, money wanted; accept £38.—365, King St., Hammersmith. [8757

Lea-Francis

1920 Lea-Francis, 3½h.p. M.A.G., low mileage, excellent condition, perfect running order; £75 (all on), or near offer.—19, Cannhall Rd., Leytonstone, E.11. [9534

Levis.

PREMIER Motor Co. for 1922 Levis

LATEST Improved Models for immediate delivery at 1922 reduced prices.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S 2¼h.p., 2-speed, clutch, £58, or with kick starter £60; easy payments only 4% extra; carriage paid to any address. Buy your machine direct from the Levis specialists.—The Premier Motor Co., Aston Rd., Birmingham. [0741

LOOK Out For Julians of Reading on Levis stand. [8702

1922 Levises in stock for immediate delivery.—Gibb, Northgate, Gloucester. [1015

LEVIS 1916 2¼h.p., splendid condition, little used; £20, or offer.—Hirst, 83, Newhold Rd., Rugby. (D) [9453

1921 Levis, Model S, all accessories, perfect condition; £50.—18, Winterbrook Rd., Herne Hill, London. [9953

LEVIS 1919 2¼h.p., splendid condition, tax paid; wonderful bargain; £30.—365, King St., Hammersmith. [9989

LEVIS 2½h.p., 2-speed, lamps, horn, recently overhauled, as new; £40.—Herbert Robinson, Ltd., Green St., Cambridge. [9570

2½h.p. Levis, overhauled and stove enamelled, splendid mount, £26/10; Cowey speedometer, 45/-.—Ridley, Coundon, Bishop Auckland. [9604

£27.—2¼h.p. Levis sporting, believed 1917, as new, equipped, polished discs, very smart.—Argyle Lodge, Newton Rd., Burton-on-Trent. [9775

1921 Levis, just bought, fully equipped, cost £75, done less than 200 miles; £60, or near offer; owner desiring combination.—Foote, 39, High St., Walthamstow. [9447

SPECIAL Offer of a few slightly showroom soiled 250 c.c. T.T. model Levis motor cycles; list price £65, reduced to £55; makers' speed guarantee of 50 m.p.h. with each machine; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0740

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge. —Complete illustrated list post free. All Levis parts in stock. [9399

ORDER—IT—NOW.

1922 LIGHT CARS.

AIREDALE 11.9 h.p. 4-seater	£475
CALTHORPE 10 h.p. 2-seater ..	£355
CALTHORPE 10 h.p. 4-seater ..	£375
CALTHORPE de Luxe, 2-seater ..	£410
CALTHORPE de Luxe, 4-seater ..	£435
COVENTRY PREMIER, 4-wheeler	£250
L.S.D. 3-wheeler, All on.....	£185
LAGONDA (Coupe or 4-seater)	£395
STANDARD 8 h.p. (2 or 4-seater) ..	£325
STANDARD 11 h.p. 2-seater	£515
STANDARD 11 h.p. 4-seater	£525

1922 MOTOR CYCLES.

B.S.A. 4¼ h.p. Chain-Belt	£107
B.S.A. 4¼ h.p All-Chain	£110
B.S.A. 6 h.p. Light Comb.	£164
B.S.A. 8 h.p. Comb.	£185
BRADBURY 4 h.p., 3-sp., all chain	£92
BRADBURY 6 h.p. Comb.	£146
DOUGLAS 2¾ h.p. 2-speed, All on	£75
DOUGLAS 2¾ h.p. 3-speed, All on	£90
DOUGLAS 3½ h.p. 3-speed, Sporting	£130
ENFIELD MODELS at latest prices.	
LEVIS Popular 2¼ h.p.	£48
LEVIS 2¼ h.p. 2-speed	£58
LEVIS 2¼ h.p. 2-speed kick-start ..	£60
NEW IMPERIAL 2¾ h.p. 3-speed	60 Gns.
NEW IMPERIAL 8 h.p. Comb. ..	£145
NORTON 3½ h.p. T.T.	£80
NORTON 3½ h.p. 3-speed	£115
NORTON Big Four	£120
REX-ACME 2½ h.p. 2-speed	£50
REX-ACME 2¾ h.p.. Blackburne engine	£72 10
SCOTT-SQUIRREL 3½ h.p. 2-speed	£105
SCOTT 3¾ h.p. 2-speed Comb.	£145
SUNBEAM 3½ h.p. (New Type)	120 Gns.
SUNBEAM 4¼ h.p. (New Type)	135 Gns.
SUNBEAM 3½ h.p. Combination	162 Gns.
SUNBEAM 8 h.p. Combination ..	£217 7
TRIUMPH 4 h.p. Chain-Belt	£105
TRIUMPH 4 h.p. All-Chain	£115
TRIUMPH JUNIOR 2¼ h.p.	£65

EXCHANGES AND DEFERRED PAYMENTS QUOTED.

Second-hand Machines and Combinations as per "Miscellaneous" Columns.

The Halifax Motor Exchange,
25, Horton Street, Halifax.
'Phone: 1400. 'Grams: Perfection.

MOTOR CYCLES FOR SALE.

Lincoln-Elk.

1920 4¼h.p. Lincoln-Elk, kick starter, insured; £110; just overhauled, lamps, £50.—Dewar, Viewfield, Galashiels. [9793

Marlow.

MARLOE-BLACKBURNE 2¼h.p., 2-speed, clutch, and kick start, brand new; £68/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [9967

Martinsyde.

D. and S. Autocar Co. are agents for Martinsydes, combination and solos; 3½h.p. sports model in stock, £110; cash or deferred.—33, The Parade, Golders Green, N.W. [9982

Matchless.

LOOK Out For Julians of Reading on Matchless stand. [8703

CROSS, Effingham Sq., is agent for Matchless motors for Rotherham district. [X3002

MATCHLESS 1920 Combination, Lucas set, hood, screen, splendid condition; £130.—Ouin, 56, Herne Hill. [9478

8h.p. Matchless-Jap Combination, 2-speed, free engine, good condition; £45.—Rick, 8, Cobbold Rd., Leytonstone. [9428

MATCHLESS 8h.p. J.A.P. Combination, fine order; £55; bargain.—A., 285, Godstone Rd., Whyteleafe, Surrey. [9838

MATCHLESS Combination, M.A.G. engine, Lucas dynamo equipment, special machine; offers.—64, Melrose Av., Mitcham. [9706

MATCHLESS 1921 8h.p. Combination, lamps, speedometer; 110 gns.—Longman Bros., 17, Bond St. Ealing. Tel.: 689. [1119

1921 Matchless, dynamo, and double-seater sidecar, all extra fitments, speedometer, etc.; £150.—Cross, Effingham Sq., Rotherham. [X3006

MATCHLESS Combination, 8h.p., excellent condition and good running order; £125 gns.—Byrne, 44, Grosvenor Rd., Lower Edmonton. [7909

'PHONE: Greenwich 751.—1922 Matchless, immediate delivery; the incomparable combination will be the centre of attraction at Olympia Show.

CALL and See Sam E. Clapham or representative, Matchless, Stand 65; cash, exchange, or easy terms; all leading makes motor cycles and light cars for 1922.—Sam E. Clapham Motors, 27, Stockwell St., Greenwich, S.E.10. [9252

MATCHLESS Combination, July, 1921, M.A.G., Magdyno, as new, very little used; £150 cash; no offers.—Larkfield Grange, Rawdon, Leeds. [9790

SHEFFIELD Agent for Matchless. All models in stock. Sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Matchless combination, sports model, new 1921; reduced to £149; easy terms no extra charge [1062

MATCHLESS Spare Parts for J.A.P. or M.A.G. can be had by return, post free, from Jones' Garage, Service Depot, Broadway, Muswell Hill, N.10. [0745

MATCHLESS and 2-seater sidecar, all accessories, bought new November, 1920, cost £225, ridden about 3,000; accept £160, lowest.—Box 7,577. c/o *The Motor Cycle.* [9560

MATCHLESS-M.A.G., mileage 1,000, double sidecar, electric light, all accessories, expert driven, better than new in every way; accept £180.—Franklin, Nest, Westerham. [9607

MATCHLESS, 1921 (Aug.), H2, 2-seater sidecar, dynamo lighting, speedometer, M.A.G. engine; price £140, no offers; mileage 2,500.—Manchester Arms, 185, Hackney Rd., London, E.2. [9429

MATCHLESS Victory Model 8h.p. 3-speed Combination, latest colours, screen, Lucas lighting, luggage grid, spare wheel, tax paid, smart and perfect, cash wanted; £77/10.—365, King St., Hammersmith. [8758

MATCHLESS 1921 New Sports Combination, shop-soiled; your present machine can be taken in part payment; special offer, £150.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

MATCHLESS.—Immediate deliveries 1922 models; trade supplied in London area, also in Cornwall, Devon, and Somerset; exchanges; deferred payments 4% extra on balance only.—Maudes' Motor Mart, London, Exeter, and Walsall. [9656

SPECIAL Offer to visitors to Show.—1920 Matchless-M.A.G. combination, electric, Easting, spare wheel, thoroughly overhauled last week, and sidecar repainted; best offer above £135; seen by appointment.—7, The Grange, Maitland Park, N.W.3. [9493

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jooes' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

MOTOR CYCLES FOR SALE.

Matchless.

1921 Matchless-M.A.G., 2-seater sidecar, dynamo lighting, Lucas horn, speedometer, hood, 2 screens, side wings, spare wheel, mudshields, guaranteed in perfect running order, mileage 3,600; £180, or near offer. —250, Uxbridge Rd., West Ealing, W.13. [9473

MATCHLESS-J.A.P. 1920-21 Model H. Combination, hood, wind screen, Lucas lamps, rear drive trip speedometer, mirror, handle-bar muffs, Tan-Sad with back and footrests, tools, pump, etc., insured till June, just overhauled as new, guaranteed top-hole condition throughout; £165; after 6.—P.D., Seven Sisters Hotel, Broad Lane, South Tottenham. [9702

Spare Parts:

TASSELL, 1a, Bloomfield Rd., Plumstead, for anything Matchless at the right price. [6144

Metro.

1920 Metro-Tyler, discs, long exhaust, all accessories; £50. — Athron, South Elmsall, Pontefract. [9914

METRO-TYLER 2-stroke, 1920, condition as new, fixed gear, lamp, mechanical horn, spare belt; £35. —Courtlands, The Avenue, Bushey, Herts. [9487

Minerva.

£19/10.—Sporting type 3½h.p. Minerva, single-speed, splendid condition, new C.A.V. mag. and belt.—Red House, Adelaide Rd., Ashford, Middlesex. [X2995

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

New Hudson.

6h.p. New Hudson Combination, splendid condition; any trial; £120.—Avenue Garage, Winnington, Northwich. [9587

2¾h.p. New Hudson, 3-speed, lamps, horn, etc., tax paid, like new; £28/10.—Speechley, 86, Churchfield Rd., Acton, W.3. [9613

NEW HUDSON 1922 Models and 3-wheeler light car.—Full range on view at London Showrooms, 45, Grays Inn Rd., London, W.C.2. [9980

1919-20 New Hudson Combination, 6h.p., splendid condition, hood, screen, speedometer, insurance; £125.—Ellis, 20, Tollet St., Mile End, E. [1099

1919 4h.p. New Hudson 3-speed Countershaft Combination, done 4,500, accessories, leg shields; £70, or near; write for appointment.—Head, 16, Barons Court Rd., West Kensington, W. [9443

34 GNS.—6h.p. twin New Hudson C.B. combination, 3-speed countershaft gear, clutch, K.S., good running order, equipped; after 5 p.m.—20, Treen Avenue, Hoggers Corner, Barnes, S.W.13. [9916

New Imperial.

32 GNS.—1917 2¾h.p. New Imperial-Jap, 2-speed, perfect, fast.—Evers, Newton Rd., Burton-on-Trent. [9779

2¾h.p. New Imperial, 2 speeds, new tyres, splendid order; bargain, £28. — Sheldon, Wheatley, Oxford. [1053

1921 New Imperial, 2¾h.p. J.A.P., 2-speed, clutch, kick start, lamps, horn, licence; £53.—40, Wellington Rd., N.W.8. [9538

NEW IMPERIAL 6h.p. 1920 Combination, 3-speed, Easting, lamps, etc., tax paid; £80.—Garaged at 78, Church St., Camberwell [8799

1920 New Imperial, 2¾h.p. J.A.P., 2-speed, clutch and kick starter, excellent condition; £47.—Hunt, Sunny Bank, Nordley, Bridgnorth, Shropshire. [9434

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. New Imperial, 2-speed only, £63; also 2-speed, clutch, and kick start model, £69; easy terms arranged. [1063

1920-21 New Imperial 8h.p. Combination, Lucas lamps, speedometer, Easting screen, Tan-Sad, unscratched; £85.—Side bell, 9, Wallingford Av., North Kensington. [9828

New Scale.

NEW SCALE-BLACKBURNE, 4h.p., brand new, 3-speed, K.S., handle-bar clutch, beautiful machine; £90.—Box 7,564, c/o *The Motor Cycle.* [9496

Norton.

PREMIER Motor Co. for Nortons.

LATEST Improved Models for immediate delivery at 1922 reduced prices.

BIG 4, chain drive, £120; Model 16H., 3½h.p., 3-speed, T.T., chain drive, £115; Model 9, 3½h.p., belt drive, £80. Write for revised price list. Easy payments only 4% extra. Buy your machine direct from the Norton specialists, The Premier Motor Co., Astoo Rd., Birmingham. [0625

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0717

LOOK Out For Julians of Reading on Norton stand. [8704

£85.—16H Norton and sidecar, 1921 (July), all on. —Day, Friars Place, Chelmsford. [1117

IF —

I were a buyer, and wanted to make the most out of my cash outlay, I should go carefully over every advertisement in this paper to decide who most fulfils the object I have in view.

TRY THE EXPERIMENT & NOTE THE RESULT!

BRAND NEW 1921 MODELS, SLIGHTLY SHOP-SOILED.

Lot 13.—1921 4 h.p. **ARMIS,** twin M.A.G. engine. List price, £135. A very special offer. **Sale price, £75.**

Lot 14.—1921 8 h.p. **MATCHLESS** Combination, spare wheel, and sidecar screen. List price, £185. **Sale price, £154.**

Lot 15.—1921 6 h.p. **MARTINSYDE** Combination, 3-speed, clutch, and kick-starter. List price, £155. **Sale price, £130.**

Lot 16.—1921 4½ h.p. **B.S.A.,** Model H2, all-chain drive. List price, £110. **Sale price, £89 10s.**

Lot 17.—1921 4½ h.p. **B.S.A.,** Model K2. List price, £107. **Sale price, £85.**

Lot 18.—1921 2½ h.p. **VELOCETTE,** 2-speed, all-chain drive. List price, £65. **Sale price, £51 10s.**

Lot 19.—1921 2¾ h.p. **MASSEY-ARRAN,** 2-speed, disc wheels. List price, £101 17s. **Sale price, £75.**

Lot 20.—1921 8 h.p. **REX** Combination, Blackburne engine, all-chain drive, detachable wheels and spare. List price, £209 12s. **Sale price, £144.**

Lot 21.—1921 4 h.p. **VERUS** Combination, Blackburne engine, 3-speed clutch and kick-starter, special Olympia Show model, with sporting Sidecar, mahogany tool box. A beautiful outfit. List price, £185. **Sale price, £125.**

Lot 22.—1921 4 h.p. **BAT,** twin J.A.P., 3-speed, clutch, and kick-starter. List price, £120. **Sale price, £85.**

Lot 23.—1921 4 h.p. **WILKIN-BLACKBURNE,** 3-speed, clutch, and kick-starter. List price, £132. **Sale price, £90.**

Lot 24.—A number of Brand New 4 h.p. **Douglas Sidecars,** complete with screen, side curtain, and lamp. List price, £40. **Sale price, £22 10s.**

Lot 25.—A number of Brand New **Millford Sidecar Chassis,** with 28 × 3 wheel and tyre, specially made for 7 h.p. Indian spring frame with lefthand kick-starter. List price, £27 10s. **Sale price, £15.**

ALEXANDER'S

113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.

MOTOR CYCLES FOR SALE.

Norton.

"WAIT and See" Jack Healy of Cork on Norton Stand, rider and agent. Garage: Drinan St. [X2546

1921 Special 3½h.p. Norton, racing gears, plated tank, guaranteed over 75 m.p.h., like new, and guaranteed for 3 months, electric lamps, special bars, etc.; cash £90.

1921 Norton Big 4 Solo, tax paid, guaranteed perfect; first £88.

1921 Norton, 17C, Lucas lamps, speedometer, etc., as new, and perfect; £105.

1916 Norton, 3-speed, chain-cum-belt, in sound order, lamps, tax paid; any trial; cash £69.—A. Jackson, East Parade, Keighley. [8666

1921 3½h.p. Norton, fully equipped, tyres, enamel, and plating unscratched, mechanically perfect; exceptional bargain, 84 gns; after 5 p.m.—4, Elm Gardens, Hammersmith. [9927

NORTON 1919 3½h.p., 3-speed, clutch and kick starter, all chain drive, lamps, horn, licenced, engine, etc., overhauled, good appearance; £75.—Herbert Robinson, Ltd., Green St., Cambridge. [9572

1921 4¼h.p. Norton, in Isle of Man frame, long exhaust, all lamps, horn, Canoelet, K4, painted primrose, screen, luggage grid, mileage 1,000; £120; photo if required.—Coltman, 19, Lawns, Hinckley. [X2914

NORTON.—Full representative stocks 1922 models; immediate deliveries. Cash or exchanges; deferred payments 4% extra on balance.—Maudes', 100, Gt. Portland St., London; Walsall Garage, Walsall. [9654

1921 T.T. B.R.S. Norton, winner of several prizes in speed trials, special long wheelbase and nickel-plated tank, Bosch mag., lamp, horn, 2 carburetters, tax paid; £70.—Lindsay, Brasenose College, Oxford. [9441

NORTON 1921 Big Four, sporting sidecar, Lucas Magdyno, Lucas horn, Cowey speedometer, oversized tyres, as new; £160; deferred payments if desired.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X2948

1921 Big Four Norton and sporting sidecar, Lucas King of Road set, Lucas horn, everything complete, licence paid, absolutely as new, late owner just purchased car; cost over £182 August, 18th, 1921; sacrifice £115; any trial.—Gibb, Northgate, Gloucester. [9053

NORTON 3½h.p., Cancelet sidecar, 16H, B.R.S. engine, close and wide gear ratios, cast iron and aluminium pistons, 5 sprockets, bored out, Senspray, engine just overhauled, sold tuned up as it won various firsts at hill-climbs, tax paid, horn; price £100.—Apply for particulars, O. G. Smart, Trinity College, Cambridge. [9512

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, have every Norton part in stock; complete illustrated list post free. [9400

N.S.U.

5-6h.p. N.S.U. Motor Cycle, less power unit, good tyres, also suitable for 4h.p. single engine; best offer.—H. Burden, Broadmayne, Dorchester, Dorset. [1041

N.U.T.

N.U.T. 1920 3½h.p. Twin, Magdyno lighting, good running order, like new, licence paid; best offer over £95.—Willett, Cheveley, Newmarket, Cambs. [9724

1920-1 3½h.p. N.U.T., Lucas Magdyno lighting, horn, etc., perfect condition throughout; £78; after 5 p.m.—4, Elm Gardens, Hammersmith. [9928

N.U.T.—Sole distributing agents for London, Surrey, Middlesex, Hertfordshire, Essex, Cornwall, Devon, Somerset, and Staffordshire; particularly attractive terms and sole districts being offered to sub-agents for 1922; immediate deliveries; cash or exchanges; deferred payments 4% extra on balance.—Maudes', London, Exeter, and Walsall. [9655

O.K.

O.K. 2½h.p., 1921, new September, done 200 miles; offers.—Lawrence, 31, St. John's Rd., Poole, Dorset. [9626

£29/10.—O.K. Union 2¾h.p., 1921 model, perfect; exchanges considered, cash either way.—8, High St., Wandsworth. [9832

£55.—July (1921) O.K.-Villiers, 2½h.p., kick start, hand clutch, good condition; S.W. district.—Box 7,578, c/o *The Motor Cycle.* [9561

Omega.

OMEGA-VILLIERS, 1921 (June), 2¾h.p., 2-speed, tax paid, horn, lamps; bargain, £50.—R. Bailey, K.C.A., Sleaford, Lincs. [9522

1921 Omega 2¾h.p., 2-speed, clutch, kick start, equipped, like new, small mileage; nearest £45.—14, Goodmayes Av., Ilford. [9705

1919 Omega-Jap 2¾h.p., 2-speed, tax paid, all on, Tan-sad, hardly used, excellent condition; £35. —96, Sandringham Rd., Dalston [9740

1920 Omega-Jap 2¾h.p., 2-speed, K.S., clutch, Dunlops, spares, all on, perfect; £50, no offer.—138, Avondale Rd., Newcastle-on-Tyne. [9481

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1919 3½h.p. Combination, legshields, Binks, carburetter, Cowey speedometer, Lucas horn, P. and H. lamps, Cameo wind screen, luggage grid, licensed, engine and gear box just overhauled; £120.—Herbert Robinson, Ltd., Green St., Cambridge. [9565

Spare Parts:

SUNBEAM Owners are informed that arrangements have been made for spare parts to be stocked at the following Sunbeam Depots:

LONDON, E.C.—Sunbeam Depot, 57, Holborn Viaduct. Tel. No.: 2180 Holborn.

LONDON, S.W.—Sunbeam Depot, 157-8, Sloane St. Tel. No.: 1106 Victoria.

LIVERPOOL.—Sunbeam Depot, 68, Renshaw St. Tel. No.: 729 Royal.

MANCHESTER.—Sunbeam Depot, 20, Peter St. Tel. No.: 3952 Central.

LEEDS.—Sunbeam Depot, 5, Woodhouse Lane. Tel. No.: 23277.

LEICESTER.—Sunbeam Depot, 16, London Rd. Tel. No.: 3717.

BOURNEMOUTH.—Sunbeam Depot, 8, Holdenhurst Rd. Tel. No.: 95Y.

EDINBURGH.—Sunbeam Depot, 37, George St., Edinburgh [9268

QUANTITY of Sunbeam 3½h.p. Spares. Stamp enquiries.—Snow, Laurel St., Dalston, E.8. [1104

HERBERT ROBINSON, Ltd., Green St., Cambridge. —All Sunbeam parts in stock. Write us if you are hung up for any part. [9402

Swift.

SWIFT 2¾h.p., good condition, fast, tax, lamps, horn; £23, or exchange, push cycle part.—87, Kent Rd., Swindon. [X3008

Thor.

£50.—Thor 12h.p., American police model, dynamo lighting, not done 1,000; suitable sidecar, £20; exchanges considered.—8, High St., Wandsworth. [9831

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists, The Premier Motor Co., Aston Rd., Birmingham [0627

1922 Triumps.—All models can be supplied.—Gourlays, Fallowfield. [X2959

CROSS, Effingham Sq., is agent for Rotherham district for Triumphs. [X3005

3½h.p. Triumph, clutch, 1913; nearest £35.—Nelsey, Stickney, Boston, Lincs. [9898

TRIUMPH 1920 2-stroke, 2-speed, licence paid; £45. —Jones' Garage, Droitwich. [8316

1920 3½h.p. Countershaft Triumph, as new; £75. —17, St. Charles Sq., W.10. [9809

1918 Countershaft Triumph, in fine condition; £48. —24, Balliol Rd., North Kensington. [9762

TRIUMPH T.T. 1914, lamps, horn, licensed; £30.—Herbert Robinson, Ltd., Green St., Cambridge. [9574

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

4h.p. Triumph Coachbuilt Combination, all on, tax paid; £42.—Speechley, 86, Churchfield Rd., Acton, W.3. [9612

3½ T.T. Triumph, fast and flexible, given; 17 gns.; carriage paid.—Ramsden's, Maybell Av., Blackpool. [9892

TRIUMPHS.—We have one or two countershaft models, prices low;—Bunting's Exchange, Wealdstone. [1010

1919 Triumph Combination, 4h.p., 3-speed countershaft, Dunhill sidecar; £85.—Knight's Garage, Reigate. [9492

1921 Triumph Combination, Aug., 700 miles, Cameo footboards; £100.—Donkin, Bishop St., Shrewsbury. [9959

TRIUMPH 1919 Countershaft, very small mileage, practically new; £75.—22, Princess Rd., Finsbury Park, N.4. [9997

1918 Countershaft Triumph, perfect condition; any trial; £48.—Side bell, 9, Wallingford Av., North Kensington. [9827

TRIUMPH JUNIOR, 1921, perfect condition, equipped; £50.—Scriven, 12, Stanford Rd., New Southgate, N.11. [9745

1918 Triumph Combination, lamps, etc., new tyres, perfect; £65; exchange late Morgan.—120, Sutherland Rd., Croydon. [1002

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—Triumphs, all 1922 models supplied promptly on easy terms or exchange. [1067

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TRIUMPH 4h.p. Countershaft, Lucas lamps, taxed and insurance; accept £52.—Write, M.G., The Torrs, Cornwall Rd., Sutton. [9424

TRIUMPH 1920 Combination, lamps, speedometer, excellent condition; 100 gns.—Reynolds, Cuilfathain, Ox Lane, Harpenden. [9615

1914 Triumph, 3-speed, just re-enamelled, overhauled, perfect; £37/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [9954

1914 Triumph Combination, 4h.p., fully equipped, excellent condition; £50.—22, Huntingdon Buildings, Bethnal Green Rd., E.1. [9955

1919 (Oct.) C.S. Triumph and Milford C.B. sidecar, Lucas lamps, horn, speedometer, all tools, spares; £95.—Watts, 54a, Church Rd., Hove. [9474

1912 Triumph Combination, 2-speed N.S.U., clutch hub, new cylinder and overhauled; bargain, £40.—1, Norwood Rd., Herne Hill, S.E.24. [9671

TRIUMPH, 1915, 3-speed, countershaft, Lucas lamps, speedometer, very smart; 49 gns.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [1118

OXFORD.—Countershaft Triumph combination, coachbuilt underslung sidecar, fully equipped; 60 gns., bargain.—King, Egrove, Kennington, Oxford. [X2975

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1920 Triumph Gloria Combination, all accessories, unscratched, guaranteed as new; £100, or offer; exchange.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [9875

1918 Triumph 4h.p. Combination, renovated makers 1920, excellent condition throughout, smart, fast, fully equipped; any trial; 80.—Clean, 52, Claremont Rd., Surbiton. [9721

3½h.p. Triumph, Philipson pulley, clutch, and light coachbuilt sidecar, all accessories, guaranteed in good condition and mechanically sound; £55.—Gibb, Northgate, Gloucester. [9056

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SPORTING Coachbuilt Sidecar, complete; £7/10; good condition.—Advertiser, 116, Woking Rd., Guildford. [9690a

CANOELET C.B. Sidecar, fine condition, complete fittings, suit Triumph; £6/10.—Prout, Canon St., Taunton. [1032

CAMBER Sidecars from £16/10 to £25. Write for 1922 price list.—Bright and Hayles, 78, Church St., Camberwell. [8793

BEAUTIFUL 1920 Canoelet Touring Sidecar, underslung, 4-point; nearest offer £23 secures.—Rosslyn, Devon Rd., Cheam. [9683

NEW Metal Bulbous Sidecar, listed £37/10; evenings; £12/10.—120, Marlborough Flats, Walton St., Chelsea, S.W.3. [X2993

COACHBUILT Sidecar, black, in good condition; £5.—D. and S. Autocar Co., 33, The Parade, Golders Green, N.W. [9983

LIGHTWEIGHT Sporting Sidecar, £10; bulbous, large underslung, £15; both snips.—Stock, 107, Coningham Rd., Shepherd's Bush. [9947

BARGAINS.—Coach Gloria sidecar with screen, £9/19/6; large Bowser, seat child, £16/10/6.—Booths' Motories, Halifax.

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph, B.S.A., £18/15/6.—Booths' Motories, Halifax.

BARGAINS.—New large size coach bodies, locker under seat, £6/19/9; featherweight sidecar, £12/10/6; cane sidecar, £6/10/6.—Booths' Motories, Portland Place, Halifax. [8199

ROBINI Manufacturing Co.—Show week. We are exhibiting at No. 9, West Kensington Garden Mews. Call and see us.—Below.

END of Season's Bargains.—Douglas chassis, complete with new tyre and tube, with shop-soiled bodies, complete with apron and adjustable wind screens; £14.—Below.

MILLS-FULFORD Chassis with shop-soiled bulbous back body, designed for this chassis, complete with adjustable wind screen and apron; £12/15. Do not miss these wonderful offers; carriage extra. See Body column.—Brixton 1585.—Robini Manufacturing Co., 1, Tulse Hill, and 22, Water Lane, Brixton, S.W. 'Buses and trams pass the door. [1029

WATSONIAN R34 Sidecar, dark green, new last May, condition perfect; £20.—Kirkby, c/o Colinslee Motor Works, Neilston Rd., Paisley. [9485

SPORTING Float Sidecar, unused, complete, smart, body painted Royal blue; £18.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [1094

SWAN Sporting Sidecar, off Indian Scout; cheap for cash, or exchange push cycle or anything useful. —Cheetham, 83, Water Lane, Preston. [9591

WILLOWBROOK Royal Leicester Sidecars, smartest designs, first-class finish; prices from 17 gns. Write for catalogue. Repairs undertaken, hoods, wind screens, etc.—The Willowbrook Motor Co., Leicester. [0335

SIDECAR.—Have a Hopley folding sidecar. Saves garage. Attached to motor will go through passage 27in. Tandem and single bodies fitted. Tester 7 years on motors up to 9h.p.—Hopley, Upper Highgate St., Birmingham. [0152

FOLDING Sidecar.—When ordering your motor, specify a folding sidecar; made to suit any motor up to 10h.p.; your own or any detachable wheel can be used; have been in use 7 years. I have many testimonials.—Hopley, Upper Highgate St., Birmingham. Estd. 25 years. [9218

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BASTONES for Sidecars. You cannot do better.—Sidecars, complete, slightly soiled, from £13/17/6; bodies from £4; also a few Montgomery No. 1 and sporting models, slightly soiled, to be cleared cheap.—228, Pentonville Rd., King's Cross, London, N.1. 'Tel.: 2481 North. [7722

SPECIAL Lightweight Underslung Chassis, suitable for 3½ or 4h.p.; price £5, or with lightweight body £10/15. Second-hand coachbuilt sidecar, complete and ready for fixing, £7/10. Mills-Fulford stockists. Write for bargain list.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton. (Half minute from Brixton Skating Rink.). [1025

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A. P. REY, 378-384, Euston Rd., N.W.1, has for immediate or early delivery:

MORGANS, all models.

COVENTRY PREMIER, 1922, 4-wheeler model; £250.

ROVER 8h.p. Model; £220.

G.N., all models

EXCHANGES or Deferred Payments arranged.—'Phone: Museum 6436.

MORGANS, second-hand, several in stock.—A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [1007

BRAND New 1921 Tamplin, 8h.p., 3-speed, 2-seater; £125.—Percy and Co., 314, Euston Rd., N.W.1. [1021

BRAND New Grahame-White, 4h.p., 2-speed, 2-seater; £70.—Percy and Co., 314, Euston Rd., N.W.1. [1022

SPORTING 2-seater, very fast, twin water-cooled, 3 speeds, reverse; £95; exchange.—84, Greenside Rd., Croydon. [9909

1922 Morgans.—If this is your choice you cannot do better than purchase it from Gibb, Northgate, Gloucester. [1017

A.V. Monocar, 1919, mechanically perfect, complete, insured £100; any trial; £65.—Kenilworth Poultry Farm, Kenilworth. [X2895

TAMPLIN, 1920, 8h.p. J.A.P. engine, climb anything, very fast; bargain, £85.—Ralph, Cambridge Place, Norfolk Sq., W.2. [1009

MORGAN, 1920 (June), 8h.p. J.A.P., discs, speedometer; £130; take solo mount part.—Thomas, 90, Australia Rd., Cardiff. [9490

A.C. Sociable, good condition, fully equipped, lamps, speedometer, spare tyre; £65; trial.—Write, 64, Park Rd., Dulwich, S.E. [9802

MORGANS, latest 1922 models, in stock for immediate delivery; prices from £150, equipped; exchanges, extended terms.—Below.

MORGAN Grand Prix, 1921-22, M.A.G., special gear ratios, discs, aluminium dash, speedometer, Lucas dynamo lighting, mileage under 200; cost £240, sacrifice £215.—Below.

MORGAN Grand Prix, 1920, J.A.P., lamps, horn, speedometer, hood, etc.; £150.—Elce, Ltd., 15-16, Bishopsgate Av., Cannonile St., E.C.3. 'Phone: Avenue 5548. [0068

HALIFAX.—G.N., 1920, dynamo lighting, £165; Morgan 8h.p., £105; another, with hood and screen, £95.—Halifax Motor Exchange, Horton St., Halifax. [X2925

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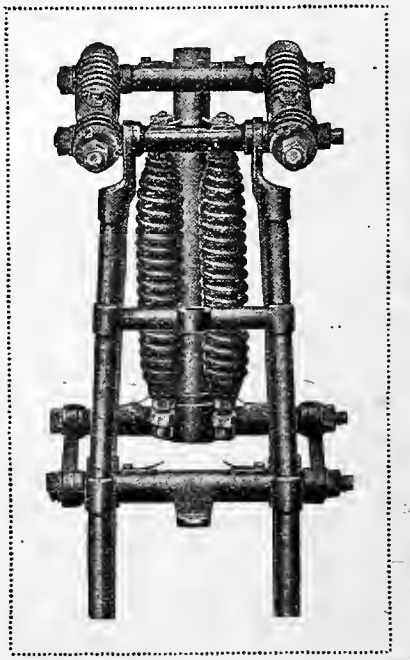

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CYCLE Car (Morgan type), twin, modern, worm shaft drive, 2-seater; £40; perfect.—H. R. Hall, Hutton Grove, North Finchley, London. [9750

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BRAND New 1922 8h.p. Rover, show model, in stock; Morgans and motor cycles part exchange. —Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X2963

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CARDEN Monocar, 1915, completely equipped, electric light, 5h.p. J.A.P., perfect condition, fast and sporting; £34.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [9902

BAYLISS-THOMAS, 1922 10h.p. model, 4-cyl. water-cooled engine, 3 speeds, Magdyno; 300 gns; immediate delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0736

MORGAN, G.P., w.c., discs, lamps, horns, screen, overhauled, new hood, 50 m.p.g., exceptionally smart and fast; trial week-ends; £125.—34, Clarence Rd., Horsham. [9930

MORGAN 1921 De Luxe Model, air-cooled J.A.P.; all accessories, lamps, etc., nearly new tyres, very small mileage; £120, bargain.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [9901

1915 Baby Peugeot, dynamo, speedometer, electric horn, repainted, appearance and condition excellent; £145.—Tel.: Museum 6626.—A.S.C., 166, Gt. Portland St., W.1. [1126

1921 Morgan de Luxe, only run few miles, water-cooled, speedometer, watch, fully equipped; cost £265, accept £160.—Side bell, 9, Wallingford Av., North Kensington. [9830

ROVER 8h.p., single-cyl., W.C., 2-seater and dickey, 3 speeds, reverse, hood, screen, lamps, good condition; £70; exchange Sociable or Swift.—12, Lesbourne Rd., Reigate. [9910

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—New 1922 Morgan Grand Prix, show model, special show finish, fully equipped; price £180, plus cost of extras; cash or easy terms. [1072

BRAND New 1922 Grand Prix. Morgan Runabout, M.A.G. engine, in stock; used Morgans and motor cycles part exchange.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X2964

BRAND New 1922 Coventry Premier Runabout, in stock; £250; used Morgans and motor cycles taken in part exchange.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X2965

CYCLE Car, incomplete, sheet metal body, with dash and steering, 50/-; three wheels, with tyres, 15/- to 25/-; 4h.p. w.c. engine, mag., and carburetter, £6. —Heane, Frimley Rd., Ash Vale. [9946

MORGAN Grand Prix, late model, 8-10h.p. J.A.P., water-cooled, disc wheels, aluminium dash, hood, wind screen, licence, overhauled; nearest £120; exchanges.—63, Solon Rd., Brixton. [9848

MORGAN Grand Prix, about 1917, special 10h.p., overhead valve J.A.P. engine, condition throughout like new, electric lighting, discs, etc.; 90 gns.—Dawson, 34, Ampthill Rd., Bedford. [9720

MORGAN 1914 Runabout, twin J.A.P., all-chain, stored 3 years, in sound mechanical order, go anywhere, tyres, lamps, appearance good; £85.—2, Lynford Gardens, Seven Kings, Essex. [9839

MORGAN de Luxe, 1921, a.c. M.A.G., 10h.p., perfect order, lamps, speedometer, Klaxon, jack, spare tyre, tube, chain, etc.; £195; inspection by appointment.—Atkins, 2, Micheldever Rd., Lee, S.E. [9697

CASTLE THREE 10h.p., 4-cyl., w.c., dynamo lighting, detachable wheels with spare, not done 600 miles, new condition; price £180; owner bought larger car.—The Haslemere Motor Co., Ltd., Haslemere, Surrey. [0735

MORGAN, G.P., 1919, W.C., 10h.p. M.A.G. engine, dynamo lighting, 5 lamps, speedometer, hood cover, painted mauve, very smart; £120; bargain.—Botten 341, Upper St., London, N.1. 'Phone: 2480 North. [9743

8h.p. Water-cooled J.A.P. Engined Racing Build Cycle Car, good running order, V radiator, Bosch, Amac, Epicyclic 2-speed, 700×80 tyres, engine practically new; bargain, £45; would sell parts.—Cooper, Walcot, Folkingham, Lincs. [9628

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WANTED.

WANTED, 2½h.p. Singer cylinder, new.—Mackie, Engineer, Peterhead. (D) [X2962

MODERN C.B. Sidecar for 3½h.p. Rover (1919).—76, College Rd., Maidstone. [9723

WANTED, 4h.p. Triumph engine, 1920, less mag.—Andrews, Kent St., Belfast. [9411

WANTED, Easting wind screen, large size.—Fuller, 53, Westgate, Peterborough. [9835

SPEEDOMETER, fit Morgan, cheap. Sale, Xl'all saddle, offers.—Horner, Kendal Lane, Leeds. [X2990

WANTED, frame for 4h.p. Bradbury, must be sound and cheap.—Matthews, Minsterley, Shrewsbury. [9600

WANTED, Seal 2-seater, recent date, good condition.—17, Graham Rd., Weston-super-Mare. [9794

SUNBEAM 3½h.p. Parts wanted, clutch, gears, forks, flywheels, etc.—Snow, Laurel St., Dalston, E.8. [1102

WANTED, Harley spares, incomplete or smashed machines cheap.—2, Fortune Gate Rd., Harlesden, N.W. [9937

A.C. Sociable, wheel steering, late model; sidecar, 28in. wheel, as part payment if desired.—Larke, Clopton, Woodbridge. [9593

WANTED, second-hand Morgans, in good condition.—A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone Museum 6436. [1008

WANTED, B.S.A. No. 3 Sidecar; will exchange No. 2 and cash, or sell for £25.—Townsend, 40, High Rd., N.2. [9905

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WANTED, Sturmey 3-speed wheel, suit 1910 Premier, or N.S.U. gear; price and particulars.—128, Tong St., Bradford. [9819

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INCOMPLETE P. and M.'s or parts, W.D. spares tyres, bankrupt stocks, etc.—Inman, Durham Rd., Seafoith, Liverpool. 'Phone: Waterloo 296. [7243

£2,000 Cash Waiting for quantities of motor cycle parts and accessories.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789 [6112

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WANTED, Triumph countershaft crank cases, flywheels, S.A. gear boxes, parts, or empty cases; any quantity purchased.—Hole, 129, Park Lane, Carshalton. [9767

WANTED for 3½h.p., N.S.U. suitable 24×2 rim, 48 holes, ⅞in. belt rim, mudguards, gear, silencer, tyres; cheap.—Duncan, 58, Cambridge St., Swansea. [9805

WANTED to purchase outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St. Liverpool 'Phone: 1092 Royal [9486

WANTED, light car or 3-wheeler, A.C. Sociable, wheel steering, in perfect order and about £40 offered; Triumph engine, complete or parts, also wanted.—591, Foleshill Rd., Coventry. [X3064

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EXCELSIOR, new, 2-stroke, 2-speed, for Ford car or van.—417, High St., Chatham. [9622

ZENITH 6h.p. Twin, good condition; £45; take Levis part payment.—Apps, Bracknell. [9924

EXCHANGE Modern 2-seater, good combination, sell cheap.—176, South Ealing Rd., W.5. [9872

ALLDAYS 4-5-seater (see advert.), for 2-seater, motor cycle, Morgan.—63, Solon Rd., Brixton. [9850

1916 Maxwell 4-seater, nice order, for Morgan and cash.—1, Bellingham Terrace, Catford. [9842

P. and M. Combination; £50; exchange 8h.p. twin solo.—Frankland, Commercial Rd., Nelson. [9813

EXCHANGE 1917 Clyno combination for lower power and cash.—78, Yerbury Rd., Holloway, N.19. [9516

ARIEL 1920 Combination, unmarked, for light weight and cash.—68, Bingham Rd., Croydon. [9164

GOOD Single Speed 2-stroke and cash for Rudge, or sell £30.—Warwick House, Somercotes, Derby. [9532

LIGHTWEIGHTS and Cash for 3½h.p. Brough 3-speed, 3½h.p. Sunbeams. See columns.—Cox. [X2994

EXCHANGE Card Table for 4h.p. Douglas carburetter or lamp set.—16, Trelawney Rd., E.9. [9682

1920 A.B.C., D.A. lighting, Zenith, N.U.T., Triumph, etc.; adjustment.—10a, Virginia St., Southport. [9788

SIXTY Cars for Exchange; postcard procures list. Call.—Douglas S. Cox, Motors, West Norwood. [1043

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EXCHANGE Rudge Multi Touring Bars for T.T.—Freebody, 20, Perseverance St., Bermondsey, S.E.1. [9625

15h.p. Steam Motor, new, cost £100; exchange runabout, combination, or sell.—21, Winstanley Rd., Sheerness. [9451

PREMIER 3¾h.p. Twin, 2-speed, clutch (£35), for lower power, 2 or 4-stroke.—150, Garratt Lane, Wandsworth. [9869

CASH and Powerplus Indian, 7h.p., genuine road racer, 3-speed, K.S., for English solo.—83, Lord St., Southport. [9787

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LATHE, 7in. screw-cutting; also turret lathe for 1920 4h.p. countershaft solo.—82, Caledonian Rd., London, N. [9903

EXCHANGE 2-speed Coachbuilt Combination for 2-speed lightweight and little cash.—Box 189, c/o *The Motor Cycle.* [X3010

3½h.p. Motor Cycle, complete less gears, for 2-stroke, or sell £25; full particulars.—Parkinson, 9, Price's St., S.E.1. [9456

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EXCHANGE two new gent's push cycles and cash for small power motor cycle.—48, St. Barnabas St., Pimlico, London, S.W.1. [9700

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6h.p. Twin Minerva, Bosch, Grado gear, mechanical valves, drop top tube, level for good scooter.—89, East Hill, Wandsworth. [9951

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EXCHANGE 8h.p. Humberette, 1914, a.c., in good condition, level, for Morgan, or sell £70.—61, Grand Parade, Harringay, N.4. [9687

A Nearly New 2-seater Car, 4-cyl., W.C.; sell cheap, or exchange late combination.—Spurling, 8, Courthope Rd., Hampstead, N.W.3. [9806

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DOUGLAS Sporting Turnout, just had £20 renovation, perfect; £40; cheaper machine part, F.N. preferred.—3, Bath Rd., Mitcham. [9864

HARLEY-DAVIDSON Combination, not W.D.; exchange solo and about £30.—Snow, Laurel St., Dalston, E.8. (Seen any time.) [1105

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O.K. Junior, 1921, Villiers engine, little used, for good sidecar, cash adjustments.—Pugh Engineering Works, Shirley Rd., Croydon. [9648

EXCHANGE Triumph Combination, 3-speed, clutch (hub), condition as new, for higher power; sell £45.—84, Clarence Rd., Hackney. [9709

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2¾h.p. Wolf, 3 speeds, clutch, usual accessories, splendid order; £35, near; exchange Douglas 2-stroke.—1, Belvedere Rd., Taunton. [9899

EXCHANGE 2-seater G.W.K., 1915, in new condition, for lightweight and cash.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [9885

6h.p. Rex Motor Cycle, mag. ignition, 3-speed pulley, sell cheap, or exchange for lightweight.—Hird, Aysgarth, Hill Top, Wilmslow, Cheshire. [9577

SUPERB 1921 Enfield Combination, every accessory, for 1921 G.P. Morgan or solo and cash.—Manager, Old Waverley Hotel, Southport. [9789

1921 (May) 3¾h.p. Scott, almost new, for 8h.p. Sports Zenith or 5h.p. N.U.T., or sell, £95.—Hudson, The Croft, High Barnes, Sunderland. [9825

EXCHANGE O.K., countershaft, 2 speeds, free, expert examination and cash for higher power.—26, Mannock Rd., Wood Green, London, N. [9957

EXCHANGE 2-seater Lagonda Coupe, like new, for lightweight and cash, or sell; £145.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [9884

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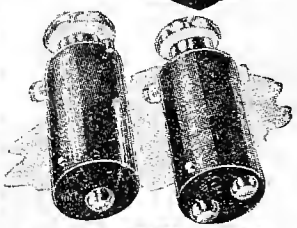

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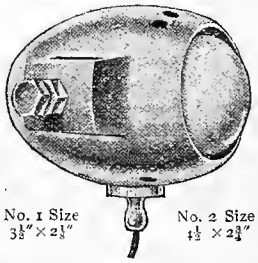
To convert bayonet to screw in bulb.

Single or Double Pole, **2/-** each. Post free.

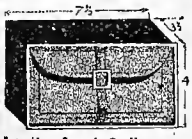


No. 1 Size $3\frac{1}{2}'' \times 2\frac{1}{8}''$ No. 2 Size $4\frac{1}{2} \times 2\frac{3}{4}''$

STADIUM SIDECAR LAMPS

Cast Aluminium. Highly polished. Manufactured in two sizes.

No. 1 Size **3/9** Carriage Paid. No. 2 Size **4/6**



METAL CASED TOOL BAGS

Leather front. 2 clips supplied with each bag. Best value obtainable.

CARR. **5/9** PAID

Turner's Stores The MOTOR CYCLISTS' ACCESSORY HOUSE

180-1-2, Railway Approach, SHEPHERD'S BUSH, W.12 'Phone Western 6177

EXCHANGE.

WILL Exchange two renovated shop-soiled 2¾h.p. Douglases for 4h.p. C.S. Triumph and chassis.—Pugh Engineering Works, Shirley Rd., Croydon. [9647

TWO 1916 7-9h.p. Harley-Davidson Combinations, exchange either for lower power solo or sidecar, cash either way.—Ewers, Newton Rd., Burton-on-Trent. [9777

TRIUMPH Combination, 1918, and chest of carpenters' tools for Harley or Matchless combination.—Lennard, 25, Charlesworth St., London, N.7. [9904

1920 I.O.M. Rudge Multi 3½h.p., mileage about 2,500; exchange Zenith, Triumph, or similar.—68, High Lane, Chorlton-cum-Hardy, Manchester. [9817

1921 Velocette, 3-speed (£60), W.D. 2¾h.p. Douglas (£45); exchange both and cash for 1921 car or combination.—41, North Bridge St., Sunderland. [9888

TRIUMPH, 1913, clutch, h.c., excellent condition, new Dunlop back, sloping top tube, for good S.C. lathe, or sell £30.—Roberts, 30, Pretoria Rd., Romford, Essex. [9507

G.N. 1921 Standard, lamps, speedometer, hood, etc., spare wheel, fine condition throughout, guaranteed sound; £160, or late combination part.—38, Claverton St., Bath. [9768

1921 Triumph Combination, Easting wind screen, luggage carrier, pillion, for late A.V. 2-seater, or sell £120.—Tapson, 12, St. George's Terrace, Stoke, Devonport. [9505

1920 Sunbeam 2-seater Sidecar, spacious lockers, perfect condition, for good single-seater and cash, 28×3 wheel, suiting 8h.p.—Snow, Nurseryman, Broadstone. [9602

WHAT Exchanges?—1920 special 3½h.p. T.T. B.S.A., with Philipson pulley, as new in every way, and like new, very fast; or sell, cash £55.—A. Jackson, East Parade, Keighley. [8664

GROUND, value £120, in Kamloops, British Columbia, for high-grade combination, late model, and good condition.—Kidd, Lochend Nursery, Ratho Station, Scotland. [9495

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Hampstead Tube Station). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [9665

EXCHANGE Peugeot Coupe, appearance as new, electric lighting, gate change, dickey, tax paid, 26 miles to gallon, for combination; sell £150.—6, Albert Rd., Peckham, S.E. [9887

SIDECAR, underslung, spare body, £10; exchange for typewriter, Roc 2-speed wheel, cabinet gramophone, diamond ring, or electric lighting set.—Warburton, Lyme Regis, Dorset. [9603

EXCHANGE 1919 Carden 8h.p., Sturmey 3-speed, excellent condition, for combination, or sell £42.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9975

RACING 1921 Twin J.A.P., overhead valves, Sturmey countershaft gear box, original tyres, long exhausts, perfect, for late Douglas or other; sell £50.—89, East Hill, Wandsworth. [9948

EXCHANGE New Pair Aluminium Footboards, motor cycle saddle, motor cycle lamp and generator, and horn, lot for gent.'s free wheel cycle.—Box 190, c/o *The Motor Cycle*. [X3011

PRACTICALLY Brand New T.T. Rover, hand-controlled Philipson, Bonniksen, plated exhaust, lamps, beautiful condition, for Harley or other; sell £68.—89, East Hill, Wandsworth. [9950

1919-20 Powerplus Indian, T.T., dynamo lighting, long plated exhaust, exceptionally low, do 70, plated fittings, as new, for sporting cycle car, A.V.; sell £78.—89, East Hill, Wandsworth. [9949

EXCHANGE Rover 8h.p., nearly new, mileage 400, with £25 accessories, for combination and cash, or sell £210.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [9978

WILL Exchange magnificent brand new Lea-Francis, unridden, for genuine 1918 or 1919 4 h.p. Triumph, with cash adjustment; appointment.—Rhodes, 53, Eastern Rd., Romford. Tel.: 95. [9999

GOOD Combinations taken in exchange for new light cars, also many second-hand machines in exchange for others.—Goad (Private House Garage), 122, Maida Vale. 'Phone: Hampstead 1353. [9968

EXCHANGE or sell 6h.p. Martinsyde combination, fully equipped, as new (May, 1921); wanted, about 10h.p. 2-seater, good make, not later than 1920; no agents.—Field, Confectioner, Monument Rd., Woking. [9433

2-SEATER Deemster, 9.5h.p., 4-cyl., just been overhauled and repainted, speedometer, dynamo lighting, 5 detachable wheels; exchange for solo or combination.—Levitt, 80, Streatham High Rd. 'Phone: 2701. [1087

LATE 1914 Enfield Combination, speedometer, lamps, pillion, £8 worth spares, guaranteed good order throughout, for G.N. or other good 2-3-seater, cash adjustment; sell £70.—Hett, Hilcote, Alfreton, Derbyshire. [9509

EXCHANGES a Speciality.—Motor cycles taken in part exchange for small and large 2 and 4-seaters; bargain prices.—Seabridge, Hansler Rd., East Dulwich. Hours 10-5.30, or appointment (not Sundays). Sydenham 2452. [4804

THE MOTOR CYCLE

Insurance Policy

Testimony

THIS space will be occupied each week with copies of letters from Policy holders who have made claims. Original letters may be inspected.

Dear Sirs,

I take this opportunity of thanking you for your prompt and ungrudging settlement of this claim, and shall be pleased to recommend your Company to some of my friends whose experiences have been very different.

Yours faithfully,

The only Safe Test of Insurance is Claims. We settle Claims promptly.

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED

(Incorporating The Autocar Insurance Department, Established 1904.)

Head Office:

77, Cheapside, London, E.C.2.

Telephone: City 9831 and 9832.

Telegrams: "Autoinsure, Cent, London."

WE ARE NOT EXHIBITING AT OLYMPIA

BUT ARE MAKING A SPECIAL SHOW AT OUR HOLBORN DEPOT OF

PARAGON Patent

FOLDING SIDE CAR SAVES STORAGE

WHEN FOLDED COMBINATION WILL PASS THROUGH 30 INCH DOORWAY.

HAS BEEN ON THE MARKET

8 YEARS

AND PROVED ITSELF TO BE

ABSOLUTELY SATISFACTORY

CALL AND SEE IT DEMONSTRATED.

WINCYCLE COMPANY Ld.
236, HIGH HOLBORN, W.C.1.
A few doors from Kingsway.

Sturmey-Archer and Armstrong Gears.
Immediate Repairs All parts for all types in stock.

Quotations despatched same day as gear is received. STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock wholesale and retail—2-speed £11, 3-speed £17.

CROMWELL ENGINEERING CO.,
327, PUTNEY BRIDGE ROAD, S.W.15.
Telegrams and Telephone—Putney 1601.
Send Repairs to Putney Station (L. & S.W.R.)

For the convenience of customers we have altered our business hours as follows:—Weekdays, including Saturdays, 8 a.m. to 7 p.m., Sundays 9 a.m. to 1 p.m.

THE "REAL" MUD STOPPERS.

"MARRYATT"

LEGSHIELDS

In Steel, stove enamelled and GOLD LINED,

15/6 per pair,

complete with fittings and carriage paid. Straps are now replaced by bolt and wing nut fastenings, or additional bracket, as preferred. Stoved and lined any standard colours at 2/6 extra.

THE SMARTEST AND CHEAPEST SHIELDS EXTANT.

The Marryatt Engineering Co.,
Marryatt St., Hammersmith, London, W.
TRADE SUPPLIED

REPAIRERS.

WE can bring your machine up to date and make it into a countershaft model by fitting a new back, with Sturmey-Archer gear box; any machine converted.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [7257

CYLINDER Grinding and new pistons at cut prices. We specialise in high-class work and quick deliveries for all classes of engines. Discounts to traders.—Kellett and Collinson, Ltd., Havelock Works, Great Horton, Bradford. [8629

CYLINDERS Reground, accurate finish, compression guaranteed: Triumph, Rover, Premier, etc., 37/-; all 2¾h.p. single, 33/-; twins, 2¾h.p. Douglas, 58/-; J.A.P., Indian, James, 60/-; complete with pistons and rings.

PISTONS.—Every pattern, standard or oversize, in stock; low price.

PISTON Rings, high grade; none better; thousands of testimonials; oversize or step cut 2/-, standard 1/6 each; return post.—Patent Rings, 30, Wigan Rd., Atherton [5191

V.S. Motor Cycle Agency.—Supplying spares and overhauling V.S. 2-speed gears, which are also fitted to Matchless machines, etc. New and second-hand V.S. 2-speed gears in stock.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [1037

HUB Gear Machines Converted to Countershaft, or complete conversion sets supplied to suit all makes; recommended by the leading motor cycle manufacturers.—Sheldon Engineering Co., Bayley Lane, Coventry. 'Phone: 634. [2679

WELDING, Welding, Welding.—Welding done by experts; cylinders, crank cases, gear boxes, pistons, cranks, flanges, etc.; aluminium a speciality. No cure no pay, and all work returned in 6 days.—H. Heap, 105, Bissell St., Birmingham. [0023

BEACH Engineering Co., 42, Earl St., Coventry.—Engines rebushed, cylinders reground, aluminium or C.I. pistons fitted from £2; connecting rods rebushed; valves 5/-, guides 3/6; pistons complete from 26/-, rings 2/-; valve caps 4/6; other repairs quoted for. [0593

CENTRAL Garage.—Have your Douglas made like new. We will completely overhaul, stove-enamel and replate parts; 2¾h.p. £10, 4h.p. £14; all replacements at cheapest prices. Other machines quoted for per return.—302, London Rd., Thornton Heath, S.E. [1047

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machinery of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Enfield Engineering Co., 31, Silver St., Enfield. [8049

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 14, Miller St., Camden Town, N.W. ('Phone Museum 2434), which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [0639

ACETYLENE and Electric Welding.—Broken flanges, cracked water jackets, scored bores, worn bearings built up; aluminium gear boxes, crank cases, any broken motor part welded and machined up and returned in 7 days; 14 years' experience.—Lincoln Jeffries, Jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. 'Phone: Central 729. [2818

WHITE and Watson, Motor Cycle Repair Specialists.—Douglas riders now is your opportunity. 2¾ and 4h.p. Douglas cylinders reground and fitted with two new pistons complete, and valves refaced for £2 and £3 per pair; other cylinders at the following rates: Up to 68 mm. 25/6, 70 mm. 29/-, 80 mm. 34/-, 85 mm. 37/-, and over 39/6; 2-strokes extra; aluminium pistons; engines rebushed, rebalanced, and overhauled; gear boxes overhauled and replacements machined.—White and Watson, 80, Belvedere Rd., S.E.1. [9860

WE Specialise in repairs to N.S.U. engines and N.S.U. engine-shaft gears; our enormous stock of N.S.U. spare parts (having acquired the company's entire stock-in-trade and patterns) enable us to supply to suit practically all N.S.U. models, including the earlier types, fitted with Eisemann L.T. mag., also for the 2h.p. N.S.U. engines fitted to 1913-14 O.K. machines. In ordering, it is important to submit old parts as pattern; trade enquiries invited.—Eagles and Co., Acton Hill Works, Spares Dept., 275, High St., Acton, London. [0355

IF only the best will satisfy you, then the Tennant Engineering Co., 238, Bristol St., Birmingham, alone can please you. Super-critical you may be, but their work will pass your inspection down to the last detail. No firm has more experience, no firm has keener workmen, no firm has greater or better facilities for turning out perfect work, and no firm will strive more to give you satisfaction. Cylinders rebored and fitted new pistons. Rebushing of every description. Engines completely overhauled and returned full of vigour and vim. Frames altered and repaired. Everything fully guaranteed and at competitive prices. Official repairers to A.C.U. and R.A.C.—'Phone: Mid. 1928. [0047

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading for announcements required by Clubs. Rate, 3d. a word, minimum 3/-.

N.W. LONDON M.C.—London-Gloucester Open 12 Hour Trial, 8 a.m. Saturday, December 31st. Standard awards, silver cups, silver spoons, special awards silver cups to best expert, general, lady, novice, and early date machine. Entrance 30/-.—Particulars, 23, Clifton Av., Finchley, N.3. [1128

IF

YOU HAD COMMENCED TO RIDE MOTOR CYCLES 25 YEARS AGO, and at the end of that time found yourself capable of enjoying anything up to 80 m.p.h. on either Road or Track, I think that you would agree that you had little to learn concerning the why and wherefore of any known Motor Cycle, and what I want you to feel is that the experience I have gained during my 25 years on the road and track is at your disposal. I am able and shall be most happy to advise you impartially regarding any machine. It is true, that what is one man's meat is another man's poison, and if you will meet me at the

ENFIELD CO.'S STAND—No. 86 AT OLYMPIA, or write to me at our usual postal address, I shall be happy to try and prevent you from buying the wrong machine. Will you please consult me on the distinct understanding that apart from the fact that you are under no obligation to purchase from us, it will be a distinct pleasure to me to try and assist you.

The machines which we are offering for the 1922 season include:

ARIEL, B.S.A., DOUGLAS, ENFIELD, HUMBER, INDIAN, MATCHLESS, NORTON RUDGE, SCOTT, TRIUMPH, and VELOCETTE Motor Cycles.

Also

ROVER, BELSIZE-BRADSHAW, and CROUCH Light Cars.

In addition, we have, as always, one of the largest stocks of bargain machines available in this country. We can arrange exchanges, or would be happy to supply on any reasonable system of deferred payments that is convenient for your good self, and I am hoping that I shall see you either at Olympia or that I may hear from you.

Yours enthusiastically,
J. W. TOLLADY, General Manager.

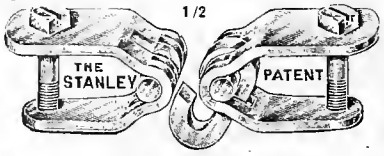
Layton Garages

90, High Street, OXFORD,
And London Road, BICESTER.
'Phone—581 & 784 Oxford.
'Phone - - - 35 Bicester.
'Grams—"Integrity, Bicester and Oxford"

STANLEY BELTS AND FASTENERS.

MILLIONS ordered and in use by H.M. WAR OFFICE and our ALLIES.

A BOX OF STANLEY SPARES is a complete belt equipment outfit—the best and cheapest insurance you can effect against belt trouble on the road. It contains:



The STANLEY FASTENER with the BEND that NEVER BREAKS, the BEST at any price. Hardened & tempered hook and flanged pins

The STANLEY SPARE LINK which is the best belt length adjuster yet invented. Saves time, trouble & money. Saves the cost of a new belt.

The STANLEY SHIELD, which protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley. 9d.

STANLEY ADJUSTING HOOKS, for adjusting the length of your belt in one second. Set of 3, 6d.

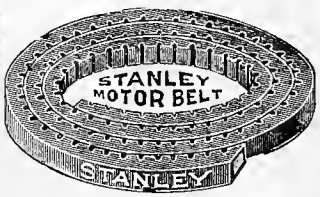
"Never be without a box of Stanley Spares."

Price 3/6 post free. Send size of belt when ordering.

The LION FASTENER, guaranteed for 5,000 miles—11d.

Our Goods are World-renowned for their Reliability.

A STANLEY FASTENER free with each belt.

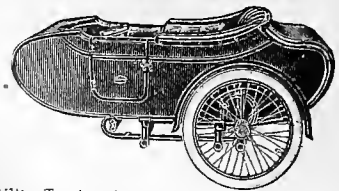


Belt Punches 1/10
Adjustable Punches 2/4

Perfs.	
5/8"	1/6
3/4"	1/9
7/8"	2/-
1"	2/4
1 1/8"	2/10

Stanley Motor Belts & Fasteners
BRITISH THROUGHOUT
(STANLEY WEBB, inventor of the Original Hook Belt Fastener and other Practical Belt Aids.)
BROMLEY, KENT. 'Phone: 806 Bromley

CAMBER SIDECARS



Utility Taodem Model £27. Single-seater Model £25. Bodies only: Taudem, £12 17 6; Single-seater, £10 17 6.

BRIGHT & HAYLES,
78, Church St., Camberwell. LONDON.
'PHONE: BRIXTON 2951.

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

A

OVERCOATS, double-breasted, 3 pockets, belt, heavy collar; exceptional offer, 21/- each.

GLOVES, all leather, gauntlet type, 5/6.

GOGGLES, R.A.F. Aero mask, Triplex glass, highly recommended, 12/6; rubber type, 1/3.

PLUGS.—Brand new Apollo, 1/6.

LAMPS.—Special line of shop-soiled P. and H. lamp sets, No. 120, 25/-; electric solo set, 92/6; P. and H. No. 128, 55/-; 127, 67/6; 131, 8/6; Lucas pattern electric rear or wing lamp, 11/6; F.R.S. streamline No. 105, 42/6; large generators, 8/6; Miller and Lucas sets stocked.

PILLION Seats.—Tan-Sad, 38/6; back rest, 9/-; side footrest, 6/-; stride footrests, 5/- extra.

SPEEDOMETERS.—Cowey trip, £6/10; non trip, £5/15/6; Watford trip, £6/5; non trip, £5/15/6.

GEARS.—All Sturmey-Archer 3-speed countershaft gear parts stocked; N.S.U. speed gear, £10; Philipson pulley, 7 gns.

HORNS.—Mechanical, 10/6 and 15/-; car type, 17/6; Clayrite, 22/6; French type, 22/6.

TOOLS.—Oilcans, ¼ pint, 1/6; 6in. screwdrivers, 1/6; petrol squirts, 1/9.

BRAKES.—Douglas 4h.p. front stirrup, complete with shoes, 2/6 each; also front rim brakes, brand new and complete, suit 2¾h.p. Douglas.

CHAINS.—Large stock all sizes Hans Renold and Coventry chains at reduced current prices. Special line of ⅝×⅜ Coventry chain, 4/6 per foot.

VALVES.—Douglas pattern, 4/-; Matchless-M.A.G. pattern, 5/-; Harley-Davidson pattern, 5/-; Triumph pattern, 4/6.

DISCS.—Ace discs, 32/6 per wheel. Models to suit most machines in stock

MAUDES' Motor Mart, 100, Gt. Portland St., London, W.1 (Museum 561); 100, Paris St., Exeter (Tel. 833); and Walsall Garage, Walsall (Tel. 444). [9652

DECORT and Flynn.

CLYNO.—All new wheels, 35/-; rear chain, 17/6; front, 16/-; tank with all fittings, 50/-; gear boxes, £15; magnetos, 55/-; rear sprocket complete, £3/10; frame centre, £3/10; forks, £3; front chain cases, 16/-; rear, 26/-; magneto cases, 12/-. We have all parts in stock, stamp please.—Below.

CLYNO.—Second-hand engine, £9; frame centre, £2/10; rear, £2; tank, 25/-; rear sprockets, 25/-; connecting rods, 12/6; chassis from £4; wheels, £1; sidecar body, £3; we have all parts to make complete cycle from £38.—Below.

ROYAL RUBY Frame, rear section, forks, new stand, gear box incomplete, footboards, etc., £16, cheap lot.—Below.

B.S.A. Belt Rims, new, 5/-; fork, £2; frame centre, 25/-.—Below.

TRIUMPH Connecting Rods, 8/-; hubs, 12/-; pair front spindles, 1/6.—DeCort and Flynn, 39, Essex Road, Islington, N.1. [1003

COUNTY of London Engineering Works, Ltd.

AUSTER Wind Screens, Triplex glass, adjustable aluminium fittings, 13×6½in., 10/-, post free.

ELECTRIC Inspection Lamps, to fit over speedometer, complete with bulb and cable, 2/6 each.

EXHAUST Boxes, Douglas 2¾h.p., 15/-; Douglas 4h.p. clutch races, 2/6; screwdrivers, 6in., 8in., 10in., 10d., 1/-, and 1/2 each.

HIGH-TENSION Wire, 9 mm. 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 26 yard coil 4/-; 3 mm. 2d. per yard, 25 yard coil 2/-; postage on coils, 5 mm. and upwards 1/-, 3 mm. 9d.

ALL Goods on approval per return post on receipt of cash, money refunded if not satisfied.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [6407

INDIAN Front Forks, gear boxes, and engines, and all parts for same.—Below.

INDIAN Intake Domes, carburetters, magnetos, clutches, kick starters.—Below.

INDIAN Carriers, chains, and guards, springs, sprockets; in fact, everything for 7-9h.p.; all parts absolutely new.—Dennis Accessories Stores, 89, Brixton Rd., London. Specialists in Indian Repairs. 'Phone: Brixton 3129. [1195

Dynamo Lighting is Easy if you fit "WATTALITE"

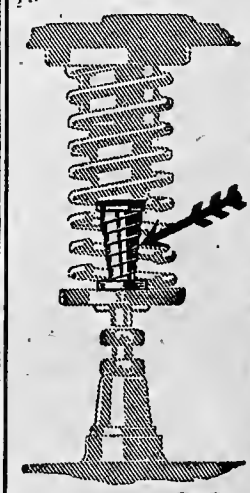
¶ Being driven by flexible shafting direct from the wheel—like a speedometer—it gets rid of the complications and difficulties in fitting that have hitherto made Dynamo Lighting impossible on many machines. This is only one of "Wattalite's" many advantages. ¶ We are Sole Sales Concessionnaires, and will be glad to tell you all about it.

Agency proposals cordially invited.

HOLROYD Motors, 6, Warwick St., Regent St., London, W.1.
Regent 554.

London County and Export Agents for
NEW SCALE (Blackburne)
REX and ACME,
BRITISH RADIAL (3 cyl.),
JAMES, CONNAUGHT,
and NEW COMET Motor Cycles. Extended payments

FLEXEKAS



An airtight flexible spring casing enclosing the valve stem and filled with special heat proof graphite paste.

Flexibility.
Lubrication of Valves.
Easy Starting.
Xtra m.p.g.
Excludes Dust.
Kills Valve Clatter.
Air Leaks Prevented.
Slow Running Ensured.

Price **2/6** per Valve.
Carton of paste 1/3 each.
State Make and Year of Machine.

OVER 50,000 SOLD!

I will replace any that are not giving satisfaction no matter where or when purchased.

If your dealer does not stock, send direct to

CLIFFORD PRESSLAND, A.M.I.E.E., Engineer, HAMPTON-ON-THAMES.

THE LAST WORD IN RUBBER GRIPS
For Inverted Levers
FITTED WITHOUT DETACHING LEVERS

MODEL No 1 ORDINARY 5/-
MODEL No 2 Solid end for non inverted 4/6
MODEL No 3 Extra Long 8½ 6/9 P.P.
Cycle sizes also EXPENSION SLEEVES MADE

SHOCKSTOPS AND LLOYD'S LUBRICATORS FOR BOWDEN CABLES

No more broken wires

Oil is forced from Reservoir through Lubricator into Cable by air pressure from tyre pump

Complete Outfit with 5 Lub's Plated 5/-.
Sample any line on appro post free on receipt of P.O.
STOCKED BY LEADING FACTORS & AGENTS
WRITE T. LLOYD. 12. BRIDGE ST MANCHESTER.

NOT AT → ONLY BUT HERE → SHOCKSTOPS A.B.C. CYCLE CO.
EXACTLY OPPOSITE ADDISON RD STA
ENTRANCE (C/O A.B.C. CYCLE CO. MACLISE RD)
ALL ARE INVITED TO CALL & INSPECT
OUR 8 LINES IN GRIPS & LUBRICATORS
— NO PRESSURE TO BUY. — ADDISON ROAD STATION

Willowbrook
LEICESTER

STAND 97.

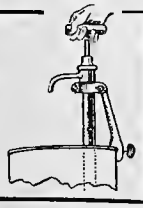
Don't fail to see the new Sporting Sidecar in polished aluminium.

Price : £18-18-0.

THE
Car for Lightweight Machines.
ALSO THE
WILLOWBROOK REX-ACME,
Taxi Sidecar Combination.
(The famous Rex-Acme 8 h.p. Motor Cycle with a special "Willowbrook" Body.)

THE WILLOWBROOK MOTOR CO.,
Belgrave Gate, LEICESTER.

—STAND FOR—
OIL PUMP
to fit 5 or 10 gal. drum.
To clip 1in. and 1¼in. pump.
Price 7/6 each.
OAKES, Longford Bridge Garage, WARRINGTON.
General Motor Repairer.



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4h.p. Douglas Spares at Bargain Prices.—Exhaust pipes, 11/- per pair, plated 20/-; silencers, 12/-; seat pillars, plated, 3/10 complete; 2¾h.p. C.A.V. magnetos, 40/- new, ready to fit; postage extra.—The Winstan Henney Motor Co., 63, South End, Croydon. 'Phone: 2431. [7668

TRIUMPH T.T. Bars, ex-W.D., 10/-; pair Triumph wheels, 50/-; pair 8h.p. J.A.P. crank cases, 45/-; coachbuilt sidecar body, £3; dynamo lighting set, for combination, £12; Amac lightweight carburetter, new, 45/-; Clyno spare wheel, tyre and tube, 40/-.—78, Yerbury Rd., Holloway, N.19. [9515

TRIUMPH Countershaft Spares, brand new: Driving chains, 12/6; 14, 15, 16, 17 tooth sprockets, 10/6; barrel springs, 5/6; inlet valves, 2/-; engine plates, pair 6/-; toolkits, 20/-; front wheel, 40/-; back complete, 60/-; bottom back stays, 65/-; top, 20/-.—Below.

STURMEY-ARCHER Spares.—All spares stocked. Old boxes in part payment for new.—Below.

TRIUMPH 3½h.p. Piston, new, 16/-; 1913 centre frame, 30/-; tank, 30/-; Cowey speedometer complete, 35/-; carriers, 20/-.—Below.

WRITE or Call on the Triumph and Sturmey specialists for all spares, repairs; everything in stock from a nut to complete machines.—Miles, 11, Chichester Rd., West Kilburn, N.W.6 (1 minute Kilburn Park Tube). [1115

TRIUMPH Touring Bars, 15/-; countershaft tanks, renovated, £2; complete fittings, £2/15; Albion 2-speed box, perfect, £4/5; Klaxon horns, shop-soiled, £1; Triumph chain cover, 15/-; lightweight Druids, 50/-; Amac, as new, 30/-.—Smithfield Motor Depot, Market, Hales St., Coventry. [X3069

WATFORD Speedometer, rear drive, for Indian, £2; Stewart trip, 26in., £2; both complete and perfect; two car generators (round), 10/- each; Levis tank, less fittings, 15/-; Rudge T.T. bars, 7/6; 55 feet 1½in. steel tubing, 12 gauge, 1/- foot, 50/- lot; all carriage paid.—56, Lawrence Hill, Bristol. [9754

P.M. Saddle, 7/-; front mudguard, side valances and stays, 3/6; pair Douglas toolbags, 4/6; pair Triumph toolbags, 5/-; 2¾ and 4h.p. Douglas back wheels, 25/- each; lightweight saddle, 6/6; Indian cylinder, for 7-9h.p., 12/-; head for same, 9/-; carriage extra.—Hole, 129, Park Lane, Carshalton. [9766

1909 Triumph Cylinder, 16/6; 2¾h.p. Douglas 1915 crankshaft, 10/6; 2¼h.p. Levis crankshaft, 12/6; new Clyno carriers, 5/6; 2¾h.p. Douglas back wheel, complete, 15/-; countershaft Triumph back wheel, complete, 25/-; new B.S.A. belt rim, 8/6.—Saunders, 49, Riverside, Kingston-on-Thames. [X2915

HENDERSON Motor Cycles, 1914-15-16.—We have a large quantity of spares, crank cases, pistons, cylinders, camshafts, frames, tanks, gears, clutches, etc., etc., much below makers' prices.—Barker's Motors, 194, Balham High Rd., S.W. Tel.: No. 4441 Latchmere. T.A.: Pushfully, Bal., London. [7850

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PISTONS for Every Make of Motor Cycle in Stock, with rings and pin; 2¾ Douglas 10/-, Bradbury 18/-, Rex 19/-, 2¾ J.A.P. 19/-, 3½ Triumph 19/-; 3½ Premier 22/6, 4 J.A.P. 22/6, etc.; post 1/-; guaranteed; cylinders reground and fitted; new pistons from 20/- each.—Rosefield Motors, Rosefield St., Leamington Spa. [9002

PISTONS, complete with rings and gudgeon pins, 150 different patterns in stock: 2¾h.p. J.A.P., Singer, Premier, etc., 21/-; 6h.p. Rex, 3½h.p. Norton, 6h.p. J.A.P., etc., 22/6; 4h.p. Bradbury, Premier, J.A.P., Singer, etc., 24/-; post 1/-; all new and fully guaranteed by us.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [7117

4h.p. Douglas Spares, cheap. Wheel spindles 2/-, gear box bolts 6d., top shackles 5/-, bottom 6/-, spindles 2/6, gear box ball races 5/-, handle-bars 12/-, rear brakes 16/6, engine clamps, sleeve nuts, back plates; everything you want below. Approval against cash; stamp, please.—R. G. Gamble and Co., 13, Somers Mews, Hyde Park, W.2. [9748

2¾h.p. Douglas Front Wheels, 15/-, 2¾h.p. Sunbeam back wheel 25/-; countershaft Triumph spares—back wheels (as new) 35/-, frame and forks complete £4, frame centre (slight repair) £2, carriers 15/-, flywheels with connecting rod and piston complete, £3, cylinder £2; stamp, reply.—Cox, 149, Chepstow Rd., Newport, Mon. [9691

NEW Blackburne 4h.p. Engine, with Amac carburetter and Thomson-Bennett magneto, £23; Grado multi pulley, with kick starter, less control handle and clip, £4; Bowden front brakes, 11/-; Bowden magneto controls, 11/-.—Bastones, 228, Pentonville Rd., King's Cross, London, N.1. Tel.: 2481 North. [7720

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14′×8	6′	8′ 6″	18 7 6	3 16 6
14′×10′	7′	10′ 3″	23 5 0	6 5 0
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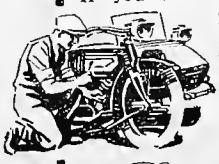

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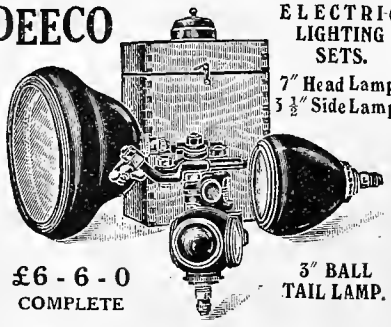

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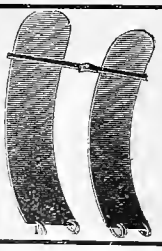

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GENUINE J.A.P. Engine Parts.—5h.p. and 8h.p. crank cases, 50/-; pair new 8h.p. cylinders, 55/- each or £5 pair; pistons complete, 17/6 each; connecting rods, 50/- pair; valve complete, 4/- each; valve guide, 3/6 each; exhaust caps, 4/- each; cam lever, 3/- each; gudgeon pins, 2/6 each; gudgeon pin bushes, Hawkins (below).

BURMAN 3-speed Countershaft Gear Box, £12/10 each; and I have all parts for Burman gear boxes; Ferodo clutch plates, 7/6 each; layshafts 10/- each; sliding gears, 5/-; low gear pinions, 5/-; top gear pinions, 5/-; stamp reply.—Hawkins (below).

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ROVER Frames and back stays, 50/-; footboards, 10/-; pair front wheels, 20/-; rear wheel, complete with sprocket, 30/-; stamp reply.—Hawkins (below).

1,000 J.A.P. Valves, all complete, 4/- each; 1,000 J.A.P. piston rings, 7/6 dozen.—Hawkins (below).

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WILLIAMSON, Rex, Villiers, Singer cylinders, pistons, and all parts in stock.—Below.

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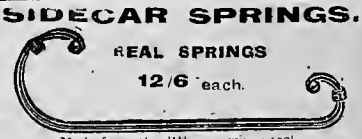

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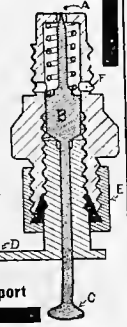

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CLYNO.—Terry's sidecar C springs, 4-leaf, 10/- each.—Below.

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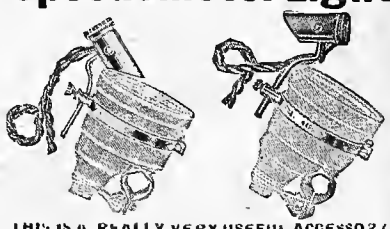

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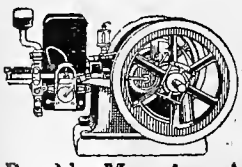

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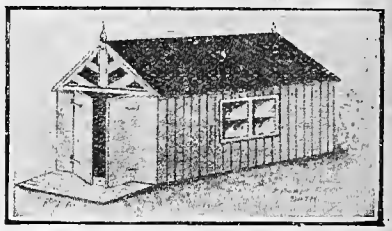

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NOTICES.

1921. O. No. 1262.

IN THE HIGH COURT OF JUSTICE. CHANCERY DIVISION.—MR. JUSTICE RUSSELL.

IN THE MATTER OF THE PATENT AND DESIGNS ACT, 1919. AND
IN THE MATTER OF LETTERS PATENT No. 819 OF 1906. AND
IN THE MATTER OF AN APPLICATION BY EDITH AUGUSTA OSBORNE (Married Woman), and SAMUEL NIELD.

NOTICE IS HEREBY GIVEN that the above named Applicants, Edith Augusta Osborne (Married Woman), of "Rostrevor," Grimes Hill, Birmingham, and Samuel Nield, of "The Manse," King's Norton, Worcester, the registered Proprietors of the above named Letters Patent, have by Originating Summons dated the 8th day of July, 1921, applied for an Order that the term of the said Letters Patent may be extended for 5 years or for such period as the Court shall think fit.

AND NOTICE is hereby given that on Tuesday, the 17th day of January, 1922, application will be made to the Court that a day may be fixed before which the said Summons shall not be in the paper for hearing.

AND NOTICE is hereby given that any person desirous of being heard in opposition to the said Summons shall at least 7 days before the said 17th day of January, 1922, lodge notice of such opposition at the Chambers of the Judge, Room 173, Royal Courts of Justice, Strand, London, and serve a copy thereof upon the Applicants.

Dated this 18th day of November, 1921.

BARLOW, BARLOW & LYDE,
165, FENCHURCH STREET, LONDON, E.C.3.
Agents for James Ore of Birmingham, Solicitor for the above named Applicants, on whom all documents requiring service may be served.

"Volex" DRY BATTERY, MOTOR CYCLE and SIDECAR Lighting Outfits

Recommended for Home and Export.

"Volex" Dry Battery Lighting Sets are the ideal no-trouble outfit. No other battery outfit will give results equal to the "Volex."
In satisfactory service for over 10 years with a constantly increasing demand due to their reliability, convenience, and economy in use.
These sets give from 9 to 12 months service, in ordinary intermittent use, without renewal batteries.
Specification—6 volt "Volex" Dry Batteries in metal container, Switchboard, Superba Head Lamp (5½in. front), Side and Tail Lamps, Cord and Bulbs.

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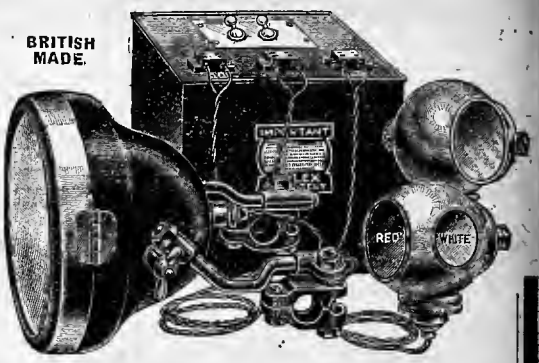
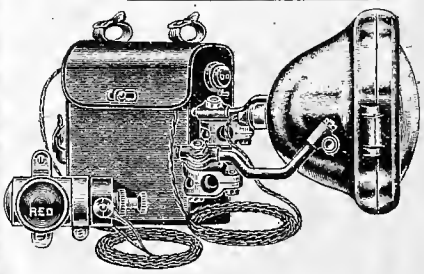


No. Mc/490, as illustrated. Price .. **£8-8-0**
Also supplied with "Superba de Luxe" Head Lamp, 7in. front. No. Mc/450. Price .. **£9-9-0**
Ready for Immediate Use.



"Volex" Motor Cycle Solo Lighting Sets.

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The most efficient Dry Battery Solo Sets produced. Made upon the same principle as our "Volex" Combination Set. Head Lamp is provided with 6 volt bulb, giving an exceptionally brilliant light and ample light is provided in the rear lamp.

"Superba" Head and Rear Set.
5½" front Head Lamp, M10/10 .. .. **£4 12 6**
Head Lamp set only, M10/7 .. .. .. **£4 2 0**
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7" front Head Lamp, M10/11 .. .. **£5 7 6**
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"Superba" Head Lamp, 5½" front.
Complete with Holder and Adaptor .. **£2 0 0**
"Superba de Luxe" Head Lamp, 7" front.
Complete with Holder and Adaptor .. **£2 12 6**

THE "RAY-O'NITE" SELF-CONTAINED MOTOR CYCLE ELECTRIC HEAD LAMP, Recommended for Home & Export.

A GREAT "VOLEX" ACHIEVEMENT.

No accumulator, oil, or acid required; a brilliant light obtained at will. The convenience of this self-contained Set cannot be over-estimated, the pleasure of having a lamp always ready for use without preparation will be appreciated. A successful self-contained motor cycle lamp such as the "Ray-o'nite" is only rendered possible by the remarkable efficiency of the "Volex" Dry Battery, which is in a class apart from all other primary batteries. Comprising "Superba" Head Lamp (6½in. front), combined with a strong metal container holding the "Ray-o'nite" Dry Battery, complete with bulb. Ready for immediate use.

No. M9/1 .. **£3 10 0**
Ditto, with "Superba de Luxe" Head Lamp (7in. front) .. **£4 4 0**
Spare "Ray-o'nite" Dry Batteries **10/6** Can be fitted in a few seconds

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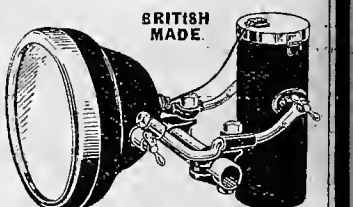

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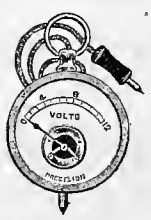
British made. Best Quality.



Pocket Type.
0 to 6 12 Volts... ... **10/-**
0 to 16 ,, ... **10/6**
0 to 6 Amps **10/6**
0 to 30 ,, ... **12/6**

Combined Pocket Type.
6 Volts, 15 Amps ... **11/6**
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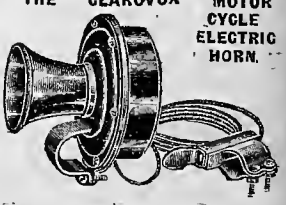
Particulars of other types and sizes see list.

THE "CLAROVOX" MOTOR CYCLE ELECTRIC HORN.

Gives a loud, clear, sonorous warning note. Complete with Switch Attachment and Conducting Cord. All Black finish. **Price 30/-**
De Luxe Model, Heavily Nickelled, **Price 40/-**



ACETYLENE TO ELECTRIC CONVERSION SET.

The Adaptor screws into the Acetylene Burner and the wiring can be carried out in a few seconds. Complete Outfit as illustrated with 4 Volt "Volex" Aero Dry Battery in Leather Satchel with Conducting Cord and Bulb. Price **31/-**
Do., with 6 Volt "Volex" Aero Battery. Price **37/-**

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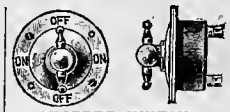

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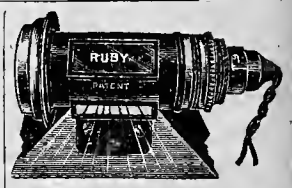
Flush Type. Suitable for Motor Car Dashboard, Magneto, etc. Nickel or Black, bronzed finish, **3/-**



TORPEDO SIDECAR LAMP
13/6
BALL ditto. 11/-
BALL Tail Lamp 13/6
Smaller Type 10/6

All complete with Lamp Holder and Adaptor

"GEM" MOTOR CYCLE ELECTRIC TAIL LAMP.

Well constructed, neat appearance, Black finish, nickel-plated, relief Rear Lamp only **5/6.**
Fitted with Bulb and 6ft. Conducting Cord, **7/6.**
Complete with "Volex" Dry Battery fitted in strong satchel container, **25/-**

Ward & Goldstone PENDLETON. MANCHESTER

THE MOTOR CYCLE

ESTABLISHED IN 1903

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
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Quarterly Licences.

QUARTERLY licences for motor cycles will be made optional for 1922. In making this concession the authorities have acted wisely, although not without some pressure on the part of such bodies as the Auto-Cycle Union and the British Cycle and Motor Cycle Manufacturers' Union. Since the introduction of the new taxation scheme at the commencement of this year, car owners have been allowed to take out short-period licences, and there was never any justifiable reason why motor cyclists should be debarred from such privileges. Elsewhere in this issue we give full details of the 1922 scheme.

In the case of lightweights the quarterly tax is 10s., representing 33⅓% increase on the year's taxation; the same rate obtains in the case of the motor cycle over 200 lb. in weight, the tax for which is £3, and the quarterly licences £1 each. During the present year car owners have had the same privilege for a total extra charge of 20%.

From this it will be seen that the quarterly licences are not to be regarded as an "easy payment," for 33⅓% considerably exceeds the extra charge made for a motor cycle sold on what is known as the "hire purchase system."

From the point of view of the purchaser of a motor cycle, there is no gainsaying that quarterly licences will be a great boon, and also assist materially in keeping the flow of motor cycle sales more uniform all the year round. At the same time it seems strange that the authorities evidently do not give to motor cyclists advantages proportionate to those obtained by car owners. 1922 motor cycle quarterly licences, compared with those for 1921 in the case of cars, are scarcely fair to those who use the smaller vehicle; yet, for the coming year, car owners are to have additional advantages which are not to be accorded to motor cyclists. From January 1st the cost of car taxes will drop in the case of yearly licences with the progress of the year, and with the quarterly licences with the progress of the three months. For example, the yearly tax after February is only 90% of the total, and so on to December, when the tax is but 10%; yet, if a motor cyclist wishes to purchase a machine in December, he will be compelled to pay a full quarter's licence. Quarterly licences are arranged on a similar basis. In other words, one may take out a car licence at any time of the year without having to pay at an excessive rate for the privilege.

Show Results.

A SATISFACTORY Show in every respect! Such was the unanimous verdict of exhibitors at Olympia at the conclusion of the Show last Saturday.

The splendid attendance and interest on the part of the public augurs well for the motor cycle movement in 1922. Some manufacturers confessed to us that they went to Olympia without expectations of a large number of orders accruing; but the feeling at the conclusion of the Show was one of optimism.

It is now being realised that the time is gone when a year's output may be disposed of at the Show. When demand so exceeded supply, motor cyclists placed their orders in November to ensure delivery in the spring, but now purchasers feel that this is unnecessary. As this is a new state of affairs, agents are unable to gauge their requirements, and so long as they are reasonably sure of obtaining delivery of motor cycles when required, they follow the lead of the private purchaser and order only sufficient to retain the agencies considered to be the most valuable. One would therefore expect to hear expressions of satisfaction only from the older and well-established manufacturers, but the younger firms have also intimated that they are well satisfied with the results of their week at Olympia.

The good effects of this year's Show cannot be measured in orders received. The Olympia Show is excellent propaganda, for it creates and fosters interest in the most economical form of motoring

An index to the advertisements in this issue will be found on the page facing back cover

Getting Back Towards Normal.

OLYMPIA showed more substantial price reductions than most amateurs had anticipated. Of course, if we haven't sold our 1921 mounts, these reductions do us as much immediate harm as good, for they enhance the already heavy depreciation on the 1921 models. Nevertheless, everybody must welcome the cuts heartily, for they betoken a return to normal conditions, and will save us in 1922 depreciations all they may cost us in selling the 1921 'bus. When you can get a 4½ h.p. three-speeded chain-driven sidecar outfit for £105 (the Quadrant), the air has almost recovered its 1914 tang.

Some Doughty Newcomers.

IT doesn't require much acumen to guess that 1922 is going to welcome some formidable additions to the competition world. To name at random a few engines which even on a Show stand impressed the observer as likely medal winners, the Powell ought to do well in road events. The Barr and Stroud may prove hot-stuff on road and track alike. The new 350 c.c. Raleigh will have to be reckoned with, not to speak of the new 2¾ h.p. Bradshaw. Meanwhile, the Triumph has annexed the hour record, and, as I write these notes, I hear that a couple of 500 c.c. twins both intend to rob the holder at the first opportunity.

Many Opinions.

I DESCRIBED some while ago how I was testing a punctureproof tube by perforating it whilst inflated and out of the cover. The vendor of a conventional tube wrote to me privately that, though the tube might be excellent, yet my test was ridiculous, as high pressure could not be obtained when the tube was out of the cover. He failed to recognise that in this particular case the inflation pressure is a vital factor in the sealing action. The plastic material which is interposed between the two layers of the double tread of the tube certainly possesses an expansive action of its own; but I should say that air pressure unquestionably assists the sealing. At any rate, if I stick a big nail in the naked tube, a tuffet of black mastic is quite forcibly ejected into the hole as the nail is withdrawn; if this occurs when the tube is mildly inflated in the open, inflation pressure behind the mastic must be much more marked when the tube is blown up to riding pressure inside a cover. So I beg to reply that my test was quite unusually hard on the tube, and actually more severe than the prolonged road tests to which I had previously submitted it.

Electric Lighting.

ACETYLENE lighting will enjoy a new lease of life owing to the excessively high cost of electrical equipment. For £3 or £4 a decent gas installation can be procured. A flywheel lighting set for baby two-strokes costs about £5 extra. Accumulator or dry battery installations range from £4 10s. to £7, the latter being suitable only for slowish machines. Full dynamo equipment is usually—in round figures—very nearly a £20 option. A Fallolite set costs £7 7s. 6d. without a tail lamp. A number of fast solo men are buying accumulator outfits, but the average rider is economically minded and contents himself with a gas installation—possibly flanked with a dry battery tail lamp.

Testing Their Wits.

THE other day I took the parcel section of my morning post into a clubroom where motor cyclists were assembled, because it is rather fun to baffle a keen rider at his hobby, and I fancied two of the gadgets which has just arrived as samples might be too much for the boys. No. 1 resembled a miniature aluminium model of the tin hat which so many millions found such uncomfortable wear a few years back. It measured 1⅞in. across, and nobody could make head or tail of it, or of the two microscopic holes which pierced its bowl. (Solution: An anti-splash vent for petrol filler caps.) No. 2 was really dead easy, but nobody quite tumbled to it. It was obviously an extra air valve, complete with Bowden control. Everybody recognised this; some of the examinees further identified a petrol pipe union and a needle valve as indicating an auxiliary pilot

Occasional Comments.—

jet for starting up. But two insulated electric terminals beat the crowd, though the obvious inference was a hot wire for vaporising the paraffin-cum-water which sometimes masquerades as petrol in these degenerate days. No. 3 was the Jebon patent automatic lubricator. Not a soul had the faintest inkling what possible use this device could be to a motor cyclist; and when an illustrated account appears in *The Motor Cycle*, readers will probably excuse the failure. I have now made it a rule to diagnose all gadgets before reading the covering letter; and I am fast developing into a mechanical Sherlock Holmes in consequence.

Garrulous Old Fogey.

AT the risk of earning the above cognomen, I must really reminisce a bit more. The M.C.C. used to open its season (which was then *the* season, for the M.C.C. dominated the sport) with a run to Brighton. Little birds twittered that two firms intended to stagger humanity by producing entirely novel passenger outfits. On the great day, Van Hooydonk appeared at Purley, trying not to look too conscious; he bestrode a Phœnix Trimo with two-speed gear and handle starting. He demonstrated *ad nauseam* until the late Wilbur Gunn rolled up on a 4½ h.p. Lagonda tricar with open frame and quite put the Phœnix nose out of joint. He started this now forgotten contraption by tipping open a trapdoor in the waist of the chassis, and executing a few steps of the Washington Post on a pedal and chain gear. At Crawley, some mean-spirited person pinched Hooydonk's starting-handle. We all felt that pedalling starters were sound design after we had heard Hooydonk discuss the situation fluently for five minutes.

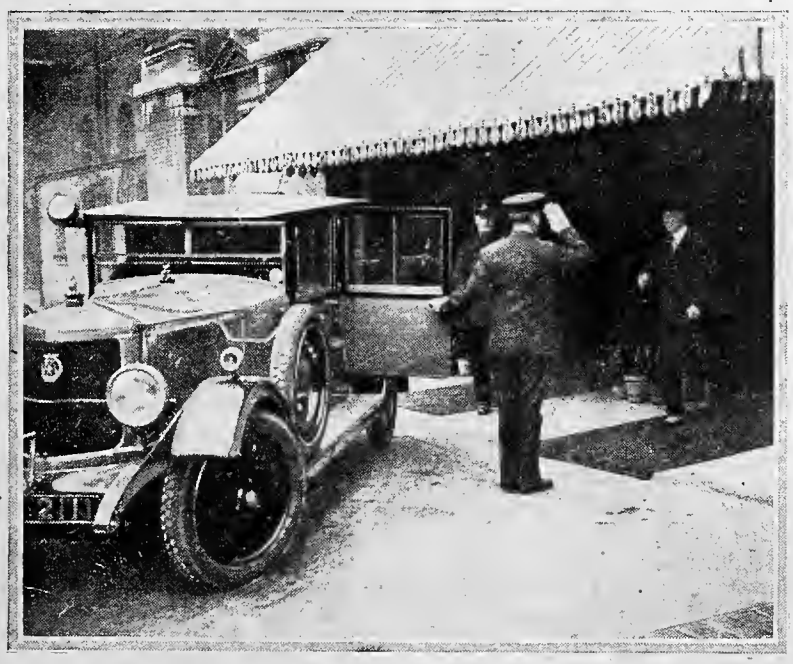
Those Trailers.

SEVERAL veteran readers have written confirming my jesting reminiscences about the perilous trailer which we all used before Percy Kemp invented the sidecar and J. Van Hooydonk begot the Phœnix Trimo. An Earlsdon (Coventry) reader once arrived home minus his wife. He retraced his tracks, and found he had decanted her at the corner of Green Lane, some 1½ mile away. She had made a pancake landing on her face, and the trailer was incontinently sold. Another reader much enjoyed his first ride on a trailer, but forgot its presence when negotiating the narrow gate at the side of his villa. He says the trailer uprooted the gate posts; but with my vivid memories of the virile engines then current, I am prepared to bet that the engine immediately stopped, and that no damage was really done. Mr. Victor Holroyd, of Rudge fame, confesses to having taken out a trailer containing his daughter, and having shortly become oblivious of the appendage. He cut corners, dodged under horses' tummies, and performed such stunts as a young rider will. When he got home, the youngster remarked, "Mamma, father *can* drive!"

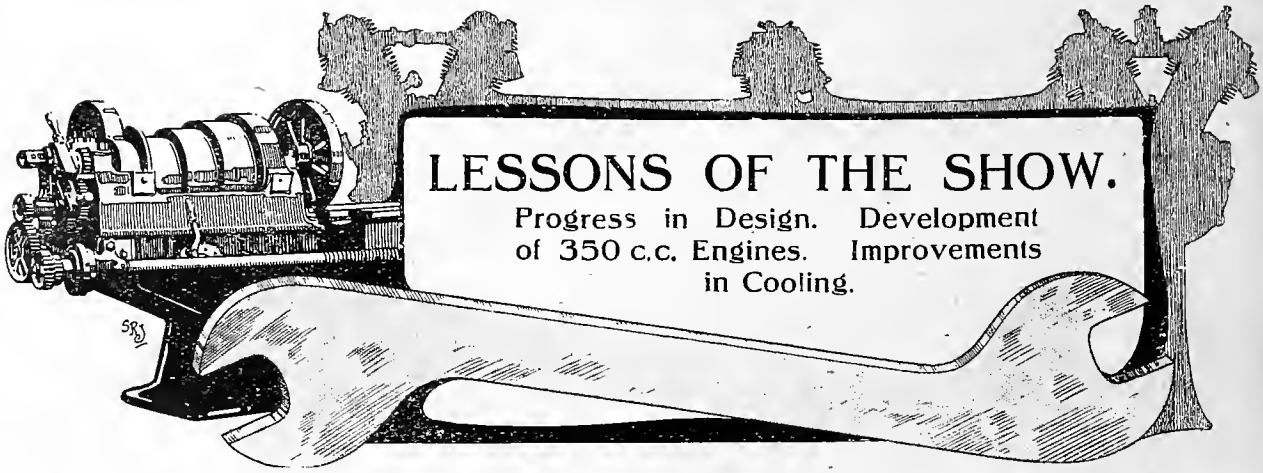
You have all heard of a "flat spot" in the mixture. Well, there is still a flat spot on the back of my head; and anybody who has ever been seated in a fast trailer when the connection snapped will testify that no physical event can possibly be more instantaneous than the resultant "biff" on the rear of the skull; there is no time to swear.

More About Depreciation.

ON November 10th, I devoted a paragraph or two to the influence which excessive depreciation is having upon the sales of motor cycles. I pointed out that, despite such depreciations, it was the plain duty of patriotic riders possessed of spare cash to place their orders. Several correspondents have raised a fresh aspect of the case. They are able and eager to obtain delivery of 1922 models, but they want to obtain a "fair" price for the 1921 'bus first. A sale by private treaty seems almost impossible, and dealers are fighting very shy of exchange deals, or at the best offering about 50% of what the 1921 'bus originally cost. This enables me to make my point more clear. I have just parted with one of my 1921 'buses. It was originally a thoroughly good machine. It is, if anything, in rather better order than when it was delivered. Its price at the beginning of 1921 was just about double what I have received for it. It is conceivable that if I had waited till the spring brings some fine weather along, I might have got a better price for it: November is always a bad selling month, because 75% of us do not ride in the winter. Nevertheless, I consider that immediate sale was both a patriotic and a paying proposition. If we all wait till Easter to buy, we shall have to subsidise a lot of unemployment. It is probably cheaper to sacrifice a few pounds on selling our second-hand machines now than to pay extra rates and taxes. One comparatively small town adopted a £200,000 relief scheme last week.



THE DUKE OF YORK AT OLYMPIA. A snapshot of his Royal Highness departing from Addison Road entrance after inspecting the exhibits last week.



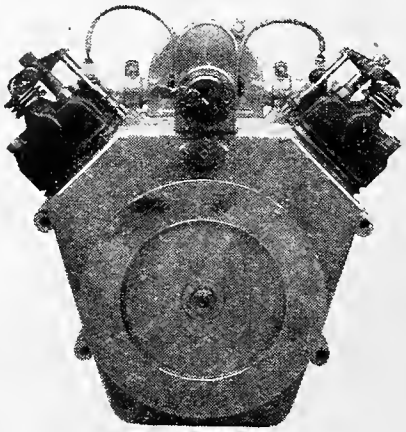
LESSONS OF THE SHOW.

Progress in Design. Development of 350 c.c. Engines. Improvements in Cooling.

NOT since pre-war days has the Olympia Motor Cycle Show revealed such definite progress along clearly defined lines. During the past two years there has been a steady struggle for high efficiency at a moderate price, and, in spite of unfavourable trade conditions, the results are becoming apparent.

1922 is to be a year of 350 c.c. singles. There is scarcely a firm catering for the solo rider who did not show at least one model with this type of engine, while many give alternatives of sporting, touring, and even sidecar types.

This is a step in the right direction, for it is a proof that the efficiency of small engines has been increased until the power output is sufficient to meet the demands of all normal work. Indeed, some of the sports models are capable of over a mile a minute—a speed which is seldom attained on the road even by sporting riders—while the tourist who has no desire for sheer speed will find that the modern "350" will take him anywhere, will need no more attention than the 500 c.c. of a year or two ago, and will be altogether lighter and handier.



The V-twin Bradshaw oil-cooled engine is unconventional in appearance, because the cylinder barrels are enclosed in the crank case.

Much of this improvement has been brought about by attention to cylinder cooling, which has enabled higher compression ratios and more scientific valve gear to be used without overheating. Additionally, lightweight three-speed gears have made their appearance in quantity, and this has gone far to help the smaller machine.

Undoubtedly the 350 c.c. machine has come to stay, and, in course of time, will only be ousted from pride of place by the development of the 250 c.c. engine—a type which is fast coming to the fore. All this must not be taken to mean that the big single and big twin are dropping out of their own particular spheres. In fact, the industry has never been better represented in these lines than at the present moment.

The Big Twin Speed Mount.

In the larger classes, development has taken place along similar lines, and our friends from across the herring pond may have to look to their Brooklands laurels in the course of the next few months. Speed is not everything, but high efficiency in reason means better road performance with lower petrol consumption and better balance, and it is a fact that the latest high-efficiency large twins are smoother, quieter, and more tractable than ever before.

In an intermediate class, the big single has received further valuable support from the trade; new additions to the type bear well-known names and testify to the efforts which have been made to produce a low-priced utility machine capable of hard wear and long life in the hands of the public.

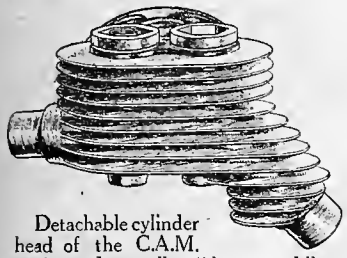
In the smaller classes, the V twin is steadily giving place to the flat twin, though the former holds its own in the 1,000 c.c. class. 6 h.p. Douglas and Coventry Victor are challengers in the mediumweight class, the former having earned a wonderful reputation in a remarkably short time, while the latter has given satisfaction in the hands of the public and greatly distinguished itself in the 500 Miles Race.

New Engines.

There are several new proprietary engines of note, in addition to new models listed by well-known manufacturers. A range of Bradshaw oil-cooled engines is distinguished by high efficiency and absence of mechanical noise—features which have in the past been considered separately rather than together. The careful investigator could gather from the sectioned flat twin on the Zenith stand many hints as to how this valuable combination has been obtained. First, it is obvious that the concealed cylinder barrel will be devoid of audible "ring," while the plain bearings, copiously flooded with oil, will obviate rattles and knocks. The reason for absence of noise in the overhead valve gear is also not far to seek, for the section reveals a very massive cylinder head, which, in addition to deadening valve chatter, evens the head temperature, and thus materially improves cooling.

Comparatively speaking, a newcomer, the B. and H. twin is interesting in many respects. The head

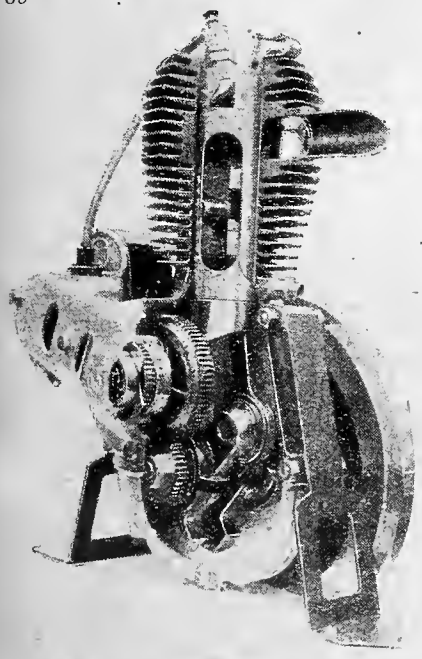
Lessons of the Show—



Detachable cylinder head of the C.A.M. engine. Internally "hexagoned" valve caps and a generously ribbed exhaust port are features.

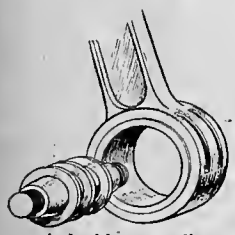
is detachable about the level of the valve chest, and thus valve caps are obviated, and the whole head can be adequately cooled. In addition, the bevel-driven magneto may be placed in front or behind by merely reversing the combined timing cover ring and magneto platform. Again, the pressure lubrication system of this engine is both ingenious and foolproof.

Quite one of the sensations of the Show was the 350 c.c. Barr and Stroud sleeve valve engine. The operation of the single sleeve is the last word in simplicity; the engine is beautifully finished and is wonderfully silent and flexible in action; added to this it is a highly efficient job, capable of high speed and low fuel and oil consumption. At the moment, it is fitted to a Beardmore-Precision model only, but it may be prophesied with safety that it will become a serious competitor of the more normal type of engine during 1922.



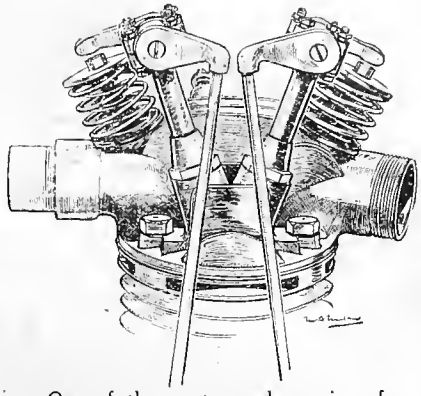
Partly sectioned model of the single sleeve valve Barr and Stroud engine, showing the general simplicity of, perhaps, the most interesting new engine at the Show.

A new two-stroke under the famous name of White and Poppe has made its appearance. As might be expected, it is a remarkably fine piece of work, having an overhung crank supported on two widely-spaced roller bearings. An aluminium piston, with plenty of metal in the head, is employed, deep and tapering fins surround the cylinder, and there is an unusual form of choke tube in the transfer port. This engine has recently undergone a strenuous bench test of long duration with flying colours, and is likely to make a name for itself in the lightweight world during the forthcoming year.

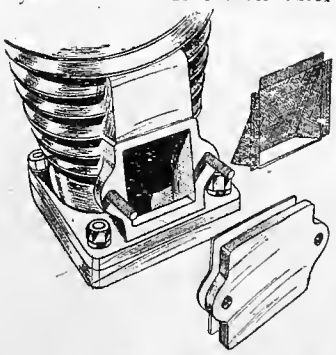


A double row roller bearing and long lubrication slots in the big end are features of the C.A.M engine.

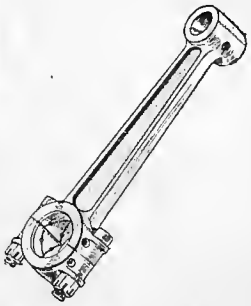
It is impossible to mention each of the new models which were displayed in various makes of machines. J.A.P. and M.A.G.-Blackburne predominate, and the overhead valve 350 c.c. model of the latter make is to be found on several sporting machines, but the C.A.M. engine fitted to the Rex-Acme is notable for its detachable head with well-cooled exhaust port. The Young aluminium cylinder with cast iron liner is interesting, and the Economic flat twin two-stroke shows a simple way of getting over the ignition difficulty of this type by the use of a flywheel magneto.



One of the most popular engines for sports models is the $2\frac{3}{4}$ h.p. overhead valve Blackburne. The valves are inclined.



To prevent back-firing into the crank case, this ingeniously shaped gauze is held in the transfer port of the Stanger by the detachable cover-plate.

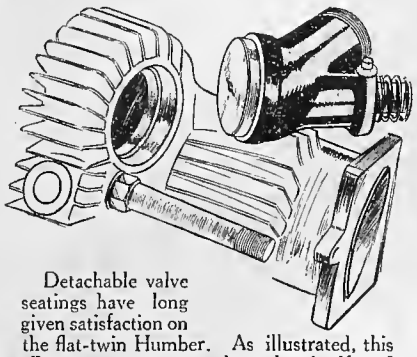


Big and little ends of the Humber connecting rod are well drilled and grooved to ensure an ample flood of lubricant in the bearings.

Some mention has already been made of cooling, but the ample ribs on Bradbury, Abingdon, and New Hudson singles are worthy of note. The new big single Abingdon is purely intended for heavy sidecar work, and the bearing areas are very generous.

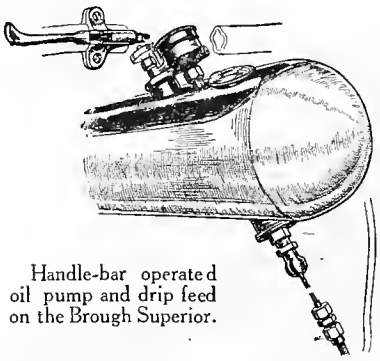
Bearings and Lubrication.

These two subjects should undoubtedly be considered together, yet a curious discrepancy occurs in motor cycle design at this point. The Bradshaw engine, it is true, employs plain bearings and forced lubrication, yet the majority of firms who have adopted



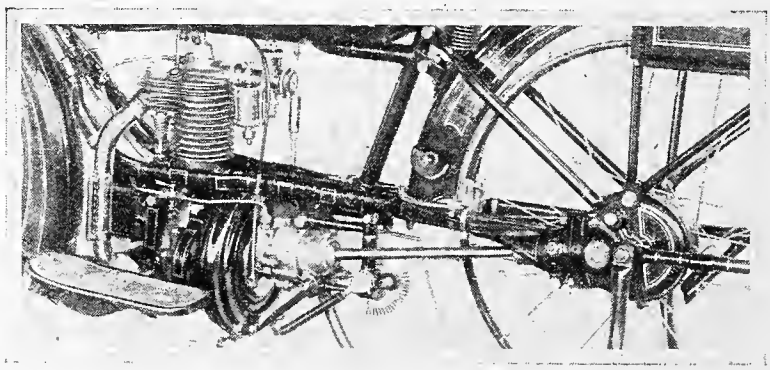
Detachable valve seatings have long given satisfaction on the flat-twin Humber. As illustrated, this allows easy access to the valve itself, and valve caps are eliminated.

Lessons of the Show—



Handle-bar operated oil pump and drip feed on the Brough Superior.

mechanical lubrication use roller or ball bearings at any rate on the mainshaft; while those who fit plain bearings throughout still rely on hand pump and drip-feed oil supply. There is, however, a steady tendency towards the laudable ideal of relieving the rider of responsibility, and lubrication systems by pump or other mechanical method, such as the utilisation of crank case pressure, are on the increase. The Hawker two-stroke is an admirable example of the latter type, while the Velocette and Bradshaw engines may be taken as typical of mechanical feed and forced lubrication systems. There is not much change as regards the number of engines using plain or ball and roller bearings; if anything, the numbers are in favour of the ball bearing, but the New Hudson big single is a new acquisition to the former type. It should be mentioned at this stage that at least four leading makers have come to the conclusion that mechanical lubrication is a necessity, two of them having experimental models already on the road, while two more are redesigning their power units with this object in view. Lubrication by hand-applied air pressure is to be found on several two-stroke machines.

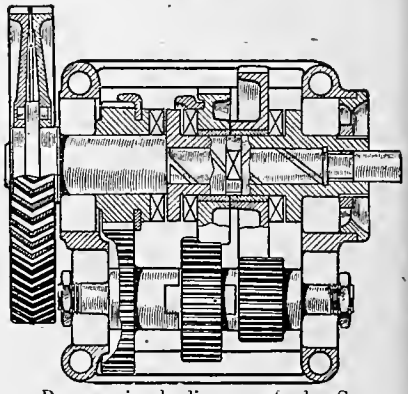


Transversely set engine, gear-unit and shaft transmission of the 2¾ h.p. F.N. (de luxe model).

Transmission.

Chain drive has scored heavily all along the line, but especially in the lighter classes. Belts are retained (usually as an option) for those who still prefer this form of transmission, or in order to keep prices down; but the general adoption of shock-absorbers somewhere in the system has rendered chain drives almost, if not quite, as sweet as chain and belt.

Shock-absorbers show a tendency to move forwards to the engine-shaft, and this is now the most usual position, though the Enfield type of cush hub is remarkably popular. Formerly almost exclusively used by the Rover, the Brampton spring link chain has made great strides in popularity, for, in addition to forming a serviceable shock-absorber, it does not require frequent adjustments. Full chain protection shows no great signs of advancement; in fact, the majority of manufacturers appear to consider that it is preferable to leave the chains accessible for adjustment rather than to protect them from the need of such frequent adjustment. Diamond and Verus are, however, good examples of completely protected chains, though in neither case are the chains intended to be run in oil baths. Sunbeam, Triumph, B.S.A., and Lea-Francis are already well-known for their chain protective methods and need no further comment.

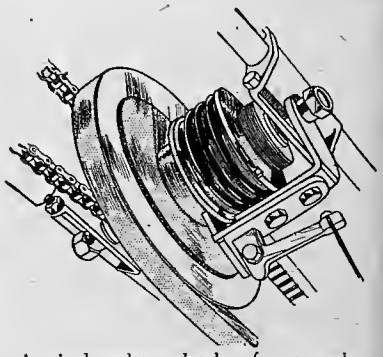


Part sectional diagram of the Scott Sociable three-speed-constant mesh gear box; it is contained in the crank case extension, and driven by a double helical gear.

The F.N. and Unibus remain the sole examples of shaft drive at the present stage of development, and, in spite of the success achieved by this type, there are no signs that the lead is likely to be followed in the near future. The only instance of combined chain and belt drive with the elements in their theoretically correct positions is to be found on the Kenilworth miniature, where the high-speed drive is by belt and the secondary drive by chain.

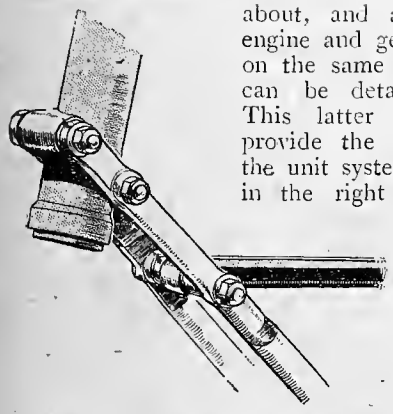
Engine and Gear Units.

For some years past, almost every new American and Continental motor cycle has embodied an engine and gear unit, and the Indian Chief is another new edition. This year, however, there is a distinct move in this direction on the part of British manufacturers. The 8 h.p. Bradshaw, 4¼ h.p. Beardmore-Precision, and J.E.S. are perhaps the best examples, since, in these cases, the gears are actually housed in extensions of the crank case, but, in the case of the 5 h.p. Lea-Francis, the lighter New Imperials, open frame Omega, two-stroke Metro-Tyler, Dot, Reynolds run-



A single plate clutch of extremely simple design on the Kenilworth miniature.

Lessons of the Show—



Distinctive features of all Diamond models are the detachable tank rail and the duplex detachable down tubes.

about, and a few others, the engine and gear box are carried on the same bearer plates, and can be detached as a unit. This latter scheme does not provide the full advantages of the unit system, but it is a step in the right direction, and is almost certain to lead to further development.

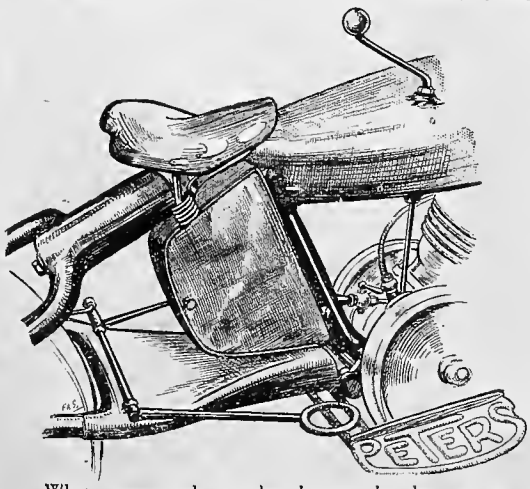
There are strong rumours of a real engine and gear box unit with common lubrication system from one of the most important firms in the trade, while another is already on the road, but for the present, at any rate, will not be marketed.

Frames.

On the whole, not very much visible change has taken place in frame design. The sloping top tube is even more common, and in certain cases lighter tubes of special steel are being used. The Hagg employs steel pressings wherever possible, the Omega shows a very neat design and strong duplex frame containing the engine unit and footboards within its width, the Ner-a-car with its car type frame is an interesting novelty, and the Peters frame has a minimum of tube work.

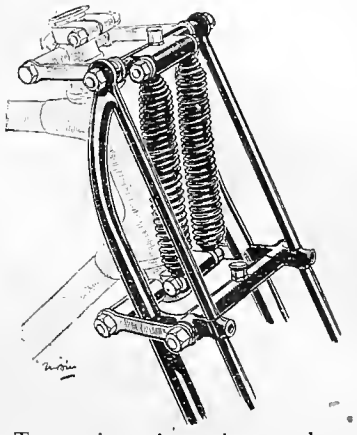
The last-mentioned machine was perhaps one of the most interesting in the Show; with the exception of its wheels, it has hardly a point in common with the average motor cycle, yet all its novelties appear to be practical as well as ingenious. Concealed spring forks and spring rear frame, a triangulated mainframe composed of a steel tank, one tube, and the engine, a clever system of automatic lubrication, and a very simple expanding pulley gear with belt tensioning device combined are some of its features, while a combined bottom bracket and silencer, large head races, pressed steel guards and carrier, and flywheel lighting and ignition all add to the charms of the machine.

There is a slight increase in the number of duplex frames, but perhaps the most noticeable feature is the frequent use of steel lugs. Beardmore-Precision frames employ sheet steel lugs throughout, and a proprietary frame unit to be seen on several stands has a like distinction. Head lugs are frequently machined from forgings, and the B.S.A. incorporates several fine forgings, particularly the lug joining the chain stays and the bottom bracket tubes.



What corresponds to the bottom bracket on an ordinary machine is used as the silencer on the Peters lightweight. Behind and below the saddle are the rear spring housing and a capacious tool box.

Loop frames are on the increase, and one of the most striking examples is to be found on the New Imperial light models. The Indian Chief is yet another addition, though this might also be described as a duplex frame.



Two tension springs only are used on the spring fork of the Chater-Lea lightweight.

Springing.

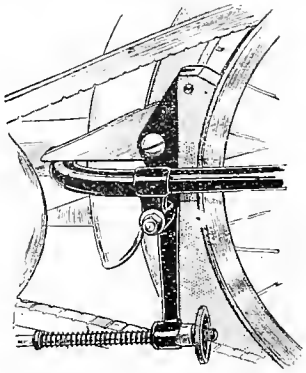
With the exception of the Dot, Peters, McKechnie, and Hagg systems, there is little new as regards spring frames, but spring saddle suspensions are increasing in numbers; Indian, Douglas, Calthorpe, and New Imperial are to be added to the lists, and new models of the Brooks and Tan-Sad have made their appearance. Reynolds Runabout and Jupp have spring bucket seats, and the Terry and Jelley flexible top saddles should not be forgotten. Perhaps the most novel is the McKechnie Coventry Victor system, and, though this type is undoubtedly an advance in many respects, it is likely to be handicapped by the public's undoubted aversion for the unorthodox. This would be a pity, for the design is most striking, and, in the course of time, should lead to developments along new lines.

Genuine Lightweights.

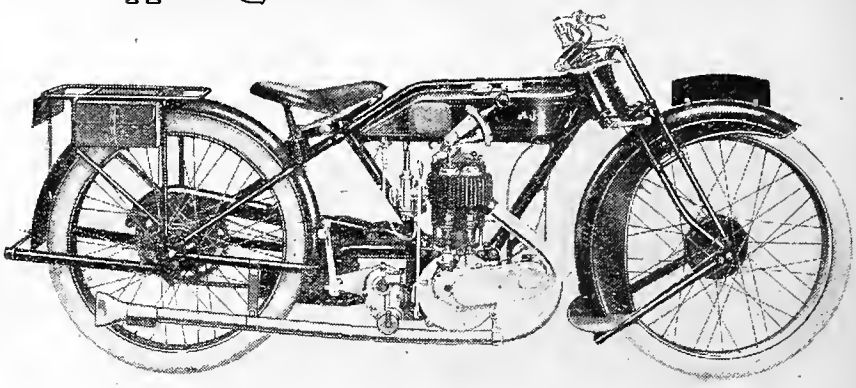
There is a genuine revival of the true lightweight motor cycles. Grigg, Economic, McKenzie, and J.E.S. are excellent instances of the case in point; J.E.S. is particularly interesting, in that it incorporates a two-speed gear in its tiny crank case, a system of pressure lubrication to every bearing, and, in the four-stroke model, an atmospheric valve. This last feature may be looked upon with suspicion by some riders, but, as it is a very modern product, and has been adopted after considerable experience with the mechanical valve, it must not be confused with the early and troublesome a.i.v. of olden days. The possibilities of the return of the automatic inlet valve are just now much discussed.

In numbers pedal cycle attachments and scooters are level runners; all have points of interest, and should find a market amongst cyclists who would be glad of motor assistance, but wish to retain, as far as is possible, the lightness and handiness of their favourite mount.

Lessons of the Show.—



Quick adjustment and parallel movement of the brake pad provided by simple means on the 2¾ h.p. Francis-Barnett.



Fitted with a kick-starter and fairly extensive mudguarding, this 2¾ h.p. A.J.S. is a step between the stripped sports and the touring models.

Sports Models.

A feature of the Show was the number of so-called sports models. These varied from the standard machines stripped of their fittings so as to be sold at a lower figure to the most expensive and up-to-date production carrying a speed guarantee and embodying all kinds of refinements with superb finish. One of the most businesslike examples in the Show was exhibited on the Sunbeam stand, but the A.J.S., Triumph, and Brough Superior are hard to beat in this class. Massey-Arran and Sheffield-Henderson also show very racy little machines, and the Scott Squirrel is no mean performer; the list could be extended indefinitely, but the New Imperial, Francis-Barnett, and Edmund should be mentioned as typical of the better sports lightweights.

Mudguarding and Detail Work.

A very real improvement has taken place as regards protection; the car type of wide flat guard is becoming general, and the inclusion of legshields in the standard specification is by no means uncommon. Except in the case of sports models, it was hard to find a badly guarded machine, though some of the very light machines ran things rather close in their efforts to reduce weight and price.

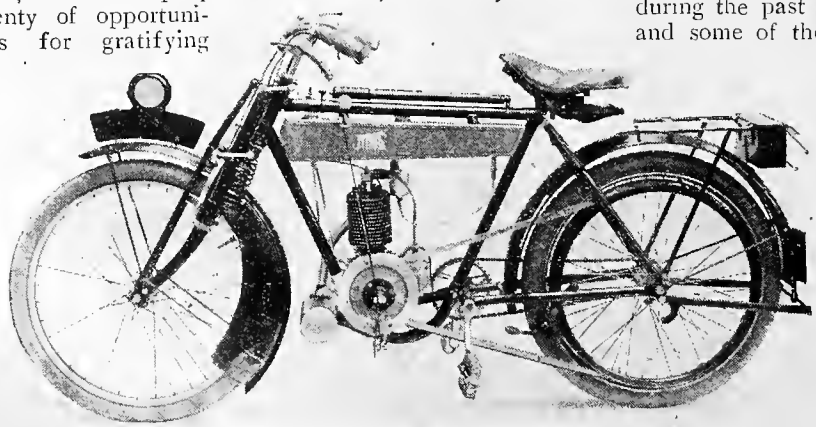
Finish was, on the whole, good, but the practical rider who rides hard and often will deplore the amount of plating still to be found on some machines. Still, there are people who like it, and they have plenty of opportunities for gratifying their tastes in the selection of a resplendent and glittering mount.

Fork stops, rubber handle grips, convenient change-speed levers, handle-bar or foot-operated oil pumps, improved tank fixings, concealed wires, stouter rims, spokes, transmission shock-absorbers, waterproof hubs, grease lubricators, and a hundred and one small but important items were to be found, and it is safe to say that greater strides have been made in detail work for 1922 than in any Show since the war.

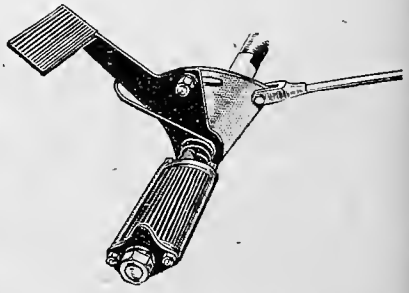
Two-strokes.

Though it is impossible to mention *all* the lessons of the Show in a few pages, these notes cannot be closed without some reference to one of the most popular types of engine—the two-stroke. There are several newcomers, but little change in general design. There is but one 500 c.c. single, the Dunelt, but a new Connaught has been introduced with an engine of 370 c.c., and the Peters and Omega are new to the 350 c.c. class. It has fallen to the lot of the two-stroke to develop the lightweight sidecar outfit, and further improvements have been made in this direction, but the public are apt to forget that a two-stroke won the 350 c.c. class in the 500 miles race at Brooklands, and that a speed of over 70 m.p.h. has been accomplished on a two-stroke of no more than 250 c.c.

In popularity the two-stroke has grown apace, and though no very obvious developments have taken place during the past year, its problems are being studied, and some of the best brains in the country are employed in solving them.



The J.E.S. four-stroke, a fine example of the true lightweight.



A refinement worthy of note on the New Imperial is the adjustment provided for wear on the brake, and also the position relative to the toe.

1922 PRICES.

Next Year's Motor Cycles classified according to their Prices.

PRICE is a topic of interest to all motor cyclists at the present time, and in order to convey conveniently the exceptional value now offered by manufacturers, we give below a list of 1922 motor cycles classified according to their price. With most makers cataloguing a large number of models it has been impossible to include them all, hence it has been necessary to take as examples a type common to the majority. In the case of lightweights under 350 c.c., the prices shown include two-speed gears with clutch and kick-starter unless otherwise indicated, while the prices of larger machines are for three-speed models. In considering these prices, it should be remembered that the majority of manufacturers of lightweights also offer single gear and plain two-speed models at prices below those in the schedule, while three-speed models are available in almost every range.

In the case of sidecars, the various standard outfits have been quoted, but these may in some models be more fully equipped than others; the Douglas range, for example, is all equipped with lamps, etc., and the Reading-Standard price includes dynamo lighting.

Under £50.

	£	s.	d.
1¾ h.p. Mackenzie (single-speed)	27	6	0
1¾ h.p. Young (single-speed)	29	17	6
2 h.p. Economic (single-speed)	34	0	0
2½ h.p. O.K. (2-stroke, single-speed)	39	18	0
2½ h.p. Spark (2-stroke, single-speed)	39	18	0
2½ h.p. Monopole (2-stroke, single-speed)	39	18	0
2½ h.p. Dayton (2-stroke, single-speed)	39	18	0
2½ h.p. Bownian (2-stroke, single-speed)	39	18	0
2½ h.p. Mowhawk (2-stroke, single-speed)	39	18	0
2½ h.p. Wolf (2-stroke, single-speed)	39	18	0
2½ h.p. Victoria (2-stroke, single-speed)	39	18	0
1¾ h.p. Hack Miniature (single-speed)	42	0	0
1¾ h.p. Kenilworth (single-speed)	45	3	0
2¼ h.p. Radco (2-stroke)	47	5	0
1¾ h.p. J.E.S. (2-stroke)	48	0	0
1¾ h.p. J.E.S.	49	0	0
2½ h.p. Unibus (2-stroke)	49	0	0

£50 to £59.

	£	s.	d.
2¼ h.p. Victoria (2-stroke)	50	0	0
2⅞ h.p. Sirrah (2-stroke)	50	0	0
2¼ h.p. Grigg	50	8	0
2¾ h.p. Cotton (2-stroke)	52	10	0
2¾ h.p. Hawker (2-stroke)	52	10	0
2¼ h.p. Excelsior-Villiers (2-stroke)	53	0	0
2¾ h.p. Kenilworth (2-stroke)	54	0	0
2¾ h.p. F.N.	55	0	0
2½ h.p. Hobart (2-stroke)	55	0	0
2½ h.p. Diamond-Villiers	56	14	0
2¼ h.p. Royal Enfield	57	0	0
2¾ h.p. Connaught (2-stroke)	57	10	0
2½ h.p. Mohawk (2-stroke)	57	15	0
2¼ h.p. Sparkbrook (2-stroke)	57	15	0
347 c.c. Peters (2-stroke, variable gear)	57	15	0
2½ h.p. Sun (2-stroke)	57	15	0
2¼ h.p. Monopole (2-stroke)	57	15	0
2¾ h.p. Olympic Courier (2-stroke)	58	0	0

£60 to £70.

	£	s.	d.
2½ h.p. Saltley (2-stroke)	60	0	0
2⅞ h.p. Alldays Allon (2-stroke)	60	0	0
2¼ h.p. Wolf-Villiers (2-stroke)	60	0	0
2½ h.p. Verus (2-stroke)	60	0	0
2½ h.p. Bown-Villiers (2-stroke)	60	0	0
2¼ h.p. James (2-stroke)	60	0	0
2¾ h.p. O.K.-Junior (2-stroke)	60	18	0
2¾ h.p. Diamond-J.A.P.	60	18	0
2¼ h.p. Francis-Barnett (2-stroke)	62	0	0
2½ h.p. Ivy (2-stroke)	62	0	0
2¼ h.p. New Hudson (2-stroke)	63	0	0
2¾ h.p. Sun	63	0	0
2¼ h.p. Velocette (2-stroke)	65	0	0
2¾ h.p. Ready	65	0	0
2⅞ h.p. Det	65	0	0
2¼ h.p. Triumph (no kick-starter)	65	0	0
2¾ h.p. Cotton	65	2	0
2¼ h.p. Levis (2-stroke)	66	0	0
2¾ h.p. Omega	66	3	0
2¾ h.p. Silver Prince (2-stroke)	66	3	0
2¾ h.p. Sirrah sidecar (2-stroke)	67	0	0
2¾ h.p. Hazlewood	67	0	0
2¾ h.p. Raleigh	68	0	0
3 h.p. Calthorpe (2-stroke)	68	0	0
2¾ h.p. Armis-J.A.P.	68	0	0
2¼ h.p. Mohawk-J.A.P.	68	5	0
3 h.p. Ivy (2-stroke)	69	0	0
2¾ h.p. New Imperial (3-speed)	69	0	0
3 h.p. Omega (2-stroke)	69	6	0
2½ h.p. Ner-a-car (friction drive)	69	6	0
2¾ h.p. Royal Ruby	70	0	0
2¼ h.p. P.V. (2-stroke)	70	0	0
2⅞ h.p. Olympic-J.A.P.	70	0	0
3½ h.p. Ahingdon (single-speed)	70	0	0
2¾ h.p. Calthorpe-J.A.P.	70	0	0

£71 to £85.

	£	s.	d.
3 h.p. F.N.	72	0	0
2¾ h.p. Massey-Arran	72	10	0
3 h.p. Raleigh	73	0	0
2¾ h.p. Francis-Barnett	73	0	0
2½ h.p. Chater-Lea (2-stroke)	73	10	0

£71 to £85 (*cont.*)

	£	s.	d.
2¾ h.p. Rex-Acme-C.A.M.	73	15	0
2¾ h.p. Edmund	75	0	0
2¾ h.p. Bown-Blackburne	75	0	0
2¾ h.p. Excelsior-Blackburne	75	0	0
2½ h.p. Jupp (2-stroke)	75	0	0
350 c.c. Beardmore-Precision (2-stroke)	75	0	0
2¾ h.p. Hawker-Blackburne	75	12	0
2¾ h.p. Verus-Blackburne	77	0	0
2¾ h.p. Hobart-J.A.P.	77	10	0
2¾ h.p. Reynolds	78	15	0
2¾ h.p. Bradbury	80	0	0
2¾ h.p. P.V.	80	0	0
2½ h.p. Radco sidecar (2-stroke, 3-speed)	82	19	0
2¾ h.p. Sparkbrook	84	0	0
3½ h.p. Rudge-Multi (variable gear)	85	0	0
3 h.p. Calthorpe sidecar (2-stroke)	85	0	0
2¾ h.p. Francis-Barnett (350 c.c.)	85	0	0
3½ h.p. Abingdon	85	0	0
350 c.c. Beardmore-Precision sleeve valve	85	0	0
2¾ h.p. A.J.S. (3-speed)	85	0	0
2¾ h.p. Allon sidecar (2-stroke, 3-speed)	85	0	0

£86 to £100.

	£	s.	d.
3½ h.p. Ariel (no kick-starter)	87	10	0
3 h.p. Coventry Eagle-J.A.P.	88	10	0
4 h.p. Blackburne	89	5	0
2¾ h.p. Douglas	90	0	0
3 h.p. Royal Ruby (3-speed)	90	0	0
4 h.p. Bradbury	92	0	0
2¾ h.p. New Scale (o.h.v.)	95	0	0
350 c.c. Hagg (2-stroke)	95	0	0
3½ h.p. Ariel	95	0	0
370 c.c. Connaught sidecar (2-stroke)	95	0	0
4½ h.p. Wolf-Blackburne	95	0	0
2¾ h.p. O.K. sidecar (2-stroke)	96	12	0
3½ h.p. Monopole	96	12	0
4 h.p. Hazlewood	98	0	0
2¾ h.p. Massey-Arran o.h.v. (3-speed)	99	15	0
4 h.p. Rover	100	0	0
3½ h.p. Rudge	100	0	0
4½ h.p. Humber sports	100	0	0
4½ h.p. Quadrant sidecar	100	0	0

£101 to £120.

	£	s.	d.
3 h.p. Ivy sidecar (2-stroke)	103	0	0
3½ h.p. Dot	105	0	0
3½ h.p. James	105	0	0
4 h.p. Triumph (chain-cum-belt)	105	0	0
3½ h.p. Scott Squirrel (2-stroke)	105	0	0
3 h.p. Royal Ruby sidecar	105	0	0
2¾ h.p. Reynolds de Luxe	105	0	0
4¼ h.p. B.S.A.	107	0	0
4 h.p. Powell	107	0	0
4½ h.p. Humber	110	0	0
5 h.p. Zenith	110	0	0
3¾ h.p. Scott	110	0	0
3½ h.p. Lea-Francis	110	0	0
4¾ h.p. Sheffield-Henderson	110	0	0
2¾ h.p. Sheffield-Henderson o.h.v.	110	0	0
5 h.p. N.U.T.	110	0	0
3½ h.p. N.U.T.	110	0	0
4 h.p. X.L.	110	0	0
3½ h.p. Martinsyde	110	0	0
4½ h.p. Victoria-J.A.P. sidecar	110	0	0
2¾ h.p. A.J.S. sidecar	110	0	0
5 h.p. Stanger (2-stroke)	110	0	0
4 h.p. Dunelt sidecar (2-stroke)	110	5	0
3½ h.p. Zenith-Bradshaw	113	0	0
5-6 h.p. Omega	115	0	0
4 h.p. Triumph (chain)	115	0	0
6-7 h.p. Coventry Victor	115	0	0
4 h.p. Armis-J.A.P. sidecar	115	0	0
6 h.p. Bradbury	117	0	0
3½ h.p. Norton sports	117	0	0
6 h.p. Hazlewood sidecar	118	0	0
4½ h.p. Excelsior sidecar	119	0	0
4 h.p. Indian Scout	120	0	0
3½ h.p. Triumph (o.h.v.)	120	0	0
5-6 h.p. Rover	120	0	0
4 h.p. Norton	120	0	0

£121 to £135.

	£	s.	d.
8 h.p. Zenith	121	0	0
5-6 h.p. Mohawk	123	18	0
4-5 h.p. New Hudson sidecar	125	0	0
5-6 h.p. Metro-Tyler	125	0	0
7 h.p. F.N. 4-cyl. sidecar	127	0	0
7 h.p. Indian Powerplus	130	0	0
3½ h.p. Douglas	130	0	0
5-6 h.p. Raleigh	130	0	0
8 h.p. Matchless (sports)	130	0	0
4½ h.p. P. & M. sidecar	130	0	0
8 h.p. Blackburne sidecar	131	5	0
4¼ h.p. New Scale sidecar	133	0	0
6 h.p. Excelsior sidecar	133	0	0
5-6 h.p. Verus-Blackburne	135	0	0
4 h.p. Harley-Davidson	135	0	0
8 h.p. Bradbury	135	0	0
4½ h.p. Beardmore-Precision sidecar	135	0	0
4 h.p. Powell sidecar	135	0	0
6-7 h.p. McKechnie	135	0	0
8-10 h.p. Reading-Standard	135	0	0
5-6 h.p. Armis-J.A.P. sidecar	135	0	0
4½ h.p. James sidecar	135	0	0
3½ h.p. Scott Squirrel sidecar (2-stroke)	135	0	0
4 h.p. Rex sidecar	135	0	0

£136 to £150

	£	s.	d.
4 h.p. Douglas sidecar	136	0	0
3½ h.p. Sunbeam T.T. (long stroke) (no kick-starter)	136	10	0
3½ h.p. Sunbeam sports	136	10	0
8 h.p. Royal Enfield sidecar (2-speed)	140	0	0
4½ h.p. Ariel sidecar	140	0	0
3½ h.p. Rudge sidecar	141	7	0
4½ h.p. Abingdon sidecar	142	0	0
4½ h.p. Humber sidecar	144	0	0
8 h.p. New Imperial sidecar	145	0	0
3¾ h.p. Scott sidecar	145	0	0
8 h.p. Chater-Lea sidecar	147	0	0
7 h.p. Victoria sidecar	150	0	0
8 h.p. Morgan	150	0	0
8 h.p. Dot	150	0	0
5-6 h.p. Coventry Eagle sidecar	150	0	0
8 h.p. Brough Superior	150	0	0

£151 to £185.

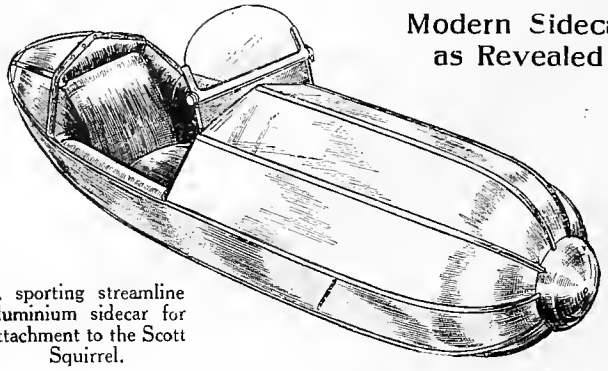
	£	s.	d.
7-9 h.p. Rudge sidecar	151	0	0
6-7 h.p. Abingdon sidecar	152	0	0
4 h.p. Norton sidecar	153	0	0
8 h.p. Excelsior sidecar	155	0	0
4 h.p. Triumph sidecar (chain)	155	0	0
5-6 h.p. P.V. sidecar	155	0	0
5 h.p. Lea-Francis	157	10	0
5-6 h.p. Monopole sidecar	159	12	0
8 h.p. Ariel sidecar	160	0	0
6 h.p. Martinsyde sidecar	160	0	0
7 h.p. James sidecar	160	0	0
6 h.p. B.S.A. sidecar	164	0	0
6 h.p. Douglas sidecar	165	0	0
8 h.p. L.S.D. Runabout	165	0	0
8 h.p. Indian Chief	170	0	0
8 h.p. Matchless sidecar	170	0	0
3½ h.p. Sunbeam sidecar	170	2	0
8 h.p. F.N. 4-cyl. sidecar	174	0	0
8 h.p. T.B. Runabout (a.-c.)	175	0	0
7 h.p. A.J.S. sidecar	175	0	0
8 h.p. Morgan de Luxe	175	0	0
8 h.p. Hazlewood sidecar	176	0	0
8 h.p. Morgan, G.P.	180	0	0
8 h.p. B.S.A. sidecar	185	0	0
8 h.p. Royal Ruby sidecar	185	0	0
7-9 h.p. Harley-Davidson sidecar	185	0	0

Over £185.

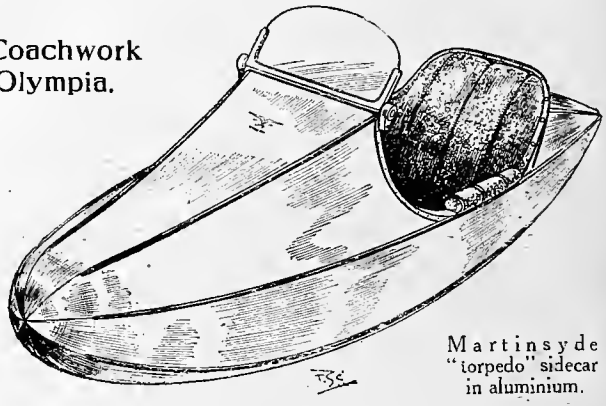
	£	s.	d.
4¼ h.p. Sunbeam sidecar	185	17	0
8 h.p. T.B.	200	0	0
8 h.p. Indian Chief sidecar	210	0	0
5 h.p. Scott Sociable (2-stroke)	215	0	0
8 h.p. Sunbeam sidecar	217	7	0
10 h.p. Castle Three	225	0	0

FROM THE PASSENGER'S POINT OF VIEW.

Modern Sidecar Coachwork as Revealed at Olympia.



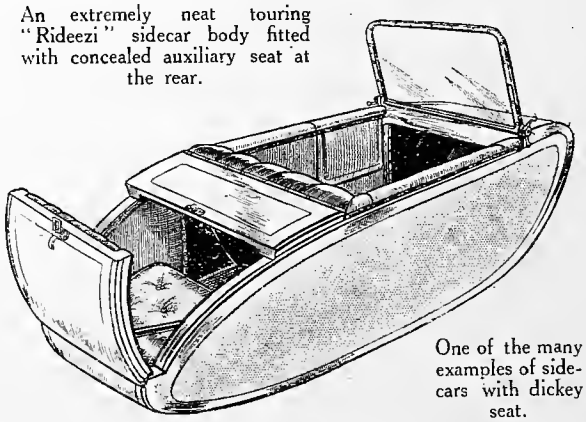
A sporting streamline aluminium sidecar for attachment to the Scott Squirrel.



Martinsyde "torpedo" sidecar in aluminium.

SPORTS models, both in sidecars and machines are to be the vogue; there seemed no end to the numbers and varieties at Olympia last week. Some of the smart little streamline bodies exerted quite a spell over people who could not possibly have found use for them. Portly dames, who could only have squeezed into the bodies with difficulty, were highly amused, if not fascinated by them, and seemed loth to pass them by in order to consider the purchase of a more staid looking affair. They are so *chic*, and in some mysterious way one associates them with French heels, silk hose, and dainty ankles. No wonder the speedman's 'bus in these days is no longer a single-purpose machine, as it used to be, for one of these featherweights can be attached with ease without harming even a highly tuned machine. Whether the limousine coupé or corpulent taxi sidecar survives or not, these lithe and sporting sidecars will live as long as the sports model motor bicycle lives. The heavy coach body of a few years ago could not possibly have been used with a high gear ratio, but these rakish bodies can be, for they are exceedingly light, and offer only the minimum of wind resistance.

An extremely neat touring "Rideezi" sidecar body fitted with concealed auxiliary seat at the rear.



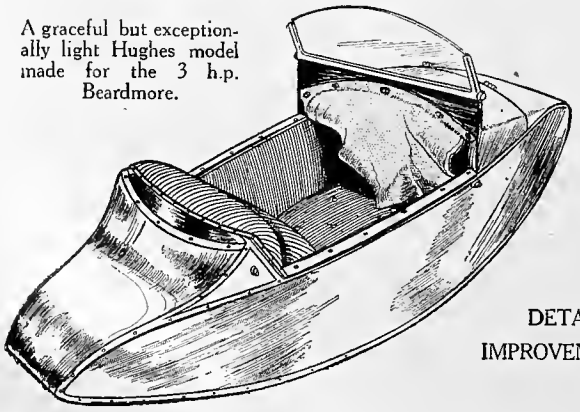
One of the many examples of sidecars with dickey seat.

Who could help but admire the Scott Squirrel outfit, for instance, with its dirigible pattern sidecar, quite one of the most *pètite* in the Show, a delightful thing in polished aluminium, with a baby Avro windscreen complete. The guarantee, too, of 60 m.p.h. for the machine, solo, makes the outfit still more attractive.

Another sidecar in the same category as the Scott was the Toronda, attached to a Brough Superior. This model, finished in hand-beaten mottled aluminium, was complete with a hood which folded away in the locker behind; the supports were of steel and also folded into a receptacle beneath hinged armrests. No untidy flapping hood and rattling supports when out for a speed burst!

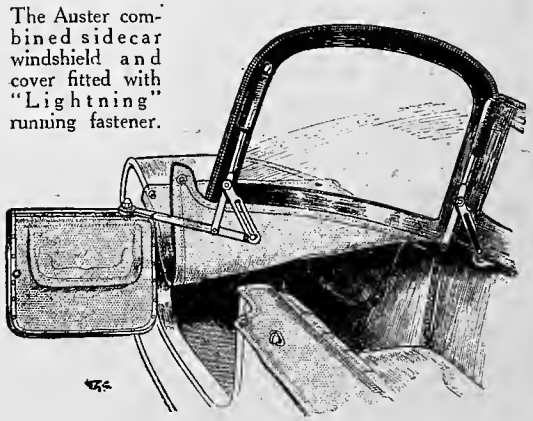
For fine finish and gracefulness in design, the Canoelet range was not easily surpassed. There, fashion appeared to have dictated as it does in other

A graceful but exceptionally light Hughes model made for the 3 h.p. Beardmore.

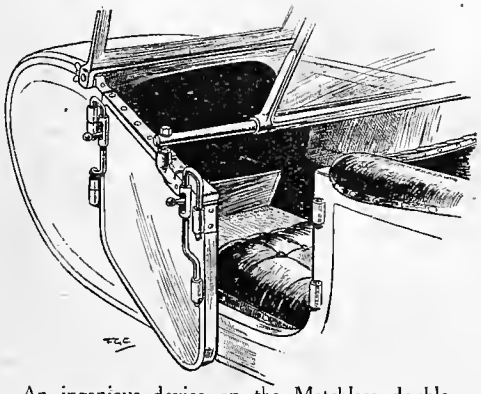


DETAIL IMPROVEMENTS.

The Auster combined sidecar windshield and cover fitted with "Lightning" running fastener.



From the Passenger's Point of View.—spheres, and it was obvious that the high-backed model which many riders still prefer is to go the way that fashion intends short skirts to go. The high back has been sacrificed to obtain graceful lines, and the contour of every Canoelet model was really graceful. Incidentally, Messrs. Mead and Deakin have adopted entirely different springing systems to suit particular models, and not simply modified a heavy pattern for lightweight work. Of the Canoelet bodies, perhaps the semi-sporting Model A4 was the most attractive, the little railed deck or luggage carrier adding in no small degree to its pleasing lines.



An ingenious device on the Matchless double-seater which allows the door to open from either jamb, giving access to either front or rear seat.

Predominating Primrose.

And what delicious colours the coach painters have mixed this year; the very names are intriguing—primrose, lime, dove grey, electric blue, ruby, yellow, lavender, moss green, and so on. Yellow, perhaps, should be reclassified into primrose, sulphur, lemon aureolin, gamboge—in fact, the whole gamut was used, giving sparkle to the stands. But why so much yellow?

A sidecar that took many people's fancy was the Cruiser model on Hughes and Sons' stand. The dash with its screen, though, of course, not new, is very graceful, and a good-sized locker was provided. There is nothing parsimonious about the upholstering.

Another model on this stand of interest to he who is termed "the family man" was designed to carry an adult and two small passengers; yet it was not in the slightest degree cumbersome.

A sidecar of original conception, also of interest to the family man, was the Sandum dual-purpose sidecar. By removing the seat (spring back complete) to a more forward position—and this is quite easily effected—then opening the back locker lid, where a further spring back and spring seat are concealed, this body, though of normal size, is converted into a sidecar big enough for two adults. An attractive proposition.

Evidently the Sandham Engineering Co. have had the question of passenger-carrying to heart, for, in addition to the model mentioned, they exhibited a side-by-side, or sociable, body that fits on to a standard-sized chassis. No doubt their experience gained in taxi sidecar body manufacture helped them considerably in evolving this useful model.

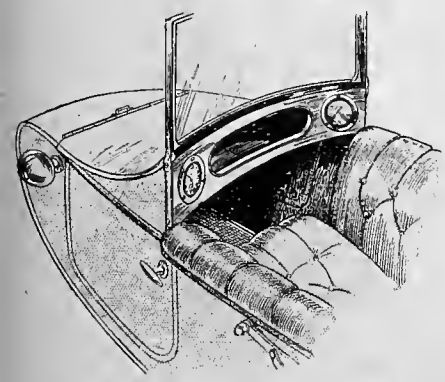
One could not help admiring the many attempts at accommodating more than one passenger in the sidecar without sacrificing unduly the general appearance of the outfit. Indeed, one of the strongest arguments in favour of the powerful sidecar outfit as against a four-wheeler at the same price is the very question of accommodation; and these sidecars in question are, therefore, the more commendable. *Apropos* of the side-by-side-seated sidecar, the success of the taxi sidecar should dispose of the bogey that this form of seating imposes undue strain on the machine.

Contrasts were offered on the Willowbrook stand; their taxi would have accommodated Daniel Lambert, but their little sporting model was surely the minimum in weight, probably as light as any in the Show and admirable for sidecar speed events.

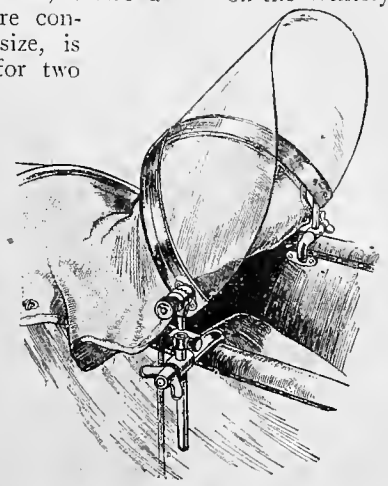
130 Guineas for the Sidecar Alone.

Another taxi sidecar that appeared to be the last word in finish and luxury was the O.E.C., offered at 130 guineas, the chassis of which is all steel and mounted on cantilever springs. On this stand of the Osborne Engineering Co. there were two other models that would appeal to the most fastidious critic in finish, suspension, and general design, the tandem model being specially attractive.

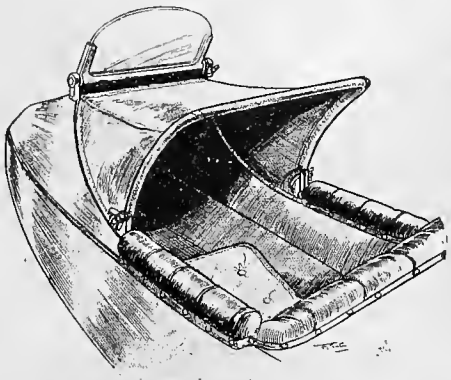
The Girdex chassis, already described, was exhibited on the Whitely Manufacturing Co.'s stand, and shown with sidecar lifted. To demonstrate the rigidity of the Girdex construction, onlookers were invited to stand



Locker fitted in the hinged "scuttle" of a P. and M. sidecar—an approved refinement in the automobile world.



Montgomery adjustable celluloid windscreen. The sketch shows the method of detaching it for access to the seat.



An original and useful device on a Martinsyde sidecar—a folding shield. The windscreen is probably more ornamental than useful.

From the Passenger's Point of View.—

on the extreme corner and observe the infinitesimal movement caused by its weight.

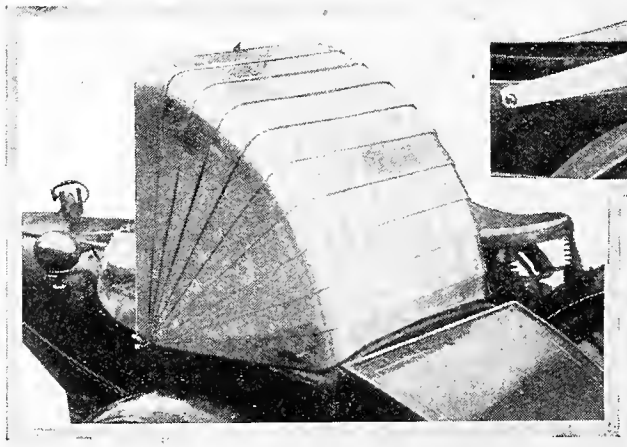
Chassis construction of well-thought-out design is used on the Dunhill sidecars, the tubular members being in the form of a triangle. This important part of a sidecar did not interest the ladies as did the Limousette in peacock blue, which was beautifully finished in grey leather and complete with V screen—indeed a fine example of the sidecar maker's art.

Quite one of the neatest ideas in double-seaters was on the Beardmore-Precision stand. Whilst retaining quite a sporting appearance, the body provides tandem accommodation, a screen being fixed for each passenger.

In Public School Colours.

Grace and distinction characterised the Montgomery sidecars, the *modèle de luxe* being a particularly fine example of sidecar building. Quite an original and attractive idea in the painting of some of the Montgomery sporting models was the adoption of school or club colours.

The Millford-Rock chassisless sidecar was the attraction of the Mills-Fulford stand, and it can be said that this model is all that the makers claim for it in the way of comfort. It may be remembered that the usual tubular frame is entirely dispensed with, and is replaced at the back and front with two spring-loaded steel members attached directly to the body. On this model the mudguarding arrangements were exceptionally good.

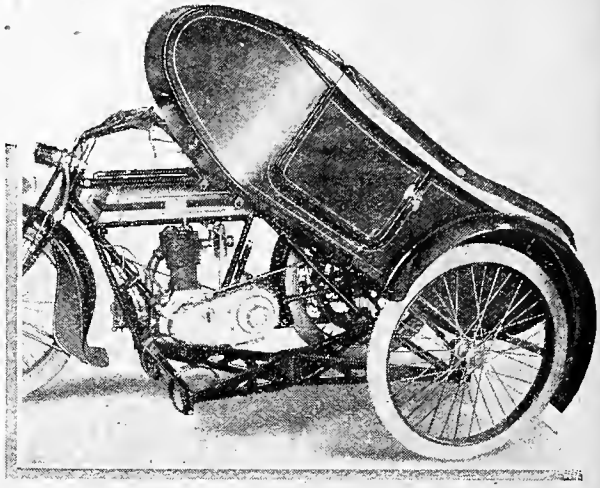


An original idea in hood manufacture. Made of aluminium in strips like a venetian blind, it folds neatly away when not in use as shown in the inset.

On the Grindlay sidecar, too, particular care has been bestowed on the springing; the firm's successful and well-tried system being retained on all except the sporting models. In connection with the latter sidecar the Grindlay lightweight screen was shown, and an ingenious little fitment it is, being exceptionally easy to adjust.

A Proved Lightweight.

Weights of machine, like their speeds, are often exaggerated. Sometimes the makers' weights are near the mark, but they are very, very seldom underestimated. The makers of the Watsonian featherweight—a model for racing men—did not simply offer their word that it weighed but 60 lb. complete with chassis and tyred wheel, but hung it on a spring balance for the "Thomas's" to test the weight for themselves—a good idea.



The Girdex chassis shown with the Whitley sidecar, lifted for practical demonstration of the rigidity of its construction.

To what many uses has the bulbous back been put. On the Norton it drops down and forms a capital luggage grid; the back of the *de luxe* bulbous Rideezi may be utilised as a table for a roadside tea. On scores of sidecars the rear portion is used as a dickey seat—truly a godsend to sidecar makers is the bulbous back.

Detail Refinements.

Many were the various little contrivances which go to make sidecaring more luxurious. The P. and M. sidecar, for instance, had, below the dash, a well finished mahogany instrument board and a shelf for gloves and powder box—a sidecar incidentally of exceptionally attractive design, finished in a delicate colour and complete with a silver swallow mascot. On the Martinsyde sporting model the apron between the screen and passenger could be pulled up to the neck to form a shield. The Douglas adjustable screen that could be pulled forward or backward at will was quite a good feature—so accommodating.

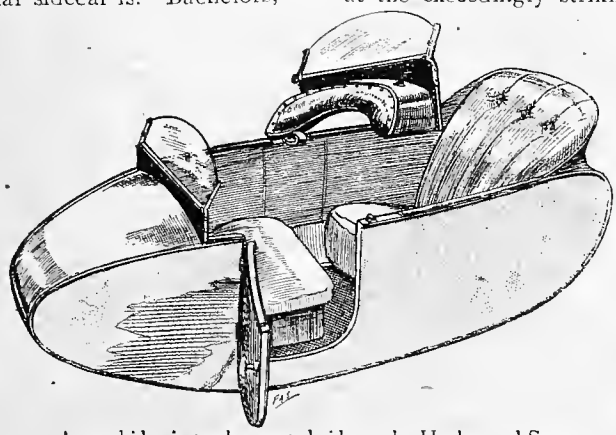
The hood of the Toronda sidecar folds away in the rear locker.

From the Passenger's Point of View.—

The A.J.S. celluloid side screens, too, must have been the outcome of practical experience. It is so easy to design sidecars, screens, and hoods that look all right, but which in practice fail miserably.

The Passenger Knows.

For candid criticism of these things, commend me to the matron who has been married so long and sidecarred so long as to be rid of all delusions. Here you will be told how ineffective is the flat screen, how badly sprung the body, how unanatomical (is there such a word?) the contour of the seat back, and what, in short, a beast your particular sidecar is. Bachelors, of course, know nothing of this — everything is "lovely" in the sight of their passengers. This deflection only points out, of course, that each year the sidecars must be increasing in comfort, especially with regard to screens, springing of the bodies, and upholstery, because makers (except those that ride in cars) are influenced by their wives' candid criticism, and also — incidentally—perhaps by their customers' opinions. That effective screens were badly needed is evinced by the solid popularity of the Easting, Cameo, and similar screens.



A novel idea in tandem seated sidecars by Hughes and Sons.

An Aluminium Folding Hood.

Hoods, one might think, cannot be very original in conception, but can't they? A designer of a hood shown on the Sidecar Body Co.'s stand outstripped every body in originality by evolving a pattern in aluminium which folded up as compactly as the ordinary type; on a polished aluminium sporting sidecar this should harmonise excellently.

The unconventional ideas in sidecars were good to see, and were just as welcome as those that were shown on the machines themselves. Occasionally one hears the scoffer when anything appears which does not conform to his channelled intelligence, but it was ever thus for the breaker of new ground. Another designer that disdained the beaten track was the maker of the Berthon sidecar shown in the Annexe, a streamline pattern, built boat fashion, finished in the natural wood.

Theatre Cars.

She of the fur coat and French heels was catered for very thoroughly on the Harley-Davidson and F.N. stands. On both stands the entrance was in the centre, and it was amusing to note the direction of travel according to the sex. The ladies marched immediately to the right to examine the luxurious Harley limousine, to the left on the F.N. stand, to wonder at the exceedingly striking primrose coupé.

Could luxury go beyond this priceless Harley model (£275 with motor cycle thrown in)? On opening the door the electric light is switched on, there is an armrest, mirror (naturally), flower vase, V windscreen adjustable for ventilation, and the upholstery is sumptuous, Bedford cord, of course, in dove grey—a peaceful colour. Perhaps slightly less amazing is the F.N. coupé, not quite so lordly—more of the Parisian touch about it—but still really rather remarkable. (It was illustrated last week.)

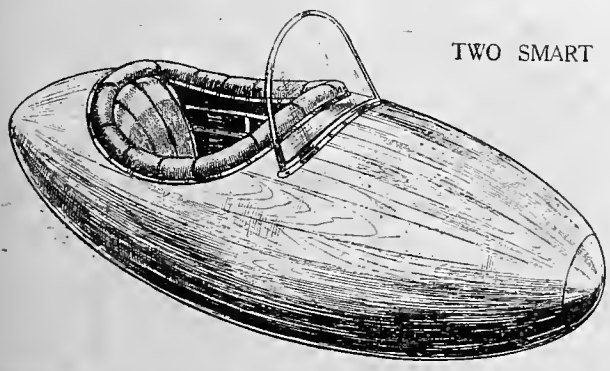
I did not examine the chassis and suchlike minor things that carried all the Harley sumptuousness, and I almost forgot to mention that in the ceiling of the sidecar there was an electric bulb set in a pale pink silk rose.

Variety.

In truth, a buyer not biassed towards any particular make must have had difficulty in choosing a model. The selection, ranging as it did from the racing Henderson to the Harley-Davidson limousine, was such as has never been seen before, and characterising very many makes was the superlative finish of the coachwork; that, and the grace of the sporting models being the greatest improvements over last year's exhibits.

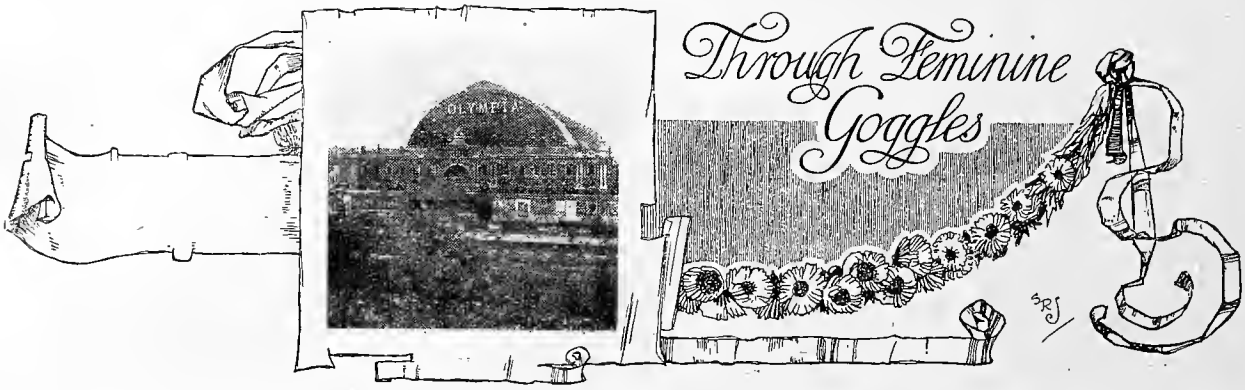
FRIAR JOHN.

TWO SMART STREAMLINE SPORTING BODIES.



Streamline boat-built sidecar body in cedar and mahogany by Berthon Boat Co.

A new design of sporting sidecar on the 1922 Rover.



A Lady's View of the Olympia Show. Solo, Sidecar, or Pillion?

By MAB LOCKWOOD TATHAM.

SHALL I buy a new motor cycle? In company with many other ladies I asked myself that all-important question, and eventually journeyed through much fog to Olympia, where I found that there are machines for every purse.

Sidecar or Saddle?

In these emancipated days, there are many of our sex who are not satisfied to watch somebody else have all the fun of driving, from the sidecar or the pillion. On the other hand, one does not always want the responsibility of driving. It is much more difficult to take an intelligent interest in the scenery if the mixture is not behaving properly or the engine is missing on one cylinder.

I think most of us like a little of both—change is charming, and, if one invests in a sidecar, one can take turn about with one's chosen companion. If fatigue overcomes enthusiasm, one can always lie down in the modern sidecar and go to sleep.

Are Sidecars Becoming Too Luxurious?

The first point that strikes me is that the aim of nearly all the sidecar models is to be as much like a car as possible. Well, of course, comfort is always a desirable thing, but surely motor cycles have a sporting element which does not demand out and out luxury.

Probably the most striking exhibit of the luxurious class in the Show was the F.N. limousine, a wonderful lemon yellow car fitted to a 7 h.p. four-cylinder machine. It had seven windows, and the port light on the right opened for communication with the driver. The V front contained two opening windows, and the side windows pulled up and down on the railway carriage system. The upholstery was carried out in Bedford cord, and electric light and a mirror in the dashboard completed a charmingly luxurious interior. Whether we shall see many of these on the road is an open question. Personally I prefer the standard model at £135. The former would be just the thing in which to be taken to a theatre, but for ordinary touring I prefer something like the Harley-Davidson or Matchless open models. The position of the sidecar in both the latter is higher than on most of this year's types, which fact, while doing away with the popular sporting effect, makes conversation with the driver easier and reduces the risk of being splashed.

There seems to be a big effort to cater for whole families. There are tandem, double, convertible, limousine sidecars, and tandem motor cycles. The O.E.C. limousine attached to a 10 h.p. Blackburne is a striking example—it accommodates four people including the driver—and instead of handle-bars, the machine is fitted with a car steering wheel, while synchronised brakes act on the rear and sidecar wheels. The price of this is 242 guineas. Why not buy a car? [Where, madame, will you find a British four-seater car at 242 guineas?—ED.]

It occurs to me that, in spite of all the developments of the sidecar, there is still room for improvements in one or two points. Take windscreens, for instance. In many cases, particularly in sporting models, the screen is set so far forward as to be of very little use, and even then it is too small. Another point: why do manufacturers make sidecar doors so small? In some of the sidecars, the narrow doors make it really difficult to get in and out.

Independence.

I would really much rather drive a solo lightweight machine. There is more interest, it is less expensive, and it does not require so much garage room. In these days of the kick-starter and clutch, there is no difficulty about starting up. There is no necessity even to wear special costume if one objects to it, as there are many excellent open frames made. Personally, I prefer special costume as being warmer, neater, and safer than skirts, and a diamond frame because it gives a knee-grip and renders the engine more accessible.

The best-known open frame machine is the Scott, which, of course, is standard, but there are many lighter and lower priced machines which are equally suitable. The Velocette people have produced an open frame this year which is very low, has kick start and clutch, a patent silencer and a guard over the sparking plug. The lowest priced ladies' machines in the exhibition were the Mackenzie, J.E.S., and the Radco, all of which seemed practical and easily managed; there are a number of diamond frame machines which are perfectly suitable for our sex. They are nearly all low, engines are well enclosed, and legshields are the feature of most of the newer models. Also T.T. handle-bars are coming into their own for road work—not in an exaggerated form, of

MAKING UP THEIR MINDS. Olympia Sketches, by Helen McKie.

Through Feminine Goggles.—

course, but sufficiently so to give the horizontal line. It is surprising how much more comfortable this position is than an upright one for long distances. Amongst standard solo models which appeal to me most are the 2¾ h.p. Douglas, the 3 h.p. Omega (which has a central spring stand), 2¾ h.p. Alldays-Allon, Levis, 2¾ h.p. Massey-Arran (the facsimile of the machine on which Whalley did so well in the T.T.), and the 3½ h.p. Sunbeam, the last two being amongst the many motor cycles now available without a "flapper bracket."

WINTER HEAD WEAR.

Miss Peggy Fraser, herself a motor cyclist, is the only fashion artist to consider the requirements of her sisters of the wheel. Some time ago Miss Fraser designed two motor cycling costumes, which were published in these pages, and now she submits three designs for hats in suède and glacé kid.

Prices.

Judging from the attitude of people visiting the Show, there is general satisfaction over the decrease in prices. Of course, there are still very expensive models, but there are cheaper ones as well—some of them very cheap—I think the value is better than it was before the war. We are getting more improvements, more reliability, and better design for very little more than the machines cost us in 1914. Next year should be a very good one for motor cycling, now that this most attractive pastime is being brought within reach of the masses. The more motor cyclists there are, the better it is for all concerned.

People who go to the Exhibition.

All sorts of interesting folk were in evidence, the family man with mother and little Willie were looking for the ideal sidecar turn-out; Bill and his girl wondered whether they will have a flat or a motor cycle when they are married; the sporting girl with the critical eye on all the sports models; the little fluffy girl who was more interested in the exhibitors than the exhibits; and, of course, the super motor cycle knut, to whom every road is Brooklands.

Apropos of racing, there were lots of old T.T. friends in attendance—de la Hay was as cheery as ever, and very optimistic about the Sunbeam for next year; and Tim Wood's beaming smile shone forth from the Scott stand. D. S. Alexander was as popular as ever with all the competition boys, and Norman Black, Pullin, Watson-Bourne, and others too numerous to mention were there.

An amusing incident occurred on one of the stands; a girl had been wasting the time of an exhibitor for some time by talking absolute rubbish about motor cycles. There was apparently nothing she did not know, so at last the harassed young man decided to catch her out. "And what do you think of the Hoover?" he asked. Said she, "Well, I think it has a very short wheelbase!" And he is still wondering who the joke was on.

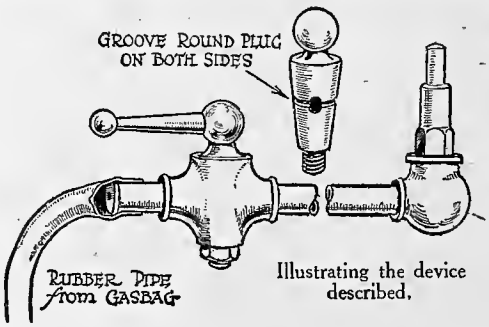
The exhibition undoubtedly was of much greater interest to ladies than in former years. They are being considered more and more by designers and manufacturers, both as passengers and drivers. And a very good thing, too. English girls have long been famous for their love of outdoor sport, and what can be healthier, cleaner, or more exciting than a good little engine, a broad highway, and lots of petrol?

Our foreign sisters, particularly in France, have yet to realise these joys, as proved by the exhibits at the Paris Salon, but they will probably follow our lead in time. And it is a lead. I hope this year to see more femininity on the road on two wheels than ever before.

HOW TO DIM A GAS LAMP.

MANY car drivers and not a few motor cyclists regard the dimming of head lamps as a courtesy which no gentleman can omit. Others consider the practice to be a direct incentive to murder or suicide. The first class may be interested to hear of two methods of dimming a motor cycle gas head lamp. One is to use the special Autoclipse lamp, listed for many years past by Brown Bros., which embodies a Bowden-controlled anti-dazzle disc. The other was invented by the son of a Teddington reader, and is shown in the accompanying sketch. It consists simply of fitting an ordinary brass cock in the pipe line between generator and lamp. File a narrow groove in the plug of the cock, and continue to enlarge this groove until it feeds just enough gas *with the cock shut* to keep the burner alight. Mount a rubber gasbag between the cock and the generator, and close the cock whenever you wish to dim. I do not wish to damp the ardour of any inventive motor cyclist, but I don't quite see myself sparing a hand to close this cock when I am riding an 8-10 h.p. twin solo on grease.

IXION.



Illustrating the device described.

1922 LIGHTWEIGHTS.

A Review of Solo Machines from 110 to 400 c.c., from 75 to over 200 lb., and from £27 6s. to £105.

IT would be much easier to write about the lightweights that were not at Olympia than about those that were. In other words, it would be a far less involved task to comment upon the products of firms that do not make "lightweights" than those who do. Sixty-eight firms exhibited machines which are for catalogue and such purposes so classified; and many of these concerns showed four or five entirely different models; that is, with separate sizes or makes of engine and not calculating gear, transmission, or specification variations. (If there were more proprietary engines on the market, this figure could have easily been improved!)

Ceased to be a Type.

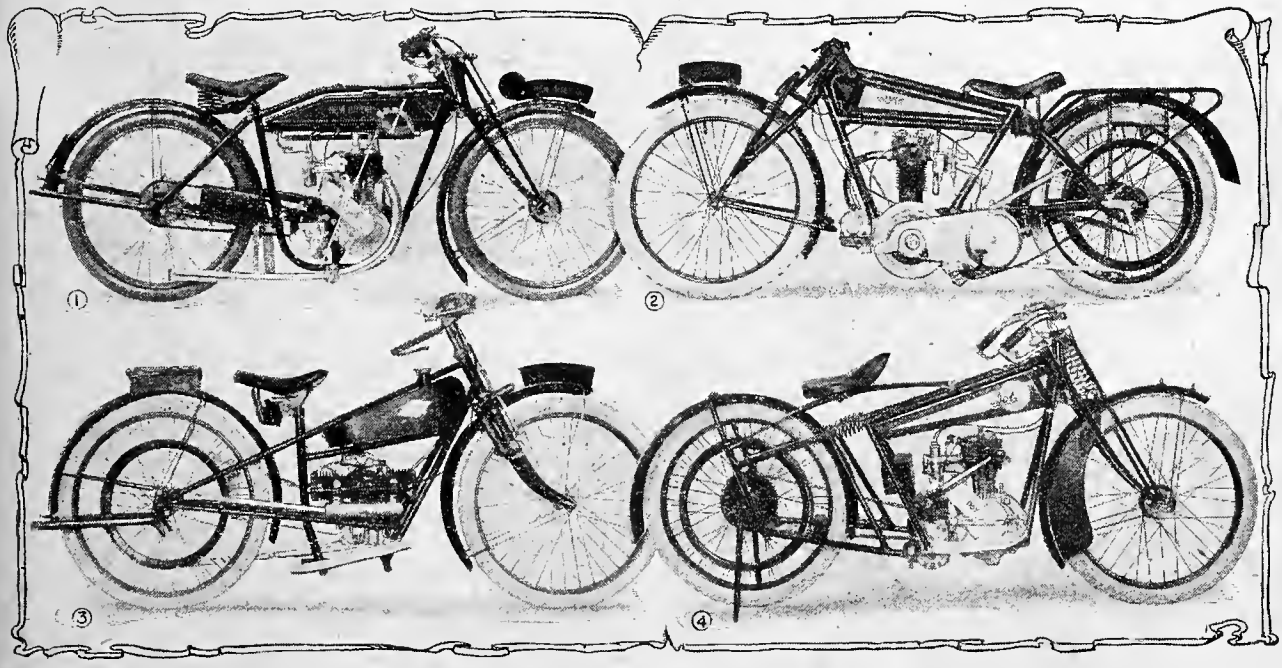
If such a referendum is a permissible criterion, as a solo machine the so-called lightweight is easily the most popular type. "Type," however, is not the most nearly correct word, since, with the advance of the lightweight, it ceased to be anything approaching a type. So much so, that there is now no safe definition of "lightweight." Mr. Webster would probably give it as the absence of the quality of being heavy. Ten years ago, the majority of motor cyclists would have very definitely stated that any motor cycle with an engine capacity of less than 350 c.c. earned the term—but, then, such a machine *was* of *light weight*, and, then, there were few, if any, engines between 350 and 490 c.c. Nowadays there are several 500 c.c. singles that weigh considerably less than one or two or the more elaborate "three-fifties," and there are also some "overgrown babies" of 400 c.c. or thereabouts.

For the purpose of this article, therefore, the very generous limit of 400 c.c. has been decided upon. 90% of the class thus formed weigh less than the £1 10s. taxation limit of 200 lb., and the 10% that exceed it have generally excellent reasons (or compensations) for doing so.

Guaranteed 70 m.p.h. sporting machines, miniatures of 110 c.c. engine capacity, and every type between fall in this category, and one wonders if in the far distant future there will be a larger class of solo mounts in existence. Although the well-tried big singles and twins on exhibit retained the interest of an enthusiastic band of solo enthusiasts, there were few of the buying public who did not seriously consider, and many who chose, a smaller machine.

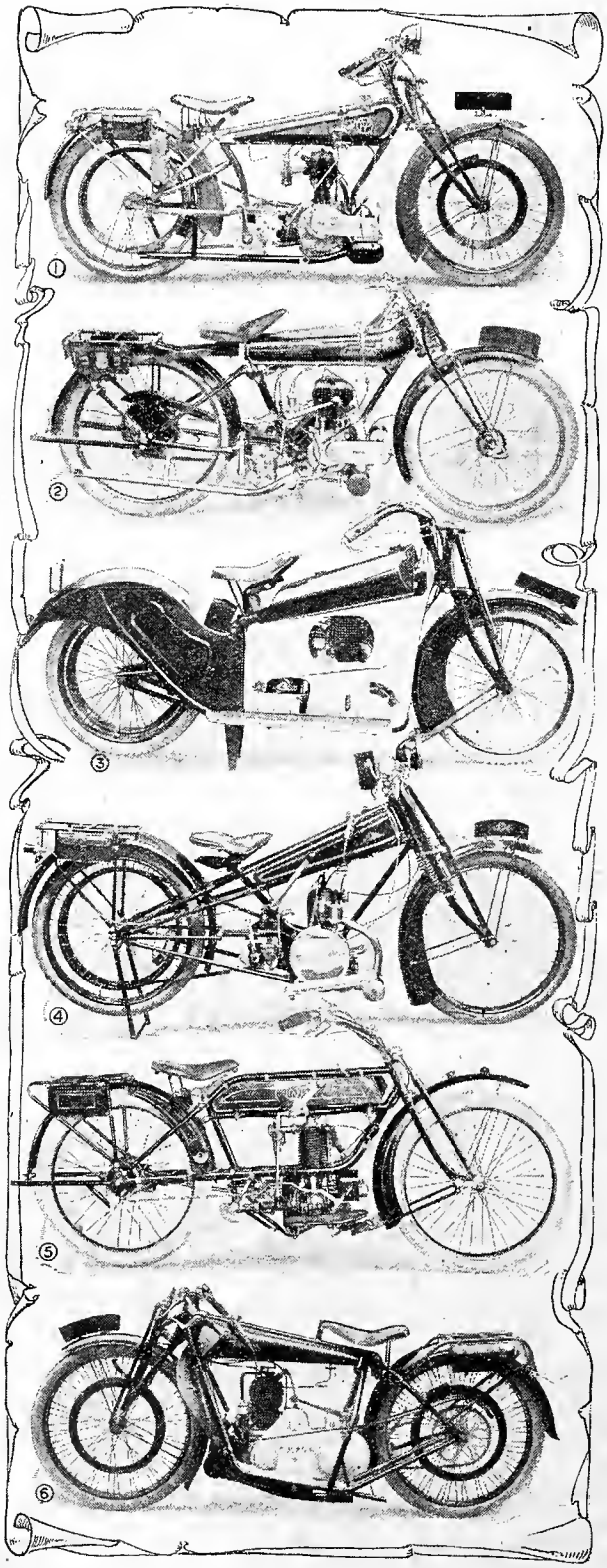
Speed an Important Factor.

This is not surprising, considering the amazing success of the "not exceeding 350 c.c." machines in 1921 competitions, and particularly speed events. Whatever may be said about the motor cycle becoming a purely utility vehicle, the average soloist still takes considerable interest in maximum speeds, and even if he attains 60 m.p.h. once only in his career, he gains considerable satisfaction from the fact that his machine was sold with a guarantee of that figure.



SPEEDY, ECONOMICAL, AND COMFORTABLE LIGHTWEIGHTS.

(1) Stripped speed model of the 2¾ h.p. New Imperial. (2) An unusual combination—an o.h.v. Blackburne engine in a spring frame—the 2¾ h.p. Sporting Coulson. (3) The lightest and cheapest twin-engined motor cycle in existence—the all-red Economic. (4) Frame springing on novel lines is incorporated in the 2¾ h.p. Dot.



(1) Hinged rear stays working against coil springs is the principle of the spring frame on the 2¾ h.p. P.V. (2) Top tube, tank, saddle, and footrests are sprung on the 2¾ h.p. Edmund. (3) Ample shields hide a novel rear frame on the 2¾ h.p. Hagg. (4) Pleasing lines are followed by the "triangulated" Cotton. (5) Shaft-driven 3 h.p. F.N. (6) Novel throughout—the new Omega.

Lightweights have shown a bigger improvement in speed capabilities in recent years than either the 500 c.c. singles or the big twins. Nor is this confined to any one or two particular makes. Therefore, as the lightweight is, anyhow, comparatively light, the most prejudiced follower of the heavyweight cult thought twice before placing a repeat order last week.

Nearly Motor Cycles.

The Show was remarkable for the number of vehicles that are only motor cycles in the sense that they have two wheels and, usually, a motor cycle type of engine. The 110 c.c. Hack, the Grigg (50 c.c. larger), the o.h.v. 1½ h.p. Kenilworth, and the unique shaft-driven Unibus, are simply more or less advanced developments of the seated scooter—the last-mentioned being very far advanced indeed. Higher up the scale, but still retaining such lingering suspicions of "scooterism" as (proportionately) diminutive wheels and open frames, come the Reynolds runabout, the Ner-a-car (nick-named on the spot the "Like-a-bike"), and the Jupp—three far from conventional attempts to give improved comfort and weather protection on two wheels. The imposing tandem-seated Reynolds is justified in exceeding the weight limits usual for a 349 c.c. engine, for it provides the same degree of comfort for each of its passengers. Just how it will behave on greasy tramlines arouses curiosity.

Before passing on to the undeniably motor cycle exhibits, mention must be made of the 75 lb. Mackenzie (not forgetting the copiously kilted sandwichmen in Hammersmith Road), the post-office-red flat twin Economic, the two remarkably attractive J.E.S. models, and the two-speed Grigg—genuine lightweights all, and bringing motoring for the million a step nearer realisation.

Almost in the same class may be placed the many single-geared or clutch model Villiers-engined lightweights, the majority embodying an ingenious pneumatic pressure lubrication system and extremely simple frame construction, and usually selling at £39 18s. Among the names on this type of machine are Spark, Monopole, New Courier, Dayton, Bownian, Mohawk, Wolf, and Victoria. Many other firms also use the Villiers power unit, but usually in a more elaborate layout.

Notable Two-stroke Models.

Two-stroke lightweights which do not embody proprietary units were shown under the following notable names: Omega (bristling with novelties — duplex frame and unit construction), Radco, Levis (211 c.c. and 247 c.c. models of greatly enhanced appearance), Velocette (three-speed touring and two-speed 50 m.p.h. sports models), Sun (with a rotary inlet valve in the crank case), New Hudson, Connaught (including a heavier 370 c.c. machine), James (for the first time with a conventional gear box), O.K. (two and three-speed, and a chain-driven machine), Chater-Lea, Ivy (two sizes, many models), Metro-Tyler (with concealed primary transmission, magneto, and gear box), Hawker, Allon, Beardmore (unaltered, but still original), Royal Enfield, Vindec, Junior Triumph, Hagg (well shielded), Calthorpe (full 350 c.c.), and Peters (regarding which the space at our disposal discourages a summary of its novelties).

1922 Lightweights.—

On the other hand, the four-stroke engine is just as popular, and was to be found in the chief lightweight models in an equally lengthy list of stands. Particularly capable little machines with 350 c.c. J.A.P. engines, lightweight three-speed gear boxes (usually), and all chain drive (often) were staged by the following:- P.V. (with simple spring frame), Diamond (with a completely enclosed drive in one case), Ready, New Imperial (loop frame and semi-unit construction, and a stripped sports model), Sirrah, Francis-Barnett (a particularly "clean" 60 m.p.h. sports model), Hobart (one of many), Rex-Acme (ditto), Dot (with a very novel spring frame), Coventry Eagle (with most handsome saddle tank, although the o.h.v. 2½ h.p. model deserves equal mention), and Excelsior.

70 m.p.h. Claimed.

Many of the above specify the equivalent size of Blackburne engine, just as some of the following Blackburne models may also be supplied with J.A.P.'s: Coulson (with a proved spring frame), Sheffield-Henderson (the o.h.v. model—one of the Show sensations; said to be capable of 70 m.p.h., and looks it!), Massey-Arran (the same engine in a more conventional but very speedy and neat-looking frame), Cotton (triangulated frame design), Kenilworth *(début)*, Hawker (resembling the two-stroke, and almost as simple), Verus, New Scale, and Edmund (a side valve sporting model with one of the neatest spring suspensions at Olympia).

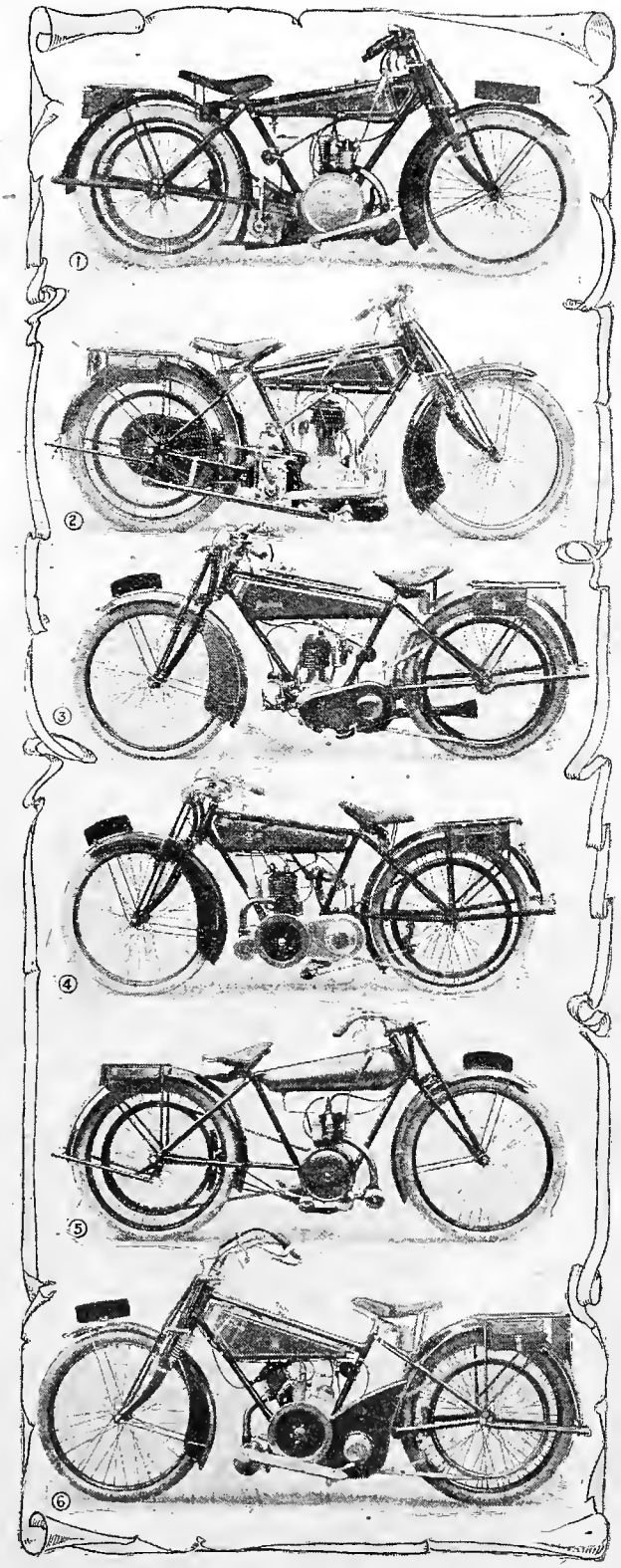
The advent of several excellent lightweight three-speed gear boxes is responsible for a greater accession to the two foregoing classes of go-anywhere lightweights than is generally realised.

293 c.c. J.A.P. engines help to make several attractive lightweight *modèles de luxe*, including the Olympic, the Hazlewood, and the Silver Prince.

A Curious Fact.

It is a curious fact that the majority of the 350 c.c. or thereabouts four-stroke lightweights which do not use proprietary engines are made by firms who also market big six or eight horse-power sidecars. A.J.S., Raleigh, Douglas, Bradbury, Royal Ruby, and F.N. all come into this category. With the one size of engine, the A.J.S. was shown in varying degrees of nakedness, each with specific appeal; there are on the other hand two Raleighs, 343 c.c. and 399 c.c., and even on the sports model a kick-starter is retained. Very similar was the style of the Royal Ruby offering—349 c.c. and 375 c.c. engines—but a spring frame model was on view. Bradbury variations rest solely in transmission and gears. The flat-twin Douglas needs little comment; it popularised this size of engine. Shaft drive is not the only good feature of the new 369 c.c. F.N., but it is a quite distinctive point.

Although only the most interesting model on each stand has been briefly sketched in the course of this article, the variety of types thus exemplified is most striking. It must be admitted, however, that every class of lightweight has received attention; future developments will consist mainly of improvements dictated by experience. One or two may not survive to see another Show, but the vast majority are too good, whether distinctive or conventional, to die.

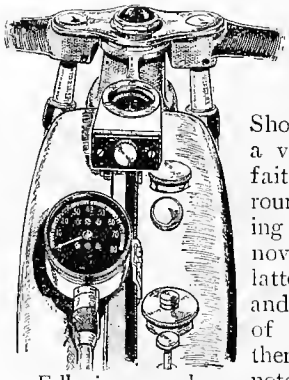


(1) A light, simple, but not unoriginal Excelsior. (2) Enclosed chain drive figures on the 2¾ h.p. Diamond. (3) Morris-engined Rex-Acme two-stroke. (4) The three-speed O.K., with final belt drive. (5) A popular two-stroke type—the 2½ h.p. Spark, (6) A conventional Sun two-stroke, equipped with belt, guard, etc., as a ladies' mount; the valve is located in the crank case.

Items Which Interested Me.

Some Casual Observations on the Olympia Show. By John Countryman.

AT home we subsist chiefly on beef and mutton. If a millionaire invites us to feed at the Ritz, we indulge in some weird and thrilling dish, which might or might not be the goods for everyday breakfast and dinner and tea. It is much the same with a motor show. All the year round we ride some 'bus which is emphatically conventional and substantial. At the Show we content ourselves with a very brief inspection of our faithful servants, and wander round with gimlet eyes, peering about in search of what is novel or *outré*. Round these latter exhibits we congregate, and linger and argue. Some of them make good: some of them do not. Anyhow, these notes more or less faithfully portray a country cousin's round of the stands, and his half-admiring, half-cynical pauses in front of machines and gadgets which were new to him.

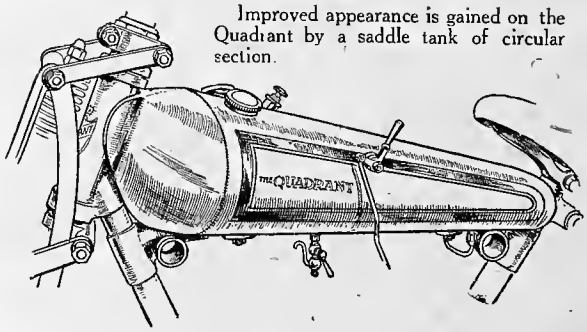


Following popular American practice, the tank top of the Indian Chief acts as an "instrument board."

John Countryman's Comments.

The surge which bore me past the turnstiles (he writes) began to ebb in front of the 70 m.p.h. Sheffield-Henderson—one of the machines adorned with a prop stand. Next door to it I noticed the swing suspension of the Olympic gear box, balanced by the Rudge eccentric front chain adjuster across the gangway—two pleasant alternatives to the still-too-common four-nut business. On the Edmund I principally noticed the Bowden lever for operating the oil pump at speed; a similar device adorns the Brough Superior, but in the latter case the big pump holds enough for thirty miles.

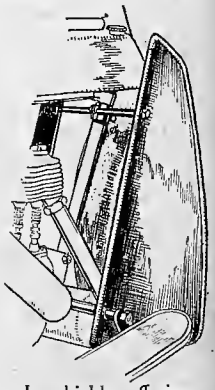
A. A. Scott was demonstrating the value of laminated gears on his Sociable; he drew a steel tool across a solid gear, and it rang: then across a laminated gear, which merely rustled. The 1922 Sociable has a neat spring drive. The McKechnie spring frame is said to have been roughed out with a Meccano set; anyhow, it is immensely promising. The Velocette is obviously designed with deep sympathies for the owner-driver who has not wrestled with $\frac{3}{16}$in. nuts jammed against the exhaust pipe, which they secure. The Velocette has pillar nuts which stand clear.



Improved appearance is gained on the Quadrant by a saddle tank of circular section.

Three-wheeler Details.

Both giants and dwarfs duly appreciated the telescopic steering pillar on the T.B. three-wheeler. As a person who has sensitive ankles and yet relishes speed, I noted the jack fixed to the rear chassis of the New Hudson cycle car—a loose jack in the cockpit is a fearsome thing. Did anybody identify better looking mudguards than those on the Lea-Francis—car type, with a flattish dome?



Legshields offering a minimum amount of wind resistance are fitted to the New Imperial light tourist.

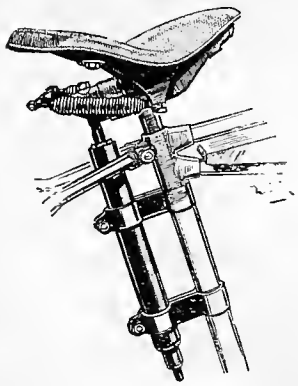
The new Hawker is an interesting layout; the suspension of its saddle and lighting battery deserve attention. Price reductions are universal, but nothing has dropped so much as the Unibus—1921, £98 14s.; 1922, £49; it has handle starting, worm drive, and twin disc wheels which let the tyre drop off when they are separated.

One of the very few machines with locknuts on the drawbolts of the rear chain adjustment is the B.S.A.; its huge one-piece aluminium chain case is most imposing, and delightfully easy to clean. The Powell bristles with excellent points; the centrifugal crank pin lubrication looks like one of the best details in the Show. The little crannies on the crank case all have rounded instead of rectangular corners, much facilitating the cleaning process. It has a capacious cast aluminium tool box in the proper place, *i.e.*, on the top of the tank. The main bearing housing is bronze-lined. I am credibly informed that the Powell and the Cotton are two of the few frames which steer and hold the road as nicely as a Scott.

Items Which Interested Me.—

Somewhere hereabouts I started violently: there was the Kenilworth miniature, fitted with belt-cum-chain drive. *Not* chain-cum-belt; the belt was the primary unit, and ran over two tiny pulleys set very close together.

Mrs. Janson was busily talking Nera-car; it has the neatest kick-starter in the Show, and an excellent twist-grip control for the clutch. The new model Omega is full of sensible originalities, and is amazingly cheap. The power unit can be taken out very rapidly. The front forks can be adequately lubricated without annoyance. The handle-bar is made in two halves, and by exchanging the halves the owner can get a T.T. or upturned pattern at will. The tank fixing is novel, for the tank is pressed up against the top tube from beneath. The Diamond is one of several machines which has its tool case pressed in one piece with the rear mudguard.



In addition to the saddle springing on the new Calthorpe, the seat tube itself is supported by an enclosed spiral spring and oil dash pot.

There is a great deal more in the new P. and M. than meets the eye. Though the engine is very little larger than its predecessor, it has nearly twice as much radiating fin area. The four-speed sidecar outfit weighs 20 lb. less than the 1921 two-speeded type. The sidecar dash and dickey are both excellent. Many technical details repay study; for example, the shape of the fork blades, and the reason for the new shape. The record in all-weather 'buses was easily taken by the South Pole edition of the B.S.A., with aluminium legshields and a front screen reminiscent of an eighteen-pounder gun shield.

Two-seated Contrasts.

Passenger enthusiasts clustered continuously round the £150 model of the Morgan Runabout. No vital sacrifice seems to have been made to get its price down: a slightly shorter wheelbase, a one-piece body without side padding, but all the vital parts just as they are in the *de luxe* type. The aluminium Morgan with marine type ventilators was a great draw.

The Reynolds tandem, with its 72in. wheelbase, aroused memories of the old Ormonde and Phœnix days. It seemed quite impossible to get near the Zenith-Bradshaw, so I sought Bradshaw's private engine stand in the annexe. The crowd there was no smaller, but I was rewarded with the sight of his oil-cooled single-cylinder, a charming little unit, with an enormous rectangular sump.

Royal Enfield outfits are still "best sellers," as they deserve to be. On the little two-stroke of the same make one admired the mounting of the release valve on the *side* of the cylinder head, so that it need not be dismantled in order to clean the cylinder.

The two new Beardmores detained most visitors a very long while. Everybody had been aching to see the Barr and Stroud sleeve valve engine, which already enjoys a great gossip reputation; but really the 4¼ h.p., with unit crank case-cum-gear box runs it quite hard in general interest. It has a nice mechanical oiler, which can be opened by a touch of the finger to feed a full charge in three seconds when necessary—this without the cost of retaining a separate hand pump. The sidecar outfit at £130 is one of the Show bargains; there is a large auxiliary silencer on the sidecar chassis with quickly detachable coupling, and the side wheel is sprung.

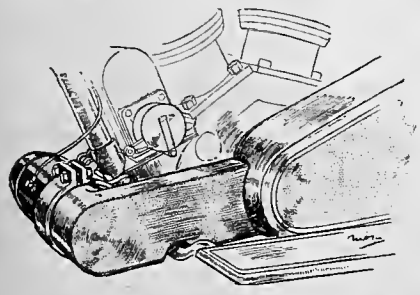
Excellent Value.

In a smaller class the Connaught sidecar at £95 was excellent value—370 c.c., three speeds, and all-chain drive. Nor was its specification scamped; as instances of refinement a three-way petrol tap and Showell mechanical oiling may be noted.

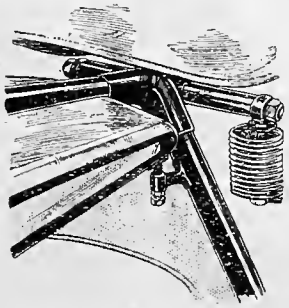
The Coventry Eagle is, of course, a *de luxe* machine throughout; but at least one of its features demands universal imitation. *Every nut is of the capped type*, a detail which vastly improves appearance, facilitates cleaning, and holds rust at bay. The new o.h.v. 6 h.p. Douglas is a welcome addition to the hot-stuff sidecar class—its mark seems to be about 80 m.p.h. solo and 60 m.p.h. with a sidecar. I liked the sensible toolbox and the patent leather undershield amongst its gadgets.

The sports Humber has one of the most powerful rear brakes in the Show—as befits a 70 m.p.h. machine. D.A. installations are not common yet, but one was neatly carried out on a Humber sidecar.

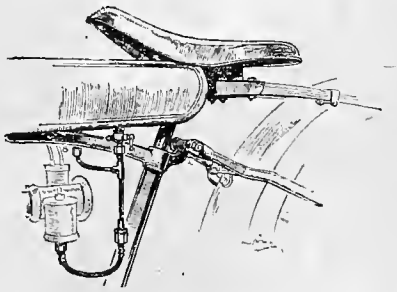
The Peters might have been designed by some engineer who had never seen a motor bicycle, for its designer departs from the conventional at every turn, using frame tubes as exhaust pipes, employing exhaust gas to work his oiling, running lighting wires inside his petrol tank, and so on. Visitors always recognise an original brain, and the stand was crowded.



The auxiliary drive for the dynamo on the Reading Standard is neatly encased



The petrol tank of the new Omega is held in position against the top frame tube—which lies in a longitudinal padded groove—by four jack screws, as shown.



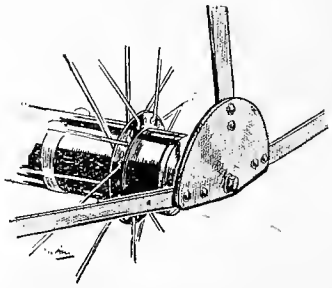
Flexible petrol pipe connections between tank and carburetter on the Edmund spring frame machine.

Items Which Interested Me.—

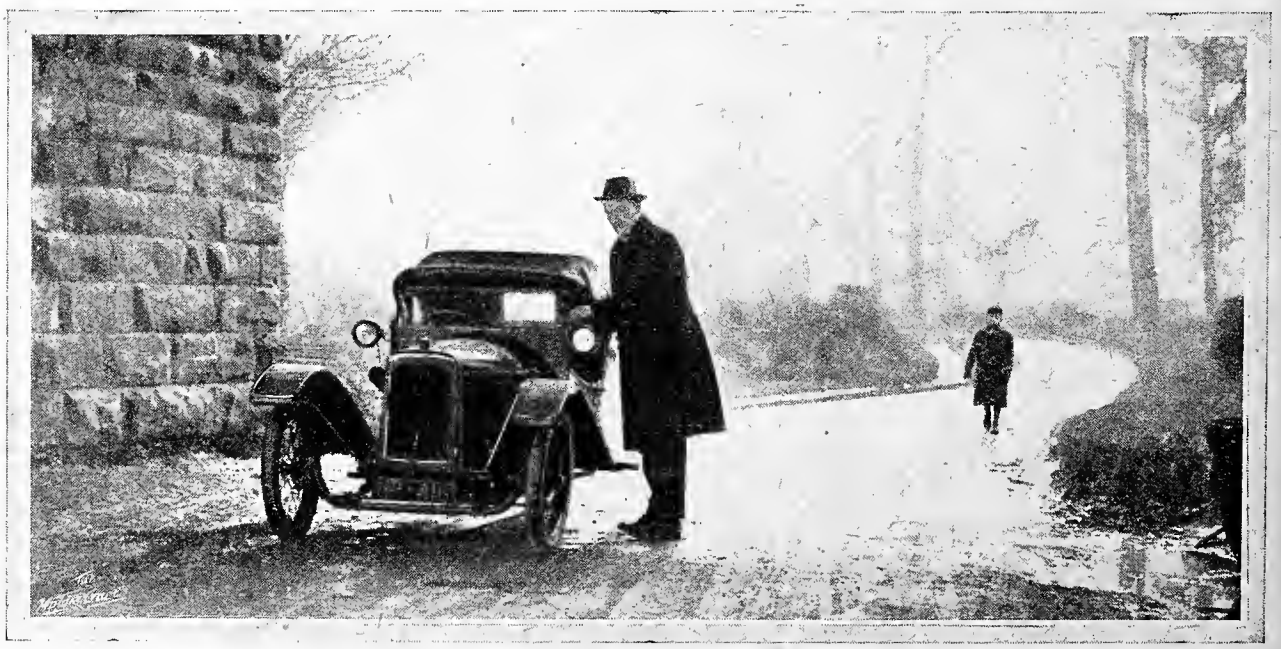
The Economic machine was not the cheapest in the Show—I fancy I sighted one at twenty-six guineas; but it was unquestionably the cheapest twin, and the simplicity of its power unit is attractive—two castings bolted together compose the engine. The ash lathe chassis of the three-wheeled runabout revived memories of the 1901 Orient Buckboard.

All the knuts had congregated at the Brough stand, where interest was divided between that guarantee of 80 m.p.h., the 'buses which substantiate the guarantee, and a Toronda sidecar with a disappearing hood.

In the accessory stands mechanical oiling is much to the fore, witness the Showell, Lamplugh, and Best and Lloyd devices. The Hawthorn oil flow indicator (Rotherham) is probably easier to watch than a drip. Rotherham's solderless pipe coupling won the hearts of many amateur owners, who have bungled petrol pipe repairs. The Smith tank gauge made most of us pause. Enquiries for accumulator lighting sets were numerous, so were expressions of dismay at the prices. The Coventry rivet extractor is very neat, and can actually be used without any handling of the chain. The Villiers flywheel magneto kept a set of lamps brilliantly lit up by the hour—evidently one firm, at least, has solved the problem of these dual outfits. The Imspecs air drive speedometer was sought out by many enthusiasts, some of whom had innocently fancied that it worked like a Pitot tube without any gearing; actually, its shaft runs at the same speed as the road wheel. I bought a pair of College pocket slippers for touring, all the Terry spanners (mine get stolen by wise knaves annually), and two Linco spanner sets, previously unknown to me. The Speedwell oil drum has won the firm many clients. Dinner time arrived just as I reached the Runbaken stand, where an aluminium piston with phosphor bronze wearing surfaces, a two-spark plug, and a spark tester were holding a small crowd in rapt attention. Altogether, I do not remember a Show which sent one home with so many gadgets to talk about. Provincial clubs ought to organise loan collections of the more portable items. A talk on mechanical lubrication with suitable exhibits would provoke quite a fierce evening.



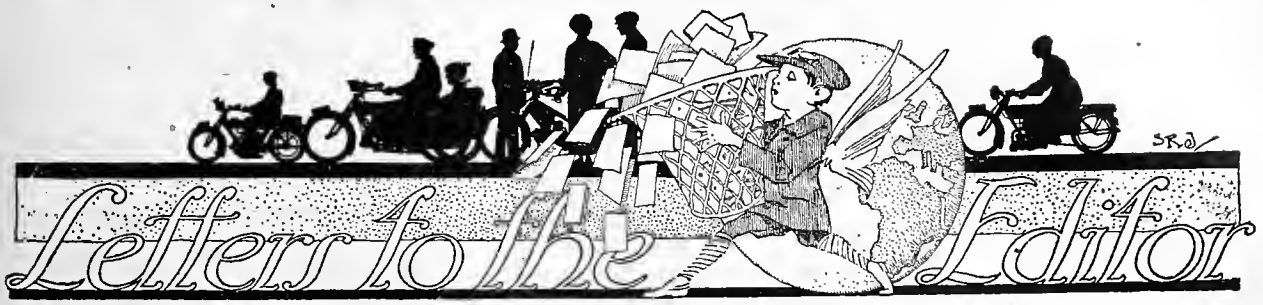
Showing the method of fixing the mudguard stays to the outside of the hub spindle on the sidecar wheel of the Indian Chief.



DECEMBER ON THE ROAD. Chief among the advantages of the runabout is the protection it affords to the driver. This owner of a three-wheeler does not need to don overalls and sou'wester; when the rain comes he stops and raises the hood.

A ROYAL VISIT TO THE MOTOR CYCLE SHOW.

On Wednesday of last week H.R.H. the Duke of York arrived at the Show punctually at 10.30 a.m. to make a tour of the exhibition. He was accompanied by Wing-Commander Grieg, and was met at the Hammersmith Road entrance by Sir Harold Bowden, Bart. (President of the Manufacturers' Union), Mr. W. G. Bower (vice-president), and Mr. H. R. Watling. The first stand visited by H.R.H. was that upon which was displayed the Scott three-wheeled runabout. From there His Royal Highness visited the stands of Rudge-Whitworth, Douglas (with which he is well acquainted), Matchless, Levis, and Harley-Davidson, where he was received by Mr. Duncan Watson, and had the two well-known Harley-Davidson riders, Temple and Davidson, presented to him. He also visited the Zenith stand, and had the beautiful section of the Zenith-Bradshaw engine explained to him by Mr. Bower, and saw the two new model Peugeots, which made their first appearance in the Show that morning. On the P. and M. stand the Duke of York had several minutes' talk with Mr. R. Moore, and asked him if the P. and M. had not been very early in the market, and he was told that the first model was on the road in 1901. On the Ner-a-car stand he shook hands with Mrs. Jansen. It is impossible to mention all the exhibits H.R.H. inspected, but he was interested in the new J.A.P. engines.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

MOTOR CYCLISTS ON PAPER.

Sir,—"Motor Cyclist on Paper" certainly seems to be in a predicament, yet should be content with his lot.

I also have been a reader of *The Motor Cycle* for years, and am still waiting for someone to offer, giving one away, which as yet I have not had the fortune to perceive.

In all probability, if such did happen, I might be killed in the rush, so that "Motor Cyclist on Paper's" hopes seem somewhat brighter than

Luton. MOTOR CYCLIST IN DREAMS.

DIMMING BY DI-OPTRIC LENS.

Sir,—May I enquire whether the principle of the di-optric lens has yet been applied to motor head lamps? It occurs to me that an arrangement of lateral prisms of glass actuated at the ends by a rack and pinion adjustment might solve this night glare difficulty by the momentary lowering of the parallel beam in response to the simultaneous inclination of the lens prisms. The effect should be that whilst a dim light still shows ahead, that would enable any driver to pass in safety, a full beam would illuminate the road for a matter of three or four yards only, to the mutual advantage of all concerned. H. H. CUDMORE.

STANDARD ENGINES AT BROOKLANDS.

Sir,—In answer to the queries of your correspondent "F.E.L." (Dulwich) on the above subject, and for the benefit of any other uninformed persons, we would like to make it public (1) that Indian *racing* machines are taken to Brooklands by van solely because they are not equipped for the road and carry no licences or registration numbers, and (2) that the blanket coverings were adopted to prevent our "numerous admirers" from inadvertently altering careful and much sought after adjustments and flooding the crank case with oil just before a race, which has often been the cause of an engine not starting easily. Your correspondent need have no fear that the blankets are to veil some mysterious new mechanism. Moreover, it may not be common knowledge that after any important race or new records, the engine is dismantled in view of the officials for measurement and inspection, and an inquisitive public may easily satisfy itself as to standardisation.

HENDEE MANUFACTURING CO.
W. H. WELLS.

WEIGHTS OF SPORTING MACHINES.

Sir,—I see "Ixion" has got a grouse about the weight of the Ricardo-Triumph. As I am about to own one of these, I must defend it.

Could the Triumph Co. turn this machine out at 160 lb.? The frame would have to be lighter. This I should have thought impossible, considering the state of the roads now and in 1911. Also think of the much higher speeds now obtained than in those days. Again, if it were ten years ago, how could the gear box be made much lighter? I am of the opinion that for long life and "foolproofness" these boxes could not be much lighter than to-day. I owned a 1911 Triumph, and with just the plain single gear belt this weighed 170 lb. fully equipped! How "Ixion" could reduce the weight I am at a loss to know. Everyone clamours for a larger capacity tank, and this, of course, weighs more than the old square tank. Then, what with chains and larger and more solid wheels and tyres, this machine could hardly weigh very much less.

Probably I am dense. If "Ixion" can assist me in getting a 30s. tax instead of a £3 one, I shall be eternally indebted to him. TRIARDO.

Nottingham.

GRAVITY FEED MECHANICAL OIL PUMPS

Sir,—The writer has observed with interest your notice on the Showell rotary oil pump, and would like to say, in reply to your criticism, that you are quite right in stating that oil must be led by gravity to the pump, and that the amount of pressure obtained is rather limited, but the force is such as our lengthy and varied tests have proved to be ample, and there is no need to make use of a thin oil.

During the recent cold snap, when the oil became very heavy and viscous, the writer covered a distance of about 150 miles, and this was the first occasion in eight months' use on which it was found necessary to increase the usual valve opening. The machine used was a 3½ h.p. B.S.A., and lubrication was everything that could be desired.

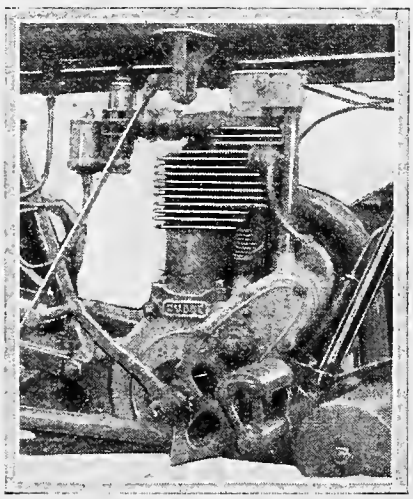
We would like to take this opportunity to point out that the flow of oil is varied according to engine speed, and, further, that the drive may not only be taken from the magneto, but also the half-time or engine-shafts irrespective of speed, as the valve in the sight does all the regulating.

We trust you will see your way to publish our letter as one of general interest.

E. SHOWELL AND SONS, LTD.,
JOHN H. COCHRANE, Sales Manager.

ELIMINATING MECHANICAL NOISE.

Sir,—With reference to the letter by "Multi Gear" which appeared in your issue of November 3rd under this heading, we would like to say that we have fitted a number of Rudge machines with enclosed overhead valve gear such as he suggests. A photograph showing this is enclosed herewith, and we have found that by fitting this type of cover a considerable amount of noise is eliminated, besides adding longer life to the various working parts.

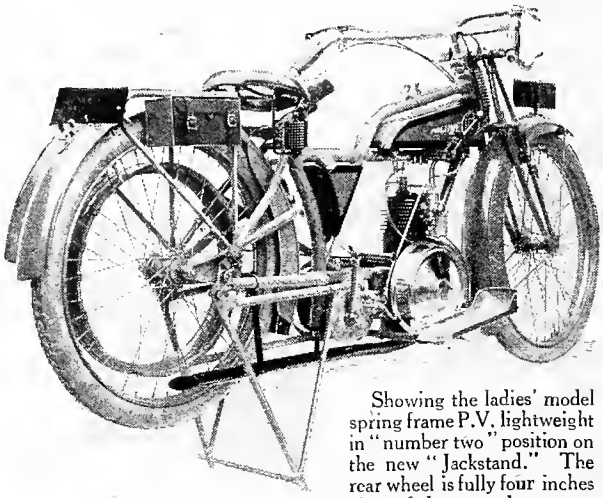


Completely enclosing the inlet valve gear of a 3½ h.p. Rudge. (See accompanying letter from Messrs. H. V Smith.)

We shall be glad to be of any service, and place our advice and experience at the service of "Multi Gear" or others interested.

HENRY V. SMITH, ENGINEERS.

Osmondthorpe, Leeds.



Showing the ladies' model spring frame P.V. lightweight in "number two" position on the new "Jackstand." The rear wheel is fully four inches clear of the ground.

SIDECAR FUEL CONSUMPTION RECORDS.

Sir,—Your correspondent "Ignoramus" must have created a record in averaging 92 m.p.g. on his 4 h.p. Triumph sidecar. I have recently made a long tour, but my average stands at 67 m.p.g. with an absolutely standard Triumph outfit—that is, as delivered from the works.

I am sure it would be interesting to know what jet and gear ratio "Ignoramus" employs. TOM HAMMOND.

REVIVING AUTOMATIC VALVES.

Sir,—Your correspondent, Mr. J. E. Smith, has opened up a deeply interesting enquiry.

I had two ancient machines—one, an old racer 3½ h.p. Triumph, and the other, which took me thousands of miles, was a 3 h.p. Lincoln Elk. The former was mechanically valved; the latter had the automatic inlet. One advantage in favour of the Elk was that there was no blow back in the carburetter when the cylinder had become overheated. The trusty Triumph opened its valve for gas, and, at certain speeds of low rate, spat out part of the charge. I attribute this to two causes. First, the gas at sub-normal temperature suddenly expanded on coming into contact with the interior of the cylinder, and, as the inlet valve was held open, partly escaped again by the way it came in. Secondly, the indicator diagrams of all gas engines show a residuary pressure behind the piston after the exhaust period terminates.

The cure, no doubt, is to increase the speed. Then the momentum of the gas has not time to react and "about turn," and the loss is negligible. But that limits the speed range.

We must command a low speed for utility's sake. Is it not a fact that the flat part of the arc near the top dead centre is of little benefit whether the inlet valve be automatic or not?

I tried the experiment of fixing an automatic between the carburetter and the inlet valve of the Triumph, with the result that there was no blow back and no waste of gas.

I would point out one more advantage of enormous value. According to my tests, the automatic claims a distinct preference in petrol consumption in long hills or switchback roads. That, of course, is after making due allowances for greater weight carried by the "trusty" machine.

The automatic valve appears at its best when the spring approaches half the strength of that of the exhaust. Probably it would go one better if it was as wide as the bore of the cylinder, and of aluminium if practicable. And to the future of the automatic valve I raise my glass!

Stowmarket. REACTIONARY.

Sir,—I am much interested in Mr. J. E. Smith's letter *re* automatic inlet valves. I have a machine in use daily fitted with valves of this type. This is a twin-cylinder Rex of 1908, and the original valves have been in use till quite recently, when, owing to the stems being somewhat worn, they were replaced by valves made of nickel steel. I have never had a broken inlet valve, and there were no cotters to wear in my case, as the collars are secured by neat clips which cannot come adrift. Another advantage with this type of valve not mentioned by your correspondent is, there are no valve guides to leak air and prevent satisfactory running at small throttle openings.

Stewartstown. AUTOMATIC.

Sir,—I was much interested to read Mr. J. E. Smith's letter on automatic inlet valves, and perhaps the fact of my being also a keen motor cyclist will be sufficient excuse for dragging "car discussion" into your columns.

We have a 1906 10 h.p. two-cylinder De Dion car, fitted with a.i.v. When we bought the car, it was with the intention of converting the a.i.v. to o.h.v., but I decided to give the old automatics a trial. So I ground them in well, adjusted the springs, and fitted case-hardened cotters to them.

Since then I have had *no* trouble with them, can start up on a frosty morning within two turns of the handle, accelerate like the very dickens, and can show the 1922 super tuned 10 h.p.'s a thing or two, will climb any hill, and take 10 cwt. anywhere. A.I.V.

Chesterfield.

COMPARATIVE INSURANCE RISKS.

Sir,—With regard to the letter of Mr. W. Attwood-Evans in your issue of November 24th, I beg to point out to him, with due apologies, that his explanation of how and why insurance premiums differ because of horse-power does not appear very sound.

In the first place, I wonder why he should take it for granted that, generally speaking, an 8 h.p. machine covers more ground than one of a more modest power. Take the man who goes to business every day on his machine to save inconvenience and expense: does he use a big twin? I think in the majority of cases his horse-power rating would be nearer 2¾.

Then Mr. Attwood-Evans states that "moreover, an 8 h.p. motor cycle is . . . capable of more speed." He does not say that his remarks apply only to sidecar outfits, so, at the risk of making the big twin fans get on their hind legs and ramp, I offer my opinion that this does not necessarily follow.

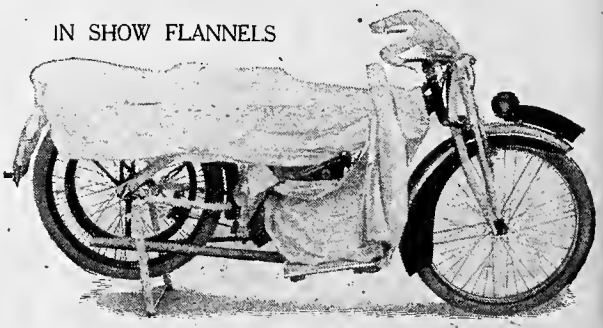
There are fast—very fast—big twins on the road, but I believe it is a fact that the average 3½ h.p. single will beat the average 8 h.p. twin when it comes to revs., and for speed you must be able to get the revolutions up, and keep them up.

The average big twin is designed mainly for sidecar work, and geared accordingly. This year's Show heralds a multitude of standard sports models, from the little o.h.v. 2½ h.p. J.A.P. upwards. Any of these should beat an average 8 h.p. twin in a "blind," especially (*vide* our comrade "Ixion") if the twin is hauling Mr. and Mrs. Quiverful and the family sidecar.

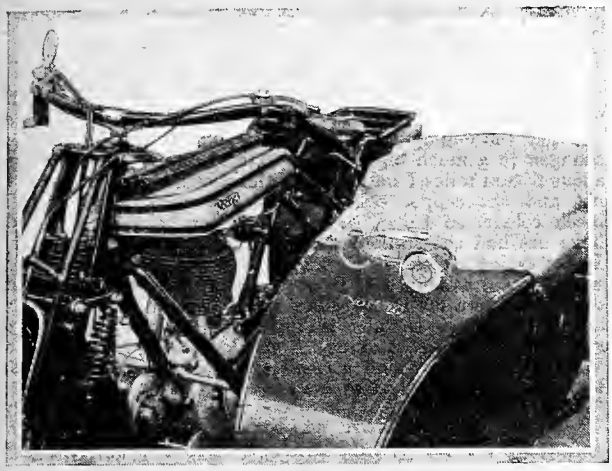
Visions of this labour of love going into the Editor's W.P.B., and the fact that my fount pen is nearly Pussyfoot, force me to make an end, but in this last dying spurt I should like to say that it is far from my wish that Mr. W. Attwood-Evans should advocate the advancing of the premium of the small h.p. 'bus (I ride a "3½"). Rather, I hope that he may eventually come to advocate the reduction of the big twin premium. NICKY NICKY BOM BOM.

Southport.

IN SHOW FLANNELS



This is how the hundreds of motor cycles were taken to the Show. All enamelled and plated parts are carefully bandaged for their railroad trip to Addison Road—the last, let us hope, of their career! The machine is a Silver Prince.



An interesting novelty was the cardboard model of a Norton sidecar which was much in evidence at the Show. It is seen reposing on the front of a standard model 4 h.p. Norton sidecar

ACCUMULATORS FOR SERIOUS LIGHTING SERVICES

Sir,—Relative to the letter on the above topic, appearing in *The Motor Cycle* of November 24th, signed by C. Kyle, of New Zealand, I consider it my duty to warn the motor cycling fraternity at large that our friend in the Southern Hemisphere has either underestimated the capacity of his accumulator or exaggerated the rate of discharge to an abnormal degree.

The accumulator is stated to be of the 6 volt 15 amp. type, which equals 90 watts.

Your correspondent informs you that he has the following lamps in use, and stipulates that his rate of discharge is about 10 amps.:

	amps.
Head light, 48 c.p. half watt bulb current consumption	4
Dim lamp in head light, 12 c.p.	2
Small bulb for stationary use in head light, 2 c.p.	$\frac{1}{3}$
Spot light, 12 c.p.	2
Speedometer, 2 c.p.	$\frac{1}{3}$
Tail lamp, 2 c.p.	$\frac{1}{3}$
Total consumption	9

It is now obvious that the discharge is approximately 9 amps. Now, if we divide this into our first calculation of 90 watts, we have—

$$\frac{90}{6} \div \frac{1}{9} = \frac{5}{3} = 1\frac{2}{3}.$$

Therefore the period over which a 9 amp. discharge could be held from the cells previously stated is nominally $1\frac{2}{3}$ hour.

We will now turn our attention to the distance covered, which is fifteen to twenty journeys of ten miles each.

In order to spare our friend too great an exposure, we will accept the lowest number of journeys for our basis.

Fifteen journeys of ten miles each equal 150 miles. Now, if we divide the number of discharge hours into the mileage covered we will arrive at the speed necessary to complete that distance during the discharge of the accumulators through the lamps:

$$\frac{1\frac{2}{3}\text{ hour}}{150\text{ miles}} = \frac{5}{3} \div \frac{1}{30} = 90\text{ m.p.h.}$$

The cells under discussion are of the secondary type, therefore recuperation through chemical action is of no account.

My own mount, "a reliable Velocette," is equipped with C.A.V. electric lighting, minus dynamo, and using the same size of accumulator as our friend, and with a maximum discharge of $2\frac{1}{2}$ amps. I can only obtain six hours continuous light.

Ten years in close contact with the electrical trade has not brought me in touch with any secondary cell that can boast of an efficiency anything near that claimed by our friend from overseas. A.F.W.W.

Lymm.

SUNDAY COMPETITIONS.

Sir,—I read with much incredulity parts of the letter written by Mr. Samuel St. John.

He says, "During the week the 'man in the street' endures even speed trials without kicking." May I ask, Who is the "man in the street"? Does he stay at home to earn the wherewithal to exist? No. Then, perforce, he is not troubled at all through the week by the pandemonium created by all the known makes of motor cycles (barring the bare half-dozen) competing in speed trials, etc.

With regard to Sunday, how many "men in the street" would stay at home and have rest and quiet in preference to watching a hill-climb or a speed trial, which, owing to the proximity of the noise, could not entail a walk of more than a few hundred yards? EF 1508.

West Hartlepool.

SIDECAR POWER IN TRIALS.

Sir,—I am one of the majority which does not go in for freak trials, but desires a low cost sidecar outfit to take two heavy persons anywhere in reason in England or Wales. (I exclude the big Scottish passes.)

The point I want to raise is this. Why is it that in reliability trials, such as A.C.U. Six Days (to which the public turns its eyes for a guide as to the capabilities of machines), there is so seldom seen a representative number of single-cylinder four-stroke sidecars just under 600 c.c.?

A number of makers of excellent 4 h.p. engines catalogue a sidecar outfit of this power, which will no doubt "go anywhere." Why then, when it comes to a trial, do these manufacturers enter their machines solo?

Supposing this year's boycott of the A.C.U. Six Days Trials had not occurred, would the man of very reasonable requirements have had a chance of seeing the numerous 4 or $4\frac{1}{4}$ h.p. sidecars in operation? For answer to this, one has only to look at the records of previous trials. There was one notable exception this year, I know (though only a $3\frac{1}{2}$ h.p. sidecar); but this is only the exception which seems to prove the rule that manufacturers are willing enough to *sell* their 550-600 c.c. sidecars to the public, but when it comes to big competitions, practically the only ones one hears of are of 6-8 h.p. (I am entirely omitting the wonderful lightweights of about $2\frac{1}{2}$ h.p., as these are of another class altogether.)

The fact that at least one famous make of 4 h.p. engine pulls touring sidecars in considerable numbers about Cornwall only mystifies me the more as to the reason why makers appear disinclined to show the capabilities of the 4 h.p. in trials as a passenger machine. If a 4 h.p. could not go through such trials as the Six Days *solo*, when lightweights can and do, the maker would, I hope, have to close down. Why not, therefore, show the man of moderate means that the single-cylinder sidecar, which any agent is ready to sell him, can answer all reasonable requirements? Not once or twice, but *keep on* showing him.

G. LANGDON.

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THREE PROBLEMS.

Readers' Views on Some Mysterious Troubles in Engines and Transmission.

IN a recent issue of *The Motor Cycle* (page 532) there appeared three letters from readers who had experienced various apparently unaccountable troubles with their machines. Many and varied attempted solutions have reached us, of which we append a selection below.

"Silenced" (Battle, Sussex) has also experienced "Mechanovice's" trouble, which was a periodical change in the exhaust note of a Union two-stroke engine. He writes:

"I am having a somewhat similar trouble with a single-geared 2½ h.p. Metro-Tyler two-stroke. Some months ago it suddenly developed a fit of running silently (or practically so) in the same way as 'Mechanovice's' engine, only it would start doing so in about one and a half miles, and the power seemed to remain about the same. After a few weeks of this it left off. Then, about a month ago, it started again, only this time the procedure was for it to run normally, with a crisp clear 'pop' for perhaps one mile. It by that time 'warmed up.' Then one suddenly becomes conscious that it is 'four-stroking,' but the note of each explosion and the volume of the sound remain exactly normal, and it is still possible, by enriching the mixture (with a variable jet), to produce the usual 'loud-banging' four-stroking! After a few hundred yards the explosive noises cease, and there is just a low 'burring' throb, with sometimes, at first, occasional outbursts of the apparent four-stroking. As soon as I reach a hill now I find that I have, not more power, as the lucky 'Mechanovice,' but about half the usual. Sometimes there is practically normal power, and I sail up hills the perfectly silenced motor cycle, envied for the efficiency of my silencing system. Usually, however, I gradually lose speed, until, at about 8 m.p.h., the exhaust wakes up too late to accelerate.

"One peculiar thing is that, on shutting the throttle when running 'silent' (at about 20 m.p.h. or more), the exhaust may still be heard, just the same throbbing note, but very quiet. When speed has reduced to about 5 m.p.h. the noise suddenly increases and takes the form of a hollow sort of 'bob, bob, bob,' the noise that one might expect from the expansion of gases compressed in the cylinder by the piston (*i.e.*, not under the high pressure of an explosion). This rather led me to suspect a choked exhaust, so I cleaned everything, with no effect whatever, except the addition of a 'tinny' quality to the normal exhaust note when present.

"Incidentally, when running 'silent' and pulling (?) on a hill, it is liable to a horrible rattle, which may be cured by closing the air control.

"Does 'Mechanovice' live in Whatlington, Battle, Sussex? If so, I should like to meet him and congratulate him on his machine's behaviour!"

Short Induction Period Blamed.

The same problem has inspired the following letter from Mr. H. W. Ayres:

"These engines (Union two-strokes) will take a tremendous amount of advance, and, from twelve months' experience, I can say that they run their best at a speed of 30 m.p.h. I find that it is at this speed that my exhaust note changes to a mere murmur, after a few miles' constant running. My only explanation is this. When the engine gets its revolutions up and doing about 1,800 a minute, the carburation is near perfection, and, owing to the extremely short induction period of the Union engine, only a very small charge is drawn in, which is at the same time ample enough to keep the revolutions up, as the compression of the engine after a long run is much better than it is at a start. The increase of power noticed by 'Mechanovice' is not a fallacy but an absolute concrete statement, as my experience with two up confirms his observation without doubt.

"Four-stroking *is* rather a nuisance with these engines sometimes, but a variable jet is what is wanted, as the engine requires very little juice on the road."

Mr. W. M. Norris suggests a cure. He writes:

"I have had the same phenomenon with my 1921 Levis engine. Perhaps my experience may be of some use. I had fitted an extra air tap to the induction pipe, which had an inside diameter of about $\frac{5}{16}$in. When the engine had got thoroughly warmed up the exhaust note suddenly changed to a much higher key. After running like this for about fifteen miles I noticed that the silencer was abnormally hot and the copper exhaust pipe had changed to a dull black colour, so I had the extra air tap soldered up, and have not had the trouble since, except the other day, when I was trying an old Bosch aeroplane plug, the electrode of which was a bad fit. So I have come to the conclusion that too much extra air is the cause of the trouble, but why this should be so I should be interested to find out. In regard to the four-stroking, I should advise him to fit a W.S.R. variable jet and a *small* extra air tap in the induction pipe which will close *properly*."

Blowback at the Valves.

Valves failing to seat properly was "Mechanic's" difficulty with his Humber. "W.B.W." (Ilkley) makes the following suggestions, and also adds a note for the benefit of "Mechanovice":

"A number of years ago we had a similar trouble with a 1905 semi-water-cooled 3½ h.p. White and Poppe single. We found the trouble to be that the valve seating became distorted when the 'holding up' bolts or studs were drawn up tight enough to ensure a good joint.

"We were able to effect a permanent cure by fitting a bridge piece across the valve guide between the top end of the valve spring and the face, where the latter normally had its bearing. The extremities of the bridge piece were drilled and tapped for the insertion of extra long bolts or studs, and the originally tapped holes in the valve seat flange were drilled out to allow these to pass through, as in the cylinder head. This allows the valve seat to be held up by pressure applied at a central point.

"'Mechanovice' might fit a magneto cut-out and use it the next time a change of tone occurs, and we think he will find that his engine will run without the usual ignition system, and prove 'self-ignition' to be the cause of change in tone of exhaust. The reason of self-ignition may be found to be a defect in the engine design and of carburation. We guess that 'Mechanovice' has not tried any fairly steep hills when this condition is in evidence; as any reduction in 'revs.' would soon alter the situation."

"Chainman" desired help in locating "an objectionable rumble" in his all-chain drive big single. Mr. W. Dougall reports a similar trouble, and suggests a cause:

"My machine (a Triumph) is in exactly the same condition, but, unlike your correspondent, I know what caused it, but, so far, have not effected a cure. While standing, a car came out of a side road, and, before it could be drawn up, it slowly bumped my sidecar, slewing the frame connection on the front down tube round so that the point of the side touched the ground. I thought I had escaped, but now find the engine in exactly the same state as described by 'Chainman.' Evidently the frame has got a twist, although not noticeable, and the engine is off the balance. I am of opinion it will be difficult to put right."

"J.G." suggests a solution:

"Do you think it could be caused by a loose baffle plate or loose end on his expansion chamber? When he shuts off the gas and allows the machine to drive the engine, air would be drawn through the exhaust system, and anything loose may account for this mysterious noise."

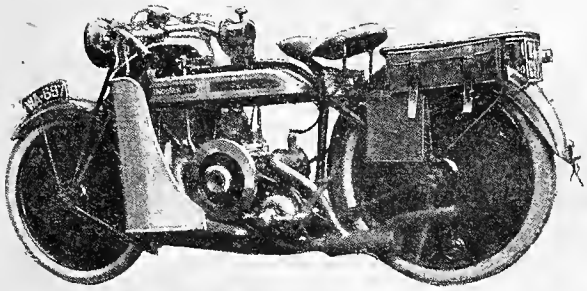
"Jockell" (Brighton) attempts to solve all three problems, in the order referred to above.

"*(a)* Compression too low. *(b)* Temporary binding of operating rockers owing to heat and under-lubrication. *(c)* Either (1) sprocket on wheel eccentric to wheel axle. (2) hub ball races require renewal or adjustment, or (3) wheel out of truth. I would add that identical troubles occurred to me with, in the case of *(b)*, a 2¾ h.p. Douglas, and *(a)* an old 2¾ h.p. Minerva."

Weather Protection on a Solo Machine.

How Overheating was Eliminated when Using very Complete Leg and Engine Shields.

WITH the approach of the winter season and the cold, wet weather which normally follows in its train, many motor cyclists may perhaps be interested in, and welcome, the following device, which greatly increases the joy and comfort of winter riding, and not only prevents saturated trousers but also shields the legs from the biting winds which are prevalent during this time of the year. The total enclosure of the front of the engine keeps the whole unit quite free from dirt and wet in a most surprisingly effective manner.



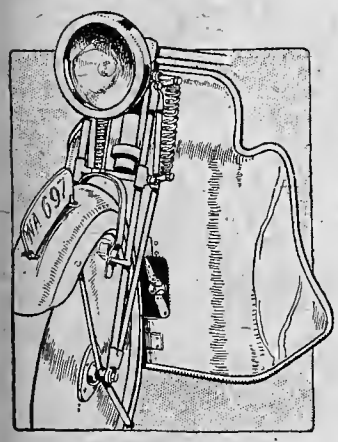
Although fitted with these ample shields, the appearance of the machine is not spoilt in any way, nor is the petrol consumption appreciably higher.

The writer has been in the habit of riding to and from business four times daily on a 4 h.p. Douglas solo machine, and, because of the discomforts above-mentioned, has sought to remedy the trouble in the manner illustrated.

Polished Aluminium and Beaded Edges.

The shields, which are made of No. 16 gauge sheet aluminium, are polished, and present outwardly a very smart and symmetrical appearance. The insides are enamelled blue to match the Douglas blue of the tank. Around the edges have been riveted some 3/8in. aluminium beading, which not only strengthens the shields, but also adds to the appearance, giving a finished-off effect. Being in two halves, the work of assembling to the machine is simple and is accomplished by bolting the two halves together and screwing the base to the footboards with half-a-dozen screws. The whole is quite free from any vibration or rattle.

Since the shields were fitted a year ago, the machine has been ridden every day during all weathers—wind, rain, hail, and snow, and even during the hurricane winds which were so frequent during the latter end of last year, and which have tested the machine thoroughly, both from the wind resistance point of view and also from the skidding danger. Incidentally, discs are fitted to the wheels. Yet several of the writer's engineering friends prophesied trouble from the following three sources: (1) Cylinder overheating; (2) wind resistance; (3) skidding.



The shields fitted to the writer's Douglas, which have proved very satisfactory in use.

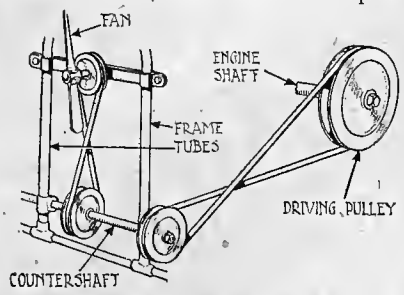
In order that the whole of the engine and the legs of the rider might be fully protected from the road mud, it became evident that some provision for the cooling of the cylinders was necessary. To effect this, a hole of rectangular shape, 4 × 5in., was cut out of the aluminium directly in front of the front cylinder head; but in practice this was found to be an uncertain and somewhat erratic method, for when riding it was found that only a small amount of air was driven by the forward motion of the machine through the hole in the guard, owing to the front wheel mudguard covering it. In order that a positive system of cooling could always be available, an arrangement was designed whereby a fan was mounted on the two frame tubes (see sketch) between the opening in the shields and the front cylinder head, driven at twice the engine speed. The drive to the fan was accomplished by fitting a plated V driving pulley on to the crankshaft and flywheel, secured by the flywheel nut. This pulley drives in the opposite direction to the engine—by means of a quarter-round crossed leather belt—a countershaft situated on the two front tubes about seven inches below the fan bearing. The axis of the countershaft being parallel to the axis of the engine crankshaft, it became necessary to arrange a right-angled drive from the countershaft to the fan.

Effect of Fan Cooling.

Another small V pulley was then fitted between the tubes on the countershaft, and another quarter belt fitted to that pulley and the fan. The fan thus rotates in a clockwise direction when looking at the front of the engine, the fan blades being so designed to suck in air through the opening in the shields. The action of the fan is quite successful, drawing in air through the hole provided, and throwing it on to the front cylinder, where it streamlines down the cooling fins, then strikes the crank case. So positive was the action of the fan that it was found unnecessary to use it on moderately cold or very cold days. Putting the fan out of action is a simple matter of but a few seconds, by just slipping off the belt from the flywheel to the countershaft. There is but little noise to object to in the operation of the fan, and the whole arrangement is of simple, light construction, and was fitted up at a very moderate expense.

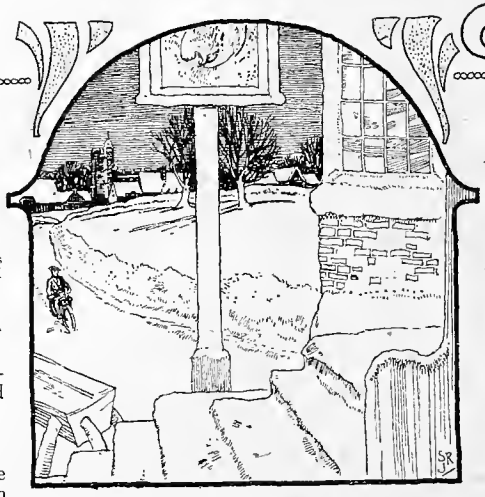
With regard to wind resistance, it is not the writer's intention to claim that there is none, but it has not been noticeable excepting when "all out."

R.W.S.



Arrangement of the fan drive, shown diagrammatically.

CURRENT CHAT



Times to Light Lamps.

Dec. 9th	...	...	4.50 p.m.
,, 11th	...	...	4.49 ,,
,, 13th	...	...	4.49 ,,
,, 15th	...	...	4.49 ,,

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Motor Cycles in Australia.

1,742 British motor cycles were imported by Australia during August, and 399 from the U.S.A.

U.S.A. Exports of Motor Cycles.

No motor cycles were imported by the U.S.A. during September, during which month 627 were exported.

Oil in the Antipodes.

Several companies have been formed in Australia and Tasmania to develop oil fields in those countries.

Cheltenham.

The A.A. informs us that the authorities at Cheltenham are just now very energetic, and advises members to observe special caution when passing through this town.

Two-strokes and Records.

Over 63 m.p.h. for ten miles is a remarkable speed for a 250 c.c. two-stroke. Judd's Show time record speed on his Velocette was 63.09 m.p.h., which shows the great advance made in two-strokes.

Some Spring Frame!

Olympia always produces a few good stories, and the dense fog in the early part of the week provided admirable scope for yarn weavers. It was said, for instance, that a well-known figure in the motor cycle world rode to the Show through the dense pall, and was impressed by the life and acceleration of his engine. He discovered after some minutes that his gear lever was in neutral and his machine stationary!

A.C.U. General Committee Meeting.

The General Committee of the Auto Cycle Union will hold its last meeting of the 1921 session at the Grand Hotel, Bournemouth, at 10 a.m. on Saturday next, when an important agenda will be considered. The meeting will be preceded on Friday evening by a dinner at the Grand Hotel. For this function invitations have been accepted by His Worship the Mayor of Bournemouth (Ald. C. H. Cartwright, J.P.), the Town Clerk (Herbert Ashley, Esq.), the Borough Surveyor (F. P. Dolamore, Esq., F.S.I.), the President of the Bournemouth and District Motor Cycle Club (Dr. Geo. Frost, J.P.), and the Chief Constable of Bournemouth (Superintendent Garrett). The Bournemouth Club and local motor cyclists generally, as well as a number of influential local residents, are expected to support the function.

Through Feminine Goggles.

Three ladies contribute to our pages this week: Miss Helen McKie, Mrs. Lockwood-Tatham, and Miss Peggy Fraser.

Another Winter Trial.

Following on the M.C.C. London-Exeter-London run on Boxing night, there comes an open twelve hours winter reliability trial organised by the North-west London M.C.C. The route is from London to Gloucester and back to London, and with it will be combined an inter-club team competition for the Twenty-five Guineas Service Challenge Cup, confined to clubs in the South Midland A.C.U. Centre.

It will be a straightforward reliability run of about twelve hours on roads which are not of a freakish character, but are, nevertheless, sufficiently severe under winter conditions to make a first-class award worthy of effort. The times have been scheduled to necessitate the lighting of lamps on the homeward journey only.

The start will take place from Jack Straw's Castle, Hampstead Heath, at 8 a.m. on Saturday, December 31st.

H. H. Bowen, who, on a twin Martinsyde (745 c.c.), beat the fifty miles and one hour records in the 750 c.c. class, his times being 79·21 m.p.h. and 78·15 m.p.h. respectively.

Special Features.

1922 LIGHTWEIGHTS.
FROM THE PASSENGER'S POINT OF VIEW.
LESSONS OF THE SHOW.

Proprietary Engines at Olympia.

Of the proprietary engines exhibited at Olympia last week, 129 were J.A.P., 28 M.A.G., 39 Blackburne, 18 Liberty, 9 Bradshaw, 42 Villiers, 2 Morris, 5 Abingdons, 1 Barr and Stroud, and 1 Juckes.

Perversity.

A Harrogate motor cyclist is awaiting a summons on at least two counts; he left his machine unattended outside a shop on a hill. The machine ran away, and, after a wandering rush down hill, finally knocked over a policeman on point duty. Perhaps it was some such incident that inspired the P. and M. ratchet brake.

The Small Engine.

Teacup engines are coming into their own. Not many years ago the 500 c.c. engine was considered scarcely big enough for passenger purposes, yet now there is a steady increase in the number of machines of under 350 c.c. which are being turned out specially for sidecar work.

Pin-pricking Prosecutions.

A tester of one of the Midland firms of motor cycle manufacturers has been summoned for having a passenger in the sidecar of a machine bearing trade numbers. On this particular occasion the machine was undergoing tests in connection with its passenger capabilities.

More Show Time Records.

Following on the healthy list of records appearing in our last week's issue, efforts in this direction during the Show period came to a conclusion on Wednesday, when the track was closed for repairs.

On Tuesday, the 29th ult., E. B. Ware, on a Morgan-Jap (85.5×95 mm., 1,096 c.c.), captured two Class H2 (cycle cars up to 1,100 c.c.) records, covering the five miles flying start in 3m. 46.97s. = 79.30 m.p.h., and the ten miles standing start in 7m. 55.14s. = 75.92 m.p.h.

In Class D, H. H. Bowen brought further success to the house of Martinsyde, riding a machine with a bore and stroke of 70×96 mm. (745 c.c.), covering fifty miles in 37m. 52.2s. = 79.21 m.p.h., while in the hour he covered 78 miles 267 yards = 78.15 m.p.h.

On the last day of November, G. Dance, on a 3½ h.p. overhead valve Sunbeam (85×88 mm., 499 c.c.), added to his last week's magnificent performances in Class C by capturing the five miles flying start in 3m. [illegible] = 87.35 m.p.h., and the ten miles standing start in 7m. 15.36s. = 82.67 m.p.h. A notable feature of the ride was that in the five miles record he covered two laps in exactly the same time. It will be remembered that during the previous week he obtained the wonderful speed over the kilometre of 93.99 m.p.h.

GUINEAS. 26 GUINEAS.

DO YOU REALISE IT?

THE

McKENZIE

MOTOR CYCLE

COMPLETE AS SHOWN

IS ACTUALLY BEING SUPPLIED

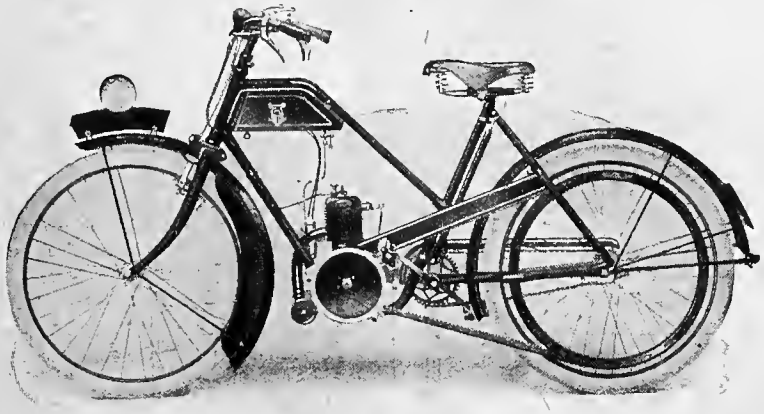
READY FOR THE ROAD

AT THE ABOVE-NAMED PRICE.

Built by HOBARTS of COVENTRY.

Full Particulars from

G. McKENZIE,
80, Fenchurch St., E.C.3.



164.8
M. P. G.
A.C.U. report.

A STRENUOUS TEST FOR AN ULTRA-LIGHTWEIGHT.

Although only weighing 75 lb., this little machine—the McKenzie—successfully accomplished an A.C.U. observed test from London to Exeter and back. Extract from "The Motor Cycle." December 1st, 1921.

For the **HIGHWAY**, the **BYWAY**, the **AIRWAY**, and the **FAIRWAY**

Bowen — Halford — Pullin —

It Sells because it Excels.

Write for Lubrication Index and Price List — post free —

C. C. WAKEFIELD & Co., Ltd.
All British Firm.
Specialists in Motor Lubrication.
WAKEFIELD HOUSE,
CHEAPSIDE, — LONDON, E.C.2.

WAKEFIELD
Castrol Regd
MOTOR OIL

F. Bowen, riding 6 h.p. "Martinsyde" Solo, covered **50 miles** at a speed of **78·16 m.p.h., 1 hour** at a speed of **78·15 m.p.h.**

Major Halford, riding 3½ h.p. "Triumph" Solo (Ricardo), covered **50 miles** at a speed of **77.27 m.p.h., 1 hour** at a speed of **76·74 m.p.h.**

C. G. Pullin, riding 3½ h.p. "Douglas" and Sidecar :—
Covered **5 miles** at a speed of **67·77 m.p.h.**,
Covered **10 miles** at a speed of **66·37 m.p.h.**

These World's Records were accomplished with the use of **Castrol**. Why do all the men who achieve "by things" in the motor world use this lubricant?

PLAYER'S

"COUNTRY LIFE"

CIGARETTES

Medium Strength
BLUE CARTON

10 FOR 5½D.

Manufactured by the Proprietors of
PLAYER'S "COUNTRY LIFE"
SMOKING MIXTURE.

JOHN PLAYER & SONS.
Nottingham.
Branch of The Imperial Tobacco Co. (of Great Britain and Ireland). Ltd.

P.952

An Offer!

We will buy your present magneto,

should you desire to replace it with a B.T.H. "Sparklight" combined ignition and lighting set.

Write for particulars of the B.T.H. "Sparklight." Quote CM812

"Sparklight" Sets can now be supplied in three types, for two-stroke and four-stroke single solos, and four-stroke single combinations, **complete at £13 10s., £16 16s., and £17 10s. respectively, and for your replaced magneto we offer £2 10s**

The
British Thomson-Houston
Company - Limited,
Lower Ford St., Coventry.

Quarterly Licences.

It is now definitely settled that motor cyclists may take out quarterly licences, instead of being compelled to pay the full amount in one payment. The short period licences come into force on January 1st next.

Three-wheelers.

Most of the manufacturers of three-wheeled runabouts now offer models at a price competitive with the big twin sidecar outfit. The Morgan short wheel-base model is the lowest in price, £150; the L.S.D. comes next at £165; and the air-cooled T.B. £175. All these are two-seated models, and not, as seems to be thought in some quarters, single-seaters.

Solid Reward.

A sound idea in competition organisation is incorporated in the Bradford M.C.C. winter trial on December 11th. At the end of the outward journey (to Morecambe) a substantial north-country mid-day dinner is to be provided for all competitors—soup, fish, joint, poultry, plum pudding, and "etcs." are on the menu—and with a 5s. entry fee withal everyone should check in, at any rate.

Two Hundred Miles Sidecar Race.

As has already been announced, the Ealing and District M.C.C. intends to hold a 200 miles sidecar race on Brooklands on July 29th, and it has been provisionally decided to give awards in the standard capacity classes: 350 c.c., 600 c.c., and 1,000 c.c. The suggestion has also been put forward to arrange some form of handicap, so that the first man to complete the 200 miles, irrespective of class, will be the winner of the chief award, the idea being to sustain public interest throughout the race.

Reunion of Ex-D.R.'s of the 1st Corps.

It is proposed to hold a reunion of the ex-D.R.'s of the 1st Corps in Birmingham on a Saturday in January or early February. Railway fares will be pooled. A dinner is suggested, followed by a visit to a theatre. Ex-D.R.'s who were attached permanently or temporarily to the 1st Corps, who would support the scheme, should write to Mr. J. W. Ordish, Solihull, Birmingham. Sufficient promises to make the gathering a success have already been received.

The Wonders of Science.

Imagine a device which enables one to see and measure the "bounce" of a valve on an engine which is running at full speed, or to watch the points of a magneto contact breaker gently opening and closing, though the armature is revolving at 2,000 or 3,000 r.p.m.! Suppose that one could see the globules of petrol passing slowly down an inlet pipe, or exactly locate a knock in the engine. Fancy examining the engagement of sprocket tooth and chain at high speeds, or optically measuring the vibrations of a tank. With these facilities, would it not be possible to design more efficient and quieter engines and transmissions? Yet these things and many others have been made possible by the oscilloscope, a new invention of Mr. A. Elverson, an instrument developed during the war in connection with aero engines.

100 m.p.h. and the Single-cylinder Machine.

When will 100 m.p.h. be attained with a 500 c.c. engine? Dance's figures (93.99 m.p.h.) indicate that this speed will soon be reached.

An Anglo-American Production.

Many months ago the patent files gave us the clue that the Ner-a-car was an American conception, and also that the name was a contraction of that of its designer, Carl A. Neracher. The Ner-a-car is now being manufactured in America on practically the same lines as the English production, which, incidentally, owes to British brains some of its constructional features.

Entries for the London-Exeter.

One hundred and forty entries have been received for this year's London-Exeter-London run of the M.C.C., but it was expected that there would be one or two additions to the list before it finally closed last night. Thirty-six solo machines, sixty-two sidecar outfits, one three-wheeler, and forty-one cars have been entered.

The New M.C.C. President.

It is scarcely correct to refer to Mr. J. K. Starley as the president elect of the Motor Cycling Club, but the fact remains that he has been asked if he would act in that capacity, and has accepted, so it is foregone that he will be enthusiastically chosen at the next A.G.M. of the club. Mr. Starley is naturally best known for his connection with the Rover Motor Co., Ltd. He has always been a thorough sportsman and a true motorist, and a senior member of our staff has recollections of him driving between the works and his home on a 3½ h.p. Rover with a forecarriage attached. On this machine Mr. Starley always carried a bicycle saddle in front, so that, if necessary, he could give anyone a lift.

Joining the Fraternity.

There will be thousands of new motor cyclists next year, if the interest displayed at Olympia is any criterion.

Next Year's Paris-Nice Trial.

Next year the Paris-Nice trial will not be organised by the Moto Cycle Club de France, which will have its hands full with the Tour de France, but will be in the hands of the Automobile Club of Nice. The trial is arranged for the beginning of March, and at Nice there will be hill-climbs, a kilometre speed trial, and other competitions.

The Film during Show Week.

A most excellent reception was accorded *The Motor Cycle* film exhibited all last week at the Poly Cinema, Regent Street, W., on the occasion of the Motor Cycle Show. A large number of motor cyclists who visited Olympia took the opportunity of seeing the chief events in the motor cycle world of 1921 on the cinema, and accorded the film an enthusiastic reception, and in the majority of cases clapped enthusiastically at the termination of the film—an unusual proceeding at a picture house.

London-Gloucester-London.

Instead of gold medals, silver cups will be awarded to all competitors gaining 95% marks in the N.W. London M.C.C. open London-Gloucester-London trial, which will be held on the last day of the year, Saturday, the 31st inst. It will be a straightforward run of about twelve hours over roads which are not of a freakish character, but, nevertheless, sufficiently severe under winter conditions to make a first-class award worthy of effort. An inter-club team competition, confined to South Midland clubs, will be included. Entries, which should be sent to Mr. H. J. Pooley, 23, Clifton Avenue, Finchley, N.3, close on the 24th inst.

A HAPPY GLIMPSE OF SOUTH AFRICAN CLUB LIFE.

October sunshine in East London (South Africa) greeted the speed-guessing non-stop competition of the local motor cycle club, which was held on the 30th of that month. Here is a cheerful group just previous to the start.

Quarterly Licences for Motor Cycles.

Full Details of the New Scheme for 1922.

As previously forecasted in *The Motor Cycle*, a system for issuing quarterly licences comes into force from January 1st, 1922. The rates at which the new licences will be issued are substantially three-tenths of those for the full year. If the owner of a motor cycle desires to take out a licence for the whole year, and has previously held one, he may apply for a renewal at his local Post Office, but if, on the other hand, he wishes to take out a quarterly licence he must apply to his local registration authority, the address of which can be obtained by enquiring at a Post Office. So far as the colours of the licencing cards are concerned, these are the same as for motor cars.

From the instructions given on the application form for a quarterly licence, it will be seen that these licences expire on March 24th, June 30th, September 30th, or December 30th. The following shows exactly how the different classes of motor cycles are affected, how much each has to pay for a quarterly licence, and the method in which the application is made:

APPLICATION.

I apply for a Licence expiring on ..... 192.... for a— Motor Cycle (or motor scooter or cycle with auto-wheel or other motor attachment).	Annual Licences, Expiring on 31st December.	Quarterly Licences, Expiring on 24th March, 30th June, 30th September, or 31st December.	Amount to Pay.
NOTE.—Motor Cycles exceeding 8 cwt. in weight unladen are chargeable to duty as cars.	Duty.	Duty.	
	£ s. d.	£ s. d.	£ s. d.
(a) Bicycle— Weight unladen not exceeding 200 lb.	1 10 0	10 0	.....
Ditto, with right to draw trailer or sidecar	2 10 0	15 0	.....
Weight unladen exceeding 200 lb. but not exceeding 8 cwt. ..	3 0 0	1 0 0	.....
Weight unladen exceeding 200 lb. with right to draw trailer or sidecar	4 0 0	1 5 0	.....
(b) Tricycle (not exceeding 8 cwt. in weight, unladen)	4 0 0	1 5 0	.....

After this the applicant has to give various particulars, which are tabulated in the following manner:

(a) Has the vehicle been previously registered under the Roads Act, 1920 .....
If not—
(i.) Is it a new vehicle? .....
If so, evidence of this, such as the manufacturer's or an accredited agent's invoice, etc., should be supplied.
(ii.) If not a new vehicle, a satisfactory explanation must be supplied as to why it has not been previously registered .....
(b) Registered Mark and Number (if any) .....
(c) Is it a Bicycle or Tricycle? .....
(d) Is it used for drawing a Sidecar or Trailer? .....
(e) Make of Vehicle .....
(f) Manufacturer's Number of Engine .....
(g) Manufacturer's Number of Frame .....
(h) Type or Model of Vehicle .....
(i.) Manufacturer's Horse-power .....
(j) Weight of Bicycle or Tricycle unladen .....

It will be noticed that the weight of a motor cycle is the weight unladen, but further on it is stated in the new application form that the licensing authority may require the owner of any motor vehicle to furnish such evidence as to the accuracy of the particulars declared as may be deemed necessary. This means that a motor bicycle may be weighed unladen; that is to say, without fuel and oil, and, so we understand, without detachable accessories such as horn, mirror, lamps, accumulators, but would not entitle the owner to remove such fittings as footrests and toolbags, which are essential parts of the machine, though, of course, the tools may be removed for this purpose. It is also inferred that in case of dispute, the machine may be weighed and a certificate of weight demanded, or it may have to be weighed in the presence of a duly authorised officer. The new form also gives clearly the definition of a motor cycle and exemptions:

(1.) The term "motor cycle" includes any mechanically-propelled vehicle with less than four wheels, weighing not more than 8 cwt. in weight unladen, but does not include a vehicle adapted and used for invalids and weighing not more than 5 cwt. in weight unladen.

(2.) The term "unladen weight" as applied to motor vehicles means the weight of the vehicle, inclusive of the body and all parts (the heavier being taken where alternative bodies or parts are used) which are necessary to, or ordinarily used with, a vehicle when working on a road, but exclusive of the weight, fuel or accumulators (other than boilers) used for the purpose of propulsion, and of loose tools and loose equipment.

(3.) Licences are not required for vehicles used by a local authority for fire-brigade purposes, but each vehicle must be duly registered by the licensing authority, within whose area it is kept and used.

Next Year's Important Dates.

Provisional dates for next year's important competitions were decided at a meeting of A.C.U. Centre representatives held at the Royal Automobile Club on Wednesday of last week.

Next year the Scottish Six Days Trial will be held in the first week in May, and the Tourist Trophy Races at the end of that month. The Junior race will be held on Tuesday, May 30th, and the Senior event on Thursday, June 1st. The 3rd of June is Whit Saturday, but it is not yet known whether the date of the M.C.C. London-Edinburgh run will be modified in consequence.

The other International events—the Grand Prix, the Swiss Six Days Trials, and the A.C.U. Six Days Trials—have been arranged for, respectively, the middle of July, the beginning of August, and the end of August. Both the Stock Machine Trial and the 500 Mile Race are also to be held next year.

Mr. T. W. Loughborough, secretary of the Auto Cycle Union, explained that the meeting had been called to fix dates for the various open competitions to be held next year, so as to avoid clashing and so far as possible to ensure each club getting the particular date which it favoured allotted to it. He pointed out that the General Committee of the Union had decided to limit the number of open competitions in 1922, apart from the four A.C.U. events, to one in each local centre of the Union—a policy which should meet with the approval of all those who felt that there were too many events this year.

Next Year's Important Dates.—

The following programme was drawn up:

Wed., March 15th.—A.C.U. One Day Stock Machine Trial.
Thurs., March 23rd.—East Midland Centre Reliability Trial.
Sat., April 1st.—Western Centre Hill-climb.
Sat., April 8th.—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., April 22nd.—N.E. Centre Reliability Trial.
Sat., April 29th.—S. Midland Centre Hill-climb.
Mon., May 1st, to Sat., May 6th.—Scottish A.C.U. Six Days Trials.
Sat., May 6th.—B.M.C.R.C. Members' Meeting.
Sat., May 13th.—Northern Centre Reliability Trial.
Sat., May 20th.—S. Western Reliability Trial.
Tues., May 30th.—A.C.U. Junior T.T. Race.
Thurs., June 1st.—A.C.U. Senior T.T. Race.
Sat., June 10th.—B.M.C.R.C. Open Meeting at Brooklands.
Sat., June 17th.—Yorkshire Centre Colonial Trial.
Sat., June 24th.—Midland Centre One Day Reliability Trial.
Sat., July 1st.—Eastern Centre Speed Trial.
Sat., July 8th.—S.E. Centre Speed Trials or Reliability Trial.
Sat., July 15th.—E.S. Wales Centre Speed Trials or Hill-climb.
Sun., July 16th.—Union Motocycliste de France Grand Prix (U.M.F.).
Sat., July 22nd.—B.M.C.R.C. 500-mile Race at Brooklands.
Sat., July 29th.—N. Western Centre Speed Trials or Reliability Trial.
Thurs., August 3rd, to Tues., August 8th.—Union Motocycliste Suisse (Geneva) International Six Days Trial.
Sat., August 12th.—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., August 12th.—North Wales Centre Reliability Trial.
Sat., August 19th, to Sat., August 26th.—A.C.U. English Six Days Trials
*Sat., September 9th.—W.S. Wales Centre Speed Trials.
Sat., Sept., 23rd.—B.M.C.R.C. Members' Meeting at Brooklands.
Sat., Oct. 21st.—B.M.C.R.C. Championship Meeting.
Date undecided.—Arbuthnot Trophy Trial; Anglo-Dutch Trial.
*This may be altered later to a Thursday in late July or early August.

THE BRUSSELS SHOW.

The Motor Cycle Section of the Belgian Automobile Exhibition.

British, French, and American Makers are also Represented.

AT the Belgian Motor Show, which opeued in the Palais du Cinquentenaire, Brussels, last Saturday, and is still in progress, classes are provided for every type of petrol-propelled vehicle, and motor cyclists consequently have their own section. The Belgian makers and agents, however, consider that their interests are best served by an independent motor cycle show, opening at the end of the winter season, just in time for spring buying. This purely motor cycle exhibition takes place in Brussels about the end of February, and unites all the native makers and practically every agent for foreign machines.

From the standpoint of the motor cycle enthusiast, the Show now in progress is not of very great importance; the two-wheelers are dwarfed by the cars and lorries. It is too early to place orders for the 1922 season, and many well-known makes on the Belgian market are not represented.

Although this exhibition is incomplete from a motor cycle standpoint, it indicates that the movement is in a flourishing condition. In August, 1914, there were 11,000 motor cycles in service in the whole of Belgium. This summer the number of registrations increased to 20,000. The full import of this growth will be realised if it is remembered that the home factories were completely wrecked at the end of 1918, and only began to get into working order towards the end of 1919. Unlike England and France, there is hardly any cycle car movement in Belgium; the motorist must take either a full sized car or a motor cycle. The explanation generally given for the lack of development of the cycle car is that the roads are too bad for this class of vehicle.

If this be true, it is wonderful testimony to the value of the motor cycle. Belgian roads are famous—or rather infamous—for their *pavé*, which is guaranteed to shake to pieces any but the best made car, but which, as figures show, do not arrest the development of the motor cycle movement.

Although there is a vigorous native industry, British motor cycles are more extensively used and more highly appreciated in Belgium than in any country in the world. This show is not entirely representative, yet among the British makers showing either directly, or through agents, were Douglas, Abingdon, Sun Vitesse, and Rover. Many of the Belgian machines, too, are dependent on the British industry for all or some of their components. The Jeecy-Vea, for instance, has the Coventry Victor flat twin engine, and an English gear box, chains, and tyres. The Rush, a new Belgian make, is presented in two models, one of which has a J.A.P. twin engine, the other a J.A.P. single, both with gear box and chain-cum-belt drive from the North of the Channel.

America is represented with the four-cylinder Henderson, the four-cylinder Ace, and Harley-Davidsons. The only Italian machine seen in the Show was the single-cylinder side-by-side valve Frera. France was represented by the single-cylinder water-cooled Viratelle, built at Lyons, and by Peugeots, Griffons, and Alcyons. Other French makers are on the market, but did not show.

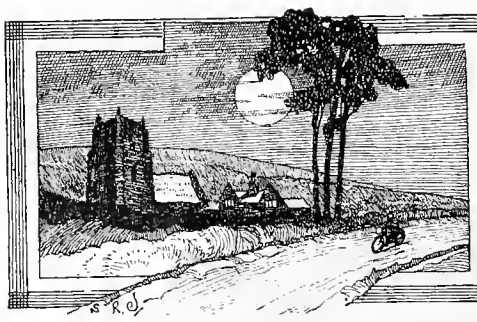
Among the Belgian novelties was the appearance of the new two-stroke Gillet, increased in size to 350 c.c. This new model has an aluminium detachable cylinder head of such a shape as to receive the deflector on the piston. The most important claim made for this is that it sets up turbulence in the cylinder, and thus eliminates any tendency for the engine to four-stroke at low speeds. There is better cooling and generally increased efficiency by reason of the aluminium head. The firm claims that with this new model, fitted with Amac carburetter, it gets excellent slow running. The machine, which is a very fine example of Belgian construction, has two speed gears inside the base chamber and final drive by belt. Another and more powerful Gillet model has just been put on the market with the M.A.G. twin-cylinder engine.

The Fabrique Nationale, of Herstal, better known in England as the F.N., naturally occupies the leading position on the Belgian market, and made a big display both of the single and the four-cylinder models, with mechanically operated overhead inlet valve and shaft drive. These models, however, were the same as those exhibited at Olympia, and, consequently, do not call for any detailed description.

Some attention is being given to that type of lightweight closely related to the motorised bicycle class. One of the newcomers in this class was the Ideal, built at Herstal, with a small two-stroke engine, expanding pulley, and round belt drive. Attention has also been given to machines for wounded soldiers, one of the best of these being the Mignon, for men who have been deprived of the use of their legs. The machine is a four-wheeler, with a single-cylinder engine under the seat, lever starting, two speeds, and final drive by chain.

Effect of the Rate of Exchange.

British motor cycle accessories are very much in evidence; but, lest readers should be tempted to imagine that Belgium is a happy hunting ground for English makers, it should be pointed out that the high rate of exchange, and particularly its unstable nature, gives dealers many a sleepless night. Because of this situation, there is a reluctance to quote prices unless immediate delivery can be made. If there is any delay in getting deliveries from the factory, or in disposing of stock, it often happens that profit is transformed into a dead loss.



THEY SAY— WHAT DO THEY SAY?

A Mixed Grill of Conversational Fragments heard in Odd Moments at Olympia

NOT the least important function of the Show—our Show!—is the opportunity it affords of reunions and discussions between riders, designers, and manufacturers.

A benign influence pervades the atmosphere at Olympia, and rivals who do not know each other for fifty-one weeks of the year unbend into mutual confessions regarding their products. To drift into the throng of a mixed party of technicians, engineers, and journalists is to gain an opportunity of hearing many more topics discussed with candour and pungency than there are items in Lyons *hors d'œuvres variés*, which most of the crowd recognise as the 1920 type with unchanged specification.

Overhead versus Side-by-Side.

This year the high efficiency men are assuring all and sundry that at last we must sit up and take notice of the overhead valve engines. Never will you hear such a wordy warfare as that which can arise when Mr. O.H.V. Jones twits Mr. Side-by-side Brown over the table with the remark that on the eve of the Show records are being mopped up by valve-in-head engines. Mr. Side-by-side bridles. Sprints, may be, says he, but his type alone can stand up to the long distances. Nonsense! what about the hour record? Mr. S.B.S. changes ground. Not a commercial job, expensive manufacture, wrecks engine when broken, noisy, operating mechanism losses counterbalance increased output; the whole hand laid on the table. Scorn of o.h.v. and supporters symmetrical lathe job on cylinder, not so expensive to make as imagined, old stick-in-the-mud 3% nickel side valves might break if used overhead, but new steels? Chromium! tungsten! Suppose old side-valve never heard of Stainless? Ideal combustion space; no distortion. *Bound* to maintain power indefinitely. Operating losses? Nonsense! Increased power output outweighs absolutely.

Mr. Side-by-side staggers up under this cudgelling. What about J.A.P.'s? "Proof of pudding," etc.; where's the o.h.v. to equal the new 250 c.c., 350 c.c., and 986 c.c.? What about the Norton? O.H.V. staggers; he remembers hazily a paragraph in a past issue of *The Motor Cycle*, and disposes of things thus: "Of course, you know that Nortons have an o.h.v. job behind the scenes? Straws in the wind, old boy, eh?" and Mr. Side-valve welcomes a mild journalist's interjection that he still thinks there's something to be said for the nearly-forgotten automatic inlet valve.

"—— where angels fear to tread," says one, *sotto voce*. But what of it? The retrograde one talks of a.i.v. for touring engines; instances the 1909 P. and M. and the 1910 twin Rex (a pretty job), and points out the 1922 J.E.S. (produced by an engineer who thinks progressively), talks of compound spring action for varied condition of high and low speeds, bounce snubbers for blow-back prevention, elimination of working and power using parts, economy of such engines, and so on; and eventually others think there's something left in the a.i.v.

Talk switches over. Are sidecars getting uglier? Signs of apoplexy from middle-aged coachwork specialists, and subject carefully steered by a diplomatic—or assertive—remark from one of God's own countrymen, "Gee, but I guess you've had to come right down to the Amurrican idea in chassis construction!"

A How? Why? chorus.

"Wal, there's a powerful tendency to join up your chassis to the frame by front connections low down. Guess the only connection above the hub level should be to the seat post, an' that don't wanner be rigid. Keep your front connections low down an' you have the right amount of flexibility between the bike and the chassis, an' cut out tube or lug fractures."

And to that little lecture a north country manufacturer, with no fancy for structures inherently flexible, mutters explosively, "Bah! Gi' me weight!"

Why not Winter Records.

Can records be made between December and early spring is another diverse topic rolled into the ball game of lunch table talk. Mr. Venturi Carb. assures everyone that the atmospheric conditions vary during this period of the year, and discourses on barometric pressures, temperatures, and humidity. All listen respectfully; who would not, when it is known that the speaker spends hours daily watching the interior workings of carburetters through glass induction pipes, and can tell you more about what happens round that corner in the valve port than you can about how your business is being run while you are up at the Show?

Mr. Carb. is in full flow, and people are trying to catch the waitresses's eye for the bill, when a young salesman (young enough to be seen and not heard) chips in, "You're right, Mr. Carb., records are quite out of the question at this time of the year—*they closed Brooklands for repairs this week.*"

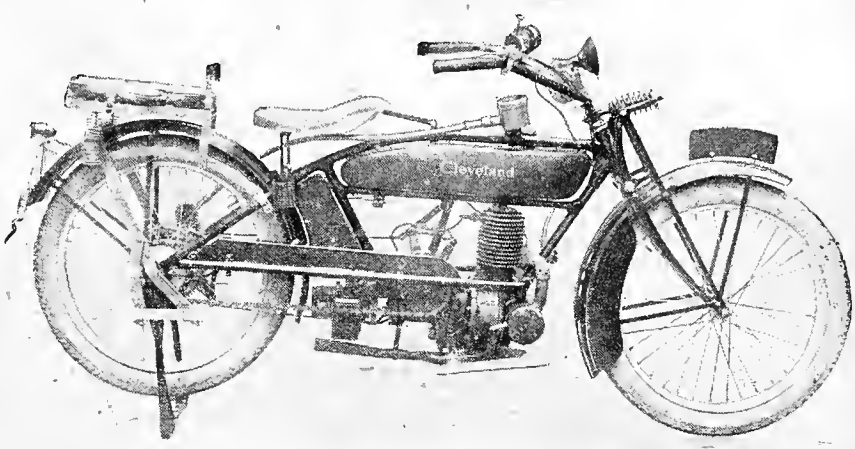
And so it goes on, day by day, *ad libitum*, as the Show progresses. Many times such topics as are raised bring light and knowledge even in the guise of persiflage; even if, as with most subjects of discussion, no definite conclusion is reached, yet the many minded views brought forward have a general tendency to increase and disseminate much floating knowledge, and the motor cycle movement benefits accordingly. Thus, even in such minor directions, does the Show justify itself. WHARFEDALE.

A Small American Two-stroke.

Details of the 1922 Cleveland. A 2½ h.p. Machine with 3in. Tyres.

THE Cleveland motor bicycle is one of the few American lightweights, and has reached a high degree of popularity in the United States. Its layout is somewhat unconventional, yet it is very practical, as might be expected from a designer who subsequently evolved the American Ner-a-car, which in Anglicised form is familiar here.

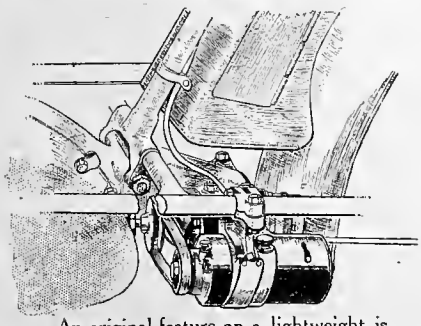
The two-stroke engine (70×70 mm. = 269 c.c.) is of the three-port type, with enclosed "outside" flywheel (the crankshaft is of the overhang type). The drive, through a two-speed gear box, is transmitted through a worm gear to the final chain sprocket, a multiple disc clutch being housed in the worm wheel. A kick-starter is fitted. The magneto is situated at the rear of the unit, and is driven directly off the engine-shaft through a coupling.



American two-stroke design—the 2½ h.p. Cleveland, fitted with two-speed gear and bevel and chain drive.

Improvements.

The new features comprise a chain guard, which not only protects the chain from mud, but also the rider's clothing from contact with the chain, while valances have been added to the mudguards, and security from carburetter troubles has been ensured by means of an additional filter. An Amac carburetter is fitted.



An original feature on a lightweight is the inclusion of a dynamo as part of its equipment.

Control Mechanism.

The clutch, following general American practice, is actuated by means of a lever on the near side of the machine, which first of all disengages the clutch, while a further movement applies the external contracting rear brake. The internal brake, also on the back wheel, is controlled by a pedal on the near side of the machine. The change of gear is effected by means of a heel-and-toe pedal adjacent to the off side footrest. Triumph pattern spring forks of light but strong construction are employed.

In the case of the particular model we inspected, a lighting dynamo is bolted to one of the duplex frame tubes, and is driven by means of a V belt off the magneto-shaft, the battery case being accommodated behind the saddle tube. Petroil lubrication is employed, and 26×3in. tyres are fitted. The gross weight is 275 lb.

The weight, long wheelbase, and large tyres, in conjunction with the comparatively small engine capacity, are not conducive to high speeds, but the general comfort should approach the ideal.

The Cleveland machine is now handled in England by Shillan, Beck, and Co. (Inc.), 90, Cannon Street, E.C.4.

A Sporting Lightweight.

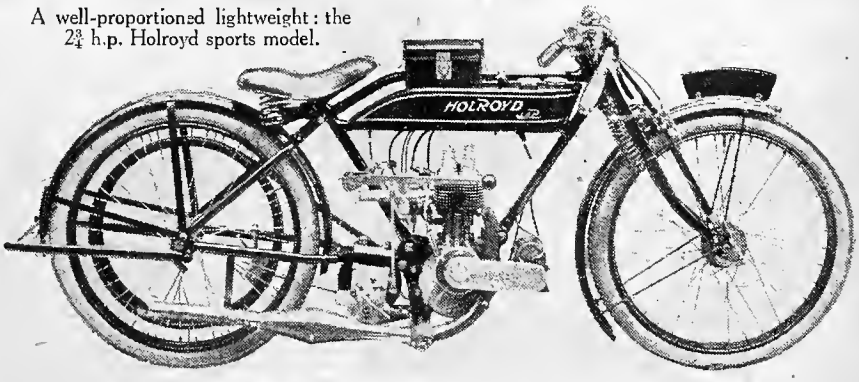
Well-known Track-man Introduces a Solo Mount to Bear his Name.

FEW vendors of motor bicycles have had wider riding experience than Mr. J. S. Holroyd, and to appeal to the young sporting rider he has placed a fast lightweight on the market bearing his own name. The motive power is a 250 c.c. J.A.P. engine fitted with an aluminium piston. Chain-cum-belt drive has been adopted, and the gear box is the new two-speed Burman, which incorporates a clutch.

Clean Outline.

The lines of the machine are symmetrical, and it is equipped with such well-known fittings as Druid forks, the new pattern Amac carburetter, a Webb front brake, and a rear brake acting on the exterior of the belt rim groove. Flat steel stays are employed in the attachment of the rear mudguard, and as the machine is intended chiefly for speed work, no luggage carrier is provided. The belt rim has been drilled for lightness, the rear hub is wide and substantial, and a full size touring saddle also forms part of the equipment. The machine is equipped with 26×2¼ Hutchinson tyres and weighs 178 lb.

A well-proportioned lightweight: the 2¾ h.p. Holroyd sports model.

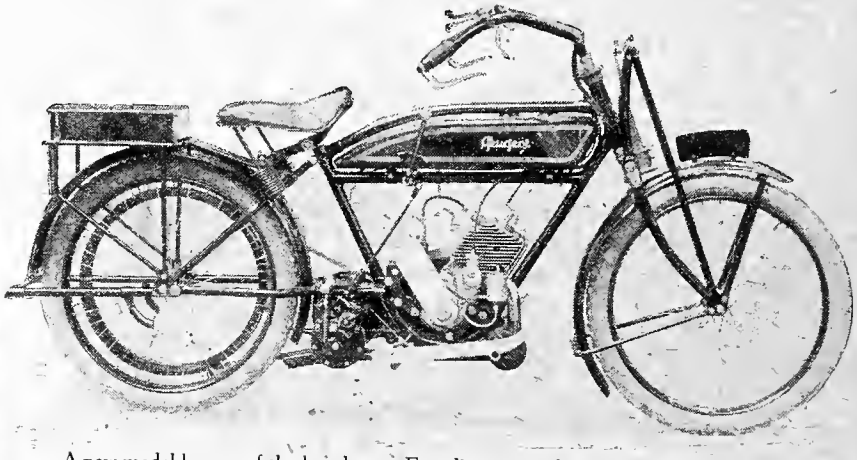


As far as possible, weight has been kept low, the crank case being below the line of the hubs, and a racy appearance is given by the long exhaust pipe with its enlarged streamlined expansion chamber. The Holroyd motor bicycle is made by Holroyd Motors, 6, Warwick Street, Regent Street, London, W.1.

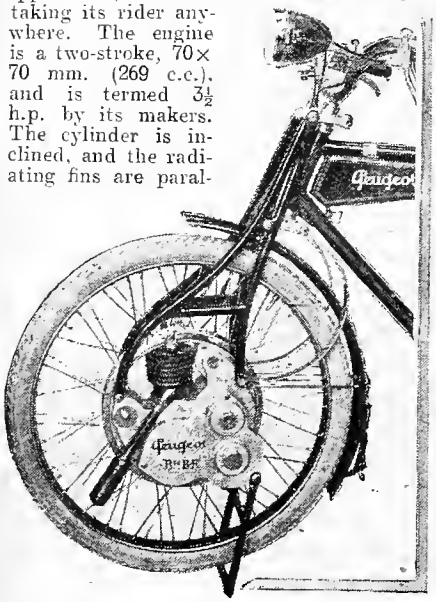
Two French Productions.

The 1922 Peugeot Models. A Two-speed Lightweight and a Motorised Bicycle.

THE only really late arrivals at the Show last week were the Peugeots, which did not materialise until the middle of the week. The two-stroke touring model is an excellent example of French motor cycle practice. It follows more or less standard lines, is of pleasing appearance, and should be capable of taking its rider anywhere. The engine is a two-stroke, 70×70 mm. (269 c.c.), and is termed 3½ h.p. by its makers. The cylinder is inclined, and the radiating fins are parallel with the ground. The engine drives by chain to the countershaft, the chain being entirely enclosed; and from the countershaft to the back wheel the drive is by belt. The forks are pivoted at the crown, after the fashion of the Triumph; but the spring employed is of the quarter-elliptic multi-leaf variety anchored to the base of the steering column.



A new model by one of the best known French motor cycle manufacturers—a 269 c.c. two-stroke Peugeot. Observe the front fork design.



As at the Paris Salon, the front wheel driven Peugeot bicycle attracted much interest at Olympia. The hub is supported on three small pinions, one of which transmits the power.

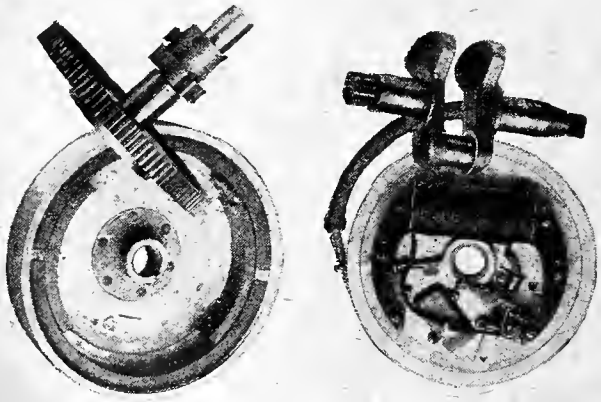
One feature of the machine is a large all-metal toolbox on the luggage-carrier, fastened with spring clips and a hasp and padlock. The machine is complete with kick-starter, clutch and two-speed gear, and weighs 154 lb.

The other Peugeot model is the Cyclo-moto, the engine of which is in the front wheel. Like the larger model, it is a two-stroke, 45×58 mm. (92 c.c.), and is entirely self-contained with its drive. A magneto flywheel is fitted, which serves for both ignition and lighting, and the unit incorporates a Ferodo-lined disc clutch. The engine lies in the centre of the front hub, the inner side of which has an internally-toothed ring, and there are meshing with it three pinions, one of which is driven by the engine. All working parts are entirely enclosed, and the lubrication is on the petroil system. The front wheel and forks, which are of the spring variety, may be supplied with an attachment for fitting to an ordinary pedal cycle. It is said to be capable of averaging 18 m.p.h.

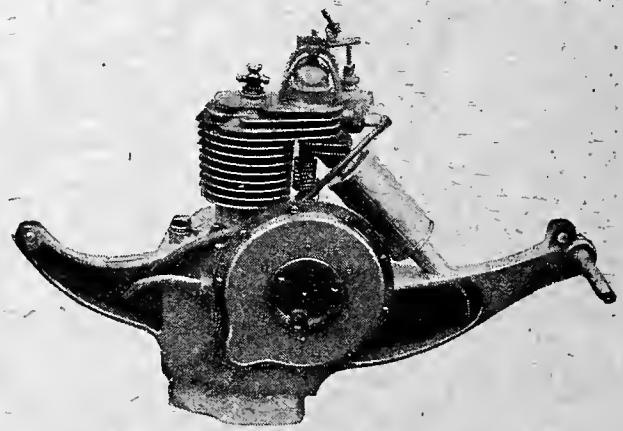
Motor Assistance for Bicycles.

The 1922 Auto-wheel. Now Imported from America. Increased Engine Size.

THE Auto-wheel was one of the earliest motor attachments for fitting to pedal cycles. It first saw the light in 1909, with a tiny two-stroke engine as its motive power. It then assumed a practical form as a 1 h.p. four-stroke attachment driven by a chain through a countershaft, on which the Auto-wheel itself was mounted, and enjoyed many years of prosperity until the war. Up to that time it was manufactured in Great Britain, but since the Armistice it



Auto-wheel details: crankshaft and integral small pinion, and the large pinion with four-point cam and oil pump eccentric. The two halves of the magneto flywheel are also shown.



The hub of the Auto-wheel is bolted to the exposed flange on the enclosed driving pinion. Observe the inlet valve dome and the stirrup fixing used.

Motor Assistance for Bicycles.—

has been found impossible to arrange for Auto-wheels to be turned out in this country, and it is at present being manufactured under licence in the United States, but in a different and improved form.

This attachment, which is handled here by Auto-Wheels, Ltd., Russell Road, West Kensington, London, W.14, now has a 2 h.p. engine, and, as before, is a four-stroke. The bore and stroke are 64×64 mm. (206 c.c.), and the automatic inlet valve is still retained. A flywheel magneto is now fitted, and the lubrication, instead of being effected by the bird fountain system employed on the pre-war Auto-wheel, is by means of a simple form of plunger type pump, driven by an eccentric off the camshaft. This pump delivers oil through the bearings, and sprays it on to the connecting rod big end. The level of the oil is shown through a window at the base of the crank case, which forms a sump. Transmission is now by gear wheels instead of chain, and the small pinion on the crankshaft meshes with a pinion coupled directly to the Auto-wheel itself. This gives a reduction of 8 to 1, and as the large wheel is mounted on the camshaft, a four-point cam is fitted.

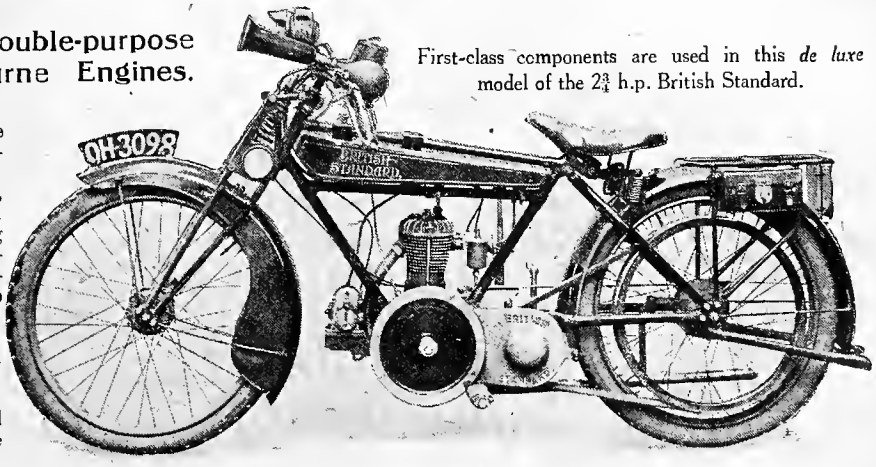
The Auto-wheel attachment is fitted with a prop stand, and is pivoted to an arm attached between the rear spindle and bottom bracket of the bicycle, while there is an additional stay to the saddle tube. A single lever carburetter is fitted, the carburetter and exhaust lifter controls being by Bowden wire. The tyre size is 20×2in., and the weight of the complete attachment is 65 lb.

1922 British Standards.

Two Classes of Solo and Double-purpose Mounts Embodying Blackburne Engines.

BRITISH Standard Motors, of 4, Newtown Row, Birmingham, are next year making a bid for popularity by offering a two-speed 2¾ h.p. Blackburne-engined lightweight at £65, or with clutch and kick-starter at £69. The machine is quite a good-looking mount, embodying such well-known components as Fellows magneto, Vici carburetter, Arden pressed steel forks, Dunlop tyres, Coventry chain, and Dunlop belt.

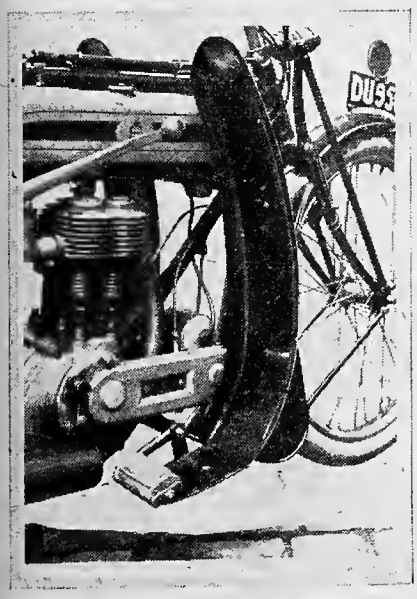
An Arden-engined two-stroke model, similarly equipped, will also be offered at £36 single gear, £42 with two-speed, and £46 with clutch and kick-starter. Better class machines with 2¾ h.p. and 4 h.p. Blackburne engines will also be offered with two and three-speed gears.



First-class components are used in this *de luxe* model of the 2¾ h.p. British Standard.

A NEW LEG GUARD.

ANYTHING that will tend to improve the motor cycle as a winter mount is of interest at the present time. Quite a large number of leg guards are now on the market, and it is becoming the rule for motor cyclists to fit them when winter approaches.



A new design of Brandish leg shield that will fit most machines. This neat pattern is of dome sectioned pressed steel.

The Brandish guard, illustrated here, is worthy of special mention, owing to the neat method in which it is fitted and the fact that it is constructed of pressed steel, and therefore exceptionally strong. The fitting, which carries the transverse bars, is a simple split clip, through which passes a long rod having a tubular sleeve on each side of the clip. By the tightening of one of the nuts at the end of this rod, the whole of the fitting is rigidly bound together.

The cost per pair is 37s. 6d., and the makers are Brandish and Sons, Foleshill Road, Coventry.

It is not intended that this guard should replace the larger shield which this firm makes specially for Triumph machines, and which has been already referred to in these columns.

TO CLUB SECRETARIES.

"The Motor Cycle" Film is now being loaned to enterprising clubs which are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, the Grand Prix Car Race, and the 200 Mile Small Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry, suggesting two or three alternative dates, preferably in April or later in 1922.

THE INTERNATIONAL SIX DAYS TRIAL.

AT three o'clock on Friday afternoon last, M. Jules Neher attended the A.C.U. rooms at Olympia with the medals and certificates won in the International Six Days Trial by the principal English competitors. Mr. Neher was introduced by Mr. T. W. Loughborough, Secretary of the F.I.C.M.

Mr. Neher, in a short speech before the presentation, made some remarks concerning next year's International Six Days, and said that the route would be altered, and there would be one day's rest at Lugano. On that day there would be a hill-climb, in which competitors might either take part or act as spectators. It was over a very sensational course, upon which high speeds have been attained. Reverting to this year's International Six Days Trial, Mr. Neher specially congratulated Eric Williams on his wonderful performance with a 350 c.c. engine (a 2¾ h.p. A.J.S.), which had since become world-famous.

Other competitors present were E. H. Lees, J. A. Newman, E. P. Dickson, and Hugh Gibson. Unfortunately H. Langman, C. P. Wood, and E. Poznanski were unable to be there.

The medals were actually presented by Mrs. T. W. Loughborough. At the conclusion of the little gathering, Mr. Loughborough thanked M. Neher for the excellent organisation of the trial, which was an event run on the Continent in which British manufacturers could have complete confidence.

PROGRESS OF OUR OLDEST CLUB.

A New President announced at the Fifteenth Annual Dinner of the M.C.C.

ON the occasion of the fifteenth annual dinner of the Motor Cycling Club last Thursday evening, the fine banqueting hall in the Wharnecliffe Rooms at the Great Eastern Hotel was remarkably full.

Naturally among the guests were the representatives of the clubs which distinguished themselves in the M.C.C. Team Trial for *The Motor Cycle* Cup, and the Sheffield and Hallamshire championship team of 1921 was complete with its president. The chair at the dinner was occupied by the president of the M.C.C., Colonel Charles Jarrott, O.B.E., who occupied that position for the last time, for it was announced later in the evening that Mr. J. K. Starley, of Coventry, is the president elect, which news was received with acclamation.

Ever-growing Membership.

The duty devolved upon Colonel Jarrott of proposing the toast of "The Club." He reminded those present of that excellent motto for speakers, "To stand up, to speak up, and to shut up," so he said he would be brief. Most of his audience knew the club's history. The club was to be congratulated on its excellent committee, upon the individual members of that committee, and upon its chairman and secretary. He dwelt upon the importance of the club events, which took a high place in the sporting side of motoring. He was referring to such events as the London-Edinburgh and the London-Exeter runs, which were held in the winter time. In 1915 there were 250 members; at the end of the war there were 500; and at the present time the membership was double that number. In 1905 the bank balance was £200, and he wondered if he were giving away secrets when he said that a suggestion had been made that a Rolls-Royce car should be bought for the members of the committee with the present bank balance. He sincerely hoped he was not giving away the committee's secrets in referring to this matter. (Laughter.) He congratulated the Sheffield and Hallamshire Club on its success in the annual club team championship, and predicted another hard fight next year.

Next followed the presentation of the trophies, *The Motor Cycle Cup* being received by Mr. S. Sawyer, captain of the winning team.

Mr. R. H. Head, chairman of the committee, proposed the toast of "The President," who was a founder member, and had presided over the club since 1908.

Colonel Jarrott, in reply, said he owed a deep debt of gratitude to the old brigade, and thanked all who had helped him in the past.

Mr. Head then rose to state that Mr. J. K. Starley had been invited to be the club's new president, subject to his election at the next annual general meeting.

Mr. J. K. Starley, replying, said the motor trade stood alone, in that every problem connected with it was more closely associated with sport than any other industry, and he was quite sure that in its early days Colonel Jarrott and other pioneers had introduced a sporting feeling which had lasted up to the present time. The Motor Cycling Club was one of the most sporting clubs, and he hoped that it would be as kind to him at the end of his term of office as it had been to the late president. Mr. Starley then went on to propose in a witty speech the toast of "The Visitors," making special mention of Messrs. Geoffrey Smith and E. M. P. Boileau, representing *The Motor Cycle*, which, in his opinion, was the greatest technical organ ever produced. He would like to mention, among the distinguished guests present, Colonel Brereton (chairman of the Auto-Cycle Union), Mr. T. W. Loughborough (its secretary), and Mr. Stenson Cooke (who wanted everybody to join his army for one guinea, and be saluted from Land's End to John-o'-Groat's). (Laughter.)

Mr. E. M. P. Boileau recalled his eighteen years' association with the Motor Cycling Club, his first duty being in connection with the S. F. Edge Hundred Miles Trial, an event which taught a great lesson, viz., how difficult it was to find a winner, and one which had not been properly solved until the present day.

London-Exeter Sportsmanship.

Mr. Geoffrey Smith thanked Mr. Starley on behalf of the visitors, though he disclaimed that he was a visitor, and referred to the sporting character of the long distance trials organised by the club, and to the London-Exeter run in particular, expressing admiration for all those great sportsmen who, swathed in mackintoshes and overalls, braved the terrors of that arduous winter competition.

Mr. Stenson Cooke, in an amusing and characteristic speech, said Mr. Starley had inferred he had come to the dinner to get members for the Automobile Association. It was quite true, but he did not like it rubbed in. "But there you are," he said. (Cheers and laughter.)

Thereafter followed a musical entertainment, for the organisation of which Mr. E. Bridgman was highly to be congratulated. It is difficult to differentiate between such a gathering of artistes, but special mention of the great Coram, the ventriloquist, must be made. With his figure, Jerry, Coram carried on an animated and topical conversation relating to front-driven Werners, Quadrants with surface carburetters, and other items which greatly amused and entertained the company.

B.M.C.R.C. DINNER.

International Character of Brooklands' Habitues' Social Function. £603 in Awards Last Year.

PLENTY of fun, an excellent musical entertainment, and the distribution of numerous prizes were the principal features of the British Motor Cycle Racing Club's dinner, held at the Holborn Restaurant on the evening of the 28th ult. There was a total absence of formality about the whole affair, there were few speeches, and the rest of the evening was devoted to the distribution of the numerous prizes, which were of the total value of £603, thirty-three of which were presented by various donors. The entire inside of the folder enclosing the menu and programme was devoted to a list of various awards gained by members of the club during the past season. As last year, the dinner assumed an almost international character.

The Chairman.

The chairman was Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., who at the close of the dinner proposed the toast of the King, which was followed by an excellent speech by Mr. H. T. Rutter, proposing the Club.

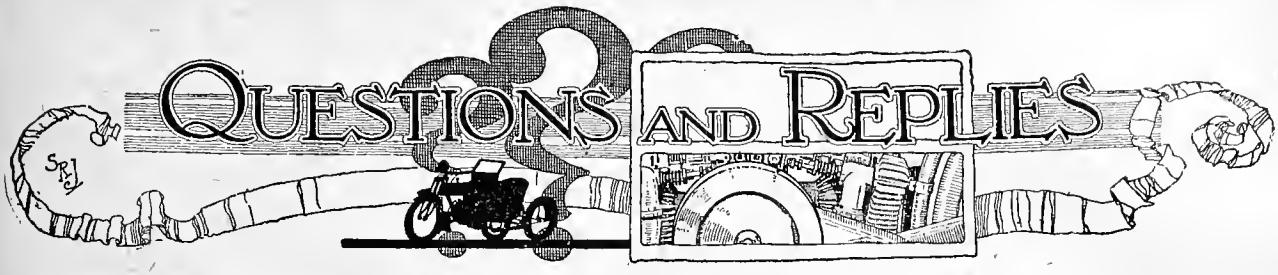
Early Racing History.

Mr. A. G. Reynolds, one of the founders of the club, in reply, welcomed the British and foreign visitors. At the time the club was founded, in 1909, motor cycles were not wanted at Brooklands. Their place was then Canning Town. In those days there were few motor cycles and few riders. It was the B.M.C.R.C. which had discovered the value of the fork for racing purposes, where the start, finish, and the whole of the race was directly under the eyes of the spectators. He had to express his thanks to Captain Miller for the success of the 500 Miles Race.

Then followed the presentation of prizes, which occupied a considerable time, and culminated in scenes of great enthusiasm when Le Vack received the Miller gold cup value £200, and was carried off shoulder high. On the occasion of the presentation, Mr. T. W. Loughborough said that Mr. W. H. Wells had given the prize, which he, as entrant, had won to Le Vack, the rider, an announcement which was followed by hearty cheers. Le Vack was called upon to reply, and in a very short but charming speech said that his success was chiefly due to that lone Britisher in the U.S.A., C. B. Franklin, whom older members would remember.

Not Too Old at Forty.

During the dinner it was announced that D. R. O'Donovan had agreed to present a twenty-guinea cup, to be competed for by members over forty years of age. The conditions of the event will be announced at a later date.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

REPLACING A MAGNETO.

? Having a 1909 $3\frac{1}{2}$ h.p. single-cylinder Triumph motor cycle which requires a new magneto, as the old one is beyond repairing, I understand that if I get any type of single-cylinder magneto with the same kind of sprocket in every way it would be as required. Is this so?—W.M.

We are rather at a loss to understand your query. Any single-cylinder magneto will suit the machine provided it is arranged to run in the same direction as the one which has been removed, and is provided with a sprocket of the same size as that on the exhaust cam wheel-shaft of the engine.

BROOKLANDS ASPIRATIONS.

? A 1914 Triumph single-cylinder motor cycle which I ride does about 65 m.p.h. on the road on a $4\frac{1}{8}$ to 1 gear. It is perfectly satisfactory as regards hill-climbing and power, and I wondered if it was tuned up and a new exhaust system fitted whether it would stand a chance of winning a race at Brooklands this year. What is the entrance fee to race there? Would an aluminium piston and a racing carburetter improve the speed, with, of course, modified cams? I have raced most things on the road, cars included, and also am acquainted with an old Brooklands man who would assist me, but, of course, I do not want to trouble unless there is a sporting chance of winning. —G.R.

If your machine actually does 65 m.p.h., you might stand a sporting chance of winning some of the handicap events at Brooklands. You may find, however, that the 65 m.p.h. which you do on the road comes a very long way short of 65 m.p.h. which is obtained against the electrical timing apparatus on Brooklands, and we should advise you to try your machine out over a measured mile against timing by two very accurate and conscientious timekeepers. You will have to go through a good deal of experimenting, and it is impossible to say that an aluminium piston and racing carburetter would improve matters to any great extent. Neither does it follow that a modified timing is necessary. The secretary of the British Motor Cycling Racing Club, the Millhouse, Warlingham, will give you information regarding entrance fees for the Brooklands races.

TYRES FOR PILLION RIDING.

? (1.) Do you consider a $26 \times 2\frac{1}{4}$in. Dunlop heavy tyre strong enough for occasional pillion riding? (2.) Can a $26 \times 2\frac{1}{2}$in. tyre be fitted to a $26 \times 2\frac{1}{4}$in. rim, and, if so, do you recommend it? I am rather nervous of an oversize cover blowing off the rim. —R.H.A.

(1.) The tyre is not of large enough section for pillion riding with safety and comfort. (2.) $26 \times 2\frac{1}{4}$in., $26 \times 2\frac{3}{8}$in., or $26 \times 2\frac{1}{2}$in. for $2\frac{1}{4}$in. will fit the same rim. There should be no fear of any of them coming off provided they are properly fitted and fairly well inflated.

MAKING A WIND WAGGON.

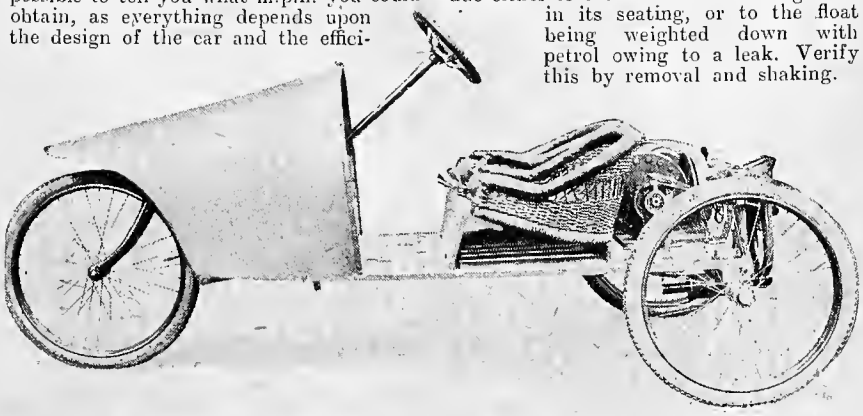
? (1.) I am building a light cycle car, and wish to know if it would be possible to have a 5ft. 6in. propeller, four-bladed, driven by an 8 h.p. J.A.P. engine. (2.) Could I obtain satisfactory results from it, and what m.p.h. would be possible? (3.) Would it be satisfactory to run the propeller at engine speed; if not, what gear ratio should I employ? —L.B.

(1.) The machine which you propose building would probably be quite satisfactory on the level, but it is very doubtful if it would climb hills well. You will need a propeller specially designed to suit the power and speed of the engine in use, and you should submit particulars of the engine, normal revolutions, and b.h.p to the propeller makers. (2.) It is impossible to tell you what m.p.h. you could obtain, as everything depends upon the design of the car and the efficiency of the propeller. (3.) With a high speed engine, it might be necessary to run the engine much faster than the propeller, but the propeller makers would give you information on this point.

EXCESSIVE FOUR-STROKING.

? Over 1,000 miles, with the engine running faultlessly, have been covered by my Villiers two-stroke engine, but recently it has developed persistent four-stroking on the level and when under light load, irrespective of the throttle opening. Under load and up hill it two-strokes with perfect regularity. The trouble seemed to occur when I tried Aviation spirit, so I fitted one jet smaller, a 24 Amac, thinking the mixture too rich. This was of no avail, so I returned to No. 1 spirit, still using the No. 24 jet. The engine is not over-oiled, but has not yet been decarbonised. (1.) Would the trouble be due to having too weak a mixture? (2.) Why should the engine four-stroke when Aviation spirit is used? (3.) Would the carburetter want cleaning or the engine decarbonising? (4.) What remedy, if any, can be given? —E.A.M.

You do not give sufficient details for us to diagnose the trouble. (1.) It is unlikely that the trouble would be caused by a too weak mixture. (2.) Four-stroking is usually caused by the mixture being too rich. (3 and 4.) Possibly the engine needs decarbonising; but we should suspect that the carburetter is flooding, due either to the needle valve being worn in its seating, or to the float being weighted down with petrol owing to a leak. Verify this by removal and shaking.



THE SIMPLEST PASSENGER MACHINE AT LAST WEEK'S SHOW.
Wood and wickerwork enter largely into the construction of the Economic three-wheeler, which is friction-driven by a small flat twin two-stroke.

A STARTING DIFFICULTY.

Owing to a bad leg, I am unable to use the kick-start of my 1913 8 h.p. Matchless-Jap, and have fitted a handle start, working directly on the engine-shaft, but cannot get sufficient speed on the engine to get a good spark from the magneto, and consequently the starting becomes difficult. I have verified the timing, there are no air leaks past the valve stems, etc., compression is good, and the spark gap and contact breaker gap are correctly adjusted. A B. and B. semi-automatic variable jet carburetter is fitted (including pilot jet) with a 38 jet, which provides ample power and flexibility. I have a four-volt 30 amp. accumulator, and thought of using this for dual ignition. (1.) Is it practicable? (2.) Can you give any suggestions as to its adaptation and wiring? (3.) Would it be necessary to use a magneto switch while running on the accumulators?—M.T.

(1 and 2.) Dual ignition on a motor cycle is not likely to be satisfactory. The motor cycle magneto is not arranged for this fitting, and a complete ignition set by coil and accumulator in addition would probably be unreliable on account of the large amount of external wiring involved. (3.) The necessity for cutting out the magneto would depend upon the wiring or whether a duplicate set of plugs were used. As a general suggestion, we would advise you to get in touch with the principal magneto makers, enquiring whether an impulse starter could be fitted to the magneto on your machine.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"G.B.H." (Oxford).—Aero discs and Binks carburetter on Rudge Multi.

"H.R." (Motherwell). — Reliability, speed, and general experiences of A.B.C.

"N.M.J." (Scarborough).—Most suitable oil and plugs for A.B.C.

"F.A.G." (Brighton).—1920 4½ h.p. B.S.A.: Chain drive, reliability, consumption, and general hints.

"A.D." (Selby).—Amac on semi-sporting Sunbeam: Size of jet (solo), air intake, maximum speed, and reliability.

"G.G.G." (Glasgow).—Reliability and general performance of Beardmore-Precision spring frame lightweight.

"A.W.R." (Darlington).—1921 A.B.C.: Reliability and durability solo and sidecar, and weak points if any.

"C.H.I." (Handsworth). — 3½ h.p. o.h.v. Douglas: General performance and experiences.

READERS' REPLIES.

ABNORMAL BEARING WEAR.

I have a motor cycle which gave me the same trouble as "D.D.'s," viz., rapid big end wear. My crankshaft was a hollow one, and had small copper pegs at each end, and also similar ones at the top of the balance weights, through which holes were drilled. Inserting a stiff wire down these cleared the oil passages which were blocked, thereby preventing the oil from getting to the crank pin, which accounts for the wear in the big end bush. My own machine wasted two new bushes inside 300 miles running, only getting 150 miles to each bush, but after carrying out the above the machine has ran perfectly.—W.M.

OVERSIZE TYRES.

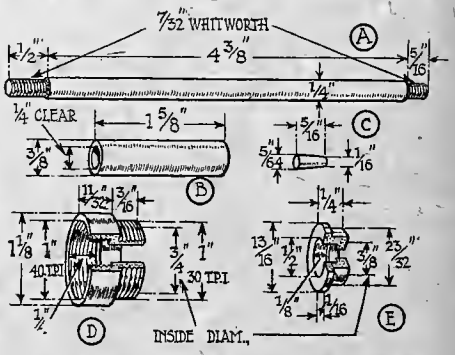
Regarding the discussion on the fitting of oversize tyres. I have fitted a 28×3in. tyre on a 26×2¼in. or 2⅜in. rim, but I have not heard of anyone having fitted a 30×3in. cover to a 28×3in. rim. This is possible, and there is no creeping provided there are security bolts in the rim. I thought some of your readers might try this if stuck on the road for want of a 28×3in. tyre.—B. G. DAVIDSON.

[A reader in France also writes to say that he has successfully fitted and used for 3,000 km. (1,775 miles) a 700×80 mm. Michelin on the rim of his 2¾ h.p. Douglas, standard size 26in. ×2¼in.—ED.]

FITTING A DRIP FEED.

With reference to the query raised in the issue of November 17th, although it is necessary to cut the tank on a Triumph, in order to fit a standard Best and Lloyd drip feed, if your enquirer gets into touch with the Best and Lloyd firm, and asks them to supply him with a drip feed and accessories specially to suit this make, he will be able to fit it without damaging the tank in any way. When I first got my Best and Lloyd drip feed and mechanical pump, I thought I should have to cut the tank, until a friend and myself got our heads together, and we sent the firm a drawing of what we wanted. They sent us the necessary parts altered, and we fitted them to the tank in five minutes without cutting it. The mechanical pump was fitted in half an hour, and up to the present the whole outfit is functioning absolutely satisfactorily. I have no connection with Best and Lloyd, Ltd. The above will answer both "A.F.B." (Winkelholme) and "J.C.B."—J. W. BROMLEY.

Reference to the sketches will give full details of all that it is necessary to make for this conversion; and it is, therefore, proposed to proceed directly to the actual fitting. The details are used thus: *(a)* Plunger rod of ½in. brass. The short screwed end is for the handle, and the long screwed end accommodates the steel and leather washers and the nut found on the B. and L. pump. The assembly of this part must be the same as on the B. and L. plunger. *(b)* Distance piece of brass tube to prevent the plunger from rising too far up the Triumph pump barrel. *(c)* Tapered plug of brass wire to plug vent hole in Triumph pump barrel. *(d)* Adapter ring to accommodate B. and L. pump top to Triumph pump barrel. *(e)* Bottom supporting washer for actuating spring. The recess on this part drops over the spindle screw of the Triumph suction valve, and the spring is thereby prevented from keeping this valve closed. To assemble the conversion, proceed as follows: Remove the existing pump plunger by unscrewing the knurled cap at top of barrel. A small vent hole of 1/16in. diameter will be found in the front of the barrel just below the top of the tank. With a thin-nosed pair of pliers insert the plug *(c)* into this hole. The plug can then be pushed tightly home with the flat of a screwdriver, using a piece of wood in the barrel as a fulcrum. The plug must not project into the barrel more than 1/32in. Completely dismantle the B. and L. lubricator by removing the brass filter from the bottom of the barrel and also removing the sight-feed chamber complete. Further dismantle the plunge by removing the handle, nut, washers, etc. Remove gland packing and ball valve, etc., from pump head. Grip the barrel of pump in a vice or chuck to prevent turning, and then heat up the pump head until the solder at the joint of barrel and head is seen to run. Now unscrew the head from the barrel, and, while still hot, wipe all surplus solder from the threads. Screw end of adapter ring *(d)* into pump head, and re-sweat the joint. The conversion is now complete, and only requires assembly, which is done as follows: Insert long end of *(e)* inside the spring, and drop the spring and washer into the Triumph barrel. Assemble leather and steel washers on the plunger rod, place on the brass tube *(b)* and also the pump head with adapter ring, and screw on the pump handle. Insert this complete assembly into the Triumph barrel, and push to the bottom. The pump head can now be screwed on to the end of Triumph barrel, fish glue making an excellent joint. Screw on the sight-feed chamber, and set the existing oil pipe to suit the new position. The old oil pipe connection on the Triumph tank is blanked off



by placing a 5/16in. steel ball inside a union nut, and tightening it up. The ball valve and packing, etc., should be replaced after sweating the adapter ring to the pump head. The three lugs for the screws on the B. and L. pump are filed off for the sake of appearance, but this point is immaterial to the working of the pump.—H. HOOD.

Important Dates.

Sat., Dec. 3rd, to Tues., Dec. 13th—Brussels Show.

Mon., Dec. 26th, Tues., Dec. 27th—M.C.C. London-Exeter London Trial.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th, 1922—Scottish Car and Motor Cycle Show.

Sun., Mar. 5th, 1922—Argenteuil Hill-climb (France)

Mon., Mar 6th, 1922—La Turbie Hill-climb (Nice).

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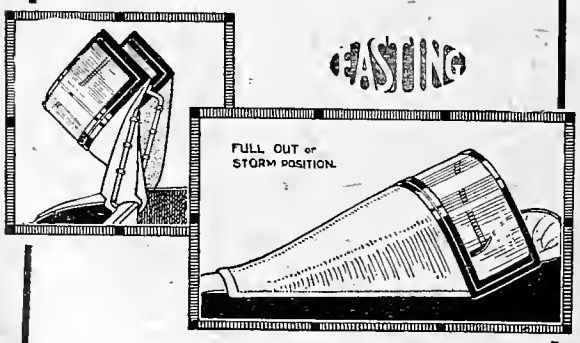

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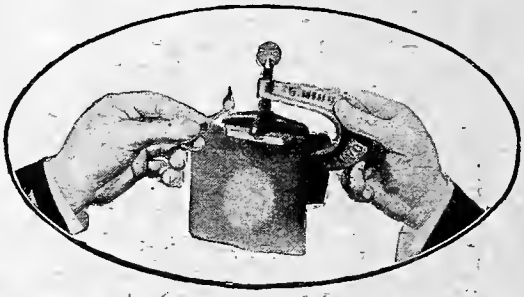

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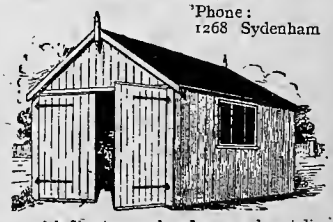

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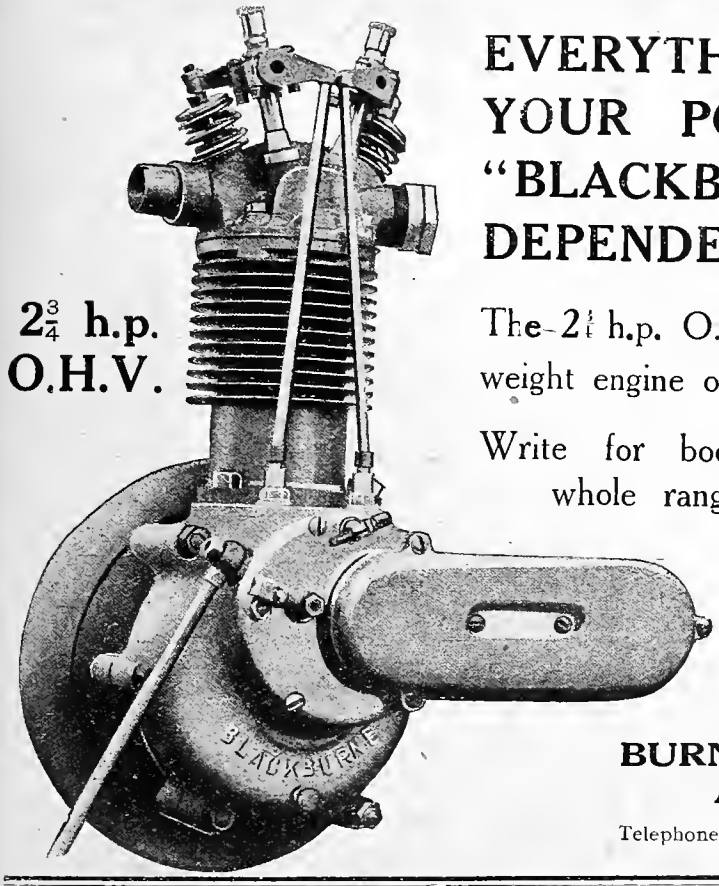

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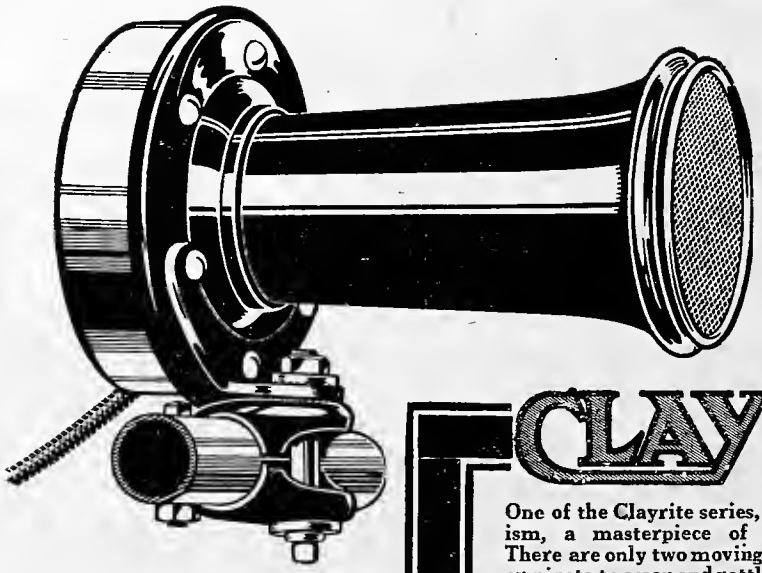

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B.S.A. 1921 H2, with No. 3 sidecar, all accessories, perfect and as new; £120; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1520

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B.S.A. 1920, delivered 1921, 4¼h.p., chain-cum-belt, with Henderson sidecar, very good condition; £85; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1523

B.S.A. 4¼h.p. Combination, 1920, fully equipped; £65, or near offer.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., W. 'Phone: Mayfair 6559. [1649

1921 B.S.A., Model K2, brand new and slightly soiled only, usual makers' guarantee given; £90.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1498

EXCEPTIONAL Bargain.—B.S.A. Model H2, 4¾h.p., with B.S.A. No. 3 sidecar, 1921 latest model combination, not done 50 miles, tax paid, new last month; £125.—Wilkins Simpson, opposite Olympia, London. [1334

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£20.—Caltborpe, 2½h.p., 2-speed, 1915, tax, ride away, all on; exchange billiard table or lathe and cash.—After 6, 164, Devonshire Rd., S.E.23. [1218

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CLYNO 5-6h.p. Combination, 1917-1918; £55; real bargains.—Locke, Draper, Penge. [1318

CLYNO 6h.p. Combination, 2-speed, kick start, sound; £45; exchange.—Bishop, Collier St., Marden, Kent. [1539

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CLYNO Combination, 6h.p., 2-speed, kick start, splendid condition; £68; for lower power, cash adjustment.—57, Kenbury St., Camberwell, London. [1408

CLYNO Combination, 1920, spare wheels, lamps, etc., excellent condition; £125, or exchange for light van or machinery, etc.—Urquhart, 371, Earlsfield Rd., London, S.W.18. [1226

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CONNAUGHT 2-stroke, single-speed, brand new; must clear, £5 under list price.—46, Cromwell Rd., Walthamstow. [1729

CONNAUGHT, 1919, single speed, footrests, semi-T.T. bars, dual, exhaust, 26in. wheels; £28/10, lowest. —9, Earlshall Rd., Eltham, S.E. [1618

1920 Connaught (miniature), all on, in excellent condition; £28.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). [1670

Coulson.

ACTUAL T.T. 'bus, Coulson team's reserve: 1922 2¾h.p. J.A.P., special frame; £90, or exchange Scott.—Bochaton, North Witham Common, Grantham. [1243

COULSON 1922 Models for earliest deliveries, with all latest improvements; write for catalogue and prices.—London Motors, 61, Holborn Viaduct, E.C.1. Tel.: City 4230. [1630

COULSON 1921 Models.—A few 2¾h.p. shop-soiled machines in stock at greatly reduced prices; cash or deferred terms.—London Motors, 61, Holborn Viaduct, E.C.1. Tel.: City 4230. [1629

1921 Coulson 2¾h.p. J.A.P. Sports Model, brand new, £65; 1922 Coulson-Blackburne machines, early deliveries and exceptional deferred terms.—Goad (Private House Garage), 122, Maida Vale. 'Phone: Hampstead 1353. [9966

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REGENT-VICTOR Combination, C.V. engine; real bargain.—Full particulars from Captain Stokoe, 23, Bellevue, Kingston-upon-Thames. [1542

COVENTRY VICTOR Combination, new June, 1920, Sturmey-Archer gear, Saxon forks, all accessories, Sandum de Luxe sidecar, hold 2, recently overhauled; bargain, cost over £200, what offers?—Marshall, 21, King's Av., Woodford Green. [1139

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1919 Diamond-Villiers, complete, good condition; £23, worth £30.—Park Street Garage, Wellington, Salop. [1304

£32/10.—1920 2¾h.p. Diamond-Jap, 2-speed (Enfield), fully equipped, fast, condition excellent; offers.—Barnes, 83c, Trinity Rd., Tooting, S.W.17. [1389

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WAUCHOPE'S, 9, Shoe Lane, London.—2¾h.p. Douglas, 1919; £47/10. [1715

1921 Practically New 3½h.p. Sports Douglas; £85. —24, Balliol Rd., North Kensington. [1445

1919 2¾h.p. 2-speed Douglas, practically new; £45. —24, Balliol Rd., North Kensington. [1446

2¾h.p. Douglas, 1915, just overhauled; £40, or near. —F. Barron, 265, Eversleigh Rd., Battersea. [1156

DOUGLAS 1911-12, new carburetter; no reasonable offer refused.—March, 99, East St., Farnham, Surrey. [1148

1920¾ Douglas, 2¾h.p., 3-speed, full equipment, perfect; 50 gns.—Fersfield, Westbury Rd., New Malden. [1561

DOUGLAS 2¾h.p., 1921, 2-speed, accessories, fine condition; £55.—144, Oakfield Rd., Selly Park, Birmingham. [X3364

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1916 2¾h.p. Douglas, 2-speed, in splendid order; £35.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1494

1918 Douglas Combination, thoroughly overhauled, screen, hood, lamps; £72.—135, Lavcoham Rd., Southfields, S.W. [1153

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£27/10.—2¾h.p. Douglas, 1915-16, little used, new tank, and miscellaneous; accept £6 down.—59, High St., Clapham. [1688

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1917 4h.p. Douglas, 3-speed, kick start, £45; sidecar, £5. — 28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1491

1920 2¾h.p. Douglas, 3-speed, clutch, K.S., fully equipped, new condition; £75, or offer.—91, Main Rd., Sidcup, Kent. [1140

2¾h.p. T.T. Douglas for sale, 1916. See the Exchange column.—Apply, Ashby, The Gables, Harmondsworth, Yiewsley, Middlesex. [1561

£70.—Douglas combination, 4h.p., 1918, fully equipped, sidecar repainted, long copper exhausts, posh lot.—58, Blagdon Rd., New Malden. [1753

DOUGLAS 4h.p. Combination, 1918 model, in first-class running order, new tyres; any trial or examination; £70.—Catlin, 5, Horse Lane, Ware. [1149

4h.p. Douglas, new condition; £45.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). [1669

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DOUGLAS 1918 2¾h.p., perfect condition; £32 cash.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1455

1916-17 Douglas 2¾h.p., 2-speed, new belt, tyre, lamps, horn, spares; any trial; £27; bought Morgan.—Harvey-Marston, Manor, Willenhall, Staffs. [1253

1921 Douglas 2¾h.p., 3-speed, only done 1,000 miles, complete with lamps, Cowey speedometer, and large copper exhaust; £70.—Springett, Billericay, Essex. [1173

£25.—Douglas 1914 2¾h.p., 2 speeds, not W.D., accessories, new tyres, running order.—Smith's, 86, Chalk Farm Rd., opposite Chalk Farm Tube Station [1632

DOUGLAS 1921 New 2¾h.p., 2 speeds, all on, shop-soiled; £72/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

1920 2¾h.p. Douglas, 3-speed gear box, Cowey trip new; £75.—Dunn, 326, Euston Rd., London, N.W.1. Exchanges arranged. 'Phone: Museum 5391. [1722

DOUGLAS; 26 gns.; 2¾h.p. Douglas, top hole, 1915-16, brand new tank from Douglas's, cost £55 last year.—89, Appach Rd., Josephine Av., Brixton Hill, S.W. [1687

84 GNS., Exchange.—1920 Douglas combination 4h.p., Easting screen, lamps, speedometer, smart fast.—Seabridge, Hausler Rd., East Dulwich. Sydenham 2452. [9336

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DOUGLAS Combinations and Solos. We have eight in stock from £49; list on request; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1527

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Douglas, 1922 models, prices £75 and £90; also 3½h.p. sports model, £130; all fully equipped; easy terms no extra charge. [1702

4h.p. Douglas Combination, 1918, absolutely as new, new sidecar body, tyres, magneto, mudguards, etc.; guaranteed; £75; fully equipped.—13, Somers Mews, Hyde Park, W.2. Tel.: Padd. 899. [1473

DOUGLAS 2¾h.p., 1920, 3-speed, fully equipped, perfect condition; £60.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., W. 'Phone: Mayfair 6559. [1648

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ANY MODEL OF ANY MAKE SUPPLIED.

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1919 4 h.p. **DOUGLAS** Combination, 3-speed, accessories	£87	10
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1915 7-9 h.p. **HARLEY-DAVIDSON** 3-speed Com., all accessories	£75	0
1921 2¾ h.p. **A.J.S.,** 3-speed, clutch and kick-starter	£80	0
1918 4 h.p. **TRIUMPH,** 3-speed countershaft, accessories	£63	0

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MOTOR CYCLES FOR SALE.

Douglas.

4h.p. Douglas Combination, 1920, horn, lamps, licensed, insured, guaranteed mechanically perfect, and appearance excellent; owner must realise; bargain, £70.—Malvern Garage, Malvern Rd., Thornton Heath, Surrey. [1462

1920 2¾h.p. Douglas, 3-speed, clutch, kick start, Cowey speedometer, Tao-Sad, horn, lighting set, mirror, licensed, indistinguishable from new; a bargain, £68.—Motorist, 769, Romford Rd., Manor Park, London, E. [1276

DOUGLAS 2¾h.p., 1921, clutch and kick start, new Sept., absolutely perfect, only run 300 miles, tools, accessories, etc., complete; cost £110, nearest to £75 secures.—Write, D., 90, Stondon Park, Forest Hill, S.E.23. [1138

1921 Douglas, 2¾h.p., 3-speed, clutch and K.S., fully equipped with lamps, horn, and speedometer, very fine condition; £75.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Iotegrity, Oxford. [1500

DOUGLAS 1920 2¾h.p., 3-speed, clutch and kick starter, lamps, horn, knee grips, rubber handle grips, Cowey speedometer, ridden 500 miles (as new); £67/10.—Herbert Robinson, Ltd., Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [1341

1920 Douglas, 2¾h.p., 3-speed, clutch and K.S., fully equipped and licensed, very small mileage, and in exceptional condition; £60.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Iotegrity, Oxford. [1501

DOUGLAS, 2¾h.p., 2-speed, guaranteed mechanically perfect, fast, smart appearance, fully equipped, just thoroughly overhauled, will carry 2 anywhere; bargain, £45; will exchange for higher power or combination.—18, Approach Rd., St. Albans. [1605

DOUGLAS. Douglas 1922 Models.—2¾h.p., 2-speed, fully equipped, £75; 2¾h.p., 3-speed, fully equipped, £90; 4h.p. solo, fully equipped, £110; 4h.p. and sidecar, fully equipped, £135; 3½h.p., o.h.v., fully equipped, £130; 6h.p., o.h.v., all chain, and new design roomy sidecar, £165. Spare parts stocked.

DOUGLAS Specialities.—75% of catalogue prices allowed on old machines purchased from us if returned in good condition within 12 months.

VIVIAN HARDIE and Lane, Ltd., 24, Woodstock St. (off Blenheim St.), New Bond St., W.1. Phone: Mayfair 6559. [0703

Spare Parts:

DOUGLAS Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8634

DOUGLAS Spare Parts.—Try the promptest firm.—Forfield Motors, Forfield Place, Leamington Spa. [X3398

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Douglas specialists; complete illustrated list post free. [9398

DOUGLAS Spares.—We hold a complete stock for all models, post free.—Jones' Garage, Broadway, Muswell Hill, N.10. [0744

Dunelt.

DUNELT 4½h.p., with coachbuilt sidecar, spare wheel, 2 spare tyres, spare belt and chain, M-L Maglite lighting and ignition, Brooks B600 saddle, in good condition; £100.—Teage, Whitehouse, Kenilworth. [X2270

Edmund

1922 Edmund Spring Frame; early delivery.—See Sam E. Clapham, Matchless, Stand 65, Olympia. [9250

Enfield.

2¼h.p. Royal Enfield, condition as new, all on; £45.—5, Sandtoft Rd., Charlton, S.E.7. [1362

ENFIELD, 2-stroke, 2-speed, clutch, perfect condition; £30.—24, Geraldine Rd., Chiswick. [1684

ENFIELD 6h.p. Combination, J.A.P. engine, all accessories; £90.—64, Sylvan Av., N.22. [8661

SHEFFIELD Agent for Royal Enfields, all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ROYAL ENFIELD 3h.p. Twin, 2-speed, perfect order, accessories; £58.—71, Narford Rd., Clapton, London, E.5. [1271

ROYAL ENFIELD, 1920 2¼h.p., all on, 2-speed, sound; £40.—G. Clapham, Ferncliffe Villa, Keighley. [1302

BRAND New Unused 8h.p. Enfield Combination, hood, screen, etc.; £120.—Heath, 168, Wellington Rd. South, Hounslow. [1200

3h.p. Enfield, perfect condition, fast, accessories, including lamps, tools, grips, speedometer; £45.—8, Peakham St., Redditch. [1418

ENFIELD, late 1920, 2-stroke, excellent condition, little used, all accessories, etc.; £40.—168, Wellington Rd. South, Hounslow. [1570

1919 3h.p. Enfield, Lucas, Watford, pillion, appearance, tyres, running perfect, fast; £48, nearest.—87, King Henry's Rd., N.W.3. [1574

3h.p. Twin Enfield, late 1919, overhauled, new tyres, fast, fine condition; £53, or exchange (level) single, Norton preferred.—Sellman, 120, Corn St., Witney, Oxon. [X3376

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Enfield.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Royal Enfield combination, 1921, shop soiled only; reduced to £125; easy terms no extra charge. [1703

28 GNS.—1919 3h.p. Enfield, 2-speed, clutch, mechanical lubrication, Binks, new tyres, fast, equipped.—20, Treen Av., Hoggers Corners, Barnes, S.W.13. [1535

ENFIELD Combination, 8h.p., fully equipped, perfect condition; £95; exchange W.C. Morgan; cash adjustment. — Lonsdale, 28, Salisbury Rd., Bexley, Kent. [1613

1916 3h.p. Twin, K.S., 2-speed, engine just overhauled by makers, splendid condition; will ride 50 miles to purchaser; £42, or nearest.—Bolus, Meriden, Warwickshire. [X3362

1919 Enfield Combination, dynamo lighting set, magnificent condition throughout, just thoroughly overhauled; must sell; £100.—Howick, Keepers Corner, Burstow, Surrey. [1420

1921 8h.p. Enfield Combination, run 500, Lucas lamps, speedometer, front and side screens, insured Aug., 1922; £120.—Owen, 129, West Bromwich Rd., Walsall. [X3151

ENFIELD 1912 6h.p. Combination, coachbuilt sidecar, fully equipped, good condition; £55; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3332

ENFIELD.—We are official agents, and can give immediate delivery of any model of this foolproof motor cycle.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0380

1921 Enfield 8h.p. Combination, Magdyno lighting, brand new but slightly soiled; £135.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1499

ENFIELD, 1921, double sidecar, perfect order, mileage 1,500, Cameo screen, Lucas horn, lamps, never used, leaf spring saddle; £130; reason for selling, bought car.—Ewart, Draper, Maryport. [1388

6h.p. Enfield Combination, fully equipped, new tyres, lamps, tools, wind screen, spares, etc., an excellent outfit; £75.—Rhind and Co., Stone Place, Rusholme, Manchester. 'Phone: 776 Rusholme. [1230

59 GNS., exchange.—1914 Enfield 6h.p. coachbuilt combination, lamps, speedometer, screen, luggage grid, smart, fast; any examination, trial.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [1083

ENFIELD 1921 Combination, 8h.p., Tan-Sad, tandem sidecar, fitted 2 Cameo screens, lamps, etc., low mileage, excellent condition; £140; would entertain exchange light car. Evenings only.—343, Grove Green Rd., Leytonstone. [1299

6h.p. Enfield Combination for sale, 1914 model, owner 5 years forces; any trial; sidecar has coupe hood, all disc wheels, tyres 700×80 Magnums, practically new, car generators; must sell immediately; nearest £70 secures.—R.C., 43, New Church Rd., Hove, Brighton. [1206

1921 8h.p. Royal Enfield and Sidecar, in excellent condition, hood, wind screen, mud shield, speedometer, electric and bulb horns, spring seat pillar, Lucas lamps and D.A. cylinder, tyres unpunctured; £125.—E. E. Lawson, 2, Regency Sq., Brighton. [1726

1921 Enfield Combination, demonstration model, mileage 300, Enfield hood and screen, tools, etc., acetylene head lamp, electric side and rear lamps, tyres perfect, tax paid, any trial, perfect order; £130; one sold like this each year; will you be the lucky purchaser? Absolute snip.—Taylor, Enfield Agents, 27, Oxford Rd., Windsor. 'Phone: 243. [1537

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [8635

Excelsior.

EXCELSIOR Combination, 1915, 4½h.p., 3-speed, clutch, K.S., trial; £40.—63, Arlingford Rd., Brixton. [1367

F.N.

1922 F.N.—The new and improved models; early delivery from Sam E. Clapham (Motors), Greenwich. [9249

F.N., 4-cyl., and light chassis, 2-speed, hand clutch, engine sound, many new parts, Binks, Bosch; owner giving up; bargain, £50.—F. E. Bungay, Farm Cottage, St. Andrew's Hospital, Northampton. [X3150

Francis-Barnett

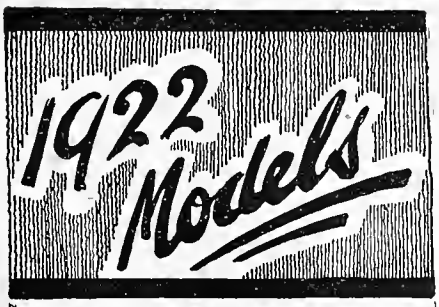
1920 Francis-Barnett, 2¾h.p. J.A.P., 2-speed, clutch, K.S., fully equipped, condition as new; £56; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1674

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY, with brand new sidecar, lamps, and all accessories; 95 gns.—Victoria Garage, Surbiton. [1471

1920 Flat Twin Harley, new condition, £67/10; sidecar for same, £7/10.—24, Geraldine Rd., Chiswick. [1683



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CALTHORPE de Luxe, 4-seater ..	£435
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L.S.D. 3-wheeler, All on.....	£165
LAGONDA (Coupe or 4-seater)	£375
STANDARD 8 h.p. (2 or 4-seater) ..	£325
STANDARD 11 h.p. 2-seater	£515
STANDARD 11 h.p. 4-seater	£525

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B.S.A. 4¼ h.p. Chain-Belt	£107
B.S.A. 4¼ h.p. All-Chain	£110
B.S.A. 6 h.p. Light Comb.	£164
B.S.A. 8 h.p. Comb.	£185
BRADBURY 4 h.p., 3-sp., all chain	£92
BRADBURY 6 h.p. Comb.	£146
DOUGLAS 2¾ h.p. 2-speed, All on	£75
DOUGLAS 2¾ h.p. 3-speed, All on	£90
DOUGLAS 3½ h.p. 3-speed, Sporting	£130
EDMUND-BLACKBURNE 2¾ h.p. 2-speed.....	£85
ENFIELD 8 h.p. Combination.....	£140
ENFIELD 2¼ h.p. 2-speed.....	£55
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LEVIS 2¼ h.p. 2-speed	£58
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SUNBEAM 3½ h.p. Combination	162 Gns.
SUNBEAM 8 h.p. Combination ..	£217 7
TRIUMPH 4 h.p. Chain-Belt	£105
TRIUMPH 4 h.p. All-Chain	£115
TRIUMPH JUNIOR 2¼ h.p.	£65

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Second-hand Machines and Combinations as per "Miscellaneous" Columns.

The Halifax Motor Exchange,
25, Horton Street, Halifax.
'Phone: 1400. 'Grams: Perfection.

MOTOR CYCLES FOR SALE.

Harley-Davidson

HARLEY-DAVIDSON 1919 7-9h.p., 3 speeds, clutch, kick starter, lamps, horn, etc.; £85.—Below.

HARLEY-DAVIDSON 1916 7-9h.p. Speed Model, lamps, horn, clutch, kick starter; £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

£95.—Harley Combination, late 1919, electric lighting and horn, top-hole condition.—58, Blagdon Rd., New Malden. [1752

1919 Harley-Davidson Combination, in splendid condition, new 1920, equipped, tax; £80. — 16, Fordwych Rd., Brondesbury. [1540

1919 7-9h.p. Harley, 3-speed, kick start, as new, £75; sidecar, £10.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1490

HARLEY-DAVIDSON 1920 (Dec.) 7-9h.p., dynamo lighting, fully equipped; £75.—Clapham Motors, High St., Clapham. 'Phone: Latchmere 4290. [1236

HARLEY-DAVIDSON Combination, 7-9h.p., electric light, running order, all on, taxed; offers, or exchange lower power.—72, Worbeck Rd., Anerley, S.E.20. [1370

MOST Luxurious Late 1920 Harley Combination De Luxe, 7-9h.p., most lavishly equipped, discs, cost £273; accept £112.—24, Balliol Rd., North Kensington. [1443

HARLEY Combination, 1916-17, hood and windscreen, new tyres; first reasonable offer secures; seen any time, smart appearance.—Snow, Laurel St., Dalston, E.8. [1749

HARLEY Combination, 1920, dynamo, speedometer, screen, under 3,000 miles, like new; 100 gns.—Bruton Mews Garage, 8-20, South Bruton Mews, Bond St., W. 'Phone: May. 4282. [1327

HARLEY-DAVIDSON 1920 7-9h.p. Electrical Combination, hood, screen, side wings; cost £272, accept £150; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3330

1919 Harley-Davidson, Henderson Elite sidecar, discs, just overhauled, new chains, exceptionally fine condition, not W.D.; £98/10; exchanges.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [9962

1920 Harley-Davidson 7-9h.p. Combination, electrically equipped, special show model; £135; exchanges entertained.—Speechley, The Motor House, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [1460

HARLEY-DAVIDSON 1920 Sports Model, coachbuilt sidecar, fully equipped, aluminium discs, new condition, run 3,500 miles only; £120. Particulars and trial by appointment.—F. G. Jarvis, 52, Christchurch Rd., Reading. [1414

HARLEY-DAVIDSON 7-9h.p. Combination, as new, tax paid, new mag., carburetter, handsome 1921 sidecar, electric light and horn, hood, screen, etc.; lowest £92.—54, Hertford Rd., East Finchley. 'Phone: Finchley 1312. [1248

1917 Harley-Davidson Combination, uncrated 1920, splendid condition, Bosch mag., owner recently bought, but finds it too powerful, insurance paid until Oct.; £95, or nearest offer.—Rusden, Brockham Hill House, Betchworth. [1267

1919 7-9h.p. Harley-Davidson Family Combination, 2 seats, electric light, hood, screen, luggage carrier; 90 gns., quick sale; owner taken delivery of new car.—324, Hither Green Lane, Lewisham, S.E.13. Tel.: Lee Green 2156. [1691

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8636

Henderson.

HENDERSON, 4-cyl., believed 1916, sidecar chassis, lamps; deliver 50 miles; £60, or nearest.—Crown Garage, Thames St., Weybridge. [1450

LATE 1920 Henderson, fully equipped, speedometer, Tan-Sad, horn, lamps, mileage 1,900, acceleration and speed unequalled, unscratched; offers.—Belmore, Haywards Heath. [1262

£85.—Henderson, 1919-20, 8-10h.p., 4-cyl., complete, with £40 Henderson Elite sidecar, dynamo lighting, licensed; cost £300; sacrifice, money wanted.—8, High St., Wandsworth. [1586

1920 Henderson, 4-cyl., with 1921 Milliford 2-seater sidecar, Easting Royal wind screen, electric light, disc wheels, all practically as new, and in perfect condition; any trial; £150.—Hartop, Draper, Castle Rd., Bedford. [1269

A BARGAIN for Quick Sale.—Aug., 1921, Henderson, 4-cyl., fitted aluminium discs, open exhaust, with shutters, driven 1,000 miles, tax paid to Dec. 31st; cost £225, will accept £130.—Box 7,703, c/o *The Motor Cycle.* [1337

Hobart.

£28.—Hobart-Villiers, 2-speed, excellent condition; or exchange.—99, Fielding Rd., Chiswick. [1368

HOBART-VILLIERS, 1920, single speed, Lucas lamps, Stewart horn, tax paid, in excellent condition throughout; £33.—H. Burnham, Brook St., Aston Clinton, near Aylesbury, Bucks. [1252

MOTOR CYCLES FOR SALE.

Humber.

2½h.p. Humber, single, new piston, tappets, tyre, tube, cylinder reground, Bosch, B. and B., £18; take push cycle part; airman's coat, helmet, £4/10.—23, Wilford Grove, Nottingham. [1638

1919 3½h.p. Flat Twin Humber Combination, electric lighting, as new; higher power combination wanted, 1919 or later, cash adjustment if necessary.—2, Inchleys Buildings, King William St., Coventry. [X3338

Indian.

INDIAN 7-9h.p. Clutch Model, needs slight repairs; £20.—Wild, Holly Lane, Erdington, Birmingham. [X3363

INDIAN Combination, 7-9h.p., 1919, all on, as new; offers.—Willson, 28, Queensbury Mews East, South Kensington. [1204

INDIAN 7-9h.p. Combination, 3-speed, K.S. clutch; £65, or offers.—Ward, 49, Clyde Rd., Croydon. 'Phone: 971. [1579

INDIAN Combination, 7-9h.p., not W.D., aluminium discs, appearance as new; £68. — 37, Montague, Hendon. [1373

95 GNS.—1920-21 Indian Powerplus combination, dynamo lighting, equipped, insured, as new.—1, Othello St., Liverpool. [1250

5-6h.p. Sports Indian, clutch, very fast; £50, or exchange level good K.S. combination or solo.—120, Clerkenwell Rd., E.C.1. [1607

INDIAN Combination, 7-9h.p., 3-speed, Binks carburetetr, recently overhauled; £50.—3, Bay View Terrace, Porthleven, Cornwall. [1596

1914-15 7-9h.p. Indian, clutch model, road racer, in running order, just been overhauled; £35, or nearest offer.—Appleton, 16, Ribble Rd., Blackpool. [1544

1915 Indian Combination, 3-speed and clutch, Canoelet sidecar, electric lighting, hood and screen, perfect; £57.—13, Vernon Rd., East Sheen, Surrey. [1484

1920 7-9h.p. Indian Combination, dynamo lighting, £85; also a 1919 combination, like new, £75.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1492

1920-21 Indian Big Valve Combination, condition perfect; £87/10.—Dunn, 326, Euston Rd., London, N.W.1. Exchanges arranged. 'Phone: Museum 5391. [1723

1921 Indian Scout, fitted with speedometer; list price £120, accept £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1502

INDIAN 1921 7-9h.p. Powerplus Combination, electrically equipped, horn, speedometer, as new; £150; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3329

INDIAN 7-9h.p., speed machine, kick, clutch, 2-speed, new condition, £35; Indian Powerplus, new 3-speed, 2-seater Burbury sidecar, bargain; part exchange.—Fairhurst, Behind 68, Standishgate, Wigan. [1543

BRAND New Powerplus Indian, W.D. model, £75; 1917 A.J.S. combination, 4h.p., complete with wind screen, lamps, horn, spare wheel, just overhauled, perfect condition; £65.—Jones Bros. and Tapley, Ltd., St. Anne's-on-Sea. [1176

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8637

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

Invicta.

1920 Invicta, 2¾h.p. J.A.P., 2-speed, splendid condition, lamps, legshields, etc.; £36.—37, Arlington Rd., Surbiton. [1591

2¾h.p. Invicta-Villiers, 2 speeds, F.E., new tyres, tubes, in splendid order, like new and genuine; £37/10.—Spacie, Todwick, nr. Sheffield. [1558

Ivy.

1920 Ivy 2-stroke, fully equipped; £25.—45, Pelham Rd., Wimbledon. [1590

IVY, 1920, 2-speed, clutch, kick start, as new; £37/10.—24, Geraldine Rd., Chiswick. [1682

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

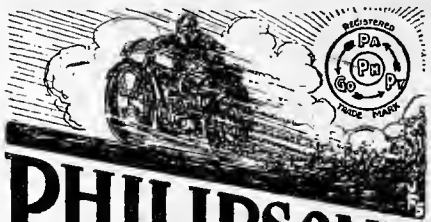
IVY.—All 1922 models in stock. Immediate deliveries. Cash or exchanges, deferred payments 4%. Trade supplied.—Mandes' Motor Mart, London, Exeter, and Walsall. [1782

James.

1921 James, 2-speed, well equipped, as new; £47/10.—17, St. Charles Sq., W.10. [9811

JAMES 1920 2-stroke, 2 speeds, fully equipped, mechanically sound; £35.—143, Ravensbury Rd., Earlsfield, S.W. [1718

4¼h.p. James, countershaft gear, K.S., clutch, all-chain, for lightweight.—Graham, 27, Wandle Rd., Wandsworth Common, S.W.17. [1295



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GOVERNOR PULLEY AND VARIABLE GEAR COMBINED WITH FLY WHEEL for all two-stroke engines.

The Lightest, Speediest, and Simplest Gear on the market for direct belt-driven 2-stroke and 4-stroke engines.

ONLY adds 2 lb. (approx.) to the weight of a 2-stroke machine, and 6 lb. (approx.) to the weight of a 4-stroke machine.

During the past week we have fitted the following machines:

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LEVIS,	TRIUMPH,
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etc.	COULSON-BLACKBURNE.

We are now in a position to supply the Philipson Pulley to fit J.A.P. engines without any alteration to the machine or "staggering" of the engine.

Our Flywheel Governor converts a single-speed 2-stroke into a speed model —*the lightest speed model on the market!*

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No gear box friction.
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MOTOR CYCLES FOR SALE.

James.

5-6h.p. James, Oct., 1919, De Luxe sidecar, Easting wind screen, accessories, excellent condition; £110, or nearest offer.—Millett, Ilminster. [1154

1920 James, 2-speed, 2-stroke, lamps, horn, etc., guarantee given that it has not run more than 1,600 miles.—364, Lillie Rd., Fulham, London, S.W.6. [1181

JAMES 4¼h.p. and Sidecar, just overhauled at works (costing £40), not ridden since; price £70, or reasonable offer, for quick sale.—H. A. Howell, Kingston, near Lewes. [1728

1918 James 6h.p. Combination, dynamo lighting, mileage less than 2,000, exceptionally good condition; £100.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1503

J.A.P.

£14.—3½h.p. J.A.P., free engine model, m.o.v., mag., running order.—King, Egrove Farm, Oxford. [X3354

2¾h.p. J.A.P., Bosch, Amac, fast; trial; ride away; £15; also Canoelet coachbuilt sidecar, nearly new, £12.—58, Tustin St., Old Kent Rd., London. [1312

£28.—4h.p. o.h.v. J.A.P., mag., lamps new, needs larger jet and retiming, engine and clutch as new; buying twin.—Aberlyn, Southminster. [1178

10h.p. o.h.v. J.A.P., B. and B., Simms-Bosch, 2-speed and clutch, very fast; photo; £55, or offers.—Upton, Coptfold Hall, Ingatestone, Essex. [1603

Kerry.

£10.—3½h.p. Kerry, Eclipse mag., B. and B. carburetter, good running order.—King, Egrove Farm, Oxford. [X3355

KERRY Lightweight, 3h.p., in sound running order, tax paid; first £12 secures.—36, Regina Rd., Southall, Middlesex. [1566

KERRY-ABINGDON, King Dick, very nice condition; first cash of £16 accepted, or with coachbuilt sidecar £21 to clear.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1456

Lea-Francis.

1920 Lee-Francis 3½h.p. Twin, completely equipped, and with electric lighting, very carefully used, and in fine order; £75.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1504

Levis.

PREMIER Motor Co. for 1922 Levis

LATEST Improved Models for immediate delivery at 1922 reduced prices.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S 2¼h.p., 2-speed, clutch, £58, or with kick starter £60; easy payments only 4% extra; carriage paid to any address. Buy your machine direct from the Levis specialists.—The Premier Motor Co., Aston Rd., Birmingham. [0741

£30.—1920 single speed Levis, accessories.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [1634

LEVIS 1917 2¼h.p., perfect order, engine just removed; £30. Week-end only.—18, Gloucester Rd., Teddington. [1395

LEVIS 1920 2¼h.p. 2-stroke, lamps, horn, etc.; £32/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

1920 Levis, fully equipped, including P. and H. head lamp, knee-grips, spare belt, perfect condition, appearance as new; £38/10.—Hamley, Redroofs, Oxshott, Surrey. [1292

1921 Levis, as brand new, horn, mirror, pump, tools, licensed, etc., most beautiful little machine; cost £60; a bargain, £38.—Teeth, 769, Romford Rd., Manor Park, London, E. [1274

LEVIS 2¼h.p., single speed, lamps, horn, just overhauled and renovated, Tan-Sad, new condition throughout; £40.—Herbert Robinson, Ltd., Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [1342

SPECIAL Offer of a few slightly showroom soiled 250 c.c. T.T. model Levis motor cycles; list price £65, reduced to £55; makers' speed guarantee of 50 m.p.h. with each machine; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0740

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—Complete illustrated list post free. All Levis parts in stock. [9399

Marloe.

MARLOE-BLACKBURNE 2¼h.p., 2-speed, clutch, and kick start, brand new; £68/10.—Goad, 122, Maida Vale. 'Phone: Hampstead 1353. [9967

Martinsyde.

MARTINSYDE 6h.p. Combination, complete with lamp, horn, Tan-Sad, and Easting wind screen; £85 for quick sale.—198, King St., Hammersmith. [1572

D. and S. Autocar Co. are agents for Martinsydes, combination and solos; 3½h.p. sports model in stock, £110; cash or deferred.—33, The Parade, Golders Green, N.W. [9982

MOTOR CYCLES FOR SALE.

Martinsyde.

1920 Martinsyde 6h.p. Combination, 3-speed, clutch, K.S., fully equipped, hood and screen; £103; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1675

MARTINSYDE 1922 Sports and touring combinations for immediate delivery. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1517

Matchless.

1922 Matchless, all models, at list prices; deferred payment or exchanges.—Below.

1921 Matchless 8h.p. Standard Combination, £155; 1921 Matchless 8h.p. standard combination, dynamo, £173; 1921 Matchless 8h.p. 2-seater combination, £167; 1921 Matchless 8h.p. 2-seater combination, dynamo, £182; deferred payments or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1677

1921 Matchless Combination, Magdyno lighting, brand new, unused; £158; owner must sell.—41, Madrid Rd., Barnes, S.W. [1676

MATCHLESS Combination, N.S.U. gears, Villiers clutch, good tyres, good condition; ride away; £38.—Miles, 15, Church St., Enfield. [1413

PHONE: Greenwich 751.—1922 Matchless, immediate delivery; the incomparable combination will be the centre of attraction at Olympia Show.

CALL and See Sam E. Clapham or representative, Matchless, Stand 65; cash, exchange, or easy terms; all leading makes motor cycles and light cars for 1922.—Sam E. Clapham Motors, 27, Stockwell St., Greenwich, S.E.10. [9252

MATCHLESS Combination, July, 1921, M.A.G., Magdyno, as new, very little used; £150 cash; no offers.—Larkfield Grange, Rawdon, Leeds. [9790

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Matchless combination, sports model, new 1921; reduced to £149; easy terms no extra charge [1704

F.O.C.H. give you good Matchless service; cash, exchange, or deferred payments; sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [1323

MATCHLESS Combination, cost June (1920) £230, hood, lamps, Tan-Sad, legshields, perfect condition; accept £140.—Rose Cottage, Nutbourne, Pulborough, Sussex. [1470

MATCHLESS Sports New 1921 Combination, 3 speeds, clutch, kick starter; £150.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

MATCHLESS 1922 models for immediate delivery. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1515

CAREFULLY Used Matchless 1920 Combination, perfect condition, hood, lamps, horn, Tan-Sad, tax, insurance to March; £135.—Jack, 21, Springfield Av., Muswell Hill. [1177

MATCHLESS Combination, 7-9h.p. M.A.G. engine, 3 speeds, all accessories, including hood and screen; accept £70.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1454

MATCHLESS.—Immediate deliveries 1922 models; trade supplied in London area, also in Cornwall, Devon, and Somerset; exchanges; deferred payments 4% extra.—Maudes' Motor Mart, London, Exeter, and Walsall. [1780

MATCHLESS Combination, late 1920, 8h.p. J.A.P., spring frame, detachable wheels, hood, screen, lamps, in excellent condition; £120, or near offer.—Kinsey and Co., 352, Lower Addiscombe Rd., Croydon. 'Phone: 1129. [1623

MATCHLESS Combination, 8h.p. J.A.P. engine, new April this year, dynamo lighting, spare wheel, 2 carburetters, hood, Triplex wind screen, many spares; owner bought car; accept fair price.—Duffy, 115, Uppingham Rd., Leicester. [1263

MATCHLESS-M.A.G. Combination, with dynamo lighting, very late 1920 model, 2 spare wheels, speedometer, screen, perfect condition; £139; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1525

MATCHLESS 1920 M.A.G. Engine Combination, spare wheel, speedometer, Lucas acetylene lamps, very small mileage, exceptionally nice condition; £127; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1526

MATCHLESS 1921 H. Combination, 2-seater sidecar, Lucas lighting, spare wheel, seat behind driver, 2 screens, sidecar step, purchased for £201/5 latter part September; owner going abroad; perfect running order; inspection and trial invited; what offers?—Write or call, A., Simons, 555, London Rd., Westcliff. [1147

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley [0381

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MATCHLESS Spare Parts for J.A.P. or M.A.G. can be had by return, post free, from Jones' Garage, Service Depot, Broadway, Muswell Hill, N.10. [0745

Minerva.

2¾h.p. Minerva, Bosch, all chain, perfect; trial; £10.—17, Heaton Rd., Mitcham. [1616

Mohawk.

MOHAWK Cycles, new or second-hand, at lowest possible prices for cash or easy payments.—Mohawk Cycle Co., Ltd., 28, Alexandra Rd., Hornsey. [8493

Ner-a-Car.

NER-A-CAR, new August, condition perfect, completely equipped, tyres unmarked, low mileage; offers over £50. — Hallas, St. Elmo, London Rd., Hitchin. [1609

New Hudson.

NEW HUDSON 1922 Models and 3-wheeler light car.—Full range on view at London Showrooms, 45, Grays Inn Rd., London, W.C.2. [9980

New Imperial.

2¾h.p. New Imperial, 2 speeds, new tyres, splendid order; bargain, £28. — Sheldon, Wheatley, Oxford. [1053

NEW IMPERIAL 8h.p. 1919 Combination, Tan-Sad, lamps, Klaxon, tools, etc.; £90.—20, Woodsome Rd., N.W.5. [1152

£25.—New Imperial, 1916, 2-speed, all accessories, perfect running, new tyres, etc.—145, Leander Rd., Brixton Hill. [1758

NEW IMPERIAL, 1917, 2½h.p. J.A.P., 2-speed, perfect running order, tax; £40, or nearest.—Ferguson Longhill, Elgin. [X3391

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. New Imperial, 2-speed only, £63; also 2-speed, clutch, and kick start model, £69; easy terms arranged. [1705

1920-21 8h.p. New Imperial Combination, speedometer, Tan-Sad, Easting screen, lamps, horn, tools, unscratched; cost £195, accept £85.—Hillier, (side bell), 9, Wallingford Av., North Kensington, W10. [1567

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LATEST Improved Models for immediate delivery at 1922 reduced prices.

BIG 4, chain drive, £120; Model 16H., 3½h.p., 3-speed, T.T., chain drive, £115; Model 9, 3½h.p., belt drive, £80. Write for revised price list. Easy payments only 4% extra. Buy your machine direct from the Norton specialists, The Premier Motor Co., Aston Rd., Birmingham. [0625

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. Phone: 72. [0717

NORTON 1920 3½h.p., 4-speed gear, K.S., h.b.c., Binks, all on, and in good condition; £85.—Hargrave Jun., Wath, Ripon. [1405

NORTON 1920 3½h.p., 3-speed, kick start, all accessories, splendid condition; nearest offer £85.—Smith, Blunsdon, Swindon. [1239

NORTON.—All models actually in stock. Deferred payments 4% extra.—Maudes', 100, Gt. Portland St., London; Walsall Garage, Walsall. [1778

NORTON, Model 9, fully equipped, condition as new, little used, tax paid; £45, or exchange.—1, Albert Cottages, Marlborough Rd., Old Kent Rd., S.E.1. [1751

NORTON Big Four 1920 Combination, Norton sidecar, speedometer, accessories, splendid condition; £95.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [1770

NORTON 1921 Big Four, sporting sidecar, Magdyno, Lucas horn, Cowey, oversized tyres, as new; £160; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3331

1922 3½h.p. Norton, 16H model, fully equipped, Lucas fittings, makers' guarantee, £105; with Henderson featherweight sidecar fitted, Baby Easting screen, £115 the lot.—14, Estcourt St., Devizes. [1541

NORTON 1921 T.T. 1.O.M. Machine, equipped with 3-speed countershaft gear box, hand-controlled clutch, kick starter, lamps, etc., perfect mechanical condition, exceedingly fast, small mileage; 100 gns.—Vivian Hardie and Lane, Ltd., 23 and 24, Woodstock St. (off Blenheim St.), New Bond St., W. 'Phone: Mayfair 6559. [1650

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge, have every Norton part in stock; complete illustrated list post free. [9400

MOTOR CYCLES FOR SALE.

N.U.T

1920 N.U.T. 3½h.p., Magdyno, equal new; £78.—Elcock, Penywern, Neath. [1255

N.U.T., 1921, lavishly equipped; £65.—Dawe, 216, Portobello Rd., North Kensington. [1576

1921 N.U.T., unregistered, unridden, Lucas Magdyno; best offer over £103.—11, Springbank Rd., Newcastle-on-Tyne. [1557

N.U.T.—Sole distributing agents for London, Surrey, Middlesex, Hertfordshire, Essex, Cornwall, Devon, Somerset, and Staffordshire; particularly attractive terms and sole districts being offered to sub-agents for 1922; immediate deliveries; cash or exchanges; deferred payments 4% extra.—Maudes', London, Exeter, and Walsall. [1779

O.K.

O.K., 1921, Villiers 2¼h.p., 2-speed, perfect; offers.—Ward, 49, Clyde Rd., Croydon. 'Phone: 971. [1578

1920 O.K.-Union, single-speed model, done 90 miles, tax paid, and complete; £35.—Cross, Agent, Rotherham. [X3374

£29/10.—O.K.-Union, 2¾h.p., 1921, hardly used, licence, perfect in every respect.—8, High St., Wandsworth. [1585

P. and M.

1918 P. and M., requires assembling, and few parts; £32.—1, Bellingham Terrace, Catford. [1401

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. P. and M. combination, late 1919, tax paid; £75. [1706

1918 P. and M., guaranteed good working order, all on; bargain, £43.—14, Devonshire Rd., Forest Hill Station. [1563

1918 P. and M., lamps, horn, tax paid; £45; buying latest model. — 37, Treadgold St., North Kensington. (P) [1374

P. and M. Combination, wind screen, lamps, horn good condition; £55.—61, Sumatra Rd., West Hampstead, N.W.6. [1558

P. and M. 1918 Combination, acc., tax; exchange old machine and cash; sell £45.—Garner, 174 Avenue Rd., Acton, W.3. [1213

3½h.p. P. and M., 2 speeds, kick start, R.A.F. model tax paid; exchange lightweight and cash, or sell £32/10.—198, King St., Hammersmith. [1571

P. and M. Combination, 1920, mechanical lubrication, Henderson spring frame sidecar, all accessories; £115.—114, Castelnau, Barnes. [1391

3¼h.p. P. and M. 1920 Solo, complete with all accessories, condition as new; £65.—Gordon Watney and Co., Ltd., 31, Brook St., London, W.1. [0748

1921 P. and M. Combination, 3½h.p., demonstration model, fully equipped, absolutely as new; £112; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1671

1918 P. and M. Combination, painted green, new wind screen, lamps, tools, new tyres, perfect, condition guaranteed; £50.—Ferguson, Church Rd. Garage, Crowborough, Sussex. (D) [1146

P. and M. Motor Cycles (ex-R.A.F.), rebuilt, fitted with new parts, including mag., B. and B. carburetter, tyres, etc., £40; combination £55; sidecar reupholstered, painted and new tyre, fully equipped, £60.—Porter, High St., Whitchurch, Salop. [8013

Spare Parts:

P. and M.—All spares in stock; stamp requirements; P. and M. spares specialist.—H. Beardwood, 147, Burlington St., Liverpool. [9986

Paragon.

1920 Paragon, 3h.p., 2-stroke, 2-speed, in splendid condition; £30; exchange higher power.—Watson, 132, High St., Aldeburgh, Suffolk. [1328

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£12/10.—2½h.p. Precision, 2 speeds, good tyres, wants mudguards and saddle.—King, Egrove Farm, Oxford. [X3356

1914 3¾h.p. Precision, running order guaranteed; £25; push-cycle part; Herefordshire; D.P.—Box 7,693, c/o *The Motor Cycle.* [1335

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PREMIER 1914 3½h.p. Combination, 3 speeds, kick starter, clutch, fully equipped; £50; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3333

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PREMIER Spares and Repairs. — We are the specialists, late with the manufacturers; stamped envelope for reply per return. We are the only firm seriously specialising in these.—Forfield Motors, Forfield Place, Leamington Spa. [X3394

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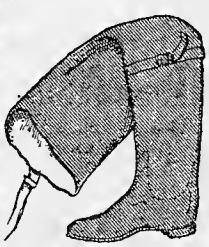

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1916 Radco, lamp, horn, new mag., recently overhauled, trial; bargain, £23.—Holland, Overton, Fradsham, Warrington. [1599

Raleigh.

PREMIER Motor Co. for Raleighs.

IMMEDIATE delivery at 1922 reduced prices.

5-6h.p., 3-speed, spring frame, detachable wheels, £130; standard sidecar, £35; De Luxe sidecar, £42; spare wheel and tyre, £6. The Raleigh is now the best value in high-grade combinations. Easy payments only 4% extra.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0626

1922 Raleigh.—All models; book now with Sam E. Clapham (Motors), Greenwich. [9247

1922 Raleigh, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1679

RALEIGH 2¾h.p. and 3h.p. Models, earliest deliveries; book your orders now; cash or deferred payments.—London Motors, 61, Holborn Viaduct, E.C.1. Tel.: City 4230. [1628

1921 5-6h.p. Raleigh Combination, used 3 months, lighting set, horn, tools, fine order; sacrifice £130, or nearest; seen Midlands.—Box 7,606, c/o *The Motor Cycle.* [1052

RALEIGH 2¾h.p. and 6h.p. models were the great attraction at the show. To secure early delivery, why not order now from the Raleigh specialists. Cash, exchange, deferred payments.—The Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1513

THE New Raleigh 2¾h.p. 4-stroke Lightweight, 2-speed, with clutch and kick starter, at £68, is the best value offered the motor cyclist for the 1922 season; orders now booking for January delivery.—Sole Birmingham Agents: The Premier Motor Co., Aston Rd., Birmingham. [0737

Reading-Standard.

1916 Reading-Standard Combination, smart, fast, powerful, taxed, insured; £105, great sacrifice.—35, Bird in Hand Lane, Bickley, Kent. [1209

Rex

£13/10.—3½h.p. Rex, m.o.v., mag., new tyre and belt, sound condition.—King, Egrove Farm, Oxford [X3357

3½h.p. Rex, m.o.i.v., Bosch, £9; Douglas, taxed, £12. — Simpson, Orchard Rd., Sunbury-on-Thames. [1583

£18.—Rex 5-6h.p. twin, low sporty appearance, Bosch, variable jet, B. and B., clutch, tax 30/- paid.—Allwood, Fern Bank, Bakewell. [1642

REX-BLACKBURNE 8h.p. 1920 Combination, splendid condition, electric, spare wheel, screen, many extras; offers.—Laurel Cottage, Stainland, Halifax. [1216

1921 8h.p. Rex-Blackburne Combination, 3-speed, K.S., handle-bar clutch control, brand new; bargain, £155.—Holroyd Motors, 6, Warwick St., Regent St., W.1. [1185

Roc.

£35 secures 4h.p. Roc-Jap coachbuilt combination, first-class running order.—24, George St., Hemel Hempsted, Herts. [1283

Rover.

1920 (Aug.) T.T. Rover, as new, Philipson pulley, all accessories; £60.—Heady, 44, Alma Rd., Carshalton. [1160

1918 Rover Combination, 6h.p. twin, 3-speed and clutch, perfect; £68.—13, Vernon Rd., East Sheen, Surrey. [1486

3½h.p. Rover C.B. Combination, 3-speed, clutch, excellent condition, reliable 'bus; £35.—Phillips, 59, Prestbury Rd., Macclesfield. [1158

ROVER, 1920, 6h.p. J.A.P., and Rover sidecar, unscratched, mileage 1,500; trial by appointment.—Gooding, Strand, Shaldon, Devon. [1214

ROVER T.T., almost new, copper exhaust, knee-grips, lamps, Cowey, mechanically perfect; £65; exchange.—47, Hamilton Rd., Reading. [1397

1920 Rover Combination, lamps, speedometer, horn, perfect condition, mileage 1,000; what offers?—Burton, 51, Clarkegrove Rd., Sheffield. [1257

1920 3½h.p. Rover Combination, 3-speed, K.S., perfect condition, 600 miles, all accessories; £95.—22, Broomfeild Av., Palmer's Green. [1199

3½h.p. Single Geared Rover, excellent condition, lamps, horn, licensed, new oversize tyres; bargain, £20.—Malvern Garage, Malvern Rd., Thornton Heath, Surrey. [1464

ROVER 1920 3½h.p. 3-speed Combination, excellent order; £87; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1524

MOTOR CYCLES FOR SALE.

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ROVER 3½h.p. 1920 Machine, condition and appearance as new, only wants seeing, 3-speed gear box and clutch, an ideal solo or sidecar machine.—Andrews, Devonshire Garage, Buxton. [X3377

ROVER.—New 1922 Rover 8h.p. can be delivered from stock, fully equipped, electric lighting, etc.; £220. — Authorised Agents: Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

ROVER 1919-20 5-6h.p. J.A.P., 1920 Henderson Elite sidecar, wind screen, electric light, aluminium discs, new tyres, Watford trip, Binks, Klaxon, perfect condition and appearance, mileage 4,000; £115.—13, Hamilton Rd., Reading. [1398

1921 Rover, T.T., 75 m.p.b. model, used only 400 miles, very fast, fitted with hand-controlled Philipson pulley and knee grips; £75.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1507

1920 5-6h.p. Twin Jap-Rover and Canoe'et sporting sidecar, dynamo (Lucas) lighting, tyres new, electric horn, outfit good condition, mechanically perfect, tax paid; bargain, £95, or nearest offer.—F. C. Swift and Co., Ledbury, Herefordshire. [1167

Royal Ruby.

NEW 3h.p. Royal Ruby, patent spring frame model; list price £95, accept £80, bargain.—Young, Mesterton, Somerset. [1234

£25.—Royal Ruby 2½h.p. 2-stroke, late model, equipped, pillion.—30, Sterndale Rd., Shepherd's Bush Rd., Hammersmith. [1412

ROYAL RUBY 2¾h.p., 3-speed; £33; any trial; tax paid; exchange considered for good 3h.p.—Harding, Newsagent, Sturminster Newton, Dorset. [128

1919 (late) 8h.p. Royal Ruby Combination, 3-speed electric lighting set, horn, speedometer, and mirror in good order; £110.—Springett, Maidstone Rd., Paddock Wood. [1314

Rudge.

1915 Rudge Multi 3½h.p., I.O.M., all on; £32.—17, Heaton Rd., Mitcham. [1614

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge Multi, I.O.M., 1920; £55. [1714

£60.—1920 Rudge Multi, 3½h.p., accessories.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [1635

RUDGE Multi, 1920, lamps, etc.; £50, or nearest.—R. Wilson, Ringers Lane, Leverington, Wisbech. [1171

RUDGE 3-speed Coachbuilt Combination; £27, bargain, no offers.—636, Harrow Rd., Paddington. [8889

1916 Rudge Multi, all lamps, new tyre, foot oiler, just overhauled; £44.—Mulberry House, New Romney, Kent. [1399

RUDGE Multi, 3½h.p., 1921, T.T., lamps, horn, Tan-Sad, insured; £72. — Simpkins, 27, Old Town, Clapham. [1363

1919½ 5-6h.p. Rudge Multi Combination, thoroughly overhauled, Easting, complete; £90.—McIntyre, Larklands, Ilkeston. [1256

RUDGE Multi, 1920, perfect condition, electric lighting, all accessories; what offers quick sale?—B., 20, Hilldrop Rd., N.7. [1369

1920 I.O.M. Rudge Multi 3½h.p., clutch, starter, original tyres, all accessories; £55.—68, High Lane, Chorlton-cum-Hardy, Manchester. [9816

WE Can Give Immediate Delivery for 1922 models Rudge; 3 speeds, all-chain, £100; Multi, £85.—Percy and Co., 314, Euston Rd., N.W.1. [1020

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RUDGE 1922 models for immediate delivery. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1519

1921 (October) 3½h.p. Rudge Multi Roadster, Lucas lamps and horn, spare belt, Tan-Sad, practically new; 80 gns.—Orlidge, Panteg Council Offices, Pontymoile, Pontypool. [1297

1920 Rudge, T.T. model, fully equipped with lamps, horn, and licence, small mileage, and in good order; £60.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1506

Spare Parts:

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SCOTT, 2-speed, kick start, all on; best offer; cheap.—24, Littlewood Rd., Lewisham. [1460

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BARGAIN.—Scott, renovated and good order, lamps and horn, new Watsonian sidecar, ride away; £50, or nearest; machine alone £35; particulars stamp.—Weatherill, Holton-le-Moor, Lincoln. [X3367

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SINGER, 1914, 3½h.p., T.T. model, racing cams, Senspray carburetter, Bosch mag., horn, lamps, etc., fast, very fine condition; £35.—4, Bockhampton Rd., Kingston, Surrey. [1437

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SUN-VILLIERS, 2¾h.p., 2-speed, 1917, Claudel-Hobson carbureter, flexible exhaust, perfect condition; £26.—17, Sussex Rd., New Malden, Surrey. [1359

SUN 2½h.p. 1921 Model, single speed, lamps, horn, mechanically sound, little used; £35.—Herbert Robinson, Ltd., Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [1343

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1920 3½h.p. 3-speed Sunbeam, well equipped, beautiful condition; £85.—17, St. Charles Sq., W.10. [9808

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Sunbeam and sidecar, 1915; £85; no extra charge for easy terms. [1707

SUNBEAM 1916 3½h.p., lamps, horn, speedometer, guaranteed sound and perfect; must sell, £59.—Reynolds, Waterbeach, Cambs. [1652

3½h.p. Sunbeam Combination, July, 1920, electric light, Easting; bargain, £110.—Coulson, Watton Abbey, Cranswick, Yorkshire. [1476

LATE 1921 3½h.p. Sunbeam Combination, genuine Sunbeam car, most lavishly equipped, cost £214; accept £125.—24, Balliol Rd., North Kensington. [1444

1921 3½h.p. Sunbeam Combination, practically new, electric lighting, insurance, registration, accessories; cost £230; nearest £140.—Carroll, Glemsford, Suffolk. [X3392

3½h.p. Sunbeam Combination, 1921, condition as new, mileage under 400, speedometer and numerous accessories; £140.—Gordon Watney and Co., Ltd., 31, Brook St., London, W.1. [0749

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SUNBEAM 1919 3½h.p. Combination, legshields, Binks carburetter, Cowey speedometer, Lucas horn, P. and H. lamps, Cameo screen, luggage grid, first-class condition; £120.—Herbert Robinson, Ltd., Green St., Cambridge. Tel.: 995. T.A.: Bicycles. [1344

SUNBEAM 1921 3½h.p., all accessories, only run about 500 miles, equal to new; accept £92 cash; exchanges entertained. Call, or 'phone if possible.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [1453

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LIVERPOOL.—Sunbeam Depot, 68, Renshaw St. Tel. No.: 729 Royal

MANCHESTER.—Sunbeam Depot, 20, Peter St. Tel. No.: 3952 Central.

LEEDS.—Sunbeam Depot, 5, Woodhouse Lane. Tel. No.: 23277.

LEICESTER.—Sunbeam Depot, 16, London Rd. Tel. No.: 3717.

BOURNEMOUTH.—Sunbeam Depot, 8, Holdenhurst Rd. Tel. No.: 95Y.

EDINBURGH.—Sunbeam Depot, 37, George St., Edinburgh [9263

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1914 Triumph, clutch, rebushed; bargain, £20.—69, St. Mary Rd., Walthamstow. [1346

3½h.p. Triumph, requires adjustment, engine A.L.; £18.—61, High St., Clapham. [1690

1918 Countershaft Triumph, perfect; £47. — 24, Balliol Rd., North Kensington. [1440

£22.—3½h.p. Triumph, sporty, smart, reliable.—Luff, Pewsey Rd., Marlborough, Wilts. [1151

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£45.—Triumph, 1917, C.S., fine running order; don't miss this.—8, High St., Wandsworth. [1597

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£55.—Triumph, late 1918, perfect mechanical and external condition, with long copper exhaust or silencer.—58, Blagdon Rd., New Malden. [1754

TRIUMPH Junior, 1920, Lucas lamps, horn; £42; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1530

TRIUMPH, 1919, No. 1 Montgomery sidecar, Easting screen, speedometer, disc wheels, lamps; £85.—Rodda, 32, Seymour House, Compton St., W.C. [1396

TRIUMPH 3½h.p., N.S.U. 2-speed, weatherproof Bosch, new Amac carburetter, tax paid, ready to ride away; £30.—Rando, 50, Brighton Rd., Surbiton. [9738

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1920 Triumph-Gloria Combination, Cameo, speedometer, lamp, just overhauled by makers, perfect condition; £95, or offer.—17, Park Rd., Bedworth, near Nuneaton. [X3369

1921 (April) Triumph with Canoelet sports sidecar, Easting wind screen, all accessories, all perfect; £110, cost £160.—R. Drury, Lawley House, Horsehay, Shropshire. [1203

TRIUMPH, 1917-18, 4h.p., 3 speeds, kick starter, clutch, fully equipped; £75; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3334

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19 21 Velocette, fully equipped and licensed, very small mileage; £45.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1509

19 21 Velocette, 2½h.p., 2-speed, mechanical lubrication, list price £65, absolutely brand new, usual makers' guarantee; £55.—The Layton Garages, 30, Holywell St., Oxford. 'Phone: 581 and 784. T.A.: Integrity, Oxford. [1508

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19 21 Verus, 4h.p. Blackburne engine, 3-speed, clutch, K.S., perfect condition throughout; £78; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington [1672

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VILLIERS 2-stroke, single gear, good tyres, appearance good; bargain, £20; approval.—Snow, Laurel St., Dalston, E.8. [1750

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19 20 Zenith Combination, fine condition; £75.—24, Balliol Rd., North Kensington. [1441

£85.—5h.p. Zenith, March, 1921, perfect condition, accessories.—24, Bellamy St., Balham, S.W.12. [1467

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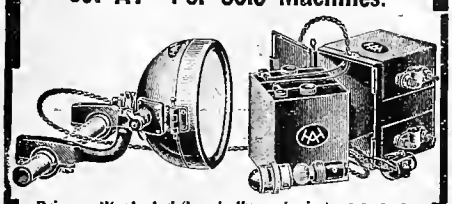

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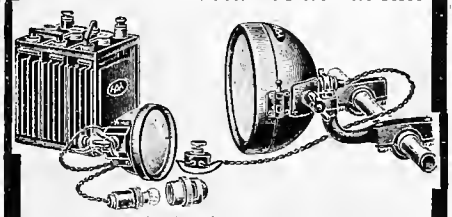
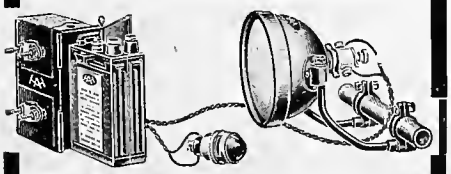


Price as illustrated (less bulbs and wire) £6 15 0

Set C1—For Medium Solo Machines.



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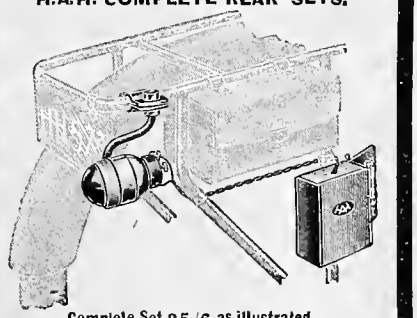
H.A.H. COMPLETE REAR SETS.



Complete Set 25/6 as illustrated.

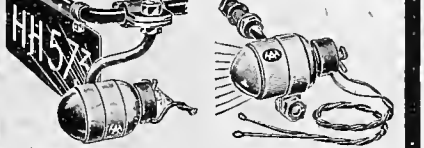


Fig. 573, Rear Lamp, 7/6 each. Fig. 560, Side Lamp, 7/6 each.

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BARGAINS.—8h.p. Premier combination, £55/10/6; 1914 P. and M., £35/10/6; late model twin N.S.U., speed gear £19/10/6.—Booths' Motories, Halifax.

BARGAINS.—1919 4h.p. Douglas combination, £89/10/6; another, electric lighting, £95/10/6.—Booths' Motories, Halifax.

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WANDSWORTH.—1919½ Rudge Multi, almost new, coachbuilt combination, 5-6h.p., lamps; 69 gns. —Below.

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HALIFAX.—1921 A.B.C., electric lighting, £87/10; Ariel 3½h.p., 1920, £79/10; 1920 Alecto 3½h.p. 2-speed combination, £79/10.—Below.

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HALIFAX.—B.S.A. 1915 4¼h.p. combination, £79/10; Chater-Lea 8h.p. combination, £85.—Below.

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HALIFAX.—2¾h.p. New Imperial, 2-speed, £35; 1916 2¼h.p. 2-speed O.K., £35; Premier 3½h.p., 2-speed, wants attention, £25.—Below.

HALIFAX.—Rex 6h.p. 2-speed combination, £49/10; Rudge 1920 7-9h.p. combination, £105.—Below.

HALIFAX.—Scott 1920 3¾h.p. combination, £105; Triumph, 1913, h.b.c. clutch, £42/10.—Below.

HALIFAX.—Triumph 3½h.p. 2-speed combination, £55; Triumph 4h.p. 3-speed combination, £69/10; Peugeot 7-9h.p., 2-speed, £37/10.

HALIFAX.—1920 3½h.p. I.O.M. Rudge, £65; 3½h.p. 2-speed Humber, £25; 1920 Kingsbury Junior, 2-speed, £45.—Below.

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LARGE Wind Screens, aluminium frame and celluloid, 10/6 each; wind screens, Avro, adjustable, polished aluminium, very smart, 7/-.—Motor Cycle Accessories Co., 868a, Old Kent Rd., London. [1764

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DYNAMOS.—The new C.A.V. for motor cycles, 6 volt 5 amp., £6/15; C.A.V. lamps for sidecars, 10/- each; all electrical equipment for motor cycles supplied.—Below.

DYNAMOS, 6 volt, 8 amp., cut-out, Lucas, third brush control; £5 each.—Jenner, 165, Church St., Mitcham. [5703

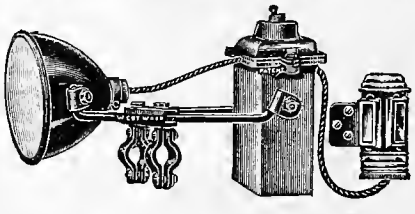
OFFERS Wanted for a Lucas E3 (new) dynamo outfit, solo or combination.—Particulars from 60, Baker St., Sparkhill, Birmingham. [9992

VOLTALITE Generator (motor cycle), without bracket, almost new, perfect condition; £3/10.—A. D. Foulkes-Roberts, Bronypare, Denbigh. [1294

MAGDYNO (Lucas), 3 Lucas lamps, accumulator, switch, and all cables, new; £24; offers considered.—60, Baker St., Sparkhill, Birmingham. [9991

SPLITDORF Magnetos, single, anti-clock, guaranteed perfect; these are the real thing, not converted starter mags.; 30/- each, a gift; reduction on quantities.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: 789 Padd. [1768

"DAYBEAM" ELECTRIC SETS.



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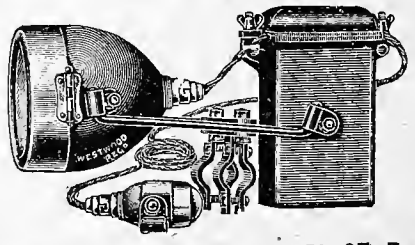
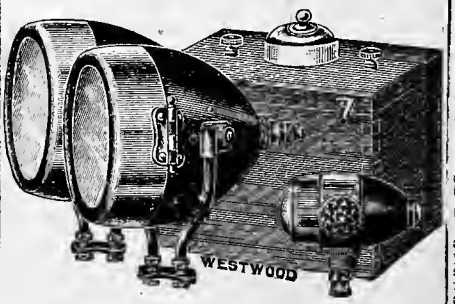


No. 30/1 complete Solo Outfit £5-5-0

No. 30/2 complete Comb. Outfit. £7 7-0



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BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; special long driving spindles for Rudge, 10/- extra; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

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COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [6406

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U.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. A1, B1, A0, KB1, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee.—Charles Parker and Co., Churchfield Rd., Acton, London. [8478

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MOTOR Cycle Tyres on Easy Terms, standard makes; list post free.—J. G. Graves, Ltd., Sheffield. [0589

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28×3 Dunlop Heavy, W.D., 35/-, Wood-Milne E.H. 30/-, Clincher plain ribbed at 45/-.—Address orders to 302, London Rd., Thornton Heath, S.E. [1624

THE Difference between a good retread and a bad one is its mileage. Try us. Watch results.—Melton Rubber Works, Melton Mowbray. [0636

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ECONOMIC.—Fully guaranteed Dunlop rubber-stud, 24×2 22/6, 24×2¼ 24/9, 26×2 24/6, 26×2¼ 25/9.

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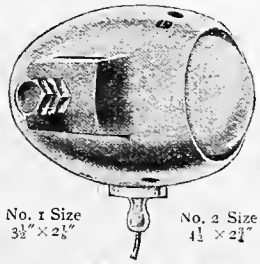

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CARBIDE, highest quality, 24/6 cwt., 9/6 28 lb., 5/- 14 lb., carriage forward, drums free.—Kemp's Garage, Importers, Louth, Lincs. [X3318

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EXPERIENCED Motor Cyclist wishes position salesman, demonstrator, competition rider, etc., with established firm with view to taking financial interest. —Box 7,711, c/o *The Motor Cycle.* [1693

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WANTED, 6h.p. A.V., late date. — Ulton Court, Bourne End, Bucks. [1725

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TANK for Enfield twin lightweight, also 2-speed parts. —Tyson, 5, Soutergate, Ulverston. [1277

WANTED, Morgan, any condition if cheap.—310, Beacon Mount, Gt. Horton, Bradford. [1205

WANTED, Norton engine, 3½h.p., in good condition.—Rodger, Burns Av., Kilmarnock. [1184

MOTOR Cycle, less engine; cheap; suit Coventry Victor.—Box 7,706, c/o *The Motor Cycle.* [1697

WANTED, 1913 3½h.p. Triumph engine or parts, new or second-hand.—Heady, 15, Brockenhurst. [1215

WANTED, Sturmey-Archer 3-speed hub, or wheel with control.—Young, 40, Huddlestone Rd., N.W.2. [1241

WANTED, Triumph clutch wheel, must be perfect.—McNeil, 117, Houldsworth St., Glasgow, W. [1183

MORGAN, G.P., wanted, condition immaterial if cheap.—Write, 143, Ravensbury Rd., Earlsfield, S.W. [1717

WANTED, second-hand Morgans, in good condition. —A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone Museum 6436. [1008

WANTED, 1919-1921 countershaft Triumph, complete, except engine, for cash.—G.S., 102, Nithdale Rd., Plumstead, S.E.18. [1291

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WANTED, W.C. and A.C. singles and twins, also gears of all kinds, either motor cycle or cycle car.—17, Wilcox Rd., South Lambeth, London, S.W. [1433

WANTED, Triumph countershaft crank cases, flywheels, S.A. gear boxes, parts, or empty cases; any quantity purchased.—Hole, 129, Park Lane, Carshalton. [9767

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THE variety of machines—lightweight, medium-weight, heavyweight, solo, or sidecar—is now so extensive as to be almost bewildering; and if you haven't a great deal of experience with motor cycles, it is difficult to make up your mind as to the mount you **ought** to buy.

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WANTED to Purchase Outright for cash, bankrupt stocks. W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

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PIANO-PLAYER, 65 note rolls, for 4-cyl. F.N.—7, Linda St., Battersea. [1419

SIDECAR, touring, nearly new, for Canoelet sporting. —F., 25, Kildare Terrace, Bayswater. [1744

2-SEATER Twin Darracq for combination or £90.—John Whiteside, Eglinton, Londonderry. [1551

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5-SEATER Car, genuine, for motor cycle and a little cash.—9, Jubilee Terrace, Broomfield Rd., Chelmsford. [1211

SMART 4-cyl. 10h.p. 2-seater, dickey, accessories, tax; 65 gns.; exchange solo.—19, Streatley Rd., Kilburn. [1392

EXCHANGE Douglas (pre-war), rebuilt, new tank, etc., for heavier machine.—105, Moore Park Rd., Fulham. [1427

BEARDMORE, 1920, 1921 engine, for C.S. Triumph, etc., condition immaterial.—510, Beardwood Rd., Smethwick. [X3344

HARLEY Combination, fully equipped, exchange for good solo and cash.—Snow, Laurel St., Dalston, E.8. [1748

GRAMOPHONE, cabinet grand, mahogany, beautiful tone, cost 40 gns., for motor cycle.—32, Woodside Rd., Kingston. [1403

EXCHANGE 4-cyl. magneto and Zenith carburetter, as new, for gent's 3-speed cycle.—Box 215, c/o *The Motor Cycle.* [X3350

1915 Studebaker, 5-seater, dynamo lighting, 5 wheels, for combination or 2-seater.—Derrington, Grafton Rd., New Malden. [1756

SABELLA Tandem Cycle Car, 8h.p. J.A.P., too long for garage; £50; or motor bicycle.—Peirce, 55, College St., Islington. [1430

1912 Quadrant 4¼h.p., exchange baby's pram, small organ, or anything useful; sell £20; offers.—130, Northfield Av., Ealing. [1483

EXCHANGE Brand New Skootamota, costing £55, for reliable motor cycle, or sell cheap.—F. Godfrey, 63, Brighton Rd., Surbiton [1351

RUDGE Multi, 1920, Watford, Klaxon, tax 30/-, unpunctured, for A.B.C. or Scott.—A., 6, Essex Grove, Walthamstow, E.17. [1273

3½h.p. Rudge, I.O.M., for small stationary engine and cash, or derelict machine and cash; sell £45.—Mulley, Builder, Welling. [1469

1920 Rover Combination, sporting, for Lagonda coupe or similar, cash adjustment; sell £100.—Young, Public Baths, Tooting. [1449

BAT-J.A.P. 6h.p., fitted with 1920 3-speed countershaft, excellent condition; exchange lightweight. —61, London Rd., St. Albans. [1366

ENFIELD Combination, 8h.p., perfect condition, for W.C. Morgan; cash adjustment.—Lonsdale, 28, Salisbury Rd., Bexley, Kent. [1612

ANGELUS Piano Player, perfect order, 14 rolls, Walnut case; exchange motor cycle; cash either way.—8, High St., Wandsworth. [1589

MORGAN, 1916, a.c., fully equipped, smart, perfect, for solo or combination, cash adjustment.—143, Ravensbury Rd., Earlsfield, S.W. [1716

EXCHANGE, gramophone, with records, cost 12 gns., for coachbuilt sidecar or 3-speed gear box; after 6.—Kemp, 3, Crewdson Rd., Brixton Rd. [1297

HARLEY Combination, 1921, luxurious sidecar, discs, unscratched, for runabout, or lower power combination.—147a, Church St., Paddington. [1411

EXCHANGE Darracq 10-12h.p. 2-seater, excellent condition, for good combination, B.S.A. preferred.—Walby, 21, Cantwell Rd., Plumstead. [1175

PLOTS Land, London 'bus route, bracing country. Opportunity. Exchange late medium M.C.—Thomas, 1a, Bevan Terrace, Stockton-on-Tees. [X3375

EXCHANGE 3½h.p. clutch Rudge, pedal start, in perfect order, for lightweight and cash, or sell £40.—Currer, 26, Trimdon St., Sunderland, Durham. [1554

1920 I.O.M. Rudge Multi 3½h.p., mileage about 2,500; exchange Zenith, Triumph, or similar.—68, High Lane, Chorlton-cum-Hardy, Manchester. [9817

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ANTOINE Combination, 4h.p., multi gear, lamps, Klaxon; also quarter-size billiard table, trial, for solo or offers; or sell £45.—20, Horsell Rd., Highbury. [1376

1921 A.V. Monocar, demonstration model, perfect, accessories, 8h.p., for sporting solo and cash; sell £90.—Service Motors, St. Chad's Rd., Headingley, Leeds. [1640

COVENTRY PREMIER 1922 Models in stock; exchange or deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1534

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1325

5-SEATER Calthorpe, new gears, tyres, pistons, etc., perfect condition; trial; exchange for good combination and cash, sell £120.—8, Church St., Warrington. [X3311

EXCHANGE brand new unusel 8h.p. Enfield combination or ditto 4½h.p. B.S.A. combination, for solo and cash.—Heath, 168, Wellington Rd. South, Hounslow. [1202

EXCHANGE 1919 7-9h.p. Harley Combination, splendid order, for cheaper machine and cash, or sell £110.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [1496

THOR, 12h.p., dynamo, electric horn, speedometer, Harley catcher, Indian passer; exchange anything on two or three wheels lower power.—8, High St., Wandsworth. [1588

ROVER 8h.p. 1922 Model in stock; will exchange combination or light car and cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [1532

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EXCHANGE Beautiful Overland Coupe, Model 83, starter and lighting, detachable rims, perfect condition, for smaller car or combination and cash.—24, Geraldine Rd., Chiswick. [1680

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7-9h.p. Yale Combination, semi-T.T., 3-speed, K.S., clutch, overhauled, exceedingly sporty and speedy, for Morgan or lighter combination; sell £90.—Beadle, Branch St., South Bank. [1548

EXCHANGE 7-9h.p. Harley-Davidson, dynamo lighting and horn, late model, in exceptional condition, for sports Zenith, Norton, N.U.T., Sunbeam; sell £70.—49, Well St., Hackney, London, E.9. [1347

TRIUMPH Combination, P. and M. gear, new Binks, underslung, also Douglas 2-speed, K.S., both mechanically perfect; exchange light car, or sell.—Hardy, Lowfold, Scholes, Cleckheaton. [1309

EXCHANGE 1918 P. and M. and sidecar, wind screen, lamps, etc., smart turnout and reliable, spare chains, valves, etc., for higher power, or sell £65.—F. Barker, Jun., Ironmonger, Potters Bar. [1766

2¾h.p. 2-speed Douglas, clutch model, climb anything; also 3¾h.p. Scott, 2-speed, good running order; for higher powered combination, Douglas preferred.—Cottam, 28, High St., Low Moor, Clitheroe. [X3317

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1921 Brand New Lightweight, complete, less engine, Brampton Biflex, Beldam heavy tyres, drip feed, semi-T.T. bars; £16/10; exchange small stationary engine and cash.—Platt, Duxbury, Chorley, Lancs. [1552

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2-SEATER De Dion, 12h.p., 4-cyl., gate change, smart, reliable, cheap to run, thoroughly overhauled, taxed, insured £200; sell £120; exchange motor cycle or combination.—5, Addison Av., Holland Park, W.11. Park 2071. [1663

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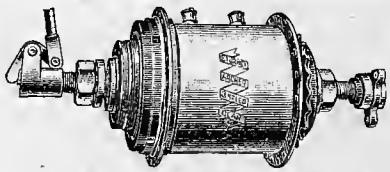

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GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 14, Miller St., Camden Town, N.W. 'Phone: Museum 2434), which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [0639

ACETYLENE and Electric Welding.—Broken flanges cracked water jackets, scored bores, worn bearing built up; aluminium gear boxes, crank cases, any broken motor part welded and machined up and returned in 7 days; 14 years' experience.—Lincoln Jeffries, Jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. 'Phone: Central 729 [2818

CYLINDERS. — Humbers, Triumphs, Premiers, Singers, Rex, genuine, not imitation; all pistons in stock, also valves; cylinders reground on new Heald grinder, send on old cylinders, made new, no junk or gadgets; all standard cylinders, ready for fitting and tested: James, perfect, £3/17/6; James 2½h.p., 57/6, perfect; 2¾h.p. Precision, £4/10.—Crown Engineering Works, Vecqueray St., Coventry. [X3405

WHITE and Watson, Motor Cycle Repair Specialists.—Douglas riders now is your opportunity 2¾ and 4h.p. Douglas cylinders reground and fitted with two new pistons complete, and valves refaced for £2 and £3 per pair; other cylinders at the following rates: Up to 65 mm. 25/6, 70 mm. 29/-, 80 mm. 34/-, 85 mm. 37/-, and over 39/6; 2-strokes extra; aluminium pistons; engines rebushed, rebalanced, and overhauled; gear boxes overhauled and replacements machined.—White and Watson, 60, Belvedere Rd., S.E.1. [1364

IF only the best will satisfy you, then the Tennant Engineering Co., 238, Bristol St., Birmingham, alone can please you. Super-critical you may be, but their work will pass your inspection down to the last detail. No firm has more experience, no firm has keener workmen, no firm has greater or better facilities for turning out perfect work, and no firm will strive more to give you satisfaction. Cylinders rebored and fitted new pistons. Rebushing of every description. Engines completely overhauled and returned full of vigour and vim. Frames altered and repaired. Everything fully guaranteed and at competitive prices. Official repairers to A.C.U. and R.A.C.—'Phone: Mid. 1928. [0047

CLUB ANNOUNCEMENTS.

Space can always be obtained under this heading to announcements required by Clubs Rate. 3d word minimum 3/-

N.W. LONDON M.C.—London-Gloucester Open 12 Hour Trial, 8 a.m. Saturday, December 31st. Standard awards, silver cups, silver spoons, special awards silver cups to best expert, general, lady, novice, and early date machine. Entrance 30/-.—Particulars, 23, Clifton Av., Finchley, N.3. [1128

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

COUNTY of London Engineering Works, Ltd.

AUSTER Wind Screens, Triplex glass, adjustable aluminium fittings, 13×6½in., 10/-, post free.

ELECTRIC Inspection Lamps, to fit over speedometer, complete with bulb and cable, 2/6 each.

EXHAUST Boxes, Douglas 2¾h.p., 15/-; Douglas 4h.p. clutch races, 2/6; screwdrivers, 6in., 8in., 10in., 10d., 1/-, and 1/2 each.

HIGH-TENSION Wire, 9 mm. 5d. per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm. 2d. per yard, 25 yard coil 2/-; postage on coils, 5 mm. and upwards 1/-, 3 mm. 9d.

ALL Goods on approval per return post on receipt of cash, money refunded if not satisfied.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2898. T.A.: Ignitionac, Brixstret, London. [6407

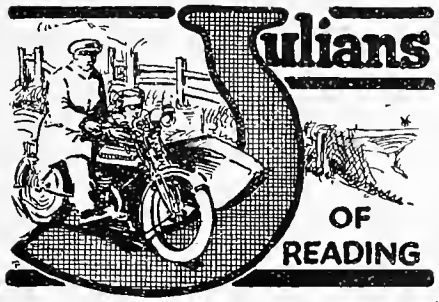
INDIAN Front Forks, gear boxes, and engines, and all parts for same.—Below.

INDIAN Intake Domes, carburetters, magnetos, clutches, kick starters.—Below.

INDIAN Carriers, chains, and guards, springs, sprockets; in fact, everything for 7-9h.p.; all parts absolutely new.—Dennis Accessories Stores, 89, Brixton Rd., London. Specialists in Indian Repairs 'Phone: Brixton 3129. [1195

3-SPEED Wheel for sale; £10.—Sinclair, 32, Charing Cross, S.W.1. [8014

PHILIPSON Pulley, off 3½h.p. Norton, perfect; 70/-.—Hargrave, Wath, Ripon. [1406



SPECIAL OFFER
DURING DECEMBER
of shop-soiled and second-hand machines, at absurdly low prices.

1921 MATCHLESS Combination, spare wheel, windscreen, leg shields, absolutely new, but slightly shop-soiled. List price £185. Our price .. .. **140 gns.**

Also with double seater sidecar, List price £191 10 0. Our price .. .. **145 gns.**

1921 LEVIS, Popular Model, new, but very slightly shop-soiled. List price £60. Only one left .. .. **40 gns.**

1921 LEVIS, T.T. 247 c.c. Model, guaranteed 50 m.p.h., shop-soiled only. List price £65. Our price .. .. **50 gns.**

1921 ENFIELD, 2¼ h.p., 2-stroke, kick-start, 2-speed, footboards, new, but slightly shop-soiled. List price £70. Our price **57 gns.**

1921 NORTON, 3½ h.p., Model 16H, specially tuned by Norton Company for competitions, close ratio gear box, only run 500 miles, much better than new, **95 gns,** or with sporting sidecar to match **115 gns.**

1919 A.J.S. Combination, complete with lamps, horn, etc., in beautiful condition, one of the greatest bargains we've ever offered, Complete only .. .. .. **110 gns.**

1920 DOUGLAS Combination, 4 h.p., lamps, Easting, in magnificent condition, two new tyres, thoroughly overhauled, etc., worth £180. Our price .. .. **80 gns.**

1920 A.J.S. Combination, electric lighting, speedometer, etc., only run 1,800 miles **£140**

1915 ENFIELD Combination, 6 h.p., Easting, lamps, horn, excellent condition, only .. .. **90 gns.**

1921 NEW IMPERIAL, 2¼ h.p., Special Sports 250 c.c., run about 100 miles, Cost when new £90, great bargain .. **70 gns.**

The above machines are offered subject to being unsold on receipt of cash.

JULIAN
84, Broad Street,
READING.

'Phone: 1024.

PARTS AND ACCESSORIES.

CLYNO.

CLYNO 5-6h.p. Spares, enormous stock; all genuine spares.

MARBLE Arch Motor Exchange.—No ridiculous prices. Trade supplied. Liberal discount on quantities. A stamped envelope will bring you our lists.

CLYNO 6h.p. Gear Boxes, complete, second-hand, new parts fitted, £10; new, £14.

CLYNO 8h.p. Frame, complete, fitted with spring seat-pillar, Brampton biflex forks, tank complete with all fittings, including Best and Lloyd lubricator, 2 interchangeable wheels, back driving sprocket fitted with internal expanding brake, 3-speed gear box, hand control clutch, handle-bars, front and rear stands, front and rear mudguards; £25.

REMEMBER, the above are all brand new and perfect Clyno parts, and would be ideal for the fitting of 8h.p. J.A.P. or similar engines.

CLYNO 8h.p. Gear Boxes, 3-speed, hand-controlled clutch, brand new; £12 each.

J.A.P. 8h.p. Cylinders, brand new, 35/- each; new crank cases, 35/- pair; double cam gear wheels, 7/6; crank pins, driving side shafts, timing side shafts, 3/- each; mainshaft timing wheels, 2/-; piston rings, 10d. each; valves, 3/6; gudgeon pin bushes, 1/6.

P. and M. Brand New Cylinders, 1909-1913, 45/- each; pistons, 12/-; new Renolds gear chains, 10/- each.

COVENTRY Chain, ⅝×¼, 5ft. 2in. lengths, brand new, limited number; 17/6, a gift.

BOXES of 50 Prepared Patches; 3/- each to clear.

LEATHER Helmets, lined chamois, soft tan leather, brand new; 5/6 each to clear, a real bargain.

BELT Rims, brand new, 19in. outside diameter, 2¼in. wide, for ¾ or ⅞ belt; the above are 2¾h.p. Douglas size. Various other sizes, new and second-hand.

TRIUMPH Toolbags.—Leatheries Empire de Luxe, fitted N.P. lock and key; 6/6.

LUCAS Girder Wrenches, genuine; 7½in.; listed 13/-, our price 7/-; brand new.

DOUGLAS 2¾h.p. Brand New Cylinders; 22/6, each, our price.

MAGNETOS.—Splitdorf single anti-clock, perfect, guaranteed; 30/-. Please note, these are not converted starter mags.

CONVERT that old 'bus into the real thing. We can supply a complete rear portion as follows: 3-speed hand-controlled clutch gear box, top back stays, chain stays, rear wheel (detachable), sprocket with internal expanding brake, stand, carrier, mudguard, etc., the finest motor cycle parts made, namely, Clyno, for £18, worth treble.

LARGE stocks of other interesting parts. Trade supplied. Discounts on quantities only. P.O.'s and cheques should be made payable to Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd 789. T.A.: Archmotex, Edge, London. [1767

BANISTER and Botten.

4h.p. Douglas Spares, new.—Induction pipes, 12/6; valves, 2/6; caps, 2/-; springs, 6d.; tappets, 3/6; bushes, big end 2/-, small 1/6; rear gear box bolt 6/6, front 2/-; mainshafts, 9/-; secondary shafts, 5/-; screwed sleeve pinion, 5/-; camshafts, 15/-; 19T and 23T gear wheels, 5/-; clutch release arm, 3/6; release key, 1/-; kick start ratchet pinion, 2/6; nut, 1/6; piston rings, 1/9; dog clutch, 3/6.—Below.

4h.p. Douglas Frame, second-hand, £6/10; centre, £5; fork girders, late, £1 each; steering columns, 6/-; fork springs, early 2/-, late 1/6; ball races for frame and forks, 9d.; pulleys, adjustable, 15/-; handle-bars, 12/6; oil pumps, 9/-; spokes, 7/- gross; belt guards, 3/6; Thomson-Bennett magnetos, £2.—Below.

2¾h.p. Douglas Spares, new.—Exhaust lifters, 10/-; pulleys, 5/-; front stands, 2/6; handle-bars, 12/6; tappets, 2/-; guides, 1/3; valves, 2/-; springs, 6d.; bushes, big and small end, 2/-; piston rings, 9d.; brake shoes, 4/-; flywheels, second-hand, 15/-; carriers, 10/-; Thomson-Bennett magnetos, £2.—Below.

RUDGE Multi New Spares.—Gears, complete, £5; pulleys, £1; cam wheels, 10/-; chain rings for starting clutch, 10/-; frame rear portion, with carrier, £2/10; intermediate gear wheel, 10/-; intermediate wheel, 4/-; exhaust rockers, 2/-; fork springs in sheath, 8/-; complete brakes, 17/6; operating sleeve, 15/-; flange sleeve, 10/-; starting clutch bearing, 5/-; carriers, 10/-; exhaust valves, 5/-; piston rings, 2/-; head lug, £1; right-hand crank and chain wheel, 5/-.—Below.

CARRIERS.—Triumph, 12/6; B.S.A., 10/-; Rudge, 10/-; 2¾h.p. Douglas, 10/-.—Below.

FRAMES.—Clyno £4/10, centres only £3; Douglas 4h.p. £5, centres only £3.—Below.

LIST of Rudge and Douglas Spares sent on receipt of stamp. Carriage on goods extra.—Banister and Botten, 341, Upper St., Islington, London, N.1. 'Phone: 2480 North. [1468

PARTS AND ACCESSORIES.

CENTRAL Garage, 302, London Rd., Thornton Heath, S.E.

WE have a splendid range of new and second-hand Douglas spares.

4 h.p.—Frames, stove enamelled £6/10, unenamelled £5/5; and all other parts at cheap prices.

2¾ h.p.—Frames with back stays, stove enamelled 90/-, unenamelled 69/-; front forks, enamelled 19/6, unenamelled, 17/-; connecting rods, 18/-; new pistons, 10/6; S.H. pistons, 7/-; piston rings, 1/3; cylinders, 20/-; valves, 2/6; complete crankshafts, 30/-; head clips, 6/6; mudguards, 12/- pair complete; silencers, 12/6; tappet guides, 1/9; head stems, 9/6; tanks, as new 52/6, unrenovated 32/6.

ALL Other Parts in stock at cheap prices.

NEW Back Axle. 2 wheels 26×2¼, with belt rims, for cycle cars, 2 mudguards, 7in. foot brake complete; £5 the lot.

STEWART Plated Speedometer, suit any motor cycle. 55/-.

CLYNO Cylinder, 1914, 5-6h.p., as new, 35/-; Triumph bottom back stays, late type, 55/-.

ANY Goods sent on approval against cash. All cheques and P.O.'s to be made payable to Central Garage, 302, London Rd., Thornton Heath, S.E., and must include sufficient for carriage. [1627

GRADO Kick Start Model, fit any engine; offers.—99, Sirdar Rd., Wood Green, N.22. [1196

19 11 Douglas, 1910 replacements. Call or write.—55, Clifford St., Manchester, S.E. [1581

P. and M. Silencers, with extension pipe at rear, 15/-; pipes, clips etc.—Below.

P. and M. Drip Feeds, 17/-; B. and B. carburetters, 35/-; tank caps, 3/6 pair.—Below.

P. and M. Chains, operation, 7/-; kick start, 3/-; magneto, 3/-; all new.—Below.

P. and M. Chain Cases, 21/- complete set; 3/- piece chain, 22/- set.—Below.

P. and M. Rear Wheels, 38/-; complete hubs, 10/-; spindles, 6/-; nuts, etc.—Below.

P. and M. Gear Hollow Spindles, 5/-; wedge bars, 6/-; bronzes, 5/- set.—Below.

P. and M. New Sprockets, engine 4/-, main driving gear 4/-, magneto 3/-.—Below.

P. and M. Frames, forks, tanks, and everything P. and M.—Long, 20, Sydney Mews, Chelsea. [1757

P. and M. Spare Parts, P. and M. spares; largest dealers and cheapest.—Below.

R.A.F. P. and M. Machines, incomplete, £18; ditto, complete except front brake, rear stand, petrol and oil pipes, and carburetter controls, £25.—Below.

P. and M. Chains, set of 3, £1/5; gear chains, 6/6 complete; K.S. chain, 3/-.—Below.

R.A.F. P. and M. Drip Feeds, 17/-; footrest rubbers, 2/3 pair; tank needles, 1/9 each; tank caps, 2/-.—Below.

P. and M. Gears, complete, £2/15; frames, £1/5; tanks, 17/-.—Below.

R.A.F. P. and M. Magneto Control Levers, 4/-; carburetter levers, 5/6; handle-bar ditto, 6/6.—Below.

P. and M. Engines and every part for same, piston rings, 1/9, new.—Below.

R.A.F. P. and M. Saddles, 15/6; silencers with rear pipe, 17/-; toolbags, 5/6.

P. and M. Riders.—Try our new foot-operated gear control. It allows you to get away easily and quickly, with both hands on bars, fitted in 2 minutes, no alterations, 12/6.—Below.

R.A.F.—Increase your speed by fitting a 43-tooth sprocket on rear wheel; price 12/6.—Below.

P. and M. Sidecar Chassis, complete with tyre and fittings; £4/10.—Below.

MAGNETOS, complete with sprocket and chain; £2/5, guaranteed.—Below.

SADDLES, good condition, 15/6; tyres, 26×2¼×2¾, 12/-.—Below.

WIND Screens, Avro, adjustable, polished aluminum frame, very smart; 7/-.—Below.

WIND Screens, larger size, with storm apron; £1/2.—Below.

ACCUMULATORS, 4-volt, 20-amp., new in case, 14/-; 6-volt, £1.—Below.

LIGHTING Sets, electric, comprising 4-volt accumulator, 4-volt head lamp, tail lamp, switch, and wire, all new; £1/17.—Below.

MOTOR Cycle Accessories Co., Station Buildings, 868a, Old Kent Rd., S.E. [1765

TOOL Rolls, strong leather, with strap and pockets, 7×18in., 3/-; other sizes made.—Below.

LEATHER Knee Grips with oval pads, 5/6 pair, carriage paid; cash refunded not approved.—Below.

LEATHER Leggings to measure; illustrated list and instructions free from makers.—County Legging Co., Franchise St., Perry Barr, Birmingham. [9040

"An all-round Man, *but*——"

"You're right, old man, but I happen to know that, in spite of it, he's out of a billet. He's a fair salesman, has a smattering of languages, knows a bit about clerical work, and one or two other things, but doesn't really 'shine' at any *one* thing.

Qualifications like that aren't good enough to-day. The man who wishes to get on *must* specialise. Take Jack Smith, for instance. Went back to his old job as a clerk after the war—now he's getting £600 a year as Accountant to an Engineering firm.

How did he do it? In the same way as I did—took a course of Postal Tuition under Wolsey Hall, He went in for Accountancy while I chose Secretarial work. We sat for our Final Exams. the same week.

Why don't you take up something like that this winter? It not only 'bucks you up' all round, but it's the quickest way to promotion. Try it!"

Write for FREE GUIDE and Specimen Lesson to the Director of Commerce, Dept. AL9

Wolsey Hall, Oxford

Any well-known

LIGHTWEIGHT

for

£15

or

COMBINATION

for

£30

Deposit, and 11 payments.

Most first-class makes IN STOCK.

LAMB'S

50, High Rd., Wood Green, London, N.
Phone: Hornsey 1956.

387, Euston Rd., London, N.W.
Phone: Museum 4978.

151, High St. Walthamstow, London, N.E.
Phone: Walthamstow 169 (2 lines).

PARTS AND ACCESSORIES.

EFFRA.—95 Government motor cycles, discarded by the Food Ministry, just arrived.

50 2¾h.p. Douglases; £25 each; running order.

35 4h.p. Douglas Combinations; £35 each.

10 TRIUMPHS; £20 each; a few cheaper; also a quantity of miscellaneous parts suitable to all W.D. machines.

ONE-FIFTH Deposit, payments spread over 1[illegible] months; accessories included if required.

189/- Deposit and 63/- monthly secures one of our rebuilt 2¾h.p. Douglases.

75% of New Parts on each machine, and every one finished as new.

£47/10; all on, 2¾h.p. Douglases, built from ex-W.D. new spares. 300 of these machines have already been supplied to readers of "The Motor Cycle." Trade supplied. Write for full specification; on approval against cash.—Below.

EFFRA.—Make sure you are buying new spares; our prices are right; all the little gadgets for your Douglas.—Below.

300 PAIRS of Brand New 2¾h.p. Douglas Forks 16/6, carriage 1/6.

50 PAIRS 2¾ and 4h.p. Douglas pattern foot boards, 10/- pair, including fittings, carriage 1/-.

EFFRA.—2¾h.p. Douglas brand new spares: Cylinders, front and rear, 35/-; pistons, 7/6; big end bushes, 2/-; timing side race, 7/6; cam wheel studs 2/6; intermediate wheel, 4/-; flywheel sprockets, 3/6; frames, 90/-, stoved; rear stands, 10/-.

50 2¾h.p. Douglas Silencers, brand new, complete with unions, 10/-, carriage 1/-.

1,000 Tappets, complete, 2/3; tappet guides, 1/9 for 2¾h.p. Douglas.

EFFRA.—4h.p. Douglas, all new frames at £1 stoved, makers' transfers; carriers, 20/-; crank shafts, 60/-; silencers, 10/-, etc.; in fact, everything and cheap.

4/9.—No more acetylene lamp trouble; since advertising these condensers we have sold over 200 in the last 14 days. Prevents the necessarily big pressure of gas from bubbling back through the water, and ensures equal distribution of gas to all burners. Your lights will flicker no longer—a steady bright light is guaranteed. Lucas manufacture; listed at 15/9; new ex-W.D. stock.

CHEQUES and Postal Orders should be made payable to the Effra Motor Works, 59, 61, and 63, High St., Clapham, S.W.4. 'Phone: Brixton 111[illegible]. 'Grams: Efframota, Clapcom. [168[illegible]

OVERCOATS, double-breasted, 3 pockets, belt, heavy collar; exceptional offer, 21/- each.

GLOVES, all leather, gauntlet type, 5/6.

GOGGLES, R.A.F. Aero mask, Triplex glass, highly recommended, 12/6; rubber type, 1/3.

PLUGS.—Brand new Apollo, 1/6.

LAMPS.—Special line of shop-soiled P. and H. lamp sets, No. 120, 25/-; electric solo set, 92/6; P. and H. No. 128, 55/-; 127, 67/6; 131, 8/6; Lucas pattern electric rear or wing lamp, 11/6; F.R.S. streamline No. 105, 42/6; large generators, 8/6; Miller and Lucas sets stocked.

PILLION Seats.—Tan-Sad, 38/6; back rest, 9/-; side footrest, 6/-; stride footrests, 5/- extra.

SPEEDOMETERS.—Cowey trip, £6/10; non trip, £5/15/6; Watford trip, £6/5; non trip, £5/15/6.

GEARS.—All Sturmey-Archer 3-speed countershaft gear parts stocked; N.S.U. speed gear, £1[illegible]; Philipson pulley, 7 gns.

HORNS.—Mechanical, 10/6 and 15/-; car type, 17/[illegible]; Clayrite, 22/6; French type, 22/6.

TOOLS.—Oilcans, ¼ pint, 1/6; 6in. screwdrivers, 1/[illegible]; petrol squirts, 1/9.

BRAKES.—Douglas 4h.p. front stirrup, complete with shoes, 2/6 each; also front rim brakes, brand new and complete, suit 2¾h.p. Douglas.

CHAINS.—Large stock all sizes Hans Renold and Coventry chains at reduced current prices. Special line of ⅝×⅜ Coventry chain, 4/6 per foot.

VALVES.—Douglas pattern, 4/-; Matchless-M.A.[illegible] pattern, 5/-; Horley-Davidson pattern, 5/-; Triumph pattern, 4/6.

DISCS.—Ace discs, 32/6 per wheel. Models to suit most machines in stock.

MAUDES' Motor Mart, 100, Gt. Portland St., London, W.1 (Museum 581); 100, Paris St., Exeter (Tel. 833); and Walsall Garage, Walsall (Tel. 444). [17[illegible]

BONNIKSEN Trip Speedometer, all black model 60/-.—T. Lamb, 37, Arden St., Edinburgh. [114[illegible]

COPPER Exhaust Pipe, 2/- per foot; cheapest on the market.—D.R., Globe Garage, Plymouth. [114[illegible]

PARTS AND ACCESSORIES.

BINKS Carburetters.—Large stock ready for immediate delivery.—Booths Motories, Halifax.

BINKS Carburetters.—We specialise in these; all models supplied.—Booths Motories, Halifax.

BINKS Carburetters.—We take your old carburetter in exchange.—Booths Motories, Halifax.

BINKS Carburetters for Douglas, Scott, Indians, Harley-Davidsons, Triumphs.—Booths Motories, Halifax.

BINKS Carburetters enable your engine to tick over; try one.—Booths Motories, Halifax.

BINKS Carburetters save petrol and give more power.—Booths Motories, Halifax.

BINKS Carburetters.—Let us take your old carburetter in exchange.—Booths Motories, Halifax.

NEW Sidecar Wheels 19/9, hubs 10/6, rims 5/9, sidecar blades with valance 8/9, with stays and lug 19/9, springs 12/6, 2¼ or 2½ tyres 17/6.—Booths Motories, Halifax.

MAGNETOS, Bosch and C.A.V., weatherproof, cheap; gas engines, 3⅞ bore £11/10/6, 6in. bore £15/10/6. —Booths Motories, Halifax.

150 CARBURETTERS.—Nearly new 1920 carburetters; B.S.A., 38/6; Brown and Barlow pilot jet, 45/-; double lever Amac, 45/-; automatic Amac, 32/6; Capac for Douglas, 32/6; 1921 models Capac, 38/6; Flexi and S.U. for Douglases, 30/-; good Brown and Barlows and Amacs, 22/6; 1920 Binks, 50/-; carriage 1/3 extra.—Booths Motories, Portland Place, Halifax. [8197

STURMEY-ARCHER Gear Boxes, brand new; in stock.—County Engineering Co., Hounslow. [0518

SADDLES, Brooks B170, as new; 22/-, post free.—Gosford Engineering, Ltd., Coventry. [X3403

CHAINS, Renolds ⅝×⅜in., 96 links 19/-, 56 links 11/-.—Lancaster, Heeley Rd., Birmingham. [X3314

SOUND 3-speed Armstrong Wheel, complete; £7, or offer.—Blackburn, High St., Coatham, Redcar. [1349

DISSOLVED Acetylene Cylinder, 6ft.; £1/10, cost £3/10.—West Cottage, Emmer Green, Reading. [1383

P. and M. Engines, frames, and practically any part at low prices.—1, Bellingham Terrace, Catford. [1400

MOTOR Cycle, complete less power unit; bargain, £8/10.—A. Fogden, Hunston Dairy, Chichester. [1479

P. and M. Cylinder, perfect, 30/-; lightweight Amac carburetter, as new, 20/-.—170, Red Lane, Coventry. [X3349

ARMSTRONG 3-speed Clutch Wheel, all controls, guaranteed good order; £9.—18, Key Hill, Birmingham. [X3346

BOWDEN Gear, 2-speed, kick start, splendid condition; nearest £10.—Brickell, St. Martin's, Portland. [1602

STURMEY-ARCHER 3-speed Clutch K.S. Gear Box, practically new; £11.—42, Beechhill Rd., Eltham, S.E.9. [1361

P. and M.—Incomplete machines, £17/10; 1918 machines, renovated as new, £50, guaranteed.—Below.

P. and M.—Engines, £8/10; gears, £5; forks, £3/10; tanks, 15/-; wheels, 35/- pair; handle-bars, 15/-. —Below.

P. and M.—New goods: Magnetos, 50/-; magneto chain case, 5/6; chain cases, 32/6; saddles, 25/-; valves, 5/-; piston rings, 1/-; bushes, 1/-; drip feeds, 19/6; frames, 25/-; footrest rubbers, 2/- pair.—Below.

P. and M.—New tyres, 17/6. All parts stocked; prompt delivery. Enquiries, stamp please.—Below.

P. and M.—The specialist and agent: Lewis M. Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [1248

HEDSTROM Carburetter, off 7-9h.p. Indian, perfect order; 14/6, quick sale.—Box 7,688, c/o *The Motor Cycle*. (D) [1265

GEAR Box, 3-speed and clutch, latest type, practically new; price £12/10.—Sinclair, 32, Charing Cross, S.W. [9009

SEND for our Helmet and Tyre Price List.—Emanuel and Co., Tyre Factors, 37a, Balls Pond Rd., Dalston, N.1. [0738

CARBURETTER, Amac, 1920, ⅞in. induction, 35/-; control wires, 3/6 set.—Lancaster, Heeley Rd., Birmingham. [X3316

BOWDEN Inner Wires, 1-16in., ½d. foot; outer 3d.; postage extra.—Llanage, 79, Waverley Rd., Redlands, Bristol. [1776

CLYNO Spares.—Everything to be cleared at cost. Write Ex-soldier Llanage, 79, Waverley Rd., Redlands, Bristol. [1777

STURMEY-ARCHER Gear Box, brand new, makers' case; £16, bargain; approval, cash.—Sanguinetti, Egerton, Kent. [1150

NUTS.—Bags 8 gross, assorted, 10/- per bag. Tools, large quantities, cheap.—Crown Garage, Thames St., Weybridge. [1452

JARDINE Gear Box and Back Stays, complete; 49/6; owner fitted Sturmey.—Lockhart, East Markham, Newark. [1285

WATERPROOF CLOTHING BARGAINS

Fig.1

MOTOR CYCLE SUIT

(*Fig.* 1). Fawn double texture material, interlined rubber, seams cemented and taped, wind cuffs, wind gusset in overalls, and patent clasp fasteners.

SUIT COMPLETE 35/-

Fig.2

WATERPROOF TRENCH COAT

(*Fig.*2) Fawn material, rubber lined, guaranteed waterproof.

Price 25/-

SEATLESS TROUSERS.

Fawn double texture material, rubber interlined, wind gusset, and clasp fasteners. All sizes,

18/- per pair.

If you cannot call, send money with breast measurement and height.

CARRIAGE PAID

Our Guarantee
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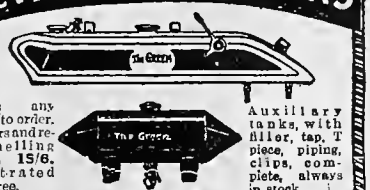
Actual Manufacturers:
Martin Waterproof Company.
208, Oldham Road, New Cross, Manchester

Petrol & Oil Tanks



Tanks any shape to order. Repairs and re-enamelling from 15/6. Illustrated List free.

Auxiliary tanks, with filler, tap, T piece, piping, clips, complete, always in stock.

A. GREEN, Water St., off Chapel St., Salford, Manchester

PARTS AND ACCESSORIES.

COPPER Exhaust Pipe, polished, all sizes stocked, straight, from 2/3 ft.; bending a speciality.—Evans.

TRIUMPH Pipes, special offer, complete with clip; long copper 14/6, steel 13/-, plated 18/-.—Evans.

DOUGLAS, 2¾h.p.; copper 12/6 pair, steel 10/-, plated 17/6.—Evans.

RUDGE, Sunbeam, Rover, Norton, copper 20/-, steel 16/-; New Imperial, Omega, Levis, etc., copper 14/-, steel 10/6; all T.T. bends.—Evans.

MUFFLER Ends (Norton pattern), detachable, fish-tailed, to suit above, various sizes stocked, from 2/6.—Evans.

FOOTBOARDS, solid aluminium, upcurved front and heel piece, with adjustable clips, 15/- pair; with fittings for Douglas, 15/-; for Triumph, 16/-.—Evans.

WHEELS from 42/- pair; specials built to order; any parts supplied.—Evans.

TOOL Boxes, armoured, suit Triumph, etc., 10/9 pair; with locks, 13/- pair.—Evans.

HANDLE-BARS, plated, Triumph pattern, W.D. or D.R., ⅞in. 14/-, 1in. 15/-.—Evans.

LEGSHIELDS, suit all machines, enamelled and gold lined, complete, 13/6 pair; aluminium, 15/- pair. —Evans.

BELT Rims, any size to order, 16/6; spring forks from 60/-.—Evans.

TAN-SAD Pillion Seats, brand new, to clear, 29/6 each.

CARRIAGE Free, cash with order, discount to trade.—Evans Bros., Brougham St., Hockley, Birmingham. [X3378

CELLULOID Sheets, 50×20 15/-, 25×20 8/6, 20×12½ 4/9.—Henry Jones, 778, High Rd., Tottenham, London. [9375

SPEEDOMETERS; bargains.—250 Jones trip model, 70/-; trade supplied.—Pioneer, 211, Shaftesbury Av., London, W.C. [9184

COMPLETE Front Brake, 7/6; touring handle-bar, 7/6; Triumph carburetter, complete, £1.—Aberlyn, Southminster. [1179

150 SCREWS, nuts, washers, set screws, 3/-; 144 bright steel bolts, 2/6; 72 bright hexagon nuts, 2/6.—See below.

72 BEST Spring Washers, 3-16in. to ½in., 1/9; 36 castle nuts, ¼in. to ½in., 1/9.—See below.

144 Coppered Bifurcated Rivets, 8d.; 12 8in. hacksaw blades, 1/6; any of the above carriage paid.—Wood, Tithebarn St., Preston. [X2924

ALUMINIUM, cast iron, and steel piston manufacturer; any pattern.—W. Cole, 53, Sarehole Rd., Sparkhill, Birmingham. [X3399

DRUID Forks, suit 3½h.p., 55/-; extra heavy pair, suit 6 or 8h.p., 75/-, equal to new.—56, Sutton St., Aston, Birmingham. [X3309

BINKS Carburetter, brand new, with spare jets, key, and Bowden controls, never fitted; £3/10.—Crookham, York Rd., Eastbourne. [1289

CYLINDERS.—J.A.P. 2¾h.p., 30/-; 6h.p. front, 35/-; 8h.p. back, 35/-; B.S.A. 4½h.p., £2.—Lancaster, Heeley Rd., Birmingham. [X3315

RENOLDS Chains, ⅝×¼in., 96 links 20/-, 56 links 12/-; soiled but unused; approval.—56, Sutton St., Aston, Birmingham. [X3308

CROWN Adjustable Pulleys, Triumph, B.S.A., Premier, Precision, Humber, Bradbury, 17/6; J.A.P.'s, 19/6; Douglas, 25/-.—Ridington.

MAGNETO Sprockets, 7-tooth to 24-tooth; engine, hub, and chain sprocket manufacturers.—Ridington.

LIGHTER Flints, 11d. doz., 2/- 3 doz., 5/6 gross.—Ridington, 202-4, Southampton St., Camberwell. [9459

N.S.U. Gears, fit Triumph, Bradbury, N.S.U., Rover, White and Poppe, and others; £5/10; approval. —Box 7,709, c/o *The Motor Cycle*. [1694

PALMER'S Motor Auction, every Thursday, 2 o'clock. Send those parts and accessories. Selling commission 10%.—Palmer's Garage, Tooting. [1738

100 SADDLES.—Brooks B170, 30/-; Lycett, large, 25/-; as new; satisfaction or money refunded. —Turner, 78, Church Rd., Willesden. [8554

SPEEDOMETERS complete from 45/-, guaranteed; repairs executed.—J. W. Robins, Speedometer Specialist, 97, Latchmere Rd., Battersea. [9661

CLYNO Spares.—For parts all models, lowest prices and quickest despatch, write Claridge's Clyno House, 8, Chandos Rd., Redland, Bristol. [1260

COWEY Speedometer, complete, 26in., perfect, 35/-; new Macintosh tyre, heavy, 26×2½, 15/-; Triumph plated bars, 6/-.—177, Earlsfield Rd., Wandsworth. [1286

WATFORD Speedometer, in perfect order, complete, with trip, best offer over 25/-; also pair E.L.I. mudshields, bargain, 7/6.—J. F. Whitehead, Appleby. [1220

THE MOTOR CYCLE

Insurance Policy

The only Safe Test of Insurance is Claims. We settle Claims promptly.

STOLEN.

A Reward of £10 is offered to the first person giving such information as shall lead to the recovery of the Motor Cycle as under and the apprehension of the thief or thieves.

1921 2¾ h.p. DOUGLAS, Registered No. Y.A. 859, Frame No. 50643, Douglas original colours, two large dents in tank, Electric lighting set, Heavy Dunlop tyres. All valves fitted Flexehar. Stolen from Hambrook, Bristol, 29th November, *Communication should be forwarded to—*

The AUTOCAR FIRE and ACCIDENT INSURANCE COMPANY, LIMITED
(Incorporating The Autocar Insurance Department, Established 1904.)
Head Office:
77, Cheapside, London, E.C.2.
Telephone: City 9831 and 9832.
Telegrams: "Autoinsure, Cent, London."

PARTS AND ACCESSORIES.

2¾h.p. 2-stroke Engine and magneto, £4; 1920 En-field gear spindle, as new, 6/-; large Amac carburetter, 15/-.—C., 686, Garratt Lane, Tooting, S.W.17. [1448

ARMSTRONG 3-speed Hub and Wheel, clutch, belt drive, perfect order; £8, or nearest; also Triumph and Chater-Lea frames.—Sherwood, Sandy's St., Newry. [1310

N.S.U. off Triumph, £5; exchange for N.S.U. recessed for Ariel; Armstrong 3-speed, as new, £7. —Taylor, Brownlow Cottage, Pleasington, Blackburn. [X3365

INDIAN 7-9h.p. Kick-start Attachment for 2-speed models, double ratchet on ball bearings; 60/-.—Particulars, Hopkins, 283, Foleshill Rd., Coventry. [X3360

GAUNTLET Mits, lined, suitable for motorists, at the astonishing figure of 2/- per pair, 8d. postage. —D. and S. Autocar Co., 33, The Parade, Golders Green. [9984

BURMAN Gear, new, 2-speed, clutch, K.S., gate change, £7/10; Enfield gear and engine sprockets, perfect, £3/10.—Wagstaff, 87, Lordsmill St., Chesterfield. [X3368

P. and M.'s.—Cast aluminium polished gear covers, with loose caps, 22/6; back guard, 6/6; magneto covers and back, 4/6; footboards, 10/6, postage extra.—Below.

NUMBER Plates, cast aluminium, silver polished letters and border, any number; cycle 10/6, car size 15/6.—Towler, Thorn St., Burnley. [1306

LONG Exhaust Pipes, direct from engine, in copper or nickel-plated steel, for all make of machines; standard sets, with detachable muffles, from 21/-.—Below.

DISCS, in polished aluminium or light steel, from 15/- per wheel; leg shields, in polished aluminium or light steel, from 17/6 per wheel.—Mersey Disc Co., 34, Sutton St., Warrington. [1165

LIGHT Car Front Axles, tubular section, 4ft. track, fitted with swivel heads, steering arms, and track rod; 25/-; stamp reply.—West, 50, Maldon Rd., Acton, W.3. [9081

ARIEL 3½h.p. Single Speed Frame, saddle, wheels, tyres, mudguards, handle-bars, and carburetter, etc. (everything except engine); offers.—25, St. Alban's Rd., Smethwick. [1233

STURMEY-ARCHER 3-speed Gear, heavy, with clutch and kick start, countershaft, brand new; approval, £14, deposit.—1, Meadow View, Newbridge, Wolverhampton. [1272

CHAINS.—Reynolds new Enfield rear, 22/-; P. and M. rear, 20/-; Clyno rear, 17/6; Clyno front, 12/6; Triumph front, 11/-; 2¾ Douglas, 10/-; stamp enquiries.—Snow.

SUNBEAM Gears, etc., new, cheap; Clyno ammunition carrier, complete, £5; Bowden carburetter levers, new, 7/6; Cowey trip speedometer, new, £3/17/6; approval.—Snow, Laurel St., Dalston, E.8. [1747

MOTOR Cycle, everything, less power unit, good tyres, Druids, dropped frame, drip feed, carrier, brakes, bars, etc., built for 4h.p.; £12.—185, Albert Rd., Handsworth, Birmingham. [X3348

300 Assorted Fine Thread Nuts, bolts, washers, split pins, for 4/9, postage free; cash with order.—Hobbs Bros. and Horrell, West Heath, Northfield, Birmingham. [X3340

P. and M. Compression Taps, 2/- each; aluminium chain cases, 30/- set; magneto cases, 5/6; tank needles, 2/- each.—P. and M. Specialist, 147, Burlington St., Liverpool. [9297

COMPLETE Sets of Gears for Bat motor cycles, 1919-20 models, delivery from stock.—The Motor Gear and Engineering Co., Ltd., High Rd., Seven Kings. 'Phone: Ilford 541. [8813

SPEEDOMETERS.—Why not check m.p.g.? Saves pounds. Cowey 50/-, Watford trip £3/5, Bonniksen trip £4, Jones £2, Smith £2/5. Spares, practically every instrument stocked.—Below.

J.S. Belt Rim 45/-, J.A. 35/-, Armstrong 30/-, J.S. and J.A. axles 11/6 each (new stuff). Tremendous assortment 3-speed gears, second-hand, guaranteed perfect.—Below.

WHY Not Exchange Present Gear for one of the latest kick-starter models? Sturmey and Albion stocked. Let me quote exchange price.—Below.

IF You Haven't Gears at all, why not one of mine that I have taken in part exchange, all perfect. Albion plain models £4 each, Mark VI. 3-speed wheels £7, Roe 2-speed box £3/10; gears complete with controls.—Below.

T.D.C. 2-stroke Engine, £5/15; lightweight frame for 2-speed, £3/10, new; Saxon lightweight forks, new, £3/5; Druid lightweight, perfect, 50/-; ditto heavyweight, £3/10; special clearance line spring forks, £2/2 each.—Below.

BRAND New 60 amp. 4 volt Accumulators, 26/-; P. and H. lighting set, new, 30/-; Klaxon horn, new, 17/6; Triumph 1912 cylinder, perfect, 50/-; Triumph countershaft brake, new, £1. Stamp reply, please.—Syd. Pearson, Cate House, Cheylesmore, Coventry. Tel.: 1639. [X3401

Olympia Show

AT

ALEXANDERS

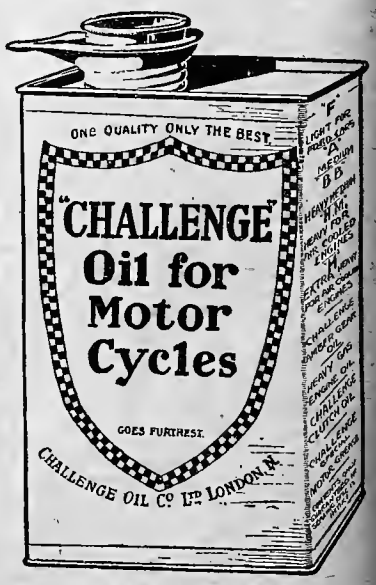
We have on view in our extensive Showrooms a complete range of 1922 Models of the following makes:

DOUGLAS, ENFIELD, NORTON, MATCHLESS, INDIAN, B.S.A., LEVIS, NEW IMPERIAL, P.&M., VELOCETTE, MORGAN RUNABOUTS,
ETC., ETC.

Consult us before purchasing your 1922 mount—our services are at your disposal.

Cash. Exchanges. Deferred Payments.

ALEXANDER'S,
113-115, Lothian Road, EDINBURGH.
272-274, Gt. Western Road, GLASGOW.



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CHALLENGE OIL Co. LTD.
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LONDON, N.16.

THE MOTOR CYCLE

ESTABLISHED IN 1905

FOR OVER SIX YEARS THE ONLY PAPER SOLELY DEVOTED TO THE PASTIME

EDITORIAL OFFICES: Hertford St., Coventry.
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The Future of the Lightweight.

A TENDENCY which will not have escaped the notice of observant readers, is that lightweights are gradually taking the place of heavier machines. The reason is not far to seek, and the fact that small engines have been found capable of all that is usually required in the way of speed, power, and reliability is a sign of genuine progress.

At the moment the 350 c.c. engined machine is a most popular type of solo mount, and before many years have passed it may give place to the engine of 250 c.c. or less. Already this type, which *The Motor Cycle* has done so much to encourage, is becoming increasingly popular, and its records on track and reliability trials have proved the capabilities of the miniature engine. Increased technical knowledge and improved production methods have led to the development of a lighter, handier, and more economical machine fully capable of the performance of the larger pre-war types, and there is little doubt but that the progress will continue. There are some who doubt the ability of the smaller machines to maintain their original efficiency for reasonable periods, but this largely resolves itself into a question of cooling, lubrication and valve wear. All these subjects are receiving close study by experts, and already the results obtained warrant a most optimistic outlook.

There will always be a market for the heavier machines just as there is a market for powerful cars, but with the development of the light and economical motor bicycle selling at a moderate figure we are approaching a bigger market and wider field than has yet been opened to the industry. There are many potential riders to-day who find a heavy and powerful solo mount too cumbersome to handle, and merely await the introduction of light and efficient "go-anywhere" mounts, capable of reproducing the performances of 500 c.c. machines of pre-war days.

Second-hand Bargains.

SOME remarkable bargains are available just now in the second-hand market; and it is no exaggeration to say that sixty pounds spent to-day will go further than one hundred did eighteen months ago.

However, the trouble is that people who most assuredly will buy second-hand mounts in the rush season next spring simply will not realise the wisdom of making their purchases now; when prices are lower, choice is unlimited, and, incidentally, the whole winter months are before them to make any necessary renovations.

It is a case where cause is irretrievably mixed up with effect, *i.e.*, prices are low, because people are not keen on buying; and those who realise this will benefit correspondingly.

Especially is this the case with this year's machines that are now being offered for sale. For it may be taken for granted that the man who sells a machine after only six months' use is often a faddist, who simply wishes to be in the fashion. Such a seller does not drive a hard bargain, for his chief anxiety is to get rid of his machine at a reasonable figure in order that he may be free to purchase the latest fancy.

But those who have followed the descriptions of new models in recent issues of *The Motor Cycle* will have noted that many of the leading firms are not making drastic alterations for next year. Therefore a 1921 machine at 20% to 30% off the published 1922 price is a very genuine bargain indeed. Motor cycles have now reached such a stage of perfection that minor improvements only are possible if we restrict these remarks to existing and recognised types. When an entirely new and unorthodox design is introduced, manufacturers have more scope to introduce many modifications, but unorthodox types are not snapped up readily, and often it entails many months of demonstration in leading competitions before buyers are tempted in large numbers.

An Index to the advertisements in this issue will be found on the page facing back cover.

Toll Bridge Fees.

ONE of our readers writes imploring me to denounce toll bridges and their fees. In old days, when there was no Ministry of Transport and no central fund, somebody had to pay for new bridges, and the idea that all users should contribute was by no means illogical, though some of the old tolls were doubtless continued long after the capital outlay had been repaid. Our forefathers suffered much more than we do from these tolls, as any motor cyclist with eyes must have noticed from the still recognisable relics of old toll-houses. Nowadays, one has to think to recall the whereabouts of the few survivors. I recall one in the Somerset marshes near Athelney, and another at Eynsham near Oxford. The C.T.C. did yeoman work in abolishing a number. However, my correspondent's ire centres round Shoreham Bridge, where motor cyclists are compelled to purchase return tickets available for the day of issue only. He is in the habit of week-ending on the further side of this bridge, and gets mulcted in two return tickets weekly. This certainly seems extortionate.

Wanted, a Chain-catcher.

DEAR me. I had nearly fallen into the nasty habit which a far more famous publicist than myself possesses of gassing about "my powerful pen." At any rate, bloodstains at the bottom of the office steps mark the *finis* of the latest appeal for a free advertisement in this column. The tame inventor in question had evolved a powerful electro-magnet for fixing to the chain stays of machines which employ a separate chain on one or more gears. But the tale he told to justify the invention of a catcher for broken chains was so pathetic that perhaps I ought to have expelled him from my sanctum more gently. He had seven children too, poor fellow. Anyhow, it was thuswise. He was ascending Hindhead on the low gear of his cycle car. Arrived at the Punchbowl, he changed up. Nothing doing. Chain gone. He remembered that a motor 'bus, proceeding downwards, had passed him just after he changed down. He knew where that 'bus garaged. He hied him thither. The 'bus driver set about him with a Ewart tyre lever. Why? Yes, the 'bus driver had picked up the broken chain all right. He had run over it with one of his new giant pneumatics, which had incontinently burst. Hence the patent electro-magnet. Perhaps I ought to have *led* the poor chap down those stairs.

It Started Too Easily.

POOR Smithers. His last 'bus had been stolen from outside his place of business, so he decided to protect the new stinkwheel twice over. *Imprimis*, he insured it for every penny it was worth, as all good motor cyclists do in these days of light-fingered gentry and novices awheel. In the second place, he fitted a very patent anti-thief lock to the steering head, which prevented the front wheel from being turned to the right hand or to the left. It fell on a day that Smithers came out of his office rather late and in a big hurry. He tickled the float, dug heavily on the kick-starter, sat down, opened his throttle several inches, and let in his clutch. Alas! The steering head was well and truly locked. Smithers is now trying to persuade the insurance people that the resulting smash was a pukka accident according to the terms of the policy. The latest bulletin is to the effect that they are not specially sympathetic.

Turps for Tight Nuts.

HERE is a small tip for the amateur overhauler. The last year or two has evolved quite a lot of engines with overhead valves, some of which have detachable heads, whilst one or two have stud fixings for the inlet and exhaust pipe joints. In

Occasional Comments.—

these constructions, a multitude of rather small nuts are involved, and they often screw on to very light studs, not too sturdily embedded in fairly fragile bases. As these fixings are commonly exposed to extreme heat and eke to whatever rain may fall, overhauling day often finds them either rusted or welded home to such an extent that dismantling becomes a perilous business. To apply a big spanner in such circumstances is asking for trouble. The stud will either come away from the casting, or shear in half. My own method consists of graphiting the threads when I assemble the parts, and doping them with turps before I try to get the nut loose. Even then, I have occasionally found it necessary to heat the nut before it could be induced to part peaceably from the stud. I am strongly of opinion that designers must devote fresh attention to these light studs on the cylinder heads of both car and cycle engines. But newcomers to this particular type of engine may find themselves compelled to use a cold chisel and return the casting to the factory unless they heed the words of one who has suffered much. Turpentine penetrates more rapidly than paraffin, provided anything can penetrate at all. A spanner which entirely surrounds the nut should be used if the available clearances permit; for open-ended spanners of small size are very fond of gaping under such conditions. A tube spanner is better than any other variety, provided it can be applied to the nut.

A Tyre-changing Table.

ONE of the cleverest accessories in the car world is the Ewart tyre-changing table. I daresay the demonstration cover which I saw operated fitted its rim like an old glove, but I should be a proud man if I could coax a sloppy old motor cycle cover back into the rim as the operator wangled back his gigantic cover. He merely laid his wheel on a sort of afternoon tea table, seized an immense lever resembling a clothes prop, gave the cover one prod, and then lounged rapidly once round the table, and presto! the tyre was on. If I were tyre hand in a big garage, I should certainly go on strike till my boss bought one of these gadgets, although I know that, so far as motor cycle tyres are concerned, it is a matter of pride with even a moderately skilful man that he handles them without the help of tyre levers.

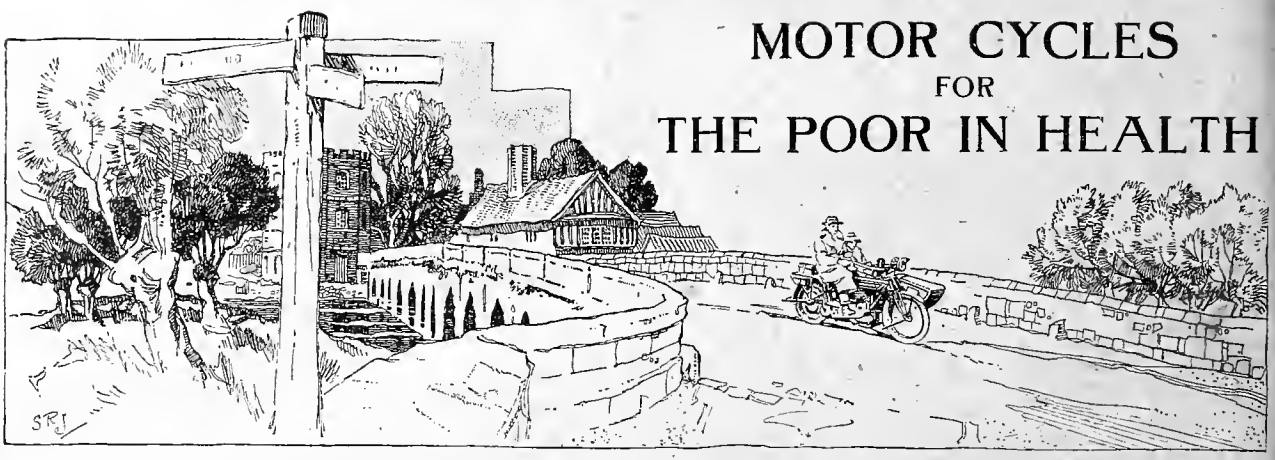
One has not to go far from one's own locality to find new interests little dreamed of until they are examined. Here is a handsome lych-gate which a Sunbeam owner has discovered just off the beaten track.

Intention Indicators.

RECENT developments suggest that there may be a tiny boom in electrically-lighted indicators for affixing to the back of a car, and showing when it is about to turn or stop. I sympathise deeply with a well-known motorist who was chaffed at Olympia for carrying his head on one side like a robin; he explained that his new car had four-wheel brakes, and stopped so suddenly that he had got a stiff neck from looking over his shoulder to see if anybody was ramming his back number plate. All the same I hope that traffic indicators will either become universal or keep away altogether. We motor cyclists have quite enough to watch without scrutinising the tail of each car we overtake, to see whether it has a signalling device or not, and if so, what the signal is doing.

Three Little-known Details.

I HAVE been experimenting with various patterns of electric lighting on a fast roadster. In the course of these experiments I have been reminded of several small points which may interest those to whom they are not chestnuts. First and foremost, dry battery sets are *not* powerful enough for sports machines. Secondly, any accumulator set gives plenty of light, but it does not seem to be the easiest thing in the world to steer at 60 m.p.h. with a heavy big-capacity accumulator on the back of your handlebar. Thirdly, most dynamo outfits absorb a little horse-power. It is not much—probably ranging from .05 to .1 h.p.—but it is enough to ensure your defeat by a sister machine *sans* dynamo in such a really earnest scrap as Brooklands or a good club hill-climb may present. So the speed model, which occasionally goes bang out in a scrap, demands a lighting set which can be rapidly jettisoned in case of need; that is one of the advantages of spring belt drives for dynamos.



MOTOR CYCLES FOR THE POOR IN HEALTH

Advice for Those who Doubt their Physical Ability to become Successful Motor Cyclists.

By JAMES F. BLACKETT, M.D. (Lond.)

THERE is no doubt that quite a large number of people take a keen interest in motor cycles, who yet possess no machine of their own. They feel drawn towards the sport, and yet do not indulge in it. What are their reasons?

Generally, it is a question of finance. A motor cycle cannot be bought without some spare capital, nor can it be kept running without spare income, and many simply cannot afford these expenses, modest though they be in relation to the enjoyment obtained.

There are also many whose health has been in some way impaired, who hesitate on that ground alone; they fear that the physical strength required is too great, or that the mental strain too continuous for them to undertake without their suffering in some way as a result. As a medical man with a good deal of motor cycle experience, I should like to lay down a few principles to guide such people, because in most cases, if suitable and reasonable precautions are taken, their fears are groundless.

Physical Demands of Driving.

One cannot, of course, get away from the fact that driving a motor cycle implies physical exertion. But the amount varies within wide limits. You may be in a hilly district with an old, fixed, single-speed, which fails at frequent intervals; or you may have a new kick or handle-starting big twin. There is all the difference in the world between what you *may* do with the former, and the least you *need* do with the latter. If you are not A1 in health, never do more than is really necessary, unless you can do it without physical discomfort. What you cannot do comfortably you cannot do safely is a golden rule which will seldom lead you far astray. Fortunately, the converse is nearly always true also. What you can do in comfort you may do in safety.

There are certain types of disability which should absolutely debar those who suffer from them from riding. Active heart disease is one. Now, I mention this on purpose to add that this does not by any means necessarily include what is often vaguely called a "weak heart," nor even chronic valvular trouble of which the patient knows nothing beyond what the doctor tells him. If there is any doubt, it is naturally wise to get medical advice, but, generally speaking, there need be none if the moderate exertions of ordinary life do not cause an undue amount of breathlessness or palpitation. As a matter of fact, many a person whose heart is not quite normal might very well get much more physical enjoyment out of life than he now thinks possible.

Another difficult problem is the consumptive. Here one is more inclined to say "Hold back," than to give any encouragement. Many consumptives undoubtedly do use a motor cycle, and often get much enjoyment from it—but none can do so without a certain amount of risk. There is always the possibility of some sudden and severe physical exertion being required in an emergency—and that way lies a hemorrhage. A consumptive should invariably get medical advice before undertaking the form of sport we are discussing.

Defective Sight and Hearing.

Defects of sight and hearing require careful consideration. Let us take sight first. If a person is blind he obviously cannot be trusted to drive any vehicle. The difficulty arises when one tries to draw a line between the two extremes of perfect vision and no vision at all; and there are, of course, two points of view, that of the would-be-driver, and that of the might-be-driven-into. Generally speaking, however, the ocular trouble is easily rectified by spectacles of not too high a power. A short-sighted person is almost bound to wear glasses, while the long-sighted or astigmatic is likely to find it very tiring without. It is extremely unwise to continue to drive if it is constantly associated with severe eye strain.

As regards safety from accidents due to collisions, and so forth, it is difficult to lay down hard and fast rules. Perhaps one might suggest that no one should drive unless or until he can see well enough to tell the time by a neighbouring church clock, or to recognise a friend on the other side of the street.

It is a little different when we come to consider defects of hearing. The question then is rather one of avoiding accidents with the machine than of risking damage to the ear. Only exceptionally does the latter point arise. There may, of course, be a very real danger in the former, but whether there is or not in any particular case must be decided on general rather than on medical grounds. I need, therefore, say no

Motor Cycles for the Poor in Health.—

more about it here. For the same reason I do not touch on cases where there is loss of limb, stiff joints, and so forth, although the correspondence columns of *The Motor Cycle* frequently testify that many disabled riders enjoy the pastime with comfort.

The Neurotic Temperament.

There is, however, one other large group I want to talk about. How often one hears highly strung excitable individuals, who have no definite physical disability, exclaim, "Oh, I am sure I should never be able to drive a motor cycle, I should be much too nervous." Sometimes, of course, they are right, but I should like to say, and to emphasise the statement, that in most cases their fears are without foundation. What such people suffer from is lack of self-control. Now driving demands a certain concentration of purpose and control of the will—the exercise, in fact, of those qualities which in neurotic temperaments are imperfectly developed. But within proper limits exercise leads to growth. If a man has to *force* himself to do certain things he is likely to neglect them. If, however, he is led on, or constrained to do them because they are associated with other pleasant or interesting acts, this neglect will not occur. Driving constrains a person suffering from "nerves" to use that moderate amount of self-control and concentration of thought which he will find of the utmost value in ridding himself of his disability. In addition, it gets him out into the country and provides him with a new and absorbing interest. The whole question might well be considered from such points of view by those concerned. Of course, excessively long journeys, especially at night, should not be undertaken by those with a debilitated nervous system.

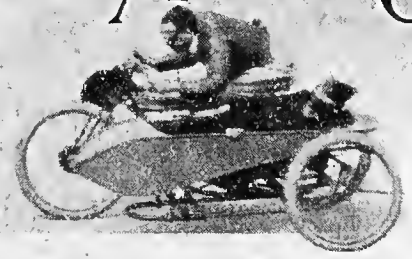
Reassurance.

In conclusion, one may say that nearly always when a man hesitates to get a motor cycle simply from fears as to health and comfort, he may be reassured. Those with serious disease do not often raise the question at all—they know quite well that to do so would be foolish. There are, of course, exceptions. Some people really are on the brink of a precipice of which they are only dimly aware, but, after all, one must take some risks in life. If one uses a little commonsense, and bears in mind that the limits of comfort seldom exceed those of safety, one has a guiding rule which will hardly ever lead one wrong.

TRINAFOUR HILL, PERTHSHIRE.

The motor cycle places those who are poor in health on an equality with their stronger brothers, so far as the exploration of remote districts is concerned. Without a motor cycle only the most hardened cyclists or pedestrians can hope to visit such places as depicted above.

BRITISH MOTOR CYCLE RECORDS for 1921



Compiled by A. V. Ebblewhite, Official Timekeeper to R.A.C., A.C.U., and B.M.C.R-C.

Since the last list of Records was published in "The Motor Cycle" of January 1st, the majority of figures have been changed.

CLASS A.—For motor bicycles of which the cylinder capacity does not exceed 250 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
D	Kilom.	17/11/21	R. N. Judd	Velocette (1)	63 × 80	249	31.20	71.70	115.38
	Mile	17/11/21	R. N. Judd	Velocette (1)	63 × 80	249	51.20	70.31	113.15
C	Kilom.†	9/ 3/21	D. R. O'Donovan	Velocette (1)	62 × 83	249	35.66	62.73	100.95
A	Mile†	23/11/20	J. V. Prestwich	Diamond-Jap (1)	70 × 64.5	249	57.7	62.39	100.41
C	5 miles	18/11/21	R. N. Judd	Velocette (1)	63 × 80	249	4 34.34	65.61	105.59
	10 miles	23/11/21	R. N. Judd	Velocette (1)	63 × 80	249	9 30.60	63.09	100.15
A	50 miles	25/11/20	J. V. Prestwich	Diamond-Jap (1)	70 × 64.5	249	53 45	55.81	89.82
C	100 miles	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	1 47 32	55.79	89.79
	200 miles	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	3 49 49	52.21	84.02
	300 miles	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	5 21 9	51.26	82.49
	400 miles	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	7 52 56	50.75	81.67
	500 miles	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	9 59 5	50.07	80.58
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
	1 hour	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	55 1,212	55.69	89.62
	2 hours	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	111 101	55.58	89.36
	3 hours	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	162 1,153	54.27	87.34
	4 hours	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	208 330	52.18	83.96
	5 hours	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	256 1,106	51.21	82.41
	6 hours	2/ 7/21	B. Kershaw	New Imp.-Jap (1)	64.5 × 76	249	304 781	50.74	81.66

CLASS B.—For motor bicycles of which the cylinder capacity does not exceed 350 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
E	Kilom.	25/11/21	G. Dance	Sunbeam (1)	75 × 79	349	25.6	87.38	140.62
	Mile	25/11/21	G. Dance	Sunbeam (1)	75 × 79	349	41.2	87.38	140.62
B	Kilom.†	25/11/21	G. Dance	Sunbeam (1)	75 × 79	349	27	82.85	133.33
	Mile†	25/11/21	G. Dance	Sunbeam (1)	75 × 79	349	43.8	82.19	132.27
	5 miles	27/ 7/21	H. R. Davies	A.J.S. (1)	74 × 81	349	4 1.6	74.50	119.89
	10 miles	28/10/21	H. R. Davies	A.J.S. (1)	74 × 81	349	8 20	72	115.87
	50 miles	24/ 5/21	H. R. Davies	A.J.S. (1)	74 × 81	349	45 6.8	66.49	107.02
C	100 miles	24/ 5/21	H. R. Davies	A.J.S. (1)	74 × 81	349	1 32 45.6	64.68	104.09
	200 miles	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	3 12 37.2	62.29	100.24
	300 miles	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	4 55 3	61	98.17
	400 miles	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	6 37 4.4	60.44	97.27
	500 miles	2/ 7/21	N. Norris	Ivy (1)	75 × 79	349	9 40 20	51.69	83.19
A	600 miles	20/ 9/20	J. S. Holroyd	Blackburne (1)	71 × 88	348	11 57 11.8	50.20	80.78
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
	1 hour	24/ 5/21	H. R. Davies	A.J.S. (1)	74 × 81	349	66 162	66.09	106.36
	2 hours	24/ 5/21	H. R. Davies	A.J.S. (1)	74 × 81	349	130 1,054	65.30	105.09
C	3 hours	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	186 1,511	62.28	100.23
	4 hours	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	245 1,686	61.48	98.96
	5 hours	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	305 219	61.02	98.20
	6 hours	21/ 9/21	Tudor Thompson	Douglas (2)	60.9 × 60	350	362 1,294	60.45	97.28
A	12 hours	20/ 9/20	J. S. Holroyd	Blackburne (1)	71 × 88	348	602 658	50.20	80.79

CLASS C.—For motor bicycles of which the cylinder capacity does not exceed 500 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
E	Kilom.	25/11/21	G. Dance	Sunbeam (1)	85 × 88	499	23.8	93.99	151.26
D	Mile	17/11/21	F. B. Halford	Triumph (1)	80.5 × 98	499	41	87.80	141.30
C	Kilom.†	29/ 3/21	R. N. Judd	Norton (1)	79 × 100	490	25.9	86.37	138.99
	Mile†	17/11/21	F. B. Halford	Triumph (1)	80.5 × 98	499	42.90	83.91	135.05
D	5 miles	30/11/21	G. Dance	Sunbeam (1)	85 × 88	499	3 26.08	87.35	140.57
C	10 miles	30/11/21	G. Dance	Sunbeam (1)	85 × 88	499	7 15.36	82.69	133.07
B	50 miles	24/11/21	F. B. Halford	Triumph (1)	80.5 × 98	499	38 49.4	77.27	124.35
C	100 miles	11/11/21	J. L. Emerson	Douglas (2)	68 × 68	499	1 21 49.8	73.32	117.99
A	200 miles	30/ 9/20	D. R. O'Donovan	Norton (1)	79 × 100	490	3 8 33	63.64	102.43
	300 miles	9/ 9/20	J. L. Emerson	A.B.C. (2)	68.5 × 54	400	4 49 51.2	62.10	99.94
C	400 miles	2/ 7/21	V. E. Horsman	Norton (1)	79.5 × 100	498	6 29 23	61.64	99.20
	500 miles	2/ 7/21	V. E. Horsman	Norton (1)	79.5 × 100	498	8 1 25.4	62.31	100.28
C	600 miles	20/10/20	D. R. O'Donovan and H. H. Beach	Norton (1)	79 × 100	490	11 1 41.4	54.41	87.56
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
B	1 hour	24/11/21	F. B. Halford	Triumph (1)	80.5 × 98	499	76 1,301	76.74	123.50
C	2 hours	11/11/21	J. L. Emerson	Douglas (2)	68 × 68	499	144 1,099	72.31	116.37
A	3 hours	30/ 9/20	D. R. O'Donovan	Norton (1)	79 × 100	490	190 1,605	63.64	102.41
	4 hours	9/ 9/20	J. L. Emerson	A.B.C. (2)	68.5 × 54	400	252 1,308	63.19	101.69
	5 hours	9/ 9/20	J. L. Emerson	A.B.C. (2)	68.5 × 54	400	310 991	62.11	99.96
C	6 hours	2/ 7/21	V. E. Horsman	Norton (1)	79.5 × 100	498	375 213	62.57	100.70
A	12 hours	20/10/20	D. R. O'Donovan and H. H. Beach	Norton (1)	79 × 100	490	651 342	54.27	87.33

CLASS D.—For motor bicycles of which the cylinder capacity does not exceed 750 c.c.

Excepting the undermentioned, the whole of the records in the above Class C also apply to Class D.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
B	50 miles	29/11/21	H. H. Bowen	Martinsyde (2)	70 × 96	745	37 52.20	79.21	127.47
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
	1 hour	29/11/21	H. H. Bowen	Martinsyde (2)	70 × 96	745	78 267	78.15	125.77

CLASS E.—For motor bicycles of which the cylinder capacity does not exceed 1,000 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
D	Kilom.	17/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	20.80	107.55	173.08
	Mile	17/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	35.20	102.27	164.59
	Kilom.†	6/ 9/21	C. F. Temple	Harley-D (2)	84.1 × 88.9	989	22.4	99.86	160.71
	Mile†	17/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	36.40	98.90	159.16
	5 miles	8/10/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	3 6.4	96.54	155.38
	10 miles	8/10/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	6 34.9	91.17	146.72
	50 miles	22/ 7/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	33 6.8	90.59	145.79
C	100 miles	22/ 7/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	1 8 22.1	87.76	141.24
	200 miles	2/ 7/21	F. W. Dixon	Harley-D. (2)	84.1 × 88.9	989	2 41 25.6	74.34	119.64
	300 miles	2/ 7/21	H. Le Vack	Indian (2)	79 × 101	998	4 9 51.6	72.04	115.94
	400 miles	2/ 7/21	H. Le Vack	Indian (2)	79 × 101	998	5 36 6.7	71.40	114.91
	500 miles	2/ 7/21	H. Le Vack	Indian (2)	79 × 101	998	7 5 59.6	70.42	113.33

A—World's records.
B—World's records, subject to A.C.U. and international approval.
C—World's records, subject to international approval.
D—British records.
E—British records, subject to A.C.U. approval.
†Average mean speed records taken both ways of course—average time of the two runs.

BRITISH MOTOR CYCLE RECORDS EXISTING ON DECEMBER 15th, 1921 (*Continued*).

CLASS E.—For motor bicycles of which the cylinder capacity does not exceed 1,000 c.c. (*Continued*).

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
A	600 miles	20/10/20	D. R. O'Donovan and H. H. Beach	Norton (1)	79 × 100	490	11 1 41.4	54.41	87.56
A	700 miles	6/ 6/09	H. A. Collier	Matchless-Jap (2)	76 × 95	862	21 25 45.6	32.67	52.57
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
C	1 hour	22/ 7/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	87 922	87.52	140.85
A	2 hours	4/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	146 1,514	73.48	118.17
	3 hours	4/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	218 697	72.80	117.16
C	4 hours	2/ 7/21	H. Le Vack	Indian (2)	79.3 × 100.8	998	286 232	71.53	115.12
	5 hours	2/ 7/21	H. Le Vack	Indian (2)	79.3 × 100.8	998	358 27	71.60	115.23
	6 hours	2/ 7/21	H. Le Vack	Indian (2)	79.3 × 100.8	998	431 1,181	71.94	115.78
A	12 hours	20/ 9/20	D. R. O'Donovan and H. H. Beach	Norton (1)	79 × 100	490	651 342	54.27	87.33
	24 hours	5–6/ 5/09	H. A. Collier	Matchless-Jap (2)	76 × 95	862	775 1,340	32.32	54.02

CLASS —. For motor bicycles with sidecar of which the cylinder capacity does not exceed 350 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
	Kilom.	19/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	33.2	67.38	108.43
	Mile	19/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	55.2	65.22	104.94
	Kilom.†	19/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	35.6	62.84	101.12
	Mile†	19/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	59.7	60.30	97.05
	5 miles	20/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	5 11.6	57.77	92.98
	10 miles	20/10/20	H. R. Davies	A.J.S. (1)	74 × 81	349	10 52.8	55.18	88.80
	50 miles	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	1 1 1.4	49.16	79.12
	100 miles	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	2 3 58.8	48.38	77.86
	150 miles	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	3 28 7.8	43.27	69.63
D	200 miles	28/ 4/21	J. F. Newey	New Comet Climax (1)	70 × 76	293	4 59 5.6	40.12	64.57
	250 miles	12/ 7/21	J. F. Newey	"	70 × 76	293	6 34 29.4	38.02	61.19
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
	1 hour	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	49 271	49.17	79.13
	2 hours	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	96 1,230	48.35	77.81
	3 hours	24/11/20	Tudor Thompson	Douglas (2)	60.9 × 60	350	137 1,246	45.90	73.87
	4 hours	12/ 7/21	J. F. Newey	New Comet Climax (1)	70 × 76	293	163 106	40.76	65.60
	5 hours	28/ 4/21	J. F. Newey	"	70 × 76	293	200 1,095	40.12	64.57
	6 hours	12/ 7/21	J. F. Newey	"	70 × 76	293	234 526	39.05	62.84

CLASS F.—For motor bicycles with sidecar of which the cylinder capacity does not exceed 600 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
D	Kilom.	17/11/21	C. G. Pullin	Douglas (2)	68 × 68	499	29	77.14	124.13
	Mile	10/ 2/21	D. R. O'Donovan	Norton (1)	79 × 100	490	53.21	67.66	108.89
C	Kilom.†	30/ 3/21	D. R. O'Donovan	Norton (1)	79 × 100	490	31.4	71.24	114.65
	Mile†	10/ 2/21	D. R. O'Donovan	Norton (1)	79 × 100	490	56.63	63.57	102.30
B	5 miles	24/11/21	C. G. Pullin	Douglas (2)	68 × 68	499	4 25.6	67.77	109.06
	10 miles	24/11/21	C. G. Pullin	Douglas (2)	68 × 68	499	9 2.4	66.37	106.81
	50 miles	26/ 9/21	D. R. O'Donovan	Norton (1)	79 × 120	588	49 23.8	60.73	97.73
	100 miles	30/ 9/21	Tudor Thompson	Douglas (2)	68 × 68	499	1 48 30.4	55.29	88.97
	200 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	3 42 40.5	53.89	86.72
C	300 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	5 39 3.6	53.08	85.43
	400 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	7 37 19.2	52.48	84.46
	500 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	9 41 22.8	51.60	83
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
	1 hour	26/ 9/21	D. R. O'Donovan	Norton (1)	79 × 120	588	60 1,368	60.77	97.80
	2 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	108 525	54.15	87.14
	3 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	161 575	53.81	86.60
C	4 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	214 811	53.61	86.28
	5 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	269 6	53.80	86.59
	6 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	318 933	53.09	85.44
	12 hours	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	576 690	48.03	77.29

CLASS G.—For motor bicycles with sidecar of which the cylinder capacity does not exceed 1,000 c.c.

	Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
	Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
	Kilom.	17/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	25.80	86.70	139.53
	Mile	17/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	42.10	84.91	136.63
D	Kilom.†	6/ 9/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	29	77.14	124.13
	Mile†	6/ 9/21	C. F. Temple	Harley-D. (2)	84.1 × 88.9	989	49.1	73.32	118
	5 miles	18/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	3 49.48	78.45	126.25
	10 miles	18/11/21	H. Le Vack	Indian (2)	82.5 × 93	994	7 54.81	75.82	122.02
C	50 miles	18/11/21	H. Le Vack	Indian (2)	79.3 × 100.8	997	40 47.88	73.53	118.33
	100 miles	18/11/21	H. Le Vack	Indian (2)	79.3 × 100.8	997	1 25 33.24	70.13	112.86
A	200 miles	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	3 13 3.6	62.16	100.05
	300 miles	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	4 48 13.8	62.45	100.50
C	400 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	7 37 19.2	52.48	84.46
	500 miles	16/ 8/21	H. H. Beach	Norton (1)	79 × 100	490	9 41 22.8	51.60	83
A	600 miles	12/ 7/20	J. D. Marvin and J. A. O'Sullivan	Harley-D. (2)	84 × 89	986	11 48 39.2	50.80	81.76
	Time.				mm.		mls. yds.	m.p.h.	k.p.h.
C	1 hour	18/11/21	H. Le Vack	Indian (2)	79.3 × 100.8	994	69 150	69.08	111.17
A	2 hours	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	125 1,669	62.97	101.35
	3 hours	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	185 146	61.69	99.29
	4 hours	25/10/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	247 928	61.88	99.59
	5 hours	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	308 1,433	61.76	99.40
	6 hours	25/11/20	H. Le Vack	Indian (2)	79.3 × 100.8	998	363 688	60.57	97.48
	12 hours	13/ 7/20	J. D. Marvin and J. A. O'Sullivan	H.-Davidson (2)	84 × 89	986	609 1,087	50.80	81.76

CLASS H2.—For two-seater cycle cars of which the cylinder capacity does not exceed 1,100 c.c. Maximum weight 772 lb. carrying passenger.

Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
Kilom.	17/11/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	26	86.04	138.46
Mile	25/11/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	43.8	82.19	132.27
Kilom.†	17/11/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	27.2	82.24	132.35
5 miles	29/11/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	3 46.97	79.30	127.62
10 miles	29/11/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	7 54.14	75.92	122.18
50 miles	22/10/21	E. B. Ware	Morgan-Jap (2)	85.5 × 95	1096	39 42.33	75.55	121.58
100 miles	22/10/21	A. Lombard	Salmson (4)	62.3 × 90	1097	1 22 38.8	72.80	117.48
200 miles	22/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	2 47 41.43	71.54	115.20
300 miles	23/ 9/13	F. Burgess and J. Wetton	Calthorpe (4)	62 × 90	1088	4 30 38.2	66.51	107.04
400 miles	23/ 9/13	"	Calthorpe (4)	62 × 90	1088	6 6 37	65.46	105.35
500 miles	30/ 9/13	B. H. Haywood and G. Baker	Singer (4)	63 × 88	1096	7 56 50.8	62.91	101.25
Time.				mm.		mls. yds.	m.p.h.	k.p.h.
1 hour	24/ 9/13	B. H. Haywood	Singer (4)	63 × 88	1096	72 976	72.56	116.77
2 hours	22/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	145 1,483	72.92	117.30
3 hours	29/ 9/13	B. H. Haywood	Singer (4)	63 × 88	1096	200 1,542	66.95	107.77
4 hours	23/10/13	F. Burgess and J. Wetton	Calthorpe (4)	62 × 90	1088	263 878	65.88	106.01
5 hours	23/10/13	"	Calthorpe (4)	62 × 90	1088	330 919	66.10	106.38
6 hours	23/10/13	"	Calthorpe (4)	62 × 90	1088	393 450	65.54	105.48
7 hours	30/ 9/13	B. H. Haywood and G. Baker	Singer (4)	63 × 88	1096	438 1,384	62.68	100.87
8 hours	30/ 9/13	"	Singer (4)	63 × 88	1096	502 1,353	62.85	101.14
9 hours	30/ 9/13	"	Singer (4)	63 × 88	1096	564 1,524	62.76	101

CLASS H1.—For cycle cars of which the cylinder capacity does not exceed 1,100 c.c. Maximum weight 772 lb. without passenger.

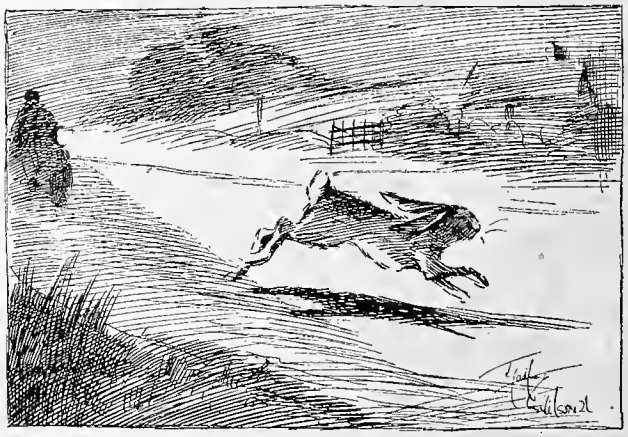
Record.	Date.	Holder.	Machine and No. of Cylinders.	Bore and Stroke.	C.C.	Time or Distance.	Speed.	
Distance.				mm.		h. m. s.	m.p.h.	k.p.h.
5 miles	28/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	3 39.89	81.86	131.70
10 miles	28/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	8 12.62	73.08	117.50
50 miles	28/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	39 2.20	76.85	123.60
100 miles	28/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	1 17 40.46	77.24	124.32
Time.				mm.		mls. yds.	m.p.h.	k.p.h.
1 hour	28/10/21	A. G. Fraser Nash	G.N. (2)	84 × 98	1086	76 1,655	76.94	123.79

A—World's records.
B—World's records, subject to A.C.U. and international approval.
C—World's records, subject to internationaal approval.
D—British records.
E—British records, subject to A.C.U. approval.
†Average mean speed records taken both ways of course=average time of the two runs given.

WILD LIFE ON THE ROAD.

Notes from the Country Diary of a Motor Cyclist.

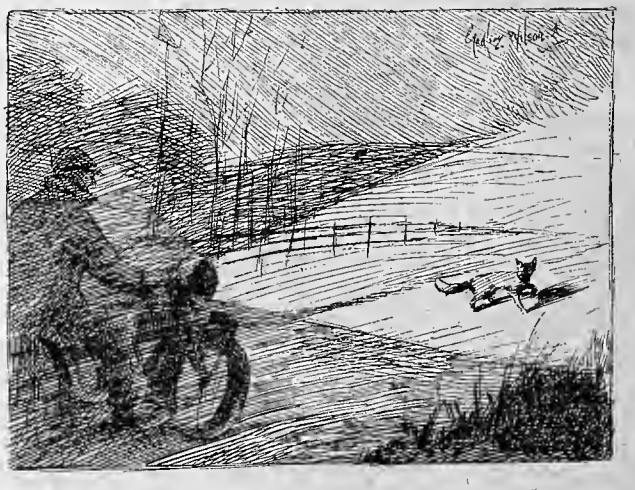
IT is not infrequently laid to the charge of the motor cyclist that he loses all the joy and beauty of rural England; that he has no soul above pace, and that he tears along highway and by-way without any eye or appreciation for the scenes and sounds, the poetry and picturesqueness, of the things around him. That this is an ill-informed libel most of us know. We also know that it is the very heart of the country, the love of the beautiful, the appeal of the poetry of rural England, and the love of Nature generally which has converted more than fifty per cent. of us to motor cyclists, and which draws us out from the smoke and din of the town into peaceful pastoral districts where, both when travelling and when halted at some woodside or other place which has commanded us to stay awhile, we are sympathetic students of the wonders around us.



"The hare simply runs straight ahead."

Naturalists Perforce.

As a matter of fact the study of Nature is forced upon the motor cyclist, and one constantly hears men, who would be the last to claim intimate acquaintance with the drama, pathos, humour, and excitement of the wild life of the field and hedgerow, describing most interestingly, experiences they have had which many an avowed Naturalist has courted and waited for all his life. The fact of the matter is that the motor cyclist is brought face to face with Nature in all her moods and vagaries. The power of observation being essentially quickened in him, he gradually finds himself watching and expectant for those sudden appearances and incidents which add to the interest of a country ride. Listen to a party of motor cyclists discussing their recent journeys. True, they will discuss the state of roads, how their machines climbed certain well-known hills, and so on, but they will also narrate how a stoat crossed in front of them in hot pursuit of a rabbit on a certain road, and how they pulled up to try and see the end of the tragedy, and, if possible, to save the terrified victim, whose bulging eyes had, as it were, appealed for help from the cruel blood-sucker which was relentlessly following. Or, they will tell you how, when they were coming back in the moonlight from a run, the light from their lamps showed up a fox which had been crossing from one hedgerow to the other, and had been fascinated by the glare. Poor Reynard, with all his quickness of thought and action, with all his cunning and powers of extricating himself from difficult positions, found himself bewildered and faced with a new problem, which for the moment mystified him. This brilliant light was not the moon gone mad! No, *there* was the cold, steely moon above, quite normal, and casting its deep protecting shadows over the highway at the very point of it he had chosen to cross near the big old elm tree. This light was more powerful than the moon; it was some marvellous caprice of the sun perhaps which had not aforetime come within his reckoning. It blinded him, it petrified him, and, oh horrors! it was assuredly coming nearer and nearer, and bringing with it a noise which he had often heard before, and which no longer had terrors for him. But that light—it was mesmeric. He pricked his ears, he lifted up a pad in readiness for action, his body quickened, but his eyes moved not . . . and the light came nearer and nearer, so that he, who prided himself on keeping in the shadows, on running along dark hedgerows so that he could not be seen, or along the furrows in ploughed fields so that his own colour blended with the upturned soil, was now in full view. Yes! there was the white tag on his brush and the sheen on his glossy, russety coat; there were those wonderful white teeth showing as he turned up his lip in nervous anger. But he did not really mean to show fight. That glare was some unnatural enemy he dared not face, for behind it was a huge monster—at least, huge to him—which throbbed and smelt. He must trust to his legs. So, when the motor cyclist was within a stone's-throw of him, he wheeled round and bounded through the opening near the old tree, and was lost in the deep shadows, suffering, no doubt, from a bad attack of palpitation of the heart.



"Or how the light of their lamps showed up a fox."

Wild Life on the Road.—

Another will tell you how from each side of the road the little pale and yellow moths flew towards his lamp, and, without ever seeming to be in a hurry, yet appeared able to keep pace with the machine for quite a distance till a sudden gust of wind took charge of them and either brushed them aside, or sent them full in the face of the man in the saddle. The moths do not sting a bit, but we all know how those hard, busy, buzzing, black beetles *do* give us a momentary pin prick when they meet us full in the cheek. The collision is probably a much nastier jar to them and sends them quite silly for the remainder of the evening. Sometimes I think that the moths just mentioned come and go quicker than we imagine. That it is not the same pale-winged moon-flitter which accompanies us along a stretch of road, but that fresh moths are drawn by our light from the vegetation of the hedgerows and continually take the place of those which cannot "go the pace."

The Hare and its Ways.

I cannot quite decide whether the hare is more foolish than the fox, or whether he is really quicker witted. All naturalists speak of the hare as being rather a "fool animal," whilst "the timid hare" has come to be quite a recognised term. Most of us have had much more experience with hares or rabbits than foxes or stoats, whilst very, very few of us have badger tales to tell. When a hare lops out of the hedgerow, having just left its form in a tussack of rough grass, and, with the intention of making a meal in a turnip field on the other side of the highway, and discovers itself at that pyschological moment in the limelight, so to speak, it at once takes stage fright. But, unlike the fox, it does not tarry for a single second to face the audience, or the limelight, or the music, or whatever you may be pleased to call it. It simply turns away from advertisement and runs straight ahead within the compass of the lamp stream. Increase your speed and puss increases hers. Then is it you begin to have an added respect for the greyhound and to recognise what wonderful speeds these animals must have. The coursed hare does not run straight for the greyhound either, as it is running now; it twists and doubles, and pops through hedges—or leaps them. But now it seems as though it cannot free itself from the light which binds it to the centre of the road. On it speeds, and the motor cyclist finds raised within him something more than the interest of the naturalist. Inherent within the breast of every man is the instinct to hunt, and the motor cyclist finds that instinct quickened. Faster he goes, full of excitement, thoroughly enjoying the fun till at last the hare finds that she is tiring and that this chase cannot last—or at any rate *she* cannot—so she absolutely flings herself in the air to right or left, and, did the cyclist stop and search the hedgerow, or the field beyond, he would no doubt discover her laid panting and her heart beating as only the heart of a hare can beat.

At Close Quarters.

A few of us have heard hares scream as we have come to close quarters with them—and the sound is thrillingly uncanny when one is alone in the quiet of the night and not expecting that almost human yell which a terrified hare can give. Some of us, it may be, have kept a hare in front of us for so long that at last she gave up what she considered a hopeless contest and allowed us to pick her up. Game on the highway belongs to no man—or any man—and we all know motor cyclists who have more than once had jugged hare or rabbit pie: yes, and even roast pheasant as a result of a ride in the dusk! J.F.-B.

HAVE YOU MET THEM?

Types of Motor Cyclists One Meets in a Day's Jaunt.

ALTHOUGH motor cyclists as a body appear to be much the same to the casual observer, it is, nevertheless, possible to divide them into about a dozen distinct classes, and even as in the old days the animals in the Ark were classified—the most notable being the bears, the bugs, and the bumble bees—so it is with the brotherhood of the road.

The "bear" is often met with, and easily distinguished. He is the fellow who rides a Harley or an 8 h.p. New Imperial solo, and flashes through small towns and villages like a super-lubricated streak of lightning, leaving a trail of dust and flying chickens as far as the eye can see. But, if you are lucky, you may find him baulked at a level crossing, and, after the dust has settled, perhaps you may have time to examine him at close quarters. Then you will see that he looks more like a bear than ever. After about a minute of stolid silence, except for the ponderous "plug-plug" from his highly-polished copper exhaust pipe, up will go his goggles, and from the depths of his cavernous helmet will issue a bear-like growl, chiefly concerning the blankety railways and their something-or-other arrangements. Then, the barrier removed, he's off again, and the dust settles once more. But he's a friendly bear, this fellow: he will always extend the glad hand if you "strike a bad patch."

Now the "bug" is a different fellow altogether—he's to be found everywhere, but you never know when you've got him. He nips about on a baby two-stroke, and, in spite of the noise of big singles and 8 h.p. twins, you can always pick out the impertinent crackle of his little power unit. But he "gets there" every time, and the way he dodges in and out, between trams and carts and under horses' heads, makes one wonder how many years he devoted to trick cycling before taking up our "great game."

Then the "bumble-bee" is, of course, the fellow who careers around at a terrific bat on a brand new Scott, paying frequent visits to the various "flowers"—the "Three Daisies" or the "Rose and Thorn," for instance. Then he's off again, after the admiring onlookers have had time to examine his 'bus. . . . And so it goes on, there being many other types, equally distinctive and equally interesting. But, be they bears, bugs, bumble-bees, or any other type, they are good fellows all, and the more one mixes with them, the more is one tempted to say, "Who would not be a motor cyclist?" J.A.

FROM THE MIDLANDS TO THE LIZARD.

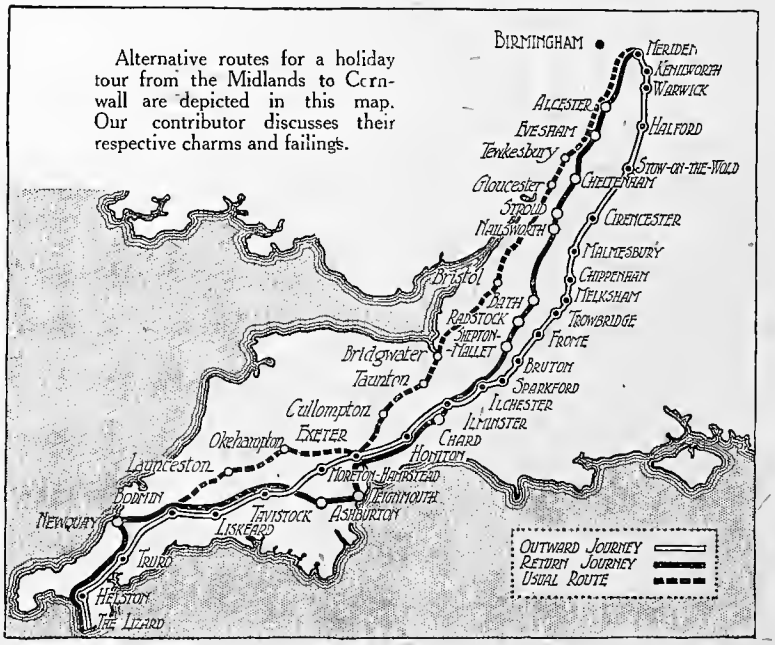
A Tour from the Centre to the South-west Corner of England on an A.B.C.

MOTOR cyclists, who have never visited Cornwall or Devon, should consider the claims of the South-west as a touring ground. Rumours of the Dartmoor roads crowded and ruined, so far as their surface was concerned, by chars-à-bancs have been prevalent this year; but during a recent journey in those quarters, I could count all the motor coaches I met on the fingers of one hand and even then not use them all.

Further, it has been reported that the roads in Cornwall were "generally bad"; upon the whole I found the Cornish roads in very decent condition.

Roads into Cornwall.

There are, of course, many ways of reaching Cornwall from the Midlands, the main road being through Gloucester, Bristol, Bridgwater, Taunton, Cullompton, Exeter, Okehampton to Launceston, once the capital of Cornwall, and still well-known for its gateway and beautifully situated castle. Another way is to keep nearer the south coast after leaving Exeter and, making one's way to Plymouth (*via* Haldon Hills, Ashburton, and Ivybridge or Starcross, Dawlish, Teignmouth, Newton Abbot, and Totnes), crossing the Tamar to Torpoint by ferry.



If one wishes to "cross the Tamar hand-in-hand," this is the best and safest way to do it, which reminds me of the fact that the northern entrance to the delectable duchy near Morwenstow is not much used, except by those who wish to try their luck or show their prowess on the Somerset and North Devon terrors—Porlock and Lynton hills.

By none of these roads, however, did I take my way, partly because a friend told me that the main road to Exeter was bad (I have since been told that it is like a billiard table), and partly because I love to cross Dartmoor when I get a chance. The fine open spaces and glorious views appeal to me greatly, so also does the nature of the roads, which in two places (one about a mile before reaching Warren House Inn and the other between Two Bridges and Tavistock) rise to a height of about 1,500ft. above sea level. There are steep hills and many turns, but there are also fine straight stretches of open road where any speed of which the machine and its rider are capable may be attained without danger to life and limb.

The Selected Route.

Taking one consideration with another, therefore, I set out one evening about tea time, and, passing through Kenilworth, Warwick (where I met with about the worst roads on the trip), Wellesbourne Hastings, and Ettington, struck the Fosse Way near Halford Bridge. I followed this old highway to a point beyond Cirencester, where the road forks, right for Tetbury, left for Chippenham, with the Fosse Way continuing straight on between the two.

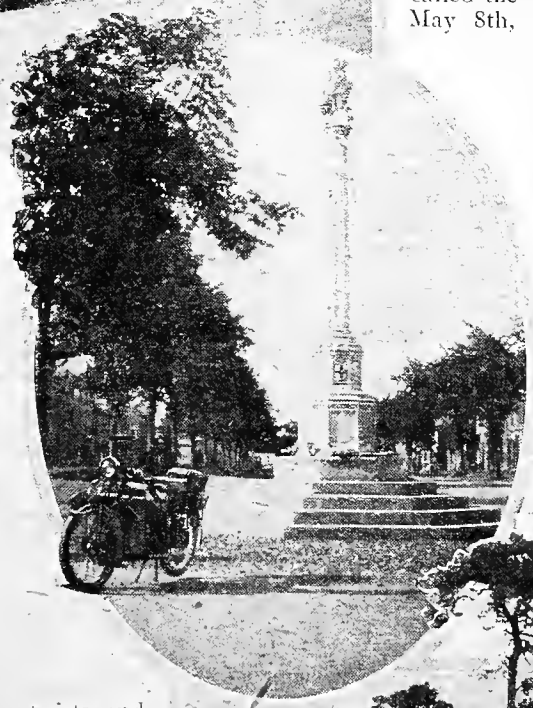
This road was good as far as Moreton-in-the-Marsh, where a very graceful war memorial has been erected, but on both sides of Stow-on-the-Wold it was grooved by irregular longitudinal gulleys, sometimes two or three abreast, which meandered along the road in a winding course. They were probably caused by rivulets in wet weather, but when I encountered them they were dry and loose. It was impossible to avoid them altogether, and at times they caused very unpleasant wobbles.

After leaving the Fosse Way as already mentioned, I passed quickly through Malmesbury, Chippenham, Melksham, Trowbridge, Beckington, Frome, which has quite a steep main street, Bruton, and Sparkford to Ilchester, where I spent the night.

Over Dartmoor.

Next morning I found the roads good enough to Exeter, though a bit rough in places. I took the direct road from Ilminster to Honiton, and had no reason to repent of my choice.

At Moretonhampstead the character of the road changes as one approaches the open moors. Instead of twisty lanes, fine open stretches are the rule, where in places almost any speed is practicable, and, with one or two reservations, safe. The roads do not always run up and down the hills at right angles to the streams, while the bridges do cross at right angles, hence there is a double turn at the bottom of a long steep slope, and this naturally requires care.



(Top) The war memorial at Longdown, between Exeter and Moretonhampstead.

(Centre) A graceful memorial erected in the wide road which traverses Moreton-in-the-Marsh.

(Bottom) On the borders of Dartmoor, near Bel Tor. An ancient cross can be seen on the wall.

Further, the hill which leads down to Merrivale Bridge has, in addition, a right-angled corner on a steep gradient a short distance before the bridge is reached.

Another place where care is required is on the short descent to Two Bridges, while Moorshop Hill, beyond Merrivale, cannot be ridden very fast, because of the many twists and turns combined with high banks.

The Cornish Roads.

A block of traffic caused me to stop on the long hill through Gunnislake, just after crossing the Tamar into Cornwall, but I restarted without difficulty and ascended the greater part of this hill at about 25 m.p.h. on second speed. There are one or two steep hills between Callington and Liskeard, but mere trifles compared with the Dartmoor hills, both in length and gradient.

The road down the Glynn Valley (between Liskeard and Bodmin) is excellent, and the scenery delightful. In this valley, road, railway, and river run more or less side by side for about five and a half miles. The road then rises over undulating ground to Bodmin and Goss Moor, where there is a straight, fast stretch for three miles on a slightly falling gradient to St. Dennis. Here the surface seemed rather rough at a fast pace, but there was little to complain of. Thence the road through Ladock and Tresilian to Truro, generally the best, or at least one of the best, roads in Cornwall, was not so good as it looked, though quite up to the general average, and the same can be said for the final stretch to Helston and The Lizard.

The scenery near Penryn, which was left about a mile on the left, is very pretty. It then becomes rather bleak, improving again near The Lizard. The town of Helston can be avoided by turning sharp to the left near the station and going through Clodgy Lane.

Helston is noted for a quaint old custom called the "Floral Dance." On Flora Day, May 8th, people dance in couples through the streets and in and out of the houses, finally finishing up at the Angel Hotel. Charles Kingsley was once a pupil at the Grammar School of this town, and Sir Henry Irving was born here.

The first permanent wireless station, that at Poldhu (or Poljew) is a landmark hereabouts. The Lizard district abounds in pretty and interesting places, viz., Gunwalloe, with its little church almost on the beach and separate belfry embedded in the rock, Kynance Cove, Gue Graze, Cadgwith and the Frying Pan, Mullion, St. Anthony, the Helford River, and Trelowarren Woods. The cliff scenery between Mullion and

From the Midlands to the Lizard.

Kynance is wonderfully fine, and the Lizard lighthouse is worth a visit, as well as the Serpentine Works at Poltesco.

The Return Journey.

On the way home I varied the journey in several ways. In the first place, I turned aside to Newquay, where I spent a few days, and incidentally saw more motor coaches than on all the rest of the trip.

At Two Bridges I again changed my route, and, instead of going *via* Postbridge and Moretonhampstead, took the road to Dartmeet and Ashburton. On the former road there are certainly hills, but they are nothing to those on the latter. As I approached Dartmeet I saw a notice advising all motorists to engage their lowest gears to assist their brakes. This is good advice, and I was glad that I followed it, for the hill is very steep, especially near the bridge, where it winds down past the inn. The climb on the other side is about as steep and longer, but not so twisty, and I went up quickly and comfortably on second speed.

Dartmeet is a delightful spot, and one in which many days might be spent with the greatest satisfaction. From the top of Bel Tor to Newbridge the road drops about 850 feet in two miles. This includes over half a mile of easy gradient near Poundsgate, so the rest must be pretty steep, as indeed it is. Again the desirability of engaging the lowest gear is impressed on motorists, and again the advice is good.

I was now in the Holne Chase neighbourhood, and very charming it is. Near Holne Bridge there used to be a very famous hairpin turn, but the latest road avoids this, and the present hill is not to be compared with those I had lately negotiated.

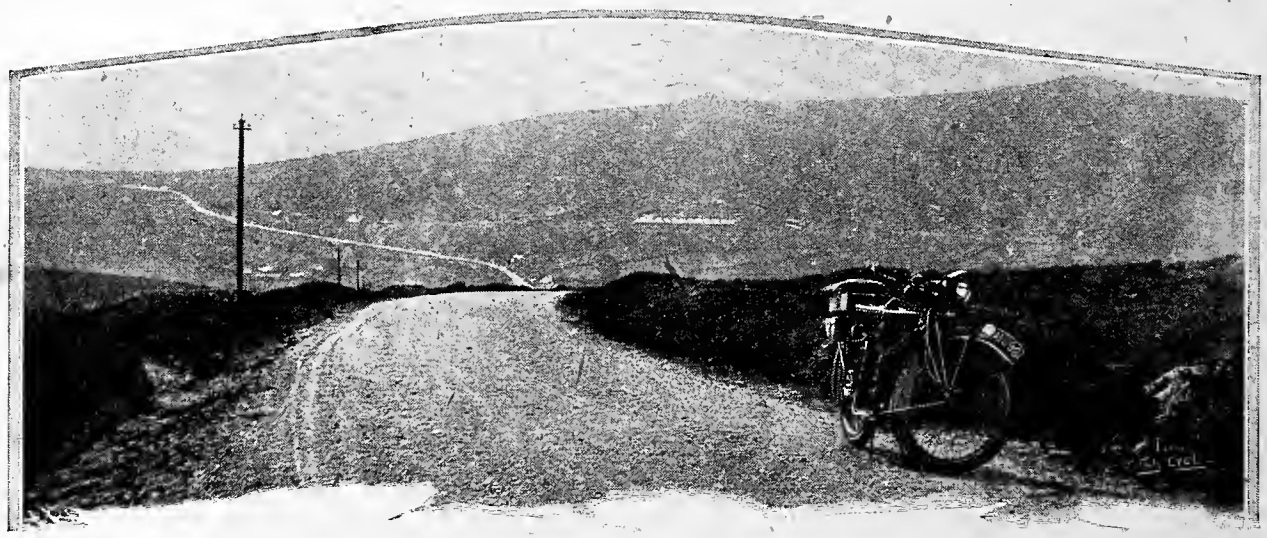
From Ashburton I followed the Exeter road for a time, then turning off through Newton Abbot to Teignmouth. Leaving next morning soon after ten o'clock, I climbed the Haldon Hills *en route* for Exeter. The view from the top of these hills must be seen to be properly realised. The downs and woodlands are varied by glimpses of the estuaries of the Exe and Teign, and backed by the sparkling sea of the channel beyond the red sandstone cliffs of Dawlish.

At Exeter I joined my outward route and followed this as far as Ilchester, with the exception that I took the road through Yarcombe and Chard between Honiton and Ilminster, but the direct road is to be recommended, running straight through Ilchester and along the Fosse Way, missing Shepton Mallet, to Radstock and Bath.

I was soon out of Bath and climbing the hill on to the Cotswolds, where there is a fine open road over the hills, till it drops at Nailsworth, and running through Stroud leads to Cheltenham. Thence I rode through Evesham, Alcester, Henley-in-Arden, and so home again. The return route from Ilchester was, on the whole, preferable to the road I traversed on the outward journey.

My Mount.

Up to the present I have said but little about the machine I rode—a 3 h.p. A.B.C.—but I think that a few words are its due. On a trip approaching 600 miles I averaged somewhere about 95 m.p.g. of petrol, and did not once have to replenish my oil tank. Only once was it necessary to touch the engine, and that was to clean a plug near Teignmouth after somewhat liberal oiling for the run across Dartmoor. The transmission (bevel and Renold chain) and tyres (Palmer cord) gave no trouble at all. AURIGA.



A typical stretch of Dartmoor country. Although not an ideal speedway, the exhilaration of riding across this wild open country on a fine day has to be experienced to be fully appreciated.

RENEWAL OF MOTOR LICENCES.

MOTOR cyclists are reminded by the Ministry of Transport that they must produce their registration books when application is made for a renewal of licences for the year 1922. In the event of the licence book having been lost, the matter should be immediately taken up with the appropriate licensing authority, so that delivery of a duplicate may be expedited. It would be well, therefore, if all motor cycle owners made sure at once that they are in a position to comply with the Ministry's requirement in this respect; for the taxation offices are likely to be very busy in a week or two

MISLEADING HORSE-POWER RATINGS.

A Plea for Closer Relationship between Cylinder Capacity and Makers' Statements of Nominal Horse-power.

TO the initiated the yearly increase in anomalies of makers' horse-power ratings is merely silly; to the novice it is most confusing.

In most cases nowadays the buyer has ceased to consider the "horse-power" of a possible purchase at all; he wisely delves into the question of cubic capacity as the basis of further comparisons of value. It would seem opportune, therefore, that a revision of the whole matter be made forthwith, especially emphasising the fact that makers' horse-power ratings are purely intended to be nominal indications of what the various sizes of engines *should* develop, and that they are not intended to illustrate what each particular engine *does* develop—on brake test or otherwise.

Looking Back.

For many years it was the pleasing custom of manufacturers to preserve some sort of modest uniformity, and for the benefit of newcomers to the pastime we may recapitulate the recognised scale. A 250 c.c. engine was 2½ h.p., a 350 c.c. was 2¾ h.p., a 500 c.c. was 3½ h.p., a 750 c.c. was 5-6 h.p., and a 1,000 c.c. was 8 h.p. So long as the majority of machines came very close up to one or other of these arbitrary limits—and, before the war, they did—all was well, and there was little or no confusion. Then bigger singles of 500-650 c.c. began to gain popularity under the titles of "fours," "four-and-a-quarters," and "four-and-a-halfs," but bearing no relations to their comparative capacities. A little later somebody realised that 499 c.c. engines develop more than 3½ h.p., and emphasised the point by calling his product a "four." The fat was properly in the fire now, and it was not long before a 350 c.c. two-stroke became a "3½ h.p." And since then things have gradually been getting more involved.

All 2¾ h.p.!

For example, several firms now list models fitted respectively with the 293 c.c. and the 350 c.c. J.A.P. engine—the latter a comparatively new product. Both are rated at 2¾ h.p.—which is absurd. Even worse is the case of the concerns also marketing a 269 c.c. Villiers model, to which is given the common estimate of "two-and-threequarters." Then the 350 c.c. Beardmore-Precision has been 3½ h.p. for some time now, which brings about an awkward *contretemps* when a 350 c.c. Barr and Stroud engine (3 h.p. according to *its* manufacturers) is fitted to an additional model. Thus two 350 c.c. machines produced by the same firm are rated as 3 h.p. and 3½ h.p. respectively.

Among the 1922 sidecar machines, we find such glaring inconsistencies as a 370 c.c. Connaught ("3½ h.p.") and a 633 c.c. Norton ("4 h.p."), with only the ½ h.p. variation in nominal rating which separates the 499 c.c. Rover ("4 h.p.") and the o.h.v. 499 c.c. Triumph ("3½ h.p."). As a correspondent points out, insurance policies are rated on these figures! Again the 4 h.p. Norton is nearly 100 c.c. larger than the 5 h.p. Stanger, and, if the 500 c.c. Dunelt had not reverted from 5 h.p. to 4 h.p. for next year, there would have been an even more striking example of the futility of the whole business. As already indicated, ratings of "4," "4¼," and "4½," are bestowed with a most amazing lack of discretion.

Mysterious Gain of 3 h.p.

One example of discrepancies in the big twin class will suffice to clinch the argument—if that is at all necessary. The 996 c.c. M.A.G. engine (air-cooled) is fitted to the 7 h.p. Matchless; the 996 c.c. M.A.G. engine (water-cooled) is fitted to 10 h.p. cycle cars.

Owners of 1921 machines also are very puzzled when the 1922 models of their mounts gain ½ to 1 h.p. by improvements to brakework or gear control, when so far as they can see the engine has been unaltered. They wonder if they are justified in increasing the ratings of their own possessions when disposal time comes.

Several solutions have been suggested; in fact, that is probably why there has been no successful attempt to amend things sooner—there are so many ways of doing it.

Go back to the good old-fashioned scale, says one group. In that case, the standard classification would be tabulated as follows:

Not exceeding	250	c.c.	...		=	2¼	h.p.
From	250	c.c.	to	300	c.c. =	2½	h.p.
,,	300	c.c.	,,	350	c.c. =	2¾	h.p.
,,	350	c.c.	,,	400	c.c. =	3	h.p.
,,	400	c.c.	,,	500	c.c. =	3½	h.p.
,,	500	c.c.	,,	560	c.c. =	4	h.p.
,,	560	c.c.	,,	600	c.c. =	4½	h.p.
,,	600	c.c.	,,	700	c.c. =	5-6	h.p.
,,	700	c.c.	,,	800	c.c. =	6-7	h.p.
,,	800	c.c.	,,	1,000	c.c. =	8	h.p.

This would mean a considerable drop in nominal horse-power for several machines, but, apart from the fact that it is not very fairly graduated, it has much to commend it. It would probably mean a lesser number of catalogue alterations and reprints than any other scheme.

More revolutionary, but more nearly approaching the truth, is the suggestion—which has been ventilated many times in the past in the pages of *The Motor Cycle*—to allow 100 c.c. to represent one horse-power. Thus:

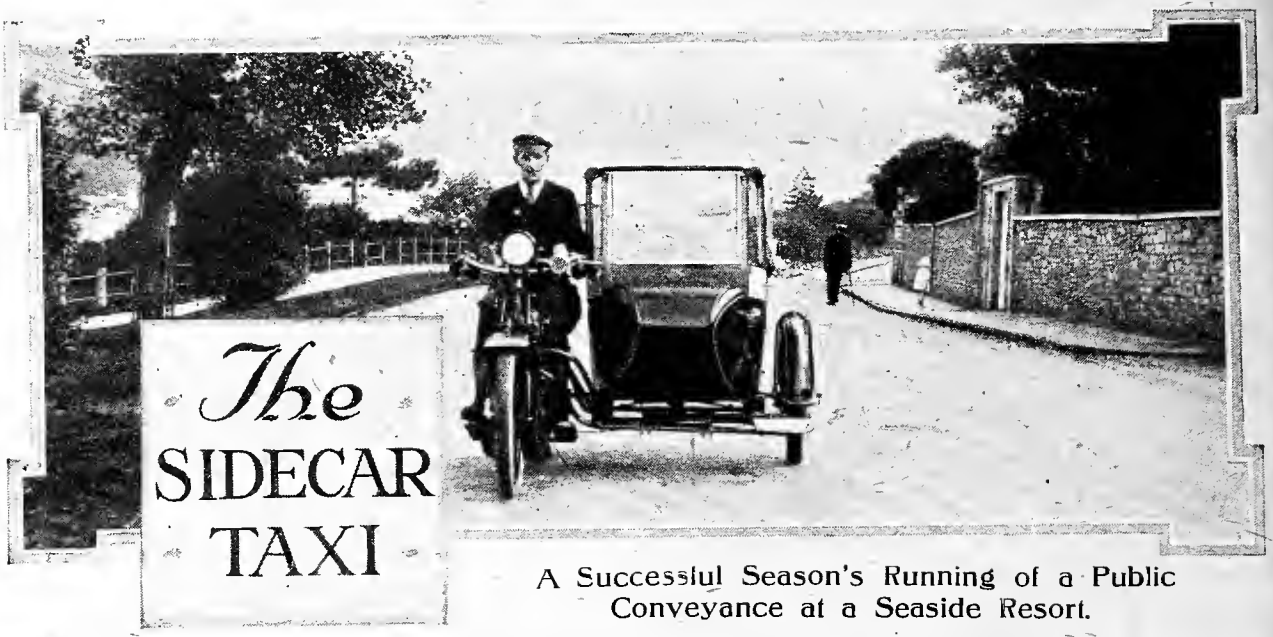
250 c.c. = 2½ h.p.		400 c.c. = 4 h.p.	
300 c.c. = 3 h.p.		500 c.c. = 5 h.p.	
350 c.c. = 3½ h.p.		550 c.c. = 5½ h.p.	

and so on.

An Attractive Plan.

Two alternatives present themselves here. Each machine might be rated to the nearest quarter horse-power (a 269 c.c. Villiers engine would be 2¾ h.p., a 293 c.c. J.A.P. 3 h.p.), or it might be taken decimally to one or two figures (269 c.c. = 2.7 h.p. or 2.69 h.p., and 293 c.c. = 2.9 h.p or 2.93 h.p.). The latter method appears most attractive on paper, for the cubic capacity of an engine would immediately be apparent from its nominal h.p. rating.

Which suggests yet one more way out of the muddle. Why not banish horse-power altogether and classify a machine by its capacity only? Several writers have been driven to this already.



The SIDECAR TAXI

A Successful Season's Running of a Public Conveyance at a Seaside Resort.

WHEN the first taxicab appeared with a motor cycle as its means of propulsion, it was ridiculed but much photographed; it drew crowds at Olympia, and it set many wondering as to whether good business might be done with this type of vehicle.

Nottingham was the first city to license sidecars, and others have followed, notably several seaside resorts, including Southsea, Torquay, and Southampton. Many other local authorities have refused licences, but it can only be a question of time before their prejudices vanish.

In June last, two B.S.A. sidecar taxicabs were licensed at Clevedon, the quiet little town on the Bristol Channel. So far they are the only two in Somerset. The owner-drivers, W. Wood and B. Ackrill, have had a very busy season, in spite of considerable taxicab and motor 'bus opposition.

No Mechanical Trouble.

Technically, the owners have nothing but praise for the 6-7 h.p. B.S.A. machines. Referring to the outfit with the largest mileage, it has covered 4,063 miles since early July, and has been decarbonised only once. No mechanical trouble of any sort has been experienced; it continues to start with remarkable ease, maintaining its power and efficiency excellently. Petrol consumption on short runs is 38 m.p.g. and on long runs up to 45 m.p.g., this using a 31 jet.

In appearance, which goes for much on the rank, it wears very well, still retaining much of its original smartness. This applies also to the sidecar, though the upholstery of one has worn quicker than that of the other cab. A very good point is the ease with which the back wheel may be changed, thus making the loss of time through punctures negligible.

There are certain criticisms to be made, however; the chief is the abnormal wear of back tyres. Whilst the original Palmer cords are still in fair condition on the front and side wheels (over 4,000 miles), each rear wheel has worn out several covers. Palmer, Goodrich, and Dunlop have been tried, and the best service obtained from one cover is under 1,500 miles; naturally, this forms the chief feature of the running costs.

There is urgent need for a good ratchet brake on these vehicles; the second cab is now in dock, due, indirectly, to its running away when left unattended on a slope for a moment. Had a ratchet brake been available, this could not have occurred, and an unusual expense with several weeks' loss of revenue, which still continues, would have been obviated.

The Lucas Magdyno has behaved perfectly, troubles, if any, having been trivial. A short run served to show the writer that the easy steering qualities are excellent, not the slightest pull being noticeable, in spite of the unusual width of the sidecar.

The Business Standpoint.

The fares charged are: 9d. per mile, with a reduction to 8d. on journeys over twenty miles; one hour waiting is reckoned free on such journeys and 2s. 6d. per hour after; shopping runs are charged at 3s. per hour.

Without going accurately into detailed expenditure, the total running cost per mile may be taken as between 5d. and 6½d.

Through a busy summer season each machine should average fifty to seventy-five miles per day. Obviously, this must be maintained to

The excellent luggage accommodation of the average sidecar taxi is not always realised as it stands for hire on the rank.

The Sidecar Taxi.—

allow a margin for the off season, but it should be noted that the chief item in the running cost—tyres—may be considerably reduced when the most suitable tyre has been found; at present this item accounts for approximately fifty per cent. of the cost per mile.

General maintenance is small, as the owner-drivers are expert mechanics and do all their own repairs. There are few expenses additional to that of the ordinary sidecar outfit—the hackney carriage licence, a stand licence, and garage rent.

Prospects.

Generally, from the experience of these two owners, it is assumed that, given a season of fair weather without national disturbances affecting holiday-making, a reasonable luck with tyres, skilful personal attention to maintenance, a sidecar taxi business in a small seaside resort or country town is likely to be a profitable one. In a busier centre, a manufacturing town, with extensive residential suburbs where the trade will be equal all the year round, such a business should prove quite a good thing. WESTERNER.

VALVE GRINDING.

A Tip to save Trouble when only Hand Tools are Available.

ALL motor cyclists know to their cost that valves must be ground in at intervals if they expect their engines to continue running in a really satisfactory manner. These intervals vary very much with different machines and different individuals, for they depend largely upon the quality of the valves, especially as regards their ability to stand great heat, and quite as largely upon the way in which the machine is driven. Those who, like my friend "Ixion," drive "very blue," must expect to pay for their fun in more frequent valve grindings and more work with a screwdriver when the operation takes place. Long periods of running with an open or nearly open throttle are bound to have their effect in increasing the heat of the engine, and consequently of the valves, more particularly of the exhaust valve, and it is this heat that causes the pitting of the surface. The inlet valve, which is constantly cooled by the incoming gas, very seldom needs grinding, and when it does a very little work generally restores its original condition.

Now since it is admitted that valves must be ground at more or less frequent intervals, it may be worth while to consider briefly how this may be done most effectively and with the least amount of trouble. There is no doubt that a lathe is ideal for the purpose, but few have access to one.

Typical inlet and exhaust valves after considerable mileage. Note how the exhaust seating (on the right) has been ground down, thus restricting the free passage of the gases

First, let me say that it is most undesirable to do all the valve grinding in the engine, for this method, although it grinds the valves well enough, also grinds away the seating which seldom needs any grinding at all, and results in time in making pockets which interfere very seriously with the ingress of the explosive mixture or the egress of the burnt gas—generally the latter, since it is the exhaust valve that gets most grinding.

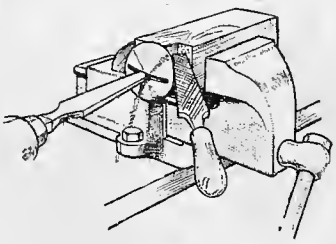
Makeshift Apparatus.

There are upon the market one or two excellent valve cutters designed with a view to achieving this very object of truing up the valve without injuring the seating, but I am supposing for the moment that the motor cyclist is not possessed of any special tools of this sort, but only an ordinary workshop equipment such as is owned by many amateur mechanics and carpenters, and that this equipment includes a hand drill having a three-jaw chuck capable of grasping the valve stem.

If the hand drill with the valve in its jaws be firmly held in a vice, it can be used somewhat in the manner of a miniature lathe. It will not be rigid enough to enable a cut to be taken with a tool, nor would it be very easy to hold the tool steady, but the worst of the pitted surface can be removed by holding a file or a carborundum stone against it, after which the valve can be finished off in the engine, and as the major part of the work has already been done this will make but little difference to the seating.

Hand Methods.

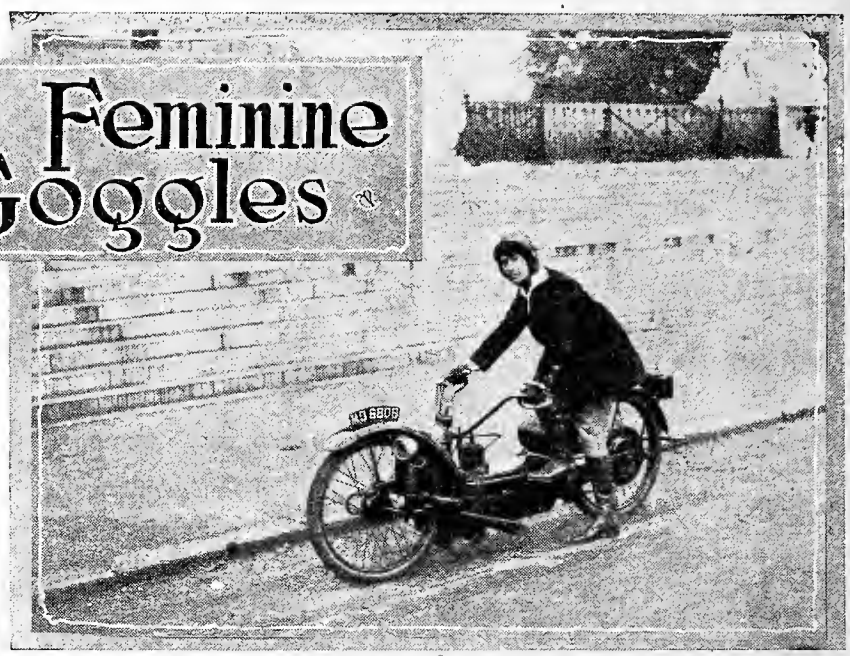
I have personally used the method above described for some years with the greatest satisfaction. Some motor cyclists file the worst of the surface off their valve faces and afterwards finish them by grinding in the usual manner, but this procedure requires more skill with the file than the average amateur mechanic possesses. Richford grinding paste, used sparingly or the finest carborundum powder, should be used for finishing the grinding; the former *may* and the latter *must* be mixed with a little oil, after which the surface may be polished with a little crocus powder and oil.



A method of rough grinding with the aid of a file and a prepared block of wood. A stick wrapped with emery paper may be used in lieu of the file

Another method of starting the work which is just as effective as holding the valve in a drill is to take a piece of wood about as long as the valve stem, and the same width as the valve head, make a hole through it lengthwise, in which the valve stem shall be a good fit, bevel one end a little to allow room for the file, and placing it in a vice get a friend to revolve the valve with a brace while holding the file or stone against the face. Compared with the first method, this has the disadvantage of requiring two persons to carry it out, but the result should be quite as good or perhaps better, as it is easier to hold the tool firm with two hands, and moreover some sort of rest can be provided without any great difficulty, against which the tool may be steadied. AURIGA.

Through Feminine Goggles



The Ner-a-car on the Road.

By MAB. LOCKWOOD-TATHAM.

WHEN I first saw the Ner-a-car my remark was, "What is it—a car or a motor cycle?" The frame, drive, enclosed engine—in fact, almost everything—suggest a car; yet it has handle-bars, only two wheels, and footboards. Of course, the first thing I noticed was the extraordinarily long wheelbase, and the fact that the centre of gravity was below the axles. The only detrimental point which struck me with regard to this was the very small clearance, especially in cornering or taking the machine up or down a step. Of course one does not expect to take corners at a very great speed, but if, in a moment of recklessness, much of an angle were attained, the running board might touch the ground.

The Ner-a-car has a car type chassis of pressed steel, with a special feature in the shape of a large immovable mudguard carrying two head lights—one electric, one acetylene; the latter is, of course, a "standby." The magneto supplies the current for lighting. The engine is a 2½ h.p. two-stroke, and friction disc transmission gives five speeds.

With the exception of one foot brake and the gear lever, control is entirely from the handle-bars. The clutch is operated by a left twist grip.

Special Clothing Not Needed.

I should like to mention that when the little machine was taken over I was dressed in my usual motor cycle garb, which consists of soft leather and beaver helmet, brown suède belted coat, fawn Bedford cord riding breeches, and field boots. It was soon discovered, however, that it was quite unnecessary, so far as riding the machine was concerned. Riding would have been just as easy in skirts. Nevertheless, for a long run the costume just described has always been found to be more comfortable and very much warmer than feminine garments, which is an important point for winter riding.

I will try to describe my sensations on first mounting. I took the precaution of doing so in Hyde Park, at a spot where there was little traffic and few people except nursemaids and small boys to see me if I happened to fall off.

My engine started at the first kick, and I mounted, slowly twisted in the clutch, and wobbled away. I soon discovered, however, that it was very nearly impossible to keep on wobbling, because the machine practically balanced itself.

It was rather a weird feeling being so far away from the front wheel, and very strange not to see the front mudguard move when turning a corner, but otherwise it soon began to feel perfectly natural.

At this point I began to feel very courageous, and decided to adventure among the traffic. So, leaving the park at Hyde Park Corner, I drove by way of Grosvenor Street and Bond Street to Conduit Street, Regent Street, and Piccadilly Circus; thence out through Buckingham Gate towards the Portsmouth Road.

In the meantime, two other Ner-a-cars and a sporting 2¾ h.p. Douglas (complete with enormous copper exhaust pipe) had joined me, and we settled down to enjoy the good roads, glorious sunshine, and general holiday feeling of Saturday afternoon.

Steering was soon discovered to be quite easy without using the hands. Direction is perfectly controlled by slightly swaying the body, and the feeling of confidence while so doing was most unusual. However, my fellow travellers quite put me in the shade on that sort of thing, and it was really amusing to see the expressions on the faces of people passing by when one of our party came along at about 25 m.p.h. standing on the engine casing with hands in pockets, or lying flat on his back on the saddle, with his feet over the handle-bars. It caused my heart to leave its usual position once or twice, particularly on tramlines. However, these things appear to be actually easier than they look, owing to the unusual design of the whole thing.

Speed on the Level.

After leaving Hammersmith and Kingston, when we were out on the country roads, there were opportunities of testing the Ner-a-car's speed capabilities. As far as I could tell without a speedometer, it

Through Feminine Goggles.—

reached a maximum of about 35 m.p.h., and there did not appear to be any undue racing of the engine at this speed, nor was there any sign of overheating.

We kept right on, doing very good time, till we arrived at the Hut at Wisley, where we stopped for tea. While it was in process I heard an amusing story of an incident which happened in the Isle of Man during T.T. race week. Two Ner-a-cars were over there at the time, and the demonstrator in charge of one of them left his mount standing outside an hotel, where the racing men are known to foregather. While he was inside a certain well-known race entrant came up and, taking the strange little machine, rode off on it. Our friend came out, found ne'er a car (!), and went off the deep end about it. Just then the star rider returned, and after listening to a storm of words said, "But you evidently don't know who I am—my name is ———". The gentleman with the Ner-a-car retorted, "I don't care if you're Lloyd George—nobody but an *expert* is going to ride this machine!"

Homeward Bound.

We had only gone a few miles on our homeward journey when the light began to fail, and I really got the sensation of driving a car when I was able to bend down and switch on electric lights. When we got into the suburbs the traffic was much thicker than on our outward journey, and I was able to judge the capabilities of my machine under such conditions better than before.

In Traffic.

Thanks to the sliding scale of gears and throttling down capacity, it is possible to come almost to a standstill in a tight corner or at the wave of a policeman's hand.

Should it be necessary to stop entirely, a slight twist of the clutch release is all that is required, and *vice versa* to move off again. This means, of course, that one need not worry about even the worst thoroughfares.

Before reaching my destination on the home run, I was reminded, by extreme fatigue and stiffness in my left arm, that the said twist grip clutch was not entirely an unmixed blessing. I have no doubt that after continued use this would not be the case, but anyone driving the machine for the first few times would be bound to feel it. The twisting muscles of the forearm are so seldom used in the ordinary way that, particularly in traffic, where much declutching is necessary, one must feel the strain to a certain extent.

Quite a good point, as far as using the machine for shopping is concerned, is the excellent springing. I do not suggest that it would be safe to carry the eggs home on it, but certainly vibration is practically *nil*, and only very bad roads cause any discomfort.

My impression of the Ner-a-car is that it is sensible, comfortable, and adaptable. It should prove popular, particularly with ladies who do not care for motor cycling from an entirely sporting point of view. The fact that a special costume is unnecessary will appeal to many, particularly those who are past their first youth.

Nearly all the weight of the Ner-a-car being carried below the level of the hubs, there is little tendency to skid. The riding position is comfortable, and, taken all round, the machine is very controllable.

IMPORTANT DEPARTURE BY A SCOTTISH CLUB.

SCOTTISH motor cyclists are a small body compared with those of England, but they may fairly claim to make up in enterprise what they lack in numbers. As regards their organisation of trials, this is admitted. Now, the Western M.C.C., the principal body in the West of Scotland, has embarked upon a new venture, which will bring Glasgow on a level with Edinburgh, and put the Scottish organisations in a remarkably favourable position as compared even with the biggest clubs in England.

At a recent special general meeting of the club it was unanimously decided to proceed with the purchase of a club house at 18, Burnbank Gardens—a locality particularly suitable for motor cyclists in the West End of the city, but reasonably central for all. It was proposed to finance the purchase by issuing debentures bearing 2½% interest and redeemable by ballot at convenient periods, and these have already been taken up to the amount of about £1,700 by the club members and other subscribers.

The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

ACCIDENTALLY INTENSIFYING THE SPARK.

Sir,—The letter appearing under the above heading in your issue of December 1st from "Sparklet" is distinctly interesting as a simple means of curing a trouble to which sparking plugs are occasionally liable.

The short circuit between the sparking points is not caused by carbon, as "Sparklet" suggests, but by the actual metal of the electrodes which is carried across the gap by the spark. This action only occurs when the central electrode attains a certain temperature, and normally the cure is to fit a plug of a design in which the central electrode will keep cooler.

The fitting of an aluminium radiator under the terminal of the sparking plug would certainly have the effect of cooling the central sparking point, although it is surprising that this fitting was sufficient to cure the trouble. However, the reason why this aluminium radiator stopped the thread of metal from bridging the spark gap must have been due to its cooling effect and not to its condenser effect (as "Sparklet" suggests), because the electrical capacity of this radiator would be practically negligible.

LODGE PLUGS, LTD.

ACCESSIBILITY OF A FOUR-VALVE SINGLE.

Sir,—The four-valve Triumph is a fine example of modern engine design, but how is the sparking plug removed hurriedly, first, when the engine is cold; secondly, when hot?

Erith. PRO., TRIUMPH.

MISLEADING HORSE-POWER RATINGS.

Sir,—It is commonly understood that the various present-day h.p. ratings bear no significance to the actual b.h.p. developed or to anything by means of which one engine may be compared with another. Therefore, if some formula or other could be generally adopted, the buyer of a machine could compare one engine by another. The formula $\frac{\text{cubic capacity}}{200}+1=\text{h.p.}$ gives correct results up to about $3\frac{1}{2}$ h.p.; this formula is very simple, but it will be seen that using it for an engine of 1,000 c.c., the h.p. is only 6. This would no doubt upset the equilibrium of the big twin class, but would enable the h.p. rating to be standardised.

If this or any other formula is unsatisfactory, it could be extended to $\frac{\text{c.c.}}{200}+1+\left(\frac{\text{No. of c.c. above 550}}{225}\right)=\text{h.p.}$ Under this formula we should get:

	Example.
200 c.c. = 2 h.p.	
250 c.c. = $2\frac{1}{4}$ h.p.	Diamond, etc.
300 c.c. = $2\frac{1}{2}$ h.p.	
350 c.c. = $2\frac{3}{4}$ h.p.	Douglas, etc.
400 c.c. = 3 h.p.	A.B.C.
500 c.c. = $3\frac{1}{2}$ h.p.	Norton, etc.
550 c.c. = $3\frac{3}{4}$ h.p.	Scott (533 c.c.)
600 c.c. = $4\frac{1}{4}$ h.p.	Sunbeam
700 c.c. = 5 h.p.	
800 c.c. = 6 h.p.	B.S.A. (770 c.c.)
1,000 c.c. = 8 h.p.	Indian.

Nelson. NOVICE 2.

Sir,—After reading "Speedwell's" letter in your Show Number concerning manufacturers' h.p. ratings, another aspect of the question, of more immediate interest to many motor cyclists, occurred to me. Most insurance companies base their premium charges on "makers' h.p."; and they will no doubt take advantage of the action of the makers of the 499 c.c. single mentioned by "Speedwell" by increasing their premiums accordingly for this particular machine. Thus, the owner of a 633 c.c. Norton will be at a considerable advantage as regards actual power, while paying the same premium as the 499 c.c. owner. This is, of course, distinctly unfair to the latter.

The c.c. of an engine should be a good enough guide to its power, and would be as easily understood by the buying public as the term "horse-power" if it were as universally adopted. ARIEL (498 c.c.)

Carlisle.

[An article on this subject appears on another page of this issue.—ED.]

TWO-STROKE FAILINGS.

Sir,—"Two-stroke" asks for the name of a machine of this type which does not burn its top piston rings. There is one—the Scott.

His trouble, however, is probably due to waiting too long between decarbonisations. On a two-stroke single last season I found that 700 miles was the limit of mileage without jamming the piston ring solid with carbon. Experience having taught this, I did several thousand miles on the same single ring fitted by these makers.

Incidentally, I fancy that this peculiarity of the two-strokes nullifies one claim that I have seen put forward for a detachable cylinder head, viz., decarbonisation without removing the cylinder. J. STUART-WHITE.

Sir,—I have a $2\frac{1}{2}$ h.p. Villiers, and have never had any trouble with burnt rings. I think that the reason for the top ring burning is because the ring is too near the top of the piston on a large number of two-strokes. It will be found that on the Villiers the ring is lower down the piston, and so is not burnt so easily by the exhaust gases, as it will be noticed that the side against the exhaust port always burns first. C.W.B.

Nottingham.

Sir,—I have a $2\frac{3}{4}$ h.p. Sun-Vitesse which has been in daily use for over two years, and have had to date one set of new rings, and then the top was no worse than the others.

Perhaps "Two-stroke," if he is a keen user of this type of machine, will try a Sun for his next mount.

I have no connection with the company.

Hants. SATISFIED RIDER.

CONVERTED BY OUR COVER!

Sir,—I think I ought to tell you that my landlord, who hates motor cycles, was overcome by the splendid cover of your Show Report, and looked right through the journal, and decided on a Ner-a-car. I told him it was "Ixion" on the coloured cover. Am I right? [Not this time!—ED.]

Godalming. TRIUMPH RIDER.

HIGHEST AGRICULTURAL LAND IN GREAT BRITAIN.

Sir,—I think your correspondent, referring to some farm near Tomintoul as being "the highest agricultural land in Great Britain" must be in error. We have in Co. Durham, above the main road (itself 1,960 feet altitude) between Middleton-in-Teesdale and Cumberland, two farms on the 2,000 feet line with agricultural land. There is no agricultural land near Tomintoul above 1,300 feet. Again, the

inns at Tomintoul only stand at 1,120 feet altitude. These are surely not the highest in Great Britain! The Cat and Fiddle is 1,650. And if High Street (2,664 feet), the old Roman road (certainly paved in parts) above Haweswater, in Westmorland may count, it overlooks the Aberdeenshire road by nearly 300 feet. So that England can boast the highest road, hotel, and agricultural land in Great Britain.

(Rev.) C. D. FOTHERGILL.

IMPROVING AN A.B.C.

Sir,—One carburetter that I personally know of that will give the required tick over is the Cox Atmos. With standard timing for valves and magnetos, throttle the engine down as slow as possible, and nearly fully retard the magneto. Then adjust the pilot jet until the required speed is obtained. I am presupposing that the inlet valve guides are not badly worn, and that there are no air leaks in the induction joints. The plug points must be of the same gap each side. Personally, I also use supplementary spark gaps, which has cured the left-hand plug from oiling up.

The gudgeon pin fixings I am using are those of Capt. Maund. If within riding distance of the Len Engineering Works, Maidstone, take a trip down there; if not, then send on the connecting rods, gudgeon pins, and pistons, as the pistons have to be slightly altered for this fitting. Usual disclaimer.

I am surprised to hear that Mr. Mason found brass plates on the ends of his gudgeon pins, as the standard fixing is a steel washer.

Another tip for A.B.C. merchants. Be careful about your oil. This is a most important point.

Pinner. A.B.C. RIDER.

[We have also received a letter from Capt. Maund on behalf of Rootes, Ltd., Len Engineering Works, Maidstone, stating that they are prepared to guarantee their modified gudgeon pins against failure, provided they carry out the work themselves (price 6s. 6d.).—ED.]

READERS' IMPRESSIONS OF THE SHOW.

Sir,—After visiting the Show, I should like to give you my impressions. First, I think, the number of women (accompanied and unaccompanied) astounded me, and the majority showed a real live interest in all the exhibits. I hope the manufacturers noted this. Secondly, although an ardent sidecarist myself (and a young one, too), the only thing that interested me at the Show was the Morgan stand. On looking at their price lists, I see none of their models listed above £200, but on a stand near by I saw a two-seater sidecar outfit at £210. I confess it beats me why people buy the latter when they can get car comfort at the same price. The Morgan has got a four-seater; and how nice and comfortable it looks with the hood up!

Concluding, I wish the manufacturers one and all the best of business, and thank them for a nice show.

D. HURREN.

Sir,—I recently came back from the Show, which made me lament my lack of sufficient cash to buy about thirty different 'buses.

I am not really interested in sidecar outfits, but the 8 h.p. Blackburne appeared to be wonderful value for money. It was easily the cheapest high-powered machine in the Show. The makers of the 4½ h.p. Quadrant at £100 were another firm offering good value. Firms such as these are helping to bring prices to pre-war level.

Among the solos I was tempted by all the various makes embodying the new J.A.P. lightweight engines. The Raleigh, however, appealed to me, and I finally succumbed to the attentions of the obliging salesman. The wonderful finish and appearance were irresistible, and the price of £68 put the pot on it. I have therefore substituted Woodbines for my "ten for six pennies" to help pay for the new 'bus.

L. EDWARDS.

Sir,—I should like to write a few impressions of the Motor Cycle Show. When inspecting a machine one naturally likes to ask questions in connection with mechanical effects of new models, especially of new engines, such as oiling system, design of bearings, etc.

These things are illustrated in your journal from time to time, but one does not hear of the test results, and I find, after speaking to several demonstrators, that their knowledge of these details is very limited.

Surely there are readers who will agree with me that one man at least who has been through the workshops (not walked through) should be allotted to each stand.

Southampton. INTERESTED.

WHICH IS THE WORLD'S BEST SOLO MACHINE?

Sir,—Being a novice, and undecided about the make of my next machine, I have jotted down at some length the reasons expressed by different writers for their preference for various machines. As far as I can make out, however, hardly a single good point has been remarked in the whole discussion which I do not find embodied in my own 'bus—a 4 h.p. Triumph. And now for a brief *résumé* of a few of these points.

"The Indian Scout . . . flexibility and acceleration." With regard to the first point, I could slow down to 4 m.p.h. on top (4.75) and accelerate again from that speed without the least trace of objection in the engine. As to acceleration, I once nearly put myself over the carrier through too sudden opening of the throttle on a 1 in 10 gradient.

The Ariel and Ivy are mentioned for economy. I regularly got over 100 m.p.g., and once did 137 (speedometered), and that in the Lake District.

The Scott is mentioned for silence and top gear performance. Except for the crackle of the open exhaust, I could detect no engine noise. As for top gear performances, I went up Kirkstone Pass on top, and was doing 28 m.p.h. at the top with threequarters throttle.

Various spring frame steeds are mentioned, but I was always at ease on the saddle even at the end of a 160-mile run.

A.B.C.'s are praised for their easy starting. Mine always started within three kicks without priming.

Nortons are mentioned for speed and power. My 'bus reached just over 55 m.p.h. under normal conditions, and could touch 60 m.p.h. with a slight down gradient or assisting breeze. It is not often that speedmen ever wish to exceed this figure on the road.

Other points mentioned about various makes were torque, balance, non-overheating, ability to take sidecar, and general

TAXI SIDECARS FOR AN INLAND RESORT.

Two well-known Yorkshire competition riders, W. E. Grange and Geoffrey Hill, with their 8 h.p. Rex-Acme taxicab outfits, which they are putting into service at Harrogate. Such machines in time will probably supplant the bath-chairmen of the famous Spa.

and absolute reliability. As far as my experience extends, my 'bus possesses all these points. Transmission excellence is shown by my early statements on flexibility, which even a Sunbeam transmission would find hard to emulate for smoothness.

There is but one point which I am inclined to criticise. Why cannot the machine be supplied with decent handle-bars instead of such awful "ear-scratchers," "sit-up-and-beg," or "sit-down-to-tea," as they are variously termed?

Stockport. H_2SO_4.

Sir,—Undoubtedly this is the pre-war Triumph. I started with a 1906 model, battery ignition, and other refinements, and have recently parted with a 1913 machine, having done some thousands of miles in all parts of England. The consumption was 95 m.p.g. regularly, oil negligible, and speed with 4¼ to 1 gear over 60 m.p.h. on the road; no speedometer. I have had extensive experience of about sixteen other machines, P. and M. and Velocette included. The P. and M. is the runner up, to my mind, and the Velocette is the best lightweight to be had, but when one is in a hurry 38 m.p.h. gets on one's nerves. I could get 120 m.p.g., however.

One hears a lot about the wonderful new engines, and so on. I have had some, and the old stuff scores every time. Hills made no difference to the Triumph, and the revolutions were something wicked when on the move. I beat a 4 h.p. solo twin easily, geared the same, but with open exhausts fitted. Spare parts are easily obtained. Riding position, accessibility, and its smooth running were a real pleasure. I never had any vibration to speak of on the handle-bars.

The Verus also is good; the 2¾ h.p. is a wonder.

London, N.W.3. KELLY.

Sir,—I feel sure that all Brough Superior riders will agree that when this machine becomes better known there will only be one possible reply to this question. Personally, I am specially impressed by this machine's tremendous power, silky drive, light weight, extreme comfort, ease of control, and magnificent finish. The interest shown by the maker after purchase has to be experienced to be realised. B.S.

Scotland.

Sir,—Referring to "Harley's" letter, does he really think that the Ford, wonderful production as it is, is the world's *best* car? A. F. SCROGGS.

Sir,—With reference to the discussion on the above, I think this is a question that is unanswerable, but perhaps an answer could be found to the question of the best machine for *(a)* speed, *(b)* economy on petrol, oil, and tyres, *(c)* reliability, *(d)* hill-climbing, *(e)* accessibility, *(f)* comfort and appearance, *(g)* steadiness, *(h)* cleanliness, *(i)* silence, *(j)* brakes, *(k)* easy starting, and *(l)* value for money.

In my opinion, the best machines under these headings are as follows: *(a)* 3½ h.p. 16H. Norton, *(b)* 2¾ h.p. two-speed Douglas, *(c)* 3½ h.p. Sunbeam, *(d)* 4 h.p. Triumph, *(e)* 2¾ h.p. A.J.S., *(f)* 3½ h.p. N.U.T. equipped with Brooks cantilever saddle and Lucas Magdyno lighting, *(g)* 3 h.p. A.B.C., *(h)* 3½ h.p. P. and M., *(i)* 4½ h.p. Humber, *(j)* 3 h.p. A.B.C., *(k)* 2¾ h.p. 1914 Douglas, and *(l)* 2¾ h.p. A.J.S.

In order to discover the best motor cycle, all the above points would have to be incorporated under one head, and I think that perfection is nearest in the 2¾ h.p. A.J.S.

Of course, service from the manufacturers in the prompt despatch of spare parts, if unobtainable locally, counts for a great deal in the selection of an ideal mount.

With reference to "Harley's" letter in your issue of November 24th, I think that the greatest number of machines of any one make on the road would be about equally divided between Nortons, Douglases, and Triumphs, and that American machines of any one make on the road are not so common as the above British makes.

Perhaps Mr. Editor could give us some idea in the matter. 'ADSUM.

Hyde Park, W.2.

["Harley's" reference to the number of machines on the road was obviously not confined to Great Britain.—ED.]

Sir,—I am not surprised to find that my original letter on the above subject has brought forth a great deal of comment, as it is natural that opinions must differ considerably on such a question.

I have carefully read the letters from readers who consider various makes of machine the best; but I have still to be convinced that they are superior to the machine I name. One reader rules out the Sunbeam on the score of price; but, in discussing such a subject as this, I think cost may be put aside.

Another considers that the make of machine most frequently encountered must be the best. If this line of argument be followed, the Ford will undoubtedly be found to be the world's best car!

In some of the letters published, the writers seem to forget the question of workmanship and finish. This point, I maintain, is extremely important. They consider that, because their machines are fairly comfortable, and get them there and back, that is all that is required. I claim that any modern machine should do that.

I will take one or two of the machines named, commencing with the Henderson. The engine has, admittedly, a very even torque, but it certainly is not as accessible as a single. The machine is extremely heavy, and this point alone would rule it out as an ideal solo mount, there being, I should imagine, few persons who would care to ride it without a sidecar. As regards finish, in this it cannot be even compared with the average English machine, much less with the Sunbeam.

The Scott is claimed as best by some, on account of its even torque. Personally, I prefer the beat of a single to anything else. A. ARNOLD.

[This correspondence is now closed.—ED.]

VARIABLE PULLEY MANIPULATION.

Sir,—Can any reader tell me how it is possible to get a really low gear on a Philipson pulley without using one's foot, as I have to keep my foot free for the foot brake, which is just above the Philipson? The hand control is of little use in traffic. CARROTS.

Warrington.

EXHAUST NOTE CHANGES ON TWO-STROKES.

Sir,—With reference to an article recently in *The Motor Cycle* about puzzling troubles, I think I can solve the one about the two-stroke changing its exhaust note. The Velocette I had once had a similar trouble; it would roar away like mad all at once, and then peg out. The trouble was in the B. and B. carbureter, 1915 type, with inverted toggle gear in the float chamber. Apparently the float would bend on the needle and fix it partly open, petrol would flow straight into the crank case, giving a rich mixture, awful petrol consumption, 40 m.p.g. once, and a distinct change in the exhaust, more muffled, due to petrol cutting the oil. The increased friction was negatived by the richer and harder pulling mixture. If your correspondent will change his carburetter for one not affected by vibration he will be all right, I expect. G. ROSEKILLY.

WHERE THE LIGHTWEIGHT SCORES.

This South African motor cyclist evidently thinks discretion the better part of valour, and is taking no risks with his little Cedos in fording the river, preferring to carry the machine and keep his engine running.

PRONUNCIATION OF "MAGNETO."

Sir,—A short time ago I had the pleasure of hearing a first-class lecture on the "Magneto as Applied to Motor Cars," which I enjoyed thoroughly. The lecturer, however, instead of pronouncing it "magnet-o," as I have been accustomed to hear it, called it the "magné-to," as if it was spelt with two e's (magneeto). Puzzled as to which was right, I looked up my dictionary, but could not find the word, but got "mag-neto-electric," which seemed to suggest that the name should be "mag-neto." PUZZLED.

Harthill.

ROLLER BEARINGS AND THEIR ACTION.

Sir,—Owing to indisposition, my answer to Messrs. A. R. Turner and A. A. Beesley has been delayed. I am perfectly conversant with the working principles of roller bearing big ends.

I should like to point out that (owing to various reasons, *e.g.*, the explosions of the engine and the resilience of metal) the bearing is not comparable to an epicyclic gear.

Also, apart from all arguments to the contrary, the rollers do slip, and, once worn, produce a harsh bearing.

N. A. BLOOMER.

SIDECAR FUEL CONSUMPTION PERFORMANCES.

Sir,—"Ignoramus's" 92 m.p.g. with Triumph and sidecar (two up) is certainly abnormal, and more than can be expected. However, my feelings are very mixed after reading Mr. H. S. B. Booth's letter, in which he states that several friends and himself cannot obtain more than 55 m.p.g. with the same outfit. The experiences of several friends and my own are very different.

My outfit is an old W.D. Triumph, parts of which are even 1915; Venus sidecar (touring pattern, quite as large and heavy as a Gloria), with Easting screen; my passenger and myself together weighing 17½-18 st. With this outfit thus laden, with usual spares and tyre and tube, I invariably obtain 70 to 75 m.p.g., using B.P. No. 1 spirit. And during the summer when the Easting is not in use the mileage is from 80 to 85 per gallon. Riding solo in summer, I several times got over 100 m.p.g.

This W.D. Triumph is now, and has been since bought, absolutely standard as used by the War Department, and was purchased rough straight off a dump. I have done no tuning or fitting particular "economy gadgets," nor had anything been done to it before.

I claim only to be a careful rider who thoroughly understands his machine, and who regularly attends to adjustments, etc. Also, I am only a one year motor cyclist.

This great disparity in consumption is very strange to my idea, and I hope other Triumph riders will give their experiences and mileage per gallon, particularly some who do not experiment with "economy stunts," etc. I cannot believe that there would be so many Triumph outfits on our roads if they are so expensive to run. MAHLIB.

Berks.

TAXATION AND THE SAILOR.

Sir,—"Taxation and the Sailor," in your issue of December 1st, is a subject that I have long been waiting to see raised. I entirely endorse "W.A.P.'s" remarks, as I think taxation in this respect is grossly unfair. Personally, I own a 7-9 h.p. sidecar outfit which does a maximum of 300 miles per annum at a cost of £5 6s., in addition to running expenses (£4 registration, £1 1s. Association fee which conscience demands to be paid, and 5s. driving licence). Compare this to the business man, who is on the road perhaps 350 days per year, and I think all will agree that a substantial rebate should be made to members of His Majesty's Forces.

I think this an admirable opportunity for our Associations to prove themselves worthy of the increased subscriptions by taking the matter seriously in hand, as, personally, I know numerous cases amongst Service men where the only thing that prevents them joining the ranks of the motor cyclists is this unfair treatment. What are the opinions of "brother sufferers"? CORPORAL.

Portsmouth.

Sir,—Although not wishing to deprive any of His Majesty's Forces of the pleasures of motor cycling, is not "W.A.P.'s" method of motor cycling a little foolish? If he only uses his machine for a fortnight a year at most, surely it is not worth while keeping one, especially as he implies that throughout the rest of the year it is unused. The deterioration of the machine, being left standing, and the little use it is put to, would make motor cycling a very expensive pastime. If "W.A.P." is so keen on the sport, I am sure he could hire a good machine, which has been well-kept, far cheaper than the cost of keeping a machine in idleness for fifty weeks of the year. CARROTS.

Warrington.

ELIMINATING VALVE CLATTER.

Sir,—I would suggest that the majority of the clatter from a Rudge does not, as your correspondents suppose, come from the inlet valve mechanism only, but is caused by the backlash of the timing wheels, and is noticed particularly when the exhaust cam slides off the rocker. The remedy for valve mechanism silence on a Rudge is to have very close fitting timing wheels, or to block up all holes leading to the inside of the crank case, and fill the timing case with vaseline. My own experiment with the latter procedure resulted in almost complete silence. MULTI.

Enfield.

SUMMARY OF CORRESPONDENCE.

Referring to a previous correspondent's bad luck with new tyres, "Use Again" (Cove) reports similar misfortune, which, however, he minimised by fitting "detachable endless linings," made by Ripley, Strong and Co., Farnborough, Hants, these giving him an extra 1,500 to 2,000 miles from each cover.

Agreeing with a previous letter on the subject of inequalities in different easy payment systems, "Verus" (Plymouth) also thinks that a much more extended time for completing purchase might be allowed. He instances the three years' hire purchase system for a £50 piano.

Mr. A. Brook writes that the automatic centrifugal cut-out of the Smith generator, recently described in *The Motor Cycle*, is on exactly the same principle as that fitted to the Splitdorf dynamo for many years. He also points out to "Ixion" that the Indian motor cycle has had a mechanical lubricating system since 1910.

Two riders of 4 h.p. Triumphs ("OE 7006" and "OH 4471") from Birmingham, who were kindly conducted by a gentleman on a racing Sunbeam from Slough to Olympia on the 3rd inst., wish to thank him for his able assistance and sporting spirit.

Two correspondents disagree with the remarks of B. H. Davies, in his "Open Letter to the Trade," that electric lighting is necessarily expensive. Mr. B. W. King recommends the Wattalite dynamo set, which is sold by Holroyd Motors, 6, Warwick Street, Regent Street, London, W.1; and the Robini Manufacturing Co., of 1 and 24, Tulse Hill, Effra Road, London, S.W.2, state that they market a complete dynamo set, which may be fitted by anyone in one and a half hours, at £15 10s.

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With a Motor Cycle in Bengal

Some Notes on Motor Cycling Conditions in India.

BY A RESIDENT.

A scene near a native Indian village.

THE touring motor cyclist in India is faced with many difficulties, but there are advantages which are not to be met with in the home country.

Unbridged rivers perhaps constitute the chief difficulty; indeed, the absence of bridges along many of the best roads is possibly the chief reason why motoring tours or long distance journeys are seldom undertaken.

Bengal is a river-ridden province, but the drawback applies very much to India as a whole. Water, which is the delight of the ryot (cultivator), is the curse of India's engineers and motorists. A streamlet may, after a few days' deluge, be turned into a swirling, swollen river as wide as the Thames at London Bridge, and against which no man or beast could stand or swim.

River bridges are the bane of the Public Works Department engineers. It is impossible to get secure foundations on the sandy soil. Some rivers, indeed, have defied the builders, and will possibly never be bridged.

December to February for Touring.

In Northern India the cold season (December to February) is the best time for motor touring, for the reason that the smaller rivers are then all dried up. In the spring months the rivers are a mere trickle of their former selves in an enormous waste of sand, and it is this sand rather than the water that is then the enemy of the motorist. To push a motor cycle and sidecar over the sandy bed of an Indian river and its long, sandy approach, often broader than the river bed itself, is the work of three or four coolies, who push from behind without the aid of engine propulsion and without rider or passenger, and even then the wheels sink deep into the sand until the tyres disappear from view. A car, even when lightened, often requires from twenty to thirty coolies. I have crossed as many as five of these rivers in a day's run, not one of which, including its sandy approach, was less than a mile across. The road usually stops abruptly and continues on the other side. Country carts and pilgrims think nothing of it, but when the river is in flood *they* take the ferry—usually a frail craft.

Another drawback is the absence of petrol supplies *en route*. In some of the larger towns petrol can now be obtained regularly, but not in all; and cities are to be found where the spirit is not always obtainable. One's stock of petrol and how and where to replenish it constitutes one of the problems of a tour, and the matter must be thoroughly arranged beforehand or the tour will be completely spoilt. Booking petrol tins in advance to railway stations is often resorted to, but there is always the danger of failure of these to arrive in time. Railway stations are frequently some miles away from the trunk roads.

Roads and Accommodation.

The majority of owners here never use their cycles out of "station" (as a town and its immediate district is called), but those who undertake tours will at least have accomplished something and have memories to look back upon for years to come.

The trunk roads, *i.e.*, those connecting big cities, are on the whole well maintained by the Government. They are usually very straight and shaded on both sides with trees to protect pilgrims from the sun, these roads having been laid out some centuries ago, chiefly by the Moghul Emperors.

The problem of accommodation is not so great, for dak bungalows (travellers' rest houses), or P.W. Department's Inspection bungalows, have been established about every fifteen miles on the principal roads and many minor roads. In the open country these bungalows are seldom found occupied, although a room or two may be engaged in those adjacent to the railways and in the towns.

The problem of food is more difficult. A chair, table, and charpoys (string beds) will usually be found at the bungalows, and some have crockery, but everything in the eating line must be taken by the tourist himself. Eggs and the inevitable merghee (chicken) can generally be bought at the villages, but not bread. Sometimes the chowkidhar (Government watchman) will turn out to be a passable cook, and he can always be relied upon to produce boiling water and lamps.

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At Least Four-horse? Single? Chain-drive?

THEN you cannot afford to overlook the new 4¼ h.p. Beardmore-Precision. At £105 it costs £10—£25 less than other "chain-drivers" of similar power and quality. Yet it has the following exclusive features—*that you cannot get on any other machine, whatever it's price:—*

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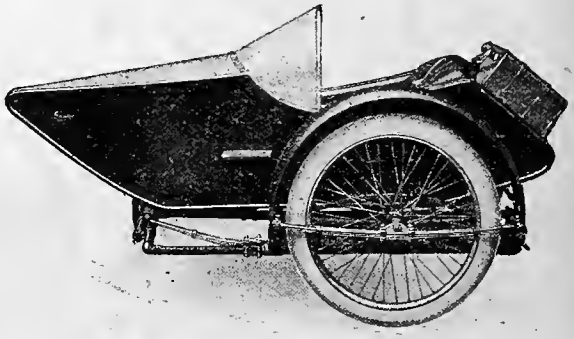

Illustration shows "Club" Model.

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The famous Connaught two-stroke is now produced not only in the popular 2¾ h.p. model, but also in a super model

3½ h.p., 3-speed, all chain drive.

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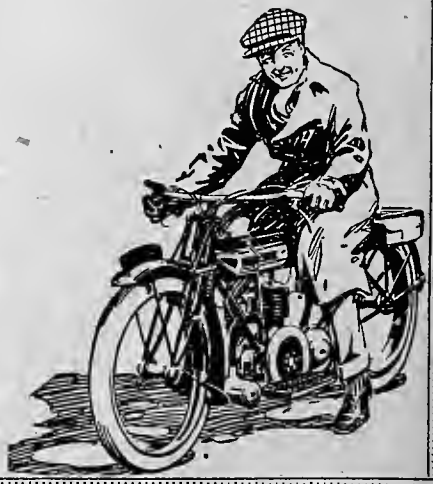

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Woodwright

With a Motor Cycle in Bengal.—

Riding should be undertaken in the early hours of the day, and a midday halt of two or three hours be made when the sun is at its strongest. The ride may then be resumed in the cool of the afternoon and the evening. In Northern India it is dark (no twilight) by 6 p.m. in the winter months and 7 p.m. in the summer, but the bungalow selected for the night's stay should be reached by daylight to enable the tourist to look over the tyres and machine, which course will often save a lot of vexatious delay when making the morning start. Night riding on tour is not to be recommended, although a moonlight ride on a "known" road is one of the most pleasant experiences in India.

(Left) In the shade of the palms—a typical landscape of the plains.

(Right) On the banks of an Indian river.

Although the temperature is high, engine heating is not a frequent trouble. Running short of oil and petrol is the chief thing to guard against, because these fuels are absolutely unprocurable in the country, and it is easy to be stranded fifty miles from any place of importance. Friends of the writer went up into the heart of the Senthal Parganas, where probably cars had never been seen before. They stripped the axle of their light car ascending a steep bank out of a river bed and had to "dak" it back for three days, the car being hauled at the rate of about a mile an hour by bullock carts. The party was without food or money and had a trying time, but one to which they can look back all their lives! One hundred miles a day is quite long enough with a motor cycle.

Snakes do not trouble one on the road, although I have ridden over several. I usually trust to speed and lift the feet when passing over. Cattle are a source of endless worry. The cowherds allow their herds to stray all over the roads, and the motorist has constantly to slow down to pass. The cattle remain in the middle of the road until almost touched, and then, with a toss of their hind-quarters, turn and amble onwards in the same direction, still occupying the centre of the road! Frequently they will attempt a charge from the rear and follow at top speed for quite a distance. A touch of the throttle and a cloud of dust will generally discourage them in this case. Buffaloes, on the other hand, will sometimes charge from the front. The cowherd stands afar off and looks on. The writer once followed a trotting horse for several miles, and could not get him to edge in enough on either side to pass, and feared any moment he might come down in front of the car. No progress could be made if motorists were to dismount and walk past cattle; they are too numerous.

The chief advantages are perhaps the scarcity of motor traffic (one may ride for a whole day without passing another motor), and the long level stretches of straight road on which a high speed could be obtained and maintained were it not for stray cattle. Stretches of fifty miles may be encountered, with the knowledge that no turnings or cross roads are likely to be seen.

Tours can, of course, be made in the hilly districts of India, but the gradients are steep and the heavy rainfall so damages the surface as to make motoring uncomfortable and even dangerous for prolonged touring. Perhaps the United Province is the best district for touring, for the roads are broad and good; and the province includes the cities made famous in India's history.

A rear sprung frame for motor cycles is desirable, and it is to be regretted that so few of the British makers have studied the Indian requirements in that respect. The Americans are flooding India with cars and motor cycles; the import duty is light and is the same for both British and foreign products.

Capital tours can be arranged with a solo machine by making use of the railways, which carry motor cycles on the mail trains at moderate rates. A night can be spent in a comfortable berth on the train, and the journey continued by road through a different province the following day. The drawback to solo touring is the minimum of luggage and foodstuffs that can be carried, whereas the sidecar will take any amount of luggage and commissariat if there be no passenger.

CURRENT CHAT

SPECIAL FEATURES

MISLEADING H.P. RATINGS.
MOTOR CYCLES FOR THE POOR IN HEALTH.
WITH A MOTOR CYCLE IN BENGAL.

Times to Light Lamps.

Dec. 15th	... ...	4.49 p.m.
,, 17th	... ...	4.50 ,,
,, 19th	... ...	4.50 ,,
,, 21st	... ...	4.51 ,,

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

British Supremacy.

According to the A.C.U., 92% of the world's motor cycle records are now in British hands.

A.C.U. Annual General Meeting.

The annual general meeting of the A.C.U. will be held on January 21st at the Royal Automobile Club.

Congratulations.

Our congratulations to H. R. Davies, who was yesterday (December 14th) married to Miss E. M. Jackson. All motor cyclists know him as the winner of the 1921 Senior T.T., and one of the most successful competition riders.

Transmission Free-wheels.

In a recent issue of *The Autocar* was described a transmission free-wheel operating on the same principle as that employed in pedal cycle coaster hubs. The object of this device is to permit coasting automatically on down grades, and thus secure economical running. So far, this scheme has not been suggested by its French sponsors for motor cycle work, but it certainly appears to have its possibilities.

Imports and Exports.

There has been little change in the overseas trading outlook during November, both imports and exports of motor cycles continuing at a low level. Actually, although fewer machines were imported, there is a slight increase in value compared with the October figures. On the other hand, British exports during the same period show a decrease both in number and value—not, however, an unusual tendency in November. Comparative figures extracted from the Trade and Navigation Accounts for November are appended:

IMPORTS.

	Oct., 1921.	Nov., 1921.
Number of motor cycles	39	31
Value of machines and parts	£5,897	£6,226

EXPORTS.

	Oct., 1921.	Nov., 1921.
Number of motor cycles	430	348
Value of motor cycles only	£35,034	£26,794
Value of parts	£26,620	£17,500
Total	£61,654	£44,294

Ex-D.R.s' Reunion.

A small reunion dinner for ex-despatch riders of the 3rd/1st London Divisional Signal Company and attached companies is being arranged to take place in London about the middle of January. Those wishing to attend should communicate with Mr. E. H. McCormack, 8, Leinster Road, Muswell Hill, London.

Another Film.

After the Junior Car Club's dinner, which is to take place on December 21st, a film showing various club events, including the 200 miles race on Brooklands, will be displayed. Light car and cycle car owners will find these pictures of especial interest.

Christmas Holidays.

PUBLISHERS' ANNOUNCEMENT.

Readers who wish to insert miscellaneous advertisements in the issue of "The Motor Cycle" dated December 29th, 1921, should note that, due to the holidays intervening, instructions must be in our hands by first post on *WEDNESDAY, 21st inst.*

ILIFFE & SONS Ltd.

Revival of the Second-hand Market?

Indications are not lacking that the second-hand motor cycle market is stirring. After two barren advertisements of his 1921 mount at £90, a member of our staff had a round dozen enquiries, and sold the machine shortly after the third advertisement appeared last week. Was a £5 reduction responsible, or is the touch of spring in the air?

Our Enlightened Rural Councils!

"A proposal to round off a dangerous corner has been rejected by the Wing (Bucks) Rural Council, on the ground that it would only induce motorists to go faster. Mr. C. C. Edmunds, Lord Rosebery's agent, urged the Council to add a piece to the corner instead of taking some off, and so compel motorists to go slowly. The Council is considering the suggestion."—A cutting from a local paper kindly forwarded by a reader who wishes us to share his amusement.

Road Warnings.

At Enfield Police Court recently there have been many summonses against motor cyclists whose machines were not fitted with two independent brakes. There has also been a police trap in operation at the bottom of Red Hill, on the Leicester-Loughborough road, near the former city.

Big Singles.

The popularity of the big single sidecar outfit can be tested any day of the week by a count of passing machines. For 1922, however, the number of makers who list this type is very considerably increased; in fact, odd as it may seem, the sidecar is developing mostly as an attachment for machines of over 550 c.c. and under 350 c.c.

Driving a Circular Saw.

An Irish correspondent has rigged up a motor bicycle for the purpose of driving a circular saw. He takes the drive from the pulley on the gear box to an additional countershaft, whence the drive is by belt to the saw. He tells us that the engine is cooled by dropping water on it.

The London-Exeter Run.

The entry for the annual Boxing Day event of the M.C.C. this year is only four short of 300. Of these 72 enter solo machines, 110 sidecars, 18 three-wheelers, and 96 cars. Among the solo entries there are no fewer than twenty-five whose machines are under 3 h.p.; these include three Ner-a-cars, two Metro-Tylers, two Cedos, two Connaughts, and two A.J.S., and one each Levis, Douglas, Triumph Junior, Velocette, Edmund, Sirrah, Coulson-B, Francis-Barnett, Verus-Jap, Wooler, New Scale, Trump-Jap, Omega, Zenith, and De Dion Bouton, the last-mentioned being B. F. C. Fellowes's ancient mount. Of the 3 h.p. size, there are four A.B.C.'s and one Ivy; while the bigger machines include Triumph, Alecto, Sunbeam, Martinsyde, Douglas, Scott, Norton, Zenith, Zenith-Bradshaw, Rudge, Beardmore-Precision, Brough Superior, Indian, Norton, Raleigh, and N.U.T.

Smallest of the sidecar machines is Neville Hall's O.K. Junior. A 2¾ h.p. Orbit, 3½ h.p. Connaught, 3 h.p. Ivy, and 2¾ h.p. A.J.S. are also entered; while in this class several new machines make their *début*, including the 4½ h.p. Quadrant, 4¼ h.p. Beardmore-Precision, and 10 h.p. Campion. Of the eighteen three-wheelers, eleven are Morgans, two Castle Threes, two L.S.D.'s, and one each T.B., Scott Sociable, and New Hudson.

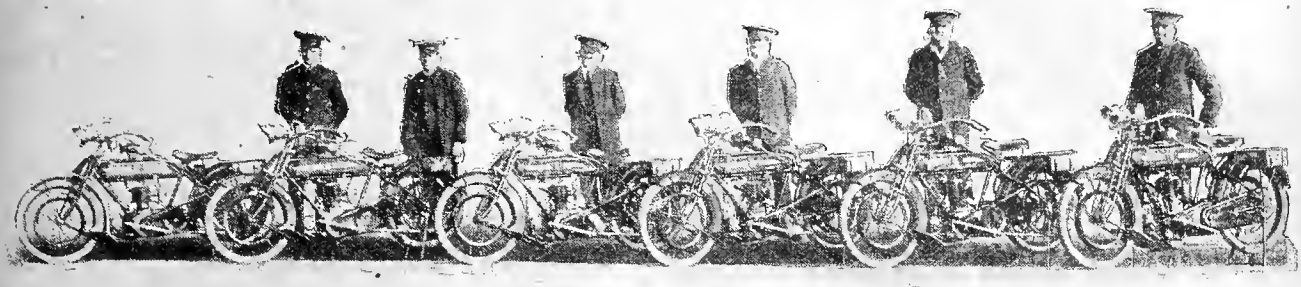
The start is from Staines at 8 p.m., Monday, December 26th, and the first competitor is due back at 5 p.m. the following day.

Thieves Still Active.

Motor cycle thieves are still very busy, and last Saturday evening the well-known Ivy exponent, Percy Newman, lost his 3 h.p. Ivy outfit from outside the Stonebridge Hotel on the Birmingham-Coventry road. The machine had a very large tank, and was equipped with an M-L Maglita set, while the sidecar had no door.

Next Thursday's Issue.

Next week's issue of *The Motor Cycle* will be the Christmas Number. As usual, we shall permit ourselves the relaxation of dealing with a number of matters in a lighter vein, and the customary illustrated short story with a motor cycle flavour will not be lacking. The usual features of topical and technical interest will, of course, be maintained.



G.P.O. ENTERPRISE IN THE ANTIPODES.
A fleet of B.S.A. machines which were recently delivered to the Postmaster-General's Department in Australia.

RENEWAL OF LICENCES.

MOTOR cyclists should apply for renewal of their existing licences as early as possible after December 16th, in order to assist the authorities concerned in dealing with the large numbers of applications which will be received.

It is estimated by the Ministry of Transport that over 800,000 licences for mechanically-propelled road vehicles will expire on December 31st, most of which will be renewed for the quarter or year commencing January 1st, 1922. It will be realised that this work of renewal, together with the issue of licences taken out for the first time, will throw a great strain upon the staffs at the local taxation offices, which have been kept down to the lowest possible limit in order that as much money as possible should be available for the construction and maintenance of roads.

The public can materially assist in the work of renewing licences:

(1.) By ensuring that their applications for renewal are in order, thus saving much correspondence; and

(2.) By applying for renewals on December 17th, or soon after, and so avoiding congestion at the last moment.

Renewals can be effected at a principal post office, except in the following cases:

If there has been a change of ownership since the last licence was taken out.

If the old licence expired more than fourteen days previously.

If it is desired to change the classification of a vehicle, *e.g.*, from "commercial goods" to "hackney."

A postmaster can only issue an annual licence for 1922 in renewal of a *blue* licence for 1921.

The following must accompany an application for renewal.

(a) A renewal form "R.F.1/a" duly filled in.

(b) The registration book for the vehicle.

(c) The old licence (in the case of post office renewals only).

(d) The amount of duty.

Personal attendance at the post office is necessary, either of the licensee himself or of his representative, but application for renewals to county and county borough councils may be made either personally or through the post.

If the applicant did not take out the last licence, he must be sure that the change of ownership has been entered in the registration book, and that the council has noted the change by date-stamping the ring against the new owner's name on pages 3 or 4 with the council's date stamp. If this has not been done, the council should be written to immediately.

The new licensee must take or send to the council:

(a) A full declaration form (obtainable at any Money Order Post Office), *not* a renewal form "R.F.1/a."

(b) The registration book for the vehicle.

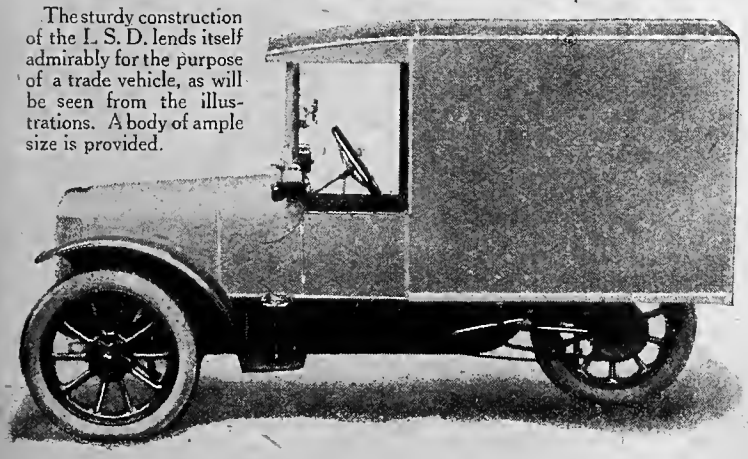
(c) The amount of duty.

The new licensee, where there has been change of ownership since the last licence has been taken out, or where he desires to register under a new class, should ask the postmaster of the nearest Money Order Post Office for the appropriate declaration form: in the case of motor cycles, "R.F. 1/2."

With regard to motor cycles registered in the early part of 1921, the engine number and frame number must be inserted on page 2 of the registration book before renewal, can be effected, and the renewal can only be effected at the Council's offices, and *not* at a post office.

A THREE-WHEELER AS A DELIVERY VAN

The sturdy construction of the L. S. D. lends itself admirably for the purpose of a trade vehicle, as will be seen from the illustrations. A body of ample size is provided.



A.C.U. General Meeting at Bournemouth.

Tourist Trophy Races Again in the Isle of Man. Horse-power Ratings to be Standardised. Changes in Stock Machine and Six Days Trials.

NO such momentous decision as that arrived at on the occasion of the last A.C.U. committee meeting at Leicester marked the general meeting at Bournemouth on Saturday last, for it was a foregone conclusion that next year's T.T. races would be held in the Isle of Man as heretofore.

Provincial meetings are to be abandoned, a technical sub-committee is to be formed to settle the question of horse-power rating of motor cycles, and certain information came to light concerning the next stock machine trial and the 1922 A.C.U. Six Days event.

After the secretary had read regrets of absence from several members unable to be present, reports of various management and competition committees were received. In connection with the former, the Chairman reported that the Union had taken strong action as regards the question of motor cycle number plates, which has been under consideration by the Ministry of Transport, and that attention had been given to the re-organisation of the staff. He also reported concerning the joint conference between the A.C.U. and the R.A.C. Originally, the former body paid the latter 2s. 3d. per head for such facilities as touring, legal assistance, etc. It was then asked to pay 5s., as the 4s. offered was found to be inadequate. These facilities cost the R.A.C. 7s. The A.C.U. was unable to pay more, and an *impasse* was arrived at. At the joint conference the matter had proceeded most happily, the 4s. offer was accepted, and the R.A.C. agreed to make up the deficit to its General Committee. He also stated that the A.C.U. Management Committee had a card up its sleeve which would secure it greater benefits. Mr. Otto Thomas explained the matter further, and the Management Committee reports were then passed.

Trial Matters.

A lengthy discussion followed on the question of the Reliability Premiership. Mr. S. R. Axford complained that the Competitions Committee did not see the scheme through, and proposed that the report should not be adopted. The Chairman, Col. F. S. Brereton, suggested that the winners of the Centre Competitions for the Premiership should have a free entry in the next Six Days Trials. This was agreed to, and Mr. Axford's motion was lost. Proposing the acceptance of the Competitions Committee's report of November 24th, Mr. Reynolds mentioned that the present system of controlling records had not been found to be ideal, and that a sub-committee had been formed to go into the matter and to investigate the methods of timing. There had been a proposal from the Midland Centre to the effect that no A.C.U. steward or judge should have any connection with the trade, and this matter was deferred till the next General Committee meeting. The next item referred to the 1922 Six Days Trials, *àpropos* of which Mr. T. Rutherford had formulated a scheme whereby the competitors would wear armlets denoting the class of medal for which they were eligible, which would be changed as they lost marks, and thus would indicate to the general public how they were faring throughout the trial. This scheme, however, was not adopted. Mr. Reynolds then went on to explain that it was proposed to call in the help of the Centres in the 1922 Six Days Trial. It was proposed to start, say, from York, and visit such places as Matlock, Shrewsbury, Llandrindod Wells, and Gloucester, and finish at Brooklands. It was decided to present a cigarette case to the late Competitions Committee chairman, the Rev. E. P. Greenhill, in recognition of his long association with the Auto Cycle Union. Mr. Reynolds then announced that the trial of stock machines would start from Birmingham, and finish at Brooklands.

The T.T. Races.

Arising out of the statement that next year's T.T. races should be held under the same rules as last year, Mr. E. M. P. Boileau asked if the 250 c.c. lightweight machines might now be regarded as running in a separate race concurrently with the Junior T.T., and not merely as a subsidiary class.

Mr. A. G. Reynolds, who proposed the adoption of the Competitions Committee reports, replied that adequate publicity would be given to the leaders—as much, in fact, as to the leaders in the Junior race.

Mr. S. L. Bailey suggested that the tyre size limits in the Senior T.T. should be increased to 65 mm.; but it was decided not to adopt this, and it was pointed out that the F.I.C.M. imposed a minimum tyre size which manufacturers were at liberty to exceed.

Mr. G. J. A. Brown (the Manx M.C.C.) was then asked to make a report concerning the arrangements for next year's Tourist Trophy races. The dates, suggested Mr. Brown, were Tuesday, May 30th, and Thursday, June 1st. The practice hours could be arranged to the mutual satisfaction of the A.C.U. and the Manx authorities. It had been arranged with the Douglas Corporation that the playing fields should be offered to the A.C.U. for the enclosure free of all charge. Improved steamship services would be running throughout the practice period (two services by day and one by night). Five thousand pounds had been voted by the Tynwald Court for the erection of an electric crane on Douglas Pier, and a wide gangway would be used on the Liverpool landing stage, up which a sidecar outfit could be easily pushed. The tax illegally exacted last year from visiting motorists would be abandoned, and all which would have to be paid was 1s. for registration. A list of hotel charges would be prepared, pillion riding would be allowed, and there would be no ban on Sunday motoring after 9 a.m. The question of a subsidy or a guarantee was next discussed, and it was finally decided that the I.O.M. authorities should be requested to pay the police and doctors. The Manx Club also consented to continue their efficient marshalling during practice. It was then agreed that the 1922 T.T. races should be held in the Isle of Man, and the Chairman offered his thanks and congratulations to Mr. Brown for all he had done.

Next the Secretary made certain statements in connection with the drawing up of the annual report. The membership, he said, had been reduced, but the Union's revenue had increased, and it was now on a sound financial basis. Many records had been confirmed, and now showed that 92% world's records were in British hands. He also mentioned the Union's legislative work, its influence on the 1920 Road Act, and on the new number plate proposals. The centre scheme had greatly progressed, and this year the A.C.U. Touring Department had issued 4,200 English routes, 500 Continental routes, and 500 Customs papers, while the A.C.U. touring representative had covered 11,000 miles.

Mr. Quintin Nicol proposed that a brief account of each centre's work should appear in the report. This was agreed.

Competition Finances.

In the course of discussing the balance sheet it was decided that figures should be prepared showing the profit and loss on various competitions, taking into consideration a certain percentage of overhead charges. The balance sheet was then approved.

It was decided to hold the A.C.U. annual general meeting at the Royal Automobile Club at 3 p.m. on Saturday, January 21st. The existing president and vice-presidents would be nominated for re-election at this meeting.

Mr. S. R. Axford's proposal to the effect that A.C.U. General Committee meetings should be held in future in London was briefly discussed and agreed. Mr. Axford's second proposal, "That in view of the conflicting and valueless horse-power rating of motor cycle engines . . . the A.C.U. should standardise some nominal rating, say, 1 h.p. per 100 c.c." This was agreed to in principle, and it was decided that the matter should be referred to a special sub-committee, consisting of Mr. S. R. Axford, Dr. A. M. Low, Messrs. E. M. P. Boileau, J. W. G. Brooker, and E. B. Ware.

Mr. Featherstone's proposal that all profits accruing from the centre open event should be divided between the centre and all clubs in the centre *pro rata* to its membership was regarded as a purely domestic matter, and was withdrawn.

The following clubs were affiliated to the parent body: The Chester and District, the Kingswood and District, the Harrow and District, and the Hinckley and District Motor Cycle Clubs.

The meeting, which began at 10 a.m., continued with a brief interval for lunch until 2.30 p.m.

The previous evening a dinner was held, at which the Mayor, the principal Bournemouth civic officers, and many local motor cyclists were present.

CLUB NEWS.

Worcester and District M.C.C.

On Wednesday next the annual general meeting of the club will be held in the Pack Horse Hotel, Worcester.

Herts M.C. and L.C.C.

The first annual dinner was held recently at headquarters, some sixty members and their friends being present. Trophies, etc., won during the season were kindly presented by Mrs. Plowman.

Essex M.C.

Two important dates in the competition programme for next year of this club have already been fixed. A one day trial will be held on February 18th, and a hill-climb on March 25th. These events are, of course, confined to club members.

Ipswich and District M.C.C.

On Saturday, 26th November, the club held its first annual dinner, at the Great White Horse Hotel, Ipswich. About a hundred members, who were accompanied by friends, sat down to a very excellent dinner, which was followed by a smoking concert and distribution of prizes on the conclusion of a most successful season.

South Midland Centre A.C.U.

This centre, which is showing signs of great activity, and has arranged a very comprehensive programme for next season, is holding its annual general meeting at the Red Lion Hotel, Bedford, on December 18th, at 1.30 p.m. Lunch at 12.30 p.m. for those who desire it. All members of clubs in the South Midland Centre are entitled to attend.

Leeds University M.C.

On Saturday, November 26th, the club held a point-to-point reliability trial over a forty-mile course for the Moore Trophy. A good knowledge of map-reading was essential, as all time wasted in finding the checks had to be made up on a 20 m.p.h. average.

A. F. Plummer (3 A.B.C.) proved to be the winner, with R. Gosling (3 A.B.C.) a close runner-up, followed by G. Suddards (3½ Rudge).

Winter Social Events.

Thursday, Dec. 15th.—Redditch and District M.C.C. Annual Dinner.
Friday, Dec. 16th.—Bradford M.C. and L.C.C. Annual Dinner.
Saturday, Dec. 17.—Wallington and District M.C. and L.C.C. Annual Dinner.
Monday, Dec. 19th.—Barrow and District M.C. Annual Dinner.
Wednesday, Dec. 21st.—Junior Car Club. Annual Dinner.
Friday, Dec. 23rd.—Cumberland County M.C.C. Annual Dinner.

Glasgow University M.C.C.

Membership of this new club is open to past and present members of the Glasgow University. The hon. secretary is Mr. J. C. Todd, the Union, Glasgow University, Glasgow.

Central London M.C.C.

Owing to lack of support, this club has amalgamated with the North West London M.C.C. A prize, to be called the Central London M.C.C. prize, will be awarded in an event next year.

Midland Centre A.C.U.

In the recent West Midland open reliability trial, the following additional awards have been announced: G. Strange (3½ James) and G. Butcher (3½ Sunbeam), gold medals; G. Packman (8 Matchless sc.), silver medal.

Croydon and District M.C.C.

Under the direction of Messrs. H. R. Davies and Harry Martin, the success of a new club, as above, should be assured. Fuller particulars may be obtained from Mr. A. J. Winstanley, 63, South End, South Croydon, Surrey. Telephone: Croydon 2431.

Surbiton and District M.C.C.

A distinguished gathering of motor cyclists enjoyed a most entertaining evening on Wednesday, December 7th, at the Holborn Restaurant, London, on the occasion of the second annual dinner of the club. Dr. A. M. Low, A.C.G.I., D.Sc., was in the chair. The absence of the customary detailed list of toasts, and the impromptu manner in which the more serious proceedings were conducted, lent a most pleasant atmosphere to the evening. Mr. T. O. M. Sopwith, during a most amusing speech, paid a tribute to the club, and made reference to the phenomenal success it has attained during its brief existence.

It was suggested that a booby prize in the form of a pogo stick should be awarded to the competitor who gained the least marks during the season.

Mr. Alec Ross extended his congratulations to the Surbiton Club on its unique success, pointing out that the membership embraced riders of the highest order, both in road competitions and on the track.

The awards, which included some magnificent cups, were distributed by Mrs. T. O. M. Sopwith.

Mr. Kaye Don, a very popular member, was, much to his astonishment and confusion, chaired by his many admirers after receiving his awards; and Mr. Davidson, whose performance in the Sopwith Cup trial was remarkably good, received a similar ovation, and was carried shoulder-high down the centre of the room.

Motor Cycling Club.

The annual general meeting will be held at Pagani's Restaurant, Great Portland Street, London, W.1, on January 31st.

TO CLUB SECRETARIES.

"The Motor Cycle" Film is now being loaned to enterprising clubs which are keen to make their winter social events a success. This exclusive film takes about forty minutes to exhibit, and the programme includes scenes at the Junior and Senior T.T. Races, the 500 Miles Race, the Six Days Trials, the Grand Prix Car Race, and the 200 Mile Small Car Race. Club secretaries should write to the Editor (Film Department), "The Motor Cycle," Coventry suggesting two or three alternative dates, preferably in April or later in 1922.

"THE MOTOR CYCLE" FILM.

SINCE its provincial release on Monday, December 5th, *The Motor Cycle* film has been shown in six different places—Coventry, Cheltenham, Gloucester, Stafford, Rednal, and Birmingham—and in each case has been received with great enthusiasm.

In this connection we give below extracts from letters received from the secretaries of two of the clubs responsible for the arrangements. Mr. Frank R. Ware, of the Gloucester M.C. and L.C.C., writes:

"The film was exhibited at the Empire Theatre to crowded houses, and was greatly appreciated and very well received by motor cyclists and non-motor cyclists alike. We think it an excellent film, and one of which those who were responsible for getting it together might well be proud. Those motor cyclists who were not fortunate enough to see the events depicted in the film had a great treat, and we feel sure that this film will do good to the promoters and to motor cycling generally. We would like to express our heartiest thanks for the loan of the film, and to those individuals in whose minds the idea was worked out and brought to such a happy issue."

Mr. J. F. Spencer, hon. secretary of the Coventry and Warwickshire M.C., sent the following acknowledgment:

"I am writing to congratulate you on the excellent film shown at the Empire. I was present on Tuesday evening, and thoroughly enjoyed the thrilling sight of the T.T. and other events."

Glasgow and Worcester Next.

To-night the Western M.C.C. (Glasgow) will give Scottish motor cyclists their first opportunity of witnessing this comprehensive screen record of the important competitions of 1921. It will be exhibited at the Cinema House, Renfield Street, Glasgow, to-day, to-morrow, and Saturday.

On Monday the Worcester and District M.C.C. has arranged for its exhibition at the Silver Cinema, Worcester; and here again, since the club made a very early application, it will remain for three days. Owing to the great demand, it has been found impossible to allot more than one day to the majority of clubs which have booked later dates.

Below is a diary of the exhibitions until the end of the year:

Thursday, Friday, and Saturday, Dec. 15th, 16th, and 17th.—Glasgow Western M.C.C.
Monday, Tuesday, and Wednesday, Dec. 19th, 20th, and 21st.—Worcester and District M.C. and L.C.C.
Friday and Saturday, Dec. 23rd and 24th.—York and District M.C.
Wednesday, Dec. 28th.—Yeovil and District M.C.
Thursday, Dec. 29th.—Truro and District M.C. and L.C.C.
Friday, Dec. 30th.—Falmouth M.C. and L.C.C.

Forty-eight other clubs have been definitely allotted dates, and the total number of enquiries received totals well over one hundred, including two from the Continent—Rotterdam and Liège.

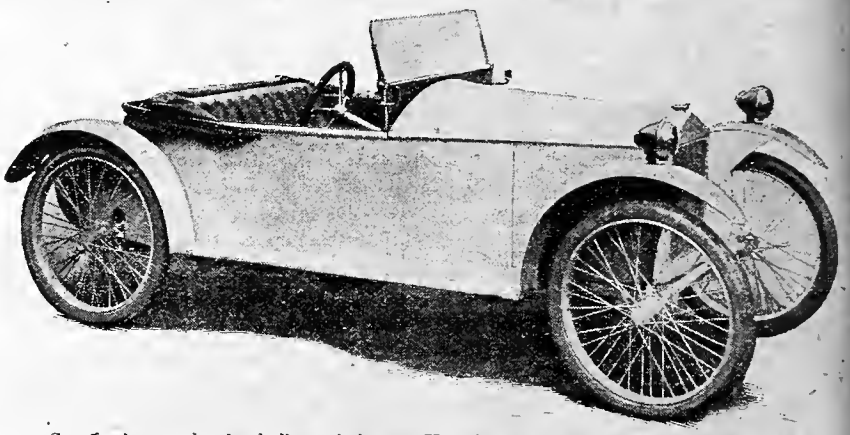
Motor Cycle Practice in a Four-wheeler.

Chain Drive, Side-by-side Seating, and Wider Track for the New Tamplins.

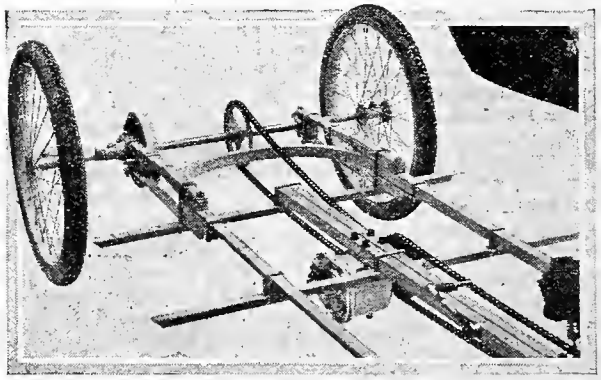
THERE are many big sidecar outfits that are more complicated than the latest chain-driven Tamplin four-wheeler, which, nevertheless, follows strictly motor cycle lines.

As on the belt-driven model, an 8 h.p. J.A.P. and a Sturmey-Archer gear box are fitted, but the chassis and bodywork have been entirely redesigned, resulting in a remarkable improvement in appearance. The chassis is built up of angular section rolled steel, and the solid back axle is carried in Skefko ball bearings, the housings being mounted between each spring and flat radius rod.

The kick-starter is so arranged that the pedal may be conveniently operated from the driver's seat, and the direct steering is of the Ackermann type. Internal and external brakes on the one drum (on the rear axle) are standard. The springing is by quarter-elliptics at both front and rear, and the movement of the axles is controlled by flat radius rods.



So effective are the simple lines of the new Tamplin that it is difficult to realise that it is more akin to the motor cycle than to the motor car.



Showing the rear springing, brakes, and transmission details, including the gear box mounting, of the 8 h.p. Tamplin. The chassis is built up of L section steel.

Transmission is by chain throughout, one chain running from engine to gear box, and another from gear box to back axle. Both gear box and engine are centrally mounted on a longitudinal member carried by the chassis cross pieces.

Attractive Coachwork.

Quite roomy and well finished, the body compares favourably in its well-balanced, attractive outline with cars costing three times as much as the £175, which is the provisional price of the new Tamplin.

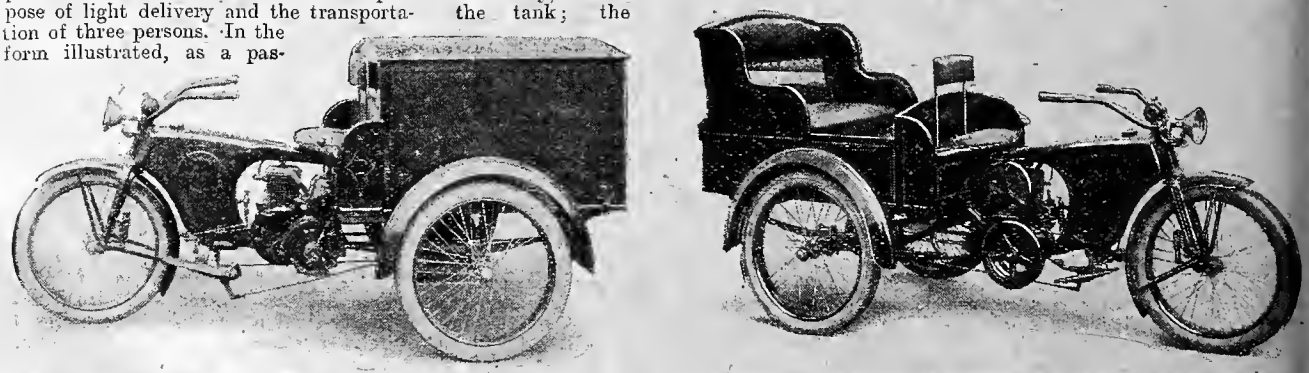
The makers are Tamplin Motors, Ltd., Kingston Road, Staines.

A Dual-purpose Tricycle.

Simplicity in Construction. Convertible Bodywork.

THE motor tricycle was the first practicable form of the motor cycle, and it has still many advantages to recommend it, either as a tradesman's carrier or a passenger vehicle. That it is possible to design a tricycle with a greater economy of material than is the case with the sidecar outfit is well illustrated in the Dobbin tricar, an American production intended to serve the dual purpose of light delivery and the transportation of three persons. In the form illustrated, as a passenger machine we can imagine it in use by farmers in the outlying districts of America, but in this country it would not be regarded with much favour; lower bodywork, however, might be fitted.

As will be seen from the illustrations, simplicity of construction is the keynote of its design, the frame being of pressed steel, which, incidentally, forms the tank; the forks, too, are of steel pressings. The engine is a single-cylinder air-cooled two-stroke, having a bore and stroke of 88.9 × 88.9 mm., the capacity being 550 c.c. A two-speed gear forms part of the engine unit, and the transmission is by chain direct to a differential rear axle. The makers are the Dobbin Motor Co., 424, West Broadway, New York.



A double-purpose tricycle, made by the Dobbin Motor Co., of New York. The rear seat can be quickly detached and replaced by a box body of ample proportions. The engine is a 550 c.c. two-stroke, carried on a pressed steel frame.

A CHANNEL STEEL CHASSIS.

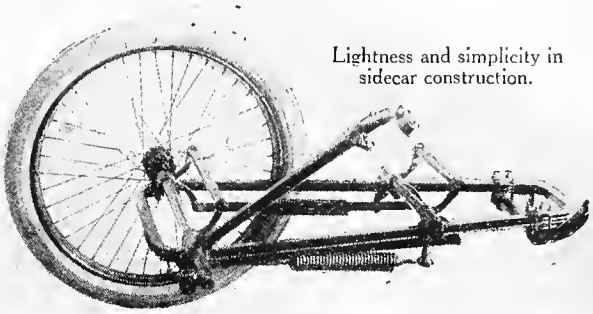
The Robson Sidecar, from which Brazed Joints are eliminated.

A VERY simple sidecar construction, unconventional in chassis design, springing, and couplings, has been evolved by S. T. Robson, Ltd., of 275-277, Coventry Road, Birmingham.

The main frame of the chassis is a truncated triangle (with rounded corners) made of channel steel in one piece, the ends being welded together. To this member the axle tube, front cross-bar, and front connection tube, are attached by U bolts or similar clips.

Steel plate connections for the Robson sidecar; they embrace two of the motor cycle frame tubes in each case.

Swinging on the axle and cross member are bell cranks, tied together at their lower extremities by flat steel connecting links. The upper ends of the cranks carry the bearer bars for the body, and the motion is controlled by long tension springs, which have screw adjustments to their anchorages. It will thus be seen that the body is parallel with the ground throughout the range of its springing movement, unlike the usual sidecar body, which is usually pivoted (more or less flexibly) at the forward end.



Lightness and simplicity in sidecar construction.

One-piece channel steel chassis of the Robson sidecar, showing the parallel link motion coil springing.

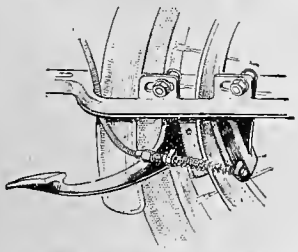
Three points of attachment are provided, and the frame clips on the motor cycle are built up of sheet steel, and two of them are so arranged as to grip two tubes. A wide range of adjustment is provided by the clips, and it is noteworthy that the attachment of the sidecar axle to the back stays of the motor cycle is a trailing universal joint, which allows a certain amount of flexibility.

Almost any type of flat-bottomed body may be fitted on to this chassis; and, owing to the fact that the springing is entirely underneath the floorboards, the width of the chassis is kept within reasonable limits without cramping the body room.

A 75 lb. LIGHTWEIGHT.

The 142 c.c. Atlas, with Single-speed Countershaft, selling at £31 10s.

THE aim of the Aston Motor and Engineering Co., Ltd., Witton Lane, Aston, Birmingham, in producing the Atlas lightweight was, frankly, to make a runabout suitable for short business or pleasure journeys where a pedal cycle would otherwise be used.



Interconnected hand and foot brakes are fitted

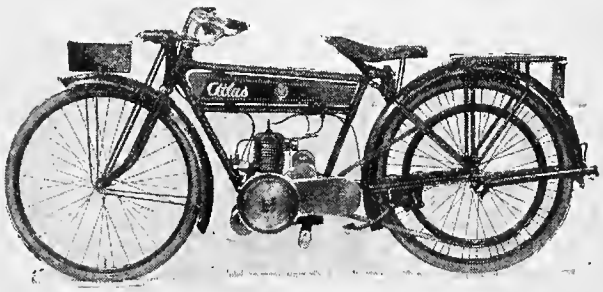
This has been most successfully accomplished, and the resultant machine, with its sturdy, compact, and clean lines, immediately strikes one as being capable of doing even more than the manufacturers claim. It will be sold at £31 10s., and should be both economical and handy.

Of the usual three-port type, the two-stroke engine has a bore and stroke of 55×60 mm. (142.5 c.c.). Plain bearings are fitted, except to the inside of the mainshaft, which is mounted on a Hoffmann race, and the flywheel is of sufficiently large diameter. A double sprocket is fitted, which drives both the magneto and the countershaft, the chains being protected by a single cover, and lubricated by surplus oil from the release valve. The countershaft runs on ball bearings.

Brakework has been carefully and ingeniously carried out. Both shoes operate on the belt rim. The foot brake is heel-operated, and the hand brake by cable from the handlebar, which, when sufficient pressure is used, connects up both shoes. Thus a very gradual and sure pull-up may be effected by the inverted hand lever.

Lubrication is by petroil, and a fuel consumption of 240 miles per gallon has been obtained. Well-known components are used for carburation, ignition, etc., and the mudguarding (4½in. guards) is well carried out.

Altogether, the Atlas is one of the most promising ultra-lightweights we have encountered, and at the low price at which it is offered excellent prospects should lie before it.



Although weighing only 75 lb., the Atlas lightweight is an exact miniature of much larger and more powerful machines.

SILENCING WITHOUT LOSS OF POWER.

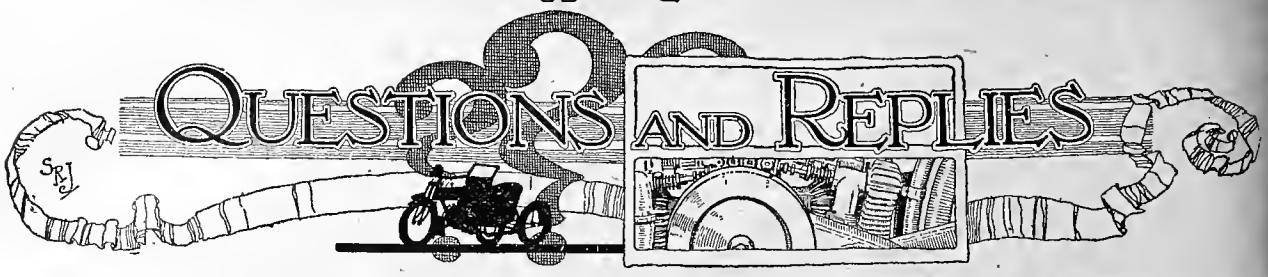
SOME remarkable claims are made for the Carb-jector silencer, and undoubtedly the device is an excellent solution of the problem of noise reduction without loss of power. At least one well-known machine (the Velocette) will be fitted with it as standard for next year.

As the name implies, an ejector action is used. Referring to the sectional diagram, the waste gases entering the silencer are split up. Some strike the diaphragm and rush down the ever-widening outside spiral passage, being cooled, expanded, and stabilised in the process. A thin stream, however, continues down the narrow central passage, which at its nozzle acts as an ejector for the gases, leaving the spiral portion. Such is the theory of the device.

Sectional diagram of the Carb-jector silencer. The gases enter at the left-hand side in this drawing.

In practice it most efficiently silences the exhaust note, causes no more back pressure than an open pipe, and ejects the gases in a semi-cold state.

The makers are Bridgehead, Ltd., Bankhey Works, Blackpool.



A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

EFFECT OF LIGHTER PISTON.

Concerning the balance of my engine, a 1911 3½ h.p. T.T. Triumph, I sent for a new cylinder piston and connecting rod, and, after assembling and having a trial on the road, I find there is much more vibration now than there was before. I have taken the engine down again, and, on weighing the old piston and rod and the new piston and connecting rod, I find that the new piston and connecting rod are 4¾ ounces lighter than the old ones. I wrote to the makers, and told them of the difference in weight, and they advised me to remove four leads from the flywheels, but I am still in doubt as to what part of the flywheels from which to remove them.—A.S.

Take the lead from the flywheels on the sides opposite the crank pin; remove an equal quantity from each wheel.

EFFECT OF WEIGHT INCREASE ON TAXATION.

I own a lightweight motor cycle, the weight of which is registered as 130 lb. My present tax is 30s., and I have to redeclare the machine prior to renewal of licence; but, having fitted an Albion gear box and various other parts, the weight must now considerably exceed 130 lb. What is the maximum weight allowed on present assessment?—H.H.B.

If the weight of the machine does not exceed 200 lb., the tax will be 30s.

OVERHEATING WITHOUT APPARENT CAUSE.

After recently taking down my 1920 Villiers two-stroke engine for decarbonising, I now find that it gets hotter in half a mile than it previously did in twenty miles. It overheats very quickly. Firing is in order with points just opening when piston is at top dead centre, spark lever in retarded position. I can find no air leaks in crank case or carburetter and plug, and compression is good; petrol pipe, jet, etc., are quite clear. No alterations whatever have been made, except to replace crank case washer with one which was a trifle thinner. Petroil system of lubrication has always been used with engine with the best of results. The engine has not lost power through overheating.—H.J.W.

If the power remains as before, and if the fuel consumption is no worse than formerly, the hotter running of the engine may be disregarded. From your description everything appears to be in good order mechanically, and, therefore, it is impossible to deduce a reason for the difference in running.

A WIND WAGGON.

(1.) Will a 4 h.p. (595 c.c.) Douglas flat twin engine give sufficient power to propel a two-seated wind waggon? (2.) What size of four-bladed propeller would be most suitable for this size of engine? (3.) In order to diminish the size of the propeller, would not one with five or more blades be practicable? (4.) Is aluminium a suitable material for a propeller? (5.) Of what pattern are the bearings of 700×100 mm. aeroplane wheels? (6.) When a tyre is stated to be a 700×100 mm. size, does this mean the actual wheel diameter, or the diameter of the tyre at the tread? (7.) Is duralumin a patented material, and can you tell me of a firm that makes it? (8.) How does the above metal compare in price with aluminium? (9.) How much are wind waggons taxed? (10.) Must a petrol tank be above an engine to feed the carburetter? If the tank were below the engine, would not the engine suction feed the carburetter? (11.) I propose making the chassis of 2½ × 2½in. ash wood. Is this strong enough?—A.W.S.H.

(1.) It is very doubtful if such a small engine would answer the purpose except on level roads. (2.) A four-bladed propeller would be most suitable. (3.) No. (4.) Wood made up in several laminations is the only satisfactory material. (5.) Plain bushes. (6.) The figures given are the tyre dimensions, not the size of the wheel rim. (7.) Yes; Vickers, Limited, Broadway, Westminster, S.W.1. (8.) We have not the prices before us in very small quantities; the cost would probably be prohibitive. (9.) As all other four-wheeled motor cars, on the R.A.C. rating of the engine. (10.) If the petrol tank is below the carburetter, you must use either a pressure feed system or a vacuum feed such as the Autovac. (11.) There is no need to use square wood for your chassis. 2½×1⅛in. should be sufficient for the side members.

BLOWBACK THROUGH CARBURETTER.

My 1914 6 h.p. Rex pulls well, and everything seems in order; but on the road a vapour continually blows out from the carburetter. I can only do about 30 m.p.g.—C.S.

You do not give sufficient details, but we imagine that the trouble is chiefly due to the inlet valve springs being weak. Renew these with stronger ones, and also make quite sure that the exhaust valves are not closing too early. Early closing of the exhaust valves may be due, of course, to worn timing gear, or more likely to excessive clearance at the exhaust valve tappets.

DULL-PLATING CYLINDERS.

Can you tell me where I can get a Triumph cylinder plated, as the Indian people used to finish their cylinders? This finish has always appealed to me, but I do not know whether it is done with success over here, and should, therefore, be much obliged if you could say who would do this. Is it really a lasting finish, and what is the approximate cost? My doubts as to its real value are strengthened by the fact that so very few engines are so treated.—H.G.K.

Almost any electro-plater should be able to plate your cylinder if you wish to have it done, but we cannot give you any idea as to the cost. Apart from appearance, there is no advantage.

Important Dates.

Mon., Dec 26th, Tues., Dec. 27th—M.C.C. London-Exeter-London Trial.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb 4th, 1922—Scottish Car and Motor Cycle Show.

Sun., Mar 5th, 1922—Argenteuil Hill-climb (France).

Mon., Mar. 6th, 1922—La Turbie Hill-climb (Nice).

Wed., Mar. 15th—A.C.U. One-day Trial for Stock Machines.

Thurs., Mar. 23rd—East Midland Centre A.C.U. Open Reliability Trial.

Sat., April 1st—Western Centre A.C.U.—Open Hill-climb.

Sat., April 8th—B.M.C.R.C., Members' Meeting at Brooklands.

Fri., April 14th, and Sat., April 15th—M.C.C., London-Land's End Run.

Sat., April 22nd—N.-Eastern Centre A.C.U. Open Reliability Trial.

Sat., April 29th—S. Midland Centre A.C.U. Open Hill-climb.

Mon., May 1st, to Sat., May 6th—Scottish Six Days Reliability Trials.

Sat., May 13th—Northern Centre A.C.U. Open Reliability Trial.

Sat., May 20th—S.-Western Centre A.C.U. Open Reliability Trial.

SIDECAR FOR A TWO-SPEED "3½."

I possess a 1918 model P. and M. motor cycle, to which I desire to attach a touring model sidecar, and should like your advice.—F.W.B.-N.

Any standard sidecar not exceeding 110 lb. in weight should suit your machine. With the comparatively small power and small choice of gear ratios available, you must appreciate that the machine should not be overloaded. Probably your best plan would be to obtain the standard sidecar produced by the makers of the machine, as there would then be no difficulty in fitting, all the connections being made to suit the sidecar lugs on the motor cycle frame.

PERFORMANCE OF SINGLE AND TWIN.

Reverting to the lecture on "Comparative Motor Cycle Performances," reported in *The Motor Cycle* some little time ago, and as an absolute novice in all things appertaining to motor cycles, I may have misread what the lecturer purported to illustrate; but regarding the performances of a 6 h.p. twin and a 4¼ h.p. single my summary of the two machines is as follows: 6 h.p. Twin Sidecar.—Maximum speed, 45¾ m.p.h.; top gear, climbs 1 in 14; second, 1 in 8; and third, 1 in 4. 4¼ h.p. Single Sidecar.—Maximum speed, 43 m.p.h.; top gear, climbs 1 in 12½; second, 1 in 6; third, 1 in 3. To my mind, except for a trifle in speed, the 4¼ h.p. single is the superior for all-round work. What then are the advantages claimed for a twin? One would have thought that an extra 2 h.p. would have made the twin much faster and a better climber. I am contemplating purchasing a motor cycle, but these comparisons bother me, especially when there is such a difference in price without apparently any gain in performance between the twin and the single. One more query. Is there a "best speed" at which, say, any single, with sidecar, should be driven? The maximum as given above is 43 m.p.h.; but no ordinary driver wants that, neither under ordinary touring conditions does he want the machine to be "slacking." There must be a speed at which everything is working in harmony; pulling sweetly without undue strain and with a minimum of wear and tear and so on. Will you enlighten me upon these points?—ALVERSTONE.

Your figures are approximately correct, but it is not right to say that the performance of the two machines is in every way equal. In the example you quote, the 6 h.p. outfit weighed 170 lb. more than the 4¼ h.p. machine, and this extra weight is made up by using a much larger sidecar and detachable wheels, larger tyres, and similar refinements. Even if the maximum speed and climbing ability of the twin is no better than that of the single, there are other advantages, such as smooth torque, and also the possibility of maintaining a higher average speed owing to the smoother running of the twin engine. The "most comfortable" speed of the average single is probably about 22-25 m.p.h. (with sidecar); while the twin may be driven almost indefinitely at 30 m.p.h. without any feeling of overdriving the engine.

SLUGGISH RUNNING AFTER REPLACING ENGINE PARTS

A 1918 2¾ h.p. Douglas, recently purchased, was a very fast machine, capable of taking any hill up to 1 in 12 on top; but at speeds exceeding 25 m.p.h. the vibration was bad. This gave me the impression that the big ends were loose, and, after examination, I found that the crank pins were badly oval. I decided to get a new crankshaft (and, incidentally, to get twin piston rings.) Everything conceivable has been done to get the engine in perfect trim. Now, though there is no vibration in running, the machine behaves in a most disappointing manner. It is extremely slow in acceleration, and, unless given a good start, will hardly go up a small incline on top gear; and as for speed, 25 m.p.h. is the maximum. The compression is good, and the magneto is a new C.A.V. The timing seems correct, the points just opening over the top centre. The new crankshaft was fitted recently, and the distance covered since about 150 miles. The bearings seem free, without excessive play.—D.F.

It would appear that in reassembling your engine either the valve or ignition timing has been erected wrongly. The valve timing can be checked by the marks on the gear wheels, and the ignition timing should be set so that the magneto points are just breaking with the control lever two-thirds retarded and the piston on top dead centre. The new piston rings may take 200 or 300 miles to "run in," and until that distance has been travelled the engine may run a little stiff.

SIDECAR OR THREE-WHEELER.

On reading "Three-wheeler's" recent letter to potential cycle carists, I was rather surprised at some of his remarks. I was thinking of something in that line myself, but, being a family man, and not over blessed with riches, I want to know a few little points definitely before making a change. My present outfit, a 4¼ h.p. single, takes my wife, self, and two children anywhere, but it lacks comfort, and we are unable to converse with ease while running. Now what I want to know is: (1.) Why will not a three-wheeler carry more than two? (2.) Where does the extra insurance and tax come in? (Garage would make no difference to me.) (3.) Why is depreciation so high? (4.) Why car charges for repairs, overhauls, accessories, and spares?—CANNOCK CHASE.

(1.) It is usually rather difficult to arrange for increased seating capacity on a three-wheeler, although it is not impossible, and in some cases even is standardised. (2.) Three-wheelers usually have larger engines than the average medium-weight motor cycle with sidecar, and in consequence a higher insurance premium is generally demanded; the tax is the same as on a sidecar outfit of similar weight. (3.) The depreciation on a modern three-wheeler need be no more than that on a sidecar outfit of similar value. (4.) In many cases repair charges, etc., and garage fees when on tour, are higher for the three-wheeler than for a motor cycle and sidecar, but this is not invariably the case.

DISMANTLING ZENITH-JAP ENGINE.

My machine is a 1914 3½ h.p. single Zenith, with J.A.P. engine, and I wish to rebush the main bearings and connecting rod. I have the engine down as far as the inside half of the engine pulley and the timing pinion on the crankshaft. As for the pulley, it refuses to come away, even after holding the crank case up by the pulley and striking the shaft on end with a hammer. (1.) On the inside half of the pulley there is fitted a loose ring on the ball bearings. Is this ring part of the flange, and is there any other fixing besides the square shaft for holding the pulley? (2.) How is the timing pinion fixed?—R.C.

(1.) The inner flange of the Zenith variable pulley is pressed on to the squared part of the main shaft. The loose ring at the bottom of the pulley has nothing to do with the fixing. These flanges are very easily broken if roughly handled when removing, and you should obtain the use of a pulley drawer. (2.) The timing pinion is screwed on to the shaft with a left-hand thread.

An Argson invalid tricycle (which has an engine of only 170 c.c. capacity), taking two up the 1 in 7 gradient of Fitzjohn's Avenue, Hampstead, London, N.W

Price Reductions.

The prices of lubricating oils marketed by Shell-Mex, Ltd., have been reduced; while the compression puncture-proof tubes sold by Bramco, Ltd., of Coventry, are also the subject of a 10% drop.

Plug Popularity.

Some painstaking individual counted all the sparking plugs fitted on the machines exhibited at Olympia, and his figures indicate that quite 62% were of Lodge manufacture, the balance being divided over fifteen other makes.

American Speed Championships.

It is a somewhat remarkable coincidence that, in addition to recently carrying off the 1,000 c.c. Brooklands Championship, the Harley-Davidson should also be successful in winning all the American national championships. The rider in the latter case, over the one to fifty miles distances, was Fred Ludlow, his best average speed being 81.8 m.p.h. (for the mile).

Two Useful Handbooks.

"Hardening and Tempering of Engineers' Tools" (9d., Percival Marshall and Co., Ltd., 66, Farringdon Street, London, E.C.4). The tempering of lathe and other tools used in the motor cyclist's garage is an exceedingly useful accomplishment, and full instructions as to the methods employed are given in a simple and practical manner. "The French Polisher's Handbook" (2s., from the same publishers). Of little application to motor cyclists, this book will appeal, nevertheless, to the handy man.

Lighting-up Tables.

Some time ago H. Taylor and Co., Ltd., 52, Sussex Place, South Kensington, London, S.W., announced the fact that they would send their 1922 lighting-up table to any reader of *The Motor Cycle* who required one, and in consequence their stock has been completely exhausted; it will be replenished shortly, however, so that all applicants will receive the table in due course.

SPARKLETS

Found on the Road.

On the 20th of last month Mr. J. A. Check, of Linden Lodge, Bolingbroke Grove, S.W.11, found part of a P. and M. gear change control, between Leatherhead and Guildford.

"XF 1455" writes to say that he deposited at the Maidenhead Police Station seven tools wrapped in a rag, which were seen to drop from the toolkit of a motor cyclist who was crossing Maidenhead Bridge at two o'clock on November 19th.

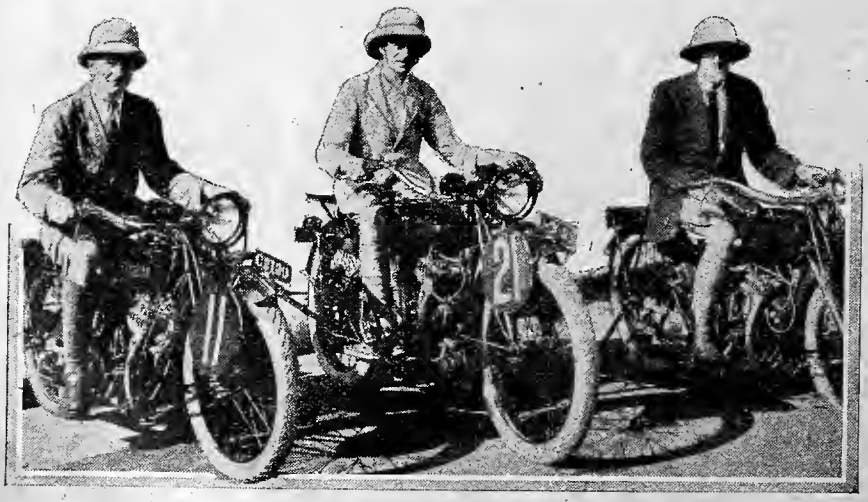
A toolbag, which the owner may have on forwarding full particulars, was found between Kingston and Thames Ditton on December 4th by Mr. H. K. Craig, 83, East Hill, Wandsworth, S.W.18.

Sidecar Outfits for Nothing!

Last week we illustrated a miniature model Norton sidecar outfit, which was much in evidence at the Olympia Show. These models, printed on sheets of cardboard and marked for cutting out and gumming together, are to be obtained from Norton Motors, Ltd., Bracebridge Street, Birmingham, no charge being made, and they are forwarded post free.

To Improve Physique.

It is perhaps not generally known that the famous spring house of Terry and Sons, Ltd., of Redditch, is not confined entirely to the motor and cycle trade. Almost anything in which springs figure is produced, and not the least important line is a range of exercisers for physical culturists. In this connection the firm is running a competition at the present time, and anyone interested should apply for particulars.



IN CEYLON. One of the most enthusiastic clubs in the East is the Ceylon M.C.C. Recently it held a twelve-hour reliability trial over a strenuous course, which included some fairly severe hill-climbing. The challenge cup offered for the best performance by a team was won by the riders of the Indian machines depicted.

Catalogues Received.

B.S.A. Cycles, Ltd., Small Heath, Birmingham: A useful list of spare parts with illustrations and prices, which should be of great value to the owners of 1921 $4\frac{1}{4}$ h.p. B.S.A. single-cylinder machines (models H2 and K2). It can be obtained post free on application.

Thompson Bros. (Bilston), Ltd., Bradley Engineering Works, Bilston, Staffs.: A list describing the air and water-cooled models of the T.B. runabout, including a spare parts list and full information concerning the chassis, sub-frame, steering gear, engine unit, and wheels. An excellent lubrication chart of the chassis is appended.

W. Montgomery and Co., Ltd., Leicester Causeway, Coventry: All types of touring sidecars made by this firm are dealt with in the latest catalogue, which also describes the patent pattern Bo-peep windscreen and a tradesman's carrier sidecar.

Wulfruna Engineering Co., Ltd., Brickkiln Street, Wolverhampton: Full details of the $2\frac{3}{4}$ h.p. Blackburne-engined model, the $2\frac{1}{2}$ h.p. fitted with the two-stroke Mark IV. Villiers engine, the $2\frac{3}{4}$ h.p. with the 293 c.c. J.A.P. engine, and the $4\frac{1}{4}$ h.p. Blackburne-engined model.

Brampton Bros., Ltd., Oliver Street Works, Birmingham: A leaflet listing the dimensions (in accordance with the standards of the British Chain Manufacturers' Association) of four new types of motor cycle chains capable of withstanding high speeds and stresses.

Dunhills, Ltd., 359-361, Euston Road, London, N.W.1: Listing all their principal 1922 models, including not only the triangular chassis but a rectangular chassis with two different types of bodies. In addition, a catalogue of Dunhill's sidecar chassis components and fittings, such as mudguards, wheels, springs, connections, lugs, and hubs, is issued.

Trump Motors, Ltd., Foxlake Works, Byfleet, Surrey: A folder describing the three models of Trump-Jap machines, the $2\frac{3}{4}$ h.p. model A with sloping top tube, the $3\frac{1}{2}$-4 h.p. sports model shown stripped for racing, and the 6-8 h.p. all-chain drive speed model.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"R.H.H." (Comrie).—Binks or Degory carburetter on 4 h.p. Coulson-B: Flexibility, speed, consumption, and acceleration.

"A.W.L." (Hornsey, N.).—Any lightweight sidecar fitted to a $3\frac{1}{2}$ h.p. Rudge Multi: Speed, climbing, consumption, etc.

"F.G.W." (London, S.E.18).—Quadrant sidecar outfit: Consumption, speed, reliability, comparisons with other single-cylinder machines.

"A.C.T." (Walsall).—Scott and A.B.C.: Reliability, consumption, power for light sidecar, renewals and replacements in 10,000 miles riding, gears, etc.

"J.T.W." (Eccles).—Bowden air inlet on Triumph carburetter: How fitted, and effect on carburation and m.p.g.

The following remarkable records have recently been made by users of "K.L.G." Plugs:

On November 17th, 1921, at Brooklands, H. Le VACK, riding a 7 h.p. INDIAN Motocycle, secured new British Records.

Flying Kilo - - - - -	107·55 m.p.h.
Flying Mile - - - - -	102 27 m.p.h.

Major F. B. HALFORD broke the following British and World's Records, on a 3½ h.p. O.H.V. TRIUMPH, Class C.—500 c.c.

BRITISH RECORDS.

1 Mile (Flying) - - -	Speed 87·80 m.p.h.
5 Mile (Flying) - - -	Speed 81.78 m.p.h.
10 Mile (Flying) - - -	Speed 80·09 m.p.h.

WORLD'S RECORDS.

1 Mile (Flying) - - -	Speed 83·91 m.p.h.
50 Mile (Flying) - - -	Speed 77·27 m.p.h.
1 Hour (Flying) - - -	Speed 76·74 m.p.h.

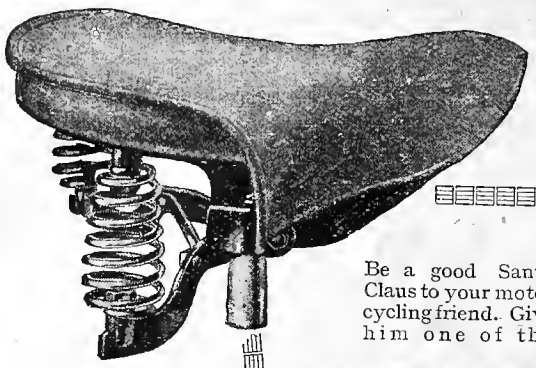
Mr. H. H. BOWEN at Brooklands, on November 24th, 1921, riding a 6 h.p. MARTINSYDE, secured the following, 750 c.c. Class—

One Hour Record -	77·58 miles in one hour.
50 Miles Record - -	38 mins. 33·2 secs. Speed, 77·81 m.p.h.

"All were available—'K.L.G.' were chosen."

THE ROBINHOOD ENGINEERING WORKS, LIMITED, PUTNEY VALE, S.W.15.

Telephone: Putney 2132, 2133. Telegrams: "Kaelgee, Phone, London,"



Be a good Santa Claus to your motor cycling friend. Give him one of the

TERRY

Floating Saddles

Put him on to the finest piece of comfort and luxury open to the motor cyclist to-day. You know how the springs take the stings out of motor cycle riding.

Order from your Agent to-day. Send us address of your friend — tell us whether to send a light-weight or heavy-weight model, and his body weight—and we will despatch direct to him.

Price 63/- each.

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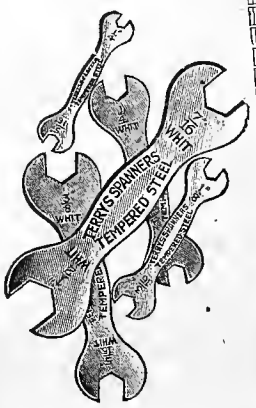
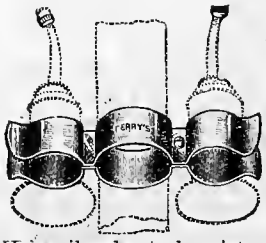
Manufacturers, Redditch, Eng.
Est. 1855.



A set of 5, to keep memory alive.

A Terry high-grade Spanner Set, plated finish, in leather case, would be very timely, and much appreciated. 8/6 per set.
Order now from your Agent.



Have oil and petrol squirts close to hand. Clip them to the frame. Save time opening and closing tool bag. Very best quality. **4/-** each, from your Agent.

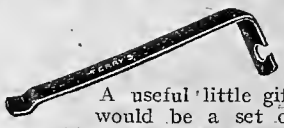
Reg. No 660,205.

Terry's Wristlet Watch Spring. Neat, novel, secure, and very durable.

	Nickel-plated.	Gilt or Silvered.
Men's wide	**9d.**	**1/-** each
Lady's narrow	**6d.**	**9d.** each

From Jewellers, Fancy Goods Dealers &c.

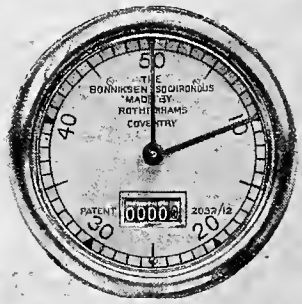
Make your own tool racks, pipe or rubber stamp racks, billiard cue racks, etc. Tool rack clips, **3/-** dozen, complete with screws. From your Agent. Name Terry is stamped on each clip.



A useful little gift would be a set of Terry's high-grade Tyre Levers in cardboard case. Motor cycle size, **1/3** per set of 3. From your Agent.

THE REVELATIONS OF THE TRIALS

The wonderful successes in the recent A.C.U. SIX DAYS TRIALS of the NEW ROVER and CONNAUGHT Teams again brings to the notice the benefits to be derived from the **"BONNIKSEN."** All these machines were fitted with this type of Speedometer, and the general opinion of the riders emphasises the assistance derived from the use of the Instrument, as the following extract from a letter will show: "All Connaught riders fitted a Bonniksen Speedometer and found them very satisfactory. My personal views on them are that they leave nothing to be desired. They helped me very much in keeping to scheduled times, and I relied wholly and solely on them for the speed test at Brooklands."



PRICES:

MOTOR CYCLE TYPE

Trip.	Non-Trip.
£5 5 0	£4 15 0

Rear Drive for American machines, 10/- extra.

CAR & CYCLE CAR TYPE.

Trip.	Non-Trip.
£7 0 0	£6 10 0

Send for Illustrated Booklet.

ROTHERHAM & SONS, LTD., COVENTRY.

Telephones: 752 and 753. Telegrams: "Rotherhams, Coventry."

Speed on Hills

One of the joys of motoring in the

L.S.D.

is its ability to climb practically all main road hills on *top*.

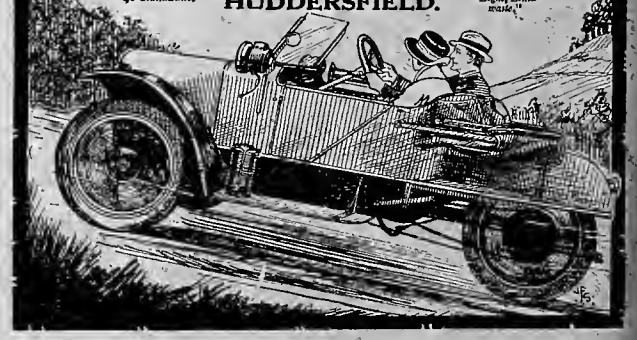
It also saves time and money.

Have you had that experience yet?

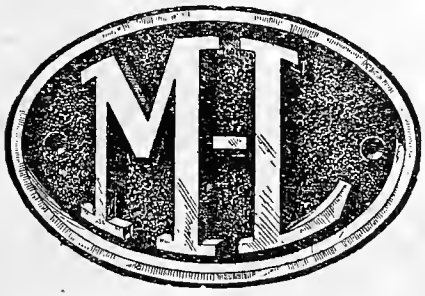
Write us for Demonstration.

SYKES & SUGDEN, Ltd.,
LINTHWAITE,
HUDDERSFIELD.

'Phone: 40 Slaithwaite. *'Grams: "Light, Linthwaite."*



Over 50%



ALL-BRITISH MAGNETOS

Over 50% of the Machines exhibited on Manufacturers' Stands at the recent Motor Cycle Show at Olympia were fitted with "M-L" All British Magnetos

All enquiries and correspondence relating to overseas trade, and to all retail and trade business in this country to be addressed to Messrs. S. Smith & Sons (M.A.), Ltd., Central Works, Crickewood, London, N.W.2. Sole Makers: The M-L Magneto Syd., Ltd. Coventry, to whom all enquiries from manufacturers should be sent

QUALITY TELLS

The Talk of the Show.

COX "ATMOS" CARBURETTER

"WHAT IT DOES AND WHY IT DOES IT"

IS A BOOK THAT TELLS ALL ABOUT THE COX "ATMOS" SINGLE LEVER CARBURETTER WHICH MANY MANUFACTURERS ARE FITTING AS STANDARD FOR 1922. A COPY WILL BE SENT FREE OF CHARGE UPON APPLICATION, AND EVERY MOTOR CYCLIST SHOULD OBTAIN ONE. WHEN YOU SEE A FIRM FITTING THE COX "ATMOS"—A £4 10 CARBURETTER—YOU MAY CONCLUDE THAT THEY ARE PUTTING QUALITY AND EFFICIENCY BEFORE PRICE.

Cox Carburetters, Ltd., Lower Essex Street, BIRMINGHAM.

OMEGA

Utility. *Omegas are primarily designed for utility purposes—to suit the rider who wants a three-hundred and sixty-five days a year worker—requiring little more attention than just filling up with petrol and oil. Though Omegas most admirably fulfil that requirement, there's nothing of the cart horse about them—except in strength. Omegas are speedy, tractable, good to look upon, good to look into, and ever ready. That's the reason of Omega popularity. On present day prices better value is a sheer impossibility.*

"A machine for every rider."

W. J. GREEN, LTD.,
Omega Works, COVENTRY

London: Bartletts, 92, Gt. Portland St., W.1
Birmingham: Gough's, 183a, Broad Street

VERUS AND SIRRAH

A CHOICE OF MODELS

With either Verus, Blackburne, or J.A.P. Engines.

To Suit Every Requirement.

SOLO OR SIDECAR COMBINATION.

Prices from £38 to £135.

Write for Lists, and Names of nearest Agents.

ALFRED WISEMAN, Ltd., Glover St., Birmingham

Telegrams—"Verus, Birmingham." Telephones—Victoria 560 and 561.

MISCELLANEOUS ADVERTISEMENTS.

PRICES.

ADVERTISEMENTS in these columns —First 12 words 3/–, and 3d. for every additional word. Paragraphs of under 8 words are charged double rate. Each paragraph is charged separately. Name and address must be counted. Series discounts, conditions, and special terms to regular trade advertisers will be quoted on application.

Postal Orders and Cheques sent in payment for advertisements should be made payable to ILIFFE & SONS Ltd., and crossed & Co. Treasury Notes, being untraceable if lost in transit, should not be sent as remittances.

All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

NUMBERED ADDRESSES.

For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

☞ DEPOSIT SYSTEM.

Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited.

The letter "D" at the end of an advertisement is an indication that the advertiser is willing to avail himself of the Deposit System. Other advertisers may be equally desirous, but have not advised us to that effect.

SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the fence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

1920 A.B.C., fitted F.R.S. head lamp and D.A. cylinder; 70 gns.; exchanges.—Kent's, 417, Lord St., Southport. [2077

WHEN YOU GET IT AT GODFREYS IT'S GOOD

IMMEDIATE DELIVERY OF THE FOLLOWING 1922 MODELS:

A.J.S., B.S.A., INDIAN, LEVIS, MASSEY-ARRAN, NEW IMPERIAL RUDGE, TRIUMPH, SCOTT, ZENITH.

SPECIAL OFFER OF BRAND NEW AND UNUSED 1921 MODELS.

SOLO MACHINES.

INVICTA, 2½ h.p.	£42
LEVIS, 2¼ h.p., Popular Model	£42
LEVIS, 2¼ h.p., T.T. Model	£49
ROYAL RUBY, 2¾ h.p. Sports, 2-speed	£62
COULSON-B, 2¾ h.p., 2-speed	£70
ARIEL, 3½ h.p., 3-speed, kick-start	£82
COV.-EAGLE, 3½ h.p., 3-speed, kick-start	£79
INVICTA, 3½ h.p., 3-speed, kick-start	£79
B.S.A., 4½ h.p., Model H, chain drive	£89
MASSEY-ARRAN, 2-speed, 2¾ h.p., Sports	£70
COV.-EAGLE, 2-speed, 2¾ h.p., Sports	£64

COMBINATIONS.

INDIAN SCOUT, 4 h.p.	£135
COV.-EAGLE, 5-6 h.p., 3-speed	£120
MATCHLESS, Model H, dynamo	£176
MATCHLESS Family Combination	£160
INVICTA, 3½ h.p., Millford sidecar	£100

EXCHANGES. We shall be pleased to have an opportunity to quote an exchange price for your present mount.

GRADUAL PAYMENTS.

We add only 4 per cent. to the cost price. One quarter down and the balance in 12 equal monthly instalments

B.S.A. SPARES
INDIAN SPARES
LEVIS SPARES
SCOTT SPARES
} Always obtainable at GODFREYS

GODFREYS LTD.,

208, Gt. Portland St., London, W1.

'Phone—Langham 1300 (2 lines).

IMPORTANT NOTICE.

Owing to the Christmas Holidays, the issue of "The Motor Cycle" for December 29th must be closed for press earlier than usual. Insertion of **Miscellaneous Advertisements** in that issue can only be guaranteed if in our hands by first post, Wednesday Dec. 21st.

MOTOR CYCLES FOR SALE.

A.B.C.

19 (Dec.) A.B.C. Special Model, exceptionally fast, owner A.B.C. expert, mileage 2,000; £66.—24, Cottage Grove, Surbiton. [2187

A.B.C. 1920 Combination, standard chassis, dynamo lighting, Cowey trip speedometer, horn, insurance till April, 1922, spares; £110.—23, South Norwood Hill, S.E.25. [1870

1921 A.B.C., mileage about 2,000, lamps, horn, spares, etc., in perfect condition; £85, or exchange 16H Norton, cash adjustment.—192, Whiteacre Rd., Ashton-under-Lyne. [X3647

A.B.C., 1920, practically brand new, only done 600 miles, Lucas dynamo lighting, T.T. bars, electric horn, speedometer, specially tuned up and exceptionally hot; cost £165, sell £82, a gift.—Winterdyne, 11, Russell Rd., Hall Green, Birmingham. [X3222

Ace.

1921 Ace, standard or electric, brand new, but shop-soiled, at very low prices.—14, Gt. Marlborough St., W.1. [1855

A.J.S.

CROSS, Rotherham, can give early delivery of all model A.J.S.'s at list prices. [X3746

1921 2¾h.p. A.J.S., new but slightly shop-soiled; £82.—Cross, Agent, Rotherham. [X3720

1922 A.J.S.—Early delivery of any model from the Premier Motor Co., Aston Rd., Birmingham. [2224

A.J.S. Combination, as new, all accessories, guaranteed perfect; £135.—179, Torridon Rd., Catford. [2039

A.J.S.—Quickest deliveries all models.—Merrick's Stores, Listerhills Rd., Bradford. Tel.: 2439. [1163

A.J.S. at Brixton.—1922 models for early delivery, cash or exchange.—Daw, A.J.S. Agent, 114, Brixton Hill. [2095

1914 A.J.S. Combination, 2-speed, clutch, all chain, perfect running order; first offer £57 secures.—Midwinter, Three Tuns, Hanley. [2278

A.J.S. Combination, dynamo lighting, spare wheel, speedometer, hood, screen, thoroughly overhauled; £140.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [2174

2¼h.p. A.J.S., 1916 3-speed touring model, fully equipped, speedometer, numerous spares, carefully kept; £50; appointment.—Gossling, 341, Norwich Rd., Ipswich. [1880

F.O.C.H. give you good A.J.S. service; cash, exchange, or deferred payments; sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [1941

1920 A.J.S. Combination, perfect, only done 2,500 miles, tyres unpunctured, lamps, horn, hood, screen, spare wheel; £125.—Storey, Malvern Villas, High Town, Congleton. [X3683

A.J.S. 1919 (late) Combination, spare wheel, side screen, Tan-Sad, fully equipped, mechanically perfect, appearance excellent, insured next July; £125.—Burrows, Marconi Station, Carnarvon. [X3646

A.J.S. 2¾h.p., 1916, 3-speed, hand clutch, kick start, lamps, speedometer, good tyres, tools, condition A1; price £50, or offers.—B.P. Garage, 40, Murray Mews, Murray St., Camden Town, N.W. [2261

1922 A.J.S. Lightweights, 2¾h.p. All models can be supplied from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. 'Phone: 308. [1967

1920 A.J.S. Combination, May, spare wheels, screen, Cowey, acetylene, Ace aluminium discs, Tan-Sad, excellent condition, fully insured June, 1922; £140; close offer.—Abbotsford, Chosenway, Hucclecote, Gloucester. [2289

A.J.S. 1921 Model 7h.p. Twin Combination, in perfect condition, privately owned and hardly used, including hood, screen for sidecar, luggage carrier and complete set of lamps; any reasonable trial; offered for quick sale, £140.—Fryer, Leominster. [1818

MOTOR CYCLES FOR SALE.

A.J.S.

1920 A.J.S. 6h.p. Combination, spare wheel. Lucas dynamo lighting and horn, Best and Lloyd mechanical automatic oil pump, Degory carburetter, Bonniksen speedometer, fully insured till March, original tyres; cost £250, price £150.—143, Holden Rd., Woodside Park, N.12. [2104

A.J.S., 1916, 2¾h.p., 3 speeds, hand clutch, T.T. model, long plated exhaust pipe, all-chain drive, tyres as new, F.R.S. largest lamp set, horn, tools, etc., in perfect condition mechanically, very fast, appearance as new, has been little and carefully used; £40.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [2279

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8 Bond St., Ealing. [8631

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [7901

Alecto.

ALECTO'S at Brixton.—Brand new 1921 models, 3½h.p., 2-stroke, 2-speed, clutch, kick-starter, all accessories, £60; the finest value ever offered, and only a few left.—Daw, Alecto Agent, 114, Brixton Hill. [2088

Alldays.

1918 Alldays Allon, 2½h.p., overhauled, lamps; £28/10.—Goad, 122, Maida Vale. Hampstead 1353. [2270

1917-18 Allon 2¾h.p., very reliable, all accessories; accept 35 gns. quick sale; owner bought heavyweight.—2, Slimbridge Rd., Burgess Hill. [1824

ALLDAYS Allon 1921 3-speed Combination, kick starter, clutch, equipped, speedometer, mudshields, insured; £75; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3707

American X.

SPECIAL American X., very fast, little used; £65.—Ring bell, 92, Savernake Rd., N.W.3. [2318

1921 American X.—One or two brand new but shop-soiled for sale at bargain prices.—14, Gt. Marlborough St., W. [1854

1921 American X Combination, dynamo lighting, latest model, finished blue, lavishly equipped, as brand new; £92/10. — 24, Balliol Rd., North Kensington [2049

Ariel.

1920 3½h.p. Ariel, good condition, lamps, horn, etc.; what offers?—A. Whaley, Werneth, Bourne Av., Salisbury. [1927

ARIEL 6-7h.p. Late 1921 Combination, complete with lamps and horn, etc., very little used, like new; £128.—194, Berridge Rd., Nottingham. [X3686

ARIEL (1921, July) 3½h.p. 3-speed Touring, all on, fast, beautiful condition, £90, offers; appointments.—Mitchell, Helpringham, Lincolnshire. [1838

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0704

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £139; no extra charge for easy terms. [2326

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

Spare Parts:

ARIEL Spares for all models, post free.—Ariel Service Depot, Jones' Garage, Broadway, Muswell Hill, N.10. [0742

Bat.

BAT Combination, 6h.p. J.A.P., 3-speed countershaft gear, clutch and kick starter, very late model, all accessories; £60.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [2133

BAT-J.A.P. 1916 7-9h.p. Combination, 3 speeds, Millford coachbuilt sidecar, Cameo wind screen, speedometer, electric lamps, horn, spare parts, tools, and accessories, very good condition; what offers?—Cranbrook, Selcroft Rd., Purley. [2211

Beardmore.

1921 Beardmore, spring frame combination, electric lighting, new tyres, horn, all tools, perfect condition; £80.—Chirney's Garage, Harpenden. [1883

Blackburne.

1921 4¼h.p. Blackburne, privately owned, complete with all lamps, horn, licence, electric rear lamp; £80.—Carnforth Motor Co., Carnforth. [1168

1920 Blackburne 4h.p. Combination, 3-speed, clutch and K.S., Lucas dynamo, fully equipped, excellent condition; £100; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1673

1920 4h.p. Blackburne, 3-speed, clutch, kick start, fully equipped, speedometer, licensed, Binks carburetter, condition as new; 55 gns.; exchanges and deferred payments.—Edwards, 50, Harrington Rd., South Kensington. [2375

BAMBERS

(of Southport)

A FEW INTERESTING MACHINES AT THE RIGHT PRICE

£30
1920 2½ h.p. **Clyno,** 2-speed and clutch.

£32
1914 3½ h.p. **Rudge** Comb., 2-speed, etc.

£40
1921 2½ h.p. **Federal,** 2-speed.

£43
1914 4 h.p. **Bradbury** Comb., 2-speed, etc.

£45
1913-14 3½ h.p. **Triumph** Comb., 3-spd., etc.

£55
1921 2¾ h.p. **Royal Ruby,** 2-speed, etc.

£55
1920 2½ h.p. **Metro-Tyler,** S. Type.

£60
1919 2¾ h.p. **Douglas.** Many extras.

£65
1920 2¾ h.p. **Douglas,** 3-speed.

£68
1920 3½ h.p. **P. & M.,** 2-speed, etc.

£70
1921 2¾ h.p. **Douglas,** 3-speed, kick-start.

£70
1915 4 h.p. **A.J.S.** Comb., spare wheel, etc.

£80
1915 7-9 h.p. **Harley-Davidson** Comb.

£83
1919 3½ h.p. **Rover** Comb., 3-speed, etc.

£85
1920 4 h.p. **Triumph** Comb., 3-speed. etc.

£98
1920 6 h.p **B.A.T.** Comb., 3-speed, etc.

£130
1920 8 h.p. **Sunbeam** Comb., electric lamps

SEVERAL MORE EQUALLY GOOD BARGAINS

WRITE NOW
EASY PAYMENTS

OFFICIAL AGENTS FOR:
B.S.A., A.J.S., MATCHLESS
ARIEL, ENFIELD
DOUGLAS, ZENITH

ANY MAKE SUPPLIED
NOW DELIVERING 1922 MODELS

EXCHANGES ENTERTAINED

R. BAMBER & Co., Ltd.,
2, EASTBANK STREET,
'Phone: 607. **SOUTHPORT.**

MOTOR CYCLES FOR SALE.

Blackburne.

BLACKBURNE.—We have several 4h.p. and 8h 1920 and 1921 machines for sale at very l prices. List on request. Cash, exchange, deferr payments.—Newnham Motor Co., 223, Hammersm Rd., W.6. 'Phone: Hammersmith 80. [22

1920 Blackburne Combination throughout, 8h.p., speed, clutch, kick start, 4 detachable whe all chain drive, electric lighting, speedometer, mirr horn, pillion seat, wind screen and side shield, licens every accessory possible, a most gorgeous combinati like new; a bargain, £125.—Dental, 769, Romford R Manor Park, London, E. [19

Spare Parts:

BLACKBURNE Spares.—Send to us the manuf turers, for all spare parts; prompt servi reasonable prices. Repairs and complete overha to Blackburne or any make of machine; enamelli (tanks a speciality), nickel plating, etc.—Osborn E gineering Co., Gosport, Hants. [08

Bradbury.

1920 6h.p. Bradbury Combination, fully equipp and overhauled; £90.—Ratcliffe Bros., 200, Portland St., W.1. [21

4h.p. Bradbury, 3-speed C.S. gear box, kick st handle-bar control clutch, good running ord £30.—Wraight, Bells Farm, Eastchurch, Sheppy. [18

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h Bradbury, new 1921, £70; and 6h.p. Bradbu combination, new 1921, £135; no extra charge easy terms. [23

Brough.

1921 5-6h.p. Brough Combination, fully equipp wants new front cylinder, otherwise perfe £65; must realise.—45, Pelham Rd., Wimbledon. [21

Brough Superior.

BRAND New 1921 Brough Superior, 8h.p. J.A.P. gine, lavishly equipped; cost £200, accept £1 —Hillier (side bell), 9, Wallingford Av., North Kensi ton. [20

BROUGH Superior 1922 models for immediate livery; cash, exchange, deferred payments. Newnham Motor Co., 223, Hammersmith Rd., W 'Phone: Hammersmith 80. [22

1921 (late) 8h.p. Brough Superior Combination, p fect condition throughout, complete electric lig ing installation, pilot and speedometer lamps, etc., epo ing Montgomery with luggage carrier, very fast; bar some outfit, all tools, spares, etc.; £175.—Court Gre Court Hill, Chipstead, Surrey. [19

ALLEN-BENNETT Motor Co., Ltd., Service Dep and sole London agents for the Brough Superio the sporting rider's ideal.—Immediate delivery of 19 models at reduced prices. Mark I., 90×77½, o.h.v., speed, clutch, and kick starter, £150; Mark I., sporti combination, step, mat, screen, etc., £180, or w special side valve J.A.P. engine, same price; Ma II. 6.5, mag., 72×90, 3-speed, clutch, and kick start £125; sporting combination, step, mat, screen, et £150. Demonstration models in stock. Catalogues se post free on request.—The Allen-Bennett Motor C Ltd., 9-10-11, Royal Parade, London Rd., West Cro don. 'Phone: Croydon 2450. [07

B.S.A.

B.S.A. 1922 Models in stock; catalogue with pleasu

B.S.A. Replacements always by return: write catalogue.

B.S.A. Specialists—County Cycle and Motor Co., Bro St., Birmingham. [44

£68.—1920 4¼h.p. B.S.A. combination, fully equipp new condition.—King, Egrove Farm, Oxford. [X37

4¼h.p. B.S.A. Combination, countershaft, comple 1919; easy payments.—Parker's Garage, Oxfo [11

1914 B.S.A., T.T. model, long exhaust, discs, gu anteed mechanically sound, lamps, tools, et £30.—Below.

1915 B.S.A., 4¼h.p., countershaft, renovated as ne with new sidecar; £58/10.—Goad, 122, Mai Vale. Hampstead 1353. [22

1921 B.S.A. 4¼h.p. Combination, and accessori cost £170 March, offers wanted. — Pip Crescent, Amersham, Bucks. [22

B.S.A. 1921 Combination, all lamps, accessori condition as new; £105, bargain.—Colon Motors, 104a, Finchley Rd. Hampstead 7822. [23

GODFREYS', Ltd., 208, Great Portland St., Lond W.1.—Complete stock of all B.S.A. spare pa always in stock. Write for free spare part list. [07

B.S.A. 4¼h.p. Combination, 2-speed hub, kick sta all tyres good, lamps, spares, trial; £48 Roughley, Faraday Rd., Winnington, Northwich. [21

1915 (late) 4¼h.p. B.S.A., stored 2½ years, exc lent condition, fully equipped, Binks; £55, nearest.—Johnson, 159, Hampton Rd., Southport. [22

F.O.C.H. give you good B.S.A. service: cash, change, or deferred payments; sound second-ha machines in stock.—5, Heath St., Hampstead (n Tube). [19

MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD 2¼h.p., 1920, as new, all on; £35.—33, Conyers Rd., Streatham. [1816

SHEFFIELD Agent for Royal Eofields, all model. in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

ENFIELD Lightweight, perfect, nice appearance; spot cash, £12/10.—1, Priory Rd., Kew Green. [2013

1919 3h.p. Enfield, M.A.G., Binks, 2-speed, clutch, new tyres; £33.—67, Fernlea Rd., Balham. [2392

1918 Enfield Combination, 8h.p. Colonial model; a bargain, £85; like new.—Ross, 86, High Rd., Lee, S.E. [2163

1921 (May) Eofield 2-stroke, 2-speed, good condition; £40, or highest offer.—25, The Drive, Purfleet, Essex. [2213

1921 Enfield 2¼h.p. 2-stroke, Magdyoo, unscratched, equal new; £57.—75, Richmond Rd., Barnsbury, N. [2233

ENFIELD 2¾h.p. Twin, 2-speed, clutch, new Dunlops, all on; offers wanted.—Ash, 26, Thornfield Rd., Shepherd's Bush. [2215

ENFIELD, 3h.p., 1916, K.S., 2-speed, and sporting sidecar; £40, or nearest offer.—Davenport, 15, Trinity St., Cambridge. [2005

ENFIELD 1920 2-stroke, Millers lamps, perfect order, small mileage; trial and examinatioo; £55.—Jupp, Leke House, Billingshurst. [2137

1920 Enfield Combination. Magdyno, speedometer, Easting screeo, as new; £125.—Ratcliffe Bros., 100, Gt. Portland St., W. [2171

1921 8h.p. Enfield Combination, lamps, speedometer trip, in good condition, only used week-ends, tyres; £125.—Box 7,797, c/o *The Motor Cycle.* [2105

1921 Enfield Combioation, 8h.p. Vickers, Magdyno, screen, low mileage, splendid conditioo; £150, clear offer.—Y., 33, Queen's Av., Muswell Hill, N.10. [1802

1921 Enfield Combioation, 8h.p., Magdyno, Easting screen, Sterling legshields, Lloyd's suspension saddle, perfect, as new; £135.—Brown, Photographer, Bedford. [2022

ENFIELD 1921 Combination, Magdyno, cantilever saddle, Palmer tyres, two 710×85, 4,500 miles, very carefully used; £130.—6, Linton Rd., Oxford. [2150

1921 Enfield-Vickers Combination, hood, screen, speedometer, 3 lamps, 2 horns, Tan-Sad, superb condition; 115 gns.; exchanges.—Kent's, 417, Lord St., Southport. [2079

ENFIELD 1912 6h.p. Combioation, coachbuilt sidecar, equipped, good condition; £55; deferred payments.—Parker's, Brandshawgate, Bolton; also 245, Cleansgate, Manchester. [X3705

1917 Enfield Combination, 6h.p., lamps, horn, Tan-Sad, Easting, tools, new Amac, new rear wheel, good running order; £65.—G. Meadows, Penning-ton Walk, Retford, Notts. [2346

ENFIELD.—We are official agents, and can give immediate delivery of any model of this foolproof motor cycle.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0380

JUST arrived, in stock, 1922 8h.p. Enfield combination, with coachbuilt sidecar, lamps, horn, tools, etc.; price only £142/10; exchanges or deferred.—Cordingley and Sons, Hastingden. 'Tel.: 102. [X3470

4 GNS., exchange.—1914 Enfield 6h.p. coachbuilt combination, lamps, speedometer, screen, engage grid, smart, fast; any examioation, trial.—Cabbridge, Hansler Rd., East Dulwich. Sydenham 52. [1083

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8635

F.N.

F.N. 1914 5-6h.p., 2-speed, all accessories, little used; bargain, £45.—365, King St., Hammersmith. [1952

1h.p. F.N., 2-speed, clutch (h.b.c.), splendid condition, very attractive; £20, cheap.—L.C., 40, Maldeo Rd., Kentish Town, N.W.5. [1884

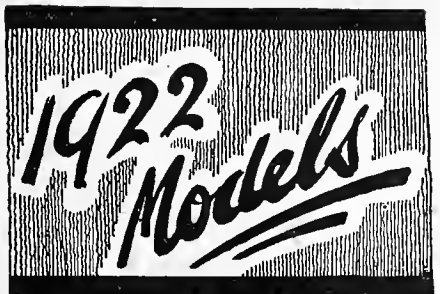
T.T. F.N., 4-cyl., 2-speed, clutch, Bosch, Binks, shaft drive, Sunbeam tank, just overhauled, remodelled, costing £30; accept £45.—160, Moss Lane, Hale, Manchester. [2207

F.N. 1920 7h.p., 4-cyl., with Montgomery double-seated sidecar (2 wind screens), just been overhauled, in perfect order, lamps, horn, speedometer; all run; moderate mileage; £82, or very near offer.—Major Kennaway, Rectory Place, Guildford. [2366

1913 5-6h.p. 4-cyl. F.N., 2-speed, clutch, K.S., Bosch, recently overhauled, lamps, electric horn, speedometer, tray, and aluminium footboards, wide bars, super exhaust, fast, reliable, perfect condition and appearance, trial seen week-ends; £65. — Paget, Hermitage, Horsham, Sussex. [2016

Francis-Barnett.

1920 Francis-Barnett, 2¾h.p. J.A.P., 2-speed, clutch, K.S., fully equipped, condition as new; £56; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1674



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1922 LIGHT CARS.

AIREDALE 11.9 h.p. 4-seater	£475
CALTHORPE 10 h.p. 2-seater	£355
CALTHORPE 10 h.p. 4-seater	£375
CALTHORPE de Luxe 2-seater	£410
CALTHORPE de Luxe 4-seater	£435
COVENTRY PREMIER 4-wheeler	£250
L.S.D. 3-wheeler, All on	£165
LAGONDA (Coupe or 4-seater)	£375
STANDARD 8 h.p. (2 or 4-seater)	£325
STANDARD 11 h.p. 2-seater	£515
STANDARD 11 h.p. 4-seater	£525

1922 MOTOR CYCLES.

B.S.A. 4¼ h.p. Chain-Belt	£107
B.S.A. 4¼ h.p. All-Chain	£110
B.S.A. 6 h.p. Light Comb.	£164
B.S.A. 8 h.p. Comb.	£185
BRADBURY 4 h.p., 3-sp., All-Chain	£92
BRADBURY 6 h.p. Comb.	£146
DOUGLAS 2¾ h.p. 2-speed, All on	£75
DOUGLAS 2¾ h.p. 3-speed, All on	£90
DOUGLAS 3½ h.p. 3-speed Sporting	£130
EDMUND-BLACKBURNE 2¾ h.p. 2-speed, spring frame	£85
ENFIELD 8 h.p. Combination	£140
ENFIELD 2¼ h.p. 2-speed	£55
LEVIS Popular 2¼ h.p.	£48
LEVIS 2¼ h.p. 2-speed	£58
LEVIS 2¼ h.p. 2-speed, kick-start	£60
NEW IMPERIAL 2¾ h.p. 3-speed	60 Gns.
NEW IMPERIAL 2¾ h.p., All-Chain	£73
NEW IMPERIAL 8 h.p. Comb.	£145
NORTON 3½ h.p. T.T.	£80
NORTON 3½ h.p. 3-speed	£115
NORTON Big Four	£120
REX-ACME 2½ h.p. 2-speed	£50
REX-ACME 2¾ h.p., Blackburne engine	£69 15
REX-ACME 8 h.p. Combination	£150
SCOTT-SQUIRREL 3½ h.p. 2-speed	£105
SCOTT 3¾ h.p. 2-speed Comb.	£145
SUNBEAM 3½ h.p. (New Type)	120 Gns.
SUNBEAM 4¼ h.p. (New Type)	135 Gns.
SUNBEAM 3½ h.p. Combination	162 Gns.
SUNBEAM 8 h.p. Combination	£217 7
TRIUMPH 4 h.p. Chain-Belt	£105
TRIUMPH 4 h.p. All-Chain	£115
TRIUMPH JUNIOR 2¼ h.p.	£65

EXCHANGES AND DEFERRED PAYMENTS QUOTED

Second-hand Machines and Combinations as per "Miscellaneous" Columns.

The Halifax Motor Exchange,
25, Horton Street, Halifax
'Phone: 1400. 'Grams: Perfection

MOTOR CYCLES FOR SALE.

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120.—Stacey, 12, Ecclesall Rd. [0577

HARLEY-DAVIDSON 1919 7-9h.p., 3 speeds, clutch, kick starter, equipped; £75.—Below.

HARLEY-DAVIDSON 1916 7-9h.p., clutch, kick starter, special speed engine, equipped; £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

1920 Flat Twin Harley, all on, perfect condition; £67/10, or exchange.—24, Geraldine Rd., Chiswick. [2355

1919 Harley, Henderson Elite, special engine, discs, exceptionally fine, not W.D.; £95.—Goad, 122, Maida Vale. Hampsead 1353. [2268

HARLEY Combination (late), bulbous sidecar, dynamo lighting, splendid outfit; accept 80 gns.—23, Tonsley Place, Wandsworth, S.W.18. [2003

MOST Luxurious Late 1920 Harley De Luxe Combination, equipped regardless, disc; £110.—24, Balliol Rd., North Kensington. [2050

1919 7-9h.p. Harley Combination, handsome turnout, disc wheels, like new; £110.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [2059

HARLEY-DAVIDSON Combination, 1919, Henderson Elite sidecar as new, engine fitted new bearings, etc.; £100.—Dunford, Buccleuch House, Thorpe Bay. [1918

1920 7-9h.p. Harley Combination, electric, speedometer; £105; take cheaper machine part.—Levitt, 80, Streatham High Rd., S.W.16. 'Phone: 2701. [2404

1920-21 Harley-Davidson de Luxe Combination, electric model, fully equipped, condition unscratched; £110.—Hillier (side bell), 9, Wallingford Av., North Kensington. [2054

HARLEY Sporting Combination, 1917, Henderson Elite sidecar, T.T. bars, discs, speedometer, lamps, etc., guaranteed perfect; £88.—33, Streathbourne Rd., Balham, S.W. [2006

HARLEY Combination, 1920, dynamo, speedometer, screen, under 3,000 miles, like new; 100 gns.—Bruton Mews Garage, 8-20, South Bruton Mews, Bond St., W. 'Phone: May. 4282. [1966

1919 Harley-Davidson, with 1921 Harley standard sidecar, fitted with child's dickey seat, new Easting wind screen, electric light; this machine has never had a sidecar attached until 3 months ago, and is in perfect condition; any trial; £95.—Hartop, Draper, Castle Rd., Bedford. [2291

HARLEY-DAVIDSON (1921 model, delivered June), De Luxe Model, electric lighting, Carjon and Mudd De Luxe sidecar, concealed hood, aluminium and Triplex glass wind screen, discs, Tan-Sad, petrol can carrier, mileage not 3,500, well looked after, excellent condition, number of spares included; £210; same outfit new would cost over £250 now.—Apply by letter, D.H., c/o Rolls-Royce, 15, Conduit St., W. [1857

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8636

Henderson.

1921 Henderson, 4-cyl. standard model, slightly shop-soiled; what offers?—14, Gt. Marlborough St., W.1. [1856

1920 Henderson Combination, disc wheels, electric lights, small mileage, perfect condition; £145, or nearest.—W. J. High, 3, Tankerton Terrace, Whitstable. [1989

1920 Henderson Combination, long exhaust, exceptionally fine outfit, specially tuned, all as new; £135; exchanges.—Goad, 122, Maida Vale. Hamptsead 1353. [2271

A BARGAIN for Quick Sale.—Aug., 1921, Henderson, 4-cyl., fitted aluminium discs, open exhaust, with shutters, driveo 1,000 miles, tax paid to Dec. 31st; cost £225, will accept £130.—Box 7,703, c/o *The Motor Cycle.* [1337

1920 (late) 4-cyl. Henderson Combination, fitted rear drive speedometer, clock, aluminium discs, electric lighting, and all accessories, just been repainted, and mileage only 2,000; machine has been carefully looked after, and is a genuine bargain at £120.—Apply after 5 p.m., Dunne, 12, Queen's Gardens, Lancaster Gate, W.1. [1823

Hobart.

HOBART, 1921, 2¼h.p. Villiers, 2-speed, all accessories, practically new; £35.—Daw, 114, Brixton Hill. [2091

Humber.

1913 3-speed Humber Lightweight; £15; good condition.—Write Brandt, The Cedars, Parson St., Hendon, N.W.4. [1831

TWO Humbers, genuine bargains, must sell, unemployed; stamps particulars.—Cleworth, Twist Lane, Leigh, Lancs. [X3649

1917 Humber Combination, 6h.p. w.c., 3-speed, flat twin, aluminium disc wheels, electric accumulator lighting, large head lamp, toolbox and luggage carrier, Tan-Sad, Easting wind screen, completely equipped in every way; £85.—55, Edith Rd., South Norwood, S.E.25. [1798

MOTOR CYCLES FOR SALE.

Indian.

INDIAN 1920 7-9h.p., electrically and fully equipped; 75.—17, Heaton Rd., Mitcham. [2069

7-9h.p. Indian Combination, as new; sacrifice £60.—Williams, 22, St. Martin's Rd., Stockwell, S.W. [1996

1921 Indian Scout, electric model, splendid condition; 94 gns.; exchanges.—Kent's, 417, Lord St., Southport. [2078

3½h.p. Sports Indian, 3-speed, fully equipped, condition good; any trial; £46.—Daniels, Loughton, Bletchley. [2221

INDIAN 1915-16 5-6h.p., 3-speed, equipped, insured August, just overhauled; £65, offers.—Floyd, 33, Blenheim, Minehead. [1860

1920 7-9h.p. Indian Combination, dynamo lighting, fully equipped; £95.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [2061

INDIAN Combination, 1916, 70×65 twin 3 speeds, D.A. lighting, excellent condition; £65.—Pilgrim, 3, Castellain Rd., Maida Vale, London, W. [1803

1921 Indian Scout Combination, dynamo lighting, speedometer, electric horn, very little used, excellent order.—Baxter, Chobham Rd., Woking. [2073

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list. [0752

1920 7-9h.p. Indian Electrical Combination, leg-shields, Easting, luggage grid, mileage 5,000, perfect order; bargain, £100.—Ives, Preston Rd., Tonbridge. [2082

1920 Powerplus Indian, with Mills-Fulford sidecar, electric equipment, good condition throughout.—Dye, 15, Earlsfield Villas, Dysart Rd., Grantham. [2276

POWERPLUS Indian and sidecar, 7-9h.p., lamps, tools, insurance, perfect condition; any trial; £70, or exchange good furniture.—Bradford, Hoo, Rochester. [1957

1914 7-9h.p. Indian Combination, 2-speed, excellent condition, Easting wind screen; any trial; £62, offers; exchange.—Mawson, Adwick-on-Dearne, Rotherham. [1906

INDIAN Combination, 5-6h.p., 3-speed, K.S., Cameo, lighting set; £65; trial Saturday after 3 o'clock, any time Sunday.—Smith, 18, North End Rd., West Kensington. [1946

INDIAN Scout and Sidecar, Henderson Featherweight, in perfect condition, mileage under 3,000, T.T. bars, disc wheels, speedometer, Klaxon, 3 lamps; £120.—Righton, Stoke Rd., Gosport. [1852

INDIAN 1919 7-9h.p. Powerplus, 3-speed, T.T. bars, lamps, horn, in new condition; exchange Triumph or Douglas, or sell £80.—H. Pardoe, Brooke Farm, Wollascote, Stourbridge. [1908

INDIAN 7-9h.p., spring frame, Sturmey-Archer 3-speed gear box new this year, Montgomery C.B. sidecar, Cameo wind screen, fully insured, enamel good, fine running order; £80.—Mander, Byrkley St., Burton-on-Trent. [2158

PRIVATELY Owned (Aug., 1920) Powerplus Indian combination, just completely overhauled for tour abroad, but must sell; new parts, engine and gear box bearings, piston rings, driving chain battery, Auster Royal screen, etc., revarnished, 2 horns, spare chain and tyre, perfect condition throughout; any trial; £98.—Dalton, 7, Upper St. Martin's Lane. Regent 4224. [1848

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8637

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

Ivy.

1920 Ivy 2-stroke, Sturmey-Archer 2-speed, kick start and clutch; £35.—24, Geraldine Rd., Chiswick. [2353

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

IVY.—All 1922 models in stock. Immediate deliveries. Cash or exchanges, deferred payments 4%. Trade supplied.—Maudes' Motor Mart, London, Exeter, and Walsall. [2415

James.

JAMES 1920 6h.p. Combination, all on; £100.—Millward, Hilcote, Blackwell, Alfreton, Derbys. [1792

1921 James Combination, indistinguishable from new, 6h.p., lavishly equipped; accept £100.—Dawe, 216, Portobello Rd., North Kensington. [2021

5-6h.p. James Combination, late 1919, Easting screen, Lucas lamps, speedometer, etc., excellent condition; £100.—W. Glenhurst, Linden Gardens, Leatherhead. [2385

JAMES (1919, Oct.) 5-6h.p. Combination, lamps (P. and H.), horn (Lucas), speedometer, luggage grid, screen leg guards, spares, perfect; £95.—122, Embleton Rd., Ladywell, London. Mondays to Fridays after 6, or by appointment. [1841

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MOTOR CYCLES FOR SALE.

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RACING 3½h.p. Overhead Valve J.A.P., 3-speed combination, Flying Middleton sidecar, winn numerous awards in competition, everything cream condition, fitted best of materiel regardless of expens sacrifice or consider exchange; photo sent on reque —Westwood House, 2, Westwood St., Moss Lane Ea Manchester. [X37

Kingsbury.

BRAND New Kingsbury 2¾h.p., 2-speed, all cha Dunlops; cost £65, sacrifice £38.—365, King S Hammersmith. [19

Lea-Francis.

LEA-FRANCIS, 1920, M.A.G., Bonniksen, electr lighting, perfect order; £68.—Clark, 7, Exhibi tion Rd., S.W.7. [22

Levis.

PREMIER Motor Co. for 1922 Levis.

LATEST Improved Models for immediate delivery 1922 reduced prices.

POPULAR 2¼h.p. Single-gear Levis, £48; Model 2¼h.p., 2-speed, clutch, £58, or with kick start £60; easy payments only 4% extra; carriage paid any address. Buy your machine direct from the Le specialists.—The Premier Motor Co., Aston Rd., Bi mingham. [07

£30.—1920 single speed Levis, accessories.—Cliffo Wilson, 177, Westminster Bridge Rd., S.E.1. [16

1914-15 Levis, 2-speed, equipped; £30; exchange wi cash Indian or 3½h.p. T.T. machine.—8, Helmsl Place, Hackney. [23

SMARTEST Levis on the road, extra wide mu guards, lamps, perfect, long exhaust, any trial £21.—1, Priory Rd., Kew Green. [20

LEVIS 1920 2¼h.p. 2-stroke, lamps, horn, etc £30.—Elce, Ltd., 15-16, Bishopsgate Av., Cam mile St., E.C.3. 'Phone: Avenue 5548. [00

£45.—June (1921) 2¼h.p. Levis, 2-speed, clutch; accessories, mileage 1,200, condition and runni perfect; onthly £75; first wire secures.—Buckna R.A.F., Grantham. [18

LEVIS 1919 2¼h.p., 2-speed, Miller lamp set, n tyres, horn, long exhaust, spare tyre, belt, enam ling and plating excellent, perfect throughout; £35 231, Green Lanes, Highbury, N.4. [19

SPECIAL Offer of a few slightly showroom sol 250 c.c. T.T. model Levis motor cycles; list pri £65, reduced to £55; makers' speed guarantee of m.p.h. with each machine; easy payments only 4% extr carriage paid to any address.—The Premier Motor C Aston Rd., Birmingham. [07

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambrid —Complete illustrated list post free. All Le parts in stock. [93

GODFREYS', Ltd., 208, Great Portland St., Londo W.1.—Complete stock of all Levis spare pa always in stock. Write for free spare part list. [07

Lincoln-Elk.

3½h.p. Lincoln-Elk, guaranteed mechanically sou enamel good, new tyre, good lighting set, Bos mag., B. and B. carburetter; £17.—Kemp, New Yo Lincoln. (1) [19

L.M.C.

L.M.C., 3½h.p., Bosch mag., B. and B. carburett 3 speeds, just re-enamelled, very smart, in ve good condition throughout, tyres and belt goo £16/10.—R. Watson, Victoria Rd., Aldeburgh, Suffol [22

Mars.

MARS-J.A.P., 1921, special 350 c.c. engin Burman 2 speeds, hand clutch, kick start disc wheels, acetylene lighting, tools, tax paid, w do over 50, beautiful machine, as new; £55.—A., 12 Ravensbury Rd., Earlsfield, London, S.W. [22

Martinsyde.

1920 Martinsyde 6h.p. Combination, 3-speed, clut K.S.; fully equipped, hood and screen; £10 deferred payment or exchanges.—Edwards, 50, Harri ton Rd., South Kensington. [16

MARTINSYDE Sports and Touring Models 1922; cash, exchange, deferred payments Newnham Motor Co., 223, Hammersmith Rd., W. 'Phone: Hammersmith 80. [22

Matchless.

MATCHLESS 1920 Magdyno Combination, splend order; £120, bargain.—Clark, 7, Exhibition R S.W.7. [21

MATCHLESS Brand New 1921 Combination, spa wheel, screen, one only left; £150.—7, Exhibiti Rd., S.W.7. [21

LATE Matchless Combination, M.A.G. single, Ama hood, wind screen, must sell; 70 gns.; evening —67, Fernlea Rd., Balham. [23

1921 Matchless Combination, Magdyno lightin brand new, unused; £158; owner must sell. 41, Madrid Rd., Barnes, S.W. [16

MOTOR CYCLES FOR SALE.

Matchless.

MATCHLESS at Brixton.—1922 models for immediate delivery, cash or exchange.—Matchless Service Agent, below.

1920 Model H Matchless Combination, spring frame, acetylene lighting, £105; 2-seater model, £135.—Arthur G. Daw, Matchless Service Agent, 114, Brixton Hill. [2085

MATCHLESS 1922 Models. 'Phone Greenwich 751. Sam E. Clapham, the agent. Now the show is over, once again at your service.—Below.

MANY Thanks to clients who placed orders at Olympia for Matchless with Sam E. Clapham, of Greenwich.

SPECIAL Notice.—If you missed Sam E. Clapham in the crowd, send your order along. Personal attention assured. We are also agents for all the world's best in motor cycles and light cars for 1922 season.—Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [2310

1922 Matchless Models; immediate deliveries at list prices; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2376

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Matchless combination, sports model, new 1921; reduced to £149; easy terms no extra charge. [2330

F.O.C.H. give you good Matchless service; cash, exchange, or deferred payments; sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [1940

MATCHLESS 1922 models for immediate delivery. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2245

MATCHLESS, 1921, Magdyno, speedometer, hood and screen, as new; £130.—Ratcliffe Bros., 200, Gt. Portland St., W. [2180

£22/10.—Matchless 4h.p. twin, J.A.P. engine, nice condition; real bargain; exchange combination or solo.—8, High St., Wandsworth. [2209

MATCHLESS 1922 Models from stock; exchanges or easy payments; trial run any time.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [2198

1922 Sports Matchless, solo, mileage 200, indistinguishable from new; 108 gns., or with new sidecar 138 gns.—Edwards, 50, Harrington Rd., South Kensington. [2377

MATCHLESS Sports New 1921 Combination, 3 speeds, clutch, kick starter; bargain; £150.—Eleo, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. Phone: Avenue 5548. [0066

MATCHLESS Combination, new February, 1921, M.A.G. engine, Magdyno, hood, screen, leg-shields, like new; £120 for quick sale.—143, Ravensbury Rd., Earlsfield, S.W.18. [2222

1921 (Aug.) Matchless, mag-dynamo lighting, speedometer, side flaps to wind screen, the whole outfit indistinguishable from new; 140 gns.—Edwards, 50, Harrington Rd., South Kensington. [2378

MATCHLESS Combination, 1920, Model H, M.A.G. 8h.p., electric lighting, speedometer, horn, tools, fitted 3 new tyres, insurance A.A. paid till Aug., 1922; £125.—150, Chase Side, Enfield, N. [1787

MATCHLESS Combinations.—Book your orders with Ross, 86, High Rd., Lee, S.E., or 'Phone Lee Green 744 for immediate delivery of 1922 models. Exchanges and gradual payments arranged. [2613

MATCHLESS-M.A.G. Combination, Sept., 1921, Lucas electric lighting, not done 500 miles, absolutely new, numerous accessories; best offer over £135.—267, Lyham Rd., Brixton Hill. [1820

MATCHLESS Late 1920 Combination, M.A.G., dynamo lighting, hood, screen, and side wings, speedometer, spare wheel, sidecar step, legshields, splendid condition; £185, cost £250.—Attwood, Ascot, Berks. [1871

MATCHLESS.—Immediate deliveries 1922 models; trade supplied in London area, also in Cornwall, Devon, and Somerset; exchanges; deferred payments % extra.—Maudes' Motor Mart, London, Exeter, and Walsall. [2413

MATCHLESS Combination, 8h.p. J.A.P. engine, new April this year, dynamo lighting, spare wheel, carburetters, hood, Triplex wind screen, many spares; owner bought car; accept fair price.—Duffy, 115, Uppingham Rd., Leicester. [1263

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NEW IMPERIAL 2¾h.p., 2-speed, excellent order, good tyres, lamps, horn; £33.—30, Fordel Rd., Catford, London. [1923

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. New Imperial, 2-speed only, £63; also 2-speed, clutch, and kick start model, £69; easy terms arranged. [2331

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NORTON, 3½h.p., gears, kick start, excellent machine; £40; exchange 2-stroke, cash adjustment.—68, Gloucester Rd., Camden Town. [2236

NORTON 1921 3½h.p. No. 9 Model, fully equipped, as new; £75; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3708

1921 Norton Model 16H, fitted with Watsonian sidecar Model R34, speedometer, lamps, perfect order; £100.—Ratcliffe Bros., 200, Gt. Portland St., W.1 [2173

BIG Four Norton Combination, Oct., 1919, P. and H. lamps, speedometer, horn, mirror, discs, knee-grips, Canoelet sidecar, apron, the whole absolutely indistinguishable from new, small mileage; sacrifice £95.—100, Riversdale Rd., Highbury, N.5. [1970

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5-6h.p. N.S.U., 2-speed, clutch, perfect condition, new heavy Dunlops; bargain, £30.—Johnson, 183, Ardgowan Rd., Catford, S.E.6. [1819

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N.U.T., 1921, lavishly equipped; £65.—Dawe, 216, Portobello Rd., North Kensington. [1576

OCT., 1921, 3½h.p. N.U.T., Magdyno lighting, fully equipped, as new; £79; after 5 p.m.—4, Elm Gardens, Hammersmith, W.6. [1973

N.U.T., 1920, Magdyno, Cowey horn, speedometer, not done 7,000, splendid condition, recently decarbonised, all bearings perfect, new Dunlop tyre, belt, chain; £90, or reasonable offer; owner buying combination.—L.P.B., 57, Frances Rd., Windsor. [1862

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P. and M. 1918 Combination, first-class, would separate; offers.—38, Sherriff Rd., West Hampstead, N.W.6. [2149

£45.—P. and M. Combination, 1918 R.A.F. model, perfect order; exchange considered.—8, High St., Wandsworth. [2210

1918 P. and M. Combination, splendid condition, all accessories, tax paid; sacrifice £60.—253, King St., Hammersmith. [1949

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1921 P. and M. Combination, little and carefully used, original tyres, Lucas accessories; £80, bargain.—Deane, Matlock Bath, Derbyshire. [X3744

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P. and M. 1919 Combination and 1921 solo for sale at very low prices. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2254

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1921-22 Raleigh Combination throughout, 5-6h.p., 3-speed, clutch, kick start, most elegant machine, and as brand new, unregistered, accessories, etc.; exceptional bargain, £130.—Surgery, 769, Romford Rd., Manor Park, London, E. [1992

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REX 1913 Coach Combination, 6h.p., 2-speed, handle start, Philipson pulley, binks, Bosch, all tyres practically new, electric horn, speedometer, spares, etc.; £60.—Forsyth, Victoria Pier, Folkestone. [1926

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1920 Rudge Multi, I.O.M., speedometer; £50.—7, South Park Hill Rd., Croydon. [2345

BRAND New I.O.M. Rudge, equipped; £58.—24, Balliol Rd., North Kensington. [2045

£60.—1920 Rudge Multi, 3½h.p., accessories.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [1635

VAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge Multi, I.O.M. model, 1920; £55. [2332

RUDGE, 1920½, I.O.M., used daily, horn, car lamp, spare valve and tube; £50.—Pollit, Wroxham. [2275

RUDGE 3½h.p. 1913 Clutch Model, thorough condition; complete accessories; £30.—Day, Shipone, Aveley, Essex. [1608

RUDGE Multi Coachbuilt Combination, 1914, 3½h.p., insured, lamps, Klaxon, spares; trial; £56.—73, Cornerbedge Rd., Gunnersbury. [2001

1921 I.O.M. Rudge Multi, bought June, low mileage, best accessories, lovely condition; £65.—1, Globe Rd., Bethnal Green [2041

WE Can Give Immediate Delivery for 1922 models Rudge; 3 speeds, all-chain, £100; Multi, £85.—Percy and Co., 314, Euston Rd., N.W.1. [1020

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1920 3½h.p. Rudge and 35 gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect; £6; deferred payments and exchanges.—Edwards, 50, Barrington Rd., South Kensington. [2373

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1920 Scott, sporting sidecar, speedometer, lamps, not used since Easter; £85.—Anderson, Waltham Abbey. [1835

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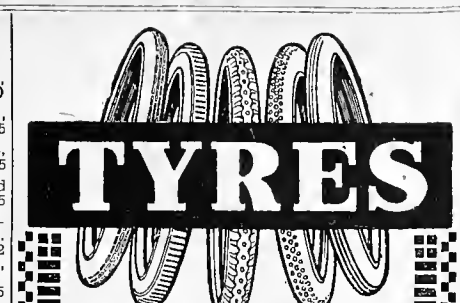

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Scott

SCOTT Motor Cycles or Sociables.—Immediate delivery can be given from Ball, Scott Specialist, 6, Wheeley's Rd., Edgbaston; or Taylor, 74, Stoney Lane, Smethwick; from whom information, spares, and real service can be obtained. [X3361

1921 3¾h.p. Sporting Scott, fitted with polished long exhaust pipe, privately owned, complete with all lamps, horn, licence, and electric rear lamp, been very little used, owner buying car; £95, or near offer.—Carnforth Motor Co., Carnforth. [1169

SCOTT 3¾h.p. Combination, June, 1921, electric lighting, Magdyno, Lucas lamps, Lucas electric horn, Claxrite horn, mirror, Bonniksen speedometer, Tan-Sad, Easting wind screen, luggage carrier, discs to all wheels, insurance to next August; cost £220, price £165, or near.—Box 7,806, c/o *The Motor Cycle.* [2349

Silver Prince.

WE have been appointed agents for the Silver Prince, the best 2¾h.p. machine made; can be had with Villiers 2-stroke engine, flywheel ignition, at £48/6; or with J.A.P. 4-stroke engine, £57/15; write for particulars.—Central Garage, 302, London Rd., Thornton Heath. [2306

Singer

SINGER 2h.p., complete with magneto, going order; £5.—249, Goldhawk Rd., W.6. [1956

SINGER Lightweight, splendid condition; £22; take push cycle part.—57, Kenbury St., Camberwell, London. [2066

Sparkbrook

SPARKBROOK 1920 2½h.p., 2-speed; £50, or offers.—22, Cranley Gardens, Palmer's Green, N. [1916

Stan.

£30.—Stan motor cycles, 2-stroke, 2¾h.p., new, shop-soiled.—Stan Motor Co., Westwood Heath, nr. Coventry. [X3777

Stanger.

THE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Muswell Hill, London, N.10. [0731

Sun.

SUN 1921, 2-speed, clutch, kick start, lamps, horn; £45.—Davies, Coniston, Park Crescent, Erith. [1788

SUN-VILLIERS 1921 2-stroke Combination, countershaft 2-speed, kick starter, hand clutch, almost new, smart turnout; £42/10.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622 [2132

Sunbeam.

SUNBEAM 1920 Combination, lamps, tools; £120.—Dunford, Bucclench House, Thorpe Bay. [1919

SHOP-SOILED 3½h.p. Sunbeam, complete, lamp, horn, tax paid; £138.—Cress, Agent, Rotherham. [X3721

SUNBEAMS converted with new 3½h.p. twin M.A.G. engines; London.—Box 7,803, c/o *The Motor Cycle.* [2366

SUNBEAM Combination, 3½h.p., 1916, hood, hinged dash; any trial; £85.—31, Nelson Rd., South Chingford, E.4. [1864

SUNBEAM 1915 2¾h.p., lamps, accessories, perfect condition; £35.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [2362

SUNBEAM Combination, 3½h.p., little used, all best accessories, tax paid; wants seeing; sacrifice £85.—365, King St., Hammersmith. [1950

1920 8h.p. Sunbeam Combination, electric light, speedometer, screen, perfect order; £145.—Ratcliffe Bros., 200, Gt. Portland St., W. [2172

SUNBEAM, late 1920 (Oct.), 3½h.p., 3-speed sports model, little used, guaranteed perfect; owner buying car; £85, genuine bargain.—Moss, Wem. [X3767

8h.p. Sunbeam Combination, M.A.G. engine, Lucas lamps, speedometer, hood, luggage grid, in splendid condition; £130.—194, Balham High Rd., Balham. [X3713

1919 8h.p. Sunbeam Combination, splendid condition, done about 3,000 miles; £120; any trial; after 6 o'clock.—26, Warrender Rd., Tufnell Park, N.19. [1826

SUNBEAM 1918 3½h.p. Combination, fully equipped, good condition; £100; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X3709

ADVERTISER will give £2 to whoever takes his delivery (New Year) of single-cyl. Sunbeam combination, spare wheel, Lucas horn, and acetylene set.—Box 7,798, c/o *The Motor Cycle.* [2325

3½h.p. Sunbeam Combination, 1921, condition as new, mileage under 400, speedometer and numerous accessories; £140.—Gordon Watoey and Co., Ltd., 31, Brook St., London, W.1. [0749

SUNBEAM, 1918, 3½h.p., 3 speeds, all-chain, all accessories, perfect condition throughout, very smart, an exceptionally fine machine; £67/10.—W. Watson, Victoria Rd., Aldeburgh, Suffolk. [2282

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1920 8h.p. Combination, with spare wheel and Lucas dynamo lighting, excellent order; £125.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2256

SUNBEAM 8h.p. 1921 Combination, hardly used, hood, screen, Lucas electric lamps, horn, spare interchangeable wheel, guaranteed best possible condition; price £200.—Heaven, Rockhurst, Woking. [2277

SUNBEAM 3½h.p., June, 1920, with Sunbeam sidecar, practically as new, Cowey horn and trip speedometer, recently overhauled, perfect running order; £145, or near offer.—Alexander, 69, Blenheim Gardens, Wallington. [1789

8h.p. Late Model Sunbeam Combination, Sunbeam sidecar, spare wheel, luggage grid, screen, electric lighting, speedometer, magnificent outfit, new condition throughout; £125; exchange good solo and cash.—37, Canterbury Rd., Dalston, N.1. [2403

SUNBEAM 8h.p. Combination, 1920, dynamo lighting, interchangeable wheels, spare wheel complete with tyre, pillion seat and wind screen, etc., the property of Sir Malcolm Murray; 180 gns., or near offer. —Can be seen at Clarence House Stables, Eccleston St. East, S.W.1. In first-class condition. [1968

Spare Parts:

SUNBEAM Owners are informed that arrangements have been made for spare parts to be stocked at the following Sunbeam Depots:

LONDON, E.C.—Sunbeam Depot, 57, Holborn Viaduct Tel. No.: 2180 Holborn.

LONDON, S.W.—Sunbeam Depot, 157-8, Sloane St Tel. No.: 1106 Victoria.

LIVERPOOL.—Sunbeam Depot, 68, Renshaw St. Tel. No.: 729 Royal.

MANCHESTER.—Sunbeam Depot, 20, Peter St. Tel. No.: 3952 Central.

LEEDS.—Sunbeam Depot, 5, Woodhouse Lane. Tel No.: 23277.

LEICESTER.—Sunbeam Depot, 16, London Rd. Tel. No.: 3717.

BOURNEMOUTH.—Sunbeam Depot, 8, Holdenhurst Rd. Tel. No. 2706.

EDINBURGH.—Sunbeam Depot, 37, George St., Edinburgh [9268

HERBERT ROBINSON, Ltd., Green St., Cambridge. —All Sunbeam parts in stock. Write us if you are hung up for any part. [9402

Torpedo.

£25.—3½h.p. Torpedo-Precision combination and accessories, in good running order, licensed, and tax paid; owner out of work.—Judd, 108, Wickham Lane, Plumstead, S.E. [1877

Triumph.

PREMIER Motor Co. for new Triumphs.

ALL Models for Immediate Delivery at reduced 1922 prices.

TYPE H., 4h.p., 3-speed, £105; Type S.D., chain drive, £115; Type L.W., lightweight, £65; sidecars from £20 to £50; easy payments only 4% extra. Buy direct from the Triumph Specialists. The Premier Motor Co., Aston Rd., Birmingham [0627

TRIUMPHS at Brixton.—1922 models for immediate delivery, cash or exchange.—Below.

1921 Triumph-Gloria Combination, practically new, £115; 1920 Triumph combination, £95.—Daw, Triumph Service Agent, 114, Brixton Hill. [2090

1918 Countershaft Triumph, perfect; £48.—24, Balliol Rd., North Kensington. [2045

CROSS, Rotherham, is sole agent for Rotherham and district for the trusty Triumph. [X3722

TRIUMPH Junior, 1920, 2 speeds, excellent condition; £45.—Knox House, Tonbridge. [1829

TRIUMPH, countershaft, 1917, 4h.p., lamps, horn, licence paid; £40.—Cuckson, Firbeck, Rotherham. [1948

£32.—Triumph, 1913, 3-speed, good tyres, all accessories.—145, Leander Rd., Brixton Hill, S.W.2. [1920

COUNTERSHAFT Triumph, 1918, splendid condition; £50.—33, Hackford Rd., Brixton, S.W. [2400

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—4h.p. Triumph, countershaft model, 1919; £55. [2340

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee [4485

1918 Countershaft Triumph, perfect condition; £48. —Hillier (side bell), 9, Wallingford Av., North Kensington. [2055

1920 Triumph, Watsonian R34 sidecar, lamps, screen, numerous spares; £90.—Thurgarton Lodge, Aldborough, Norwich. [1828

1919 T.T. Triumph, direct drive, all on, excellent condition, very fast; £45.—Plemont, Elmbridge Rd., Gloucester. [2308

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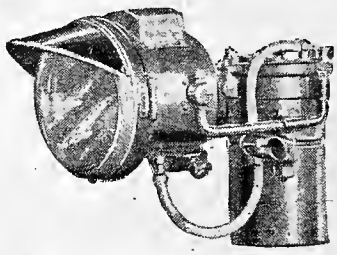
There is every reason for buying through the post from the Service Co. Ltd., London. Established 1887. Up-to-date and large stocks. Latest designs. Immediate delivery. carriage paid. Expert attention. All help and ensure your COMPLETE SATISFACTION WITH EVERY DEAL.



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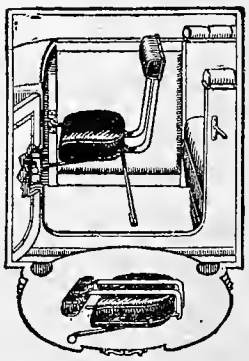

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We have purchased the manufacturer's entire stock of these adjustable childs' seats, suitable for all sidecars. Quickly fitted. Immediately removed. Folding back. Seat and back rest upholstered. Comfortable and beautifully made. Plated fittings. Original price, 47/6. Our price, **23/-**
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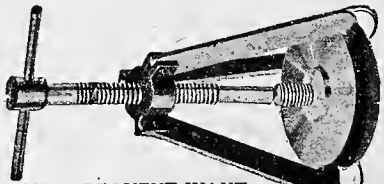

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Gas Lighters. For coal and acetylene gas. Wooden handle. A great time saver, **1/-**

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MOTOR CYCLES FOR SALE.

Triumph

TRIUMPH Junior, 2-speed, perfect order; £35, exchange. — Forfield Motors, Forfield Place, Leamington Spa. [X37

TRIUMPH Combination, 1914, 3-speed, pillion seat, must sell; £48; trial run arranged.—8, The Polygon, Old Town, Clapham. [214

COUNTERSHAFT Triumph, fully equipped, splendid condition; £63; stamp details. — Wentworth, Chessington, Surbiton. [20

TRIUMPH, 4h.p., 3-speed, countershaft, Canoel sidecar; £49.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [20

WAUCHOPE'S, 9, Shoe Lane, London, E.C. Triumphs, all 1922 models supplied promptly, easy terms or exchange. [23

1922 Triumph, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [16

TRIUMPH Countershaft, engine recently overhauled, Lucas lamp and horn; £34.—Clifford Hall, Waterhouses, Ashbourne, Derbyshire. [19

3½h.p. Triumph, good condition, N.S.U. hub clutch, new tyre, belt; £32, or nearest.—E.B., 14, Gordon Rd., High Wycombe, Bucks. [21

1917-18 4h.p. Triumph, fully equipped, in perfect condition; accept £46 for quick sale; after 5 p.m., 4, Elm Gardens, Hammersmith. [19

RENOVATED 4h.p. Triumph, just overhauled, splendid condition; no reasonable offer refused. Boulding, Coleorton, Broadstairs. [20

1921 Renovated Triumph (makers' guarantee), super condition, accessories; £80, or offer.—Write Simpson, Brayton Vicarage, Selby, Yorks. [20

TRIUMPH, C.S., 3-speed, lamps, horn, speedometer, Tan-Sad, guaranteed perfect; £50, or offer.—Wilson, 10, King's Av., Woodford Green. [18

1919 Triumph 4h.p., original belt and tyres, excellent condition, all on; £85.—S. Hopkins, 5, Cefndon Terrace, Harwain, near Aberdare. [18

£20.—Triumph 3½h.p., 1912, Bosch, new B. and lamps, etc., tyres excellent; apply Saturday or Sunday.—Drew, Ivy House, Terrace, Barnes. [24

TRIUMPH (July, 1919), latest gear change, 3-speed, countershaft, new condition; £65.—28, Woodford Rd., Forest Gate. 'Phone: Stratford 2598. [20

1921 Triumph H, fitted Lucas dynamo lighting, £109; exchange sports Sunbeam. — Jackson, Grappenhall Rd., Stockton Heath, Warrington. [20

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4. 1921 Triumph, Model H, only ridden 500 miles, countershaft gear, in every respect as new; £87/10. [23

TRIUMPH Combination, 4h.p., W.D. renovated, speed, clutch, large Swan coachbuilt, Easting, horn, lamps; £48.—Drennan, 25, Elms Rd., Clapham, S.W. [21

TRIUMPH C.S., 1916, equipped, good appearance, thorough order, tax paid; £48, or offers.—Marshall and Co., Engineers, Waterside, Chesham, Bucks. [21

WAUCHOPE'S, 9, Shoe Lane, London, E.C. 2¼ h.p. Triumph Junior, 1921, tax paid, fully insured, all accessories; £50; easy terms arranged. [23

F.O.C.H. give you good Triumph service; cash, exchange, or deferred payments; sound second-hand machines in stock.—5, Heath St., Hampstead (next Tube). [19

TRIUMPH 1922 models for immediate delivery. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [22

TRIUMPH 1921 Model, quite new and fully guaranteed, 4h.p., 3-speed and clutch, Model H, list price £105; sale price £95.—Colmore Depot, 31, Colmore Row, Birmingham. [X372

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [03

TRIUMPH 1921 Sports Model, condition as new throughout, mileage under 200; £67/10, bargain.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [006

TRIUMPH 1922 Models, including the famous Ricardo 4h.p. o.h. valve model; £120; we can deliver definitely this month. — Meeten Motor, Triumph Agents, Dorking. 'Phone: 163. [227

TRIUMPH 1921, 3-speed countershaft gear, all accessories, ridden few miles, almost new; £85.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [213

£52.—1916 Triumph, lamps, speedometer, long exhaust, 17 and 15 tooth sprockets, spares, just rebushed and tank re-enamelled, not junk; or exchange. Scott; Sydenham.—Box 7,783, c/o *The Motor Cycle.* [189

TRIUMPH.—We have several good solos and combinations at lowest prices. List on request. Cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [225

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 4h.p., C.S. 3-speed, absolutely perfect and as new; this machine has been stored, and a guarantee will be given; bargain, £75.—Wellington Garage, Ellington Mews, Ledbury Rd., Bayswater, W. Park 99. [2206

TRIUMPH, 3½h.p., Bosch mag., Brooks, P. and H. lamp set, horn, tools, etc., tyres and belt nearly new, in very good condition throughout, fast, and smart; £20.—R. Watson, Victoria Rd., Aldeburgh, Suffolk. [2281

TRIUMPH (reconvted), 4h.p., 3 speeds, clutch, Milford sidecar new Juoe, tyres excellent, all accessories, just overhauled, re-enamelled, perfect condition; owner ordered abroad; £60, or offer.—Capt. Bryan, 2nd Bank Batt., Farnborough. [1833

1921 4h.p. Triumph, new Oct., 3-speed, clutch, kick start, demonstration model, mileage under 100, absolutely as new, complete with lamps, horn, licensed; 90 gns., or with Millford sidecar (unscratched) 90 gns.; deferred payments and exchanges.—Edwards, 50, Harington Rd., South Kensington. [2374

TRIUMPH, 1921 (Oct.), 4h.p. combination, C.B. sidecar, fully equipped and licensed, as new, end term bargain; £107/10 cash; approval anywhere. All guarantee given as with new outfit and carriage paid both way if not approved.—The Layton Garages, 9, Holywell St., Oxford. 'Phone: 581. [2359

Spare Parts:

TRIUMPH Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8638

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Triumph experts; complete illustrated list post free. [9403

TRIUMPH Spares.—We are official service agents; full stock of all parts.—Premier Motor Co., Aston Rd., Birmingham. [2228

COMPLETE Stock Triumph Spares, satisfaction guaranteed.—Ward and Co. (Albert Agg), 51, Upper Richmond Rd., Putney. [2000

TRIUMPH Spare Parts for all models, also Sturmey-Archer gear parts from stock, post free. Gear overhauls by specialist.—Jones' Garage, Broadway, Muswell Hill, N.10. [0746

TRIUMPH Parts, 1904 to 1921.—Every part, any year, in stock, new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 7, Forfield Place, Leamington Spa. [X3761

Trump.

VAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Trump-Jap, 2-speed model, new 1922; £60; easy terms arranged. [2335

VAUCHOPE'S, 9, Shoe Lane, London, E.C.—New late 1921 3½h.p. Trump-Jap, fitted with latest J.A.P. engine, overhead valves, 3-speed model, and racing machine; £75; no extra charge for easy terms. [2336

Velocette.

1922 Velocette, clutch and kick starter.—Early delivery from the Premier Motor Co., Aston Rd., Birmingham. [2227

NEW Velocette, 1921 models, at enormous reductions, all with internal expanding brakes to both wheels, and other latest improvements; 2-speed £55, 3-speed £62, lady's open frame 2-speed £55; sent on approval; easy payments 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [2226

Verus.

1921 Verus, 4h.p. Blackburne engine, 3-speed, clutch, K.S., perfect condition throughout; £78; deferred payment and exchanges.—Edwards, 50, Harington Rd., South Kensington [1672

Williamson.

4h.p. Williamson Combination, perfect condition, fully equipped; £48.—17, Heaton Rd., Mitcham. [2070

EXCEPTIONAL Bargain.—1914-15 Williamson combination, luxurious C.B. sidecar, glass screen and hood, spare gear box and carburetter parts, lamps, speedometer, etc.; £55; after 5 p.m.—4, Elms Gardens, Hammersmith. [1971

WILLIAMSON 8h.p. Combination, water-cooled flat twin, all accessories, very smart and powerful touring combination; £68.—Richmond Park Garage, 70, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [2131

Wolf.

BEST Bargain This Week.—Wolf, 2¾h.p.; only wants seeing; trial; £12/10. — 1, Priory Rd., Kew Green. [2014

Wooler

WOOLER, 1920, 2¾h.p., flat twin, spring frame, variable gear, clutch, accessories, tax paid, cost £107, and only run about 1,000 miles, practically new; by trial; 38 gns.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. [2037

Zenith.

1920 Zenith Combination, well equipped; £75.—24, Balliol Rd., North Kensington. [2051

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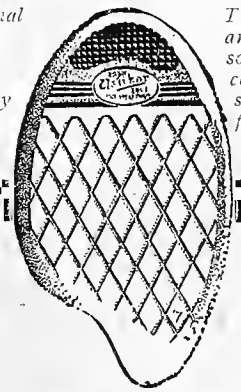
THEN YOU CAN STICK THIS SOLE ON YOUR BOOTS.

The original and only sole that can be successfully fitted.



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These soles are specially prepared with an adhesive surface and fixed with Sol-fix. The process of fixing is exactly the same as that of repairing a punctured Motor Cycle Tube. No nails or screws are required, and one of the many advantages of this process is that no damage whatever is done to the Boots or Shoes, which become ABSOLUTELY WATERPROOF.

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WHEN you buy a Zenith from Allan Gruzelier, you know that you will be looked after from the time you purchase until you part with the machine.

NEW or Second-hand Models, spare parts, overhauls, repairs.

I CAN give you immediate delivery of practically any 1922 model, even the chain-drive 3-speed Bradshaw. Write for particulars, or anything you want for your Zenith, to

ALLAN GRUZELIER, Ulster Chambers, 168, Regent St., W.1. 'Phone: Regent 205. [1944

ZENITH-BRADSHAW, 1922, in stock for immediate delivery.—The Motor Mart, Scarborough. [2218

BRAND New 1921 Zenith, 5h.p., luxuriously equipped; £85.—Dentist, 216, Portobello Rd., North Kensington. [1575

1920 Zenith Sports Model, perfect condition, fully equipped; £78.—Ratcliffe Bros., 200, Gt. Portland St., W. [2177

1914 6h.p. Zenith Sporting Combination, all accessories, many late refinements; £55.—Daw, 114, Brixton Hill. [2093

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Zenith-Bradshaw, new; price £105; easy terms arranged. [2337

ZENITH-GRADUA 6h.p., good condition; £45; would take Levis or 1914 clutch model Triumph and cash.—Apps, Bracknell. [2205

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw; price £118. [0711

ZENITH, 5h.p., 1917, K.S., clutch, completely overhauled, re-enamelled, replated, new tyre and belt, lamps, tools, etc.; £55.—2, Madrid Rd., Barnes. [2020

F.O.C.H. give you good Zenith service; cash, exchange, or deferred payments; sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [1936

ZENITH 1920 Combination, 5-6h.p. J.A.P., electric lighting, speedometer, accessories, insured Nov., 1922, mileage 2,500; £105, near offer.—12, High Lane, Chorlton-cum-Hardy. [1172

1921 Zenith 8h.p. Combination, Model H, indistinguishable from new, only used a few times, complete with all accessories; a bargain at £135.—Harris, 14, Great Marlborough St., W. [1924

ZENITH 1920 6h.p. Sports, speedometer, horn, lamps, insured, new condition, £72; 1920 8h.p. countershaft combination, Lucas electric lighting, £106.—Clark, 7, Exhibition Rd., S.W.7. [2200

ZENITH 1922 models for immediate delivery; 3½h.p. Bradshaw models in stock; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2246

ZENITH 6h.p. Countershaft Combination, perfect condition throughout, dissolved acetylene, 3 lamps, Klaxon, Watford, knee grips, tools, and spares; £95.—20, Sheephouse Fields, Farnham, Surrey. [2029

1922 Zenith-Bradshaw in stock for immediate delivery; £118; cash, exchange, or extended payments.—Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon

Miscellaneous

MOTOSACOCHE, £16; Sun-Villiers, £26; both £39.—Keen, Brynygwenin, Abergavenny. [1910

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths' Motories, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10/6; 6h.p. Zenith combination, £49/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 3-speed gear, clutch, kick starter, lamps, speedometer, £42/10/6.—Booths' Motories.

BOOTHS' Bargains. — Free engine Triumph, £22/10/6; 4-cyl. F.N., 2 speeds, £29/10/6.

BOOTHS' Bargains.—1920 Williamson 6h.p. combination, £95/10/6; another, dynamo lighting, £115/10/6.

BOOTHS' Bargains.—Harley-Davidson combination, mileage 300, £139/10/6; 3h.p. Humber, £10/10/6.

BOOTHS' Bargains.—1915 B.S.A. combination, £55/19/6; 1920 Wooler, £49/19/6; 3h.p. 2-speed Enfield, £29/10/6.

BOOTHS' Bargains.—8h.p. Premier combination, £49/10/6; 1914 Phelon and Moore, £35/10/6.

BOOTHS' Bargains.—1917 4h.p. Douglas, £59/19/6; 1919 4h.p. Douglas combination, £89/10/6; another, electric lighting, £95/10/6.

BOOTHS' Bargains.—1916 Douglas, £47/10/6; 1920 Morgan de luxe, M.A.G. engine, speedometer, £165/10/6; 1920 3½h.p. Ariel combination, £85/19/6; G.W.K. light car, £139/10/6; 1922 new 4½h.p. Quadrant combination, £100.—Booths' Motories, Halifax. [2311

MOTOR CYCLES FOR SALE.

Miscellaneous.

HALIFAX Motor Exchange, Horton St., Halifax.—A.J.S. 1919 combination, £135; Ariel 3½h.p. 1920 combination, £87/10.

HALIFAX.—1921 A.B.C., electric lighting, £87/10; Ariel 3½h.p., 1920, £79/10; 1920 Alecto 3½h.p. 2-speed combination, £79/10.—Below.

HALIFAX.—Alecto 1920 3½h.p., 2-speed, £62/10; 1921 Beardmore-Precision 3½h.p., spring frame, £69/10.—Below.

HALIFAX.—B.S.A. 1915 4¼h.p. combination, £79/10; Chater-Lea 8h.p. combination, £75.—Below.

HALIFAX.—1919 2¾h.p. Calthorpe-Jap, 2-speed, £45; Excelsior 1920 2½h.p., 2-speed, £42/10; Edmund 1920 2¾h.p., spring frame, £59/10.—Below.

HALIFAX.—Harley 1920 electrical combination, £155; Harley, 1918, with 1920 Henderson sidecar, £115.—Below.

HALIFAX.—Henderson 4-cyl. combination, £165; very smart 1920 Indian Scout, £95.—Below.

HALIFAX.—2¾h.p. New Imperial, 2-speed, £35; 1916 2¼h.p. 2-speed O.K., £35; Premier 3½h.p., 2-speed, wants attention, £25.—Below.

HALIFAX.—Rex 6h.p. 2-speed combination, £49/10; Rudge 1920 7-9h.p. combination, £105.—Below.

HALIFAX.—Scott 1920 3¾h.p. combination, £105; Triumph, 1913, h.b.c. clutch, £42/10.—Below.

HALIFAX.—Triumph 3½h.p. 2-speed combination, £55; Triumph 4h.p. 3-speed combination, £69/10; Peugeot 7-9h.p., 2-speed, £37/10.

HALIFAX.—1920 3½h.p. I.O.M. Rudge, £65; 1920 Kingsbury Junior, 2-speed, £45.—Below.

HALIFAX.—Sunbeam 1920 8h.p. Magdyno combination, very smart, very special equipment; £197/10; like new.—Below.

HALIFAX.—1921 P. and M., speedometer, etc., like new, £92/10; Indian 7-9h.p. 2-speed combination, £55.—Below.

HALIFAX.—1916 Rudge Multi 3½h.p., £47/10; 1920 2¾h.p. Wooler, £55.—Address below.

HALIFAX.—Zenith 6h.p. countershaft combination; £85; deferred payments quoted.—Halifax Motor Exchange, Horton St., Halifax. [1979

TWIN 6h.p. Motor Cycle, with overhead valves, £15; also late Rex combination, 6h.p. twin, 2-speed, £30.—H. R. Hall, Hatton Grove, North Finchley, London. [1889

FIRST-CLASS 7-9h.p. Combination, electric lighting, wind screen, pillion seat, etc., fully equipped; bargain; £65; any time.—Groves, 196, Lavender Hill, S.W.11. [1800

RUDGE Multi 3½h.p. Sporting Combination, complete, perfect condition, £50; also 2¾h.p. New Imperial, 2-speed, 1917, absolute bargain, £38; exchange higher power.—13, Scoresby St., S.E.1. [1995

BUNTING'S Buy, Sell, or Exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [9650

ALLBER Garage, Thornsett Rd., Earlsfield, London, S.W.18 (opp. Earlsfield Station, L.S.W. Rly.). 'Phone: Latchmere 4388. Cash, exchanges, easy terms; delivery on deposit. End of season clearance bargains.

ALLBER.—James 1919 2-stroke, 2 speeds, good tyres, complete with lamps, in splendid condition, tax paid; £35.

ALLBER.—Mars, 1921, special 350 c.c. J.A.P., Burman 2 speeds, clutch, kick starter, disc wheels, full equipment, tax paid, exceptionally fast, absolutely as new; £55.

ALLBER.—O.K. Junior 1921 2-stroke, ridden a few miles only, in new condition, tax paid; £29.

ALLBER.—Douglas 1916 2¾h.p., 2 speeds, good tyres, all accessories, tax paid, in good order; £38.

ALLBER.—Sun-Villiers, 1916, engine just overhauled, all lamps, horn, tax paid, good machine; £25.

ALLBER.—Douglas 1919 4h.p., 3 speeds, clutch, kick starter, new tyres, all accessories, tax paid, in splendid order; £60.

ALLBER.—Edmund, 1917, spring frame, 2½h.p. J.A.P., Enfield 2-speed gear, all chain, all accessories; bargain, £35.

ALLBER.—Matchless Model H combination, 1920, delivered Jan., 1921, Magdyno, M.A.G. engine, hood, screen, legshields, absolutely as new; £125.

ALLBER.—Douglas 1920 4h.p. combination, new tyres, lamps, speedometer, mirror, as a new machine, tax paid; £87/10.

ALLBER.—P. and M. 1918 combination, 2 speeds, kick starter, new tyres, absolutely as new throughout, all accessories; £60.

ALLBER.—Douglas 1917 lighting sporting combination, 2¾h.p., 2 speeds, fitted all accessories, tax paid, good order; £42. [2262

LEVIS 2¼h.p., believed 1917, less magneto, £17; Calcott 2¾h.p., 1915, lamps, £19/10.—187, Elm Rd., New Malden. [2184

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Established 16 Years.

No Better or cheaper House.

NEW CLEARANCE LINES, APPROVAL AGAINST CASH. CARRIAGE PAID.

WOOD-MILNE Key Grip COVERS

26 × 2¼	3-ply	13/6
26 × 2¼, 26 × 2½	4-ply Extra Heavy ..	16/6
28 × 3	4-ply Extra Heavy ..	29/-
700 × 80 to fit 650 × 65	4-ply extra heavy ..	32/6

GOODYEAR All-Weather Tread COVERS. Extra Heavy.

26 × 2¼	Diamond Pattern ..	26/-

GOODRICH Safety-Tread COVERS Extra Heavy.

26 × 2¼	.. ..	28/-
26 × 2½ × 2¼	.. .. ..	36/-
26 × 2½	.. ..	35/-
650 × 65	.. ..	40/-
26 × 3 for 650 × 65 rim	.. ..	48/-
28 × 3	.. ..	48/-

CLINCHER Rubber Non-Skid COVERS.

24 × 2¼	De Luxe Heavy ..	23/6
26 × 2	.. ..	23/6
26 × 2⅜	.. ..	25/-
26 × 2⅜	Extra Heavy	27/-
26 × 2½ × 2¼	Heavy	30/-
650 × 65	Dreadnought 3-ribbed	39/-
700 × 80 to fit 650 × 65	De Luxe Extra Heavy	47/-

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New 1922 Models in Stock.

Monigomery Bo-Peep Sidecar Screen, easily fitted to any Sidecar ...	£3 10 0
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26 × 2¼	.. .. ..	each 6/3
26 × 2½	.. .. ..	,, 6/3
26 × 2½ × 2¼	.. .. ..	
26 × 3, 650 × 65, 700 × 80, 28 × 3	.. .. ..	each 7/6
28 × 3	Goodyear Butted	7/6

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9 till 6; Saturdays, 9 till 1.

228, Pentonville Road, King's Cross, London, N.1.

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MOTOR CYCLES FOR SALE.

Miscellaneous.

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged. Any new cycle, combination, or car supplied; cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1943

BARGAINS.—6h.p. 3-speed Rudge, £40/10; 1921 2-speed Omega, £51/10; 1921 new O.K., £38/18; 1921 2-speed O.K., like new, £52/10; several shop-soiled machines at reduced prices; exchanges entertained, including push cycles. Visit us.—Booths' Motories, Portland Place, Halifax. Tel.: 1062. [8198

1921 3½h.p. Sporting Model Sunbeam motor cycle, lamp, horn, new in April last, in perfect trim, nearest offer to £115; also 1921 12h.p. 4-seater Swift, new Easter last, complete with hood, side curtains, screen for rear seats, luggage grid, speedometer, and Triplex glass screen, in excellent condition; nearest offer to £500; trial.—Geoffrey Smith, c/o *The Motor Cycle*, Coventry. [X3704

MEBES and Mebes, the Original Light Car Specialists, invite reasonable offers for the following shop-soiled, but otherwise new motor cycles, as they are relinquishing this part of their business in favour of light cars: Beardmore-Precision 3½h.p.; Woolsr 2¾h.p., variable gear; Rover touring model, 3½h.p., 3-speed, clutch; Bat 6h.p. Model 4, clutch, 3-speed; L.M.C. 6h.p. suspension-frame model, clutch, 3-speed; L.M.C. 6h.p., rigid frame, clutch, 3-speed; L.M.C. 3½h.p., clutch, 3-speed; also 6h.p. L.M.C. combination, fully equipped, used for demonstration only; and one Elite model Henderson sidecar and one spring-frame Henderson sidecar, both new, shop-soiled only.—144, Gt. Portland St., W.1. 'Phone: Langham 2230. [1892

Ladies' Motor Cycles.

1921 Excelsior Lady's Model, fully equipped, as new; £35.—Ratcliffe Bros., 200, Gt. Portland St., W. [2178

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

MOTOR ATTACHMENTS.

BARGAIN, Auto wheel, first-class; £8/19/6 complete.—Madison, Littleover, Derby. [X3223

MOTOR CYCLES FOR HIRE.

ARE You Going Away for Christmas? Good Douglas combination for hire at two-thirds ordinary rates.—Rodwell, 11, Red Lion Passage, W.C.1. 'Phone: Chancery 7272. [1879

MOTOR CYCLES WANTED.

CASH

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FOR Motor Cycles,

COMBINATION or Solo, any quantity, any make, any condition. Exchanges a speciality.—T. and B. Motor Co., Ltd., 372, Euston Rd., N.W.1. Museum 6581. [5564

W. T. DUNN, Ltd., always buy.

FULL Market Value given for modern solos, combinations, and cycle cars. Call, write, or 'Phone: Museum 5391.—W. T. Dunn, Ltd., 326, Euston Rd., London. [0332

LATE 1920 3½h.p. Touring Sunbeam, sidecar.—43, Carson Rd., S.E.1. [2383

MODERN Motor Cycles purchased for cash.—Humphrys, 269, Rye Lane, S.E. [1885

SOLO Machine Wanted, about £25.—Snow, 91, Mapledene Rd., Dalston, E.8. [2388

TRIUMPH, countershaft, must be good order, and cheap.—54, Coval Rd., Mortlake. [X3735

WANTED, modern combination, under £50.—Advertiser, 78, Dukes Av., Muswell Hill. [2002

WANTED, 2¾h.p. Douglas, not earlier than 1914; cheap.—King, Egrove Farm, Oxford. [X3715

COMBINATION or good solo; state year and lowest price.—Box 7,762, c/o *The Motor Cycle*. [1845

16H Norton, Sports Sunbeam, Indian Scout, late; reasonable.—153, Knollys Rd., Streatham. [1945

2-STROKE, 2 speeds, chain drive preferred, reasonable.—Briggs, 10, Bartletts Buildings, E.C.4. [2010

WANTED, good solo or combination for cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [2025

WANTED, Triumph, 1914 clutch model, with decompressor; must be perfect.—Box 7,802, c/o *The Motor Cycle*. [2344

WANTED, modern lightweights and combinations, cheap for cash.—Patterson, 12, The Quadrant, Winchmore Hill, N.21. [9502

REALLY Good Solo, equipped; any make considered; full details; absolute rock-bottom for cash.—Draper, Goldhill, Farnham, Surrey. [1839

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PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

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PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

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PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale, held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale a nominal auction fee is charged: for motor cars, 20/-; motor cycles under £50 value, 10/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogues free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [2164

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harington Rd., South Kensington. 'Phone: Ken. 3709. [0604

GOOD Allowances made for solos or combinations in exchange for new bicycle or car.—D. and S. Autocar Co., 33, The Parade, Golders Green, N.W. [2267

WANTED, cheap, 4h.p. combination, 1914 or later, good running condition, appearance no object.—Write, Marsden, 101, Salisbury House, Finsbury Circus, E.C.2. [1404

WE are Buyers of Solos, Combinations, and Light Cars at good prices.—Call, write, or 'phone Latchmere 4388.—Allber Garage, Thornsett Rd., Earlsfield, London, S.W.18. [2264

WANTED, offers for 1919 electric Powerplus Indian combination, excellent condition, as part payment for new combination; Hampshire district.—Box 800, c/o *The Motor Cycle*. [2323

WANTED, your motor cycle or combination. We are buyers. We give full market price, and pay cash on spot.—Write, 'phone, or call, Percy and Co., 14 and 316, Euston Rd., N.W.1. 'Phone: Museum 337. [1018

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone. Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 762 and 2363. [0372

WANTED, unlimited number of combinations and solo machines, any class, new or second-hand; cash offer on sight. Please call or 'phone.—Richmond Park Garage, 110, Upper Richmond Rd., East Sheen, S.W.14. 'Phone: Putney 2622. [2129

SEND Your Motor Cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address, Palmer's Garage, Tooting. [2167

TRICYCLES FOR SALE.

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng., Ltd., 3 Kendalls Mews, George St., W.1. [2684

J.N. Tricycle, as new, not run 50 miles since overhauling costing £45, 2¼h.p., shaft drive, 2-speed, pedal starter, hand clutch; £60.—Easter and Jones, Motor Engineers, Swindon. [2116

TRICARS FOR SALE.

3h.p. Riley Tricar, 4-speed gear box, hood, screen, fast little car; £250.—Juffkins, Shillingford Hill, Wallingford. [1888

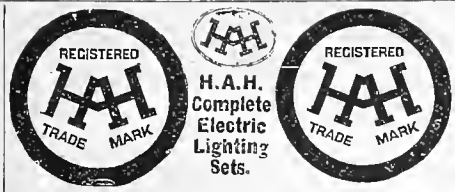
MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—3, Kensington Mews, George St., W.1. [5334

AUTOPED Scooter, little used, tax; £11/10.—A. F. Smith, Tansley, Matlock, Derbyshire. [1962

AUTOPED Scooter, brand new, 1½h.p. 4-stroke, complete with dynamo lighting; £15.—Percy and Co., 14, Euston Rd., N.W.1. [1019

17 GNS.—Brand new A.B.C. Skootamota, as delivered ex works, pan seat, equipped.—Hardy, 8, Breams Buildings, Chancery Lane, Holborn, 4752. [2122



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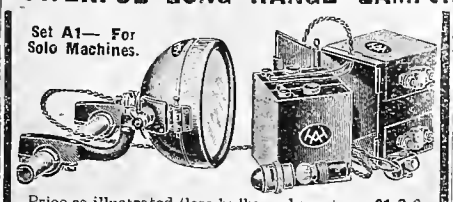
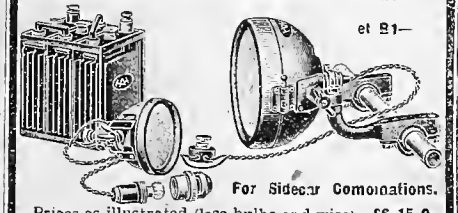


Set A1— For Solo Machines.

Price as illustrated (less bulbs and wire) - £1-3-6



Set B1— For Sidecar Combinations.

Prices as illustrated (less bulbs and wire) £6-15 0

Set C1—For Medium Solo Machines.

Prices as illustrated (with bulbs less wire) £3-15-0

Set D1—For Solo Machines

Price, (less bulbs and wire), 66/6 complete

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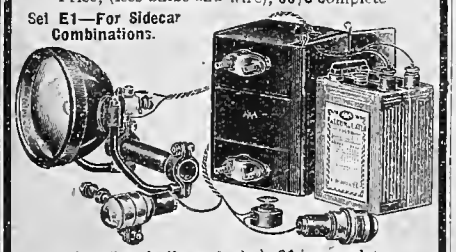

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Postage extra on the above.

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HOODS, double texture twill, solid brass fittings, to fit any sidecar; 45/-.—Below.

HOODS Recovered; new celluloid fitted to wind screens.—Collins and Son, rear of 84, High St., Putney, S.W.15. [1813

WINDSCREENS to fit any sidecar at 30/-, also for 35/- with apron.—Collins and Son, rear of 84, High St., Putney, S.W.15. [2258

BENT Hoops, hood fittings, straps, turnbuttons, twills, etc.; hardwood polished wind screens, 27/6.—Henry Jones, 778, High Rd., Tottenham, London. [9576

RENNOC Co.—We are actual manufacturers of hoods, screens, and aprons. Send for list.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [2321

COUPE Combined Hood, Screen, and Cover Apron. The only screen with back protection. Passenger may be totally enclosed. The screen for 1922. Write for folder.—Below.

REPAIRS.—All types of screens renovated. Celluloid, 2/6 sq. ft.; best twill, 72in., 10/6 yard; postage extra.—Coupe Wind Screens, 28, Middle St., Portsmouth. [X3724

ADJUSTABLE Wind Screens to any angle, will fit any car, complete with latest fittings and coverall apron, beautifully finished, 35/-; carriage extra. Hoods, best quality twill, heavy brass fittings, will fit any car, £2/10; carriage extra on all goods.—Brixton 1585.—Robini Manufacturing Co., 1, Tulse Hill, and 22, Water Lane, Brixton, S.W. 'Buses and trams pass the door. [2317

BODIES.

RENNOC Sidecar Bodies, actual manufacturers, 35 models, also several clearance, cheap to clear.

RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [2320

SIDECAR Body, C.B., newly painted, wind screen, apron, electric fittings, mat; £5.—L.C.C. Cottage, Hoskins St., Greenwich, S.E.10. [1228

ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

50 New Sporting Bodies, very handsome streamline type, upholstered, finished any colour, ready for chassis, listed 8 gns.; £3/10 each to clear; carriage paid.—Cobb, 18, Midland Rd., Carlton, Nottingham. [2156

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

ROBINI Manufacturing Co.—£6/15.—End of season's bargains. We can offer a large number of shop-soiled bodies of many types, upholstered and painted different colours, complete with coverall aprons, £6/15. A few 2-seater models, complete with coverall aprons, etc., at £9. A few bodies, complete with hoods and wind screens, etc., a wonderful offer, £11; carriage extra. second-hand bodies at £3/10. See Sidecar column; catalogue on request.—Brixton 1585. Robini Manufacturing Co., 1, Tulse Hill, and 22, Water Lane, Brixton, S.W. 'Buses and trams pass the door. [2315

SIDECAR ATTACHMENTS.

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SANDHAM, the smartest sidecar specialists.

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MIDDLETON'S Patent Spring Wheel Sidecars are guaranteed 3 years.

MIDDLETON'S Patent Unbreakable Chassis for high-powered machines: Zenith, Harleys, Indians, New Imperials, Sunbeam, Blackburnes, etc.

INDIANS with kick starter on left present no difficulty with Middleton's special model.

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SECOND-HANDS of various makes for sale. Your old sidecar taken in part exchange.

MIDDLETON'S Spring Wheel Sidecars are not only safer and more comfortable, but are faster on bad roads than rigids. They give to the bumps, not bash into them.

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INDIAN Sidecar, semi-sporting, for spring frame, new; 18.—37, Daleham Mews, Hampstead. [1930

£6/10.—Projectile shaped sidecar, painted red, all connections.—King, Egrove Farm, Oxford. [X3717

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TRITUBE Sidecars are most unique. Scientifically desigoed, made of finest materials.

TRITUBE Chassis, constructed of steel lugs, straight steel tubes, with welded joints.

TRITUBE Sidecars are light. Supplied with either sporting or touring coachbuilt bodies.

TRITUBE Sidecars. One price, £15/10. Write for booklet.—Davis Bros., Church St., Rickmansworth. 'Phone: 5. [1331

DOUGLAS Sidecar, fine condition, complete with all connections; £10.—Matthews, Ockley, Surrey. [1900

SIDECAR, medium weight, complete, £6/10; lightweight Watsonian, £5/10.—17, Heaton Rd., Mitcham. [2071

TWO Coachbuilt Sidecars, suit Douglas; one £7; other, nearly new, with Cameo screen, £18.—30, Frederic St., Luton. [1876

SIDECAR, fine condition, 4-point attachment, suit Scott, Cameo, disc, luggage grid; £12.—Box 7,784, c/o *The Motor Cycle*. (D) [1891

SPORTING Float Sidecar, complete, unused, smart, Royal blue; £15.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [2364

1921 (August) 3½h.p. Sunbeam Sidecar, as new, wind screen, lamps, all accessories, complete; cost £47, accept £35.—The Kraal, Bridlington. [1933

SIDECAR, coachbuilt, £6/15; another £8/15, another £10/5; Douglas chassis, tyre, complete, £6/10; N.S.U. gear, as new, £8.—57, Kenbury St., Camberwell, London. [2067

RENNOC Sidecars, bodies, hoods, screens, largest stock in London, actual manufacturers throughout. Send for our 1921 catalogue, 32 pages, 80 illustrations.

PHŒNIX Sidecars.—All spare parts in stock by the Rennoc Sidecar Co.

RENNOC Sidecar Co. specialise in sidecars for Indian motors, with left-hand kick starters, and can deliver.

RENNOC Co. have 50 second-hand and clearance sidecars, bodies, hoods, etc., all to clear at knock-out prices. Note: Write for special clearance list.

RENNOC Co. have the finest selection of complete sidecars in the trade.

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RENNOC Co. have in stock sidecars to fit all makes, English and American.

RENNOC Co. again ask you to send for their 1921 catalogue, the most comprehensive issued by any manufacturers.

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BARGAINS.—Gloria cane sidecar, £6/19/6; Ruby coach sidecar, £9/10/6; Hercules coach, £9/10/6; large Bowser seat child, £12/10/6.—Booths' Motories, Halifax.

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph, B.S.A., £18/15/6.—Booths' Motories, Halifax.

BARGAINS.—New large size coach bodies, locker under seat, £6/19/9; featherweight sidecar, £12/10/6; cane sidecar, £6/10/6.—Booths' Motories, Portland Place, Halifax. [2312

SIDECAR.—Have a Hopley folding sidecar. Saves garage worry and expence. Attached to motor will go through passage 28in. Tandem and single bodies fitted.—Hopley.

FOLDING Sidecar.—When ordering your motor specify a Hopley folder. Suits motors up to 10h.p. Can be changed from pleasure to commercial in few seconds. Detachable wheels can be fitted. Tested 7 years.—Hopley, Upper Highgate St., Birmingham. [0152

WILLOWBROOK Royal Leicester Sidecars, smartest designs, first-class finish; prices from 17 gns. Write for catalogue. Repairs undertaken, hoods, wind screens, etc.—The Willowbrook Motor Co., Leicester. [0335

COACHBUILT Bodies from £6; underslung chassis from £7/7. Call and see the wonderful value offered. We are actual manufacturers. We specialise in repairs, repainting and upholstering.—Collins and Son, rear of 84, High St., Putney, S.W.15. [1814

PARAGON (patent) Folding Sidecar saves storage, has 7 years to its credit, and has proved itself absolutely reliable. Fits any make of motor cycle, and, when folded, combination will pass through a 30in. doorway. Call and see it demonstrated.—Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0388

WIND Screens, folding, the cheapest on the market, complete with fittings, £1/15. We carry a complete range of coachbuilt bodies in stock to suit all type chassis, and our prices defy competition. Our standard model, priced at £6/10, is well worth £9. A very attractive sports model at £7/10 is also stocked. Come and see for yourselves; we would like to meet you.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). [2299

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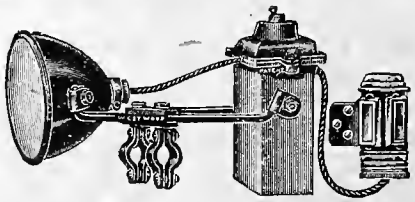

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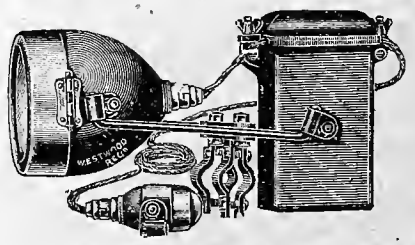

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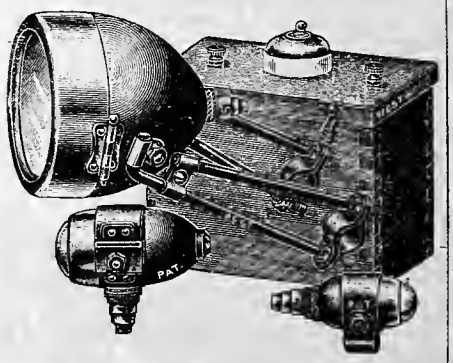

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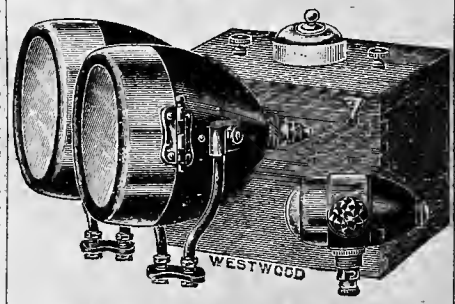

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RUNABOUTS AND CYCLE CARS.

BEDELIA.—The new 1922 model 8-10h.p., with air cooled or water-cooled engine.

BEDELIA.—Air-cooled model £185, water-cooled model £195. Immediate deliveries. Trial runs free.

BEDELIA.—Catalogues free from L. N. Palmer, sole concessionnaire for the British Empire, Palmer Garage, Tooting. [216

A. P. REY, 378-384, Euston Rd., N.W.1, has for immediate or early delivery:

MORGANS, all models.

COVENTRY PREMIER, 1922, 4-wheeler model £250.

ROVER 8h.p. Model; £220.

G.N., all models

EXCHANGES or Deferred Payments arranged. 'Phone: Museum 6436.

MORGANS, second-hand, several in stock.—A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [100

A.V. Monocar, 1920, all on, perfect; £75.—Henry Smith, Osmondthorpe Lane, Leeds. [223

MORGANS at Brixton.—Early deliveries of 1922 models, cash in exchange.—Morgan agent, below.

1920 (late) G.P. Morgan, W.C., J.A.P., finished peacock blue, had little use and like new throughout; £140.—Daw, Morgan Agent, 114, Brixton Hill. [209

MORGAN, 1920 G.P., complete; £140; very good condition.—Aysccough, Padbury, Buckingham. [123

BRAND New 1921 Tamplin, 8h.p., 3-speed, 2-seater £125.—Percy and Co., 314, Euston Rd., N.W.1. [102

BRAND New Grahame-White, 4h.p., 2-speed, 1 seater; £70.—Percy and Co., 314, Euston Rd., N.W.1. [102

MORGAN Type Tricar for furniture, or sell £55.—Morley, 199, Compton Buildings, Goswell Rd., E.C.1. [210

HALIFAX.—Morgan 8h.p., £105; another with hood and screen, £95.—Halifax Motor Exchange, Horton St., Halifax. [198

BRAND New Morgan, 1922; option to purchase at £22/10 under list; what offers?—34, Observatory Rd., East Sheen, S.W. [212

MORGANS.—1922 show models delivered from stock at new reduced prices; exchanges, extended terms. Spares for all models.—Below.

MORGAN Grand Prix, M.A.G., 1921-22, dynamo lighting, special gears, aluminium dash, speedometer, many other extras, cost £240, mileage under 200; £195.—Below.

MORGAN Sporting, M.A.G., 1917, lamps, horn, etc., first-class condition; £87/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [007

GIBBONS Mark III. Cycle Car, 2-seater, 1920, splendid condition; price £90, or nearest.—Wain, Cotton Rd., Potters Bar, Middlesex. [184

DUO Cycle Car, 8h.p. J.A.P., hood, screen, electric light, new tyres; £85; trial; exchange combination.—62, Maysoule Rd., London, S.W.11. [187

G.N. Cycle Car for sale, late 1921, new ex-stock price, complete with dynamo lighting and equipment as per makers' specifications, £175.—Below.

MORGAN Runabout for sale, date 1914, good condition; price £60, for quick sale.—Robins and Johnson, 78, Newland Av., Hull. [179

LIGHT Tricar, 2-seater, 4½h.p. B.S.A. engine, B.L. lubricator, handle-bar controlled, variable pulley gear, wide ratio; £40.—Hetherington, Moffat. [X371

CYCLE Car, 7h.p., 5 wheels, polished aluminium body and discs, 2-seater; cost over £200, accept £100; photo; appointment only.—153, Lynton Rd., Acton. [197

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—G.N. cycle car, new 1922 model, saxe blue finish, all-weather model; price £215; easy terms arranged. [233

BRAND New 1922 8h.p. Rover, show model, in stock; Morgans and motor cycles part exchange.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X296

1921-22 Morgan de Luxe, w.c., speedometer, side mirror, watch, only run a few miles; £155.—Hillier (side bell), 9, Wallingford Av., North Kensington. [205

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NEW and Second-hand Light Cars and Cycle Cars, all makes; good selection in stock; cash, easy payments, or exchange.—Service Co., 292, High Holborn, W.C.1. [0673

MORGAN, 1916, little used during war, re-enamelled, electric light, excellent condition, complete; £100; appointment any week-end.—Taylor, Highfield, Mottingham, S.E.9. [1844

1920 8h.p. Water-cooled Lawrence-Jackson Chassis, complete with tyres, as new; £75, or near, for what exchanges?—Cook, 2, Fullbrook Mews, Tufnell Park, N.19. [2294

BAYLISS-THOMAS, 1922 10h.p. model, 4-cyl. water-cooled engine, 3 speeds, Magdyno; 300 gns; immediate delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0736

1921 Morgan de Luxe, 10h.p. M.A.G., mileage under 1,000, electric and acetylene, special dash, fully equipped, condition as new; £180, or near.—Rose, 355, Norwich Rd., Ipswich. [1793

HUMBER, 1910, twin 10h.p. 2-seater, water-cooled thermo, detachable wheels, spare wheel; consider exchange good combination.—Crown Engineering Co., Recqueray St., Coventry. [X3781

JARDEN 1921 (August) 2-seater, hood, wind screen, electric lighting, all accessories, insurance, perfect condition; £105, bargain.—Chatsworth House, Derby Rd., Penders End. [1997

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MORGAN Spare Part Depot.—Spares for all models from stock; immediate delivery. List free.—Ellee, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

BRAND New 1922 Grand Prix Morgan Runabout, M.A.G. engine, in stock; used Morgans and motor cycles part exchange.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X2964

BRAND New 1922 Coventry Premier Runabout, in stock; £250; used Morgans and motor cycles taken in part exchange.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X2965

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MODERN 2-seater Cycle Car, less engine, friction transmission, 5 detachable wheels, 5 good tyres, domed mudguards, hood, etc., all good condition, 3d. photo; £38.—A. Gotch, Chesham House, Kettering. [2099

BRAND New 1922 4-wheel Coventry Premier, dynamo lighting, spare wheel and tyre, 12 months free insurance, brass finish, less speedometer, at a special price; £230.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X3770

A. C. Sociable, wind screen, hood, side curtains, hand brakes, 3 brass electric lamps with accumulator, electric horn, foot gong, spare tyre and spares, will carry warm and dry in all weathers; £65, or near offer.—Dumford, Gillingham, Dorset. [1805

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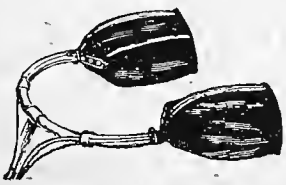

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ROVER Light Cars from stock; exchanges for motor cycles.—Clark, 7, Exhibition Rd., S.W.7. [2202

CADILLAC 1917 8-cyl. 30h.p. Tourer; £350; accept small car or combination in part.—Mrs. Patmoor, 106, Acre Lane, Brixton, S.W. [2192

COVENTRY Premier, 1922, 4-wheel model; £250; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

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HALIFAX.—Jowett 2-seater, Sept., 1920, moderate mileage, many extras, £245; 1920 8h.p. Richardson, dickey seat, £140.—Halifax Motor Exchange, Horton St., Halifax. [1981

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MOTOR Van, 12h.p., splendid running condition; £65, or would exchange for combination or motor cycle; cash adjustment.—28, Bourne Rd., Bexley. [2398

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5-7h.p. Coventry Victor flat twin; £18.—Waines, 55, Gladstone Rd., Scarborough. [X3753

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1913 Rex 6h.p. Twin, complete with 1918 B. and B. carburetter and controls; £12/10.—7, Exeter Rd., Walthamstow, E.17. [1928

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Fig.1

MOTOR CYCLE SUIT

(*Fig.*1). Fawn double texture material, interlined rubber, seams cemented and taped, wind cuffs, wind gusset in overalls, and patent clasp fasteners.

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Fig.2

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(*Fig.*2) Fawn material, rubber lined, guaranteed waterproof.

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Double twill waterproof, rubber interlined. Lined inside warm fleece, ear pieces and strap. Indispensable for winter riding. State size of hat worn. **6/-**

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THOMSON-BENNETT Magnetos, new and unused, single-cyl., clock or anti, suit any machine, price 55/-; twins, 45, 48, 50, 55, 60, 180 degrees, for J.A.P., Clyno, Douglas, etc., price 55/-. See our guarantee.—Below.

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BOSCH D.A.L. Magnetos, soiled only, otherwise as new, single-cyl., suitable for any stationary engine or big single, £3/15; twins, any degree, ready to drop on Indian, Harley, or any big twin, £4/5; a powerful spark at low speed, ensuring easy starting. All the above magnetos are variable ignition and fitted short-circuiting switch. See our guarantee.—Below.

GUARANTEE.—Every magneto that leaves our works, no matter what the price or make, carries a written guarantee. Not merely a guarantee that same is in good order at time of sale, but a plainly written statement that we guarantee every machine against all defects for a period of 12 months. This, we maintain, justifies us in charging a few shillings more than certain of our competitors.

RELIANCE Magneto Repairing Co. hold one of the largest stocks in London, and can be depended upon for a straight deal at the right price. When buying it pays to deal with a firm of repute.

RELIANCE cordially invite customers to their works to see any of the above on test. Magneto list giving full particulars sent upon application.—Reliance Magneto Repairing Co., 283, St. John St., London, E.C.1. [6616

BOSCH and M-L. singles, variable ignition, guaranteed; 30/-.—84, Greenside Rd., Croydon. [2240

50° U.H. 55/-, ditto C.A.V. (new) 60/-; approval.—F., 21, Bristol Gardens, Paddington, W.9. [2072

M-L Magnetos, new; list £8/10, our price £6.—Colonial Motors, 104a, Finchley Rd. Hampstead 7822. [2365

K.L.G. W.D. Sparking Plugs, wonderful value, 4 for 5/-, post free.—Thompson, 59, Queen St., Wolverhampton. [7944

3/9.—Three W.D. K.L.G. sparking plugs, detachable mica type standard thread, post free.—Spencer, Potter St., Bishop's Stortford. [2126

DYNAMOS. Dynamos.—Lucas E3, 6 volt, 5 amp., new, not W.D., specially made for motor cycles; £5/15, guaranteed.—Below.

DYNAMOS.—The new C.A.V. for motor cycles, 6 volt 5 amp., £6/15; C.A.V. lamps for sidecars, 10/- each; all electrical equipment for motor cycles supplied.—Below.

DYNAMOS, 6 volt, 8 amp., cut-out, Lucas, third brush control; £5 each.—Jenner, 165, Church St., Mitcham. [5703

THOMPSON-BENNETT New Magnetos, single, anti clock, fixed ignition, complete; 27/6.—Dowell, Douglas Specialist, Pyrford, Surrey. [2159

CHELTENHAM.—Repairs to magnetos, self-starters, lighting plants, etc.; London experts employed.—Norwood Magneto Works, 95, Bath Rd., Cheltenham. 'Phone: 1256. [0758

ELECTRIC Light Bulbs for motor cycles and cars, one watt and half watt types stocked.—W. T. Clarke and Co., Ltd., Electrical Engineers, Silver St., New Oxford St., W.C.1. Price lists free. [2358

CONTINENTAL Ignition Repair Co.—We repair Continental magnetos only. By specialising on Bosch, U.H., Eisemann, Mea, Splitdorf, Dixie, and Berling magnetos, we can naturally give you better service.

PRICE: Rewinding 18/-, condensers 10/-, platinum screws (Bosch standard) 6/-, remagnetising 2/6, slip rings 6/6, H.T. terminals 4/6. Our price for overhauling a motor cycle magneto ranges between 20/- and 35/-, and never exceeds the latter figure. Guaranteed for 12 months, and redespatched to you in 2 days.

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GOVERNMENT Surplus Unused Magnetos.—Having purchased the entire stock of the following makes of magnetos, we are able to offer them at large discounts.—Below.

BOSCH Single, clock or anti, £3; Thomson-Bennett, single or twin, clock or anti, 42, 45, 50, 55, 180°, £2/15; C.A.V., single or twin, clock or anti, £2/10; special long driving spindles for Rudge, 10/- extra; postage on the above magnetos 1/6 extra.—Below.

ALL these magnetos are fitted with variable ignition and leads, and are fitted with base plates, ready to be immediately fitted on. Please state make of engine when ordering.—Below.

GOVERNMENT Surplus New Plugs in boxes.—A.C (Titan), 1/6; K.L.G., type F7, detachable, 2/6.—Below.

HIGH Tension Wire, new, unperished, 9mm. 5d. per yard, 25 yard coil 8/6; 7mm., 4d. per yard, 25 yard coil 6/-; 5mm., 3d. per yard, 25 yard coil 4/-; 3mm., 2d. per yard, 25 yard coil 2/-.—Below.

POSTAGE on Coils 5 mm. and upward, 1/-; 3 mm., 9d. See other goods under Parts and Accessories.—Below.

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COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2698. T.A.: Ignitionac, Brixstret, London. [6406

THOMSON-BENNETT Magnetos, new, guaranteed perfect, slightly soiled, single or 180° twin, variable ignition, switch terminal, clock or anti; £2; postage 6d.—Brockbank, 58, Lord St., Southport. [0756

ALMOST New Lucas Magdyno Set, complete with accumulator, head, rear, and sidecar lamps, electric horn, switch, cables, and spare bulb case, also platform for fixing set to Triumph; price £25.—B., 11, Pleasant Place, N.1. [2389

SPLITDORF Magnetos, single, anti-clock, guaranteed perfect; these are the real thing, not converted starter mags.; 30/- each, a gift; reduction on quantities. —Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: 789 Padd. [1768

J.H. Magneto Repairs.—We specialise in these magnetos, and can be relied upon to give you good service. A1, B1, AO, KB1, KB2V, KZ2V type spares stocked; prices moderate; 12 months' written guarantee. —Charles Parker and Co., Churchfield Rd., Acton, London. [8475

MAGNETO and Dynamo Repairs Service, also self-starters, batteries, and general electrical equipment are speedily and thoroughly repaired by the Sunbaken Repairs and Spares Service, all work returned indistinguishable from new. Spare parts for every known make.—Connecticut Service Station.

THERE is a Service Depot in every large town. Call to-day for a quotation. Head Office and Works, Derby St., Cheetham, Manchester; Manchester town depot, 288, Deansgate; London depot, 115, Gt. Portland St., W.1; Leeds depot, 52, Woodhouse Lane; Liverpool depot, 65, Renshaw St.; Birmingham depot, 22, Corporation St.; Bristol depot, 14, Colston St.; Paris depot, 40, Rue Brunel. [0258

SURPLUS Magnetos (with written guarantee one year).—Bosch type singles, 35/-; ditto, advance-and-retard, 40/-; B.L.I.C. singles, 42/-; Thomson-Bennett and C.A.V. singles and twins, 50/-; spares for all makes. Magneto repairs of every description.—Whitgate Magneto Service, Cherry Orchard, Croydon. [9580

WOR Immediate Disposal. — Thomson-Bennett, C.A.V., all degrees, single and twin, leads, and variable ignition, for all machines, £2/12/6, includes postage; Bosch £3, postage extra, 1/6. We forward immediately all magnetos on approval against cash. Money refunded if dissatisfied.—The Central Motor and Ignition Works, 14a, Loughborough Rd., Brixton, S.W.9.

EUSTON Ignition Co.'s 24-hour repair service. Guaranteed repairs to all types of magnetos; Splitdorf and Dixie specialists; official Indian electrical service station; Thomson-Bennett repairs and spares. All repairs are tested on an approved A.I.D. test bench before despatch, and therefore carry our guarantee for 12 months. We hold the largest stock of guaranteed magnetos in London, twins all degrees; spare parts for all makes in stock; charged accumulators, all voltages, always ready in stock; plugs, bulbs, ½-watt and vacuum bulbs, all voltages. We give you real live service always.—Euston Ignition Co., Euston Rd., London, N.W.1. 'Phone: Museum 4. T.A.: Magdyno, Eusroad, London. [0263

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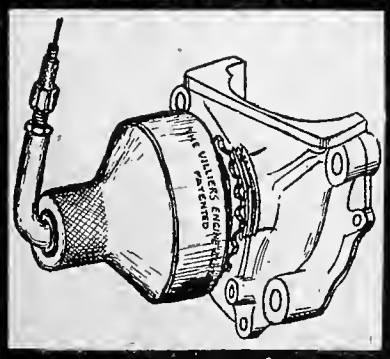

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ECONOMIC.—26×2½×2¼ Goodyear clearance, 42/6; Avon rubber stud extra heavy, 30/-; Clincher de Luxe, 30/-.

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ECONOMIC.—Fully guaranteed Dunlop rubber stud, 24×2 22/6, 24×2¼ 24/9, 26×2 24/6, 26×2¼ 25/9.

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SCOTTISH Readers will find it advantageous to purchase their tyres from McArthur, Hill and Co., 47, Carrick St., Glasgow. Lists post free. [9619

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TYRE Repair Specialists.—H.F. process throughout, including retreading burst covers. Every kind of repair to tyres and tubes in 24 hours, retreads in 4 days.—The Motor Tyre Co., 66, High St., West Brompton. [6068

STARTLING Offer.—New Beldam covers, 26×2 or 2¼ 20/- each, 26×2½ 30/-, 28×3 35/-, 650×65 40/-, 700×80 45/- each; new Avon or Michelin steel studded covers, W.D., 700×65 35/- each.—The Homerton Rubber Works, Brooksby's Walk, Homerton, E.9. [0331

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TANKS for B.S.A., new, 42/6; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [X8993

TANK for Triumph, new, 42/-; 1910, 1921.—Coventry Tankers, Ltd., Hearsall Works, Coventry. [X8992

TANKS Renovated, makers' designs, transfers, 13/6. —Whitworth Motor Renovating Co., 7, Jamaica Row, Birmingham. [1796

COVENTRY Tankers, Ltd., makers to the principal manufacturers; petrol tanks for any style supplied, extra capacity.—Hearsall Works, Coventry. [7464

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TANKS Re-enamelled Makers' Colours, design, and transfer; first-class work; prompt return.—Donalds, Enamellers to the Leading Manufacturers, 138, Glover St., Deritend, Birmingham. [X2636

AVERY'S Stock Tanks for Douglas, Triumph, Ivy, B.S.A., Omega, Rudge, enamelled makers' colours, with plated fittings, 40/-, or any design to order; 12 months' guarantee with every tank.—Gordon Street Tank Works, Coventry. 'Phone: 1774. [X3014

TANKS of every description replaced, repaired, and re-enamelled at our own works; all kinds of fittings stocked; quick service and reasonable charges. Illustrated list free.—A. Green, Water St., Chapel St., Salford, Manchester. Tel.: 2191 Central. [0256

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NEW Clipper Belts.—8ft.×¾in. 11/6, 8ft. 6in.×¾in. 13/-, 8ft. 6in.×⅞in. 14/-, 8ft. 6in.×1in. 16/9.

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LARGE Stock of Belting, in new condition, mostly 6ft. lengths, ¾in. 4/-, ⅞in. 5/-, 1in. 6/-.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. [1769

BALATA-CHROME Combination V Belts, suitable for variable pulleys and wet weather conditions; 500 more belts offered for trial on the following terms: ⅝in. 1/6, 1in. 1/9, 1½in. 2/- per foot, plus 1/- postage; fasteners 9d. each.—Pollin and Son, Hollington, St. Leonards-on-Sea. [1329

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CARBIDE, highest quality, 24/6 cwt., 10/- 28 lbs., 5/6 14 lbs., carriage forward, drums free; immediate delivery.—Kemp's Garage, Importers, Louth, Lincs. [X3678

CARBIDE, guaranteed maximum gas yield, British Acetylene Association standard, 21/6 cwt, drums free, all meshes; stock at 22 depots; immediate delivery.—Elloc Cycle Works, Importers, Gedney Drove End, Wisbech. [3972

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CARBIDE, finest quality obtainable, brilliant, lasting, 25/- cwt., drum free, cash with order, free on rail, Aberdeen, Bristol, Cardiff, Edinburgh, Glasgow, Gloucester, Grimsby, Hull, Leeds, London, Lowestoft, Liverpool, Lincoln, Manchester, Newcastle, Preston, Port Talbot, Runcorn, Sharpness, Swansea, Yarmouth.—E. C. Maddock, Wareham, Dorset. [1976

PATENT AGENTS.

CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

J. E. S. LOCKWOOD, 3, New Street, Birmingham. 'Phone: 5816 C. Patents guide free. [9057

PATENTS Advice, handbook free.—King, Registered Patent Agent, 146a, Queen Victoria St., E.C. 35 years' references. [0129

W. BRYSON, B.Sc., Assoc.M.Inst.C.E., Chartered Patent Agent, 29, Southampton Buildings, London, W.C.2. 'Phone: Museum 3651. [9242

FLETCHER WILSON, of Coventry, Chartered Patent Agent, and Registered United States Patent Attorney.—Tel.: Wilpat, Coventry. 'Phone: 356. [X4194

H. N. & W. S. SKERRETT (H. N. Skerrett, Fellow of the Chartered Institute of Patent Agents, A.I.Mech.E., A.I.A.E., Associate I.E.E., etc.; W. S. Skerrett, A.I.E.E., Registered Patent Agent).—Patents, designs, and trade marks.—24, Temple Row, Birmingham. Tel.: Central 1038. T.A.: Skerrett, Birmingham. [1534

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£5/15 Covers "All Risks" for Morgans or similar 3-wheeler.—Ernes Bass, 40, Chancery Lane, W.C.2. [0005

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£4/5/6 secures Full Policy for Cycle Cars, Morgans and the like up to £175 value; £3/5/6 covers 4h.p. combinations; £4 covers 6h.p. combinations. Prompt settlement. Immediate cover.—John Clements and Co., Insurance Brokers, 65a, Holborn Viaduct, E.C.1. [1355

"THE Motor Cycle" Insurance Policy is the policy authorised by "The Motor Cycle," and covers motor cycles or cycles and sidecars used for private purposes. Complete comprehensive cover. Maximum benefits, minimum rates. Full particulars and prospectuses on application.—The Autocar Fire and Accident Insurance Co., Ltd., 77, Cheapside, London, E.C.2. [0007

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Nov. 1st, 1921.

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YOUNG Well-educated Man Required as working partner in motor cycle, light car, and cycle business, prosperous South Coast town, chartered accountants report shows yearly profit of £570; capital required about £500.—Box 7,791, c/o *The Motor Cycle*. [197

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AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods station, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting, London. [216

WANTED.

SCOTT Radiator, Brooks B170 saddle, motor sail cheap.—8, Mayfield Rd., Eccles. [X368

WANTED, smashed-up or worn-out Morgan, cheap.—Seaborn, Mile End, Colchester. [179

WANTED, Swan sporting sidecar, or similar.—Askew 8, Franconia Rd., Clapham Park. [186

CLUTCH, sprocket, etc., for Young cycle attachment.—Blakemore, 19, Waterloo St., Hove. [187

WANTED, cylinder for 1909 3½h.p. Humber; cheap.—V. Beaumont, Seed Hill, Huddersfield. [211

WANTED, Binks carburetter, perfect condition.—John E. Green, Moor Lodge, Dereham. [208

WANTED, second-hand fittings off Cameo windscreen.—Benson, Albert St., Harrogate. [211

WANTED, a Triumph combination, belt-driven 1921.—F. Tonar, Veterinary Surgeon, Bath. [180

DOUGLAS Chassis, unrenovated, sound, cheap; or exchange spares.—116, Church Rd., Northwood. [213

WANTED, sound inner fixed flange for Philipson, to fit 1914 Rover.—Walker, Shell Rd., Charlestown, Fife. [183

WANTED, 4h.p. engine, any good make, and 3 speed gear box.—A.K., 317, Stapleton Rd., Bristol. [202

WANTED, second-hand Morgans, in good condition.—A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone: Museum 6436. [100

WANTED, forks, wheels, magneto, carburetter, tyres, etc., and cheap 2-stroke cycle.—68, Gloucester Rd., N.W. [223

BLUMFIELD.—Wanted, piston, connecting rod, w.c. cylinder, for 7-9h.p. J. type cyclecar engine.—Howarth, 39, Church, Padiham. [190

ENFIELD 8h.p. Frame, sound, cheap; also Morgan chassis, sound, or wants repairing, cheap.—Bram 20, Farlton Rd., Earlsfield, S.W. [193

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [067

CYCLE Car Parts wanted, M.A.G., J.A.P., or similar engine, back axle, steering, clutch, etc.—Full particulars, May, 1, Auburn Rd., Bristol. [1822

WANTED, bankrupt stocks, W.D. spares, incomplete P. and M.'s or parts.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [1248

WANTED, Triumph countershaft crank cases, flywheels, S.A. gear boxes, parts, or empty cases; any quantity purchased.—Hole, 129, Park Lane, Carshalton. [976

ENGINE, 4-cyl., 8-10h.p., piston and cylinders not wanted; case and cranks must be in good condition.—Particulars and price to Edwards, 1, Cullum St., London, E.C. [1917

3-SPEED Hubs or Gear Boxes, also engines, air or water-cooled, suitable cycle or light car, wanted for cash. 'Phone: 1958 Brixton.—19, Wilcox Rd., South Lambeth, London, S.W.8. [2348

WANTED to Purchase Outright for cash, bankrupt stocks. W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

EXCHANGE.

A.B.C., as new, for 1921 16H Norton or Sunbeam.—40, Aynhoe Rd., W.14. [2220

FORD Van, £78; exchange solo or combination.—2, Halons Rd., Eltham, S.E.9. [1897

3½h.p. Ariel, 3-speed, kick start, for lightweight.—R. Hills, Warboys, Hunts. [2287

PEUGEOT 10h.p., with dickey; £150; good combination part.—Terrace Garage, Chiswick. [X3736a

A.V. Monocar late 1920; exchange solo, combination; (see under For Sale.)—Croydon. [2402

P. and M. Engine, complete, for hub gear.—Page, 20, Heivon St., Walworth, London, S.E.17. [2157

£30 and Levis for best A.B.C. offered; Norton considered.—Weybourne Cottage, Farnham. [2284

EXCHANGE Cinematograph with films for motor cycle; sell £30.—89, Spencer Place, Leeds. [1863

1921 Matchless, guaranteed, hardly used, for Morgan or cycle car, or sell £155.—82, Market St., Colne. [1898

EXCHANGE.

HARLEY Combination, exchange sports Zenith or A.V.; sell £80.—Orchardleigh, Leatherhead. [2032

SIXTY Cars for Exchange; postcard procures list. Call.—Douglas S. Cox, Motors, West Norwood. [1003

EXCHANGE, countershaft Zenith and cash for A.C. Morgan.—Sapsford, Baker, Cheshunt, Herts. [2042

£57.—Kendall runabout for motor cycle and cash; any offers considered.—Box 7,801, c/o *The Motor Cycle.* [2322

h.p. Bradbury Combination, fully equipped, for lathe, or sell £80.—Bingham, 14, Portway, Wantage, Berks. [1812

ALLDAYS 4-5-seater, new condition, value £150, for w.c. Morgan combination.—63, Solon Rd., Brixton. [2369

1h.p. Sunbeam Combination, 1916; exchange with 2 cash for 1920; Surrey.—Box 7,804, c/o *The Motor Cycle.* [2351

DOUGLAS, O.K., Rudge, for w.c. Morgan; alternative arrangements considered.—63, Solon Rd., Brixton. [2370

BEDFORD-BUICK 1913 Tourer, 15h.p., Warlands, for good combination.—Hillrise, Surbiton Hill Rd., S.W. [X3731

TWO New 26×2¼ Covers and new watertight mag. for coachbuilt sidecar complete.—Box 229, c/o *The Motor Cycle.* [X3689

EXCHANGE Sporting Type 3-wheeler for countershaft Triumph and cash, or sell.—White, Owslebury, Hants. [1791

3½h.p. Premier, excellent running order and condition, £28; or exchange 2-stroke.—26, Wood St., Taunton. [2107

DERRY 1914, twin, 5 wheels, new tyres, equipped, taxed, for good combination.—Springhurst, Fassett Rd., Kingston. [X3738

55 m.p.h. 1914-15 T.T. Triumph for monocar, cycle car, or twin bicycle.—F. B. Hobson, Hill Lodge, Welwyn, Herts. [1914

HUMBERETTE, 1914, no faults, smart, equipped, taxed, for good combination.—Springhurst, Fassett Rd., Kingston. [X3734

B.C.H. Tourer, 1915, smart, whole as new, 15h.p., 3 gate, 5 rims, for good combination.—83, Clarendon Rd., Putney. [X3729

SAXON 2-seater Car, fully equipped, for sale; exchange for Harley.—770, Stratford Rd., Sparkhill, Birmingham. [2009

BUICK 1916 Ton Chassis, dynamo, 5 pneumatics, right steering; good combination part.—Yellowarage, Surbiton. [X3730

h.p. Premier Combination, 2-speed, K.S., countershaft, for lower power and little cash.—591, Foleshill Rd., Coventry. [X3774

L.W.K., 1916, special body, 2-seater, 5 wheels, whole as new; good combination part.—Knight, 2, Disraeli Rd., Putney. [X3732

EXCHANGE 1920 L.J. light car for combination and cash, or sell.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E. 3155. [2024

EXCHANGE, 3h.p. Enfield, M.A.G. engine, fast, valued £50, 4h.p. Triumph preferred.—Prout, Canon St., Taunton. [2102

MEGA-J.A.P. 2¾h.p., 2-speed, practically new, perfect, with cash for Triumph.—42, Cecil Terrace, Horton, Bradford. [1904

EXCHANGE First-class Combination for solo and cash.—Newnham, 223, Hammersmith Rd., W.6. Phone: Hammersmith 80. [2248

EXCHANGE Brand New Skootamota, costing £55, for reliable motor cycle, or sell cheap.—F. Godfrey, Brighton Rd., Surbiton. [1351

WANTED, Scott or twin, not exceeding 5h.p.; exchange Powerplus Indian; sell £75.—Captain Harrison, Rothley, Leicester. [1896

HALIFAX.—50 second-hand machines and combinations; keen exchanges. Get list.—Halifax Motor Exchange, Horton St., Halifax. [1983

1920 Citroen 2-seater, value £250, or 1920 Essex 5-seater, £340, for combination and cash.—Hurst, 26, Tulse Hill, Brixton. [2147

HALCOTT. 1916, new transmission throughout, new block and pistons; smart good combination part. Knight, 2, Disraeli Rd., Putney. [X3733

HUMBER Combination, 4½h.p., water-cooled, 3-speed, kick start; any trial; £58; lower power part.—57, Salisbury St., Camberwell, London. [2065

ALBION Grand Piano, lovely tone, splendid condition, for Rudge or Douglas solo and cash.—A.I.H., 10, Burdett Rd., London, E.14. [2234

1h.p. James, countershaft gear, K.S., clutch, all-chain, for lightweight.—Graham, 27, Wandle Rd., Wandsworth Common, S.W.17. [2357

TRUMBULL 1917 2-seater, 10h.p. 4-cyl., 3-speed 4 gate, 5 wheels, good order; exchange good combination.—Terrace Garage, Chiswick. [X3736

MECILIAN Piano-Player, interchangeable reeds, 40 rolls first-class music, 65 note; exchange motor cycle, £18.—14, Estcourt St., Devizes. [2098

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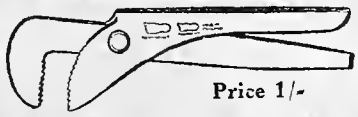

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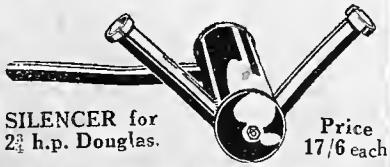

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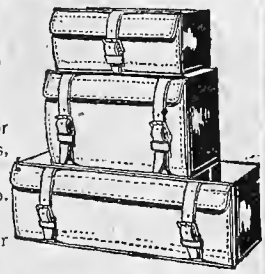

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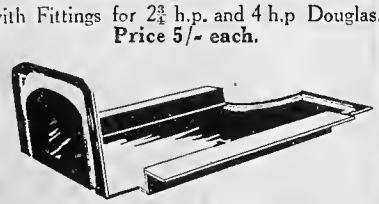

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EXCHANGE, 4h.p. 3-speed Triumph for higher power; also 6h.p. Bat-Jap, variable gear, for lightweight.—People, Stockbridge, Hants. [1990

26×2¼ Cover, Miller head lamp, generator, walking-stick gun, for 2¾h.p. Douglas frame complete.—Tombling, Church St., Gt. Missenden, Bucks. [2101

EXCHANGE Mills-Fulford chassis, good cabinet gramophone, for good underslung chassis for Triumph.—W. Earl, Gloucester Rd., Trowbridge. [1899

1912 Aster Landaulet, Bedford cord, etc., 6 lamps; exchange Morgan, solo, etc.; sell £180. Wanted, second-hand parts.—13, High St., Wells, Somerset. [2119

1920 Calthorpe Coupe, lighting, starting, beautiful condition; £375; exchange 1921 combination, cash adjustment.—18, Hestercombe Av., Fulham. [1795

MATHIS 1921 Sporty 2-seater, lighting and starting, £60 extras, mileage 500; £275; good combination part.—Hillrise, Surbiton Hill Rd., S.W. [X3737

EXCHANGE 4-cyl. Magneto, needs attention, for folding camera, or anything useful.—Avery, Little York Cottage, Back Pantiles, Tunbridge Wells. [X3684

1920 8h.p. Sports Zenith, perfect, for Triumph, Sunbeam, Norton, A.J.S., or similar; cash either way; ride anywhere.—Box 7,805, c/o *The Motor Cycle.* [2350

EXCHANGE good 3-ton motor lorry, splendid condition, tyres like new, for good 2 or 5-seater car, or combination and piano.—Box 228, c/o *The Motor Cycle.* [X3688

HENDERSON 4-cyl. Combination, mechanically perfect, appearance as new, for lower power combination or light car.—197, Whippendell Rd., Watford. [1934

ZENITH 5h.p. Sports, 1915, equipped for countershaft model same or higher power, cash adjustment; or sell £65.—8, The Avenue, Chingford, E.4. [2117

1916 Enfield, 2-speed, K.S., speedometer, Spartan, overhauled and new tyres, for single gear Triumph and cash.—1, Enmore Av., South Norwood. [2018

1912 2¼h.p. Premier, new piston, valves, tappets, pulley, and tyre, less carburetter; exchange anything motorish; sell £20.—13, High St., Wells, Somerset. [2118

A.V. Monocar, 1919-20, very sporty, mechanically perfect, all on, for late Zenith or similar; sell £85.—A. J. Sandford, 56, Spencer Rd., Wealdstone, Middlesex. [1825

EXCHANGE beautiful Overland coupe, 1916, starter and lighting, absolutely perfect condition, for combination or light car and cash.—24, Geraldine Rd., Chiswick. [2354

EXCHANGE 1920 3½h.p. I.O.M. Rudge Multi, fully equipped, and about £10, for combination; Triumph preferred.—Thompson, 27, Brent St., Hendon. [X3742

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [1942

EXCHANGE Siger Sewing Machine, treadle, boat-shaped shuttle, perfect condition, for 3½h.p. Minerva cylinder, 82mm. bore.—3, Victoria Terrace, Southwell. [1837

BEARDMORE-PRECISION, standard, Aug., 1921, perfect, 300 miles, for Triumph or Sunbeam combination; cash adjustment.—Kelham, Nassington, Peterboro'. [2288

1921 6h.p. Martinsyde Combination, Easting, speedometer, electric light, guaranteed perfect, for 1921 De Luxe Morgan and cash, sell £125.—Row, 65, Market St., Torquay. [1959

EXCHANGE good 3-wheel cycle car, watertight magneto, good tyres, disc wheels, perfect order, for good motor cycle or combination.—Box 230, c/o *The Motor Cycle.* [X3690

1920 Sandum 2-seater Sidecar, spacious lockers, perfect condition, for good single-seater and cash, 28×3 wheel, suiting 8h.p.—Snow, Nurseryman, Broadstone. [9602

8h.p. J.A.P. Engined Cycle Car, Bosch mag., Binks carburetter, variable speeds, hood, screen, electric lamps, for good combination.—63, Walm Lane, Cricklewood, N.W.2. [X3768

BEARDMORE-PRECISION 3½h.p. 1921 (October) Sports Model, fully equipped, for cheaper machine and cash; or sell £68.—17, Gillott Rd., Edgbaston, Birmingham. [1922

1915-16 Ford Touring Car, interchangeable wheels with spare, new tyres; £85, or exchange for solo or combination, cash either ways.—Warwick, Hinckley Rd., Leicester. [X3685

BRADBURY 1914 4h.p. Coachbuilt Combination, lamps, horn, tools, spares; any trial; 48 gns.; exchange 2¾-3½h.p. solo and cash.—11, Pretoria Av., Walthamstow. [1960

PHŒNIX 11.9h.p., 4-cyl., 2-seater car, dynamo lighting, small mileage, 1915, value £220; accept good combination or Morgan and cash.—P. Riddelsdell, Boxford, Suffolk. [1963

EXCHANGE 1921 3½h.p. P. and M. solo, with accessories, for lightweight and cash; sell £75.—Newnham, 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2255

EXCHANGE.

A.V., 8h.p., 1920, for late sports Sunbeam or Norton. —36, Kersland St., Hillhead, Glasgow. [8007

SIZAIRE-NAUDIN, 8-11h.p., 3 speeds and reverse, good tyres, new body, hood, and screen, smart in appearance; price £50; exchange motor cycle.—Bridge House, Boxford, Suffolk. [1964

4h.p. Lea-Francis, M.A.G., 2-speed, Binks, electric lamps, horn, run 800 miles, unscratched; £85, or exchange single, A.B.C., or lightweight.—Le Brunn, 7, Victoria Rd., Sittingbourne, Kent. [1954

INDIAN, 1919, 7-9h.p., spring frame, 3-speed, T.T. handle-bars, new engine, accessories, tax paid; £75; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. [2038

1920 Temperino Light Car, 9h.p., 3-speed and reverse, detachable wheels with spare, electric lighting, as new; exchange for combination and cash. —Snow, 91, Mapledene Rd., Dalston, E.8. [2387

1919 3½h.p. Flat Twin Humber Combination, electric lighting, as new; higher power combination wanted, 1919 or later, cash adjustment if necessary.—2, Inchleys Buildings, King William St., Coventry. [X3338

SUNBEAM 1921 3½h.p., semi-sporting, long exhaust, 4 lamps, accumulator, acetylene, speedometer, watch, discs, perfect, for 1921 electric Indian Scout, or sell £125.—B. Nicholson, Ebchester, Co. Durham. [1875

EXCHANGE 100 Volt 32 Ampere Dynamo, 5-6h.p. water-cooled engine, switchboard, meters, wiring, and accessories, all new, except engine, for combination or light car; London.—Box 7,733, c/o *The Motor Cycle.* [1801

1916 10h.p. Sporting 2-seater Ritz, 4-cyl., dynamo lighting, electric horn, hood, screen, Stepney, speedometer, £140; exchange combination and cash; photo.—Lingard, Bridgeholme, Chapel-en-le-Frith. [2124

EXCHANGES a Speciality.—Motor cycles taken in part exchange for small and large 2 and 4-seaters; bargain prices.—Seabridge, Hansler Rd., East Dulwich. Hours 10-5.30, or appointment (not Sundays). Sydenham 2452. [4804

18h.p. Darracq Landaulet, 4-cyl., fully equipped, 5 good tyres, £65 cash; also 1916 10h.p. Alldays' 2-seater, in perfect order, £160; exchange solo or combination for either, cash adjustment.—Whisstock and Lingley, Woodbridge, Suffolk. [2307

EXCHANGE Level, 8h.p. Enfield combination, dynamo lighting, for Morgan; new 7-9h.p. Rudge Multi for light lorry or £100 worth spare parts. Stamped envelope reply.—'Phone: Putney 1652.—Britnell Bros., 43-45, High St., Fulham. [2135

HALIFAX. — 1922 Airedale, B.S.A., Calthorpe, Legonda, Coventry Premier, and Standard light cars; Norton, B.S.A., Sunbeam, Levis, Enfield, New Imperial, and Triumph motor cycles; quick deliveries; liberal exchanges.—Halifax Motor Exchange, Horton St., Halifax. [1982

COUPE 2-seater and dickey, 12h.p. Renault, 4-cyl., very smart, fitted electric light, Klaxon, mirror, cigarette cabinet, speedometer, exchange for modern combination and small cash adjustment, or sell £160.—Shard Garage, Shards Sq., Peckham Park Rd., Old Kent Rd., London. [1278

EXCHANGES.—The Newnham Motor Co., 223, Hammersmith Rd., W.6 ('Phone: Hammersmith 80), are prepared to entertain any kind of exchange of motor cycles or cars, new or second-hand. Authorised agents for Rover, Calthorpe, Singer, Coventry Premiers, etc. Cash, exchange, deferred payments. List on request. [2249

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ANY

ARMSTRONG or Sturmey-Archer Gears Repaired promptly and efficiently.—County Engineering Co., Houoslow. [0517

WHITTALL for Welding. Aluminium experts. prompt delivery.

WHITTALL.—Pistons complete for Triumph, Premier, J.A.P., Bradbury, B.S.A., Douglas, Sunbeams, etc.; 14/- to 24/-, on approval, exact to pattern.

WHITTALL.—Cylinders reground and new complete pistons fitted from £2, perfection guaranteed. Twelve years' first-class reputation. Pistons to pattern or sketch.—Whittall Machinists Co., Whittall St., Birmingham. [0017

C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from £2.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd. [0003

ARMSTRONG and Sturmey-Archer Gesar Specialists. Repairs while you wait.—Tavistock (below).

ARMSTRONG and Sturmey-Archer Gears completely assembled for 6/- in 2 hours.—Tavistock (below).

ARMSTRONG and Sturmey-Archer Parts at cut prices by return of post.—Tavistock (below).

GEARS, shafts, valves, etc., for car or cycle, made promptly.—Tavistock (below).

GEARS.—Send all gear repairs and replacements to Tavistock Engineering Co., 254a, Portobello Rd., North Kensington, London. 'Phone: Park 643. [1759

Sturmey-Archer and Armstrong Gears. Immediate Repairs. All parts for all types in stock.

Quotations despatched same day as gear is received. STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock, wholesale and retail—2-speed £11, 3-speed £17.

CROMWELL ENGINEERING CO., 327, PUTNEY BRIDGE ROAD, S.W.15.

Telegrams and Telephone—Putney 1601.
Send Repairs to Putney Station (L. & S.W.R.)

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19.9 Ariel machine won silver medal, James machine won silver medal, 920 Scott machines won team prize. 1921 Matchless machines won team prize, two gold and two silver medals F N machines won two gold and two silver medals plus bonus marks for petrol consumption.

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If fitted with **BOWDEN CONTROL 11/6 EXTRA.** When ordering state length of jet, including plug and year of carburetter. Write for leaflet, it will interest you.

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RUDGE BROS. Motor Fittings Manufacturers FLEET ST., BIRMINGHAM.

Any new machine for £15 down up to value £70. Instalments to suit convenience.

Value £75 and over 1·5th down. Write stating make you are wanting.

Second-hand machines. £5 down, 10/- weekly, straight-forward dealings with straight-forward people. Lamps, Tools, Tyres, etc., at lowest terms.

WANTED Second-hand engines, spares, etc.

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Hub or Countershaft Gears repaired while you wait.

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2, 3 and 4 speeds, light and heavyweights. Also three speeds and reverse.

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ENGINE Overhauls, quality work only, cylinders reground, pistons, valves, bushes, etc.—Below.

PISTONS for every standard motor cycle in stock from 14/- each.—Below.

CYLINDER Grinding, our speciality 2¾h.p. Douglas reground, fitted with new piston, rings, and gudgeon, 25/- each.—Below.

TRIUMPH, J.A.P., Bradbury, and all 3½h.p., 4h.p., cylinders reground and fitted new piston, rings, and gudgeon, 35/-; returned in 48 hours.—Below.

QUALITY and Satisfaction is our motto, entrust your work to specialists and get a guaranteed repair.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [9659

HUB Gears.—Great reductions in prices of replacements for Sturmey-Archer and Armstrong gears.

HUB Gears.—Wheels repaired and returned within the week; send for latest price lists.

HUB Gears.—Why pay an extortionate price for fitting a few new parts to an old gear?

HUB Gears.—We undertake to supply the complete new internal portion of the gear mechanism less main driver for £5.

HUB Gears.—A. F. Lewis, Charlestown, Weymouth. Look out for the Lewis patent 2-speed countershaft gear and clutch. [0747

WELDING Aluminium Crank Cases, gear-boxes by experts; immediate attention; reasonable prices.—Below.

WELDING Broken Cylinders, flanges, combustion experts of 11 years' experience.—Below.

CYLINDER Grinding on latest machinery, installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [4769

ARMSTRONG and Sturmey Gears repaired or parts supplied promptly.—Cherry Lane Garage, Lymm, Cheshire. [9907

DOUGLAS Overhauls.—We specialise in overhauling and repairing Douglas machines.—Tavistock (below).

DOUGLAS Overhauls.—Send your Douglas to us for reliable, efficient, and cheap repairs.—Tavistock (below).

DOUGLAS Overhauls.—Don't have your machine spoilt by amateur mechanics.—Tavistock Engineering Co., 254, Portobello Rd., North Kensington, London. 'Phone: Park 643. [1760

FRAME and Chassis Repairs and Alterations. We are specialists. Reasonable charges; immediate attention.—Below.

ENGINES Overhauled, rebushed, singles 35/-, twins 45/-. Try us for any repair or replacement.—Henry V. Smith, Osmondthorpe Lane, Leeds. [2230

CYLINDERS Reground, new pistons fitted, from 22/6; engines overhauled in 5-6 days. Speciality, Triumph and Premier.—Below.

WELDING also brazing by experienced workmen. Spare parts supplied.—W. R. S. Fiddian, Bush Lane House, Bush Lane, E.C.4. [2381

FOR Expert Engine Overhauls, cylinder grinding, new pistons, and spares, Hedley and Co., Forth St., Newcastle-on-Tyne. [1333

FRAME, chassis, and tank repairs, enamelling and painting by experts; prompt deliveries.—Langham Co., Fitzroy St., Leicester. [6097

INDIAN Owners.—If you have trouble with your machine, send to Indian repair specialists, Dennis, 89, Brixton Rd., London. [1853

ENGINES Rebushed, overhauled, rings fitted, compression guaranteed; singles 30/-, twins 40/-; returned 3 days.—Below.

VALVE Seats, rebuilt from 10/- valves 5/-, valve guides 4/-, valve cups 4/-, piston rings 1/6.—Below.

CYLINDERS Rebored, fitted with new piston, from 30/- to 40/-.—Turner Bros., Engineers, Summerseat, Manchester. [2298

J.A.P. and Blackburne Engine Experts: reasonable and reliable.—Kingsbury Garage, Edgware Rd., Hendon. 'Phone: Kingsbury 134. [4209

WELDING.—Broken cylinders, crank cases, etc., made like new; work guaranteed; quick return.—Tonge Welding Co., Morton St., Middleton, Manchester. [6302

CYLINDERS Reground, new pistons complete fitted from 25/-; work guaranteed; good deliveries.—Shortridge, 18, Boughton Rd., Brownsover, Rugby. [X3712

OBSOLETE Parts Made, gear cutting, shafts, cylinders rebored, new pistons, quickly, cheaply. No part too difficult for our plant.—Morton and Weaver, Coventry. [X8844

ROC 2-speed Wheels, Humber, Rex, V.S., Matchless, Campion, Wall, Roc; sole licencee for all Roc gears; all spares in stock.—Connolly, Carmelite Rd., Coventry. [X3779

CYLINDER Grinding, new pistons, etc.; accurate and highly finished work; prompt delivery; price list on application.—W. and F. Wills, Ltd., Engineers, Bridgwater. [0728

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The T.T. Dates.

NEVER have the Tourist Trophy races been the subject of so much controversy as this year. The surprise occasioned by the announcement of the A.C.U. Competitions Committee that the 1922 event would be held in Belgium was followed by a discussion as to the desirability of transferring Britain's only road race to a foreign country. Then came the reversal of this decision by the General Committee, and the astounding news that the R.A.C. had annexed the most suitable dates. Until quite recently nothing had been decided, and when the A.C.U., at its Leicester meeting, finally agreed that the races should again be held in the Isle of Man, there was a general feeling of satisfaction.

But even now serious discussion is taking place, this time as to the suitability of the dates chosen, viz., May 30th and June 1st, on account of the fact that this is the week preceding the Whitsuntide holiday.

The Busiest Week of the Year.

The more these dates are considered, the more one is constrained to doubt the wisdom of holding the races at such a time, and, in accepting them, the A.C.U. appears to have overlooked several important points which should have been considered. Firstly, of all weeks of the year, that preceding the Whitsuntide holiday is the busiest period for motor cycle manufacturers, who can ill spare the mechanics and staff from their works at that time.

Secondly, the annual London-Edinburgh event starts on the day following the Senior race. This second factor is important for several reasons, as, with two such important events clashing, the public interest will be divided. Again, a large number of keen motor cyclists who visit the Island, whether as riders, officials, or spectators, usually participate in the long-distance trial to Edinburgh, and with the T.T. dates as at present arranged, one or the other must be sacrificed by them.

We well appreciate that the selection of a suitable date was not an easy matter, but we understand that the Isle of Man authorities were prepared to postpone the car event to a later date if such action were necessary.

If we accept that the pre-holiday week is unsuitable—and we cannot see how it can possibly be proved satisfactory—the choice seems to lie between:

(1.) Fixing the dates of the motor cycle races a little earlier.

(2.) Postponing the races a fortnight by arrangement with the parent body—the R.A.C.

(3.) Holding the races in September after the Manx Highway Board has had time to repair the roads after the car races.

Of these suggestions, the second seems to offer the greatest satisfaction. Certain it is, an effort should be made immediately to change the date to one in keeping with the importance of the historic Tourist Trophy event.

Winter Riding.

THERE are a few motor cyclists who annually lay up their solo machines during the winter months for fear of skids on the greasy roads. Such a course is certainly not warranted with modern machines, and the owners lose much enjoyment by its adoption. No machine is skidproof, but, given a modern machine with reasonably low centre of gravity, good tyres, and careful riding, there is little to be feared. Many riders make a mistake in travelling too slowly over grease, and in employing too high a gear. When travelling slowly in traffic, the low gear should always be employed if the streets be greasy, and the throttle should be handled gently, clutch engaged smoothly, and the spark lever retarded more than usual.

Our advice to nervous riders is to keep their machines on the road and enjoy the exhilaration which can only be obtained by a run on a bright winter's day.

An index to the advertisements in this issue will be found on the page facing back cover.

Dope for Hot Studs.

INSPIRED, no doubt, by a wise paragraph in *The Times*, the technical press of the country, in all its various specialist departments, now devotes quite a lot of attention to inventions, specifying crying needs and trusting inventors to solve the problems. To contribute my modest quota, I would suggest that there is room for a heatproof lubricant for application to screw threads subjected to high temperatures. Four times in one week recently I met engineers wrestling with immovable threads, rust ascribable to exposure to water having complicated the problem in each case. The four instances related to:

(1.) The release valve of a baby two-stroke.

(2.) The cylinder head fittings of an air-cooled cycle car.

(3.) The alleged "detachable" head of a four-cylinder *monobloc* water-cooled American car.

(4.) The valve caps of a motor lorry.

The last-named gave the most trouble, for it was of foreign make, and no spares were procurable. Soaking with turps and paraffin, heating the engine, and then chilling the valve caps, colossal spanners clumped by local Hercules with huge mallets—all failed; and, at the moment of writing, these valve caps are still in position.

Assembled Machines.

OLYMPIA impressed me with the extent to which the production of "assembled" machines is growing. Of course, every motor cycle is "assembled" in the strict sense, but the term is a handy colloquialism for a mount embodying a proprietary engine, gear box, etc., built up into a frame by some local dealer. When one can buy such excellent engines as the J.A.P., M.A.G., Blackburne, Villiers, and others, such sound gear boxes as the Albion, Sturmey, Burman, Juckes, Jardine, Moss, etc., the "assembling" policy naturally thrives. There are three points in favour of the "assembled" machine, as contrasted with the mount which is an original design throughout. The assembled machine is usually *cheaper* than the average of its class, for a firm which turns out 10,000 engines or gear boxes per annum can generally produce more economically than a factory with an output of 1,000 or less. The assembled machine usually consists of *standardised parts*, easily obtainable anywhere; this is only true of such original machines as enjoy really large outputs. The small assembler can *modify his specification* to suit the fads of an individual purchaser. In fine, the assembler offers buyers a cheaper standardised machine, embodying some of his own notions.

The Obverse.

ON the other hand, the selection of an "assembled" machine demands a certain amount of caution. There are *big* assemblers, who can offer buyers all that the "special design" factories can give. They are just as jealous for their good name as any of the great factories. They offer us the same kind of service. Their guarantee is as good as the best. Their machines command excellent prices second-hand. By contrast, a deal with some of the petty assemblers is a very different pair of shoes. Such a man may not have the will or the power to give his clients any service at all. His guarantee may be almost worthless. His machine may depreciate quite abnormally in twelve months, partly because it is almost unknown, partly because it has no permanent backing behind it. If I were extremely impecunious, and knew a sound mechanic in a back street who assembled two or three good engines into frames every year, I might be wise to give him an order. Being poor, I should buy the machine for keeps, avoiding the loss which comes from an annual sale. I should get a cheap, sound machine from him, and, living close at hand, I could rely on him to treat me fairly. But I should be a fool if I bought his machine with the intention of selling it next autumn, or if I lived any distance away. Under these circumstances, if I wished to avail myself of the special advantages of an "assembled" mount, I should select one of the big assemblers. "Assembling" is, of course, almost a habit with the American car manufacturers, most of whom are assemblers pure and simple. It is odd that this Yankee trade policy is so largely adopted in the British motor cycle industry, and so generally eschewed in the British car industry. It is perfectly sound in itself, and makes for economy; therefore, it is spreading perceptibly in our light car trade, where every shilling counts; and the reasons for its growth in the motor cycle world are similar.

The Scott Squirrel.

LOTS of Scott enthusiasts proved faithless to their first love because they wanted a little more speed. The average Scott in private hands gives about 45 m.p.h., which is fast enough for many people; and it is faster than it feels or looks, because it takes nearly all hills in its stride on top with little perceptible slowing. But when 2¾ h.p. sports models begin to appear with guarantees of 70 m.p.h., the Scott had plainly to do something. Hence the Squirrel. Most of its extra speed—it is guaranteed to do 60 m.p.h., anyhow, anywhere—comes from the tiny tips which riders bandy from mouth to mouth, *e.g.*, "an aluminium piston adds 10 m.p.h. to any

Occasional Comments.—

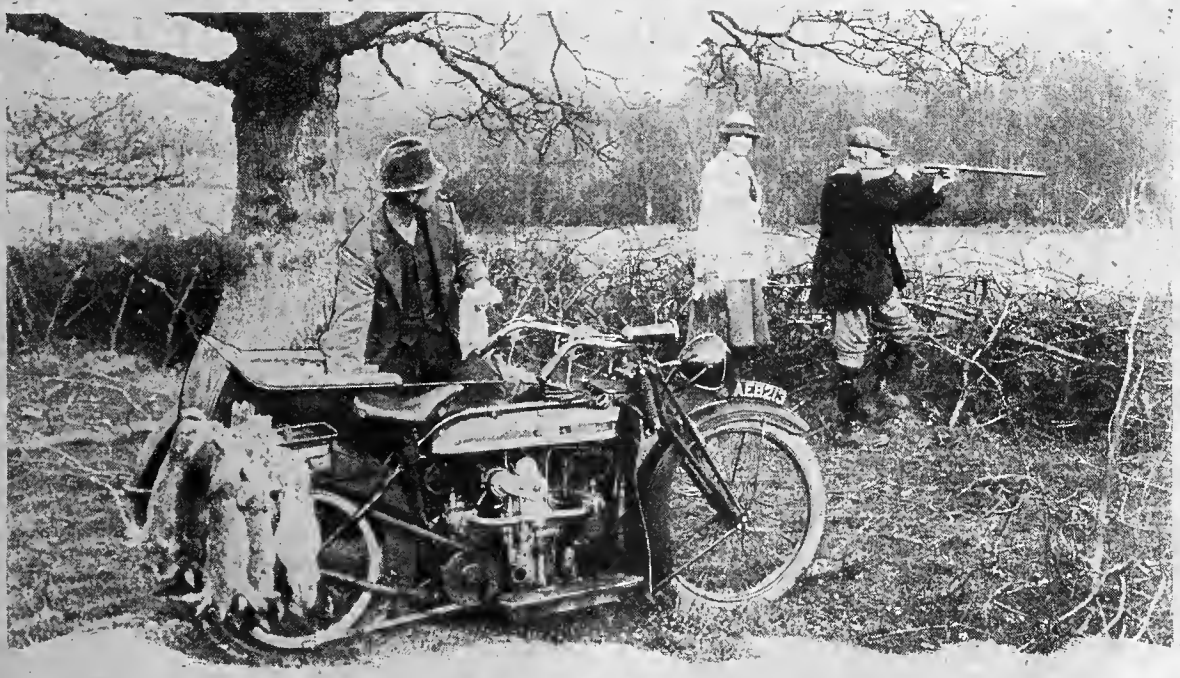
two-stroke, but melts after five miles of full throttle" (except on a very few machines). "Put a plug in the centre of the head, and you'll get an extra 5 m.p.h." (the Squirrel has *two* plugs in the centre of the head, and so presumably gets an extra 10 m.p.h. on that score). But, jokes apart, I notice that the Squirrel is minus the standard sparking plug socket on the rear of the cylinder heads, which must ease the factory job of obtaining a symmetrical cylinder casting free from liability to distort.

Riding after Dark.

FOR many years past I have gone out somewhere on practically every evening in the week. I have seldom used a motor cycle for short distance work at nights. Sometimes I walked. Sometimes I used a push bicycle, because its lamps entailed no real trouble. If the distance was long enough to suggest mechanical transport, I should probably use a car, if one was available, because its electric lighting was so clean and convenient. A motor bicycle would only be employed when the distance was long, and no other mount was available. Comparatively few of my motor cycles have been fitted with electric lighting, because it usually represents a £30 extra, of which a high percentage is a dead loss on a re-sale. For the last few months I have owned one of the cheap little sets (they ought to and will be a lot cheaper, ultimately) which draw their current from the magneto. For some weeks I regarded it with suspicion. It has never let me down, and I see no reason why it should. The result is that I now leap into the saddle after dark without any hesitation. I do not dream of walking, or cycling, or wangling a car. I am already far more mobile and sociable after dark than I have ever been in my life; and I am coming to regard my magneto lights as absolutely indispensable. I consider that such additions double or treble the value of a utility machine, and obviate the principal criticism which utilitarian users could formerly bring against the motor cycle. The sooner the popular single-cylinder four-stroke is regularly endowed with a similarly cheap and reliable lighting outfit, the better for its future. But, so far, no attempt appears to have been made to cater in this respect for the owner of a costly 3½ h.p. sports machine, whose requirements are: really powerful illumination (preferably electric), light weight, and/or easy detachability, capacity for fifteen hours continuous use (say, for the London-Exeter trial), and an appearance and finish in keeping with that of a £120-£150 'bus.

A New Tool Wanted?

THE growing popularity of overhead valves suggests that it is time for the accessory makers to market another new tool. Years elapsed before amateurs were provided with tools for compressing the springs of a side valve engine; we used to wrestle with screwdrivers, chip chunks off the cylinder fins, and other chunks off our knuckles. Finally, a lot of tools were brought out, and peace descended upon us. Nowadays the overhead valve is booming, and, to the best of my belief, the only way of freeing the spring *in situ* is to press it down with the fingers; some modern valve springs are far too stiff to lend themselves to finger operation. When the o.h.v.'s are fitted in a detachable head, it is generally possible to put the head in the kind of vice which adorns the bench of the average amateur. But if designers could watch sundry amateurs of my acquaintance tackling this job, a cold sweat would trickle down their spines. The designing of a tool easily adapted to most o.h.v. motor cycle engines is not a real brain-twister.



A GOOD "BAG."

Although not comparable with a day's game shooting, a day among the rabbits is not to be despised. This year in particular a sidecar has proved a useful vehicle, for rabbits have been unusually plentiful.

TYRE PRECAUTIONS FOR WINTER.

Commonsense Hints on the Care of Tyres.

FOR sheer misery nothing exceeds a winter puncture. It is bad enough on a crisp sunny day, when one had anticipated a rousing ride with a hot meal towards sunfall. But it is a thousand times worse when the tyre goes flat on a wet, dark night in some such thoroughfare as the Lea Bridge Road, with the street swimming in that filthy liquid mire which London brews in December, and motor 'buses and taxis are flinging splashes all over your cold fingers. Not less mournful is it when the rear wheel begins to bump on some lofty high road about 9 p.m.; two minutes after one has dismounted, face, feet, and fingers are reduced to the consistency of ice, and the possibilities of effecting a sound repair seem infinitely remote.

Yet many stupid riders chance these tortures. They buy a machine in the early spring, wear the covers thin by a hard summer's work, weaken the tubes by a number of patches, some of which were not too well fixed, and then blithely ride on the same tyres in winter, fondly hoping for the best. The coming of winter is the signal for every sane man to overhaul his tyres.

The Safest Plan.

My own practice is to fit a brand new cover to the back wheel every October, reserving any part-worn cover for spring and summer use. The front wheel cover will probably retain its tread corrugations and be free from weak places and bad cuts; I leave it alone. But the all-weather rider's back cover should have a perfect tread, be sound in every stitch of its fabric, and be as thick as money can buy. It ought to be a brand new heavyweight, unless haunting forebodings are to add to the emotional misery of certain runs which winter will surely bring, pleasant as the reminiscences of them may be later on. A doubtful inner tube must unquestionably be changed in October. Just at present there is a certain liveliness in the invention of puncture-proof tubes. I know nothing of the Jeff, which has overlapping leaves of rubber thickly massed on the inside of the tread; theoretically, this construction should certainly seal minor holes. But I have prolonged experience of the Challenger tube, which has a double tread; between these two layers of red sheet rubber is a filling of black plastic stuff, about ¼in. thick. If you stick a nail in an inflated tube a tiny gout of black plastic expands into the hole, and seals it. I am riding on these tubes this winter, and am prepared to bet I shall suffer no road stops with my tyres. Certain puncture-sealing compounds are also being advertised. I have not tried them, though I have tested many of their predecessors. I make a rule to try such compounds on the dog, so to speak; in other words, I test them in an old tube, and prove for myself whether they do their work, and whether they prevent a patch from sticking if a patch should ever be required.

The Question of Butt-ended Tubes, with a Word on Inflators.

Special tubes are rather costly. In default of such wholesale measures as using special tubes in winter, it is comparatively cheap to mount some such nail-catcher as the Monie. Its inventor's theory is that nails normally lie flat on the road, that the front wheel tweaks them momentarily upright, and that, before they can get to bed again, the back wheel runs into them, and down goes your back tyre. I am sure he is right. He has devised a little rubber flap, which hangs down in front of the back wheel, and just clears the road, sweeping down any impudent nails which are poised vertically waiting for the back tyre.

Above all, a spare tube should be carried. The repair of a puncture by the roadside in pouring rain is not too simple a matter at midsummer. In a snowstorm it is almost an impossibility. However cold the hands may be, it is always possible to mount a fresh inner tube, and I carry one as an insurance. Some riders rely on butt-ended tubes. Their extra convenience is so obvious that the continued survival of endless tubes points to intrinsic defects in the best butt-enders. But there is no objection to carrying a butt-ender as an iron ration, so to speak.

Repair Kit and Inflator.

It is also wise to inspect the tyre repair kit. In summer it matters little what we run short of on the road—somebody is sure to come along presently, and lend us what we want. In winter, especially after dark, motor cyclists are rare birds on many roads. The tyre repair kit was probably bought six months ago, and possibly the supply of patches and chalk is low. Conceivably it was bought last year, and it may not have been new stock then. Rubber solution is subject to a chemical process as it ages; I do not think any firm in the trade would recommend its solution when it was eighteen months old.

Nor should the inflator connection be forgotten. Many riders are content with the cheap toy inflators delivered to motor cycle manufacturers in grosses with their tyre contracts. These inflators are often—not always—scarcely more powerful than an ordinary bicycle pump, and their flimsy connections cannot be relied upon after a few months. There are few experiences more agonising than to repair a puncture in bitter weather, commence to reinflate, and have your flexible connection come away at the metal unions.

ROAD RIDER.

CHRISTMAS GREETINGS, 1921.

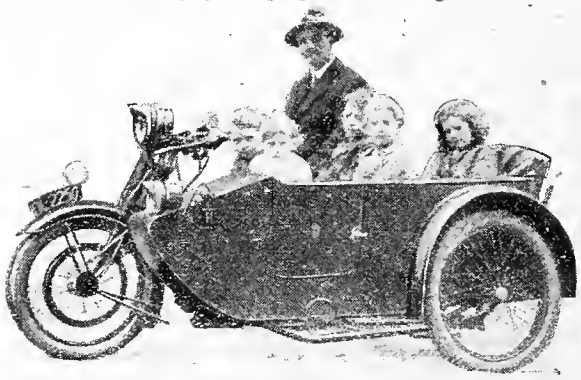
The Editor and Staff of "The Motor Cycle" Wish all Readers a Happy Christmas and a Prosperous New Year.

PASSENGER MACHINE TOPICS.

Jottings on Matters of Interest to Owners of Sidecars and Cycle Cars, not to mention their Passengers.

Collated by "Vedette."

WHY is it that Enfield sidecars are used by motorcyclists with large families more than any other make? Personal observation compels the remark, and additional proof of the statement is supplied by the accompanying photograph, following, as it does,



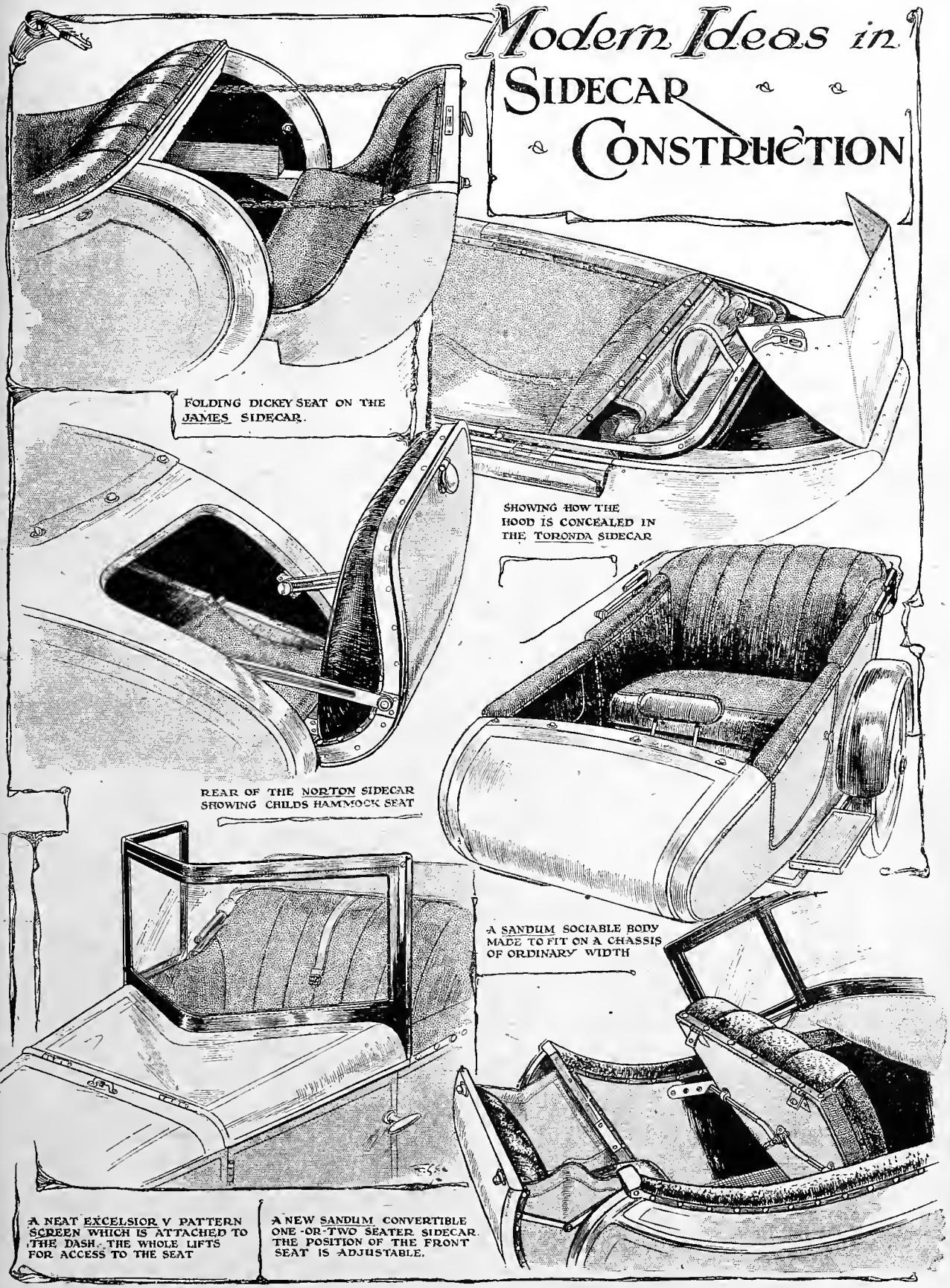
Six up!—but there appears to be room for one or two more in this Enfield outfit used for advertising schemes in aid of the Isle of Wight's "adopted" French village.

the snapshot of Mr. W. L. Driver's outfit "nine up," which was reproduced in *The Motor Cycle* of Sept. 8th. Both machines are Enfields. The present illustration shows the president of the Newport (I.W.) Football Club (being on dangerous ground, I now quote the photographer's inscription), "accompanied by some of his children," as he tours the district in aid of Monchy-le-Preux, the ruined French village adopted by the Isle of Wight. Does he ever take *all* his children out at once?

THE fittings on the 10 h.p. Blackburne sidecar outfit, illustrated here, would, I think, create a record in accessory equipment. Every conceivable instrument which adds to the convenience and efficiency of a machine has been fitted. The property of a member of the staff of S. Smith and Sons, Ltd., of Great Portland Street, W.1, the machine conveys suggestions as to the accommodation of equipment. Made to the special dimensions directed by the owner, the sidecar has been equipped with a wide dashboard below the windscreen. Neatly placed on this are, from left to right, a bezel wind clock, an ammeter and lighting switch combined, and a Smith flush-fitting speedometer. The ammeter and switch combined is a most interesting fitting. A small slide on the dial above the meter shows, when the knurled rim is rotated, the lights which are in operation and also whether the dynamo is charging or not. Two neat hooded lamps serve to illuminate the instruments. Beneath the dashboard and screwed to the off side of the body is a cigarette lighter which receives its current from the lighting installation. The large dim and bright side lamp, provided with two separate bulbs, is fixed to the side of the body, and, as a sidecar lamp, gives an extremely good light. The dimmer bulbs of this and the head lamp, which is of the same pattern, are operated from the circular switch. Other Smith's accessories include an electric horn on the front of the sidecar chassis, and a mechanical and a bulb horn located on the tank and handle-bars respectively. Two neat little fittings, also on the handle-bars, are the licence card holder and rear mirror. More luxurious is the gradient meter fixed beneath the handle-bars on the tank tube, whilst directly behind that is the charging ammeter. A Smith five-jet carburetter has been fitted and is provided with a neat extra air control held at the side of the tank. A butterfly nut registering against a graduated scale at the top of the fitting indicates the amount of extra air induced. The new Smith dynamo is driven by a Whittle belt from a pulley fixed outside the engine flywheel, whilst the dynamo itself is held by a circular band clipped to the front frame tube. The accumulators are located between the sidecar and the back wheel of the machine as also is the spare petrol tin. The waterproof spare wheel cover at the rear of the sidecar is another of Smith's productions. This year's Show revealed a decided tendency towards the double-seated sidecar with side-by-side accommodation. The Sandum illustrated on the following page was only one of the several bodies of this kind on exhibition.

A 10 h.p. Blackburne tandem-seated sidecar fitted by its owner to demonstrate how accessories should be accommodated.

Modern Ideas in Sidecar Construction



FOLDING DICKEY SEAT ON THE JAMES SIDECAR.

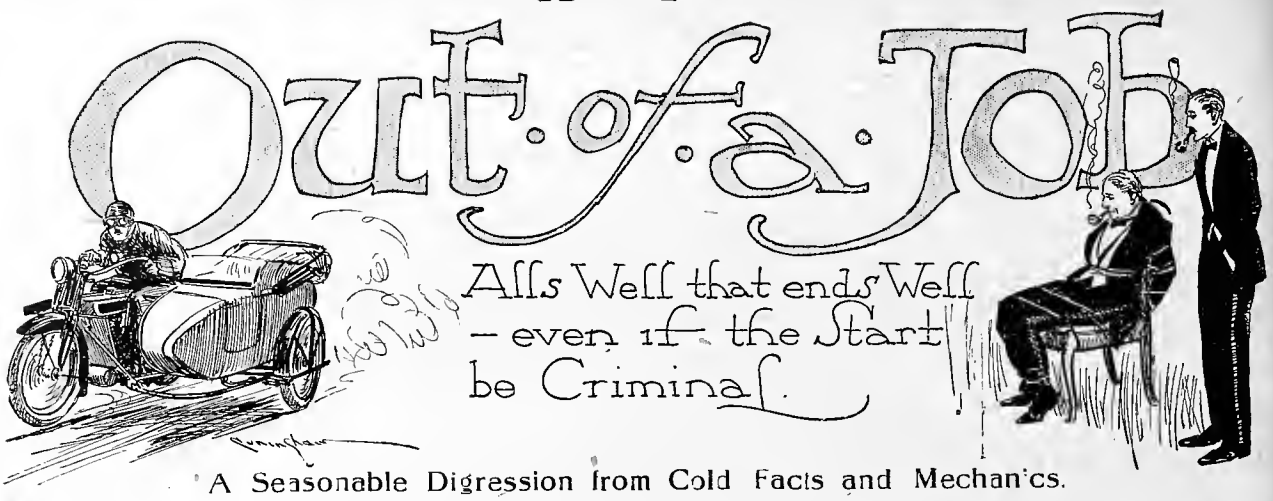
SHOWING HOW THE HOOD IS CONCEALED IN THE TORONDA SIDECAR

REAR OF THE NORTON SIDECAR SHOWING CHILDS HAMMOCK SEAT

A SANDUM SOCIABLE BODY MADE TO FIT ON A CHASSIS OF ORDINARY WIDTH

A NEAT EXCELSIOR V PATTERN SCREEN WHICH IS ATTACHED TO THE DASH. THE WHOLE LIFTS FOR ACCESS TO THE SEAT

A NEW SANDUM CONVERTIBLE ONE-OR-TWO SEATER SIDECAR. THE POSITION OF THE FRONT SEAT IS ADJUSTABLE.



A Seasonable Digression from Cold Facts and Mechanics.

THE litter of opened letters and torn envelopes which covered the table in front of Chatteris and Bedale was partly accounted for by the fact that they had existed for at least eight weeks entirely on credit; and partly by the spirited advertisement which they had inserted in the agony column of the *Morning Wire* on the previous day, as follows:

> TWO Ex-officers, unable to live any longer on their gratuities and decorations, desire employment; stools barred, penpushing abhorred, pittances useless, adventure essential; crime of a sporting nature welcomed.—Apply, Box 330. "Morning Wire" Offices.

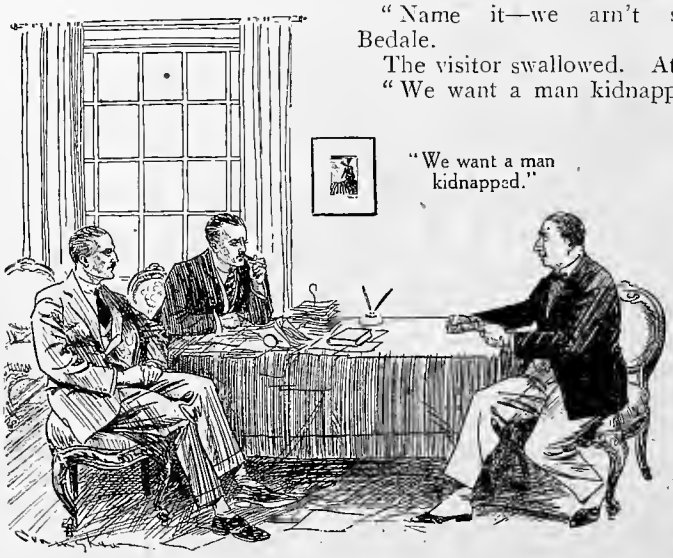
This appeal had not brought as big a mail to the flat near Buckingham Gate as its authors expected; but their usual budget of envelopes with the flaps tucked in was certainly augmented by a few bearing orange twopenny stamps; and Gerald Chatteris, V.C., appeared to find one of these latter missives quite interesting.

Vague but Possible.

"This fellow's a bit vague, Arthur," he admitted. "Gives no name, but says that if we mean what we say, we're to ring up Gerrard 899746 immediately. There are three heavy penstripes under 'immediately.' The rest are mostly from old ladies recommending us to apply to war charities, or from Jews offering to lend us money. Any luck in your batch?"

Arthur Bedale swept a heap of crumpled papers contemptuously off the table.

"Two rich tabbies want footmen, one profiteer seeking gamekeepers at a quid a week, and a firm looking for insurance touts. I'll ring up Gerrard 899746 before the company disconnects the line. They're unhooking us to-morrow, you remember, if the bill isn't paid."


"We want a man kidnapped."

Bedale lounged across the flat, picked up the receiver, and talked into it at intervals for five minutes in that tired voice with which the best type of service man camouflages his secret energy.

"He's coming round straight off in a taxi," he reported. "Still refuses his name, has an oily voice, and sounds a bit nervy. Probably it's crime, and his maiden venture at that."

Fifteen minutes later the bell rang, and Chatteris admitted a rotund, opulent-looking youngster of some thirty summers with a fat pink face; somewhat blotched with pallor. In spite of his evident anxiety, his eyes roamed keenly round the flat, and he did not fail to note the unpaid bills on the table.

"Is it Crime?"

Bedale indicated a chair, and the trio sat down and faced one another. In awkward conversations, the best thing is to let the other man start. All three knew this simple rule. Chatteris and Bedale held out longest. Finally the stranger stammered.

"Well—er—gentlemen, I saw your advertisement . . ." he broke off.

"Is it crime?" interrogated Chatteris helpfully.

The visitor nodded silently.

"Name it—we arn't schoolgirls," contributed Bedale.

The visitor swallowed. At last with an effort . .

"We want a man kidnapped."

"And then murdered?" enquired Bedale hopefully.

This aroused the stranger. He had been studying his inquisitors, and had clearly made up his mind about them.

"Not at all. You mustn't hurt a hair of his head. You will simply collar him, remove him to a safe place for seven days, during which no living soul must learn his whereabouts. Then you release him. The

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business must on no account be traced back to me; and if there is any racket, you will stand it."

"And the terms?" blandly asked Chatteris.

"You're selling!" snapped the visitor.

"And you're buying!" retorted Chatteris.

The visitor stared Chatteris hard in the eye, and his gaze did not fall when Chatteris returned the gaze with interest. Finally, he leant forward and tapped the table vigorously.

"As your friend said just now, we're not children. You want money. A lot of it, probably. I want something done which is clean outside the law. I'll give you a thousand pounds for your week's work. If you're neat, there isn't an atom of risk in it—until afterwards. You can lay your plans to clear the country on the eighth day, and many a Colonial millionaire has started with less money than the pair of you'll have then."

Chatteris and Bedale looked at each other for a minute. They did not seem quite easy in their minds. Then Bedale remarked in his tired voice, "Our advertisement said sporting crime."

"Sporting?" snapped the visitor. "I am no judge of sport. I will mention the words 'Sinn Fein,' and remark that the Irish negotiations are still in a very delicate position."

* * *

Half an hour later the door shut behind the mysterious stranger. On the table lay ten £100 notes. On the back of a wine merchant's bill in Chatteris's neat script were jotted notes to the effect that John Hunter (personal appearance described in full) was to land at Falmouth *ex* the *s.s. Ruritania* two days later; that he was on no account to get further than the arrival platform at Paddington, except in the custody of his amateur gaolers; that he was to be detained till January 1st in any safe hiding place; that any mishap was to be instantly reported to Gerrard 899746; and that in the event of failure the notes were to be returned intact by registered post to Archibald Jones, Poste Restante, Charing Cross.

'Quick to greet any pretty girl.'

Somewhat Too Drastic.

Bedale shut the door, and the two fell into armchairs and stared mutely at each other.

Chatteris broke a long silence.

"What tactics?" he enquired.

Bedale was fairly prompt with a suggestion. "I travel up with him. Pull the communication cord at an agreed spot. Push him out. You are waiting with the sidecar. You offer him a lift. Take him to secret haunt of the gang. Gag. Bonds. Chloroform, if necessary. Passages booked for Rhodesia on January 2nd."

"Rotten!" criticised Chatteris. "We can't dump him off a train in daylight, and you can never be sure when those darned liners will get in. We've got to sandbag him at Falmouth or in town. Bigger the place, the less the risk. We'll get him at Paddington somehow."

"I've got it," said Bedale eagerly; "really, crime is as easy as falling off a log when you once start. We both travel up with him in the same carriage. Chum up all we can. Our Rolls meets us at Paddington. Offer him a lift. Thus to the den of the gang."

Rolls-Royce or Matchless?

"Two snags," returned Chatteris laconically. "First, we haven't got a Rolls. Second, this den is going to be in the hands of bailiffs long before January 1st."

Bedale was developing. He tapped the bundle of notes meaningly. "Hire a Rolls, chauffeur, and all complete. Transfer den of gang to keeper's hut in my uncle's old coverts above Abingdon. Happen to know the new landlord's bluing his war profits at Monte."

Chatteris shook his head decidedly. "We can't touch this cash till we've earned it. The fellow may be a wrong 'un, but he's trusted us with £1,000, anyhow."

Finally the pair compromised. The Matchless sidecar, their only remaining valuable, was worth £140 anywhere. They would dip into Archibald's £1,000 for necessary expenses. If the stunt failed, the outfit would have to go under the hammer. Time was short. Bedale went down on the Matchless to inspect and stock the keeper's hut, whilst Chatteris accumulated certain munitions of war at the flat, and paid deposit on two passages to Rhodesia. On December 23rd the two travelled down *de luxe* to Falmouth, studying the written description of Hunter till they knew it by heart.

* * * * * * * * *

Big, broad-shouldered men with flaxen hair are not common. Five seconds after John Hunter swung his grip up on to the rack of a first-class carriage in Falmouth station, two smaller men of military bearing collided in the corridor, wrangled politely for a moment, annexed seats opposite Hunter, and settled down to the perusal of *The Times* after that half-timid, half-suspicious stare at each other with which the travelled Englishman honours his own kith and kin. The plan of operations was for Hunter to be drawn into a gradually tightening intimacy *en route*. Hungry for the conversation of his own kind, he needed

Out of a Job.—

no drawing. Long before Paddington was reached the three were ostensibly great chums, though equally ostensibly they had never met before. Chatteris had successfully arranged that the trio were to share his car to his flat, change into war paint there, dine at the Ritz, and do a revue. A handsome Rolls was duly waiting at Paddington, and fortunately there was neither dun nor bailiff at the flat when Chatteris inserted his latch key. Ten minutes later, whilst Hunter was gratefully accepting a cocktail as a reviver after the unwonted effort of knotting a white tie, Bedale scientifically chloroformed him from behind.

—not always what they seem.

The two conspirators looked uncommonly foolish for successful criminals.

"Hanged if I like the job," muttered Chatteris sheepishly eyeing the unconscious figure on the bed.

"We're not going to hurt the fellow. You go down and get the old Matchless round while I jam this victim into two or three heavy coats."

* * * * * * * * * *

The Matchless was to provide the transport of the night, partly because it was cheaper than hiring a Rolls, partly because it dispensed with letting a paid driver know anything of the hideous doings which were afoot. By 10 p.m. the Matchless was dodging through the traffic bound for the Bath Road. The camouflage was Bedale's brainwave. All three men were in evening dress, not too closely concealed by heavy coats till London was cleared. Chatteris, driving, was cheerful, but not too merry to drive adroitly. Bedale, on the carrier, was two stages merrier—quick to greet any pretty, genial, or comic personality on the pavement. Hunter, in the sidecar, had clearly dined not wisely but too well; he lay back comatose, and when passing a point policeman at a traffic crawl Bedale cheerily bent over him and spoke encouragingly of the beneficial effects of one more small drink. They were obviously three undergraduates who had been celebrating a footer victory in town. But once Hounslow was cleared coats were buttoned up to the neck, opera hats discarded for T.T. helmets, and the throttle flew wide open. Bedale still kept a watchful eye on the passenger, and there was a little bottle in his hand.

The Matchless ran as a Matchless always does, and it was hardly a young man's bedtime when she clambered up the mass of wet leaves which composed the last lap before the keeper's hut. Hunter was disembarked, dragged upstairs, and a certain restorative was administered. When he showed signs of coming round he was rapidly tied up, and a big scarf round his mouth protected the two amateur criminals from the denunciations which they were uncomfortably conscious they might possibly deserve.

His eyes were not pleasant reading as consciousness slowly returned into them. Bewilderment and incredulity were their main expression for several minutes after he was able to take in the figures of his companions and the nature of his surroundings. Presently anger became an obvious ingredient in his feelings. Then anger appeared to give place to a cold, contemptuous scorn. Gradually a certain amount of perplexity seemed to be mixed with his contempt. He had eloquent eyes, and Chatteris and Bedale wriggled as they had never wriggled since they left school.

"He had eloquent eyes, and Chatteris and Bedale wriggled as they had never wriggled since they left school."

Finally Chatteris thought it was time to clear up the situation. He began rather nervously.

"Look here, Mr. Hunter, we've decided to be perfectly open with you. We bear you no malice. We shall do you no harm. We've been well paid to detain you here for one week. We intend to do it. We are-er-desperate men. At the end of that week you may go wherever you wish. During that week I regret that we must keep you in irons; you are a big man. We prefer a quiet life, and we must, therefore, keep you gagged, unless we have your word that you will make no noise likely to betray your whereabouts. Otherwise, you can have anything you want, and we should like you to be comfortable."

Weakening Fast.

Bedale, who had taken quite a fancy to their massive prisoner, was weakening fast. He broke in,

"As a matter of fact, old chap, we're darned sorry it's you we had to sandbag. Hocussing an entire stranger is one thing—this is another. Anybody can see you're a good sort. Nod your head for the silence parole, and I'll take that scarf off. The only thing I don't like about you is your politics."

The prisoner nodded. Chatteris and Bedale both dived at the knots of the scarf, and Hunter's mouth was free in a moment.

"Who told you about my politics?" he asked quietly. Chatteris and Bedale looked at each other.

"Our employer," replied Chatteris.

"It's odd," murmured Hunter, "because I haven't got any."

The amateur criminals filled their pipes, and, noticing an imploring look in Hunter's eyes, did as much for him. All three smoked silently for ten minutes or more. Finally, the prisoner let his pipe drop out of his mouth. It fell with a rattle on the bare wooden floor. Chatteris and Bedale jumped. Then Hunter asked quietly:

"What are the orders of the day?"

"For you, d'you mean?" asked Chatteris.

"No, for you."

"We earn our money if we keep you here seven days."

"Can I write a letter?"

"Certainly not."

Another long silence followed.

The prisoner broke it at last.

"You fellows have been had. I can see you're

Out of a Job.—

straight, though appearances don't point that way; so I won't try to bribe you. I am a mining engineer. The mine in which I am interested has been losing money for two years. I've found the lode again. A scoundrel in town has suppressed my reports, and is trying to buy the mine for a song. I came home to stop him. He has paid you to hold me up till the deal's through. Will you go back on him if I can prove my story?"

Chatteris and Bedale conferred in whispers. The mysterious Archibald had merely stipulated that nobody was to know Hunter's whereabouts. Both men were already secretly ashamed of themselves. Finally,

"What do you suggest?" enquired Chatteris.

Rectifying a Mistake.

The prisoner's eyes were half eager, half mocking.

"Tie me up as tightly as you can. One of you stay here on guard. The other to go immediately to 1,017, Chancery Lane, and ask for my solicitor, Ted Burns, of Burns, Whetheril, and Stauncey. No—it's Christmas now; you'll find him at Furzedown, Dorking. Your own lawyers will tell you what sort of man he is. If I mayn't write, tell him in any form of words you prefer that John Hunter will call on January 2nd, and that in the meantime he is to refuse to sell, grant options, or otherwise endanger the Oranga mine. Wrap it up as you think best, to exclude any risk of my sending him political code messages.

Another conference between the amateur criminals, when the pair fell to arguing as to who should ride the Matchless up to town: no nice job in the freezing dawn, but they both preferred it to doing sentry go over Hunter. Finally, Chatteris went and Bedale stayed.

Eight hours later Chatteris returned. His face was ruby, whether with the weather or shame Bedale hardly knew. Chatteris strode across the room and slashed the rope off Hunter with his pocket knife.

"I don't know how to apologise, sir," he began. "We've been bad. Bedale and I will return our fee to that scoundrel of a City fellow. We won't run if you'd like to jug us. In the meantime you're free. My sidecar is outside, and I'll drive you wherever you want to go. Burns made the whole job quite clear. Here's a note from him."

Hunter rose rather stiffly.

"Hard up, I suppose?" he queried.

"Damnably," assented the amateur criminals.

"You earn your money if I stay here till Jan. 1st?"

The puzzled pair assented.

"Well, I'll stay," volunteered the quondam prisoner; "I like your crib. I like your grub. I like you. Burns won't let the mine go now, I see. You may as well earn your cash. Is there such a thing as a pack of cards in this wilderness?"

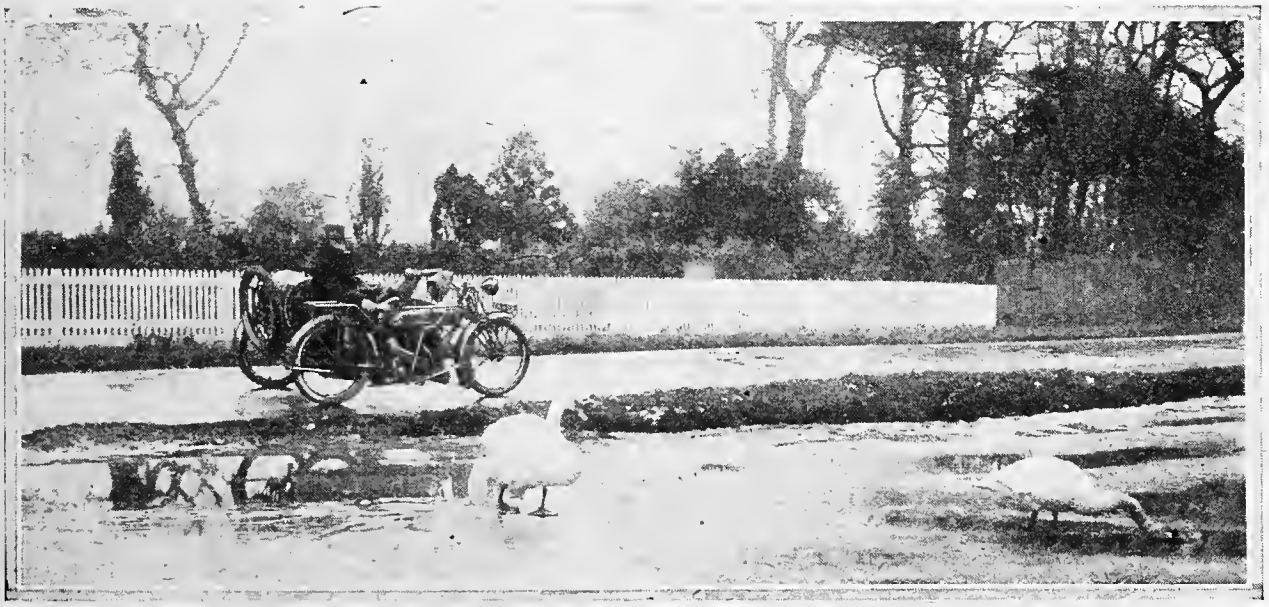
£1,000 to the Good.

Cards were forthcoming. On Jan. 1st the Matchless was once more dragged out of the woodshed. Snow is not good for magnetos, and she started up less readily than her wont. But before long the original three passengers slid down a leaf-sodden ride through the covert.

"By the way," sang Hunter into Chatteris's ear, as the latter opened the throttle, "you never said what you got for this little stunt?"

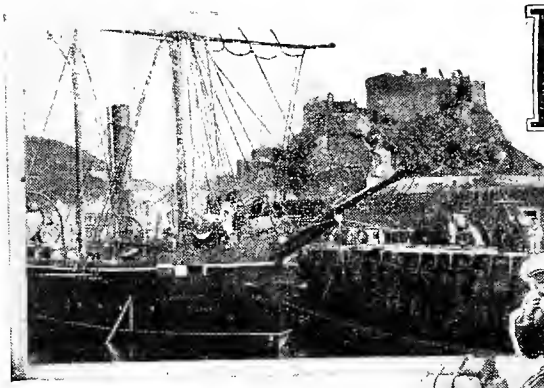
"Eh?" muttered Chatteris, turning red. "Well, a thousand, if you want to know."

"Put it into my mine," bellowed Hunter as the exhaust evinced a crescendo, "the directors prefer their employees to become shareholders; and they mustn't miss two men of push and go like you."



The average motor cyclist does not in these days vaseline his machine and store it away for the winter, but always keeps it in readiness. Certainly some of the most enjoyable runs of the year may be made on the bright, frosty days of winter. This photograph was obtained near Totteridge.

In the Channel Isles with a Motor Cycle



(Left) The searcher after the historical will find all that he desires at Mont Orgueil Castle, Gorey (Jersey).
(Right) The Cobo district, Guernsey.

The Distinctive Appeals of Jersey and Guernsey to the Holiday-maker.

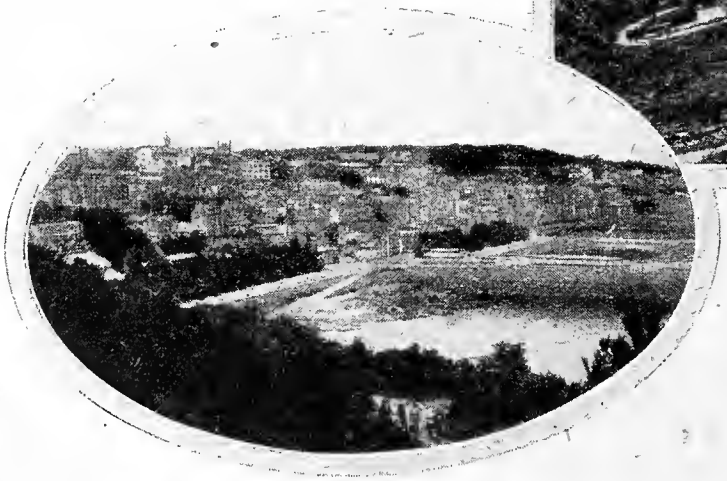
DIFFERENT motor cyclists have different ideas as to how a holiday should be spent. Some are content to tour—and that strenuously; others prefer to settle at a convenient centre and mingle their explorations awheel with other pleasures quite unconnected with petrol and motors. For the latter class the Channel Islands have a direct appeal. But the motor cyclist who contemplates the Isles for his next season's holiday ground is well advised to choose the particular island that provides the form of environment coinciding with his own conception of "holidaying," for where Jersey caters for, and welcomes with open arms, an army of visitors, the sister isle of Guernsey has charms only for the academic and purely nature-loving enthusiast, who asks for nothing more than "The Great Open."

Guernsey.

Named Sarnia (Green Isle) by the Romans, Guernsey has a quaint old town, St. Peter Port, built in rough picturesque tiers on a hillside facing east, with the smaller islands of the group (Sark, Herm, and Jethou) a few miles distant. Alderney lies some twenty miles to the northward and Jersey about the same distance south-east.

The island is a veritable network of lanes and roads that carry what is to the uninitiated a bewildering stream of traffic, mostly petrol-driven, a large fleet of motor 'buses, and a tramway. Everywhere on the coast are spots of wild beauty, a sunset on the green heights of the extreme western point (Pleinmont) having in it the silent romance of solitude and a mystery all its own when the shadows steal in from the mighty, unbroken expanse of the Atlantic. Those heights were loved by Victor Hugo, whose home in Hauteville is open to visitors.

A twisting road leading from the sea at Bouley Bay, Jersey.



St. Peter Port, Guernsey, from the south.

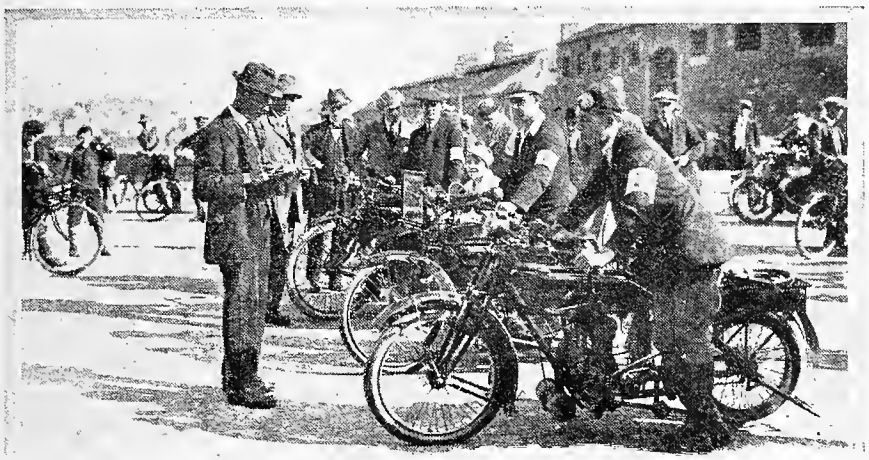
Main roads are in excellent condition, and although there are by-ways where a spring frame might be advantageous, the surfaces are generally superior to roads on the mainland. From the island capital, St. Peter Port, boats run daily in the season to Sark, a little isle almost untouched by the mechanical genius of man, and where utter severance from the "busy outside" is always to be had—with all the advantages of modern civilisation within ready

In the Channel Isles with a Motor Cycle.—

reach. Herm and Alderney are also easy of access. St. Peter Port has its cinemas, concert parties, libraries, newspapers, taxis, and cabs, but the island's shores have no bathing machines nor nigger minstrels—on Sarnia the "Great Open" is yours.

Jersey.

A busy hive of visiting pleasure seekers and native activity, Jersey is best described as a "little Brighton." It has all the fascinations and attractions that its staider sister isle has not. The cliffs have not the magnificent greenery nor heather of Guernsey, but the larger area of the country has in it an appealing aspect of old-world beauty that is equalled only in some portions of Normandy. The roads are not all they might be, but withal the surface can be generally described as good.



An inter-island trial at Guernsey. Start of a recent fifty miles trial between Jersey and Guernsey motor cyclists. Fifty-two Guernsey riders competed, and there were six from the sister isle of Jersey, who were disappointed in their hope of taking back to their island a much coveted trophy.

Two railway lines run out their network of rails to the two extremes of the isle—Corbière and Gorey. St. Helier's, the capital, is a model little town, having in its long season every one of its huge number of hotels booked up months ahead. Here the visitor at the end of the day is catered for in every conceivable manner; there is, too, an excellent promenade extending out from the town to St. Aubin's. About this wee city o' nights is an atmosphere of laughter and song that has all the French *flair*, with a sobering touch of British reserve.

Hills—and Golf!

Both isles can provide the inevitable searcher after stunt hills all that he can desire in vile surfaces and nasty hairpins—the Zigzag and Les Niaux in Guernsey, and Mont Misere and Bouley Bay Hill in Jersey—and there are others! L'Ancresse in Guernsey is a really magnificent natural golf course, and Gorey in the sister isle annually attracts a huge quota of enthusiasts. It is perhaps unnecessary to emphasise the historical churches, ruins, and archæological remains to be found throughout these Norman islets.

Cigarettes are obtainable at 6d. for 20, the milk and butter is world-famous, and the natives constitute a genial, placid race. There is ample room for touring; there is much that is old, quaint, and new to be seen. The whole area is British, and everywhere the English tongue is spoken. Motor cycles are permitted to be landed without question, and a cheap form of visitor's licence is issued. Daily services are run throughout the spring and summer by both Great Western and London and South-Western steamers from Weymouth and Southampton. Some conception of the motor traffic can be gauged from the 540 motor cycles in Guernsey alone, with an additional 500 cars!

WITHOUT CHANGE-SPEED GEAR.

THE simplest possible form of motor cycle is the single-geared lightweight, and it is not surprising that it is a type upon which a large number of motor cyclists favour when first joining the fraternity of the road. The sporting rider, also, favours the single-geared mount, and the direct belt-driven "3½" fulfils the requirements of those who prefer a machine which brings out the skill of the driver more than any other.

These facts considered, it is rather surprising that the single-geared machine is gradually disappearing, and in the lightweight class presumably it is only retained in order that its makers may offer a motor cycle at a low price.

We give herewith a list of these single-geared lightweights arranged in order of their price, from which it will be seen that, although the number has dwindled, there are still sufficient from which to make a choice.

With the exception of the Economic, Atlas, and the J.E.S., all the lightweights mentioned follow conventional lines. Of the three exceptions, the Economic is a small flat twin two-stroke; the J.E.S. and Atlas are miniature machines.

Only two 3½ h.p. single-geared machines are now catalogued, *i.e.*, the Norton and the Abingdon, the Rover and Ariel models of this once popular type having been abandoned for next year.

		£	s.	d.
1½ h.p.	Atlas	31	10	0
2 h.p.	Economic ..	34	0	0
2½ h.p.	Radco	35	14	0
2½ h.p.	British Standard	36	0	0
2½ h.p.	Calthorpe ..	36	0	0
2¾ h.p.	Sirrah	39	0	0
1¾ h.p.	J.E.S.	38	0	0
2½ h.p.	O.K Junior ..	39	18	0
2½ h.p.	Spark	39	18	0
2½ h.p.	Victoria ..	39	18	0
2½ h.p.	Wolf	39	18	0
2½ h.p.	Excelsior ..	39	18	0
2½ h.p	Bowiao	39	18	0
2½ h.p.	Dayton	39	18	0
2½ h.p.	Kenilworth ..	42	0	0
2½ h.p.	Hobart	42	0	0
2½ h.p.	Rex-Acme ..	42	0	0
2¾ h.p.	Olympic	45	0	0
2½ h.p.	Connaught ..	45	0	0
2½ h.p.	Mohawk ..	45	3	0
2½ h.p.	Monopole ..	45	3	0
2½ h.p.	Saltley	47	0	0
2¾ h.p.	Levis	48	0	0
2½ h.p.	Verus	48	0	0
2½ h.p.	Silver Prince ..	48	6	0
2½ h.p.	Francis-Barnett	50	0	0
3½ h.p.	Abingdon ..	70	0	0
3½ h.p.	Norton	80	0	0

'Our machine may be ridden with elegance."

A Motor Pogo.

First and Exclusive Details of a New Type of Machine.

Engines of Various Powers.

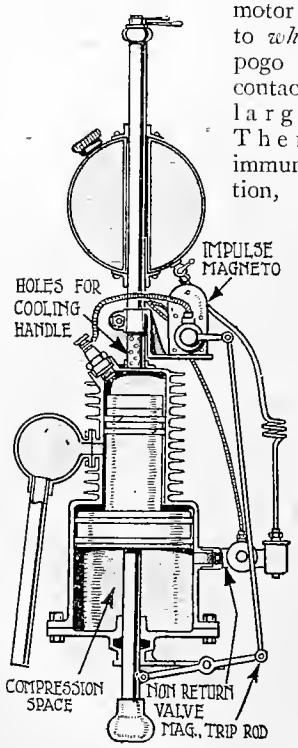
Outlined by Hyam A Crank.

Method the police may adopt if the hop limit is exceeded.

THE reader of *The Motor Cycle* is always a well-informed man, and will, therefore, be familiar with the jumping stick known as a "pogo," now being boomed by the daily papers on the same curious lines which made standard bread, the sweet pea, the diabolo, the North Foreland golf links, and the scooter momentarily famous. Have the possibilities of the *motor* pogo occurred to any stunt merchant except myself and a gallant soldier with whom I have held converse on the subject? At any rate, we are jointly taking up the possibilities with enthusiasm, and hope to organise immediate mass production, to finance which we are prepared to admit partners with a capital of not less than £100,000.

Outside the Law!

The first item in our ticket is financial. Thanks to the Government's crass lack of imagination, the motor taxation laws only apply to *wheeled* vehicles. Now the pogo has no wheels, but makes contact with the ground *via* a large ferrule of solid rubber. Therefore, our invention is immune from taxation, registration, and the speed limit, and will be extraordinarily economical to run.



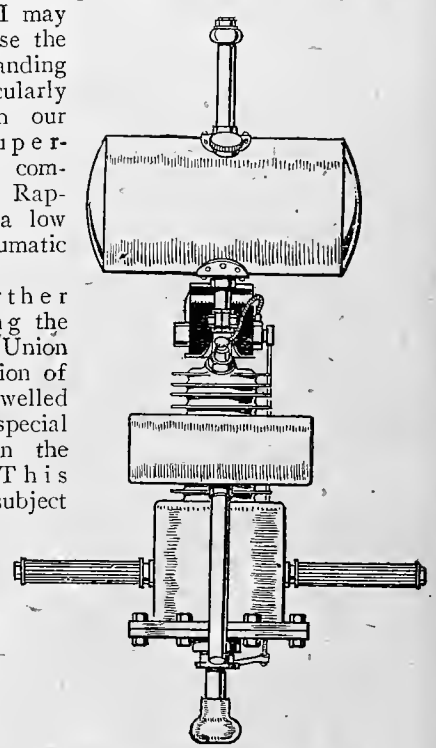
Section of the motor pogo, showing general layout of the power unit, but not the lubrication arrangements.

Secondly, ask any soldier what he most detested in the last war, and he will certainly reply, "uncut wire." Barbed wire presents no terrors to an infantryman equipped with our motor pogo. Fitted with a suitable engine, the Guards may pogo merrily over entanglements as if they were non-existent; the pogo will possibly render the comparatively costly tank absolutely obsolete. At any rate, we reckon on receiving such colossal orders from the war departments of the Great Powers that we may not be able to supply the public for years.

Thirdly, every motorist is complaining bitterly of the surface of our modern roads. The tourist who uses a pogo is independent of the roads. If he so desires, he may keep on the roads. Pot-holes do not disturb him; he plants the ferrule of his pogo firmly either in a pot-hole or on the hump before or behind it; in either case his travel is as luxurious as if the road were solid rubber. Should he meet or overtake a motor coach, filling the road from hedge to hedge, he neither hoots, nor dismounts, nor takes the ditch. He merely opens his throttle, and leaps clean over the obstruction. On the other hand, he may prefer to tour on the wrong side of the hedges, hopping cheerily along inside the fields, and leaping the cross fences as he reaches them. When passing houses, he can increase the altitude at the peak of each hop, see what is happening inside private gardens, peer in at upstairs windows, and the like.

The pogo cannot puncture, for its ferrule is of solid rubber. I may add that to ease the shock of landing after a particularly large hop with our 16-20 h.p. super-pogo, we have commissioned Mr. Rapson to design a low pressure pneumatic ferrule.

We are further approaching the Auto Cycle Union with the intention of offering a jewelled cup for a special pogo class in the 1922 T.T. This offer will be subject to the selection of a suitable course. Any course is suitable for pogoing so long as patches of hard ground about 6in. in diameter exist at average



Front view of the motor pogo. A *de luxe* model, with footboards and electric lighting is contemplated.

A Motor Pogo.—

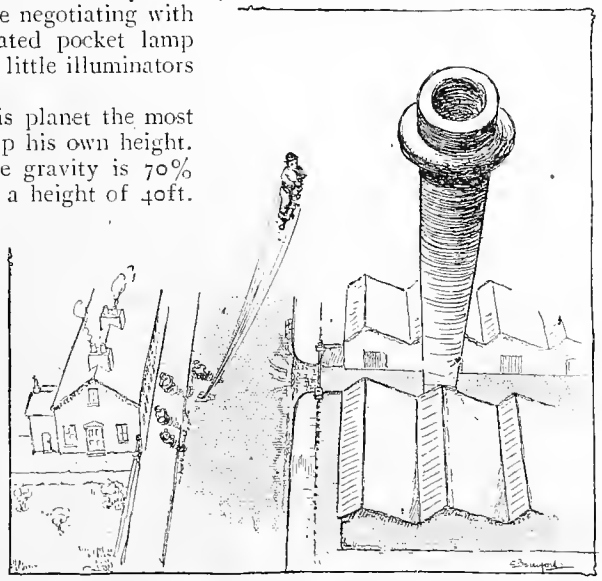
intervals of, say, 10ft. for a 2½ h.p. two-stroke pogo, or, say, 40ft. for a 7-9 h.p. pogo *de luxe*. We have not yet been able to discover a course which presents sufficient difficulty to make a pogo race really interesting; but our competition manager is now *en route* to examine the possibilities of the Giant's Causeway at middle tide.

Lighting Equipment.

No lamps are legally required on a motor pogo, which is as yet a completely extra-legal machine. However, as the Government is always ready to strangle new industries, we are negotiating with the inventor of a chain-operated pocket lamp to furnish one of these handy little illuminators suited for our purpose.

It is well-known that in this planet the most muscular man can barely jump his own height. In the planet of Mars, where gravity is 70% weaker, a man could jump to a height of 40ft. with ease. What we are offering the public amounts to the amenities of life in Mars without the trouble of making the journey.

The daily papers suggest that with the ordinary foot-operated pogo certain nasty accidents have occurred through the top of the pogo handle striking the chin of the operator. In fact, a well-informed Parisian correspondent states that Carpentier is training with a pogo.

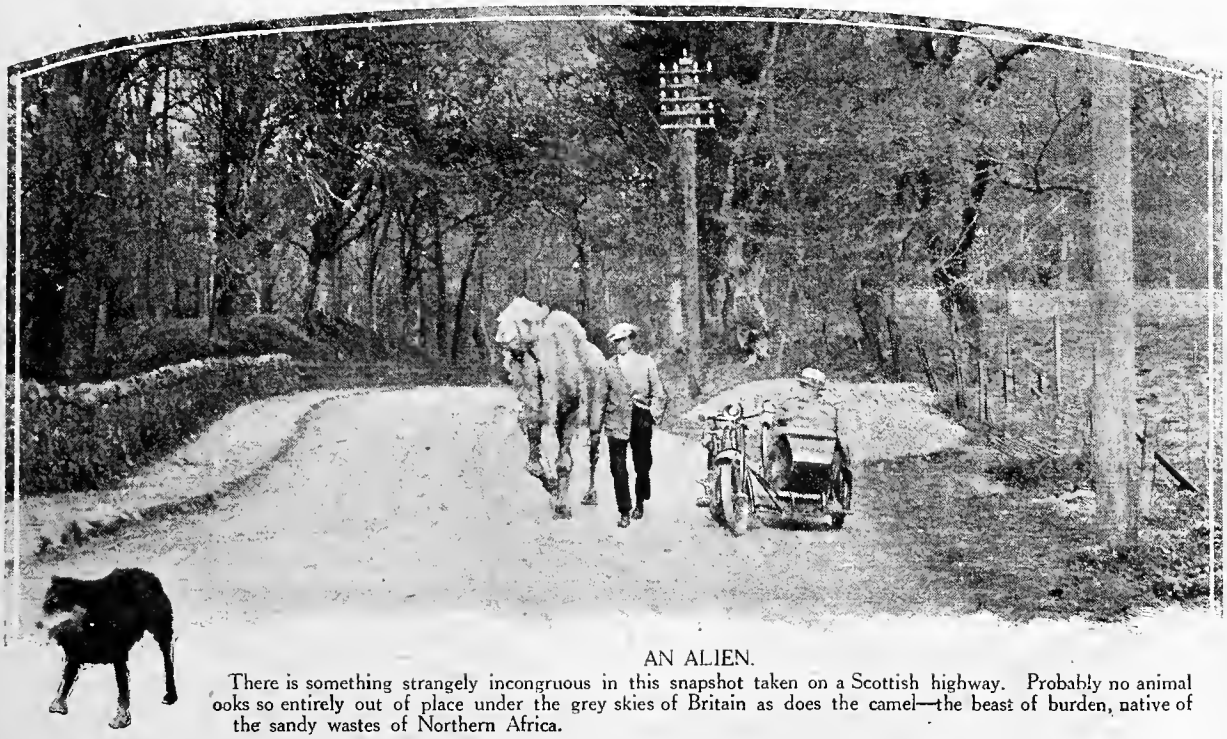


Steeple Jack going to work on a motor pogo.

The typical manly Briton prefers his sports and hobbies to include an element of danger, and we can supply such customers with a motor pogo fitted with the ordinary type of vertical handle. The timid pogoist may, however, specify our special safety type with a U handle. Even when this model is provided with a 16-20 h.p. engine, the U handle clears the rider's chin by at least 8in. in the wildest hops-hops, with an altitude of 50ft. if required. Moreover, since the engine replaces physical effort in our pogos, there is no need for the operator to double himself up in the ungainly fashion which all observers of the French hand pogo must have deprecated. Our machine can be ridden with grace and elegance, and is becoming to ladies.

Hill-climbing.

In climbing hills, the hop is shortened according to the gradient. In ascending small hillocks, the expert motor pogoist goes right over the top, which is tantamount to rushing the incline on a car or cycle. If the hill is long and steep, an ingenious item in the mechanism (not shown in the sketch, for patent reasons) enables the pogoist to substitute a brief and dogged leap for the wild, free-flying jump utilised on the level, which represents motor pogoing at its zenith.



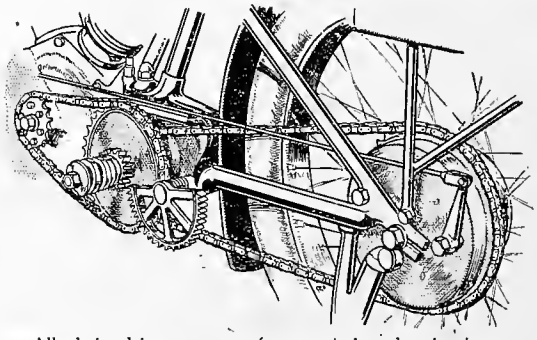
AN ALIEN.

There is something strangely incongruous in this snapshot taken on a Scottish highway. Probably no animal looks so entirely out of place under the grey skies of Britain as does the camel—the beast of burden, native of the sandy wastes of Northern Africa.

TRANSMISSION SYSTEMS.

SOME NOTES FOR THE NOVICE.

MUCH has been written in the past and much more will doubtless be written in the future on the subject of the most suitable transmission for motor cycles; and the chain and belt controversy has been keenly waged. This is as it should be, for much good may come from intelligent discussion, and in this case there is certainly something to be said on each side, though I am of opinion that this matter will eventually be settled by the victory of neither belt nor chain, but by the introduction of a third method of transmission, to wit the shaft with either worm or bevel. This last is especially suitable to any motor cycle which has its engine set with the crankshaft longitudinally in the frame, as is the case with all present-day four-cylinder machines and a few others, notably the A.B.C. and the F.N. lightweight (the latter already has shaft drive).



All chain drive—a type of transmission that is almost supreme on big twin sidecars.

The Advantages of Belt Drive.

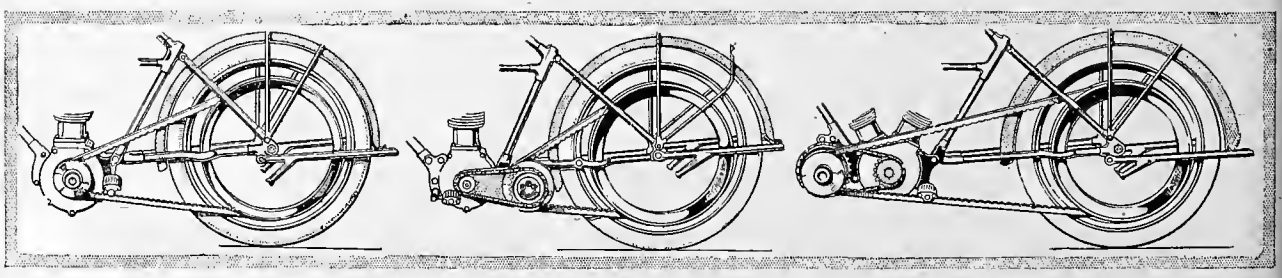
To return now to the more fashionable styles of transmission, it may be granted at once that the belt has the advantage in simplicity and initial cheapness. It is a much simpler matter to design a machine suitable for a belt drive than one which has to withstand the greater stresses of a chain. Before the introduction of the countershaft gear box this particular point had greater weight than it has at present, for a chain needs a countershaft in any case, whereas a belt can be taken straight from the engine to the rear wheel—in fact, it is better so, for fairly long distance between the driving centres is desirable in belt drive, or even essential; but in chain drive it is not so, for a long chain, if at all loose, is apt to swing and mount the sprocket when a short one will not.

Another point in favour of the belt is that rubber belts (and most belts are rubber in these days, though some very good leather belts are still on the market) are clean to handle and need no dressing or lubrication.

Some Notes on Design.

Theoretically, when a belt is used for the transmission it should be between the engine and gear box, that is to say, when the whole transmission is by belt the gear box should be in the rear hub and not what is generally called a gear box at all, but a hub gear. Hub gears have, however, very nearly disappeared for a variety of reasons. Therefore, the statement that began this paragraph comes to this: When a countershaft gear is used the belt should be from the engine to the gear box and the chain from the gear box to the rear wheel, or, in other words, belt-cum-chain is better than chain-cum-belt drive—except in appearance.

The reason for this is that belt speed should be kept high and stress low if the belt is to work efficiently and not slip, whereas chain speed should not exceed certain defined limits, but a chain cannot slip. When a hub gear is employed belt slip can often be stopped by dropping into a lower gear; the belt will then be running at a higher speed and with less tension, for the action of the gears will increase the mechanical advantage. However, the layout of a motor cycle, not lending itself to the best mechanical application



Once all popular but now almost confined to lightweights—direct belt drive. This system, however, has more than one advantage besides simplicity—for example, flexibility.

Chain-cum-belt drive—popular, simple, and reliable. The flexibility of the direct belt is lost, but not to a very considerable degree.

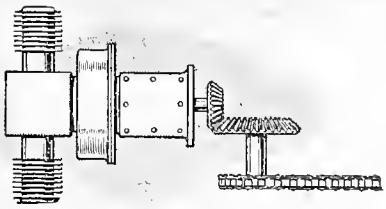
Where the belt retains its chief advantage—the Zenith countershaft-in-front drive embodying a variable pulley gear.

Transmission Systems.—

of a primary belt, has prevented the adoption of such a system.

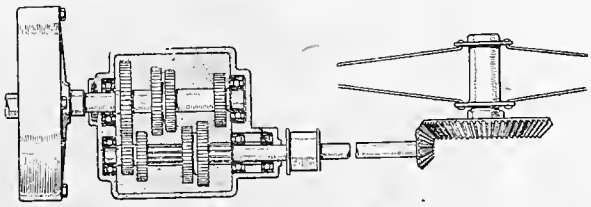
Where a Chain Scores.

The positive drive of a chain is a great advantage, especially in the case of a heavy machine with a sidecar attached and in wet or snowy weather. If proper attention is given to a chain in the garage it will be very seldom necessary to touch it on the road. The efficiency of a good fitting and well lubricated chain is extraordinarily high. To set against these advantages is the fact that greater care is necessary in the matter of alignment and adjustment. The alignment in the first place is a matter for the maker, but the rider should see that he does not upset it by twisting his gear box or rear wheel when chain adjustment becomes necessary or when the wheel is removed for any other reason.



Diagrammatic illustration of the bevel and chain type of transmission as employed on the A.B.C.

It is desirable that chains should have as much of the slackness removed as possible; but they must not be actually tight or strained, and, as it is very seldom that a chain remains equally tight at all positions of the sprockets, the wheel must be turned round slowly until the position in which the chain is tightest is found (this is called the tight spot), and the chain adjusted for that position. It will be somewhat on the loose side in other positions, but this will have no serious effect, whereas too great tightness will result in broken rollers. Sometimes broken rollers are caused by their being hardened too much in the making, and bad alignment is another cause.



Plan of four-speed gear box and shaft drive. The gear box being somewhat to one side, a dynamo might be housed alongside.

Treatment of Chains.

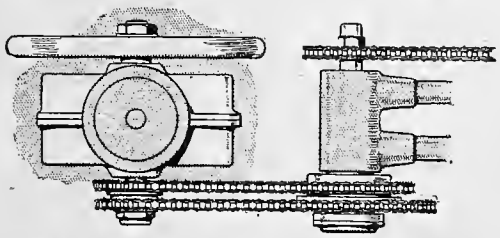
Probably the greatest disadvantage of chain drive lies in the fact that it is dirty to handle, and unless it is protected in oil and dust-tight cases, it requires periodical attention. In dusty weather an exposed chain should not be oiled, as the road dust and grit mix with the oil and form an abrasive mixture which is very deleterious both to chains and sprockets. It may be lubricated with one of the many chain lubricants on the market (these are a mixture of grease and graphite) applied with a stiff brush after the chain has been rubbed down with paraffin and roughly dried, and this can be done with the chain *in situ;* but a better plan is to remove the chain from the machine occasionally, wash it thoroughly in a dish of paraffin, and afterwards soak it well in the melted lubricant. It is sometimes recommended that the chain be boiled in grease and graphite, but this is a great mistake, for the temperature of boiling grease is about three times as high as that of boiling water, and quite hot enough to draw the temper of the rollers, pins, and bushes, and so to ruin the chain. All that is necessary is that the lubricant be melted, and this takes place at quite a moderate temperature. If the finger can be borne in it no harm will result. This method of treating a chain ensures the lubricant getting well into those parts where it is required, and when there it excludes grit and wet to a very large extent.

Some people maintain that a driving chain does not need a cover. This is true to some extent, because the speed of the chain will throw off the dirt that falls upon it. We must, however, remember that before the dirt is thrown off it will do a certain amount of harm. Although a chain may look moderately clean at the end of a dirty ride, it has been subjected to a certain amount of grinding during the entire trip, and by next morning it will almost certainly be found to be more or less rusty because water has dropped from the rear mudguard upon it during the night.

Therefore, if complete and adequate chain cases cannot be fitted, I am strongly in favour of a light chain cover. I have used the word adequate advisedly, because chain covers when complete are worse than useless unless they are properly constructed. I have known cases removed after a winter's riding to be found full, or as nearly full as makes no matter, of mud and water. This is a very poor lubricant for a chain or anything else.

Shaft Drive.

It is my firm conviction that the ideal transmission of the future will consist of a shaft terminating in a bevel (straight or helical) or a worm. With this form of drive it will be better that the engine should be set longitudinally in the frame; the cylinders of a V or flat twin will then be across the frame, but those of a four-cylinder in line with it. It has been asserted by those who know no better that when an engine is mounted in a motor cycle in this manner cornering is rendered difficult or even impossible by the gyroscopic action of the flywheel rotating in a plane which lies across the direction of movement. This is quite a mistake, and has no foundation in fact. The only effect of the flywheel will be to make the front wheel press more or less heavily on the ground according to the direction of the turn, and this is not noticeable in practice.



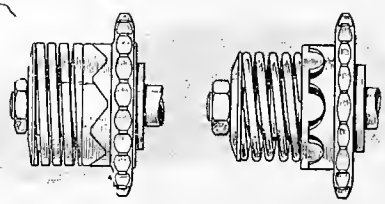
Selective clutch type of gear which necessitates an extra chain, but is, withal, very simple.

As the engine will be set in the centre of the frame and the shaft at the side, the drive must pass through pinions at this point, which will therefore correspond to the first sprocket of a chain-driven or the pulley of a belt-driven motor cycle.

Transmission Systems.—

This will naturally be the correct place for the gear box, which should differ slightly from that in general use in that the drive should enter on one shaft and make its egress by the other. Every gear will then be equally direct, and only one pair of pinions need be in action at a time, and the efficiency will be high.

Another advantage of the shaft drive is its extreme neatness. The shaft can, if desired, pass through one of the frame members, but even if it does not it is by no means obtrusive in appearance, and it is moreover easy to enclose the working parts in oiltight cases. If this be done the shaft itself can be exposed to the elements without suffering any harm, and no unsightly cases are required. Such a transmission should wear very well, and, beyond periodical oiling, should require no attention or renewals during the ordinary life of a machine.



Two shock absorbers for chain drive using a similar principle—(left) the Sunbeam, (right) the Raleigh.

Shock Absorbers.

It will, of course, be readily understood that when a positive transmission such as a chain or a shaft is used some sort of cushioning device must be employed to soften the harshness of the drive.

There are at present many of these fitments on the market which do their work very satisfactorily. Some rely upon friction entirely and are, in effect, small clutches, the sprockets being gripped between two plates under influence of a strong spring. In a few cases friction and springs are combined very effectively. Excellent examples of this system are to be found on the Sunbeam, Triumph, and Raleigh motor cycles. Again, it is not unusual to find a slipping clutch on the engine-shaft and a rubber cushioning device on the rear hub. The Enfield is a good example of this construction. The Enfield gear is, moreover, operated by expanding rings within the sprockets on the countershaft which grip them by friction. This machine, therefore, has its transmission very well cushioned, and it is consequently very smooth in action.

Belt drive stands less in need of cushioning devices, as the belt itself has a certain amount of elasticity, and can slip on the pulley. But even a belt can be somewhat harsh when run over a large pulley on the countershaft behind the engine, and would then be improved by a shock absorber. The Zenith method of placing the countershaft in front of the engine is good, because it admits of a long belt, which need not be so tight as a short one, and, further, its greater length gives its elasticity a better opportunity of coming into play.

J.H.W

MOTOR CYCLES IN SYDNEY, AUSTRALIA.

Odd Paragraphs of General Interest from our Australian Correspondent.

NOW that warm weather is coming, all clubs are getting ready for the competition season. There is talk about a few track meets, and it is to be hoped they materialise as they all go to help improve the breed.

* * *

I am informed that a motor cycle, the Hercules, is built in Victoria from English components. This machine is fitted with a Coventry Victor flat twin engine, and with the direct drive model sells for £135. A Sturmey-Archer three-speed box costs £15 extra.

There has arrived here at last a Beardmore-Precision. This machine is being offered for sale at £110, which seems fair enough, but a comparison is not available owing to the absence of similar types of machines.

* * *

Below are the prices of various machines: J.A.P. 4 h.p. three-speed £127 10s., J.A.P. 6 h.p. three-speed £168 10s., Ariel 4 h.p. three-speed £135, Ariel 6 h.p. three-speed £155, Rudge Multi 3½ h.p. £132 10s., Douglas 2¾ h.p. two-speed (W.D.) £135, Douglas 2¾ h.p. three-speed £150, Douglas 4 h.p. three-speed £190, Cedos 2¼ h.p. two-speed £75, Humber 4½ h.p. three-speed £195, P.M. 4 h.p. two-speed £165, Excelsior 7 h.p. three-speed £165, A.J.S. 2¾ h.p. three-speed £150, Indian Scout 4 h.p. three-speed £170, Indian 7 h.p. three-speed £185, and Triumph 4 h.p. three-speed £165.

A new arrival is the 6-7 h.p. B.S.A., which is priced at £175.

One sees these British motor cycles handled by dealers who hold agencies for American machines. Out of every shop visited in Sydney, only one tried to sell me a British machine, and that was the Douglas agent.

* * *

The results of the Twenty-four Hours Trial held by the Victorian Motor Cycle Club are now to hand. The trial attracted twenty-six entries, including ten Indians, seven Harleys, five J.A.P.-engined machines, two Excelsiors, one B.S.A., and one Douglas. Of the twenty-four starters, eleven came through without loss of points. Of these, six were Indians, four Harleys, and one J.A.P. solo. Of the others, two who completed the course, an Indian lost eight points, and the B.S.A. forty-one points. The distance covered was 400 miles, competitors starting at nine o'clock one night and finishing at nine o'clock the following night.

* * *

The silence of machines is being stressed here at present, and any noisy machines taking part in club competitions will be disqualified. The M.C.C. of N.S.W. propose to import a machine, which I suspect to be Dr. Low's Noisymometer (Audiometer, I think it was called), to determine absolute winners in competitions.

The Christmas Trial

LONDON-EXETER on BOXING DAY

List of the 182 Motor Cycle and 18 Three-wheeler Competitors with their Official Numbers, together with Time Table showing Times of Arrival at and Departure from the Various Points en route.

MOTOR BICYCLES.

1. A. C. Rhodes (3½ Triumph).
2. G. E. Cuffe (2½ Metro-Tyler).
3. G. Brough (8 Brough Superior).
4. D. H. Davidson (4 Indian Scout).
5. G. Richardson (2¾ Raleigh).
6. R. L. Richardson (3½ Alecto).
7. P. Street (3½ Sunbeam).
8. E. L. Ferguson-Taylor (5 Zenith).
9. F. V. Edwards (4¼ B.S.A.).
10. W. Bray (3½ Sunbeam).
11. E. H. Gifford (3½ Martinsyde).
12. H. H. Nicholson (3½ Martinsyde).
13. A. A. Symes (3½ Martinsyde).
14. T. S. Sharratt (2¾ A.J.S.).
15. W. M. Foster (4 Norton).
16. T. L. Daniels (3½ Douglas).
17. B. F. C. Fellowes (2¾ De Dion Bouton).
18. C. J. Wheeler (3¾ Scott).
19. P. Pike (2¼ Levis).
20. H. F. Fellowes (3½ Norton).
21. H. W. Deacon (3½ Norton).
22. W. Veasey (3½ Martinsyde).
23. R. V. Saltmarsh (4 Harley-Davidson)
24. A. S. Pinchbeck (3 A.B.C.).
25. W. Milligan (3½ Sunbeam).
26. A. Milward (3 A.B.C.).
27. L. N. Stannah (4 Triumph).
28. H. C. Nias (4 Triumph).
29. J. A. W. Armstrong (2½ Metro-Tyler).
30. P. R. Copland (2¾ Douglas).
31. V. Gayford (3½ Zenith).
32. F. C. Townshend (3½ Zenith-Bradshaw).
33. W. D. Pugh (3½ Zenith-Bradshaw).
34. W. W. E. Clarke (2¼ Triumph Junior).
35. E. J. Kehoe (3½ Rudge Multi).
36. J. J. Boyd-Harvey (3½ Scott Squirrel).
37. C. Lintott (4½ Humber).
38. J. A. Hoult (3¾ Scott).
39. Ivan F. Anderson (2¼ Connaught).
40. A. C. Payne (2¼ Cedos).
41. C. C. Labin (4 Zenith-Bradshaw).
42. A. H. S. Love (3½ Norton).
43. H. R. Hancock (3½ Lea-Francis).
44. F. R. Cotgrove (3 A.B.C.).
45. O. P. C. Collier (2¾ Edmund).
46. L. E. Chirney (3½ Beardmore-Precision).
47. G. S. Wright (2½ Connaught).
48. W. G. Churchill (2¾ Sirrah).
49. H. B. Browning (2¾ A.J.S.).
50. R. C. Staunton (4 Triumph).
51. B. Gold (2¾ Coulson-B.).
52. H. Gold (2¾ Francis-Barnett).
53. H. W. Harrington (2¾ Verus-Jap).
54. H. H. Robinson (2¾ Wooler).
55. A. G. Wall (2¼ Cedos).
56. W. J. Thomas (3 Ivy).
57. E. H. Fielden (4 Norton).
58. E. Foster (5-6 Raleigh).
59. E. M. Chudley (4 Indian Scout).
60. A. M. Knill (4 Indian Scout).
61. H. J. Scale (2¾ New Scale).
62. R. G. Spikins (8 Brough Superior)
63. William H. Wells (5 N.U.T.).
64. Martin O'Reilly, 5 N.U.T.).
65. C. L'Estrange (2¼ Ner-a-Car).
66. F. K. Parson (2¼ Ner-a-Car).
67. R. W. Learned (2¼ Ner-a-Car).
68. L. Pulham (2¾ Trump-Jap).
69. L. Nicholson (2¾ Omega).
70. F. E. Salter (2¾ Zenith).
71. P. L. B. Wills (3½ Rudge Multi).
72. T. P. Manifold (3 A.B.C.).

SIDECARS.

73. P. W. Moffat (6 Douglas).
74. E. A. Wright (3½ Sunbeam).
75. E. Atkins (3½ Ariel).
76. P. W. White (8 Sunbeam).
77. T. J. Ross (7 Matchless).
78. R. C. Boxer (7 Matchless).
79. E. V. Cox (6 A.J.S.).
80. E. S. Powell (6 A.J.S.).
81. J. A. Peacock (8 Matchless).
82. Clifford Wilson (4½ Quadrant).
83. C. W. E. Gaulder (4½ Quadrant).

OUTWARD JOURNEY.

Standard Time.	Place.	Mileage.	Total Mileage.
p.m.			
8.0	**STAINES**	—	—
8.31	Bagshot (10 mile limit)	9½	9½
8.46	Blackwater	4½	14
9.5	Hartley Row	6	20
9.34	**BASINGSTOKE** (10 mile limit)	9	29
10.1	Overton (10 mile limit)	8	37
10.15	Whitchurch	3½	40½
10.37	Andover	7	47½
10.57	Middle Wallop	6½	54
11.30	**SALISBURY**	11	65
a.m.			
12.30	Salisbury	—	65
12.42	Wilton	3½	68½
12.51	Barford St. Martin.	2½	71
1.4	Fovant	4	75
1.42	Shaftesbury	11½	86½
1.57	East Stour	4½	91
2.26	Milborne Port	8¾	99¾
2.36	Sherborne	3	102¾
2.55	Yeovil	5¾	108½
3.23	Crewkerne	8¾	117¼
3.47	Chard	8	125¼
3.51	**CHARD HILL TOP**	1	126¼
4.8	Yarcombe	4¾	131
4.33	**HONITON**	7¾	138¾
4.51	Sidbury	6	144¾
4.54	Sidford (Rising Sun)	1	145¾
5.0	Sidmouth	1¾	147½
5.5	**PEAK HILL TOP**	1¼	148¾
5.11	Otterton	2	150¾
5.26	Woodbury	5	155¾
5.35	Clyst St. Mary	3	158¾
5.46	**EXETER**	3½	162¼

HOMEWARD ROUTE.

Standard Time.	Place.	Mileage.	Total Mileage.
a.m.			
8.0	**EXETER**	—	162¼
8.33	Newton Poppleford	11	173¼
8.45	**S'C'BE HILL FOOT**	4	177¼
8.48	**S'C'MBE HILL TOP**	1	178¼
9.11	Colyford	7½	185¾
9.30	Lyme Regis	6¼	192
9.57	Bridport	9	201
10.27	Winterbourne Abbas	10	211
10.41	Dorchester	4¾	215¾
10.59	Puddletown	4¾	220½
11.28	Blandford	11	231½
p.m.			
12.37	**SALISBURY**	22¾	254¼
1.40	Salisbury	—	254¼
2.13	Middle Wallop	11	265¼
2.33	Andover	6½	271¾
2.54	Whitchurch	7	278¾
3.5	Overton (10 mile limit)	3½	282¼
3.30	**BASINGSTOKE** (10 mile limit)	8	290¼
3.57	Hartley Row	9	299¼
4.15	Blackwater	6	305¼
4.30	Bagshot (10 mile limit)	4½	309¾
5.0	**STAINES**	9½	319¼

Sidecars (continued)—

84. G. A. Pidgeon (4½ Quadrant).
85. W. A. Fell-Smith (8 Brough Superior).
86. J. C. Sanford (5 Rover).
87. S. C. Tait (8 Brough Superior).
88. H. Clennell (8 Brough Superior).
89. H. Woollen (6 Martinsyde).
90. J. T. Bashall (6 Martinsyde).
91. W. H. Bashall (6 Martinsyde).
92. D. S. Parsons (8 Matchless).
93. G. Nott (7 Matchless).
94. F. W. Stevenson (5 Brough).
95. E. S. Burnett (4 Triumph).
96. C. F. Plowman (3½ Sunbeam).
97. B. E. Belfield (7-9 American X).
98. L. Arnold (8 Matchless).
99. A. H. Nelson (4 Triumph).
100. W. F. Guiver (7-9 Matchless).
101. R. J. Andrews (4¼ B.S.A.).
102. W. P. Brandoo (4 Triumph).
103. V. F. Long (8 Excelsior).
104. William King (7-9 Harley-Davidson).
105. J. G. Hann (8 New Imperial).
106. S. Farley (10 Ace).
107. P. Pehrson (4 Dunelt).
108. C. W. Vallings (4 Dunelt).
109. R. B. Clark (8 Matchless).
110. H. F. Edwards (7 Matchless).
111. J. A. Hilger (5 Rover).
112. T. E. Ranger (8 Matchless).
113. J. A. Masters (7-9 Harley-Davidson).
114. H. R. Harveyson (7-9 Harley-Davidson).
115. C. F. Temple (7-9 Harley-Davidson).
116. J. R. G. Haill (7-9 Harley-Davidson).
117. H. Karslake (8 Brough Superior).
118. F. J. Ellis (7 Matchless).
119. G. D. Hardee (7 Matchless).
120. C. R. Collier (7 Matchless).
121. A. H. Ilsley (7 Matchless).
122. F. Macdonald (8 Matchless).
123. J. Graham (7 Matchless).
124. H. L. Misorez (7 Matchless).
125. F. W. Neill (7-9 Matchless).
126. Cecil Nott (7 Matchless).
127. Eli Clark, Jun. (4¾ Beardmore-Precision)
128. D. D. Tilt (4 Triumph).
129. K. Campbell-Cullen (5/6 A.J.S.).
130. A. A Attwood (4½ Quadrant).
131. W. Reginald Brown (3½ Sunbeam).
132. G. J. C. Chambers (8 Royal Enfield).
133. R. Charlesworth (8 Zenith).
134. Frank Pownall (8 Royal Ruby).
135. W. L. Gard (7 Matchless).
136. F. W. Giles (7 A.J.S.).
137. J. G. Biss (4 Norton).
138. W. C. Hemy (2¾ A.J.S.).
139. S. S. Debenham (10 Campion).
140. W. L. Danskin (7-9 Rudge-Whitworth).
141. F. T. Sibley (7-9 Rudge-Whitworth).
142. E. J. L. Strong (7-9 Harley-Davidson).
143. George F. Mason (3½ Connaught).
144. J. Wallis (7-9 Reading-Standard).
145. A. C. Ward (4 Triumph).
146. H. W. Glendinning (4 Powell).
147. A. S. Cuthrie (3 A.B.C.).
148. J. D. Marvin (8 Brough Superior).
149. S. Julian (7 A.J.S.).
150. W. Julian (7-9 Matchless).
151. A. F. Scroggs (3½ Sunbeam).
152. C. D. Reyersbach (2¾ Wolf-Blackburne).
153. N. C. Dear (8 Sunbeam).
154. R. Newitt (3½ Douglas).
155. J. G. Goodenough (4 Norton).
156. B. S. Allen (7-9 Matchless).
157. P. A. Hopkins (3 Ivy).
158. G. R. Claridge (4 Triumph).
159. R. Rayner (7 A.J.S.).
160. R. H. Attwood (4 Norton)
161. A. J. Agg (7 A.J.S.).
162. W. H. D. Steer (8 Zenith).
163. W. Bucknell (8 Matchless).
164. A. F. Pulling (8 Royal Enfield).
165. B. J. Sims (8 Bat).
166. P. Cunningham (3½ P. and M.).
167. L. Welch (4¼ B.S.A.).
168. D. J. Stone ((2¾ Orbit).

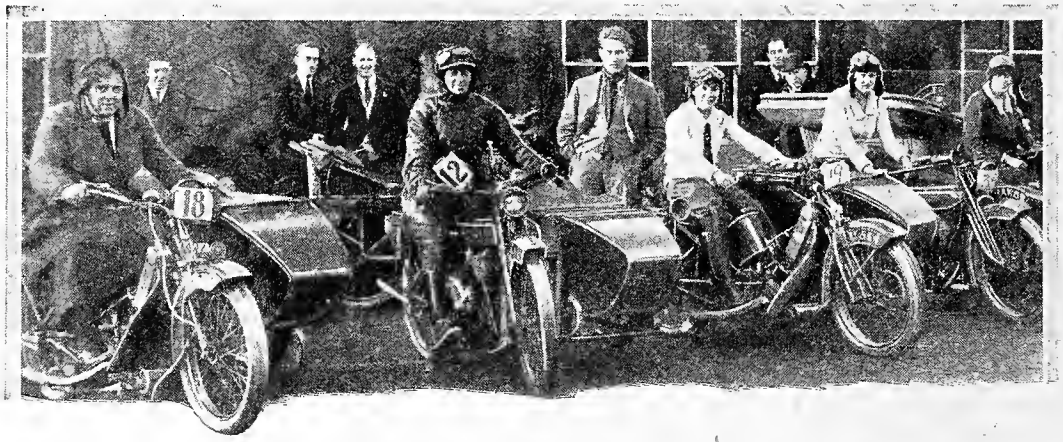
Sidecars (continued)—
169. William Hill (8 Chater-Lea).
170. H. H. Saddington (5-6 James).
171. A. P. McGowran (4 Triumph).
172. G. Packman (8 Matchless).
173. E. J. Pittock (2¾ Scott).
174. J. McBirnie (7-9 Indian).
175. G. Kuhn (4 Douglas).
176. L. Heller (4 Douglas).
177. E. J. Hardwick (4 Triumph).
178. O. S. Bridcutt (4½ Dunelt).
179. C. G. Pullin (6 Douglas).
180. Neville Hall (2¾ O.K. Junior).
181. C. N. Green (5-6 Rover).
182. J. A. Watson-Bourne (8 Brough Superior).

THREE-WHEELED CYCLE CARS.

183. W. Joyce (8-10 Grand Prix Morgan).
184. T. J. Mooney (5-6 Scott Sociable).
185. A. J. Sproston (10 Morgan).
186. W. H. Elce (8-10 Morgan).
187. Joseph Richardson (3 Morgan).
188. H. Beart (8-10 Morgan).
189. W. E. Line (10 New Hudson).
190. W. G. Boyer (8 Morgan).
191. C. E. Bennett (8 Morgan).
192. F. A. Longman (8-10 L.S.D.).
193. W. E. Cornwall (9.2 Castle Three).
194. G. W. Shepherd (8-10 L.S.D.).
195. D. Henry (9.5 Castle Three).
196. F. H. Douglass (10 Morgan).
197. F. S. Spouse (8 T.B.).
198. S. A. McCarthy (8 Morgan).
199. H. W. Holmes (8 Morgan).
200. H. E. K. Sawtell (10 Morgan).

YORKSHIRE WINTER TRIAL.

Bradford M.C. and L.C.C. Trial for the Spencer Cup Attracts 38 Starters. 35 Finishers.



FIVE LADY MOTOR CYCLISTS IN A WINTER TRIAL.

The Bradford M.C. and L.C.C. has some enthusiastic lady members who are not daunted by prospects of bad roads and weather. The illustration shows—Miss Ida Pickles, Morecambe, (Scott sc.); Mrs. Appleton Bradford (P. and M. sc.); Miss D. Sayles, Barnsley (Scott sc.); Miss P Barker, Bradford (P. and M. sc.); and Miss N Suddards, Bradford (Scott sc.).

FINE weather favoured the annual winter reliability trial for the Spencer Cup. The route followed was to Hest Bank, near Lancaster, *via* Skipton and Settle, the return journey finishing at Long Preston to ensure all the riders completing the course in daylight. The actual distance of the trial was one hundred miles, and included no freak hills or watersplashes. To give all competitors a chance, previous trophy winners had to climb Buckhaw Brow (one mile) at a given speed, whilst members who entered a reliability trial for the first time received a bonus of 15 points. A splendid Christmas lunch was served at the Bradford M.C. and L.C.C.'s expense at the Hest Bank Hotel, and the arrangements were excellent. Mr. T. G. Bullus (the trials hon. secretary) was responsible for the organisation, and was ably assisted by members as checkers, whilst at the Lancaster end valuable help was given by members of the Westmorland, Lancaster, and Morecambe clubs. Mr. Frank Spencer, the donor of the trophy, was also present.

Hot Coffee en route

The start was at 8 a.m., and hot coffee, served at two places *en route*, was much appreciated. Secret checking zones were arranged, points being deducted in seconds' error against schedule, timing by checkers' watches. Five lady entrants all put up a splendid show, and all finished inside the allotted time. Mrs. Appleton (Bradford) and Miss Phyllis Barker (Bradford) both rode P. and M. sidecars, whilst three Scott outfits were driven by Miss Nellie Suddards (Bradford), Miss Ida Pickles (Morecambe), and Miss Dorothy Sayles (Barnsley). Abe Waddington, the Yorkshire cricketer, drove a Norton sidecar. Of the forty-two entrants, thirty-eight started, and only three riders retired, tyre troubles being reported in each case.

Results: 1, Spencer Cup (won outright), H. S. Lockwood (3¾ Scott sc.), received 15 points bonus, nett error 11; 2, silver medal, W. Moore (3¾ Scott), handicap, previous trophy winner, nett error 24.

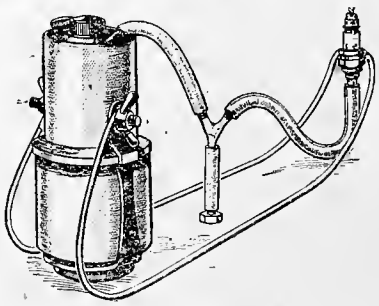
Motor Cycle Lighting for Indoor Purposes.

How a Discarded Acetylene Generator was Converted into a Reading Lamp.

PARAFFIN oil lamps are very costly to run these days, and many country houses are so arranged that the lamp cannot be conveniently placed for reading purposes. The writer, up against these difficulties, recently devised a very useful reading lamp from a motor cycle Lucas generator and burner, the latter being taken from a discarded sidecar lamp.

The sketch is, I think, self-explanatory. A piece of heavy gauge iron wire was bent into the shape shown, and attached to the usual thumbscrews of the ordinary Lucas generator. The burner is mounted in a twist of the wire loop.

No gas fitter would dream of fitting a pipe installation without water traps at the low points, for condensation is bound to cause fluctuation of the lighting power and general unreliability. The simple water trap shown in the sketch is one which I find essential in the case of the house lamp, and distinctly beneficial in the case of the motor cycle lamp. It always figures in my acetylene lighting outfits, and I think that if others adopted it they would find that many of their lamp troubles would cease. It consists, as will be seen, of a three-point brass junction, to the idle end of which is attached about 2in. of rubber tube, into the bottom of which, by way of ballast, is secured a little set-screw. This hangs straight downwards and traps the water in the gas, the two opposite leads being respectively from the generator and to the light.



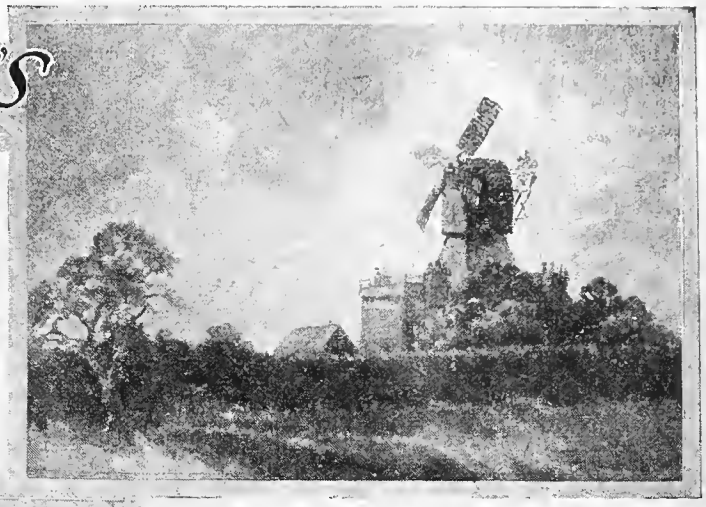
Showing how the generator and improvised burner was employed for acetylene lighting indoors

My reading lamp costs approximately 2½d. per night to burn; if I use the oil lamp for reading it costs about 9d. Will some electrical "knut" be so good as to advise us how to adapt a Lucas dynamo lighting set to the task of house lighting? I have one standing idle. If one employed a water motor, what size of motor and what head of water would be necessary? Information on this point would doubtless be appreciated by others.

H.M.B.

HIGHWAYMEN'S HAUNTS

The Romance of Wimbledon Common and Putney Heath, and the Houses adjacent to them.



A well-known landmark—the Windmill on Wimbledon Common.

Putney Heath. A miniature lake, Queensmere.

IN these days of high-powered, swift motor traffic, coupled with the fascination of speed, we are all too apt to rush past much that is both beautiful and interesting in the process of transportation from one "resort" to another.

Riders accustomed to speed along the Portsmouth Road over Putney Heath would do well to pause awhile and take a careful survey of some of the unspoilt sylvan scenery hereabouts, for this is no ordinary "common," but a great and historic bit of nature's handiwork, as full of interest and real romance as it is of beauty.

Fine Scenery and Invigorating Breezes.

Bounded on the south by Wimbledon, on the west by Roehampton, on the east by Wandsworth, and on the north by Putney, the spacious and picturesque Putney Heath and Wimbledon Common are justly considered the finest and largest of London's open spaces. Although at no exceptional altitude, these lands command splendid views, and enjoy a matchless, invigorating air, borne on the breezes from the Surrey hills, Richmond Park, and the silvery Thames; and the numerous dignified residences surrounding testify to the esteem in which the place is held.

Most people know the old windmill, the landmark in the centre of Wimbledon Common, and the flagstaff near by; but their geographical knowledge ends there, whereas the things of most interest properly require a day to explore, and well repay the explorer for his trouble.

Putney Heath is, of course, the most picturesque portion of the area, being extraordinarily fertile and rich in trees of all kinds—the silver birch predominating—furze bushes, ferns, wild flowers in abundance, as well as hills, valleys, brooks, lakes, and woods. During the summer many parties may be seen enjoying a picnic in some of these secluded retreats, with nothing to disturb the serenity of the situation but the trickling of a brook or the music of innumerable birds in the trees overhead.

It was not always thus peaceful and safe, however, for here was once the happy hunting ground of the intrepid Dick Turpin and his fellow "knights of the road"; and many an unfortunate wayfarer has been abruptly ordered to "stand and deliver" ere he crossed the heath. The old "Green Man," a favourite resort of Turpin's, still stands at the Putney end of the heath (almost opposite which is the "Pound"); and another, but more picturesque house, once enjoying the merry rascal's patronage is "Ye Olde King's Head," Roehampton, at the western extremity. This is the more ancient of the two houses, with a big tree sheltering its front entrance, to which, no doubt, in its younger and slimmer days, the famous "Black Bess" was frequently tethered, what time her bold master was not at Bagshot, Blackheath, or Hounslow Heath.

Romantic and Historic Associations.

Both Putney Heath and Wimbledon Common, by reason of their convenience, were once high in favour as a *rendezvous* for duels, and among the duellers were Pitt, Canning, and Lord Castlereagh. The Spencer family is associated with Wimbledon. At their old manor house, long since demolished, Queen

Highwaymen's Haunts.—

Elizabeth was entertained by Lord Burleigh. Later this house belonged to Queen Henrietta Maria. Next it came into the possession of Sarah, Duchess of Marlborough, who left it to the Spencers. Its fine park of 1,200 acres was sold in 1836, and the manorial rights finally disposed of in 1871.

Putney Heath has a distinct charm all its own; its fresh wildness and irregularity, rising and falling in pleasant undulations; its mosses, gorse, and wild flowers; the gleam of its silver birches; its keen breeze, all contribute to fascinate the student of nature.

At "Bowling Green House" (on the Portsmouth Road) the great statesman Pitt died; and "Scio House," nearly opposite, was formerly the residence of the late Sir George Newnes. At "West Lodge" lived Douglas Jerrold, and here died Leigh Hunt. "Holly Lodge," in the Wimbledon Park Road, is where George Eliot wrote "The Mill on the Floss"; and Gibbon, the historian, lived in a house on Putney Hill (in Lytton Grove), not far distant. At the foot of Putney Hill, in a large house called "The Pines" (the first house on the left), lived and died the poet Swinburne, with his friend, Watts-Dunton.

A picturesque inn—the old King's Head, Roehampton village

The "Green Man," Putney Heath, a haunt of Dick Turpin's.

Roehampton House, Lord Leven's seat, through the pretty Roehampton village, is of Queen Anne pattern, dating from 1712. The ceiling of its saloon was painted by Thornhill. During the war this house was used as a military hospital. Near here, too, was Dover House, Lord Clifden's residence, and other famous mansions of bygone glory.

Putney Heath is well supplied with ponds, notably "Queensmere" (down the steep slope from the Golf Club House, near the windmill) and "Kingsmere" (near the "Telegraph Arms"). Cæsar's Well, the historic spot marking the Roman Encampment of 2,000 years ago, is worth a visit. It is the best part of a mile from Queensmere, in a southerly direction, distinguished by an encircling camp of fir trees.

Some sixty years ago this ground was the scene of the inauguration of the National Rifle Association's annual meetings, the forerunner of Bisley: Queen Victoria opened the meeting, which was a brilliant and fashionable one, comparable with Epsom Downs on Derby Day.

A. L. SUMMERS.

Competitions at Christmastime.

THE fascination of the winter event is becoming more generally realised by the sporting rider, and this year more than one club has taken the plunge and is boldly organising a Christmas holiday competition. It is a pre-war idea that we feel should be revived. If only judging from the popularity of the M.C.C. London-Exeter Run, such events have a strong appeal at holiday time.

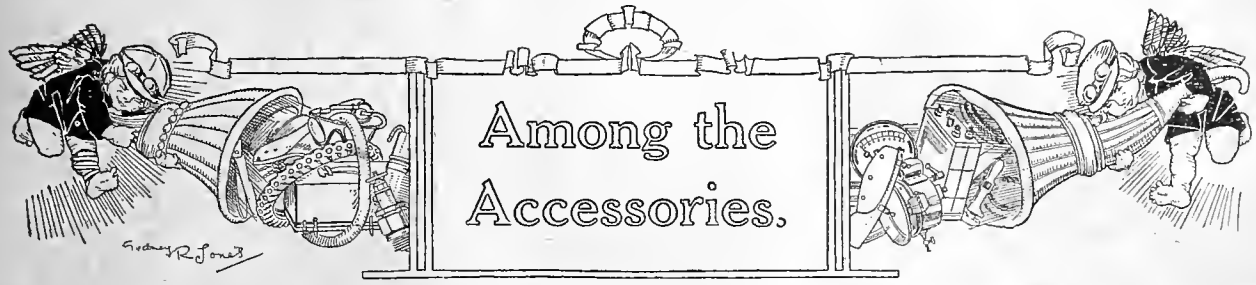
The Birmingham M.C.C. Sporting Half-day Efficiency Trial, to be held on December 27th, may be taken as typical of the style of competition that will be appreciated. Starting at 11 a.m., the competitors are promised that the event will finish within reach of home before lighting-up time.

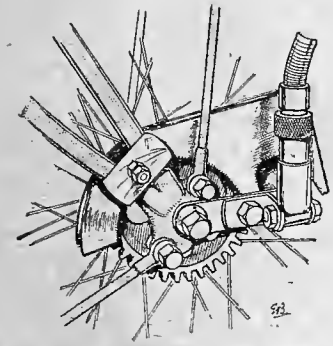
According to the "prospectus," there will be "plenty of splashes, all rideable (fact!), and if the weather should be good to you some greasy hills." Various more or less novel tests will also be included. Members of any of the Midland Centre A.C.U. clubs are eligible, entries closing to-day.

Not to be outdone, the Mansfield M.C.C. is holding a hill-climb, open to the East Midland Centre A.C.U., on Boxing Day. There will only be seven classes, and the entry fee of 3s. cannot be considered excessive. Caudwell Hill, near Mansfield, is the venue of the climb.

We shall watch with interest the amount of support these "mid-day" events receive this year, for we believe that too many clubs are inclined to relax their energies around this period of the year.

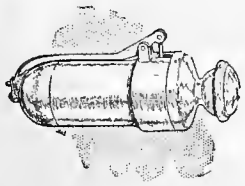
The success of the two long-distance events—the Exeter run and the N.-W. London M.C.C. open trial to Gloucester—is, of course, assured. The latter trial, by the way, will include one non-stop section in the Tring district, to be taken after dark on the return journey.





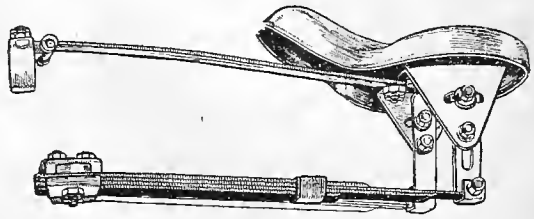
Weatherproofing the Speedometer Drive.

Although there is little to describe about the "Speedoguard," there is much to be said in favour of the device, which, as the name indicates, is intended to protect the speedometer gear wheels from mud and water. A grooved channel runs along the top. Price 7s. 6d. (Tippett, Cowney and Groombridge, 6, Alexandra Road, Dorchester, Dorset.)



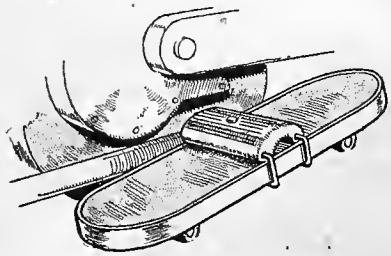
An Inexhaustible Flash Lamp.

Quite one the neatest of the many self-generating inspection lamps now on the market, is the "Electro Automate" which sells at the moderate figure of 25/-. It is very cleverly designed, and gives a surprisingly good light. (Theo and Co., Hatton Garden, Liverpool.)



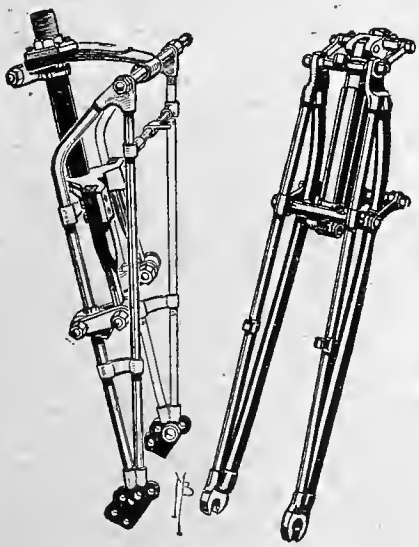
Spring Saddle Suspension.

Suspended by threequarter-elliptic springs from the clips on the top and bottom tank tube, the "K" saddle has many features to commend it. The seat may be moved forward or backward, thus adjusting the springs to suit different weights. (A. E. Wilby and Sons, Ltd., Holloway Head, Birmingham.)



Obviating Footboard "Bouncing."

Complaints are often made that footboards do not allow the rider's feet a good "grip" of the machine. The Chako auxiliary rubber footrest overcomes this difficulty. All sizes of footboards may be fitted at 7/6 per set. (Champ, Kay, and Co., Saltisford, Warwick.)

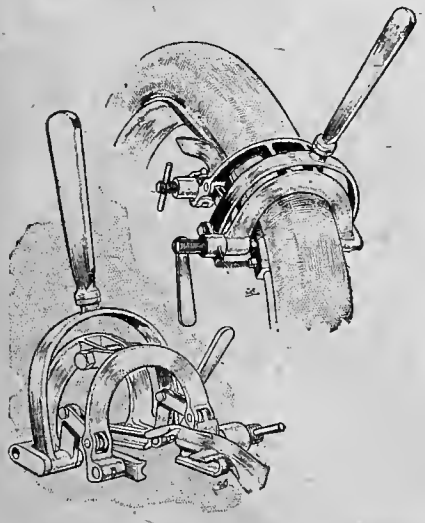


Front Wheel Suspension.

Two new front forks, both possessing elements of novelty, are illustrated:

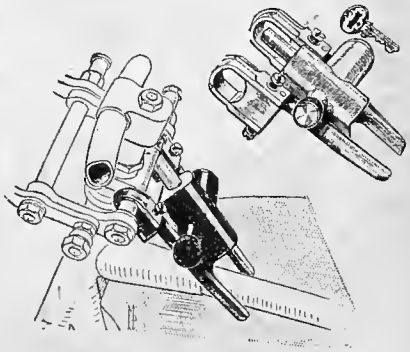
(Left) Called the "Improved" fork, this design absorbs both vertical and diagonal shocks, and has in all three leaf springs, one horizontal and two vertical. The latter connects a casting at the foot of the steering head with two links attached to the rear girders. (L. W. E. Dickson, 1, Molesey Park Villas, St. Mary's Road, East Molesey.)

(Right) An enclosed compression and tension spring and a modified parallel ruler motion are features of the "Swan" fork. (The Swan Engineering Co., Fallings Park, Wolverhampton.)



Mechanical Tyre Manipulation.

Five minutes is the maximum time in which, it is claimed, the most obstinate tyre may be removed or refitted, with the aid of the Grado tyre tool. Tube nipping is impossible, and, on the whole, it is among the most ingenious accessories of the year. Price £3 10s. (Grado, Ltd., 26, Cross St., Hatton Garden, London, E.C.1.)



Foiling the Motor Thief.

How the Phillips steering lock acts is shown in the above drawing. When not in use it swings up more or less out of the way. Obviously the heads of the fixing screws must be cut off. (A. Phillips, 199, Darlaston Road, Walsall.)

CURRENT CHAT

Times to Light Lamps.

Dec. 22nd	... ...	4.51 p.m.
,, 24th	... ...	4.53 ,,
,, 26th	... ...	4.54 ,,
,, 28th	... ...	4.55 ,,

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Greetings!

To all our readers: A Merry Christmas!

The Car T.T.

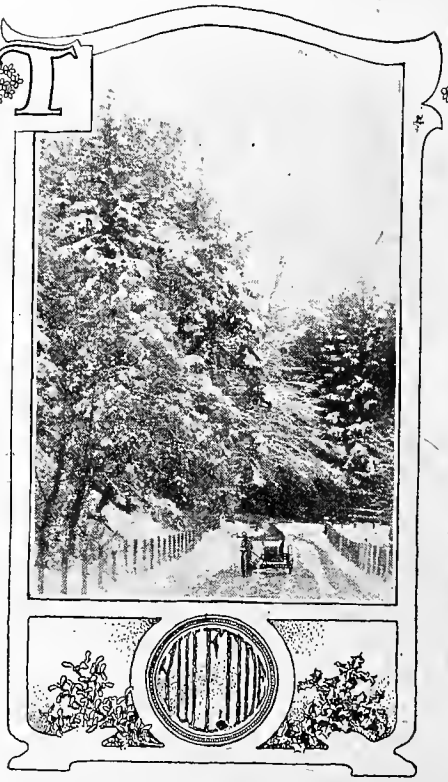
Entries close for the Tourist Trophy Car Race on Saturday of next week—six months before the event.

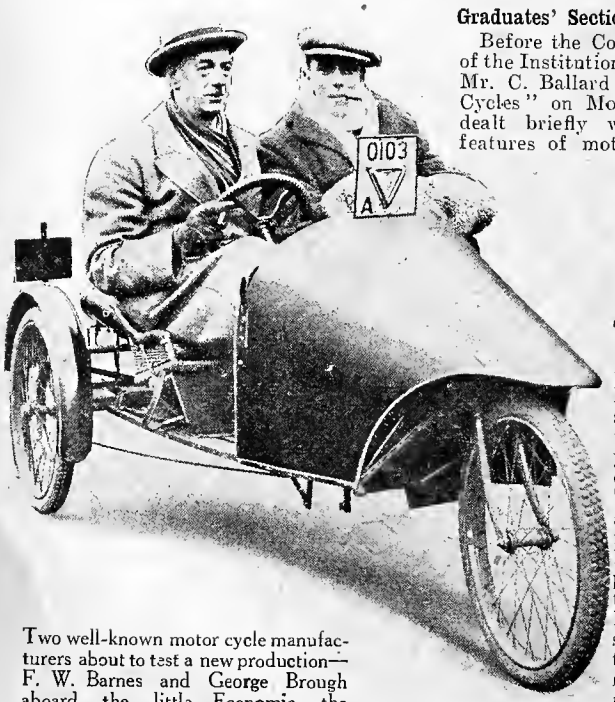
Christmas Presents.

Wives and sweethearts of motor cyclists looking round the shops for something suitable for a Christmas present for "him" should remember that the prospective recipient does *not* require an umbrella, and that a leather helmet, a new road clearer, or speedometer, will be more appreciated.

Proposed South African T.T.

South African motor cyclists are confident that they need a motor cycle road race on the lines of the T.T. races, and are now considering a suitable course for this event. It is suggested that the Port Elizabeth district would do admirably, where there is a twenty-mile course over which a hundred-mile reliability trial was recently held.





Two well-known motor cycle manufacturers about to test a new production—F. W. Barnes and George Brough aboard the little Economic, the simplest passenger machine at Olympia.

Informal Meeting of the I.A.E.

Those members of the Institution of Automobile Engineers who, on the 7th inst., attended the first informal meeting held in London since the war had a most interesting and instructive afternoon. Various novel tyres and tyre accessories were demonstrated.

Graduates' Section I.A.E.

Before the Coventry Graduates' Section of the Institution of Automobile Engineers, Mr. C. Ballard read a paper on "Motor Cycles" on Monday, the 12th inst. He dealt briefly with all the outstanding features of motor cycles, and especially with cooling, lubrication, etc. An animated discussion followed, in which many of those present took part. The chair was taken by Mr. J. L. Shorter.

That £2,000,000 Surplus.

When the new scale of taxation was adopted, the Minister of Transport stated that £8,000,000 was required. The first year has already produced over £10,000,000. This surplus of some £2,000,000 should in fairness be remitted, and the late Minister of Transport himself suggested that a reduction would be due if there was a surplus. In bringing these facts before its readers, *The Autocar* urges, in order that a reduction in the onerous scale of taxation may be granted in the near future, that unity of action by all motorists is essential.

Special Features.

GUIDE TO THE LONDON-EXETER RUN.
A MOTOR POGO.
"OUT OF A JOB."

For London-Exeter Competitors.

As in previous London-Exeter trials, Mr. James Moffat, Town Hall Garage, Yeovil, will provide coffee for all competitors as they pass through Yeovil.

Unfortunate.

A dislocated shoulder, sustained by H. E. K. Sawtell while playing football recently, may result in his well-known 10 h.p. Morgan being withdrawn from the London-Exeter run on Boxing Day.

Vacancy for a Yarmouth Motor Cycle Club.

A local reader considers that there is a vacancy for an energetic motor cycle club in Yarmouth. There were, he states, some very successful speed trials on the front just after the war.

The Difference.

A writer in *The Autocar* recently described why his friends interested in cheap motoring nevertheless failed to place orders for small vehicles of the cycle car type. Said a typical one: "A peep under the bonnet settled me. I could never learn what all those pipes and things were for . . ." Now, a good motor cyclist *knows* "what the pipes are for"—wants to know, in fact, and enthusiastically pursues knowledge on the matter. It is just a difference in psychology.

Police Activity in Belgium.

It is not only in England that certain towns suffer from waves of police activity, for just now Verviers, in Belgium, is not a happy place for motor cycling. If, as our informant says, there is a shortage of water in the town, it simply rains summonses, and the very sight of a motor cyclist puts the police into a bad temper. Matters have reached the point where summonses are held in readiness, printed and absolutely complete except for the name of the offender.

Standardisation of Component Parts.

Considerable progress has been made lately by the Committee on Automobile, Motor Cycle Parts of the British Engineering Standards Association—an organisation whose good work is apparent from its name. Seven sub-committees have been appointed, each composed of specialists in the subject under consideration. The Institution of Automobile Engineers may claim much credit for initiating a workable scheme which would not be hampered by the prejudices of various manufacturers interested.

Making Motor Cycling History on

DUNLOP TYRES

THE following remarkable records have been established at Brooklands and provide remarkable testimony to the endurance, speed and security of the Dunlop motor cycle tyres which were used in each instance:

CLASS 250 c.c.

R. W. JUDD (2¼ Velocette)

Flying km.	71·70 m.p.h.
,, mile	70·31 ,,
,, 5 miles	65·61 ,,

(Latter includes fastest lap ever recorded in this class at Brooklands at **66·11 m.p.h.**)

CLASS 500 c.c. Solo.

MAJOR HALFORD (3½ Triumph)

Flying mile	87·80 m.p.h.
,, 5 miles	81·78 ,,
10 ,, ...	80·09 ,,
50 ,, ...	77·27 ,,
1 hour	76·74 ,,

CLASS 750 c.c.

BOWEN (Martinsyde)

50 miles	77·81 m.p.h.
1 hour	77·58 ,,

DUNLOP RUBBER CO., LTD.,
Founders of the Pneumatic Tyre Industry,
BIRMINGHAM.
LONDON: Dunlop House, 1, Albany Street, N.W.1.
Telephone - - - - - - 5400 Museum (8 lines).

A Seasonable Gift
for any motoring friend
"THE DUNLOP BOOK"
PRICE ONE GUINEA NET
Can be ordered through any dealer

G.N.

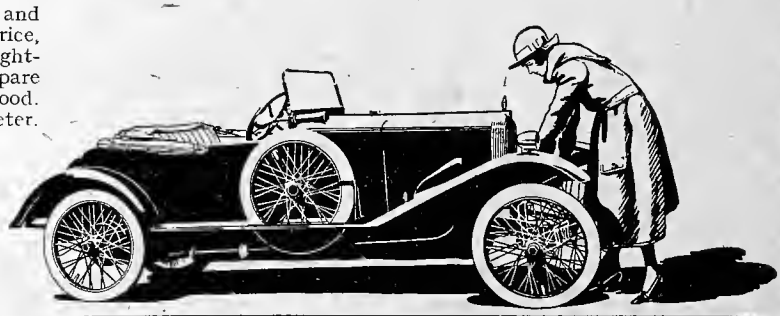
G.N. MOTORS, LTD.
WANDSWORTH,
LONDON, S.W.18.

Showrooms at
222, GT. PORTLAND ST., LONDON, W 1.

Where, as well as at the G.N. agents throughout the country, the G.N. can be seen, tried and purchased. The price, including dynamo lighting, installation, spare detachable wheel, hood, screen, speedometer, etc., etc., is

£225

COMFORTABLE MOTORING with proper protection from the weather.



Raymond

PLAYER'S

"COUNTRY LIFE"

CIGARETTES

Medium Strength
BLUE CARTON

10 FOR 5½D.

Manufactured by the Proprietors of
PLAYER'S "COUNTRY LIFE"
SMOKING MIXTURE.

JOHN PLAYER & SONS,
Nottingham.

Branch of The Imperial Tobacco Co. (of Great Britain and Ireland), Ltd.

P.952

Equip your Motor Cycle with Electric Light

Bother no longer with odorous and troublesome acetylene—just switch on and flood your path with brilliant Electric Light. You can equip your Cycle with new lamps or convert your existing Lamps to Electric with

WATES ELECTRIC CONVERSION SETS

Solo Lighting Sets. Conversion set with new tail lamp ..... **£2 : 5 : 0**
Complete set with new head and tail lamp... **£4 : 0 : 0**

Sidecar Combination Lighting Sets.

Conversion set with new side and tail lamp ..... **£3 : 15 : 0**

Complete set with 5 inch head lamp... **£5 : 10 : 0**

Complete set with 7 inch head lamp... **£6 : 5 : 0**

EXCEPTIONAL ACCUMULATOR OFFER!!
Hart or Peto and Radford Manufacture.

(In metal case with strap handle.)
4 Volts
12 amps. actual. 24 amps. ignition.

Quantity	Price each	Total price
1	14/-	14/-
2	13/-	26/-
3	12/8	38/-
4	12/3	49/-
6	12/-	72/-

Size 5⅝ × 3¼ × 3⅜
All above prices include free delivery.

Why not write today for illustrated list giving prices of complete sets for Solo and Combination work, conversion sets for existing lamps, accumulators, and our motor cycle electrical fittings.

WATES BROS.,
Retail Offices - - 5, High Street, Bloomsbury, W.C.
- - 132, Charing Cross Road, W.C.2.

"The Autocar" Christmas Number.

The two chief items of Christmas fare offered in this week's issue of *The Autocar* are a gruesome story by "Owen John," entitled "Things on Dartmoor," and, in strong contrast, a humorous sketch by Charles G Harper entitled "Mr. Pickwick's Second Time," narrating the adventures of the genial philosopher and his friends while revisiting their old haunts in a motor car.

Institution Meeting.

A general meeting of the Institution of Production Engineers will be held at 7.30 p.m. on Friday, December 30th, at the Institution of Mechanical Engineers, Storey's Gate, London, S.W Mr. G. H. Hales, A F.R.Ae.S., M.I.P.E. (member of Council), works manager of Messrs. Drummond Bros., Ltd., Guildford, will deliver a paper, to be illustrated with lantern slides, dealing with "The Costing System and its Relation to Production."

How the Rolls-Royce is Made.

Readers engaged or interested in automobile manufacture should study a series of articles now appearing in *Engineering Production* dealing with the works and methods of Messrs. Rolls-Royce Ltd. These articles are well illustrated and full of detail, and comprise three instalments, the first of which appeared in the issue for December 15th. It is interesting to record that this is the first occasion during the history of the Rolls-Royce Co. that an engineering publication has been accorded the privilege of describing and dealing with their methods of production. The articles referred to are, therefore, of a unique character, apart from the nature of their contents.

Alsatian Course for the Grand Prix.

The Autocar announces that Strasbourg has been selected as the centre for the car Grand Prix next summer.

Stage Stunts.

If one were travelling at night and met a motor cyclist with an obviously glowing cylinder, one would be led to suspect overheating. That this is not necessary the case was proved at the Levis Athletic Club's smoking concert during a sketch entitled "A Reliability Trial." In this case the effect was produced by a ruby tail light attached to the carburetter illuminating well-chalked cylinder ribs.

Head Light Dimming.

In spite of official notices, there are quite a number of car owners who courteously dim their head lights on the approach of other vehicles, leaving moderately powerful twelve volt side lamps in action. This raises a curious point, for most motor cycles and runabouts have only six volt sets; yet if the smaller craft does not reply by dimming his already feeble light, up go the car lights again, making confusion worse confounded.

A Radial Engine for Cycle Cars.

Suitable for mediumweight cycle cars, a three-cylinder engine of about 850 c.c. will shortly be placed on the market by a British firm. Full details will be published in *The Motor Cycle* in an early issue.

Many sidecars have been brought into service this week for the conveyance of holly, Christmas decorations, and good fare, but few would care to take the risk of carrying such a formidable Christmas tree through town traffic as the rider seen in the illustration.

The T.T. Dates.

In testing the opinions of manufacturers, riders, and others directly concerned regarding the unsuitability of the dates chosen for the Tourist Trophy Races, we find that so far, without exception, these agree with our view as expressed in the leading article this week.

Change of Mounts.

Rene Dequin, the well-known racing motor cyclist, will ride a 3 h.p. Ivy at Brooklands during 1922.

Cars in the London-Exeter.

In addition to the 200 motor cycle and three-wheeler entrants in the London-Exeter, there are ninety-seven cars, a list of which is given in this week's *Autocar*.

London-Gloucester on Hogmanay.

There is still time to enter for the open winter trial of the N.W. London M.C.C. from London to Gloucester and back, to be held on December 31st. Entries close definitely on Christmas Day. Mr. H. J. Pooley, 23, Clifton Avenue, Finchley, London, N 3, is the secretary. Approximately sixty names had been received at the time of going to press. Details of the route will appear next week.

A Triumph Light Car.

For two or three years there have been rumours of a Triumph light car to be produced under the same conditions and to the same standards which have placed the Triumph motor cycle in its present high position. Such a proposition is to materialise at last, for we are able to announce that the Triumph Co. has purchased the works and goodwill of a well-known light car concern, to wit, the Dawson Co., of Stoke, Coventry.

"THE MOTOR CYCLE" FILM.

APPRECIATIONS of *The Motor Cycle* film continue to reach us from all quarters, and crowded houses are the rule, whether it be shown at a club social evening or included in the usual programme of a cinema house.

Mr. R. H. Leech, press secretary of the Stafford and District M.C.C., writes: "Many members and friends were present (at the film exhibition), and the film was proclaimed a magnificent production. A good collection was made in aid of local charity, the Mayor (Alderman T. A. Dunn) being present."

"It was an extremely crowded hall, and all expressed their pleasure with the film."—Mr. A. V. Poyser, superintendent, Princess Mary's Convalescent Centre, Rednal, Birmingham.

On Tuesday and Wednesday of last week it was shown at the "Futurist," Birmingham, on behalf of the West Birmingham M.C.C.—an amateur club, whose lady secretary, Mrs. H. G. Gale, writes: "It is an excellent film in every respect. . . . Like all good things, it passed too quickly."

Since then it has been shown for three days by the Glasgow Western M.C.C., and three days by the Worcester and District M.C.C.

To-morrow and Saturday the film will be shown at York, under the direction of the York and District M.C. Immediately after the Christmas holidays, it goes down to Somerset and Cornwall. On Wednesday, the 28th inst., it will be included in the programme of the Central Hall Electric Palace, Yeovil, by arrangement with the local motor cycle club; on the following day the Truro and District M.C. and L.C.C. is organising an exhibition in Truro; and on Friday it will be shown at the Polytechnic Hall, Falmouth, on behalf of the Falmouth M.C.

The Truro exhibition on Thursday is being arranged in conjunction with the club's annual dinner, to be held in the Women's Institute, Truro.

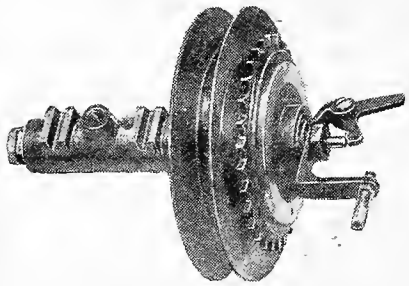
Applications and enquiries for the film continue to pour in, but we would emphasise that it is now absolutely booked up until the end of April, and that there are not many vacant dates in May.

AN EPICYCLIC COUNTERSHAFT GEAR.

Two Speeds and Clutch Controlled by One Handle-bar Lever in the Lewis Lightweight Gear.

ONE of the charms of the epicyclic type of gear is the facility which it offers for the inclusion of a free engine clutch as an essential part of the gear selecting mechanism. Other minor advantages obtained by the type are compactness, lightness, and silence of operation.

At one time epicyclic gears were in common use on motor cycles, both on the engine-shaft and in the back hub positions, but the countershaft gear box of conventional car pattern ultimately ended the vogue of the other types. Nevertheless, the charm of the epicyclic type—a charm especially known to experimental designers—results in occasional essays in its direction, and a most practical-looking form of countershaft gear, embodying the ring, planets, and sun train of pinions, has reached marketable form from the workshops of A. F. Lewis, of Oakleigh, Charlestown, Weymouth.



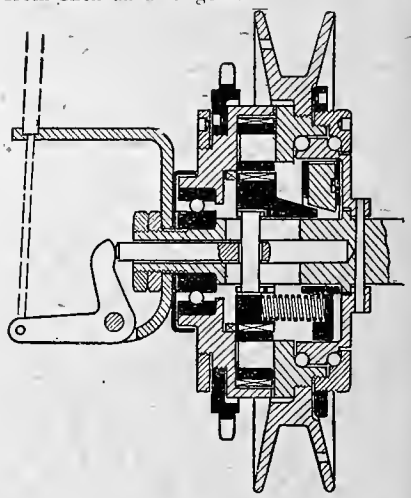
Small proportions and lightness are features of the Lewis gear, which is here shown, with its bottom bracket shell for bolting to the motor cycle frame.

Briefly, the Lewis gear consists of a countershaft spindle mounted in a shell arranged to be secured to the bottom bracket of the machine. On this spindle is mounted a ball bearing chain wheel carrying the internally-toothed driving ring of the gear and another bearing on which runs the belt pulley, to which also are attached five studs, acting as carriers for the planet pinions. Between these two main members slides a sun pinion in constant engagement with the planets. The longitudinal movement of the sun pinion is controlled by a handle-bar-operated push-rod.

Light Weight and Simplicity.

High gear is obtained by releasing the handle-bar lever, when springs in the gear push the sun partially to the left, and cause its teeth to engage with dogs cut in the primary chain ring carrier, thus locking the gears as a solid mass, and giving a direct drive. Free engine position is obtained by pulling up the handle-bar lever until the sun disengages the dogs, and then rotates idly backwards. Further pressure on the operating lever forces the sun to the right, and projecting spigots, formed as a part of it, engage with plungers carried in the low gear clutch member. These plungers expand into an annular recess machined in the stationary portion of the pulley bearing, and there grip frictionally, thus stopping the sun pinion, and setting the complete epicyclic train in motion.

Examination of the accompanying drawing will show that the gear is extremely simple in construction, and that it runs on ball bearings throughout, the bearings of the belt pulley being adjustable. The only apparent disadvantage—a small one—is the fact that the clutch action is confined to the low gear only; in consequence, it will be impossible to slip the clutch on high gear. Old-time riders of machines equipped with Vindec hubs will recollect that no particular difficulty arose from such an arrangement.



Section of the Lewis two-speed epicyclic gear, showing the sliding sun pinion, its actuation, and the low gear clutch

The Lewis gear is very light in weight (less than half that of the average two-speed and clutch gear box), and the price is moderate. It should be particularly well suited for the conversion of existing single-geared machines.

NEW SCOTTISH LIGHTWEIGHT.

350 c.c. Barr and Stroud Sleeve Valve Engine Embodied in the Three-speed Royal Scot Motor Cycle.

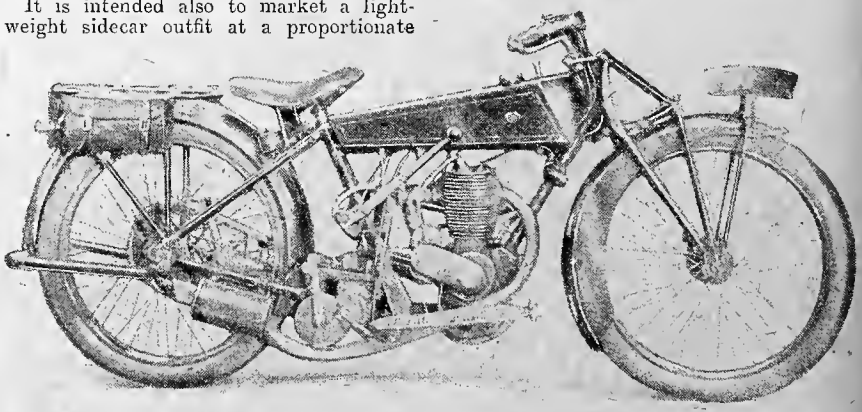
IT is not surprising that one of the earliest firms to fit the Barr and Stroud sleeve valve engine should be a Scottish concern. Actually the Royal Scot motor cycle, made by Donaldson and Kelso, Anniesland, Glasgow, is the second machine marketed with this much discussed power unit, which was first described in *The Motor Cycle* last July, and which was among the most interesting exhibits at the recent motor cycle show.

It will be recalled that a single rotating and reciprocating sleeve is actuated by a horizontal stub extension which is held in a self-aligning bronze bearing eccentrically set in a timing pinion. Suitable ports are cut in the sleeve and in a symmetrical cylinder head. Tests have proved that the engine is of very considerable efficiency for its capacity—350 c.c.

On Conventional Lines.

The remainder of the Royal Scot follows familiar lines, although the spring forks (of the Montgomery type) are not yet common on $2\frac{3}{4}$ h.p. lightweights. A saddle tank of simple outline rests on a sloping top tube, and the lubricating system at present is by plain hand pump. Transmission is by chain throughout *via* a Burman lightweight three-speed gear box, and the brakes are internal expanding on both wheels. The price is £85 solo.

It is intended also to market a lightweight sidecar outfit at a proportionate price; and, in fact, tests have already been made with a sidecar attached. The machine has been found well up to the work of ascending the well-known test hills around Glasgow with a heavy passenger in the sidecar.



Montgomery forks and a B. and S. sleeve valve engine lend distinction to the Royal Scot lightweight.

A NEW LIGHTWEIGHT.

Full Equipment and Clean Lines are Features of the Wigan-Barlow.

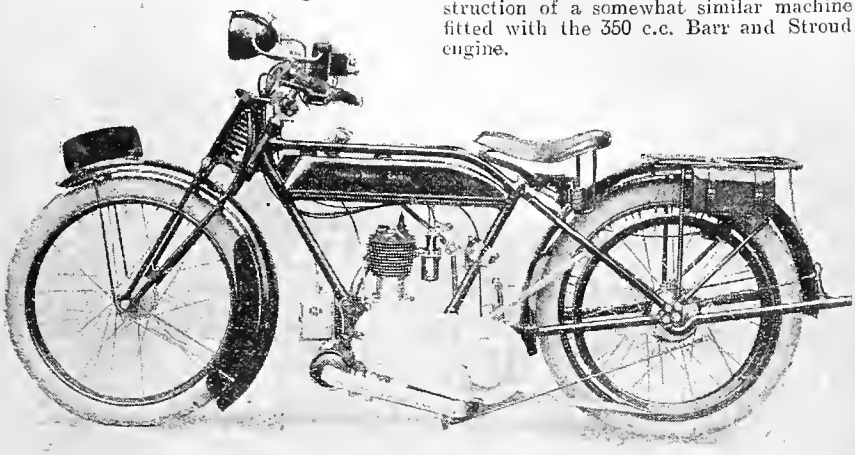
THOUGH presenting no great novelty in construction, the 2½ h.p. Wigan-Barlow is well worth careful study, since it incorporates several items unusual in so light and moderately priced a machine.

Standard Components.

A 293 c.c. J.A.P. engine is the power unit employed, and transmission is by protected chain to a two-speed Albion gear box with clutch and kick starter. Final drive is by belt. Front springing is effected by a Maplestone fork, and Webb internal expanding brakes are fitted front and rear.

In addition to the usual aluminium footboards, carrier, etc., the front guard is valanced behind the fork, and 26×2½in. tyres are fitted, which will add very considerably to the rider's comfort, and will minimise tyre troubles.

The latest type of Best and Lloyd sight-feed lubricator is standardised, and with its dropped top tube and neat finish the machine presents an attractive appearance. An M-L Maglita ignition and lighting set will be fitted as standard. The manufacturers are Wigan-Barlow Motors, Ltd., of Lowther Street, Stoke, Coventry, are also contemplating the construction of a somewhat similar machine fitted with the 350 c.c. Barr and Stroud engine.

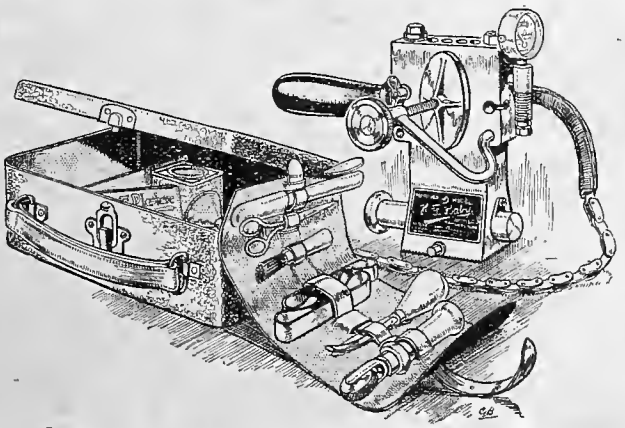


A neat looking lightweight, the Wigan-Barlow, embodying an M-L Maglita ignition and lighting set as standard. The engine is a 293 c.c. J.A.P.

VULCANISING MADE EASY.

A NUMBER of motor cyclists imagine that the process of vulcanisation is a mystery quite beyond the ken of normal persons, and for this reason a badly gashed cover or tube is sometimes scrapped when it would still have a useful life if properly treated.

Such persons would do well to examine the H.F. Baby vulcaniser. The name of the manufacturers, Harvey Frost and Co., Ltd., of Great Portland Street, London, W.1, has been well known in their particular line since the earliest days of pneumatic-tyred road transport; and from a long experience they have been enabled to combine with their latest vulcaniser all those little conveniences which go so far to assist the amateur.



Complete H.F. "Baby" vulcaniser, with its equipment and carrying case.

The vulcaniser, complete with all tools and necessary material, is put up in a compressed fibre satchel some 8in. square × 3¼in. deep, so that it may easily be carried in a sidecar if a tour is contemplated; and an instruction book is provided, so clearly written that it would be hard to go wrong, even with no previous experience.

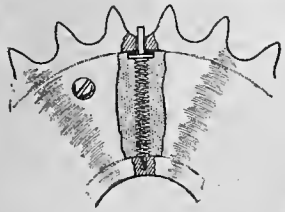
Not long ago we experienced a burst in the rear tyre of a sidecar outfit, and, on returning home, took the opportunity of testing an H.F. Baby. Following the simple instructions with care, an admirable repair was made; and, though the burst had taken place in the middle of the tread, the tyre has stood some two hundred miles road work since vulcanisation, with no signs of wear; in fact, the damaged part is now barely distinguishable from the rest of the tread.

The vulcaniser is provided with a simple adjustable fastening, which enables it to be used without removing the tyre from the rim, provided, of course, that the inner part of the cover does not require treatment. It should be added that the heat is steam-applied, a simple methylated spirit burner being fitted.

AUTOMATIC CHAIN LUBRICATION.

A DEVICE which, by merit of its simplicity and obviousness, prompts wonder as to why it has never been done before forms the subject of this paragraph. Its object is the constant and automatic lubrication of exposed or semi-exposed driving chains, and the originator is Mr. C. R. Little, of the Constitutional Club, Coventry.

Briefly, the idea consists of a hole drilled radially through the sprocket in the hollow between two teeth. This hole is normally sealed by a small peg, spring loaded, and carrying a small leather washer under a collar, which acts as a valve. The sprocket itself is constructed to act as an oil reservoir, being closed with discs spun into place—one on each side. Almost any make may be adapted.



An original and simple device for oiling the final transmission chain.

Obviously, for the half of every revolution the plunger is depressed by a roller of the chain which holds it down, thus allowing a small quantity of oil to escape on to the chain.

For machines having exposed rear chains, the device appears to be an excellent one, and a machine on which it has been running, with only one filling of oil, still retains its final driving chain in well-lubricated condition after well over one thousand miles.

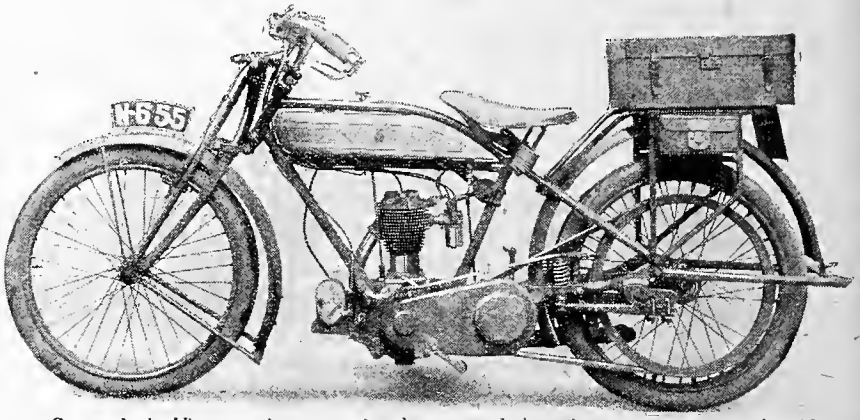
AN INTERESTING SPRING FRAME.

Combined Leaf and Coil Suspension Applicable to existing Machines.

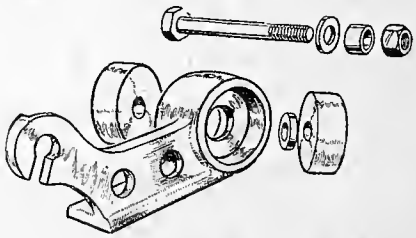
HAILING from Belgium, the Victory spring frame has many points of interest, and embodies advantages which are not immediately obvious to the casual observer. The manufacturers, Victory Constructions Mécaniques, S.A., 540, Chaussée de Waterloo, Ixelles-Bruxelles, who have arrived at the design after considerable experimental work, make notable claims for the device.

It will be seen that the rear wheel is carried in a short link pivoted from the rigid chain stays. The fork-ends of these links have wide faces, and are rigidly dogged to special axle members, so that no twist can take place, and the links on each side must rise and fall together. Enormous areas are provided for the bronze pivot bearings, and a web in the bearing is gripped between the faces of the two bronze bearings so as to provide a friction damping device and sideways location. Should side wear develop after long use, the location can be corrected by facing off a steel distance piece. Attached to either link is a short laminated spring having a loosely mounted extension bolt at the front end. This bolt passes through the chain stay, and is attached to a compression spring above the stay, a rubber stop being provided between the stay and the leaf spring.

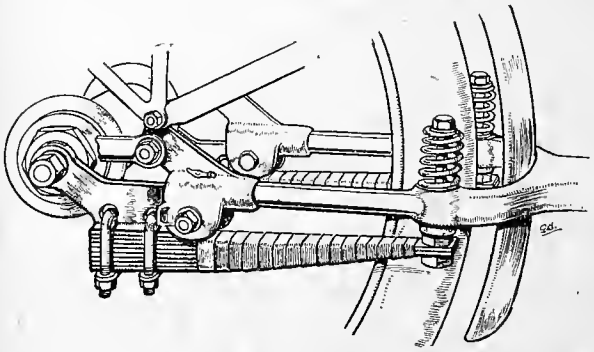
Two rather unique claims are made by the inventors: (1) that the machine is actually steadier in grease than a rigid frame machine, and (2) that the upward motion of the rear wheel on striking a bump is balanced by the downward thrust of the leaf spring at the inner end of the chain stay; and thus a minimum of shock is received by the frame and rider.



So neat is the Victory spring suspension that a second glance is necessary to realise that this Belgian-built Rush lightweight has not a rigid frame. Leaf and coil springs, a friction device, and a rubber buffer contribute to the design.



Two bronze bushes act as bearings and as a friction damping device for each link.



Great lateral rigidity is obtained on the Victory rear suspension set; the links are dogged to the axle, preventing an unequal rise, and the main bearings are of ample area.

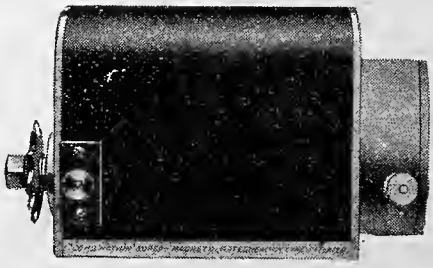
No spring frame will give a badly-damaged road the smoothness of a billiard table, despite the claims of many enthusiastic inventors. At the same time we may fairly say that the Victory frame was at least as comfortable as any system of motor cycle suspension that we have yet tested, and the majority of them much more complicated designs.

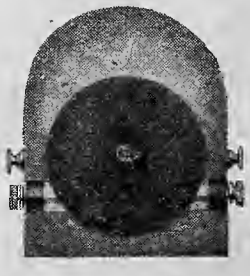
During a short run over some very mixed roads, the frame, as fitted to a Rush lightweight, proved entirely satisfactory from every point of view. Potholes, taken at speed, are, of course, felt, but fail to produce any jar, and, what is even more important, zigzagging on greasy tramlines did not result in a skid. The machine held the road wonderfully, which is particularly noteworthy, since the riding position was thoroughly awkward, and unsuited to the writer.

It is the intention of the manufacturers to market the attachment in this country both as a conversion set for existing machines, and as a proprietary fitting for inclusion in standard models. We are informed that many Belgian machines are now fitted with the Victory spring frame, and many conversions have been made, which all have given great satisfaction.

AN INNOVATION IN COMBINED LIGHTING AND IGNITION.

A HIGH-TENSION magneto which generates direct current for lighting, and has but one armature, is an innovation in combined lighting and ignition sets, which will shortly be introduced by the Combination Metallic Packing Co., Ltd., of Gateshead-on-Tyne. Full details are not yet available to the public. The ignition current is of high tension; it is claimed that full ignition is obtained from 50 r.p.m. of the armature. There is no high-tension slip ring or induction coil, and the make and break automatically advances and retards with the engine speed. Voltage is also automatically regulated, and the direct current for lighting is of 4½ volts 4 amps., at 500 r.p.m. of the armature under full load. The direct current and ignition windings are electrically free from each other, and generate independently from the single armature. Its weight is 15 lb.





The "Combination" magneto, which generates a direct current for both ignition and lighting from one armature.

International Conference of Motor Cyclists.

Meeting of the F.I.C.M. at Milan. New Sidecar Classes. Scooters and Motor-assisted Bicycles Defined. Wonderful 100 m.p.h. Records.

THERE was an international conference of the F.I.C.M. at Milan at the beginning of last week. The following countries were represented: Italy, England, France, America, Belgium, Holland, Switzerland, and Spain. Sixteen delegates in all were present under the chairmanship of Count Bonacossa.

A sub-committee was formed to investigate the organisation and classifying of records, and the international records broken during the last year were submitted for sanction. All the British claims were passed, and were, incidentally, 92% of the total.

101.32 m.p.h. for Fifty Miles.

Records in America showed the figures of 104.34 m.p.h. for ten miles and 101.32 m.p.h. for fifty miles. These were made by Otto Walker (Harley-Davidson) at Fresno, California. Other fine times were R. Hepburn's (Harley-Davidson) 100 miles at 88.4 m.p.h., 200 miles at 87.02 m.p.h., and 300 miles at 85.7 m.p.h. French records included Lombard's 75.85 m.p.h. on the Salmson.

Scooters, lightweight sidecars, and two-seated sidecars have all gained international recognition, the following additional classes being instituted:

Class Z.—For motor-assisted bicycles not exceeding 125 c.c.

Class Y.—For motor scooters not exceeding 175 c.c.

Class B-S.—For sidecar machines not exceeding 380 c.c.

Class J-1.—For single-seater sidecars not exceeding 750 c.c.

Class J-2.—For two-seater sidecars not exceeding 780 c.c.

The following definitions were approved:

A scooter is a motor-propelled vehicle carrying a platform, no part of which is less than 30 cms. from the ground, and has a minimum length of 20 cms.

A motor-assisted bicycle is a vehicle having two or three wheels, provided that, if with three wheels, the third is used for propulsion only, whether it is operated by the driver and/or a motor.

It is proposed to form a representative governing body of motor cyclists in Spain. The Spanish Government paid the expenses of the Spanish delegates, so great is its interest in the movement.

The following officers were elected: President: Sir Arthur Stanley; vice-presidents, M. Longuemare (France), M. Jules Neher (Switzerland); and Count Albert Bonacossa (Italy); hon. treasurer, S. F. Sharp; general secretary, T. W. Loughborough.

A balance-sheet will be presented early next year.

Improved Touring Facilities.

Suggestions for improved facilities are to be presented by each member next year in order to improve international touring. It is proposed to issue a bulletin annually. A guaranteed circulation, however, will be required. This will be discussed later.

It is proposed to make it compulsory for competitors to insure themselves, as a result of some recent fatal accidents. It was also agreed that at least three competitors from one country entering an international competition shall be permitted to enter at pre-war rates of exchange.

It is possible that the date of the 500 Mile Race at Brooklands will be altered by one week before or after, since it clashes with the Belgian Grand Prix.

Next Year's International Event.

The route of the International Six Days Trials was submitted by M. Neher, and will provide an excellent course. The new rules for this event include the following: That the trophy shall be insured by the winning member for £800; that the trophy shall remain the property of the F.I.C.M.; the winning member shall retain the trophy for nine months, when a model of the award shall be given permanently to the member; the winner shall be permitted to organise and submit suggestions for the following trial.

These proceedings lasted until lunch time on Wednesday, when the delegates were entertained to lunch by Count Bonacossa it his chateau. A visit to the Touring Club of Italy followed, when the members were met by the President, and an excellent set of touring maps was presented to each delegate. A visit to the works of Messrs. Pirelli, the tyre manufacturers of Milan, was made on the Thursday.

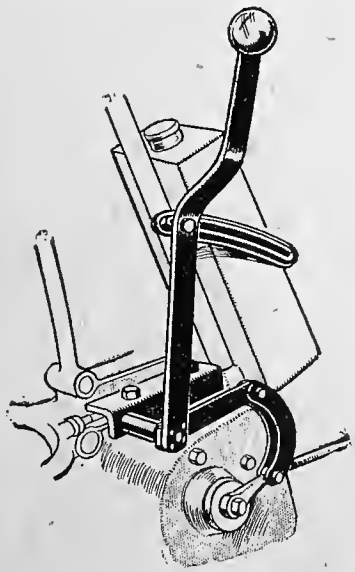
The Federation will meet on August 11th, 1922, at Geneva, and also immediately after the Motor Cycle Show, 1922, in London.

HAND-CONTROLLED CLUTCH FOR 1913 INDIAN.

WHEN I decided to fit a hand control clutch lever to my 1913 Indian, the difficulty experienced was in finding a suitable position for the pivot upon which the clutch lever should work. After due consideration I decided to utilise the bolts and nuts securing the gear box to the frame in order to support a pivot. The right-hand plate on the top of the gear box housing was removed, and a piece of angle iron was drilled and fitted into its place with one side on the casing of the gear box. At the rear wheel end of this angle iron a piece of steel rod, to act as the fulcrum, was riveted. This short piece of rod was turned up with a shoulder about ⅜in. from the angle iron to ensure the clutch operation being wholly in a vertical plane.

Foot-control Retained.

The clutch lever itself was about 16in. in length, and at the fulcrum an arm about 4in. in length was riveted at about an angle of 60°. A short link, shaped like the arc of a circle, was made to join the end of the arm riveted to the clutch lever to the short arm, operating directly the spiral thread. To steady the clutch lever and to act as a guide a further fitment (a guide on the oil tank) was necessary. The operation of the foot-control was in no way interfered with, and the whole fitment has been working beautifully and sweetly for some eighteen months now. For solo riding the advantage of hand control is very great.—H.W.T.



Hand control for a 1913 Indian clutch. This method of finding a suitable pivot may be adopted in many other cases.

A LIGHTING CASE—AND A MORAL.

A CASE illustrating the folly of withdrawing the war time order which required horse-drawn vehicles to show a red rear light at night came before the Falkirk Sheriff Court last month. A motorist was charged with dangerous driving, and the evidence showed that he ran into the rear of a horse-drawn lorry, which had no rear light, and which he failed to see in the darkness owing to the brilliant head light of a passing tramcar reflecting on the screen of his car and so completely dazzling him.

Misleading to Road Users.

The charge in this case was found not proven, and Sheriff Robinson in giving his decision said people who made orders ought to stick to them. To issue an order that vehicles must have rear lights, and then put it off again, was most misleading to those who were using the roads. In so far as respondent's vision was dazzled by the head light of the tramcar, he was inclined to believe that this was true; but in circumstances of that kind it was the duty of the motorist to slow down or stop altogether until he could see properly, and not, by proceeding, run the risk of knocking into anything which might be standing in the road in front of him.

Junior Car Club.

The president of the club, the Hon. Sir Arthur Stanley, has kindly consented to take the chair at the annual dinner, to be held on January 10th.

West Birmingham M.C.C.

A most successful annual dinner was held at headquarters, the King's Head Hotel, Edgbaston, on Thursday, the 8th inst. This was followed by the presentation of prizes by Mr. James St. John, vice-president. An excellent musical programme ensued, which put the finishing touch to a very enjoyable evening.

Public Schools M.C.C.

With Col. F. Lindsay Lloyd, C.M.G., in the chair, the annual dinner will be held at the Public Schools Club, 61, Curzon Street, Mayfair, W., on Thursday, January 5th, 1922, at 7 for 7.30 p.m. In order that the necessary arrangements may be made, it is imperative that members should inform the hon. secretary not later than first post on Saturday next whether they intend to be present.

Ealing and District M.C.C.

A pleasant evening was enjoyed by members and friends on Monday of last week at the Town Hall, Ealing, where was celebrated the third anniversary of the club. The President, Dr. A. M. Low, A.C.G.I., D.Sc., at the close of the dinner, proposed the toast of "The King," which was followed by a most entertaining speech by Mr. J. A. Masters, the captain, proposing "The Club." Major Empson, proposing the toast of "The President," and Capt. A. Fraser Nash, of G.N. fame, on behalf of "The Visitors," were the other speakers. The President, in reply, quoted, as some of the achievements of the club, the London-Holyhead trial, which was an unqualified success, and the Brooklands race meeting.

Bristol M.C.C.

There was a large attendance at the annual dinner of the Bristol Motor Cycle Club, held recently at the Full Moon Hotel, North Street, the president, Mr. W. B. Carter, occupying the chair. The Chairman presented the prizes won during the past year, quite a creditable proportion of them going to an amateur rider, F. G. Mann (7-9 Harley-Davidson sc.).

Mr. E. Featherstone, treasurer of the Western Centre, A.C.U., in proposing the toast of "The Bristol Motor Cycle Club," said it was a sporting club of which one could be proud. In pre-war times Bristol was known from one end of the country to the other, and had leaders whose names were household words, viz., Rankin, Eli Clark, and E. Kickham, and the last-named they were glad to see back after his accident in the Grand Prix.

Sheffield University M.C.C.

The first annual dinner was held on Friday, December 16th, and was most successful. It was preceded by a lantern display, which included slides from the photographs taken by *The Motor Cycle* photographer on the recent trial at Litton Slack and Cowdale.

Coventry and Warwickshire M.C.

Lieut.-Col. J. A. Cole, the president, occupied the chair on the occasion of the club's annual dinner, which was held on Tuesday of last week at the Masonic Hall, Coventry. Amusing speeches and more or less impromptu verse-making were the features of the evening, during which an imposing array of trophies and awards was presented to the successful competitors in the past year's competitions.

The Mayor of Coventry promised continued attention to the question of road surfaces; and Mr. J. K. Starley, one of the speakers, reminded his hearers that good roads were expected in view of the taxes contributed by motorists in general.

Mr. V. A. Holroyd extended a hearty invitation on behalf of the committee to Col. Cole to act as president for another year, an invitation which was accepted in a speech in which Col. Cole recalled his very earliest motoring experiences when he visited Coventry to drive away a 6 h.p. Daimler with tube ignition.

The chief prize winners were S. Wright and H. W. Hassall. The latter was especially congratulated upon his success in the Belgian Grand Prix.

Bradford M.C. and L.C.C.

On December 16th the Bradford M.C. and L.C.C. held its second post-war annual dinner at the County Restaurant, Bradford, under the chairmanship of the president, Mr. J. E. Fearnley. The gathering was well attended, over a hundred members being present. During the proposal of "The Club" by Mr. F. Scriven, it was mentioned that the present membership of the club was 280, and, in addition, there were twenty-two honorary members. During the year fifty-six members only had been lost, despite the depression in Bradford's prosperity during the year. Mr. T. G. Bullus responded with a racy *résumé* of the club's doings in trials during 1921, and also paid a graceful tribute to the Bradford Gipsy M.C.C., which had assisted in the organisation of many of the events.

Mr. J. Conchar proposed "The A.C.U. and the Yorkshire Centre (A.C.U.)," coupling therewith the names of Mr. J. N. Longfield and Mr. W. A. Dovener, chairman and secretary respectively; the latter names were received with tremendous acclamation. During his remarks, Mr. Conchar predicted that the Yorkshire Centre Open One Day Trial on June 17th would probably "out-Scott the Scott trial."

Toasts of "The Visitors," "The Press," and "The President," were proposed by Messrs. S. M. Haigh, C. Sidney, and A. R. Naylor respectively, and received suitable responses. The prizes were distributed by Mr. J. E. Fearnley, and the evening was closed by the ever popular Irish and Yorkshire ditties of the Dewhirst Bros.

A special feature of the evening was the tastefully printed menu, including a complete list of the club's 1921 competition results prepared by Mr. W. A. Dovener.

Birmingham M.C.C.

On Friday, January 13th, the club will hold its annual dinner, smoking concert, and prize distribution. Tickets, 12s. 6d. each, will be available shortly.

Levis Athletic Club.

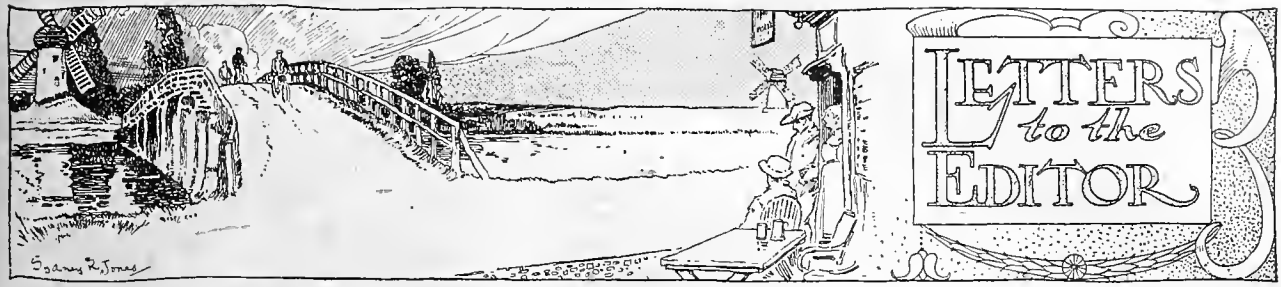
On Friday and Saturday last an excellent variety entertainment was provided by the Levis Athletic Club at the Levis Works, Stechford.

The programme, which was well varied, and contained many topical allusions, concluded with a sketch entitled "A Reliability Trial." This sketch, which was a clever skit on the real article, proved immensely popular. Mr. Alec Ross, who worked hard to replenish the coffers of the club, made the interesting announcement that the A.C.U. stock trial would start from the Ward End works of the Wolseley Co., and that, by the courtesy of Mr. McCormack, special arrangements had been made which would be of assistance to Midland competitors.

During the evening Mrs. Butterfield distributed prizes to successful competitors in club events.

Evesham M.C. and L.C.C.

The club held its first annual dinner at headquarters, the Crown Hotel, Evesham, on Wednesday night of last week. About fifty members and friends were present, and the Mayor of Evesham (Mr. W. A. Fisher) presided. After the toasts of "The King" and "The Prince of Wales," Mr. J. Howell, of Worcester, proposed the toast of "The Club." He said they of the Western Centre regarded the club as a rather precocious baby. They had among them that night Mr. Eric Williams, whom he considered the greatest rider this generation had seen. Mr. Morrall, their acting trials secretary, was a man of great promise. It was an honour to have the Mayor in the chair, and Mr. A. O. Brown, the donor of a cup, had come from Southampton for the event. Mr. G. J. Brotherton, the hon. secretary, responded, and spoke of the assistance rendered them by the Worcester and Cheltenham Clubs.



The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

VARIABLE EXHAUST NOTES ON TWO-STROKES.

Sir,—I recently required some new piston rings for my machine, and had to go some ten miles to get them. However, I started out, somewhat doubtful as to the running, as I had no bottom ring, and the others were badly worn. However, the machine behaved exactly as "Silenced" described, but ran very regularly, and did not lose power until the revs. fell very low. When new rings were fitted it ran as normally as ever. Now, when running with the throttle only slightly opened, if I open the air there is a curious swishing sound like the sucking of a carburetter, which continues as long as the air lever is fully opened. Can any reader explain this? JEGLIDE.

Great Yarmouth.

Sir,—I have repeatedly found that once the engine of my machine (an old model Connaught) is thoroughly warmed up, by putting the gear in neutral, and closing right down the air lever of the carburetter with the throttle one-quarter open, I can get the engine to run without a murmur from the exhaust at about 600 r.p.m., and two-stroking all the time. Unlike your other correspondents, I have practically no power when running like this, as the least pressure on the flywheel will stop the engine. However, on closing the throttle slightly and opening the air lever, the engine will start the usual four and eight-stroke banging until the mixture is corrected, when it regains its usual burble.

From the above experience I should be inclined to attribute the other cases of silent running to a super-rich mixture, which will not explode, but burns. TANTA.

Walton-on-Thames.

FLAKING OF MICA PLUGS.

Sir,—I have noticed for some time now letters from numbers of motor cyclists who write to you for advice on the subject of what they term "drying up." What this "drying up" means I do not understand, and never did, and I am perfectly sure that what they complain about is caused by self-ignition, which is caused by inefficient, defective, and badly manufactured spark plugs.

In addition to their "drying up" troubles, motor cyclists and motorists generally are suffering, and have been suffering for some time, from what they think is "seizing up." They can drive their motor cycles or cars gently, or, comparatively speaking, gently, for some distance, but when they arrive at a hill and open up the throttle, or even if they open up on the level, the engine, after a short distance at full throttle, comes to a sudden stop, but the engine is free immediately the starting handle or kick-starter is operated. This trouble is not due, of course, to "seizing up" but to self-ignition through these bad plugs. This self-ignition takes place so early that the piston has to compress the explosion, which, of course, it cannot do, and stops the engine dead.

I think it would be a good thing if you would use the influence of your widely read paper to warn motor cyclists and motor car users of these plugs; and I, on behalf of my company, wish to protect our productions.

When an engine so behaves, due to its faulty plug, the opinion of the majority of users is that it is the engine which is at fault because the symptoms are so like a "seize up" to most people, but they overlook the fact that an engine cannot change its mind! And if a stoppage is due to a seizure, it still remains seized when stopped.

The plugs which I have found to be the worst offenders are of the mica type, and the mica is wrapped. Why a manufacturer will make a plug in this manner is absolutely beyond me. The wrapping is first done, apparently, in a cylindrical manner, and afterwards turned to taper shape, which turning exposes the underneath layers, and these layers begin to flake very early in their life, and often burst or flare open. The edges of these flakes become incandescent and cause self-ignition, in some cases so early that it ignites the gas while the inlet valve is still open, causing blowing, or popping back into the carburetter. Some of these plugs are detachable, and if the centres are detached very carefully, so as not to break or rub off the loose edges, the flaking can be seen. THE M.A.G. ENGINE CO., LTD.

OSBORNE DE LISSA, Managing Director.

THE HIGHEST METALLED ROAD IN GREAT BRITAIN.

Sir,—Well knowing the district mentioned by your correspondent, I can quite understand him lifting the machine over boulders, heather, etc. The road he mentions is nothing more than a "moss road" (*i.e.*, a road the natives use for bringing their peats down from the moss, or bog), and I pity the club that "finds" this "road" for a hill-climb or test.

The query, however, asks for the "highest metalled road," and by no stretch of imagination can one call this metalled; while the remarks with regard to scenery are somewhat misleading as it is very bleak and treeless after the farms are passed. The track is never used beyond these farms; while from Loch Bulig to Inchroary is merely a footpath, and not a good one at that. No; it is far better and quite arduous enough to get from Deeside to Tomintoul by the regular route *via* Gairnside, Cock Bridge, etc.

I still think the highest *road* can be found in Aberdeenshire; but this is the well-known Cairnwell from the Spittal of Glenshee to Braemar, with the famous hairpin bend known as the Devil's Elbow, and rises to a height of 2,200 feet above sea level.

L. FORBES.

A FINE ARRAY OF PRIZES

It is not our rule to publish photographs of club prizes, but this array of the Newcastle and Dist. M.C. trophies and medals for the 1921 season is exceptional, and serves to show the enthusiasm of Northern motor cyclists in club life.

PRONUNCIATION OF "MAGNETO."

Sir,—There is no doubt that this is usually pronounced "magneeto," but about ten years ago I heard a paper read before the Institution of Automobile Engineers by Mr. F. W. Lanchester. This eminent authority pronounced it magneto, slightly emphasising the second syllable, but with a short "e." E. SIMPSON, M.I.A.E.

HEAD LIGHT DIMMING ETIQUETTE.

Sir,—While "devouring" *The Motor Cycle* recently I noticed that the head light controversy is still raging.

It may be of interest to know that it is a law here that all head lights must be dimmed 150ft. from any approaching vehicle. Motorists appreciate the danger of glaring lights, and usually switch off about 300ft. from anything approaching. EX-NB 9477.

Miami, Florida.

Sir,—The thanks of the motoring community are due to you for the prominence given in your journal to the subject of light dimming. A wider observance of this simple courtesy would do much to render night driving safer and more pleasant for all.

I cannot quite see why nearly all your writers on this subject seem to take it for granted that gas lamp users cannot reasonably be expected to reduce their lights under any circumstances. Any set of gas lamps can be arranged to dim quite satisfactorily if a little trouble be taken by the owner to spend the necessary few pence and few hours in fitting up a gadget that will enable them to reduce their light at times when it is a danger and annoyance to other road users.

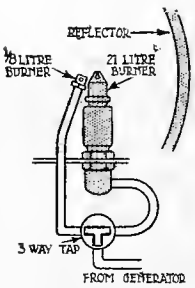


Fig. 1.

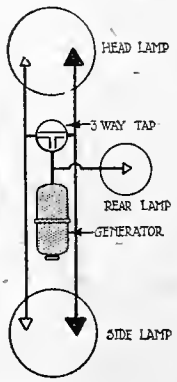


Fig. 2.

That so few "gas men" seem to have taken this trouble is the writer's excuse for describing a dimming device which has performed successfully for some years past on his own machine.

The lamps fitted on the machine are an F.R.S. Major head lamp with a 21 litre burner, and a Lucas rear lamp with a ⅛ litre burner. When the sidecar is attached it carries another F.R.S. Major with 21 litre burner. All are supplied from a Low generator of motor cycle size.

To be quite honest, it was not consideration for other road users which first induced the writer to fit the dimmers, but rather it was a desire to reduce the 42 litres gas consumption in town, and when standing outside the house.

Various devices were first fitted which acted by impeding the flow of gas to the burners; but, whilst quite good for momentary dimming, they failed in town work by sooting up the burners rapidly.

Each head lamp was then fitted with a three-way tap and a pilot burner taking ⅛ litre, arranged as shown in fig. 1. This was successful in town, but did not solve the difficulty of momentarily dimming the sidecar lamp from the saddle. To overcome this defect, the sidecar lamp was fitted with a double supply pipe, as indicated in fig. 2, both lamps being now controlled from the one three-way tap.

The extra complication due to the use of the two small pipes on the sidecar is very little, and is quite paid for by the saving in gas alone. KB 1112.

Liverpool.

[Car owners and their associations have now more or less come to a definite conclusion on this matter, *i.e.*, that switching off entirely is unsafe, but that the fitting and using of dimming switches is to be encouraged. The R.A.C. has lately conducted trials of promising devices of this nature, and has issued certificates of performance. A number of these dimming switches are described and illustrated in the current issue of *The Autocar*. It only remains now for owners of vehicles with powerful lights to make the necessary conversions.—ED.]

"ECONOMICAL MOTORING FOR TWO."

Sir,—I enclose a photograph which may be of interest to your readers. I think I can claim that it is the only "combination" of this kind on the road. The gentleman's cycle is the Waltham Engineering Co.'s special cycle with their Young 1¾ h.p. attachment. This is coupled to the lady's cycle with a Unito rigid coupling.

The power of the engine is simply wonderful. I ran it all last season, and have been from London to Brighton and back comfortably in the day. With, of course, pedal assistance, we can get up all but freak hills with ease. On test, with the engine in best form, we have run from Ashtead to Tooting without ever turning the pedals! I suppose that is with about a 20 st. load. It is very cheap to run, and the initial outlay is relatively small.

CLAPHAM.
London, S.W.12.

BICYCLE OR CAR?

"Clapham," in the accompanying letter, gives his experiences with these coupled pedal cycles driven (mainly) by a 1¾ h.p. Young motor attachment.

PREVENTION BETTER THAN CURE.

Sir,—If "Humber 1st" will mount his A.A. badge on his front mudguard, in front of the number plate, he will no longer get caught up in it. A. BREDT.

IMPROVING AN A.B.C.

Sir,—I was much interested in a letter from F. Mason *re* "Improving an A.B.C." Being a well satisfied owner, and having got over the two difficulties he mentions, I should be very happy to help him out. The carburetter necessary is a Cox Atmos, but this will not tick over unless everything else is in proper order. The gudgeon pin fixings are discarded, and a large size (3/32in.) copper rivet driven in each end of the pins. It is necessary that the gudgeon pin has at least ⅛in. lateral play. E. F. BEWERS.

MAXIMUM SPEEDS OF TWO-STROKES.

Sir,—I note with interest that one of your correspondents can get 44 m.p.h. with a Villiers engine. I should be very pleased to hear how it is done. I have a Villiers-engined Revere, new in December, 1919, and, although this machine is a paragon of reliability and a marvellous hill-climber, the highest speed I have ever touched (Johns-Manville speedometer) is 38 m.p.h., and that down a gentle slope with a following wind. Also, the engine does not like continuous driving at more than 25 to 27 m.p.h. AR 8414.

London, S.E.18.

HINTS CONCERNING SCOTTS.

Sir,—In common with "Southerner," whose letter appeared in a recent issue, I should like to know how to get 98 m.p.g. with a Scott. I use a gear of 4¼ to 1 on top, Binks carburetter (jets 00, 1, and 8), and a lightweight sidecar, and obtain 45 m.p.g. I am fitting "hot air," and shall no doubt improve on the above. As regards easy starting, I consider the Scott the easiest of bicycles to start, and I have had several. My method is this. Stop up every single air leak, use No. 1 or aviation petrol if possible, half-retard ignition, open throttle half-way (Binks), cover up the intake with the hand, lift half-compression, and push the engine round quite slowly with the kick-starter (slower the better) a few times, and the machine will then start at once. When hot, open the throttle about one-quarter, give one gentle push, and then a smart dig, and off it goes. P. CALLARD.

EXPECTED DEVELOPMENT IN IRELAND.

Sir,—I should very much like to bring under the notice of the trade the enormous possibilities of a greater sale of British machines in Ireland. Now that all the restrictions are taken off temporarily, and with the prospect of being removed altogether, there is a very large percentage of the Irish who are only waiting their chance to start the supreme pastime on a level basis with the Britisher. It is only a matter of a few months to get the roads in order again, and during that time I am certain that if manufacturers extended their agencies in this country they would find that they would get very many orders. In my opinion, the motor cyclists we have in this country are only a very small fraction of what there will be in the near future.

Dublin. WORRIED.

MOTOR CYCLISTS IN DREAMS.

Sir,—If "Motor Cyclist in Dreams" would like to see the fulfilment of his desire, if he possesses patience, perseverance, and concentration he can, by visualising and holding the image of his desire strongly in the mental world, find in time that, according to the clearness of his mental image, and the persistency with which he holds to it, his desire of motor cycling will come along.

He should form a clear cut mental image, filling in every detail of the motor cycle and himself riding, even to the clothes he is "wearing," and with persistent patience and keeping the image ever present before him the realisation is bound to come.

This process is not to be confused with dreaming, which is only frittering away of the mental energy, and results in nothing, except loss of mental activity which could be turned to good account.

These are things which individuals can, if they desire, prove themselves. MAUDE STANSFELD.

SIDECAR FUEL CONSUMPTION RECORDS.

Sir,—May I take the liberty of replying to Mr. Tom Hammond, in regard to "Ignoramus's" petrol consumption? I myself am riding a 1921 Triumph sidecar, an absolutely standard outfit, as delivered from the Triumph Cycle Co., with no alterations in regard to jet or anything else. My average is 88 m.p.g.—not a trip average, but week in and week out, and in the county of Derbyshire, always with a sidecar and passenger. Last September, after tuning up my machine, I took a trip average with sidecar and passenger, and out of one gallon and one pint of petrol I got 111½ miles, thus making a fraction under 100 m.p.g.

The secret of it all is: Treat your machine as part of yourself. Gear on the low side, say 5¾ to 1 top, or not a fraction over 5½. Decarbonise every 700 miles. Do not half do it—give minute attention to your valves. Do not allow a speck to remain on the valve faces; also, always have good springs. Give the engine a pumpful of oil every six miles, do not run six, then seven, and then eight; let it have it regularly, by speedometer if possible.

ENTIRELY SATISFIED.

Derby.

WEIGHTS OF SPORTING MACHINES.

Sir,—With reference to "Triardo's" defence for heavy sporting machines in your issue of December 8th, I can only agree with the last part of it. Is he aware that the sidecar has been responsible for a lot of this weight—long wheelbase, large tanks, heavy frame, etc. If the 4¼ h.p. Coulson, 4¼ h.p. Hawker, Bat, and one or two other machines can be made within the 200 lb. limit (and a touring machine at that), should it be necessary for the sports models to be 240 lb.?

Again, take the 2¾ h.p. sports Massey Arran at 175 lb. and the 5-7 h.p. flat twin Coventry Victor at 225 lb.

Until some line is made between a machine for sidecar use and a machine for solo work, and manufactured specially for one or the other, extra weight will always be burdened on the solo motor cyclist.

"Ixion" knows what he is talking about.

S. HENDERSON.

Sir,—As another prospective owner of a Ricardo-Triumph, I write to support "Triardo" in his remarks of the 8th inst. One of the outstanding points which recommended the machine to me was its substantial construction.

I have seen so-called "sports" machines led into garages suffering from the results of quite ordinary skids, with their frames twisted to an almost incredible degree. One instance stands out, being that of a 4 h.p. 30s. tax machine (60 m.p.h. (?) sports model), which had the whole steering head twisted as the result of an ordinary skid! Now then, "Ixion," what about it? RICUMPH.

West Somerset.

GOOD BAD ROADS OR BAD GOOD ROADS?

Sir,—When I used to ride in England I was continually irritated by reading letters from the Colonies boasting of the bad roads overseas. I found this particularly annoying in June, 1919, when I broke three spokes and fractured my down tube on a Hounslow pot-hole, and read soon after that we were lucky to have the roads we had.

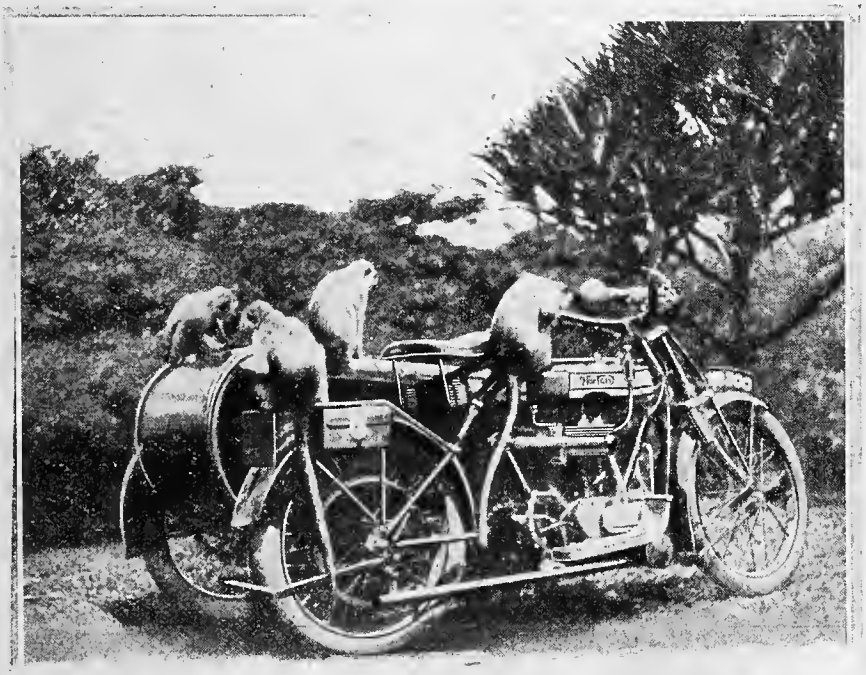
I have now covered 5,000 miles of Rhodesian roads, mostly thirty miles from the nearest railway, and although it is admittedly difficult to average more than 18 m.p.h., it is, nevertheless, far more pleasant riding than the English roads provided two years ago.

With the splendid clutch on my 4 h.p. Triumph, river drifts on the main roads present little difficulty, and even the sandiest roads are better than Mendip grease.

To sum up, roads which have not been "made" yet are far nicer than those whose Tarmac surfaces have been beaten into potholes and corrugations by lorry traffic; and, thank goodness, there are no tramlines.

S. Rhodesia. OVERSEAS TRIUMPH.

[It is generally supposed that English roads have been considerably improved since 1919.—ED.]



A snapshot of wild monkeys examining a Big Four Norton. The photograph was taken on the banks of the Umgeni river, S.A., by Mr. J. L. Norton, who states that the monkeys were shy to begin with, but soon made up their minds that it was a good machine, and settled down comfortably, while he from his hiding place exposed the film.

COMPARATIVE INSURANCE RISKS.

Sir,—"Nicky Nicky Bom Bom" will perhaps appreciate that the only just basis for the assessment of motor cycle premiums is the individual rider's driving skill, and that they should be in inverse ratio to his degree of observance of the principle of "Safety First." Since this is impracticable, and a basis of some sort had to be found on which to calculate premiums, the present system in vogue with insurance companies was adopted.

In this connection it is interesting to note that motor cycling insurance, from the insurance companies' point of view, still shows a heavy loss at the end of the year, and, as a result, rates for this class of insurance are likely to be still further increased.

Mr. Attwood Evans's statement that an 8 h.p. motor cycle is capable of more speed than the lower-powered machines argues that he is rather more of an insurance expert than an experienced motor cyclist. ENFIN.

Bromley, Kent.

Sir,—As one of those who, only by dint of scrupulous care, contrive to enjoy the freedom of the open road, through the medium of a motor cycle and sidecar, I am vastly interested in the subject of insurance as recently raised in your columns. I must confess to an ignorance on the subject. I have paid my premiums with much weeping and wailing and gnashing of teeth, and considered the cash thus disposed of as having depleted my possible mileage for the season. There must be many riders who, like myself, use their machines in a modest way, say, at the week end, and for only six months of the year. For this we pay a premium to cover the whole twelve months. Is it not possible to insure one's outfit for, say, April to September inclusive, at a somewhat reduced charge? Now that we are to be permitted to take out our licences quarterly (which will mean a saving of 30s. to such as I), cannot the insurance companies make some similar arrangement at a slightly higher rate than for the annual premium? ECONOMIST.

Reading.

FAMILY TRANSPORT MEDIA.

Sir,—I would advise "Family Man" (Woking) to give a Scott Sociable a real good trial before he finally decides on his next three-wheeler.

Our family consists of father (12 st.), mother (8 st.), son (eight years), daughter (six years), son (five years), and son (two years)—six in all—and I have covered over 4,000 miles to date, about half distance six up and carrying stove, food, fuel, etc., in proper comfort.

Incidentally, I have yet to see a two-seater sidecar attached to a motor cycle with a pillion that would give any comfort at all over 130 miles of average road to-day to any one of the four passengers.

I have never reached 70 m.p.g., although I get very near; but the Sociable is far cheaper to run than a first-class sidecar over, say, 5,000 miles. ANOTHER FAMILY MAN.

Manchester.

RELATIVITY AND THE PROP STAND.

Sir,—Might I suggest that prop stands should have a short spike on the ends? Using one of these on loose soil or mud with a flat end the machine is liable to fall over. Naturally, the spike would obviate this. A. BREDT.

Sir,—"Humber 1st" has given us a pleasant mixture of humour and pathos in recounting his experience with a makeshift prop. To the moral drawn by your correspondent one might add another pointing out the folly of using a makeshift when the real article is obtainable.

Unfortunately, a letter such as your correspondent's may convey to some readers an impression that a prop stand is not a safe thing to use; and, as a consequence, the general use of a really excellent fitting is thereby quite considerably retarded.

As the manufacturer of a popular prop stand, and as a reader with probably the longest experience of prop stands, I can assure "Humber 1st" that a correctly fitted and adjusted prop is not only very reliable, but is also a real boon to the solo rider. It is so delightfully easy to use that some riders seem to take a pleasure in using the prop quite unnecessarily, probably owing to a feeling of relief that the troublesome rear stand has been rendered obsolete so far as everyday use is concerned.

If the prop stand is well made and correctly adjusted to the angle and height of the footboard, there is no more useful fitting for the solo motor cycle, and certainly none that will give the rider such real satisfaction. Some inquirers appear to think a prop stand is not strong enough to hold up their machines, but we are repeatedly demonstrating that our all-steel prop will hold up a machine with a 14 st. rider in the saddle. A. ALTREE.

THREE POTENTIAL ENTRIES FOR A PRIVATE OWNERS' T.T.

Sir,—Having recently read the suggestion to hold T.T. races for private owners (no "shamateurs" wanted), we, the undersigned, are wishful to back it up. There are no events of this kind in which a *pukka* private owner holds an earthly chance, besides which entrance fees are prohibitive. Another point is that the course would be too long; ordinary sporting private owners are not used to 250 miles all out, and certainly do not wish to ruin their machines. May we, therefore, suggest that a course of sixty miles is sufficient, and that such a race would appeal more widely to the public than one in which non-standard machines are used and ridden by crack trade men.

We should like to finish up by hoping that the "Blue 'Un" will give the suggestion all the help it can.

H. BEACON.
N. A. LINDLEY.
W. HAVELOCK POTTS.

LEVERS OR TWIST GRIPS?

Sir,—At any discussion of this question I have hitherto been conservatively partial to the levers with which I have been familiar for all the fifteen years during which I have been a motor cyclist. But the other week I had an experience which led me to re-examine on their merits the two methods of control.

The experience I refer to was a nasty spill—the first that has happened to me. (I touch wood as I tell it.)

I do not know whether the two dogs concerned were deliberately attacking me, or, perhaps in their canine way, endeavouring to escape from me. At all events, it was not easy to keep clear of both. *Incidit in Scyllam qui vult vitare Charybdim.* In the event one of them just touched my front wheel, and, simultaneously, coincidence or result I know not, my rear inner tube burst, and I crashed.

The damage to horn and accessories was no more than was to be expected, but the personal injury was of a more serious nature. The needlessly sharp point of the exhaust lift lever had entered and gashed my left knee for a distance of 3½in.

A twist grip on my machine would not have averted the spill, but it certainly would have saved the need for the surgeon's services and the four weeks' absence from office.

In any case, are not these levers needlessly sharp at the point? Why should they not terminate in a foil, or knob, or button? LK 369.

Gibraltar.

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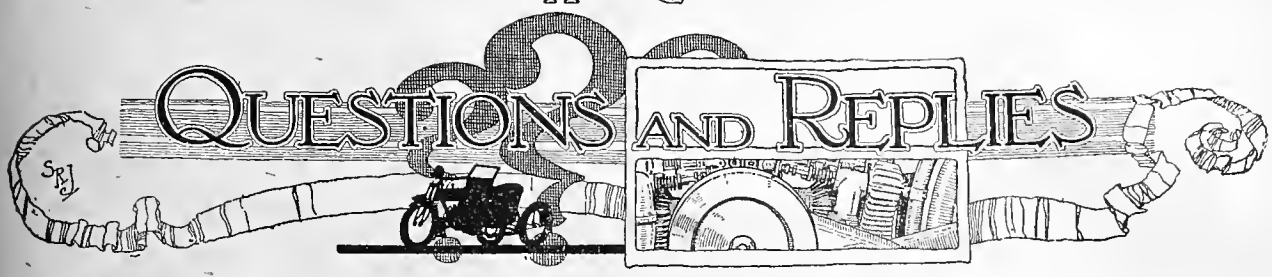

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

CHOOSING A COMMERCIAL TRAVELLER'S MACHINE.

I am taking up travelling for certain commodities as an occupation, and it is in connection with this that I expect to find a motor useful if not indispensable, especially as I shall have to carry a little stock with me. The district I shall be canvassing is hilly, and the roads are rather bad if one has occasion to leave the main routes. My means are very limited. What lightweights do you recommend me to look out for with this information in front of you? Please name a few, with their h.p. and prices, and then be good enough to tell me which you consider the pick of the lot. Presumably, one with more than one gear would be needed, and I should like one as simple as possible on account of the fact of being rather an amateur. In buying a second-hand machine, what points do I need to look out for? I understand that it is very easy to get "taken in" when purchasing such, and no one wants to lose more than is really necessary, especially when one has very little to lose!—S.L.S.

For your work a machine of between 300 c.c. and 500 c.c. cylinder capacity would be advisable. You would do well to study *The Motor Cycle* Olympia Show report for the most desirable mount for your work. Prices and all essential details were included in that issue. For obvious reasons, we cannot recommend one machine in preference to all others; if you could bring your choice down to three or four makes we would endeavour to advise if your selection is a suitable one. Before choosing a machine, we think it would be well if you obtained some better knowledge of the subject, and would suggest that you study the chapters on selecting a machine which are embodied in the latest edition of "Motor Cycles and How to Manage Them."

NO WONDER!

(1.) I have a 2¼ h.p. two-stroke (about 1916), and am constantly having trouble with the top piston ring, which carbons solid into its groove. I have had the engine down three times this season, and have on each occasion put in a new ring in this position, and always with the same result. On the last occasion (quite recently) the ring was carboned up solid in its groove after running only 100 miles, after taking the engine down and putting in a new ring supplied by the makers specially. The lower ring never seems to trouble this way. The engine quickly gets very hot, and commences to knock badly when running on the flat with very little throttle opening. Is the carboned up ring the cause of this? (2.) Should the edge of the top of the piston be on a level with the bottom of the exhaust port opening in the cylinder when the piston is at the bottom of its stroke? At present it does not get down to this point by a full $\frac{1}{16}$in. (the steep slope of the piston top is nearest the port).—F.W.S.

(1.) Gumming up of the top piston rings in two-stroke engines is rather a common fault, and it is difficult to overcome, although it should not occur so frequently as happens in your case. The only thing we can suggest is that you fit a ring having a good deal of up and down play, and also a fairly wide gap, so allowing the ring to be quite free in its groove. (2.) The top edge of the parallel portion of the piston should come approximately level with the bottom of the exhaust port. This can only be taken generally, as in all cases the ports are not machined and have slight variations. If the piston is fitted in your engine as described it is in the wrong way round, and this will account for all the bad running of the machine. The steep side of the deflector should be next to the transfer port.

Important Dates.

Mon., Dec 26th, Tues., Dec. 27th—M.C.C. London-Exeter-London Trial.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb 4th—Scottish Car and Motor Cycle Show.

Sun., Mar 5th — Argenteuil Hill-climb (France).

Mon., Mar. 6th — La Turbie Hill-climb (Nice).

Wed., Mar. 15th—A.C.U. One-day Trial for Stock Machines.

Thurs., Mar. 23rd—East Midland Centre A.C.U. Open Reliability Trial.

Sat., April 1st—Western Centre A.C.U.—Open Hill-climb.

Sat., April 8th—B.M.C.R.C., Members' Meeting at Brooklands.

Fri., April 14th, and Sat., April 15th—M.C.C., London-Land's End Run.

Sat., April 22nd—N.-Eastern Centre A.C.U. Open Reliability Trial.

Sat., April 29th—S. Midland Centre A.C.U. Open Hill-climb.

Mon., May 1st, to Sat., May 6th—Scottish Six Days Reliability Trials

Sat., May 13th—Northern Centre A.C.U. Open Reliability Trial

Sat., May 20th—S.-Western Centre A.C.U. Open Reliability Trial.

TWO-STROKE ADJUSTMENTS.

Having just purchased a 2½ h.p. two-stroke two-speed Clyno, I find that, when run on the level, at about 25 m.p.h., the engine suddenly pulls up as though it had seized. This happened three or four times in a run of 100 miles, and I simply took my clutch out and then started off again in bottom gear, when the machine seemed to run well. I have tried various mixtures of petrol and oil during my run, but this did not seem to make matters any better. The machine spits back very badly through the carburetter if I give it very little air. (1.) I have a No. 24 jet; do you recommend trying another size? (2.) Would this trouble be caused by the plug points being set too close and overheated? (3.) Would it be possible for the float chamber to empty itself and again refill in the time of one minute, in which I had to stop? (4.) Would the bad spitting at slow speeds be caused by faulty timing; if so, will you kindly let me know the correct method of timing of this particular machine? (5.) When I operate the compression valve on the top of the cylinder there are a continuous number of bangs as long as this is left open. Can this be remedied? (6.) What quantity of oil should be mixed with a gallon of petrol?—G.C.T.

(1.) Try a No. 26. (2.) The trouble certainly appears to be due to pre-ignition, and in all probability the sparking plug is at the root of the matter. (3.) If there is any restriction in the petrol supply it is possible that the float chamber may be empty, and so bring the machine to a standstill. If the obstruction was something floating in the petrol it is quite likely that on the machine stopping the float chamber would refill again before you restarted. (4.) This is probably due to incorrect (weak) mixture or unsuitable sparking plug. The timing should be set so that the contact breaker points are just opening when the piston is on top dead centre with the control lever almost fully retarded. (5.) This is no doubt due to the compression valve not opening to its full extent; adjust the compression, release control wire, or renew if necessary. (6.) About one part to twelve by measure. If this proportion causes a smoky exhaust, cut it down to about one part in sixteen.

EASIEST WAY OF CORRECTING BALANCE

? I possess a 3½ h.p. Norton. Upon fitting a new connecting rod and piston, the flywheels balance them upwards. What is the correct method of balancing for speed? If the piston and connecting rod are too light, should I drill the flywheels or weight the connecting rod or piston?—H.L.H.

The new piston and connecting rod should be exactly the same weight as the old ones, and we would recommend that you make certain that this is so rather than tamper with the balance weights on the flywheels.

READER'S REPLY.

EXCESSIVE FOUR-STROKING.

I venture to give another solution of "E.A.M.'s" trouble on the above subject. I have a Connaught, and on one occasion it took to four-stroking badly, and I eventually found that the gauze in the air intake of my Amac carburetter was quite choked up with dirt. On cleaning this, the engine two-stroked again quite all right, and now I periodically clean the gauze in petrol, and have not had a recurrence of the trouble.—N.M.P.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"Miner" (Somerset).—Most economical carburetter and most suitable size tyres for 1913 Williamson.

"D.F.B." (London, N.W.8).—Flexekas on 4 h.p. Triumph, Low generator, and Challenger inner tube.

"T.W.G." (Manchester).—7 h.p. F.N.: Climbing, consumption (petrol and oil), passenger work, and general hints.

"D.W.M." (Falkirk).—3 h.p. Raleigh: Speed, consumption, and capability of light sidecar work.

"J.E.V." (Hatfield).—Maglita equipment on 3½ h.p. Rudge Multi solo: Reliability and amount of light, and any other dynamo lighting that can be fitted to this machine.

"A.C.U." (Devon).—Dunelt with sidecar: Reliability, climbing, and maintenance of tune.

"M.M." (London, S.W.19).—General experiences of the Jupp open frame lightweight.

"G.F.R." (London, W.1).—1921 four-cylinder A.C.E., solo and with sidecar: Cooling, climbing, timing, and maximum speeds.

"E.R." (Lincoln).—Quadrant and Excelsior 4½ h.p. single-cylinder outfits: Power, speed on hills, consumption, and general reliability.

"F.H." (Hounslow).—Reynolds runabout: General suitability for middle-aged professional man.

"A.B.G." (Edinburgh).—4¼ h.p. spring frame Beardmore-Precision: Speed, reliability, consumption, and hill-climbing.

"V.E.W." (Eastbourne).—Experiences of running taxi-sidecars.

"D.F.L." (Oxford).—8 or 10 h.p. 1921 Blackburne, solo and sidecar: Reliability, consumption, etc.

"A.A.A." (Pontypridd). — 3½ h.p. Rudge Multi, T.T. model: Reliability, gear efficiency, climbing, with and without light sidecar; also similar queries regarding 16H Norton.

"C.J." (Wembley Park).—Scott Sociable: Suitability for serious touring with two heavy passengers and luggage in very hilly county, roadworthiness, stability on grease, and general reliability.

GRIM MOTOR CYCLISTS.

Arrayed as living skeletons, Birmingham University medical students recently paraded the city on motor cycles during a carnival and street collection in aid of the local hospitals.

SPARKLETS.

On the Track.

Dunlop tyres were used by H. H. Bowen on the occasion of his recent successes on a Martinsyde at Brooklands.

Insuring the Prince's Cars.

The fourteen Crossley cars used by the Prince of Wales and his suite during the present tour in India are insured with the Autocar Fire and Accident Insurance Co., Ltd.

An A.C.U. Booklet.

The A.C.U. has issued a booklet entitled "Why You Should Carry the A.C.U. Badge," which extols the advantages of membership to the governing body, the address of which is 83, Pall Mall, London, S.W.1.

An American Two-stroke.

Cleveland motor bicycles are handled in this country by the branch office of the Cleveland Co. at 90, Cannon Street, London, E.C.4, the sales manager being Mr. J. W. Shillan, of Messrs. Shillan, Beck, and Co., Inc.

Fuel, Oil and Air.

The growth of the motor movement generally is perhaps best gauged by some of its smaller manifestations. Not many years ago the man who imagined a successful business from the retail sale of motor spirit and oil only would have been deemed ultra-optimistic; to-day, however, the first privately owned filling station exists. It is in Robin Hood Vale, on the Portsmouth Road, between Putney and Kingston. Castrol oils are supplied exclusively, and compressed air for tyre filling is gratuitous.

A Brooklands Speed Calculator.

Whether the Castrol Speed Finder is more of a blessing to the regular Brooklands *habitué* or to harried sub-editors revising the "copy" of irresponsible track correspondents, it is difficult to say. It consists of a card with concentric circles of times and distances, and a radial thread from a hole in the centre, which is used to co-ordinate the required figures. It gives m.p.h. on the 10ft. and 50ft. Brooklands lines, also m.p.h. over the mile, half-mile, and kilometre from known times. The Castrol Speed Finder was designed by C. G. Pullin, the well-known racing motor cyclist, and it may be obtained on application to C. C. Wakefield and Co., Ltd., 30-32, Cheapside, London, E.C.2.

Catalogues Received.

Martinsyde, Ltd., Maybury Hill, Woking, Surrey: Between covers of somewhat unusual design, the Martinsyde catalogue gives valuable information concerning the various types of machines and the parts thereof.

Barimar, Ltd., 10, Poland Street, London, W.1: A folder dealing with their metallurgical process for restoring badly scored motor cycle cylinders.

Grindlay (Coventry), Ltd., Melbourne Works, Spon End, Coventry: A catalogue of the Grindlay sidecars, giving particulars and prices of the various models, which are made to suit all types of motor bicycles.

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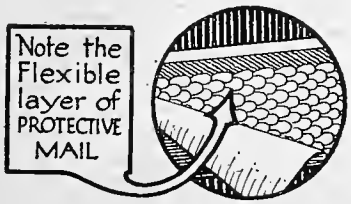

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CONNAUGHT 1920, new condition; £28/10.—Light Car and Motor Cycle Engineering Co., Ltd., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). Tel.: Brixton 1292. [2553

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COULSON 1922 Models for earliest deliveries, with all latest improvements; write for catalogue and prices.—London Motors, 61, Holborn Viaduct, E.C.1 Tel.: City 4230. [1630

1921 2¾h.p. Coulson-Jap, 2-speed Sturmey, brand new; list price 93 gns., our price £65; deferred payments and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2372

COULSON 1921 Models.—A few 2¾h.p. shop-soiled machines in stock at greatly reduced prices; cash or deferred terms.—London Motors, 61, Holborn Viaduct, E.C.1. Tel.: City 4230. [1629

Coventry Eagle.

1921 (Aug.) Coventry Eagle, 2¾h.p. J.A.P., 2-speed Sturmey, clutch, kick start, lamps, etc., only done 200 miles; accept £55, or offer.—Station Hotel, Bramley Rd., Notting Hill (outside Latimer Rd. Station, Metropolitan Railway). [2636

COVENTRY EAGLE, 1921, 2¾h.p. J.A.P., Sturmey 2-speed, clutch, K.S., horns, lamps, trip speedometer, mirror, perfect mechanical condition throughout, unscratched, as new; cost £95, bargain, £63.—11, Allfarthing Lane, Wandsworth. [2830

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ALLON 2½ h.p., 2-speed, clutch and kick start, leg shields and all-weather finish	£60 0 0
extra for 3-speed	£5 0 0
ALLON Combination, as above, 3-speed	£85 0 0
EDMUND, Model No. 2, 2¾ h.p., J.A.P., 2-speed, spring frame, clutch, k-start	£75 0 0
Ditto Model 3B, 2¾ h.p. Blackburne spring frame, clutch and k-starter	£85 0 0
Ditto Model 4B, 2¾ h.p., Blackburne 3-speed, clutch and k-s., all-chain	£90 0 0
DOUGLAS, 2¾ h.p., 2-speed, fully-equpd.	£75 0 0
DOUGLAS 2¾ h.p., 3-speed, clutch and k-start, fully-equipped...	£90 0 0
DOUGLAS 4 h.p., solo, fully equipped	£110 0 0
DOUGLAS 3½ h.p., Sports Model, O.H.V., 3-speed, fully equipped	£130 0 0
DOUGLAS 4 h.p. Combination, fully equipped	£135 0 0
DOUGLAS 6 h.p., O.H.V. outfit, fully equipped...	£165 0 0
ENFIELD 2½ h.p., 2-speed, clutch... ...	£55 0 0
Extra for kick-starter	£2 0 0
ENFIELD 8 h.p. combination, 2-speed, clutch, spring seat	£140 0 0
HARLEY-DAVIDSON 4-5h.p. Sports Mdl.	£140 0 0
Ditto, 7-9 h.p, Magneto Model combination, with Speedometer	£188 10 0
Ditto, 7-9 h.p. electrically equipped, speedometer	£203 10 0
NORTON No. 9 Model	£80 0 0
Ditto, No. 16H Model	£115 0 0
Ditto, No. 1 Model, Big 4 h.p. ...	£120 0 0
NEW HUDSON, 2½ h.p. Popular Model	£50 0 0
Ditto, 2¾ h.p. De Luxe Model... ...	£60 0 0
Ditto, Four-Point-Five Solo	£100 0 0
Ditto, Four-Point-Five Combination	£125 0 0
MATCHLESS Sports solo Model 'J' ...	£130 0 0
Ditto, Standard Model 'H' Comb.	£170 0 0
Ditto, Standard Model 'J' Sports Combination	£160 0 0
Ditto, Standard Model 'H' 2-Seater Combination	£176 10
P. & M. 4¼ h.p., 4-speed Model Solo ...	£115 0 0
Ditto, 4¼ h.p. 4-speed Model Combination, fully equipped	£150 0 0
Ditto, 4¼ h.p. 4-speed Model 'B' Solo	£102 0 0
Ditto, " " " 'B' Comb.	£130 0 0
SCOTT 3½ h.p. 'Squirrel' guaranteed 60 m.p.h. and 70 m.p.g.	£105 0 0
Ditto, 3¾ h.p., Standard Model solo	£110 0 0
Ditto " " " comb.	£145 0 0
SUNBEAM, 3½ h.p. Standard Model Solo	120 Gns
Ditto 4¼ h.p. " " "	136 Gns.
No. 1 Sidecar, for above	42 Gns.
Ditto, 3½ h.p. Light Solo (k-start)...	130 Gns.
Ditto 3½ h.p. T.T. Sporting Model ...	130 Gns.
Ditto, 3 h.p. Model Solo	160 Gns.
No. 2 Sidecar for above	47 Gns.
TRIUMPH, 4h.p. Model 'H' (chain & belt)	£105 0 0
Ditto 4 h.p. Model S.D. (all-chain)...	£115 0 0
Ditto 3½ h.p. O.H.V. Model 'R' ...	£120 0 0
Ditto 2¼ h.p. Junior	£65 0 0

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De Dion.

DE DION 3h.p., running order; £16; take push cycle part.—57, Kenbury St., Camberwell, London. [2728

RACING De Dion, new type, 3h.p., 2-speed, clutch, K.S., Klaxon, Tan-Sad, lamps, etc., for sale; £35.—Winterflood, 98, Blackstock Rd., Finsbury Park, London. [2464

De Luxe.

1921 2¾h.p. De Luxe, all on, taxed; £30, offers.—Box 7,829, c/o *The Motor Cycle.* [2444

DE LUXE 2¾h.p. 1921 Model, as new, fitted Albion 2-speed, kick starter, handle-bar controlled clutch, Dunlop heavy tyres, P. and H. lamp set, mirror, large Klaxon, E.I.C. mag.; bargain, £40, cost £75.—Andrews, Yoxford, Suffolk. [2453

Diamond

1921 Diamond, 2¾h.p. Villiers, 2-speed Sturmey, clutch and kick starter, pan seat saddle, splendid condition; cost £88, sacrifice £43.—Apply, 2, Suffolk Rd. South, Bournemouth, West. [2468

Dot.

DOT-J.A.P., 2¾h.p., 1920, 2-speed, full equipment, speedometer: £45.—219, Belsize Rd., Kilburn. [2671

Douglas.

2¾h.p. Douglas, 1914, 2-speed; £30.—81, Dundee Rd., South Norwood. [2688

DOUGLAS 1921 New 2¾h.p. All-on Model, shop-soiled; £72/10.—Below.

DOUGLAS 1920 4h.p., lamps, horn, etc., first-class condition; a real bargain; £65.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0065

£10.—Douglas, 1912; must sell, bargain.—Write, Fern, 34, Bancroft Rd., E.1. [2850

DOUGLAS, 1911, running order; £15.—Mole, Church St., Ropley, near Winchester, Hants. [2832

DOUGLAS 2¾h.p., 1916, perfect; £30; Saturday 9-12.—116, Tanner St., Bermondsey. [X3913

DOUGLAS 2¾h.p., Countershaft 2-speed, splendid condition; £38.—80a, High St., Bexley. [2960

DOUGLAS 2¾h.p., complete with mag.; bargain, £8/10.—Doyle, 3, Lordburn, Arbroath. [X4018

1919 4h.p. Douglas Combination, in good order; £70.—H. E. Griffin, Haywards Heath. [2686

DOUGLAS Combination, fully equipped; £75, like new.—C. Owen, 55, Holland St., Burton. [2546

2¾h.p. Douglas, 1914, 2-speed, clutch, K.S., accessories; £45.—Gould, Stoke Hill, Exeter. [2424

DOUGLAS 1920 4h.p. Combination, fully equipped, perfect order; £75.—P. J. Evans, Birmingham. [X4063

2¾h.p. Douglas, uncrated, 1919, unscratched, 2 speeds, lamps, accessories; £45.—63, Solon Rd. Brixton. [2753

4h.p. Douglas Combination, all on, sidecar as new; £75, or nearest.—Bert, 32, Barton Terrace, Preston. [2693

LATE 1920 4h.p. Douglas Combination, lavishly equipped, any trial; £75.—24, Balliol Rd., North Kensington. [2719

DOUGLAS 1920 4h.p. Combination, new condition, equipped; any trial; £92.—Clark, 7, Exhibition Rd., S.W.7. [2194

SPECIAL 2¾h.p. 2-speed Douglas, lovely condition, footboards, extra air; what offers? Must sell.—Richards, Caersws. [2827

DOUGLAS 2¾h.p., 1917, enamel, plating, and mechanism as new, equipped; £38.—30, Crystal Palace Park Rd., Sydenham. [2772

1921 Douglas 2¾h.p., 3 speeds, condition as new, lamps, Cowey horn and speedometer; £78.—38, Cowley Rd., Oxford. Tel.: 870. [2570

2¾h.p. Douglas, 2-speed, 1921 (March), insured, fine condition; nearest £60; by appointment.—McOwan, Corner House, Godstone. [2676

1914 2¾h.p. Douglas, 2-speed, perfect mechanical order, tyres sound; nearest to £30; S.E. London.—Box 7,871, c/o *The Motor Cycle.* [2901

DOUGLAS 2¾h.p., 1914, just rebuilt with large amount new parts, new lamp set, licensed, any trial; £27.—Dowell, Pyrford, Surrey. [2698

DOUGLAS, 1920¾, 2¾h.p., 3 speeds, clutch, K.S., licensed, equipped as new; 62 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2977

1919 Douglas 2¾h.p., 2-speed, fully equipped, pillion, new tyres, indistinguishable from new; £48.—5, Norwood Rd., Herne Hill, S.E.24. [2892

DOUGLAS 1920 4h.p. Combinations, £85, £90, £95, all guaranteed.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2871

MOTOR CYCLES FOR SALE.

Douglas.

DOUGLAS 4h.p. Combinations from £55; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2862

84 GNS., Exchange.—1920 Douglas combination, 4h.p., Easting screen, lamps, speedometer, smart, fast.—Seabridge, Hansler Rd., East Dulwich. Sydenham 2452. [9336

DOUGLAS 4h.p. Combination, 1921, hardly used, all on, sporting Canoelet sidecar, blue, insured September, 1922, splendid condition; £95.—Lang, Whittlesford, Cambridgeshire. [2601

DOUGLAS 4h.p. and Sidecar, 1922 model, brand new, guaranteed complete with lamps, horn, and licence holder; £120 nett cash.—Colmore Depot, 31, Colmore Row, Birmingham. [X4020

DOUGLAS, 1921, 2-speed, Lucas equipment, specially built and tuned, spare exhaust for racing; bargain, £55.—30, Sterndale Rd., Shepherd's Bush Rd., Hammersmith. [2705

ELI CLARK can give you good service both in new machines and spares; try me. I may be useful to you. The pioneer agent for Douglas motors.—196, Cheltenham Rd., Bristol. [0016

1919 Douglas 4h.p. Combination, lamps, Klaxon, wind screen, excellent condition; 60 gns.; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2939

DOUGLAS 1914 2¾h.p., 2-speed, Grosvenor sporting sidecar, fully equipped, good condition; £50; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4005

1920 Douglas 8¾h.p., 3-speed, new C.A.V. magneto, Klaxon, Cowey, speedometer, Binks, just decarbonised, excellent condition, bought combination; £63.—Clarke, 80, North St., Ripon. [2151

DOUGLAS 1919 4h.p., Mills-Fulford sidecar, excellent condition, under 2,500 miles; 100 gns.; seen Saturday afternoon, or offers by letter.—Nickson, 16, Alexandra Drive, Sefton Park, Liverpool. [2497

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Douglas, 1922 models, prices £75 and £90; also 3½h.p. sports model, £130; all fully equipped; easy terms no extra charge. [2996

LATE 1918 4h.p. Douglas Combination, sporting side car, machine mechanically perfect as new, everything on; £58, bargain.—J. Wells, jun., 7, Atharn Terrace, Saddlebone Rd., King's Lynn. [2439

1920 Douglas 4h.p. Combination, little used, well cared for, Brooks cantilever saddle, Tan-Sad, speedometer, wind screen, lamps, etc., good tyres; accept 75 gns.—Hurst, 26, Tulse Hill, Brixton. [2699

DOUGLAS Combination, 4h.p., 1920 model, in new condition, screen, speedometer, and many extras; original cost £180; first offer over £100 secures.—Weybridge Automobiles, Ltd., Weybridge. 'Phone: 236. [2452

£18.—Douglas 2¾h.p., 2-speed, tyres practically unsoiled, pillion seat, horn, pump, and numerous spares, tax paid; any trial 2 up.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. [2657

£17.—Douglas, early model, modernised, overhauled, vigorous puller, variable Amac, aluminium footboards, copper tail pipe, Palmer tyres, new belt, large projector, toolbag; bargain.—Box 7,872, c/o *The Motor Cycle*. [2902

DOUGLAS, 4h.p., 1917, 3 speeds, kick starter, smart, makers' colours, guaranteed perfect, fast, nearly new Dunlops, etc., all accessories, bargain, £48; coach sidecar, £9/10; trial any time.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney, London. 'Phone: East 4542. [2681

SPECIAL Competition Red Douglas, 2-speed, adjustable pulley, dropped bars and footrests, long exhaust pipes, special pistons, cams, rockers, etc., racing carburetter, over 40 m.p.h. guaranteed on bottom gear, many pounds worth of spares; £60, cost double.—Letters, Lloyd, 31, Wellington Sq., Chelsea. [2425

DOUGLAS, 2¾h.p., special rings, strong springs, 5a cam, all new parts, 2in. exhaust, special bars, beel brake, College shields, belt case, 2 belts, new chain, knee grips, lamps, horn, tools, also Douglas bars, footboards, discs, long exhaust pipes, insured A.A., a splendid little 'bus, and fast; exchange for sporting 6 or 8h.p. Zenith or A.B.C., or sell £45.—Palmer Bros., Kingston Bridge Garage, Hampton Wick. [2674

Spare Parts:

DOUGLAS Spares; immediate delivery.—Kays, 8, Bond St., Ealing. [8634

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Douglas specialists; complete illustrated list post free. [9398

DOUGLAS Spares.—We hold a complete stock for all models, post free.—Jones' Garage, Broadway, Muswell Hill, N.10. [0744

McNEILLE and Platt, Liverpool.—Cheapest house in England for new unused 2¾h.p. and 4h.p. Douglas W.D. spares. Send for lists, free.—'Phone: 1902 Royal. [2621

Enfield.

ENFIELD 2¼h.p., 1920, as new, all on; £35.—33, Conyers Rd., Streatham. [1816

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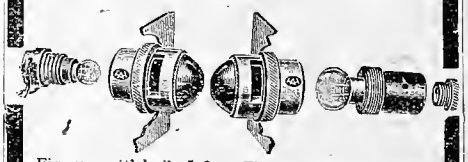

Fig. 574, with bulb, 5/9 — Fig. 576, less bulb, 4/6.

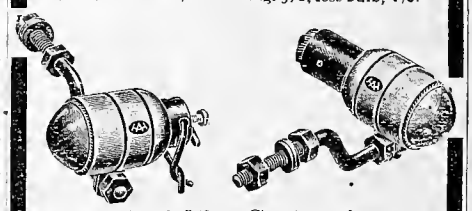

Fig. 560, with bulb 7/6. — Fig. 561, less bulb, 6/6.

H.A.H. SWITCHES.

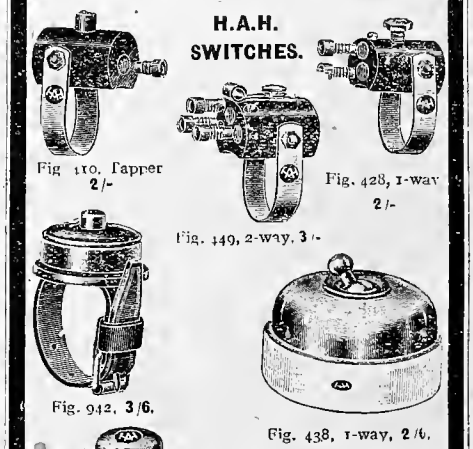

Fig. 410, Tapper 2/- — Fig. 449, 2-way, 3/- — Fig. 428, 1-way 2/-

Fig. 942, 3/6. — Fig. 438, 1-way, 2/6.

Fig. 347. 'Speedolite' H.A.H. Patent Speedometer Lamp, 7/6 each.

H.A.H. Insulating Tape.
Fig. 455, ½in. small roll, 7½d.
Fig. 456, ½in. large roll, 1/-
Fig. 457, ¾in. small roll, 6d.

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MOTOR CYCLES FOR SALE.

Enfield.

ENFIELD 2¼h.p., 1921, as new, all on; £52.—Trott, 65, Mayford Rd., Balham. [2420

ENFIELD New 1921 8h.p. Combination, reduced to £128.—P. J. Evans, Birmingham. [X4062

SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

1918 Enfield Combination, 8h.p. Colonial model; a bargain, £85; like new.—Ross, 86, High Rd., Lee, S.E. [2167

ENFIELD 2¼h.p., new and unused; £48.—40, Replingham Rd., Southfields, S.W.18. Putney 1694. [2958

ROYAL ENFIELD Combination, 1916, hood, screen perfect condition; £85, all on.—Wood, 31, Grove Park, Colwyn Bay. [2510

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—1921 Royal Enfield combination, Vickers engine £110; cash or easy terms. [2996

1920 Enfield Combination, 8h.p., small mileage, complete with lamps, horn, etc., Easting; £100.—Philpot, Motors, Canterbury. [2741

1914 6h.p. Royal Enfield Combination, excellent condition, and running order; £95, or nearest offer.—Cattle, Thornton Dale, Yorks. [2587

BEST Bargain This Week.—Enfield 2-stroke, 2-speed clutch, completely equipped, indistinguishable from new; £35.—1, Priory Rd., Kew Green. [2794

1917 Enfield Combination, 6h.p., fully equipped with Lucas dynamo lighting set, all in splendid condition; any trial; £78.—62a, New St., Woodbridge, Suffolk. [2690

ENFIELD Combination, 1920, 8h.p., Magdyno, speedometer, Easting, insurance, as new, not used since June; £110.—Boot, 1, Berridge Rd. East, Nottingham. [2879

ENFIELD 1912 6h.p. Combination, coachbuilt side car, fully equipped, good condition; £55; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4001

ENFIELD.—We are official agents, and can give immediate delivery of any model of this foolproof motor cycle.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0380

ENFIELD Combination, November, 1920, 8h.p. J.A.P., Lucas Magdyno, Cowey speedometer, Tan-Sad saddle and pillion, legshields, Easting wind screen; £130.—Bates, 1, Union St., Bedford. [2800

6h.p. Enfield Combination, 1915, stored 2½ years, recently overhauled, excellent condition, speedometer, insured; £90, or nearest offer; by appointment.—McOwan, Corner House, Godstone. [2675

ENFIELD 3h.p. Twin, 1915, 2-speed, kick starter, lamp, tax paid, £35; also 2¾h.p. twin Enfield, 1912, 2-speed, £27/10; both in good order.—Butterworth Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [2818

Spare Parts:

ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8635

Federation.

1921 (June) Federation, J.A.P. 6h.p., Sturmey-Archer, 3 speeds, Canoelet sidecar, bulbous back, Easting, Stewart horn, mag., leg shields, new Lucas King of Road lamps, 7in. mudguards, insured June, cost over £200, not done 400 miles, perfect, unscratched; £140.—Metcalfe, Butcher, Skipton, Yorks. [2477

F.N.

F.N. 1922 7h.p. Combination in stock; £127.—Tuck Bros, 154, Blackhorse Rd., Walthamstow. [2819

1914 F.N. 7h.p., good condition, mechanical valves, 3 speeds, Binks; £45.—Philpot, Motors, Canterbury. [2742

F.N. 1920 7h.p., 4-cyl., with Montgomery double-seated sidecar (2 wind screens), just been overhauled, in perfect order, lamps, horn, speedometer; trial run; moderate mileage; £82, or very near offer.—Major Kennaway, Rectory Place, Guildford. (P) [2366

Francis-Barnett.

1920 Francis-Barnett, 2¾h.p. J.A.P., 2-speed, clutch, K.S., fully equipped, condition as new; £56; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1674

Harley-Davidson.

SHEFFIELD Agent for Harley-Davidsons; from £120. Stacey, 12, Ecclesall Rd. [0577

HARLEY-DAVIDSON Combination, 1920, as new, only done 2,500; £140; spares.—341, Station Rd., Harrow-on-the-Hill. [2532

HARLEY-DAVIDSON, 1917, 7-9h.p., excellent condition; 72 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2978

1919 7-9h.p. Harley Combination, all accessories as new, any trial; £75.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [2970

HARLEY Combination, 1915, 7-9h.p., K. engine, 3 speeds, clutch, kick starter, lamps, licence; bargain, £60.—63, Solon Rd., Brixton. [2754

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Harley-Davidson.

MOST Luxurious Late 1920 Harley de Luxe Combination, equipped every possible accessory; £105.—24, Balliol Rd., North Kensington. [2717

HARLEY-DAVIDSON 1920-21 Combination, electric model, lavishly equipped, small mileage; £105.—Hillier (side bell), 9, Wallingford Av., North Kensington. [2708

HARLEY-DAVIDSON 1916 7-9h.p., speed model, discs, lamps, horn, etc.; £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

HARLEY-DAVIDSON Combination, 1921, 5,000 miles, electric model, discs, condition absolutely as new; £140 gns.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [2447

1920 Harley Combination, bulbous sidecar, screen, Tan-Sad, same tyres on as when new, first-class condition, any trial; taking 1922 model; £115.—Hollycroft, Langford, Beds. [2852

HARLEY Combination, 1920, dynamo, speedometer, screen, under 3,000 miles, like new; 95 gns.—Bruton Mews Garage, 8-25, South Bruton Mews, Bond St., W. 'Phone: May. 4282. [2603

1915 7-9h.p. Harley Solo, 3-speed, fully equipped, many renewals, including set of gears, 70-90 m.p.g.; £75; exchange 3½h.p. Sunbeam; write offers.—Sherwood Rise, Mansfield-Woodhouse, Notts. [2419

HARLEY-DAVIDSON 7-9h.p., electric model, complete with electric lamps and horn, brand new and unused, guaranteed; £145 cash; magnificent machine.—Colmore Depot, 31, Colmore Row, Birmingham. [X4022

1920 Harley-Davidson Combination, special sports model, with airship shape sidecar, dynamo lighting, fully equipped; 125 gns.; exchanges entertained.—Speechley, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [2573

HARLEY-DAVIDSON Model 20/J, 7-9h.p. Combination, electrically equipped, demonstration machine, electro plate and enamel as new, beautiful condition, still under guarantee, tax paid, insured till Oct., 1922, wind screen, child's seat, complete kit; accept £150.—26, Western Rd., Henley-on-Thames. [2667

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8636

Hazlewood.

1920 Hazlewood Combination, 6h.p., perfect condition, dynamo lighting, electric horn, screen, etc.; £100.—Philpot, Motors, Canterbury. [2743

5-6h.p. Hazlewood Combination, 1915, 3-speed, good condition; will take £60; exchange lower power combination, P. and M. preferred.—Wilcock, 5, Firs Lane, Leigh, Lancs. [2502

Henderson.

HENDERSON, 1920, 4-cyl., with 2-seater sidecar, luxuriously equipped, tax paid; £127/10; exchanges.—Smith's, 86, Chalk Farm Rd. (opposite Chalk Farm Tube Station), London. [2656

HENDERSON Combination, 1921, 4-cyl., side valves, 3 speeds, reverse model, dynamo lighting, licensed, excellent condition; 175 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2979

HENDERSON, 1920 (Dec.), electric lighting, with Henderson Elite sidecar, screen, speedometer, aluminium discs, absolutely as new; £120, offer; exchange.—Clapham Motors, High St., Clapham. 'Phone: 4290 Latchmere. [2749

Humber.

HUMBER 3½h.p. 2-speed and sidecar; great bargain, £15.—Speechley, 86, Churchfield Rd., Acton, W.3. [2576

1915 3-speed 3½h.p. Humber, fully equipped, condition and appearance as new; £35.—37, Arlington Rd., Surbiton. [2779

£19.—Humber 3½h.p., 2-speed Roc gear, good running order, lamps, horns, etc.—Brown, Tea Gardens, Galleywood, Chelmsford. [2597

£19.—3½h.p. Humber, 1911-13, exceptional condition, tyres, belt as new, smart, reliable, licensed, equipped; photo, stamp.—Bacon, Offington Lane, Worthing. [2735

HUMBER Lightweight, perfect running order, lamps, horn, etc., new belt, licence, ride away; £20, or nearest offer.—Waters, Park Rd., Fordingbridge. [2641

HUMBER, 3½h.p., 1916, 3 speeds, free engine, kick starter, splendid condition, nearly new tyres, etc., smart turnout, fast, guaranteed perfect, B. and B. latest, all accessories, and underslung coach sidecar; bargain, £49.—Stepney Garages, 77, Salmon Lane, Commercial Rd., Stepney, London. 'Phone: East 4542. [2682

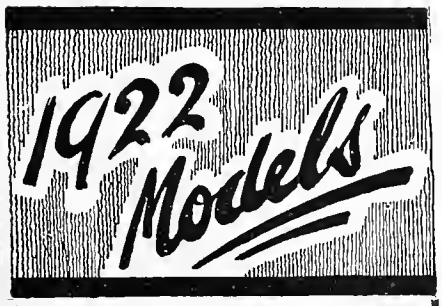
Indian.

INDIAN 7-9h.p. Powerplus Combination, new 1921; £158.—P. J. Evans, Birmingham. [X4064

1920 Indian 7-9h.p., electrically and fully equipped; £75.—17, Heaton Rd., Mitcham. [2822

1914 7-9h.p. Indian, spring frame, 2-speed, £32; sidecar, £8.—17, Heaton Rd., Mitcham. [2825

1914 Indian Combination, 7h.p., overhauled and complete; £45.—Philpot, Motors, Canterbury. [2744



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CALTHORPE de Luxe 2-seater	£410
CALTHORPE de Luxe 4-seater	£435
COVENTRY PREMIER 4-wheeler	£250
L.S.D. 3-wheeler, All on	£165
LAGONDA (Coupe or 4-seater)	£395
STANDARD 8 h.p. (2 or 4-seater)	£325
STANDARD 11 h.p. 2-seater	£515
STANDARD 11 h.p. 4-seater	£525

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B.S.A. 4¼ h.p. Chain-Belt	£107
B.S.A. 4¼ h.p. All-Chain	£110
B.S.A. 6 h.p. Light Comb.	£164
B.S.A. 8 h.p. Comb.	£185
BRADBURY 4 h.p., 3-sp., All-Chain	£92
BRADBURY 6 h.p. Comb.	£146
DOUGLAS 2¾ h.p. 2-speed, All on	£75
DOUGLAS 2¾ h.p. 3-speed, All on	£90
DOUGLAS 3½ h.p. 3-speed Sporting	£130
EDMUND-BLACKBURNE 2¾ h.p. 2-speed, spring frame	£85
ENFIELD 8 h.p Combination	£140
ENFIELD 2¼ h.p. 2-speed	£55
LEVIS Popular 2¼ h.p.	£48
LEVIS 2¼ h.p. 2-speed	£58
LEVIS 2¼ h.p. 2-speed, kick-start	£60
MARTINSYDE 6 h.p. Combination	£160
NEW IMPERIAL 2¾ h.p. 3-speed	60 Gns.
NEW IMPERIAL 2¾ h.p., All-Chain	£73
NEW IMPERIAL 8 h.p. Comb.	£145
NORTON Big Four Combination	£149 10
NORTON 3½ h.p. 3-speed	£115
NORTON Big Four	£120
REX-ACME 2½ h.p 2-speed	£50
REX-BLACKBURNE 2¾ h.p.	£69 15
REX-ACME 8 h.p. Combination	£150
ROYAL RUBY 2¾ h.p. 2-speed	£70
SCOTT-SQUIRREL 3½ h.p. 2-speed	£105
SCOTT 3¾ h.p. 2-speed Comb.	£145
SUNBEAM 3½ h.p. (New Type)	120 Gns.
SUNBEAM 4¼ h.p. (New Type)	135 Gns.
SUNBEAM 3½ h.p. Combination	162 Gns.
SUNBEAM 8 h.p. Combination	£217 7
TRIUMPH 4 h.p. Chain-Belt	£105
TRIUMPH 4 h.p. All-Chain	£115
TRIUMPH JUNIOR 2¼ h.p.	£65

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MOTOR CYCLES FOR SALE.

Indian.

INDIAN 7-9h.p., clutch model, first-class condition; £65; or exchange combination.—80a, High St., Bexley. [2961

INDIAN Powerplus, 1919, spring frame, 3 speeds, clutch, lamps, tax, little used; £58.—Davis, 26, Muswell Hill. [2561

INDIAN 1920 Combination, Burbury 2-seater sidecar; £120; exchange.—Fairhurst, behind 68, Standishgate, Wigan. [2775

INDIAN 1919 7-9h.p. Powerplus, 3 speeds, K.S., excellent condition; £65, or offers.—Morris Motor Works, Monmouth. [2829

5h.p. Indian, 3-speed, clutch, K.S., good running order, fast; £75.—Goldspink, Hawkedon Hall, Bury St. Edmund's. [2461

INDIAN Combination, 1916, 70×65 twin 3 speeds, D.A. lighting, excellent condition; £65.—Pilgrim, 3, Castellain Rd., Maida Vale, London, W. [1803

1921 Indian Scout Combination, dynamo lighting, speedometer, electric horn, very little used, excellent order.—Baxter, Chobham Rd., Woking. [2073

INDIAN 7-9h.p. Combination, 2 speeds, clutch, fully equipped, good condition; £35; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4008

SNIP!—1915 7-9h.p. Indian, spring frame, 3 speeds, kick starter, T.T. bars, lamp sets and horn, recently completely overhauled, in sound order; £48.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X4051

JUNE (1920) Powerplus Indian Combination, electric, Easting screen, Tan-Sad pillion, speedometer, total mileage 2,600, tyres unpunctured, just overhauled, All-in Policy till June, 1922; any trial by appointment; best offer.—Owen, 3, Merivale Rd., Harrow. [2533

Spare Parts:

INDIAN Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8637

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Indian spare parts always in stock. Write for free spare part list. [0752

INDIAN.—The Dennis Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

Ivy.

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

James.

JAMES 1920 2-stroke, 2 speeds, fully equipped, runs perfect; sacrifice, £34.—143, Ravensbury Rd., Earlsfield, S.W.18. [2899

JAMES 4¼h.p., late model, 3 speeds, hand and foot clutch, kick starter, licence, accessories; £42; exchanges.—63, Solon Rd., Brixton. [2755

JAMES Lightweight, December, 1920, engine No. 9099, all on, guaranteed perfect; trial; £35; exchanges.—7, Cowdrey Rd., Wimbledon. [2922

1920 James 3½h.p. Twin, 3 speeds, kick starter, clutch, original tyres, hardly used; cost £140, accept £75.—Philpot, Motors, Canterbury. [2745

MAGNIFICENT 4h.p. James Coach Combination, countershaft, chain-cum-belt drive, a real beauty; first 29 gns.—Ramsden's, May Bell Av., Blackpool. [2580

JAMES 1917-18 3½h.p. Twin, sports model, fully equipped, indistinguishable from new; £70; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4007

JAMES 1920 6h.p. Combination, Lucas dynamo lighting, Cameo, speedometer, Cowey horn, splendid order; £115.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2875

J.E.S.

1920 J.E.S. Motor Cycle, fully equipped, little used, £17; also Young's cycle attachment, new, £12.—37, Arlington Rd., Surbiton. [2780

Kingsbury.

KINGSBURY, brand new 1921 2¾h.p., 2 speeds, clutch, Dunlops, all-chain drive; cost £65; cash wanted, £38.—365, King St., Hammersmith. [2931

Lea-Francis.

1921 Lea-Francis, 3½h.p. twin, M.A.G. engine, absolutely as new, hardly used; £78.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [2961

Levis.

PREMIER Motor Co. for 1922 Levis

LATEST Improved Models for immediate delivery at 1922 reduced prices.

POPULAR 2¼h.p. Single-gear Levis, £48; Model S 2¼h.p., 2-speed, clutch, £58, or with kick starter £60; easy payments only 4% extra; carriage paid to any address. Buy your machine direct from the Levis specialists.—The Premier Motor Co., Aston Rd., Birmingham. [0741

MOTOR CYCLES FOR SALE.

Levis.

£30.—1920 single speed Levis, accessories.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [1634

1920 Levis 2¼h.p., Miller lamps, horn, perfect condition; £40.—146, Bristol St., Birmingham. [X3980

1922 Levis; immediate delivery of all models.—Premier Motor Co., Aston Rd., Birmingham. [X4033

LEVIS 2¾h.p. 2-stroke, splendid order throughout; £24/10.—Speechley, 86, Churchfield Rd., Acton, W.3. [2575

1918 Levis, perfect, economical and fast; £37, or nearest.—43, Fleetwood Rd., Clarendon Park, Leicester. [2831

LEVIS 1920 2¼h.p. 2-stroke, lamps, horn, etc.; £30.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

SPECIAL Offer of a few slightly showroom soiled 250 c.c. T.T. model Levis motor cycles; list price £65, reduced to £55; makers' speed guarantee of 50 m.p.h. with each machine; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [0740

A FEW Slightly Soiled 1921 Levis Models at greatly reduced prices: 2¼h.p. Popular, £42; Model S 2¼h.p., 2-speed, clutch, £52; 247 c.c. T.T., speed guaranteed 50 m.p.h., £50; write for special end of season clearance bargain list; easy payments 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X4034

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—Complete illustrated list post free. All Levis parts in stock. [9399

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Levis spare parts always in stock. Write for free spare part list. [0753

Martinsyde.

LATE 1920 Martinsyde Combination, 6h.p., beautifully equipped; £75.—24, Balliol Rd., North Kensington. [2720

1920 Martinsyde 6h.p. Combination, 3-speed, clutch, K.S., fully equipped, hood and screen; £103; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1675

MARTINSYDE Sports and Touring 1922 Models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2860

Matchless.

CROSS, Effingham Sq., is agent for Matchless motors for Rotherham and district. [X4012

MATCHLESS 8h.p. Combination, H2, new March, 1921; best offers?—130, Solteigate, Chesterfield. [2519

MATCHLESS 1920 Magdyno Combination, splendid order; £120, bargain.—81, Dundee Rd., South Norwood. [2687

MATCHLESS Brand New 1921 Combination, spare wheel, screen, one only left; £150.—7, Exhibition Rd., S.W.7. [2197

MATCHLESS 1920 Magdyno Combination, just overhauled; bargain, £108.—Clark, 7, Exhibition Rd., S.W.7. [2942

1921 Matchless Combination, Magdyno lighting, brand new, unused; £158; owner must sell.—41, Madrid Rd., Barnes, S.W. [1676

F.O.C.H. for Matchless; cash, exchange, or deferred payments. Sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2611

MATCHLESS Combination, M.A.G., Bosch, hood, wind screen, single Amac, splendid condition; £68; evenings.—67, Ferulea Rd., Balham. [2959

MATCHLESS 1922 Models from stock; exchanges or easy payments; trial run any time.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [2198

1922 Matchless Models; immediate deliveries at list prices; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2376

MATCHLESS Combination, 1921, 8h.p. J.A.P., hood, screen, spare wheel, recently overhauled.—Swan Motor Works, 317, Old Kent Rd., S.E. [5899

ONE 8h.p. Matchless Combination, lamps, wind screen, etc; £55 lowest; any trial given.—Geiger, 24, Mansfield Rd., Gospel Oak, London, N.W.3. [2936

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Matchless combination, sports model, new 1921; reduced to £149; easy terms no extra charge. [2984

MATCHLESS, Model H, late 1920, M.A.G., Lucas lighting, accessories, insured Sept., 1922; £125.—40, Repliugham Rd., Southfields, S.W.18. Putney 1694. [2954

1922 Sports Matchless, solo, mileage 200, indistinguishable from new; 108 gns., or with new sidecar 138 gns.—Edwards, 50, Harrington Rd., South Kensington. [2377

MATCHLESS Sports New 1921 Combination, 3 speeds, clutch, kick starter; £150.—Elce, Ltd., 15-16, Bishopsgate Av.; Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

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MATCHLESS 1922 Models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2858

MATCHLESS and Sidecar, 6-8h.p., 2-speed countershaft, kick starter, speedometer, lamps, first-class running order; 30 gns.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [2446

1921 (Aug.) Matchless, mag-dynamo lighting, speedometer, side flaps to wind screen, the whole outfit indistinguishable from new; 135 gns.—Edwards, 50, Harrington Rd., South Kensington. [2378

MATCHLESS Combinations.—Book your orders with Ross, 86, High Rd., Lee, S.E., or 'Phone Lee Green 744 for immediate delivery of 1922 models. Exchanges and gradual payments arranged. [2163

1920 Matchless Model H, Magdyno lighting, etc., spare wheel, etc., fully equipped; bargain, £117.—'Phone: Greenwich 751. Sam E. Clapham (Motors), 27, Stockwell St., Greenwich, S.E.10. [2877

MATCHLESS Combination, 8h.p. J.A.P. engine, new April this year, dynamo lighting, spare wheel, 2 carburetters, hood, Triplex wind screen, many spares; owner bought car; accept fair price.—Dufty, 115, Uppingham Rd., Leicester. [1263

MATCHLESS 1922 Models.—Sam E. Clapham, the agent. Send your order along now. Secure delivery in time for 1922; cash, exchange, or easy terms.—Write, call, or 'phone Greenwich 751. Sam E. Clapham, Matchless Service Depot, 27, Stockwell St., Greenwich, S.E.10. [2876

MATCHLESS.—We are the recognised North London agents for the delightfully sprung and practically designed Matchless combination; the Rolls-Royce on three wheels; immediate delivery from stock, for cash, deferred payments, or exchange; trade supplied; all spares in stock.—Jones' Garage, Muswell Hill, N.10, and at Woodside Parade, North Finchley. [0381

SHEFFIELD Agent for Matchless. All models in stock. Sporting models £180, standard models £185.—A. J. Stacey, 12, Ecclesall Rd., Sheffield. [0574

Spare Parts:

AUTHORISED Service Depot.

ALL Matchless Models in stock; best stock of spares in London.—Knight Traction Co., Ltd., Upper Tooting Rd., S.W.17. 'Phone: Streatham 2390. Trade supplied. [0759

TASSELL, 1a, Bloomfield Rd., Plumstead, for anything Matchless at the right price. [6144

MATCHLESS Spare Parts for J.A.P. or M.A.G. can be had by return, post free, from Jones' Garage, Service Depot, Broadway, Muswell Hill, N.10. [0745

Metro.

METRO-TYLER.—Few 1921 models at reduced prices.—The Metro-Tyler Co., Ltd., Banister Rd., Kilburn Lane, W.10. [2846

1922 Metro-Tyler, S. type, 2-speed, show model; list £70, unused; must sell before Xmas; sacrifice £49.—Driscoll, 58, Woodfield Rd., Ealing, W.5. [2752

Minerva.

£20.—Minerva, perfect, 3½h.p., complete.—Lye, 18, Frere St., S.W.1. [2489

New Hudson.

NEW HUDSON 1922 Models and 3-wheeler light car.—Full range on view at London Showrooms, 45, Grays Inn Rd., London, W.C.2. [9980

1922 New Hudson 3-wheeler, dynamo lighting, hood, screen, spare wheel and tyre, all wheels interchangeable; £230.—Coppen, Allan and Co., London agents for New Hudson. [X4024

1921 New Hudson 2¼h.p., shop-soiled, £42; also de luxe 2-speed, £50; also 1921 de luxe, £30; in splendid order.—Coppen, Allan and Co., 89, Gt. Portland St. London agents New Hudson. [X4205

1921 New Hudson 2¼h.p., special Ace speed model, winner of two speed events, mileage under 200, extra sprockets, lamps, horn, tax paid; cost £78/15, accept £60.—136, Uxbridge Rd., W.12. [2528

New Imperial.

1920 New Imperial-Jap 8h.p. Combination, well equipped; £85.—24, Balliol Rd., North Kensington. [2721

NEW IMPERIAL 3-speed 350 c.c. Super Sports, J.A.P., scarcely used; £68.—Clark, 7, Exhibition Rd., S.W.7. [2195

1921 2¾h.p. New Imperial, 2-speed, clutch, kick starter, lamps, horn, excellent condition; £50.—40, Wellington Rd., N.W.8. [2707

1918 New Imperial, 8h.p. J.A.P., all lamps, speedometer, and new M.P. sidecar, £96; splendid order.—Coppen, Allan and Co., 89, Gt. Portland St., W.1. [X4028

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. New Imperial, 2-speed only, £63; also 2-speed, clutch, and kick start model, £69; easy terms arranged. [2986

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NEW IMPERIAL 1922 2¾h.p., 3-speed model, delivery from stock, Show model; £63.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

1919 New Imperial 8h.p., special upholstered sidecar, hood, screen, Lucas lamps and horn, pillar sprung saddle, Binks, aluminium chain case and number plates, Best automatic oil pump; £115. 'Phone: Finchley 206.—Paxhill, Friern Lane, Whetstone, N.20. (P) [2821

Norton.

NORTON 1921 Models.—Sole district agents, Wessex Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0717

1921 and 1920 Nortons, Model 9, all on, insured ready for road; £70 and £55 respectively.—Hughes, 82, Norwich St., Cambridge. [2765

NORTON B.R.S., purchased Nov., 1920, lamps, horn, speedometer, etc., insured, perfect order; £65.—Porter, High St., Whitchurch, Salop. [2684

NORTON 1921 3½h.p. No. 9 Model, fully equipped, as new; £75; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4003

JUST Lock.—1921 (June) 17C Norton, soiled only, Lucas lamps and horn, etc., guaranteed perfect; approval against cash willingly; first cheque £86.—Jackson, East Parade, Keighley. [2916

1920 3½h.p. 3-speed Norton, just had complete overhaul, with rebushing, lamps, tools, etc., tyres good; £83; with Canoelet sidecar and Triplex screen, £89.—Belmont, Lyme Regis, Dorset. [2526

NORTON 16H., April, 1921, special engine, Ricardo piston, special close ratio Sturmey-Archer, mileage under 1,500, unused since overhauled and tuned at works, accessories; £105.—Write or call, W. G. Worthington, Maple Hayes, Lichfield. [2923

PREMIER Motor Co. for 1922 Nortons: No. 9 3½ h.p., belt drive, £80; 16H 3-speed T.T., £115; Big 4 3-speed, £120; easy payments 4% extra.—Immediate delivery from the Norton Specialists: The Premier Motor Co., Aston Rd., Birmingham. [0625

1920 (November) Big Four Norton, with Henderson Elite sidecar, F.R.S. electric lighting and accumulator, Easting wind screen, just overhauled, condition perfect; buying car; a bargain, £110.—Laurance, 30, Priestgate, Peterborough. [2692

1922 3½h.p. 16H Norton, only done 20 miles, 3 engine sprockets for racing, powerful electric head light, Norton racing sidecar with wind screen, very comfortable, nearly new, also brand new Binks racing rat-trap carburetter extra; all on £125.—Catt, Thanet, Northampton. [X4057

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge have every Norton part in stock; complete illustrated list post free [9400

N.S.U.

£11.—3h.p. N.S.U., good running order, Bosch mag., overhauled.—Richards, Caersws. [2828

N.U.T.

1920 Magdyno N.U.T. 3½h.p.; genuine bargain, offers.—Elcock Penywern, Neath. [2776

N.U.T. 3½h.p., 1921, as new, lamps, horn, tools, complete with Tan-Sad saddle; £75, or offer.—Mimosa, Thames Ditton. [2787

£29/10.—N.U.T. 2¾h.p. twin, 2 speeds, countershaft, chain drive, hand clutch, accessories, discs, sporty lot.—8, High St., Wandsworth. [2645

O.K.

1921 O.K., Mark IX., fitted with 2-speed, brand new, and fully guaranteed; £46; deferred terms arranged.—38, Cowley Rd., Oxford. 'Phone: 870. [2571

1919 2¾h.p. O.K.-J.A.P., 2-speed, not done 50 miles since makers' overhaul, new handle-bars, horn, lamps, tools, insurance Sept., 1922; £40, or nearest.—Massey, Bakery, Willenhall, Staffs. [X4048

O.K. 1920, Villiers, splendid condition, new cyl. and piston this year, Klaxon horn, lamps and spares; owner requires higher h.p. machine; offers—Gross, 5, Sellons Av., Harlesden. (D) [2469

Omega.

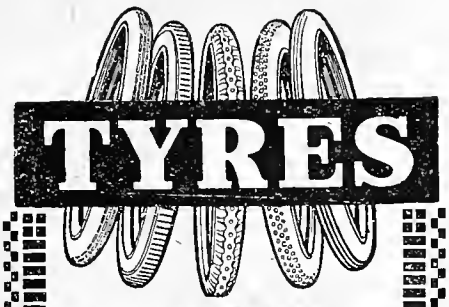
OMEGA-J.A.P., 2¾h.p., October, 1919, excellent condition externally and internally, head lamp, horn, 40 m.p.h., 100 m.p.g., full kit tools; owner going India; £38, quick sale; no offers.—Clarke, 8, Hollycroft Av., Hampstead. [2600

OMEGA 1922 Model.—For earliest deliveries write to London Motors, 61, Holborn Viaduct London, E.C.1, sole distributing agents for the following counties: Bedfordshire, Berkshire, Northamptonshire, Suffolk, Cambridgeshire, Hampshire, Oxfordshire, Sussex, Huntingdonshire, Norfolk, Rutland, Kent, Hertfordshire, Surrey, Essex, and Buckinghamshire, with the exception of a 20 mile radius of London. [2417

P. and M.

1918 P. and M., blue-gold model, hardly used; £39 cash secures.—61, New Kent Rd., London, S.E.1. [2886

P. and M., £50, bargain, late model, black, lined green, with electric lamps, etc.—35, Freegrove Rd., N.7. [2834



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"	S. Moulton Extra Heavy	27/9	68/
"	Clincher de Luxe Heavy	25/-	54/6
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"	Hutchinson T.T. Rub. S.	27/6	59/9
"	Clincher de Luxe Ex. Hy.	25/-	68/6
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"	Clincher de Luxe Heavy	27/6	58/9
"	Wood Milne Ex. Heavy	16/6	72/3
"	Wood Milne Special	13/6	63/9
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26×2¼	7/-	10/3	28×3	7/6	—
26×2¾	7/9	11/3			
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MOTOR CYCLES FOR SALE.

P. and M.

1921 3½h.p. P. and M., 2-speed, new; reasonable offer accepted.—Box 7,881, c/o *The Motor Cycle.* [2912

1918 P. and M. Combination, splendid condition, all accessories, tax paid; sacrifice £60.—353, King St., Hammersmith. [2930

P.M. Combination, 1921, Mills-Fulford sidecar, lamps, all accessories, tax paid; trial welcomed; £115.—Howell, West Hanningfield, Chelmsford. [2507

3¼h.p. P. and M. 1920 Solo, complete with all accessories, condition as new; £65.—Gordon Watney and Co., Ltd., 31, Brook St., London, W.1. [0748

P. and M., perfect condition, accessories, pillion seat, electric lighting, speedometer; £57/10, or nearest offer.—Mackintosh, 6, Onslow Gardens, S.W.7. [2957

BARGAIN.—P. and M. combination, 1918, lamps, horn, taxed, sell complete or separate; solo £32, sidecar £8; sacrifice.—143, Ravensbury Rd., Earlsfield, S.W.18. [2898

P. and M. 1916 Combination, sporting, Canoelet sidecar, tyres very sound, good order; £35.—Colonial Motors, 104a, Finchley Rd., N.W. Hampstead 7822. [2946

1921 P. and M. Combination, 3½h.p., demonstration model, fully equipped, absolutely as new; £112; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1671

P. and M. Motor Cycles (ex-R.A.F.), rebuilt, fitted with new parts, including mag., B. and B. carburetter, tyres, etc., £40; combination £55; sidecar renholstered, painted and new tyre, fully equipped, £60.—Porter, High St., Whitchurch, Salop. [8013

Spare Parts:

P. and M.—All spares in stock; stamp requirements; P. and M. spares specialist.—H. Beardwood, 147, Burlington St., Liverpool. [9986

Peugeot.

4h.p. Twin Peugeot, ride away, £14; sidecar, £3.—Warwick, Hinckley Rd., Leicester. [X3991

Premier.

PREMIER 3½h.p., 1912, 3-speed, good condition; 27 gns.—Longman Bros., 17, Bond St., Ealing. Tel.: 689. [2450

3½h.p. Premier, wicker sidecar, hub gear, perfect order; nearest cash offer £50.—James, Bassenthwaite, Cumberland. [2427

Spare Parts:

PREMIER.—Herbert Robinson, Ltd., Green St., Cambridge, can supply any part from stock; no waiting. [1345

PREMIER Spares and Repairs.—We are the most competent advertisers of these, as we served in the Premier works. Any part quoted per return.—Forfield Motors, Forfield Place, Leamington Spa. [X4083

Precision.

1914 Precision 4h.p., 3-speed, clutch, K.S., equipped; £26.—17, Heaton Rd., Mitcham. [2823

Quadrant.

CLIFFORD WILSON Mfg. Co., sole distributers for Quadrant motor cycles. All models in stock. Exchange or deferred payments.—177, Westminster Bridge Rd., S.E.1. Tel.: Hop. 210. [1636

QUADRANT New 1922 Models.—Delivery immediately from stock; call and inspect; exchanges; extended terms.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

Radco

£22.—Radco 1918 2-stroke, Albion 2-speed, smart appearance, excellent condition, licensed, equipped.—Bacon, Offington Lane, Worthing. [2736

£26/10.—Radco 1921 Sports Model 2½h.p., disc wheels, long exhaust, mileage about 200, excellent condition, equipped; offers.—Barnes, 83, Trinity Rd., Tooting, S.W.17. [2653

A FEW Brand New Radco 1921 Lightweights at enormous reductions; Single-geared models from £30; 2-speed models from £44; all carry makers' full guarantee; easy payments only 4% extra; write for special clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [X4036

Raleigh.

1922 Raleigh, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1679

RALEIGH 2¾h.p. and 3h.p. Models, earliest deliveries; book your orders now; cash or deferred payments.—London Motors, 61, Holborn Viaduct, E.C.1. Tel: City 4230. [1628

NEW 1921 Slightly Showroom Soiled Raleigh 5-6h.p. Combination; reduced to £150; write for special end of season clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [X4035

RALEIGH 2¾h.p. and 5-6h.p. Models for earliest deliveries; cash, exchange, deferred payments.—Raleigh Specialists: Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2855

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MOTOR CYCLES FOR SALE.

Raleigh.

RALEIGH Late 1921 5-6h.p., with special sidecar, Lucas dynamo lighting, very small mileage; cheap for cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2856

1921-22 Raleigh Combination throughout, 5-6h.p., 3-speed, clutch, kick start, most elegant machine, and as brand new, unregistered, accessories, etc.; exceptional bargain, £130.—Surgery, 769, Romford Rd., Manor Park, London, E. [2785

PREMIER Motor Co. for 1922 Raleighs.—Immediate delivery of 5-6h.p., spring frame, detachable wheels, £130; standard sidecar, £35; De Luxe sidecar, £42; early delivery of the new Raleigh lightweight, £66; easy payments 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [0626

Reading-Standard.

1921 Reading Standard 8-10h.p., with M.P. sidecar, dynamo lighting, screen, in splendid running order; £98.—Coppen, Allan and Co., 89, Gt. Portland St. [X4030

Ready.

1922 Ready, 2¾h.p. J.A.P., 2-speed, clutch, kick starter, Olympia Show model; £61.—Coppen, Allan and Co., 89, Gt. Portland St. [X4031

Revere.

REVERE-VILLIERS 2¾h.p., new January, 1921, mileage 300, perfect, accessories new, owner unfit; £47, or nearest.—O'Hara, Alberton Tower Hospital, Woolton, Liverpool [X3879

Rex

2¾h.p. Rex, variable gear, new mag., perfect; £11.—17, Heaton Rd., Mitcham. [2824

REX, magneto, Senspray, mechanical valves; must sell; £14/15.—53, Sheffield Rd., Wandsworth. [2833

TWIN Rex Combination, perfect condition, reliable, comfortable, fast; £40.—Errington, 18, Stanhope Gardens, Harringay. [2508

5-6h.p. Twin Rex, complete unit, mechanical overhead inlets, Bosch, Senspray, little used, perfect; £20, or offer.—Webster, Stanford-le-Hope, Essex. [2795

NEW 1921 Rex-Blackburne 8h.p. Combination, spare wheel; reduced to £150; easy payments 4% extra; write for special end of season clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [X4038

Rover.

1919 Rover Combination, 6h.p., little used; £100.—Philpot, Motors, Canterbury. [2747

1919 Rover 3½h.p., 3 speeds, perfect condition; solo £70, with new sidecar £95.—Philpot, Motors, Canterbury. [2746

1921 Rover Combination, speedometer, lamps, horn, Tan-Sad, insured, as new; £100.—Hughes, 82, Norwich St., Cambridge. [2766

SPECIAL 1921 T.T. Rover 3½h.p., Philipson, long exhaust, accessories, spares, nearly unused, perfect; best offer.—38, Elmbourne Rd., Balham. [2560

ROVER 1919 5-6h.p. Combination, electric lighting, screen, dash to sidecar, Cowey horn, perfect condition; bargain, £75.—365, King St., Hammersmith. [2932

1921 Rover 8h.p., dynamo, spare wheel, speedometer, etc., as new; £165; combination part.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [2969

1913 3½h.p. Rover Combination, 3-speed, clutch, kick starter, beautiful order, any examination or trial; £58.—8, Half Moon Lane, Herne Hill, S.E.24. [2896

ROVER 1920 3½h.p. 3-speed Combination, excellent condition; £85; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80 [2870

ROVER 5-6h.p., 1920, speedometer, Klaxon, hood, screen, Tan-Sad, luggage grid, new tyres, perfect order; £90.—Ruehen, 19, Hemberton Rd., Clapham, S.W. [2638

1921 3½ Rover, all-chain drive, 3-speed, new; will exchange for 1920-21 2¾h.p. Douglas or Triumph; cash adjustment.—Box 7,883, c/o *The Motor Cycle.* [2914

ROVER 3½h.p., 1912, and light Montgomery sidecar, 3-speed, clutch, recently overhauled, excellent condition, all accessories and tools; £40; would separate.—Turner, Allestree, Woodcote, Epsom. (D) [2924

1921 Rover Combination, 5-6h.p., complete, engine No. 8/81537, mileage inconsiderable, condition good throughout; owner going abroad; £100.—Capt. G., Wellington Hotel, Wellington Coll., Berks. [2793

Rudge.

£60.—1920 Rudge Multi, 3½h.p., accessories.—Clifford Wilson, 177, Westminster Bridge Rd., S.E.1. [1635

RUDGE 3½h.p. Clutch Model; any trial run; £22/10.—Speechley, 86, Churchfield Rd., Acton, W.3. [2577

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge Multi, I.O.M. model, 1920; £55. [2995

1921 I.O.M. Rudge, mileage 400, well equipped, fast, unscratched; £54.—24, Ballin Rd., North Kensington. [2723

RUDGE Multi I.O.M. 1920 Combination, fully equipped; bargain, £60, or offer.—18, Radnor Rd., Harrow [2649

With every Reconditioned Douglas purchased between now and January 31, 1922, we are giving a Full Insurance Policy for 12 months—Free.
Send your order now, and get a year's Insurance for nothing — Bertie's Xmas present to you.

RECONSTRUCTED DOUGLASES AT BARGAIN PRICES.

Absolutely indistinguishable from new. We guarantee them to be the finest reconditioned machines and we still challenge the Trade to produce anything better.
Covered with a 3 months' guarantee similar to that which makers give with a new machine. Write for particulars of our Easy Payments—they are very liberal and taken entirely at our own risk.

2¾ h.p., fully equipped with Lamps, Horn, and Licence Holder, fitted with "Vici" Single Lever Carburetter ... . **55 gns.**

4 h.p., Solo, 3-speed, kick start, all on .. .. .. **75 gns.**

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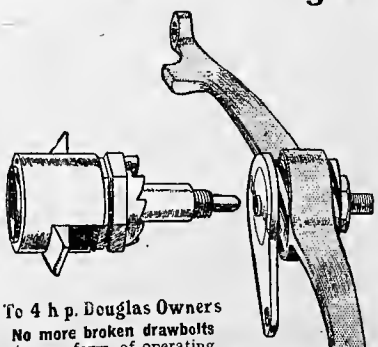

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No more broken drawbolts
A new form of operating mechanism for the 4 h.p. Douglas Motor Cycle, by which the Drawholt is entirely eliminated.
Write for full particulars.
Trade Supplied.

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'Phone: Brixton 2417. Wires: Burlington Motors, Clapham
Just by Clapham Common Underground Station.

MOTOR CYCLES FOR SALE.

Rudge.

£52/10.—1920 I.O.M. Rudge Multi, Lucas accessories, tyres as new, perfect in every respect.—8, High St., Wandsworth. [2643

1919 3½h.p. Rudge Multi, fully equipped, Cox-Atmos carburetter, sound mechanical condition; £65, or nearest.—Bath, Bulkington, Devizes. [2494

BRAND New Soiled 1921 I.O.M. Rudge, electric lighting, Klaxon horn; cost £97/10; cash wanted, £67/10.—365, King St., Hammersmith. [2933

F.O.C.H. for Rudges; cash, exchange, or deferred payments. Sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2610

WE Can Give Immediate Delivery for 1922 models Rudge; 3 speeds, all-chain, £100; Multi, £85.—Percy and Co., 314, Euston Rd., N.W.1. [1020

RUDGE Multi, 1920½, I.O.M. special model, licensed, excellent condition; 62 gns.; exchanges.—12, Cornwall Mews, Gloucester Rd., S.W.7. [2980

3½h.p. Rudge, clutch, 45 m.p.h., 100 m.p.g., appearance, overhauled, mechanically perfect, genuine; £32, or offer.—Scrase, 23, Avenue Gardens, East Sheen, S.W.14. [2640

RUDGE Multi 1920 3½h.p. T.T. Isle of Man Model, lamps, horn, speedometer, etc.; £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

1920 3½h.p. Rudge and 35 gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect; £76; deferred payments and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2373

SNIP!—1921 3½h.p. T.T. Rudge Multi, sloping tank, been little used, and in quite new condition, very fast, and complete with lamp sets and horn, tax paid; £48.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X4049

RUDGE 3½h.p. Isle of Man Models.—We have several of these machines, which are slightly shop-soiled or run small mileage, for sale at attractive prices; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2861

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Rudge parts in stock; complete illustrated list post free. [9401

Scott.

£28.—Scott combination; trial; low price, quick sale.—49, Idlecombe Rd., Tooting. [2639

SCOTT, 1920, excellent condition; any trial; £62.—Clark, 7, Exhibition Rd., S.W.7 [2196

1920 Semi T.T. Scott for Sale, guaranteed perfect, must be sold; what offers?—Jackson, 93, Shaw Lane, Barnsley. [2706

SCOTT Motor Cycles and Sociables. Scott service and spares.—Cathedral Motor Works, 99, Gt. George St., Liverpool. [2848

£69/10.—Scott Combination, 1920, as new, lamps, horn, speedometer, windscreen, luggage carrier.—8, High St., Wandsworth. [2644

SCOTT, sports, engine No. 4777, practically unused, perfect, full equipment, owner unfit; £98, or best.—O'Hara, Alberton Tower Hospital, Woolton, Liverpool. [X3880

1921 T.T. Scott-Squirrel, delivered June, 1921, electric light, H.H. head lamp, perfect order, private owner; price £85.—Slater, Highfields, South Elmsall, Doncaster. [2529

SCOTT 1920 Combination, excellent condition, tax, insured, electric lighting, Easting wind screen (Royal), new tyres, Cowey horn, Bonniksen, and the following: Levis touring bars (new), Scott T.T. bars, electric head, rear lamps, Cowey speedometer, Capac carburetter, 2 accumulators, 4v. 6a., not used, with case (new), Tan-sad (new), oilskin jacket and 6 sou'westers; the lot £100, carriage paid; approval against cash; bargain, first secures.—Chapman, 323, Twomile Hill, Kingswood, Bristol. [2672

Spare Parts:

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list. [0751

SCOTT Riders.—We keep huge stock new and S.H. Scott parts. Any part on approval against cash.—Ward Motors, Ltd., The Scott Specialists, 32, Hustler St., Bradford. [0739

Silver Prince.

SILVER PRINCE, grand order, Villiers engine single speed, 1921; bargain, £41.—7, Alwen St., Wordsley, Stourbridge. [X4045

SILVER PRINCE, 1921, fitted Villiers engine, Sturmey 2-speed, kick start, guaranteed perfect in every way; £55, or would exchange for Silver Prince with J.A.P. engine; no other make; cash adjustment.—2-113, Park Lane, Birmingham. [X4046

Singer

SINGER, 1917, 2-speed, kick, excellent condition; £35.—Fairhurst, behind 68, Standishgate, Wigan. [2774

SINGER 3½h.p., T.T., Bosch mag., discs, fully equipped, thoroughly overhauled; £20.—Hinnell, Alberton, Colchester [2592

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Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

Stan.

£30.—Stan motor cycles, 2-stroke, 2¾h.p., new, shop-soiled.—Stan Motor Co., Westwood Heath, nr. Coventry. [X3777

Stanger.

THE Machine of the moment is the Stanger V twin, 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage, Muswell Hill, London, N.10. [0731

Sun.

SUN-VITESSE 1922 2¾h.p., 2 speeds, 2-stroke, clutch, kick starter, delivery from stock; £57/15.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3 'Phone: Avenue 5548. [0072

Sunbeam.

CROSS, Rotherham, is agent for Sunbeams for Rotherham. [X4014

1919 3½h.p. Sunbeam and Sidecar, complete, lamps, etc.; £108.—Cross, Agent, Rotherham. [X4015

£95.—Sunbeam twin combination, 1915, spare wheel, Lucas accessories.—Jones, 11, Hawkshead St., Southport. [X4019

1921 3½h.p. Sunbeam Combination, equal new, complete with accessories and extras.—Ison, Oakfield, Ashby-de-la-Zouch. [2726

SUNBEAM 1914 2¾h.p., complete with lamps, etc., engine overhauled; £35.—Colonial Motors, 104a, Finchley Rd., N.W. Hampstead 7822. [2947

1920 Sunbeam Combination, 3½h.p., detachable wheels, 700×80 tyres, fully equipped, condition guaranteed; £90.—Philpot, Motors, Canterbury. [2748

SUNBEAM 1919 3½h.p. Combination, 3 speeds, clutch, kick starter; £80.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0074

SUNBEAM 1918 3½h.p. Model, sidecar, fully equipped, good condition; £100; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4004

SUNBEAM Combination, 1914, Canoelet coach sidecar, electric lighting, good tyres, accessories; £58.—Butterworth Garage, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [2817

SUNBEAM Combination, 1919, lamp, horn, tax paid, chain drive, 3-speed, kick starter; £78.—Butterworth Garage, 64, Mill Lane, Brixton Hill. 'Phone: Streatham 2813. [2816

SUNBEAM 1920 8h.p. Combination, spare wheel, Lucas dynamo lighting, excellent order; £119; exchange solo and cash.—W. Ayers, Garage, Kensington Palace, W.8. 'Phone: Park 86. [2796

3½h.p. Sunbeam Combination, 1921, condition as new, mileage under 400, speedometer and numerous accessories; £140.—Gordon Watney and Co., Ltd., 31, Brook St., London, W.1. [0749

3½h.p. Sunbeam Combination, 1918, 1921 Swan sporting sidecar, disc wheels, punctureproof tyres, luggage grid, electric side and tail, acetylene head lamp, horn, tools, new piston and valves; £115.—Bayley, Melrose House, Belvedere St., Ryde, I.O.W. [2523

8h.p. Sunbeam and Sidecar, delivered Dec., 1920, complete with spare wheel, horn, wind screen, lamps with Lucas light car generator, in splendid condition, not used last 3 months, bought car; £180.—Daniels, Lightpill Iron Works, Stroud, Glos. [2487

SPORTS Sunbeam, 1922 model, 3½h.p., 3-speed clutch and kick start, large Lucas head lamp set, and tail lamp, Lucas horn, Bonniksen speedometer, aluminium number plates, Pedley knee-grips, mileage 900 miles; best offer over £130.—Ramm, The Orchard, Godstone, Surrey. 'Phone: Godstone 10. [2558

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge.—All Sunbeam parts in stock. Write us if you are hung up for any part. [9402

SUNBEAM Owners are informed that arrangements have been made for spare parts to be stocked at the following Sunbeam Depots:

LONDON, E.C.—Sunbeam Depot, 57, Holborn Viaduct. Tel. No.: 2180 Holborn.

LONDON, S.W.—Sunbeam Depot, 157-8, Sloane St Tel. No.: 1106 Victoria.

LIVERPOOL.—Sunbeam Depot, 68, Renshaw St. Tel. No.: 729 Royal.

MANCHESTER.—Sunbeam Depot, 20, Peter St. Tel. No.: 3952 Central.

LEEDS.—Sunbeam Depot, 5, Woodhouse Lane. Tel No.: 23277.

LEICESTER.—Sunbeam Depot, 16, London Rd. Tel. No.: 3717.

BOURNEMOUTH.—Sunbeam Depot, 8, Holdenhurst Rd. Tel. No. 2706.

EDINBURGH.—Sunbeam Depot, 37, George St., Edinburgh. [9268

Triumph.

CROSS, Rotherham, is agent for the Trusty Triumph. All models in stock. [X4013

TRIUMPH 2-speed C.B. Combination; £30.—Weston, 66, Ascaton St., S.W.8. [2659

HEIGH-HO THE HOLLY!

—this life is most jolly.

—you can get the very thing you want if you haven't all the money!

Come to the Service Co. and choose that machine you want, second-hand or new. Never mind about the cash,—the machine's the thing. Have it for the New Year. Only one fifth the full price need be put down. The rest, monthly to suit *your* convenience.

In the meantime we are booking orders for 1922 models of all makes and should be pleased to give you full information of new features, revised prices, etc., on hearing from you. We will make an unreasonably good allowance on your present machine and the balance can be paid on the easiest of easy terms. Our second-hand stock is carefully selected. Every machine overhauled and guaranteed.

Our service goes with every transaction and does *not* end with the sale.

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MOTOR CYCLES FOR SALE.

Triumph

3½h.p. Triumph; £15; excellent condition, ride away.—47, Leigh Rd., East Ham. [2764

TRIUMPH, 1914, wicker sidecar, complete, 3-speed; £50.—9, Burnley Rd., Stockwell. [2486

1914 4h.p. T.T. Triumph, guaranteed perfect; £38.—80, Marlborough Rd., Coventry. [X3967

1918 Countershaft Triumph, perfect; £48.—24, Balliol Rd., North Kensington. [2722

LEEDS.—1919 4h.p. countershaft Triumph and sidecar; £68; exchanges.—89, Spencer Place. [2668

TRIUMPH, countershaft, S.A. 3 speeds, lamps, and tax; £52.—Hole, 129, Park Lane, Carshalton. [2737

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—4h.p. Triumph, countershaft model, 1919; £55. [2997

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

1914 3½h.p. Triumph, single speed, T.T. model, complete with horn, lamps, etc.; £35.—Hewens, Maidenhead. [2520

TRIUMPH and Gloria Model H. Combination, all accessories, late model; £72/10.—364, King St., Hammersmith. [2934

1921 Triumph 4h.p., unscratched, countershaft, large Lucas lamp set and horn; £93.—38, Cowley Rd., Oxford. Tel.: 870. [2569

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—Triumphs, all 1922 models supplied promptly on easy terms or exchange. [2989

1920 Triumph. 3-speed countershaft, lamps, horn, knee grips, etc., good condition.—Apply, Stephens, Bricklehampton, Pershore. [2467

1922 Triumph, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1678

TRIUMPH 3½h.p. 3-speed Coachbuilt Combination, good condition, very reliable, re-enamelled; £55, or nearest.—Bridge, Wittersham, Kent. [2430

TRIUMPH, late 1918, condition as new, fast sporting machine, small mileage, guaranteed genuine; £70.—Horrill, Rowena, Forest Row, Sussex. [2433

F.O.C.H., the Triumph agents; cash, exchange, or deferred payments. Second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2608

TRIUMPH Junior, 1921, lamps, licensed, fully insured, like new; £50, near offer; seen any time.—145, Widmore, Bromley, Kent. Bromley 1727. [2666

1918 Countershaft Triumph, fully equipped, renovated by Triumph Cycle Co. 1920; £55.—Hillier (side bell), 9, Wallingford Av., North Kensington. [2709

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼ h.p. Triumph Junior, 1921, tax paid, fully insured, all accessories; £50; easy terms arranged. [2985

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—1921 Triumph, Model H, only ridden 500 miles, countershaft gear, in every respect as new; £87/10. [2990

TRIUMPH 1919 Combination, fully equipped, lamps, Easting wind screen, splendid condition; seen and tried any time; £85.—Snow, 91, Mapledene Rd., Dalston, E.8. [2637

TRIUMPH 1921 Combination, chain drive, Lucas lamps, Triplex screen, luggage carrier, as new, perfect; any trial; £110.—14, Morton St., Royston, Herts. [2518

TRIUMPH Gloria 1920 Combination, lamps, tools, mirror, Bonniksen, mileage 3,000, owner driven only, equal new, genuine; £115.—87½, Guilford St., W.C.1. [2550

TRIUMPH 4h.p. T.T., countershaft, 1918, 3-speed, kick start, enamel and plating new, perfect condition; £65 for quick sale.—Walker, C.L.O. Hospital, Judd St., W.C [2462

TRIUMPH 1921 Sports Model, condition as new throughout, mileage under 200; £67.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

TRIUMPH 1917 Combination, guaranteed in every respect, first-class condition, lamps, Tan-Sad; any trial; £46. 'Phone: Waltham Cross 299.—44, Sun St., Waltham Abbey. [2565

I WILL Allow very best price for your present Triumph machine in exchange for any new model. Drop me a line and see.—Harry Nash, Triumph Agent, 365, King St., Hammersmith. [2929

TRIUMPH 1922 Models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2859

1921 Baby Triumph, as new, done 900 miles, tyres perfect, best lamp and horn, spare tube and belt, tax paid, fully insured to March, 1922.—Gowing, Fincham, King's Lynn. [2504

1921 Triumph Combination, wind screen, speedometer, lamps, long nickel exhaust, polished Ace discs all wheels, exceptional machine, and guaranteed perfect; £100.—Word, 51, Upper Richmond Rd., Putney. [2973

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0382

TRIUMPH 1922 Models, including the famous Ricardo 4h.p. o.h. valve model; £120; we can deliver definitely this month. — Meeten Motors, Triumph Agents, Dorking. 'Phone: 163. [2274

TRIUMPH-GLORIA Nov., 1920, combination, fully equipped, in absolute condition; reason for sale, buying bigger power combination; best offer over £105.—Grimmett, 38, Cowgate, Peterborough. [2881

19 12 3½h.p. Triumph, with Canoelet Minor sidecar, N.S.U. 2-speed, Triumph clutch hub, new cylinder and many parts fitted, perfect order throughout; only £40.—1, Norwood Rd., Herne Hill, S.E.24. [2894

TRIUMPH 1920 Model, countershaft, and Gloria sidecar, a top-hole 'bus, in splendid condition, Easting screen, F.R.S. electric lamps, footboards, etc.; quick sale £95.—Holland, 164, Earlsdon Av., Coventry. [X4088

TRIUMPH 1920 Combination, perfect condition, luggage grid, electric side and tail lamps and acetylene head; any trials; £85, or near offer; seen by appointment.—Bradley, Wudnee, 8, Marlborough Rd., Richmond. [2628

TRIUMPH 3½h.p., any trial, really good order, dropped frame, and all accessories; £25.—Light Car and Motor Cycle Engineering Co., 26, Tulse Hill, Brixton (½ min. from Brixton Skating Rink). Tel.: Brixton 1292. [2554

TRIUMPH 1919 Gloria Combination, with dynamo lighting, £97; 1917 4h.p. solo, £59; Juniors (2), 1920 models, perfect, £40 and £42; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2872

19 18 Triumph, 4h.p., with Watsonian R34 sidecar, lamps, horn, wind screen, speedometer, discs, spares, excellent condition; 60 gns.; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2938

19 14 Triumph 4h.p. C.B. Combination, Sturmey-Archer 3-speed hub gear, Bosch, recently overhauled, rebushed, perfect mechanical order, lamps, horn, trip speedometer; trial by appointment; £55.—Innes, Rydens Farm, Walton-on-Thames. [2505

PREMIER Motor Co. for 1922 Triumphs.—Immediate delivery of Type H 4h.p., 3-speed, £105; Type SD, chain drive, £115; Type LW, lightweight, £65; sidecars from £20 to £50; easy payments 4% extra.—Buy direct from the leading Triumph agents: The Premier Motor Co., Aston Rd., Birmingham. [0627

NEW 1921 Slightly Showroom Soiled Triumph Lightweight, £60; Type H 4h.p., 3-speed, £95; Type H with Watsonian Monarch sidecar, £120; write for special end of season clearance bargain list; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X4039

Spare Parts:

TRIUMPH Spares; immediate delivery.—Kays, 8, Bond St., Ealing. [8638

HERBERT ROBINSON, Ltd., Green St., Cambridge. —The Triumph experts; complete illustrated list post free. [9403

TRIUMPH Spares.—We are official service agents; full stock of all parts.—Premier Motor Co., Aston Rd., Birmingham. [X4042

COMPLETE Stock Triumph Spares, satisfaction guaranteed.—Ward and Co. (Albert Agg), 51, Upper Richmond Rd., Putney. [2000

TRIUMPH Spare Parts for all models, also Sturmey-Archer gear parts from stock, post free. Gear overhauls by specialist.—Jones' Garage, Broadway, Muswell Hill, N.10. [0746

TRIUMPH Parts, 1904 to 1921.—Every part, any year, in stock, new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X4082

Trump.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Trump-Jap, 2-speed model, new 1922, £69; easy terms arranged. [2982

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—New late 1921 3½h.p. Trump-Jap, fitted with latest J.A.P. engine, overhead valves, 3-speed model, road racing machine; £75; no extra charge for easy terms. [2983

Unibus.

SNIP!—Unibus, brand new 1922 model, just delivered, 2 speeds, hand clutch, shaft drive, spring frame; cash £45.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X4052

Velocette.

19 22 Velocette, clutch and kick starter.—Early delivery from the Premier Motor Co., Aston Rd., Birmingham. [X4040

19 21 2¼h.p. Velocette, 3-speed, lamps, horn, tools, licence, mileage 200; wanted offer.—Box 7,882, c/o *The Motor Cycle.* [2913

ASTOUNDING Offer of Brand New Velocette 1921 Model D2, 2-speed, chain drive, £55; easy payments only 4% extra; sent on approval; the best value ever offered in high grade motor cycles.—The Premier Motor Co., Aston Rd., Birmingham. [X4041

WATERPROOF CLOTHING BARGAINS

Fig. 1

MOTOR CYCLE SUIT

(*Fig.* 1). Fawn double texture material, interlined rubber, seams cemented and taped, wind cuffs, wind gusset in overalls, and patent clasp fasteners.

SUIT COMPLETE 35/-

Fig. 2

WATERPROOF TRENCH COAT

(*Fig.* 2) Fawn material, rubber lined, guaranteed waterproof.

Price 25/-

SEATLESS TROUSERS.

Fawn double texture material, rubber interlined, wind gusset, and clasp fasteners. All sizes,

18/- per pair.

If you cannot call, send money with breast measurement and height.

MOTOR CYCLISTS' HELMETS.

Double twill waterproof, rubber interlined. Lined inside warm fleece, ear pieces and strap. Indispensable for winter riding. State size of hat worn. **6/-**

WATERPROOF CAPS.

Light weight waterproof material, with ear flaps. Suitable for all-weather riding, golfing, fishing farmers, and all purposes. State size required. **7/6**

POST YOUR ORDER TO-DAY.
ALL GOODS CARRIAGE PAID.

Our Guarantee
Money Refunded in full if not thoroughly satisfied.

Actual Manufacturers:
Martin Waterproof Company,
208, Oldham Road, New Cross, Manchester

MOTOR CYCLES FOR SALE.

Verus.

19 21 Verus, 4h.p. Blackburne engine, 3-speed, clutch, K.S., perfect condition throughout; £73; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington [1672

Villiers.

19 18 Sporting Villiers, 2¾h.p., recently rebushed, 2-speed, G.H. electric lighting, good tyres, fast, reliable machine; £35, or nearest.—91, Lennard Rd., Beckenham. [3001

Wolf.

£18/10.—Wolf-Jap, 2¾h.p., accessories, new tyres, perfect order.—8, High St., Wandsworth. [2646

19 17 3½h.p. Wolf Combination, lamps, horn, and wind screen; £60, or highest offer.—Avery, Deverill, Warminster. [2679

Wooler.

19 20 Wooler, accessories, ride to purchaser; £40; cash wanted.—Box 7,876, c/o *The Motor Cycle.* [2906

WOOLER 1921, the actual machine ridden in the T.T., very fast, perfect; £60.—Longman, 17, Bond St., Ealing. Tel.: 689. [2449

WOOLER 1920, chain drive, 3-speed, 1,000 miles, enamelling and plating as new, lamps, horn, speedometer and tools, mechanically sound throughout, exhibition model; 85 gns; seen any time.—Popplewell, 42, Lancaster Rd., Stroud Green, N. [2431

X.L.

X.L.—Brighton agents, The Burlington Motor Co., 9, St. George's Rd. Show models in stock. Deferred payments or exchanges. [2777

Zenith.

ALLAN GRUZELIER, specialist in Zenith motor cycles.

19 21 Zenith-Bradshaw, soiled, 100 gns.

19 21 8h.p. Countershaft, soiled; £108.

19 21 8h.p. Countershaft, unused; £112

IF you want a Zenith, come to the man who specialises. You are sure of the right machine then.

I CAN Give immediate delivery of any 1922 model.

A ZENITH from Allan Gruzelier has a service behind it that follows it always. Spares, overhauls, and tuning at the shortest notice.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W. Regent 205. [2615

19 22 Zenith-Bradshaw, Gradua, horn, speedometer, new; £100.—Stutfield, Grove House, Hampton, Middlesex. [2740

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Zenith-Bradshaw, new; price £105; easy terms arranged. [2987

19 20 8h.p. Countershaft Zenith Combination, electric lighting, little used; £110.—17, Garden Av., Mitcham, S.W. [2962

19 21 Zenith 8h.p. Countershaft Combination, little used, fully equipped, many spares; £110.—72, Longridge Rd., Earl's Court. [2670

67 GNS.—1920½ 5h.p. Sports Zenith, Fallot lamp and generator, knee-grips, etc.; see exchanges.—28, Sheen Gate Gardens, S.W.14. [2535

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw; price £118. [0711

F.O.C.H., the Zenith agents; cash, exchange, or deferred payments. Second-hand machines in stock. —5, Heath St., Hampstead (near Tube). [2607

MAGNIFICENT 6h.p. Zenith, luxurious coach sidecar, wind screen, fully equipped, K.S.; a modern outfit for 35 gns.—Ramsden's, May Bell Av., Blackpool. [2581

ZENITH-GRADUA 1919 3½h.p., all complete, tools, lamps, tax paid, speedometer, just overhauled; best offer over £40.—J. Baigent, Chobham, Woking. [2478

19 21 Zenith 8h.p. Combination, Model H, indistinguishable from new, only used a few times, complete with all accessories; a bargain at £135.—Harris, 14, Great Marlborough St., W. [1924

SNIP!—1920 5-6h.p. sports Zenith, long plated exhaust, been little used, and in really new condition, all lamps and horn, tax paid; £60.—Walbro Motor Cycle Co., Saffron Walden. 'Phone: 45. [X4050

19 22 Zeniths, all models.—5h.p. J.A.P., countershaft, £118; with sidecar, £147; immediate delivery; actual Show model in stock. Order early.—South Eastern Garage, Herne Hill, S.E.24. [2897

19 22 Zenith-Bradshaw in stock for immediate delivery; £118; cash, exchange, or extended payments.—Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0734

ZENITH 1920 6h.p. Sports, speedometer, horn, lamps, insured, new condition, £72; 1920 8h.p. countershaft combination, Lucas electric lighting, £106.—Clark, 7, Exhibition Rd., S.W.7. [2200

MOTOR CYCLES FOR SALE.

Zenith.

4-5h.p. Zenith, appearance as new, sound mechanical condition, new Dunlops and tubes, kick start, clutch, countershaft Gradua gears; sacrifice £58; all on, lamps, Tan-Sad, spare chain, new belt, new Amic, tools.—Coniston, Alfriston Rd., Seaford. [2492

ZENITH, 1921-22, with 1921 Cloria sidecar, 8h.p. twin J.A.P., countershaft model, with clutch and kick start, complete lighting set, horn, Easting wind screen, licensed, etc., as new; sacrifice, £118.—769, Romford Rd., Manor Park, London, E. [2782

ZENITH 8h.p. 1920 Countershaft Combination, new Swan sports sidecar, Aero wind screen, disc wheels, speedometer, many accessories and spare parts, guaranteed perfect condition; £100; seen by appointment.—Giles, 18, Old Cavendish St., W.1. [2422

ZENITH 1921 Combination, o.h.v. 8h.p. J.A.P. engine, specially built June, mileage 600, aluminium pistons, Rolls-Royce tulip valves, roller big end, enormous quantity valuable spares, touring and racing timing gear, perfect condition throughout, speed 70 m.p.h. with passenger and sidecar; inspection invited at Zenith Motors, Hampton Court; £125.—Riddoch, Fonthill, Reigate. [2920

Ladies' Motor Cycles.

LADY'S 1921 2-stroke Sun-Villiers, fully equipped, only run 1,000 miles; £50.—H. E. Griffin, Haywards Heath. [2685

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

NEW 1921 Lady's Open Frame Velocette, 2-speed, chain drive, reduced to £55; easy payments 4% extra.—To be obtained only from the Premier Motor Co., Aston Rd., Birmingham. [X4043

Miscellaneous.

WANDSWORTH Motor Exchange.—Christmas gifts. Finest selection motor cycles, combinations, to choose from.—Below.

WANDSWORTH.—Easy terms. Easy terms. First deposit down secures immediate delivery of any motor cycle.

WANDSWORTH.—Sun lightweight, 2½h.p., mag., nice little runabout machine; only 19 gns.—Below.

WANDSWORTH. — Kenilworth 1920 machine, 1¼h.p., almost new; cost 50 gns., sacrifice 22 gns.—Below.

WANDSWORTH.—Rex, fine 3½h.p., mag., dropped frame, drive away; cheap, 15 gns.—Below.

WANDSWORTH.—Vindec with sidecar, 3½h.p., 2 speeds, countershaft kick, lamps; 26 gns.—Below.

WANDSWORTH.—Torpedo, with Canoelet sporting sidecar, 3½h.p., Grado gear, kick; 29 gns.—Below.

WANDSWORTH.—Rex, with coachbuilt sidecar, 5h.p. twin, Grado gear; clear, 29 gns.—Below.

WANDSWORTH.—Peugeot sporting type machine, 5h.p. twin, wants little attention; 18 gns.—Below.

WANDSWORTH.—Moto-acoche lightweight, genuine, 2½h.p., mag., variable gear, runs splendidly; 23 gns.—Below.

WANDSWORTH.—Minerva 7h.p. twin, mag., 2 speeds, runs well; bargain, 25 gns.—Below.

WANDSWORTH.—Singer, 2½h.p., enclosed valves, 3 speeds, clutch, lamps, beauty; 32 gns.—Below.

WANDSWORTH.—Rudge, 3½h.p., clutch model, good tyres, drive away; opportunity, 29 gns.—Below.

WANDSWORTH.—Scott, reconstructed, twin, water-cooled, smart machine, very fast; sacrifice, 39 gns.—Below.

WANDSWORTH.—Triumph, 3½h.p., 3 speeds, clutch, dropped frame, nice machine; 46 gns.—Below.

WANDSWORTH.—F.N., latest, 7h.p., 4 cyls., 3 speeds, clutch, speedometer, lamps; 68 gns.—Below.

WANDSWORTH.—Triumph (late) coachbuilt combination, 4h.p., 3 speeds, lamps; special, 49 gns.—Below.

WANDSWORTH.—Indian, beautiful machine, 7h.p. twin, 2 speeds, very fast; 49 gns.—Below.

WANDSWORTH.—1920 B.S.A. magnificent coachbuilt combination, 4¼h.p., 3 speeds; gift, 79 gns.—Below.

WANDSWORTH.—1921 brand new Triumph, 4h.p., 3 speeds; first cheque, 95 gns.—Below.

WANDSWORTH.—Bradbury, 4h.p., Bosch, 2 speeds, drive away; very cheap, 25 gns.—Below.

WANDSWORTH.—12 beautiful coachbuilt sidecars from 8 gns., some fitted with wind screen.—Below.

WANDSWORTH.—Matchless-Jap, 5h.p. twin, mag., good tyres; clear, 23 gns.—Below.

WANDSWORTH.—Exchanges.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). Phone: Latchmere 4686. [2844

EASTERN GARAGE

OUR MOTOR CYCLE AGENCIES FOR 1922

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MARTINSYDE
N.U.T.
NEW IMPERIAL
QUADRANT
ROYAL ENFIELD
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SCOTT
TRIUMPH
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LIGHT CARS:
BAYLISS-THOMAS, ROVER.

The following is a selection from our list of OVERHAULED and GUARANTEED

SECOND - HAND MACHINES:

A.J.S., 1921, 2¾ h.p., 3 speeds, clutch, and kick-starter, Lucas lamps and horn **£70**

A.J.S. 1921 7 h.p. Combination, 3 speeds, clutch, and kick-starter, Lucas Magdyno lighting, electric horn, as new **£160**

DOUGLAS W.D. 4 h.p. Combination, 3 speeds, clutch, and kick starter, as new **£90**

MARTINSYDE 1921 6 h.p. Combination, 3 speeds, clutch, and kick-starter, electric lighting, speedometer, horn, windscreen **£115**

METRO-TYLER, 1920, 2½ h.p., 2-stroke, 2 speeds, lamps, horn **£45**

NORTON. 1916, 3½ h.p., Model BS, Philipson pulley **£60**

N.U.T., 1920, 3½ h.p. twin, 3 speeds, clutch, and kick-starter, Lucas Magdyno lighting, Swan sporting Sidecar **£115**

ROVER, 1917, 3½ h.p., T.T. model, Philipson pulley, lamps, horn, speedometer **£48**

TRIUMPH, 1920, 4 h.p., 3 speeds, clutch, and kick-starter, all-chain **£85**

TRIUMPH, 1920, 4 h.p., Model H, and Sidecar, 3 speeds, clutch, and kick starter, lamps, horn, speedometer, windscreen **£103**

TRIUMPH 1920 4 h.p. Combination, 3 speeds, clutch, and kick-starter, all-chain drive, lamps, horn, speedometer, screen **£115**

MORGAN de Luxe, 1920, 8 h.p. M.A.G. water-cooled engine, lamps, horn, speedometer, side door **£130**

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MOTOR CYCLES FOR SALE.

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths' Motories, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10/6; 6h.p. Zenith combination, £49/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 3-speed gear, clutch, kick starter, lamps, speedometer, £42/10/6.—Booths' Motories.

BOOTHS' Bargains. — Free engine Triumph, £22/10/6; 4-cyl. F.N., 2 speeds, £29/10/6.

BOOTHS' Bargains.—1920 Williamson 6h.p. combination, £95/10/6; another, dynamo lighting, £115/10/6.

BOOTHS' Bargains.—Harley-Davidson combination, mileage 300, £139/10/6; 3h.p. Humber, £10/10/6.

BOOTHS' Bargains.—1915 B.S.A. combination, £55/19/6; 1920 Wooler, £49/19/6; 3h.p. 2-speed Enfield, £29/10/6.

BOOTHS' Bargains.—8h.p. Premier combination, £49/10/6; 1914 Phelon and Moore, £35/10/6.

BOOTHS' Bargains.—1917 4h.p. Douglas, £59/19/6; 1919 4h.p. Douglas combination, £89/10/6; another, electric lighting, £95/10/6.

BOOTHS' Bargains.—1916 Douglas, £47/10/6; 1920 Morgan de luxe, M.A.G. engine, speedometer, £165/10/6; 1920 3½h.p. Ariel combination, £85/19/6; G.W.K. light car, £139/10/6; 1922 new 4½h.p. Quadrant combination, £100.—Booths' Motories, Halifax. [2311

REX 5-6h.p., a.i.v., and frame complete, Roc 2-speed, Bosch mag.; also 2¾h.p. Minerva engine; what offers?—White, Alford, Lincs. [2437

VILLIERS 2-stroke, Senspray; brakes, carrier require attention; going order; lamps; £15, or offer.—Rimington, 5, Royal Crescent, Weston-super-Mare. [2465

BUNTING'S Buy, Sell, or Exchange any make of motor cycle. State your requirements. We undertake to do your business and give you satisfaction. Distance immaterial.—Bunting's Motor Exchange, Wealdstone. [9650

WANTED to dispose of a large number of combinations and solo machines at clearance prices to make room for new models; list on request.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2874

F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged. Any new cycle, combination, or car supplied; cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [2614

MOTOR ATTACHMENTS.

J.E.S., in good order; £12/10.—H., 34, Belgrave Gate, Leicester. [2496

1921 Wall Auto-Wheel, with special drip feed, only done 100 miles; £12.—Bevis, 83, Shirland Rd., Paddington. [2975

J.E.S. 1h.p. Engine, magneto, carburetter, tank, belt rim, controls, perfect order; £7/10.—Hartley, Coal Merchant, Broughton-in-Furness. (D) [2538

YOUNG Attachment on gent's special bicycle, 1921 model, never ridden; cost £32, take £27/10.—Hopkins, 6, Calcott Court, Brondesbury, London, N.W.6. (D) [1439

MOTOR CYCLES WANTED.

CASH

WAITING

FOR Motor Cycles.

COMBINATION or Solo, any quantity, any make, any condition. Exchanges a speciality.—T. and B. Motor Co., Ltd., 372, Euston Rd., N.W.1. Museum 6581. [5564

W. T. DUNN, Ltd., always buy.

FULL Market Value given for modern solos, combinations, and cycle cars. Call, write, or 'Phone Museum 5391.—W. T. Dunn, Ltd., 326, Euston Rd., London. [0332

WANTED, A.B.C. kick start model.—Box 7,868, c/o *The Motor Cycle.* [2619

JAMES 4½h.p. Combination, not earlier than 1919.—151, Globe Rd., Bethnal Green. [2491

WANTED, lightweight, must be cheap for cash.—Write, 24, Hanover St., Islington. [2715

WANTED, late 1921 Enfield combination; letters.—Bennett, 49, High St., Wanstead. [2665

COUNTERSHAFT Triumph, condition immaterial for cash.—43, Leavesden Rd., Watford. [2696

WANTED, a Triumph combination, belt-driven, 1921.—F. Tonar, Veterinary Surgeon, Bath. [1809

WANTED, good solo or combination for cash.—C.S., 14, Swaton Rd., Bow, E.3. Tel.: E3155. [2971

MOTOR CYCLES WANTED.

PALMER'S Garage, Tooting.—The pre-eminent place for the disposing of motor cycles.

PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

PALMER'S Garage, Tooting, make a speciality of motor cycles in the weekly auction sale every Thursday at 2.

PALMER'S Garage, Tooting.—No garage charge is incurred until 7 days' notice is given.

PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

PALMER'S Garage, Tooting.—If cash offer not accepted, machine can be included in auction sale, held every Thursday.

PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale a nominal auction fee is charged: For motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

PALMER'S Garage, Tooting.—Catalogues free. Tel.: 208 Streatham. T.A.: Palmer's Garage, Tooting. [2843

WANTED, 4-cyl. F.N.'s, T.A.C.'s, T.M.C.'s, Hendersons.—Wandsworth Motor Exchange, Ebner St., Wandsworth.

WANTED, Red Indians, Harley-Davidsons.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station).

SPECIAL Cash Buyers—Triumphs, Bradburys, Enfields, B.S.A.'s, P. and M.'s, Bats, Scotts, Douglases, Matchless, Rex.—Wandsworth Motor Exchange, Ebner St., Wandsworth (Town Station). 'Phone: Latchmere 4686. [2845

LATE Combination, also good solo, for cash; no fancy prices, please.—Call or write, 89, East Hill, Wandsworth. [2917

WANTED, modern lightweights and combinations, cheap for cash.—Patterson, 12, The Quadrant, Winchmore Hill, N.21. [9502

MOTOR Cycle Wanted, condition immaterial, 1914 upwards.—Lowest price, particulars, Elge, 19, Lewis Grove, Lewisham, S.E. [X3969

F.N. 4-cyl. 5-6h.p., 1910-13, 2-speed, condition immaterial; must be cheap.—Write, Ross, 2, Warham Rd., London, N.4. [2695

WANTED, 2¾h.p., 3½h.p. solo, A.B.C., James, or Coulson preferred; cash, offers.—Particulars, Box 7,875, c/o *The Motor Cycle*. [2905

REQUIRED, Norton Big Four, sidecar or solo, cheap for cash; London district.—Full particulars to Box 7,836, c/o *The Motor Cycle*. [2475

WANTED, countershaft Triumph, must be cheap for cash; one needing a few repairs not objected to.—Hole, 129, Park Lane, Carshalton. [2739

WANTED, 8h.p. family combination, late model, Matchless, Ariel, B.S.A.—Lowest cash price and particulars, Box 7,890, c/o *The Motor Cycle*. [2956

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0604

WANTED, your motor cycle or combination. We are buyers. We give full market price, and pay cash on spot.—Write, 'phone, or call, Percy and Co., 314 and 316, Euston Rd., N.W.1. 'Phone: Museum 1337. [1018

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone. Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

SEND Your Motor Cycle to Palmer's Garage and Motor Auction Rooms, High St., Tooting. Cash offer telegraphed immediately on receipt. Nearest station Wimbledon. We will collect from any London station. Machine can be included in auction sale if desired.—Sole address: Palmer's Garage, Tooting. [2838

TRICYCLES FOR SALE.

ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng Co., Ltd., 5, Kendalls Mews, George St., W.1. [2684

TRICARS FOR SALE.

9h.p. Riley Tricar, 4-speed gear box, hood, screen; no reasonable offer refused.—Juffkins, Shillingford Hill, Wallingford. [2542

MOTOR SCOOTERS.

KINGSBURY Scooters and Spare Parts.—3, Kensington Mews, George St., W.1. [5334

A.B.C. Skootamota, excellent condition, horn and licence; £17/10.—King, 4, Short St., Cambridge. [2911

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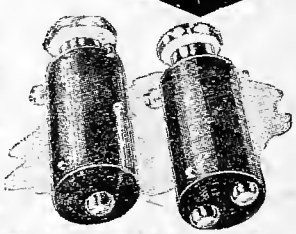

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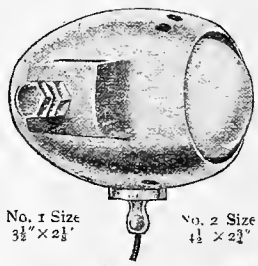
Single or Double Pole, 2/- each. Post free.



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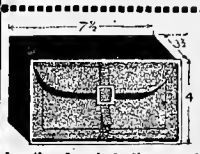
Cast Aluminium. Highly polished. Manufactured in two sizes.
No. 1 Size 3/9 Carriage Paid. No. 2 Size 4/6



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Leather front. 2 clips supplied with each bag
Best value obtainable.
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The MOTOR CYCLISTS' ACCESSORY HOUSE
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AUTOPED Scooter, brand new, 1½h.p. 4-stroke, complete with dynamo lighting; £15.—Percy and Co., 314, Euston Rd., N.W.1. [1019

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CAMBER Hoods, 55/-; wind screens, 27/6.—Bright and Hayles, 78, Church St., Camberwell. [2805

BENT Hoops, hood fittings, straps, turnbuttons, twills, etc.; hardwood polished wind screens, 27/6.—Henry Jones, 778, High Rd., Tottenham, London. [9376

RENNOC Co.—We are actual manufacturers of hoods, screens, and aprons. Send for list.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [2321

ROBINI Manufacturing Co.—Adjustable wind screens, made of celluloid and thick twill, all enamel fittings, complete with coverall apron, 35/-, carriage paid; money returned if not satisfied. 'Phone: Brixton 1585.—Robini Mfg. Co., 1 and 3, Tulse Hill, Brixton, S.W. [2928

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SIDECAR Bodies, 30/- each, Douglas.—Speechley, 86, Churchfield Rd., Acton, W.3. [2578

CAMBER Coach Bodies from £4/17/6.—Bright and Hayles, 78, Church St., Camberwell. [2813

RENNOC Sidecar Bodies, actual manufacturers, 35 models, also several clearance, cheap to clear.

RENNOC Co. specialise in repairs, repainting, and upholstering.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [2320

ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

ROBINI Mfg. Co.—End of season's stock of new bodies. A few left. All these bodies coachbuilt, of many different types, sports, etc., complete with Coverall aprons, £6/15 each. Catalogue on request. Carriage extra. 'Phone: Brixton 1585.—Robini Mfg. Co., 1 and 3, Tulse Hill, Brixton, S.W. [2926

SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

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FOR

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SANDUM Sidecars.—Our pre-war prices were the talk of the show; £14 to £50. Write for new catalogue.

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INDIANS with kick starter on left present no difficulty with Middleton's special model.

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SIDECAR Mudguards, 28×3in.×4in., valance, no stays, bright, 7/9 each; 28×3in.×5in., ditto, ditto, bright, 7/9 each; 26×2½in., valance, stays and clip, bright, 10/6 each.

MICHELIN Rims only, 650×65, black enamelled, 5/- each.—The Birch Aircraft Manufacturing Co., Ltd., 169-171, High Rd., Willesden Green, N.W.10. [2476

BARGAINS.—Gloria cane sidecar, £6/19/6; Ruby coach sidecar, £9/10/6; Hercules coach, £9/10/6; large Bowser seat child, £12/10/6.—Booths' Motories, Halifax.

BARGAINS.—Shop-soiled £27/10 sidecar, suit Triumph, B.S.A., £18/15/6.—Booths' Motories, Halifax.

BARGAINS.—New large size coach bodies, locker under seat, £6/19/9; featherweight sidecar, £12/10/6; cane sidecar, £6/10/6.—Booths' Motories, Portland Place, Halifax. [2312

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FOLDING Sidecar.—When ordering your motor specify a Hopley folder. Suits motors up to 10h.p. Can be changed from pleasure to commercial in few seconds. Detachable wheels can be fitted. Tested 7 years.—Hopley, Upper Highgate St., Birmingham. [0152

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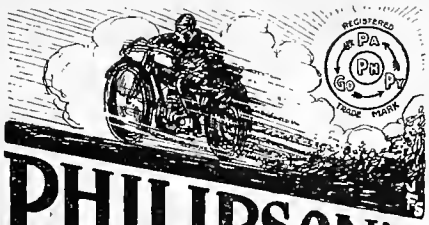

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EXCHANGES or Deferred Payments arranged.—'Phone: Museum 6436.

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1921-22 De Luxe Morgan, W.C., lavishly equipped; £150.—Hillier (side bell), 9, Wallingford Av., North Kensington. [2711

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BAYLISS-THOMAS, 1922 10h.p. model, 4-cyl. water-cooled engine, 3 speeds, Magdyno; 300 gns; immediate delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1 [0736

ROVER New 1922 8h.p. Model in Stock; price £220.—Authorised Agents, Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0076

139 GNS.; exchanges a speciality.—Genuine 1921 G.N. de Luxe, 2-seater, dickey, dynamo, 2 spare wheels, shock absorbers, speedometer; any examination, trial.—Below.

99 GNS.; exchanges a speciality.—1921 Carden 2-seater De Luxe, lavishly equipped, detachable wheels and spare, only run about 800 miles; cost £155. —Seabridge, Hausler Rd., East Dulwich. Sydenham 2452. [2935

MORGAN, Grand Prix, late model, water-cooled 8-10h.p. J.A.P., discs, hood, wind screen, lamps, licence, splendid condition; £110; exchanges.—63, Solon Rd., Brixton. [2756

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—New 1922 Morgan Grand Prix, show model, special show finish, fully equipped; price £180, plus cost of extras; cash or easy terms. [2994

G.N. 1922, immediate delivery, dynamo lighting horn, speedometer, aluminium dash, etc.; £225. —Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0077

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A.C. Sociables, by the A.C. Co., dependable runabouts, take 2 persons anywhere, good condition and appearance, fully equipped, from £50 to £85; trial.—29, Allsop St., Upper Baker St., London, N.W. [1458

£85.—1921 Carden, complete with lamps, horn, hood, screen, speedometer, spring seat, etc., guaranteed in excellent running order, like new; trial; bargain; seen Birkenhead.—Box 7,869, *c/o The Motor Cycle.* [2630

CARDEN 1921 De Luxe, dynamo lighting, clock, speedometer, amp. meter, electric horn, lots of spares, condition as new, cost over £200; £105.—Colonial Motors, 104a, Finchley Rd., N.W. Hampstead 7822. [2948

MORGANS.—1922 models can be delivered from stock immediately; any specification; exchanges; extended terms; spares for all models.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548 [0075

1920 A.V. Monocar, electric light, speedometer, Lucas mechanical horn, etc., in beautiful condition throughout, very fast; take £65 cash (worth more); exchange Triumph, Sunbeam, Morgan.—Stone, 280, Gloucester Rd., Horfield, Bristol. [2588

1921 Morgan de Luxe, 10h.p. M.A.G. engine, water-cooled, with hood and screen, lamps and generator, mechanical horn, licence paid, fully equipped, mileage under 100, condition as new; owing to ill-health, must sell; offers; any trial.—Foreman, 52, Barton St., Gloucester. [2680

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EXCELSIOR 8h.p. Blackburne, Burman gear, Lucas Magdyno, Watsonian cab with roof light, Pyrene extinguisher, spare wheel, complete with meter and insurance until May; 200 gns.; only used 6 weeks.—Watsonian, Conybere St., Birmingham. [2887

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PALMER'S Garage, Tooting.—The pre-eminent place for purchasing. Auction every Thursday.

PALMER'S Garage, Tooting.—£35 down and 12 monthly payments £5 secures superb Napier 5-seater, dynamo lighting.

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PALMER'S Garage, Tooting.—£30 down and 12 monthly payments £5 secures reliable live axle Panhard waggonette 12-seater.

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PALMER'S Garage, Tooting.—£25 down and 12 monthly payments £5 secures excellent 12-14h.p. Fiat chassis.

PALMER'S Garage, Tooting.—All above cars are in good running order. For cash down price deduct 10% from above totals.—Palmer's Garage, Tooting. [2842

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admittedly, but by concentrating in one direction it is possible to become a specialist and to know more about that particular subject than someone else who tries to learn the lot.

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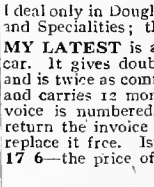
MY LATEST is a new rear spring for the 4 h.p. Sidecar. It gives double the movement of the usual spring, and is twice as comfortable. Further, it is unbreakable, and carries 12 months' guarantee. Each spring and invoice is numbered. If a spring breaks in this period, return the invoice and the broken spring, and I will replace it free. Isn't this fair? And the price is only **17 6**—the price of a standard spring.



ZOOM! ZOOM!!
My wonderful Exhaust System is still the biggest seller of the day. It adds £10 to any 2¾ h.p. Douglas, yet only costs **30 -**; a little while back it would have cost 50/-, and a standard silencer costs to-day 37/6. Everybody is satisfied with them. Mr. Charles F. Stagg, Newport, writes—"I received the pipe before the Speed Trials and was successful in gaining the Challenge Cup for the fastest time in the 350 c.c." I have made arrangements to produce 250 sets a week, and can send by return.

AIR COOLED VALVE CAPS were originated by me. I have sold over 5,000 for 2¾ h.p. and 4 h.p. Douglas Machines.—They prevent knocking, make your engine give full power on long hills, and let you drive "all out" without drying up. They were used by many T.T. riders, and the winners of the Grand Prix used them. Many have copied my design but cannot fathom my alloy. My price is **4 -** per cap, and remember they are guaranteed.

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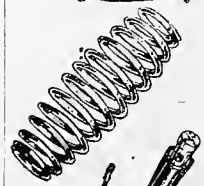
Do you appreciate more power, better petrol and oil consumption, better compression, and an engine that does not carbon nor gum up nor oil the plugs? If so, you should insist on fitting my Twin Rings, made under a patented process. They are the most scientific rings manufactured, and every one is guaranteed. 2¾ h.p. **1/6**, 4 h.p. **1 8** each. Racing men say "They are IT."

A CLEARANCE LINE of new and guaranteed Saddles (adjustable springs), which may be tensioned for any weight; beautifully finished solid leather top on steel pan; fits a 2¾ h.p. frame perfectly, giving a low riding position, and does not foul the sidecar connection on the 4 h.p. Only a few left. My price, **25/-**; elsewhere, 35/-.



I have lots of other Douglas Specialities, including Barrel Valve Springs: Racing, **2/-** per pair; Touring, **1/6** per pair. Large Metal Armoured Solid Leather Two-strap Tool Bags for 4 h.p. Douglas, price **12/6**, usual price 20/-; and for 2¾ h.p. (smaller), **9/-**. Only a limited supply. Black Inflators, fit Douglas Clips, **6/-**; usually 8/6.

Remember, my service is a return service. Everything you order you get by return, and, if you are not satisfied, return the article, and your money is returned without deductions—That's my policy.

ALL DOUGLAS MODELS demonstrated and supplied.
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ROVER Cars.—1922 8h.p. model; price £220; early delivery.—Godfrey's, Ltd., 208, Gt. Portland St., London, W.1. [0350

ROVER Cars.—The famous 1922 8h.p. models in stock for immediate delivery; £220.—Eagles and Co., 275, High St., Acton, London. [0761

4-SEATER Perry 8h.p., 2-cyl., 1916, excellent condition, usual accessories; 90 gns., or exchange. Please call.—26, Tulse Hill, Brixton. [2700

COVENTRY Premier, 1922, 4-wheel model; £250; immediate delivery; cash or deferred payments.—Ratcliffe Bros., 200, Gt. Portland St., W. [0730

STUDEBAKER 5-seater Touring Car, just repainted, beautiful appearance and condition; £80 cash, or take a Morgan.—Bunting's Exchange, Wealdstone. [2878

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ROVER 8h.p. Light Car, 1922 models, dynamo lighting; £220 cash; deferred payments 4% extra.—Ratcliffe Bros., 200, Gt. Portland St., W.1. [0729

WEST NORWOOD undoubtedly continues pre-eminently conspicuous amongst discerning bargain-hunters' objectives. (Comment absolutely unnecessary.)

WEST NORWOOD.—Advertised dates guaranteed accurate. Many cars really exceptional condition. Exchanges entertained.

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WEST NORWOOD.—12-14h.p. Unic van, detachables, sump, £95; 3-ton L.G.O.C. lorry, good, £100.

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WEST NORWOOD.—1913 coupe light car, 8-10h.p., smart, £125; 30-cwt. Gobron-Brillie lorry, solids, £125.

WEST NORWOOD.—10h.p. 1915 Whiting-Grant light car, 4-cyl., monobloc, £125; G.W.K. 2-seater, taxed, £135.

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CONSULTING Patent Agency, 253, Gray's Inn Rd., London.—Aero and aircraft engines. [2416

J. E. S. LOCKWOOD, 3, New Street, Birmingham. 'Phone: 5815 C. Patents guide free. [9057

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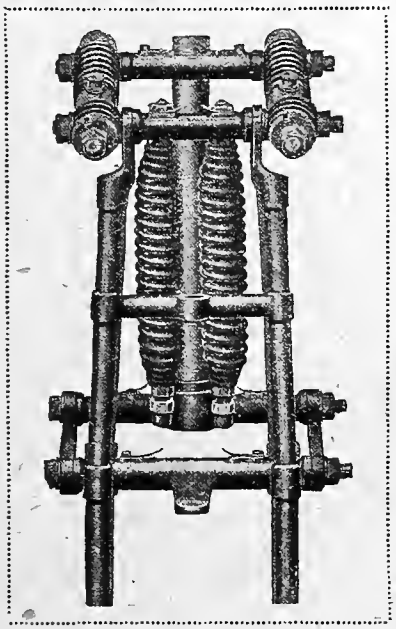
SALESMAN wanted, outside enquiries, supervising sub-agency business; must be keen, enthusiastic; sound knowledge of motor cycle business; state salary, or salary and commission, required; no inflated salaries; permanent and progressive position for right man.—Parker's, Bradshawgate, Bolton. [X4000

SITUATIONS WANTED.

EX-OFFICER, thorough knowledge motor cycles, light cars, and accessories, wishes responsible position, willing to take financial interest, commercial experience.—Box 7,873, c/o *The Motor Cycle.* [2903

The BRAMPTON Bi-Flex SPRING FORK



SINCE a spring Fork can only absorb vibration and shocks effectively in the direction in which it is capable of movement, the liberal margin of movement in both the horizontal and vertical planes which the exclusive design of the Brampton Bi-Flex facilitates, will be readily appreciated. The Brampton Bi-Flex Spring Fork is instantly responsive to, and completely absorbs within itself, all vibration and shocks from every angle at which resistance is encountered, rendering the rider immune from discomforts which are otherwise impossible to entirely eliminate.

BRAMPTON BROS., Ltd.,
Oliver Street,
BIRMINGHAM.

Measurement forms and descriptive booklet illustrating models for motor cycles from 2¼ h.p. upwards, free on request.

BUSINESSES AND PROPERTY FOR SALE, TO BE LET, OR WANTED.

SPACIOUS Premises are about to be erected in the centre of the City of Birmingham. Large ground floors and basements, particularly suitable for motor sales, to be let on long leases.—For full particulars apply to Frederick J. Pepper, Estate Agent, Colmore Row, Birmingham. [2617

STOLEN.

£25 Reward for information leading to the recovery of a 1921 Triumph combination, Reg. No. U 8883, frame No. 313299, engine No. 75746. Missing from garage in Queen's Rd., Leeds.—Apply Finder and Beecroft, 101, Albion St., Leeds. [2562

GENERAL TRADE.

AUCTION Sales.—Palmer's Garage, Tooting, the oldest solely motor auction rooms in London. Terms 7½%, not chargeable if machine unsold. Motor cycles and cars bought and sold for cash. Nearest goods stations, Falcon Lane, L. and N.W.R.; Wimbledon, L. and S.W.R. and G.W.R.—Sole address: Palmer's Garage, Tooting. [2839

WANTED.

LATE 1920 3½h.p. Touring Sunbeam Sidecar.—43, Carson Rd., S.E.1. [2383

WANTED, two 28×2in. inner tubes.—Hardy, Pinewood Rd., Eaglescliffe-on-Tees. [2564

1910 3½h.p. Triumph Cylinder, perfect condition.—Shaw, 96, Battenberg St., Belfast. [2498

DOUGLAS.—Bottom, middle, and top section; cheap. —Gutstone, 9, Jasmine Grove, Anerley. [2604

PULLEY Gear, for big single James; deposit system. —Hodge, Chester Rd., Kidderminster. [2534

WANTED, 5 or 8h.p. twin J.A.P. engine, cheap for cash.—P. Riddelsdell, Boxford, Suffolk. [2880

P. and M. Parts wanted, chains, magneto, inverted levers.—S. E. Porter, Whitchurch, Salop. [2885

2-SEATER Body for Humberette, new or second-hand, any condition.—Sharps, South St., Yeovil. [2438

WANTED, 1920 Indian sidecar, Mills-Fulford bulbous back preferred.—Worrell, Grimston, Norfolk. [2557

HAND Controlled Philipson, to suit W.D. countershaft Triumph.—Dugdale, Radford, Coventry. [X4010

FRAME for 3½h.p. Ariel, 1912, must have dropped top tube. State price and delivery.—Laurie, Grange, Alloa. [2471

A SUNBEAM Sidecar for 3½h.p. machine, in good condition; state price.—Apply, 7,851, c/o *The Motor Cycle.* [2513

WANTED, second-hand Morgans, in good condition. —A. P. Rey, 378-384, Euston Rd., N.W.1. 'Phone Museum 6436. [1008

CYCLE Car Chassis Parts, or complete chassis (Humberette type); also Morgan 3-wheeler chassis. —Smith, Power Station, Bedale. [2501

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

S.A. Gear Box, sprockets, chains, 2-seater sidecar or chassis, suit Regent. Cycle car parts offered exchange.—100, Adelaide Rd., S.E.4. [2713

WANTED, bankrupt stocks, W.D. spares, incomplete P. and M.'s or parts.—Inman, Durham Rd., Seaforth, Liverpool. 'Phone: Waterloo 296. [1249

WANTED, Triumph countershaft crank cases, flywheels, S.A. gear boxes, parts, or empty cases; any quantity purchased.—Hole, 129, Park Lane, Carshalton. [9767

WANTED, 4-cyl. F.N. rear wheel, complete, controls and other parts; Amac (1¼in. inlet), oil pump (sight feed), top bar Klaxon.—Shelley, 11, Junction Rd., Brentwood. [2525

WANTED to Purchase Outright for cash, bankrupt stocks, W.D. spares, miscellaneous spares. Send full particulars.—McNeille and Platt, 57, Gt. George St., Liverpool. 'Phone: 1092 Royal. [2489

EXCHANGE.

SUN-VILLIERS and cash for higher power machine. —Penny, 146, Huish, Yeovil. [2589

1-TON Lorry, covered, solids rear; exchange motor cycle, level.—23, Filmer Rd., Fulham. [2432

NEW Push Cycle (gent's) in exchange for coach-built sidecar.—Cowlishaw, Methwold. [2854

1920 Douglas Combination, 4h.p., for late Sunbeam, or sell £95.—Bouchier, New Rd., Ascot. [2605

EXCHANGE Zenith (see For Sale) for w.c. Morgan, G.N., A.C.—28, Sheen Gate Gardens, S.W.14. [2536

SIXTY Cars for Exchange; postcard procures list. Call.—Douglas S. Cox, Motors, West Norwood. [1043

3½h.p. Triumph, clutch, excellent condition, for 2-speed 3½h.p., or higher; sell £39.—29, Market St., Alton. [2463

WANTED, 4-cyl. F.N., solo or combination; exchange countershaft Triumph.—34, Belgrave Gate, Leicester. [2495

NORTON 1921, 80 m.p.h., and sidecar, for late Triumph, A.J.S., etc., and cash.—Lyons, West St., Blackpool. [2052

EXCHANGE.

£15 and P. and M., late model, for good countershaft Triumph or Norton.—82, Caledonian Rd., London, N. [2714

SPECIAL Sporting L.M. Cycle Car; £120; exchange sports Sunbeam, Scott-Squirrel.—37, Eldon Rd., Blackburn. [X4017

1920 Scott Combination, 1920 Rudge Multi; take older lots in part exchange. — 8, High St., Wandsworth. [2647

B.S.A. Combination, perfect condition; £50; exchange late Douglas solo, level.—107a, Thurlow Park Rd., Dulwich. [2509

2¾h.p. Douglas, O.K., Rudge, for w.c. Morgan, alternative arrangements considered.—63, Solon Rd., Brixton. [2758

PERRY 4-seater (see Light Cars) or Citroen 2-seater for motor cycle and cash; please call.—26, Tulse Hill, Brixton. [2701

1915 Rover Combination, 3½h.p., 3-speed, clutch, etc., for modern 6h.p. solo mount.—39, Ashford Rd., Swindon. [X3989

EXCHANGE Gas Engine, dynamo, voltmeter, lamps, perfect order, for Douglas or other.—89, East Hill, Wandsworth. [2919

1920 Triumph and sidecar, or renovated W.D. wanted for Humberette; cash either way. See Cycle Cars for Sale column. [2591

TRIUMPH 4h.p. Countershaft Combination, exchange higher power, or sell £85.—20, Queen's Rd., Basingstoke. [2789

EXCHANGE 1918 countershaft Triumph for T.T. Rover or similar 'bus.—Alford, Springfield, Albany Crescent, Claygate. [2434

1916-17 Grand Prix Morgan, M.A.G., discs, for powerful combination; sell £100.—Hopkins, 9, St. John's Park, N.19. [2771

GRAMOPHONE, solid mahogany floor grand, cost £35; exchange for lightweight, cash adjustment. —222, Brockley Rd., S.E.4. [2724

EXCHANGE Brand New Skootamota, costing £55, for reliable motor cycle, or sell cheap.—F. Godfrey, 63, Brighton Rd., Surbiton [1351

TRIUMPH Combination, 1919, not W.D., perfect; for 8h.p. Zenith, Morgan, similar.—J. Payne, West Chaldon, Dorchester. [X3878

HALIFAX.—50 second-hand machines and combinations; keen exchanges. Get list.—Halifax Motor Exchange, Horton St., Halifax. [2625

BEARDMORE, Sept., 1920, spring frame, electric lights, speedometer, valued £50, for Douglas same value.—8, Manor Rd., Coventry. [X4009

1919 Levis, 2-speed, and 1913 B.S.A. coachbuilt combination for modern combination.—Cotton, 60, Half Acre Rd., Hanwell, W.7. [2662

INDIAN 1915 7-9h.p. C.B. Combination, excellent condition, for 3½-4½h.p. solo.—64, Summerfield Crescent, Edgbaston, Birmingham. [X3971

8h.p. Sports Zenith Combination, Binks, copper exhaust, completely overhauled, for Indian Scout or good solo.—84, Ilex Rd., Willesden. [2551

SIDECAR, home-made, coach body, good tyre, 4-point connection; £4, or exchange Easting or speedometer.—Grimmett, Heyford, Banbury. [2544

TRIUMPH 1914 4½h.p., 3-speed, clutch, first-class condition, enamel excellent; £40; exchange lightweight.—112, Clarence Av., Northampton. [2490

ZENITH Sports 5-6h.p., 1919, disc wheels, electric lighting, Degory, perfect condition, small mileage; exchange solo single.—Pollett, Caterham. [2797

1¼h.p. Harwood 2-stroke Cycle Attachment, just overhauled; exchange any make of motor cycle, 2-stroke preferred.—Sandfield, Headington, Oxford. (D) [2482

B.S.A. 1919 Special 3½h.p., T.T. model, with domed piston, very little used, for 1920 5h.p., Zenith or A.B.C. or similar; sell £65.—93, Foxley Lane, Purley. [2616

DUNELT 4½h.p. Combination, electric, Boonikeen 1,000, £155 June; £115; exchange 1921 Zenith or equal combination.—Luckett, Market Place, Banbury. [2436

7-9h.p. Rudge Multi Combination, August, 1920, perfect and complete throughout, tax paid, for lightweight and cash, or 100 gns.—136, High St., Battersea [2470

1914 Premier 3½h.p. Sports Model, mechanically perfect, fast, reliable, tyres good, any exchange considered; sell £27.—267, Mortlake Rd., Ilford. [2654

HARLEY 1921 4h.p., dynamo, sports, speedometer, discs, perfect; exchange 20-21 Triumph, Norton, Sunbeam, etc.—Parsons, 1, Acton Lane, Chiswick. [2798

SUNBEAM Combination, late model, 3½h.p., 3 speeds, clutch, kick starter, equipped, insured £140, for solo and cash; sell £85.—63, Solon Rd., Brixton. [2757

LAGONDA Coupe, 1914, 5 wheels detachable, 4-cyl.; sell cheap, or exchange for combination and cash, Enfield preferred.—19, Valnay St., Tooting. [2684

8h.p. Enfield Combination, late 1918, dynamo lighting, in excellent condition, for a good 2-seater car, cash adjustment.—Box 7,878, c/o *The Motor Cycle.* [2903

INTEGRITY'S

LAYTON GARAGES

To our many friends——a Greeting ! !

ANOTHER Christmastide has come round—bringing with it the close of yet one more year, its record of things achieved — and, above all, of new friends to add to the ever-growing community of those who have met us, dealt with us, and found our friendly ways of doing business to their liking. To me, this friendliness in business is one of the great prizes of life. I do believe that it was never intended that there should be no more in it than the making of a sale, the gaining of a profit. To give service for service's sake, letting the reward take care of itself, is, I am sure, by far the better way. My reward, our reward, is in the great fact that our customers are our friends — and that there are literally thousands all over this country, and in every part of the world, who have pleasant recollections of Layton's. As they do not forget us, so do we always remember them. To keep the lamp of our good name ever well-trimmed and brightly burning — to maintain undiminished, to develop to greater perfection in the future, the qualities that have commended us to those who have given us their trust and patronage in this past—this is the sincerest way in which we can express our thanks to those friends, old and new, who in letting us serve them have honoured us.

¶ WILL YOU THEREFORE, all of you, wherever you may be, accept our thanks and our gratitude in this spirit; and may I, on behalf of my firm, as well as for myself, wish you, both for this Christmastide, and the coming year, the "Best of Everything that matters."

J. W. Tollady,
General Manager.

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90, High Street, OXFORD
and London Road, BICESTER.

Phones - - 581 & 784 Oxford. 35 Bicester
Grams - - "Integrity," Bicester & Oxford

EXCHANGE.

SCALE-DALM 5h.p., lamps, horn, licensed, in good running order; £30, first cash, or exchange for 2¼h.p. 1916 Douglas.—Roberts, 9, Rhedyw Rd., Llanllyfni. [2530

F.O.C.H. are noted for fair exchanges.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752. Hours 9-7, including Saturdays. [2613

EXCHANGE 1920 A.V. Monocar with cash for good combination or Morgan.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2866

BEARDMORE-PRECISION, standard, Aug., 1921, perfect, 300 miles, for Triumph or Sunbeam combination; cash adjustment.—Kelham, Nassington, Peterboro'. [2288

EXCHANGE 1921 Royal Ruby 8h.p. Combination, lamps, horn, etc., for Ford ton lorry or chassis, or other light lorry.—A. Kennerley, 232, High St., Winsford, Cheshire. [X4058

8h.p. Sports Zenith, done 1,400 miles, original tyres, condition as new; exchange for lower power, or Scott Squirrel or Indian Scout.—21, Monarch Rd., Northampton. [X3979

MASS 15-cwt. Open Van, 4-cyl.; expert examination invited; sell £75, or exchange combination.—Speechley, 86, Churchfield Rd., Acton, W.3. 'Phone: Chiswick 1902. [2579

4FT. Dark Oak Cabinet Gramophone, with locker for records, double spring motor, quantity of records; exchange motor cycle, £35 value.—Gilbert, Dunchurch, Rugby. [X3970

VAUXHALL Car, 14-seater, perfect, sure living, with contract; £400; owner no time drive; combination part exchange; appointment.—12, Bushey Park Rd., Teddington. [2493

EXCHANGE G.N. 8h.p., belt drive, in first-class condition, with cash, for first-class combination.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2864

1912 5-6h.p. 2-speed F.N., coachbuilt sidecar, crank case damaged, otherwise good order; exchange 6 volt accumulators, gramophone; sell £15.—58, Hillside Crescent, Leigh-on-Sea. [2678

EXCHANGE 2-3-seater New Pick 10-14h.p., 4 cyl., w.c., 3 speeds, reverse, electric, etc., for combination, piano, and cash, or sell £130.—Holland, 28, Lonsdale St., Burnley. [2790

EXCHANGE 3½h.p., 2-speed, clutch, Bosch, lamps, all-chain, good appearance, condition, and £10, for Douglas or lightweight; sell £25; after 6.—37, Leamington Rd. Villas, W.11. [2791

EXCHANGE 1918-19 4h.p. Triumph, 3-speed, countershaft, lamps, speedometer, etc., and Mills-Fulford sidecar for 1916-17 Morgan; sell £85.—Llangollen, Watton Rd., Knebworth. [2694

EXCHANGE.—We are authorised agents for Rover 8 cars, and will accept your motor cycle in part payment.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2868

EXCHANGES.—We specialise in exchanges of all descriptions; cash either way; list on request; a call solicited.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2869

EXCHANGE Bleriot Whippet 2-seater, handle starter, late model, for good combination; cash either way.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2865

1917 12h.p. 4-cyl. 2-seater Trumbull Car, electric lighting, engine overhauled, tax paid, perfect order; £35, or exchange good combination.—7, Athara Terrace, Saddlebone Rd., King's Lynn. [2440

1922 3½h.p. Norton, 16H model, 3-speed, fully equipped, fitted Henderson featherweight sidecar, mileage 200; exchange for G.P. water-cooled Morgan; £120.—14, Estcourt St., Devizes. [2768

INDIAN Combination, 1920, 7-9h.p., Swan sporting sidecar, discs, dynamo lighting, speedometer, very fast; exchange commercial Ford, must be good, no junk.—Duke, 44, Edith Rd., Peckham, S.E. [2503

KINGSBURY Junior, 1921, 2-seater, 8-10h.p., dynamo lighting, 5 interchangeable wheels, absolutely as new, for motor cycle and cash; sell £150.—3, The Mews, Victoria Rd., Clapham. 'Phone: Latchmere 4290. [2750

EXCHANGE 100 Volt 32 Ampere Dynamo, 5-6h.p. water-cooled engine, switchboard, meters, wiring, and accessories, all new, except engine, for combination or light car; London.—Box 7,733, c/o *The Motor Cycle.* [1801

EXCHANGE 1914 Arden 2-seater, 8h.p. J.A.P. engine, 3 speed and reverse, shaft drive, for good combination; cash either way.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2863

SIDDELEY-DEASY 15-20h.p. Open Touring, dynamo lighting, wire detachable wheels, exchange Brough Superior, Sunbeam 1921 model and £175 cash, or sell £250.—Austin, 95, Taunton Rd., Bridgwater, Somerset. [2826

EXCHANGE 1919 Lagonda coupe, dynamo lighting, for combination or runabout and cash, or with cash for later model Singer or similar.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80 [2867

EXCHANGE.

8h.p. 3-wheel Runabout, w.c., 3 speeds and reverse, electric horn and light, speedometer, wind screen, hood, car steering, etc., £95, for Triumph combination, or similar; offers.—56, Brookville Rd., Fulham. [2556

EXCHANGES a Speciality.—Motor cycles taken in part exchange for small and large 2 and 4-seaters; bargain prices.—Seabridge, Hansler Rd., East Dulwich. Hours 10-5.30, or appointment (not Sundays). Sydenham 2452. [4804

1916 G.W.K. De Luxe Model 2-3-seater, recently overhauled and reupholstered in smart red, licensed, accessories, etc.; £125; exchange combination and cash.—Dentistry, 769, Romford Rd., Manor Park, London, E. 'Phone: Ilford 500. [2786

1920 Omega-Jap 2¾h.p., 2-speed, clutch, and kick start, all on, splendid condition, and cash; exchange 4 to 5h.p.; also solid oak bureau bookcase; exchange lightweight, ladies or gent's.—Sanderson, Post Office, West Ayton S.O., Yorks. [2648

LATE Bleriot-Whippet 2-seater, outside starter, special sporting body, hood, screen, dynamo lighting, perfect order, electric horn, many extras (value £100), for late combination or solo and cash; genuine offer; trial invited.—89, East Hill, Wandsworth. [2918

CAR Rotax Lighting Set, 5 beautiful brass lamps, switchboard, complete with volt and amp. meters, dynamo and cut-out, C.A.V. accumulators, motor electric horn, worth £30, offers; furniture required. New and perfect 8h.p. w.c. J.A.P. cylinder, side-by-side, 4-cyl. trembler high tension coil, offers.—T. J. Rance, 81, Digby St., Crosby, Scunthorpe, Lincs. [X3968

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ANY

ARMSTRONG or Sturmey-Archer Gears Repaired promptly and efficiently.—County Engineering Co., Hounslow. [0517

WHITTALL for Welding. Aluminium experts. prompt delivery.

WHITTALL.—Pistons complete for Triumph, Premier, J.A.P., Bradbury, B.S.A., Douglas, Sunbeams, etc.; 14/- to 24/-, on approval, exact to pattern.

WHITTALL.—Cylinders reground and new complete pistons fitted from £2, perfection guaranteed. Twelve years' first-class reputation. Pistons to pattern or sketch.—Whittall Machinists Co., Whittall St., Birmingham. [0017

C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from £2.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd. [0003

ARMSTRONG and Sturmey-Archer Gear Specialists. Repairs while you wait.—Tavistock (below).

ARMSTRONG and Sturmey-Archer Gears completely assembled for 6/- in 2 hours.—Tavistock (below).

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GEARS, shafts, valves, etc., for car or cycle, made promptly.—Tavistock (below).

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ENGINE Overhauls, quality work only, cylinders reground, pistons, valves, bushes, etc.—Below.

PISTONS for every standard motor cycle in stock from 14/- each.—Below.

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HUB Gears.—Why pay an extortionate price for fitting a few new parts to an old gear?

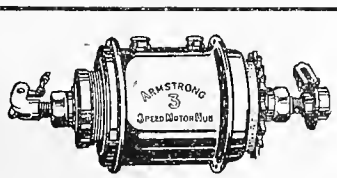
HUB Gears.—We undertake to supply the complete new internal portion of the gear mechanism less main driver for £5.

HUB Gears.—A. F. Lewis, Charlestown, Weymouth. Look out for the Lewis patent 2-speed countershaft gear and clutch. [0747

WELDING Aluminium Crank Cases, gear boxes by experts; immediate attention; reasonable prices.—Below.

WELDING Broken Cylinders, flanges, combustion experts of 11 years' experience.—Below.

CYLINDER Grinding on latest machinery, installed since hostilities ceased; accuracy guaranteed; new pistons fitted.—Sadgrove and Co., 140, Conybere St., Birmingham. [4769



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Quotations despatched same day as gear is received.

STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock, wholesale and retail—2-speed £11, 3-speed £17.

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Telegrams and Telephone—Putney 1601.

Send Repairs to Putney Station (L. & S.W.R.)

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Shop-soiled HELEN TOURIST Complete with coverall apron, £6-15-0.

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Can be fitted to **A.M.A.C., B. & B., 6/6. Senspray, Triumph, Claudel-Hobson, 10/6.** Postage and packing, 6d. If fitted with Bowden Control, **11/6** extra, as illustrated. When ordering state length of jet, including plug and year of carburetter. Write for leaflet.—*Of all well-known Agents, or direct from*—**RUDGE BROS., Motor Fittings Manufacturers, Fleet St., BIRMINGHAM**

A.C.U. 6 DAYS TRIAL.

1919 Ariel machine won silver medal, James machine won silver medal, 1920 Scott machine won team prize. 19.1 Matchless machines won team prize, two gold and two silver medals. F.N. machines won two gold and two silver medals, plus bonus marks for petrol consumption.

CLIFFORD MOTORIES, EASTWOOD, NOTTS.

A.J.S., Enfields, B.S.A., Nortons, Douglas, New Imperial, Matchless.

Tax Paid. Carriage Paid Anywhere.

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BRADBURY Spares and Repairs.—Agents, Bright and Hayles, 78, Church St., Camberwell. [2811

DOUGLAS Overhauls.—We specialise in overhauling and repairing Douglas machines.—Tavistock (below).

DOUGLAS Overhauls.—Send your Douglas to us for reliable, efficient, and cheap repairs.—Tavistock (below).

DOUGLAS Overhauls.—Don't have your machine spoilt by amateur mechanics.—Tavistock Engineering Co., 254, Portobello Rd., North Kensington, London. 'Phone: Park 643. [1760

ARMSTRONG and Sturmey Gears repaired or parts supplied promptly.—Cherry Lane Garage, Lymm, Cheshire. [9907

FRAME and Chassis Repairs and Alterations. We are specialists. Reasonable charges; immediate attention.—Below.

ENGINES Overhauled, rebushed, singles 35/-, twins 45/-. Try us for any repair or replacement.—Henry V. Smith, Osmondthorpe Lane, Leeds. [2230

STOVE Enamelling, frames 9/-, wheels 8/-; tanks makers' colours; plating.—De La Cour, 298, Kennington Rd., S.E. [2770

FOR Expert Engine Overhauls, cylinder grinding, new pistons, and spares, Hedley and Co., Forth St., Newcastle-on-Tyne. [1333

REPAIRS and General Overhauls a Speciality.—Bright and Hayles, 78, Church St., Camberwell. 'Phone: Brixton 2951. [2810

CYLINDERS Re-ground, new pistons fitted complete; £2/12/6.—Bright and Hayles, 78, Church St., Camberwell, London. [2809

FRAME, chassis, and tank repairs, enamelling and painting by experts; prompt deliveries.—Langham Co., Fitzroy St., Leicester. [6097

INDIAN Owners.—If you have trouble with your machine, send to Indian repair specialists, Dennis, 89, Brixton Rd., London. [1855

ENGINES Rebushed, overhauled, rings fitted, compression guaranteed; singles 30/-, twins 40/-; returned 3 days.—Below.

VALVE Seats, rebuilt from 10/- valves 5/-, valve guides 4/-, valve cups 4/-, piston rings 1/6.—Below.

CYLINDERS Rebored, fitted with new piston, from 30/- to 40/-.—Turner Bros., Engineers, Summerseat, Manchester. [2898

J.A.P. and Blackburne Engine Experts; reasonable and reliable.—Kingsbury Garage, Edgware Rd., Hendon. 'Phone: Kingsbury 134. [4209

ROC 2-speed Repairs; Humber, Rex, Campion, J.A.P., Wall, Roc, and Millenium; all spares in stock.—Connolly, Carmelite Rd., Coventry. [X4093

WELDING.—Broken cylinders, crank cases, etc., made like new; work guaranteed; quick return.—Tonge Welding Co., Morton St., Middleton, Manchester. [6302

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NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

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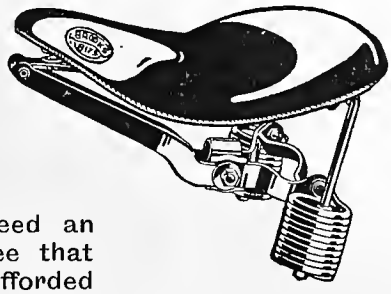

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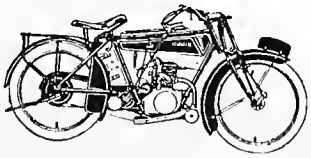

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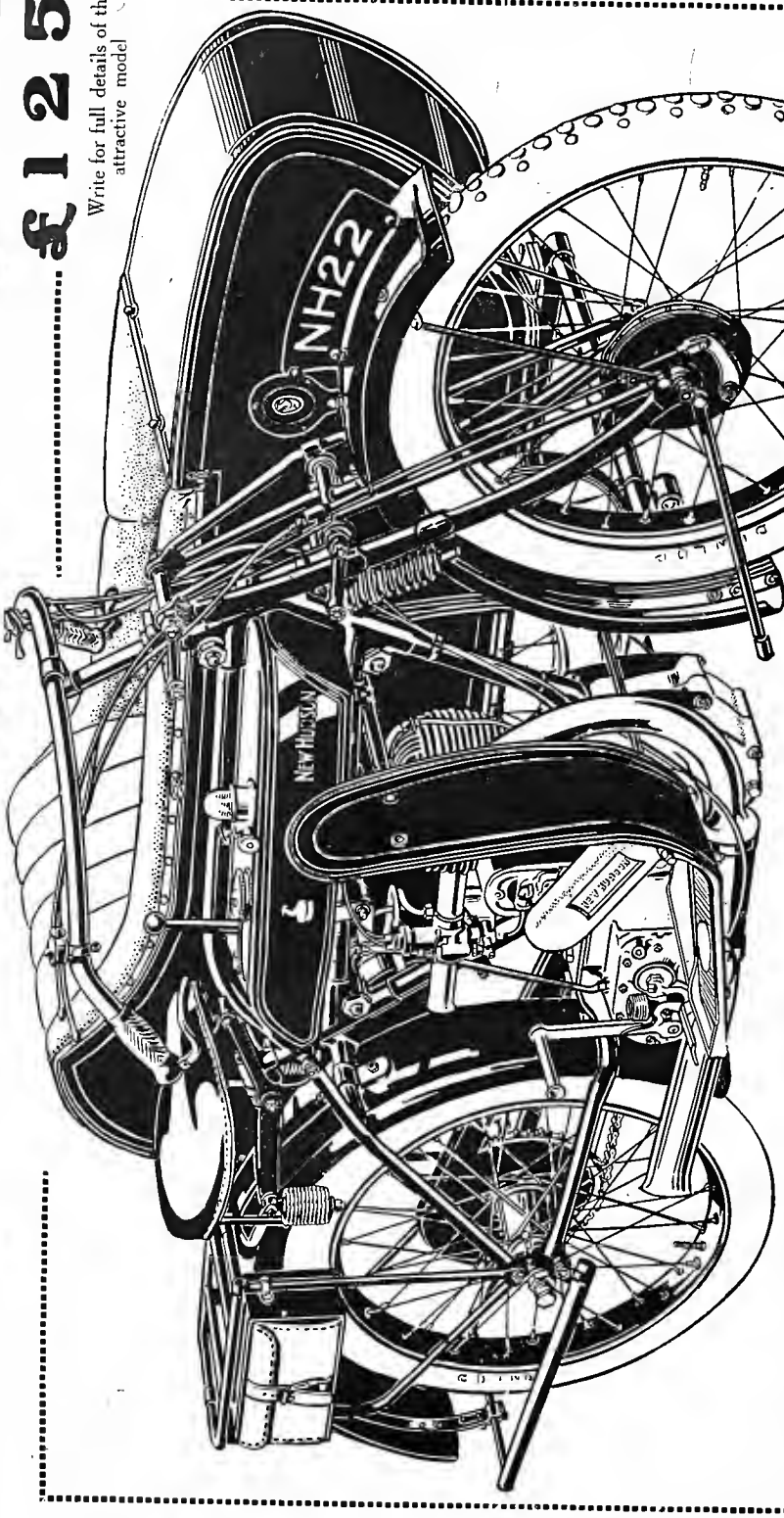

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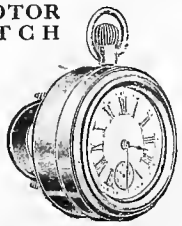

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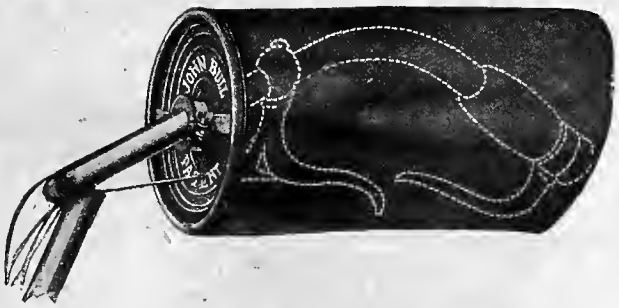

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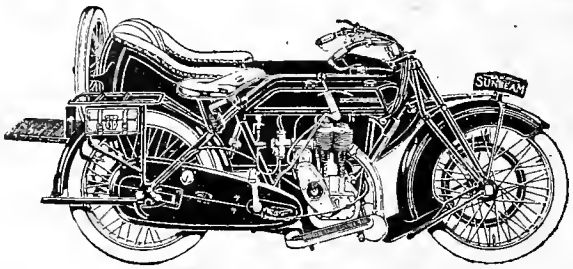

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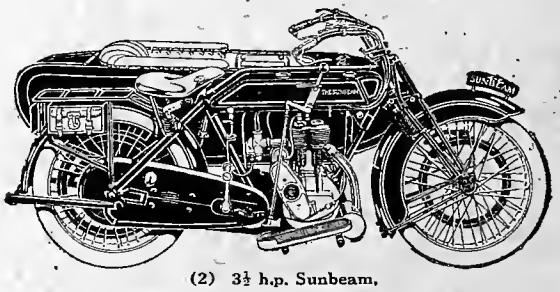

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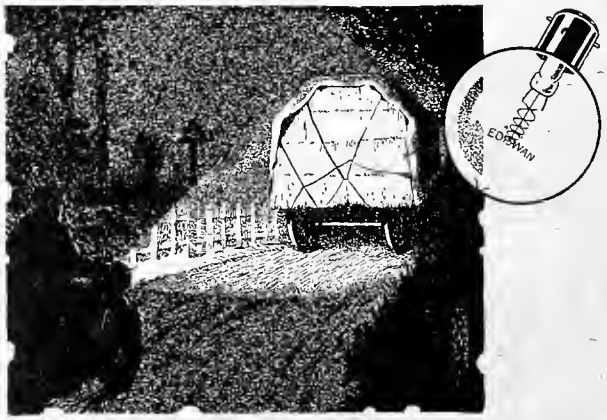

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"Probably the most difficult Stand in the Show to approach is that of the A.J.S. The new model 2¾ h.p., no less than the 7 h.p. Combination, attracting such a crowd that only a few in the immediate neighbourhood of the machines can inspect the new designs. The smaller type is shown both as a solo and sidecar, and in addition a rakish-looking sporting model. The 7 h.p. is exhibited with single and double seated passenger attachments."

—*"The Motor World," Dec. 2nd, 1921.*

"The A.J.S. Stand reigns alone in this year's Olympia display—and indeed of all Olympia Shows ever held. The ever-moving masses of humanity which constantly surround this Stand, instantly prove that the public at large have appreciated the significance of this achievement."

—*"The Irish Cyclist and Motor Cyclist," Nov. 30th, 1921.*

"The A.J.S. Stand arouses more than ordinary interest. The road and track successes of this make have been phenomenal."

"Daily Express," Dec. 1st, 1921.

To present A.J.S. Riders.
If you are contemplating having your Machine overhauled for the coming Season, the best time to send it to us is now.

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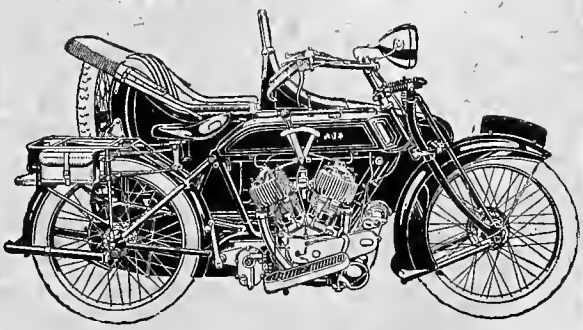
The 7 h.p. Passenger Combination. Price—to standard specification £175



The Talk of the Show.

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"WHAT IT DOES AND WHY IT DOES IT"

IS A BOOK THAT TELLS ALL ABOUT THE COX "ATMOS" SINGLE LEVER CARBURETTER WHICH MANY MANUFACTURERS ARE FITTING AS STANDARD FOR 1922 A COPY WILL BE SENT FREE OF CHARGE UPON APPLICATION, AND EVERY MOTOR CYCLIST SHOULD OBTAIN ONE. WHEN YOU SEE A FIRM FITTING THE COX "ATMOS"—A £4 10 CARBURETTER—YOU MAY CONCLUDE THAT THEY ARE PUTTING QUALITY AND EFFICIENCY BEFORE PRICE

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Bristling with novelties—neat design—strong duplex frame. Power unit can be taken out rapidly—front fork can be adequately lubricated without annoyance—tank fixing novel—T.T. or upturned bar at will—full of sensible originalities—amazingly cheap.

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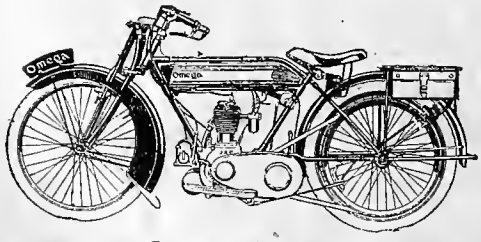

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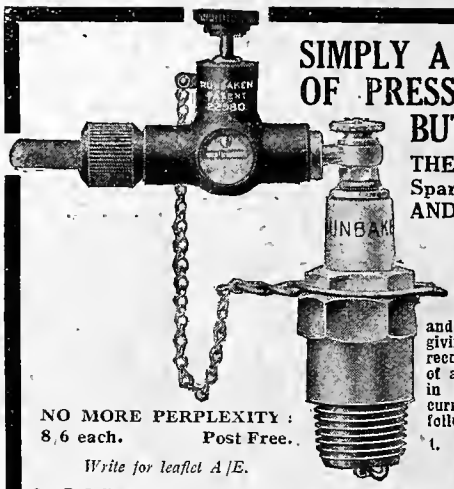

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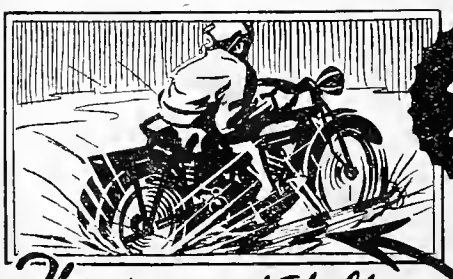

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"The Motor Cycle" says:

"In this work we come across special articles which should interest our readers, such as those on Filing, Screw-cutting, (whether by lathe or by hand) How to Use Spanners, Metal Turning, Metal Spinning, an article on the Overhauling of the Motor Car, another on the Motor Cycle, another on the Bicycle and Cycle, Taper Turning, Home-made Drilling Machines, Emery Discs, Bobs and Wheels, Hardening—and one on Fitting up a Workshop for Motor Repairs. . . . . The motorist and cyclist will find much to learn from this well-written and copiously-illustrated work. . . . We have had a copy of 'THE AMATEUR MECHANIC' in our possession for some years, and many useful hints and tips have been gathered from it. . . . It should find a place in the library of every practical motor cyclist."

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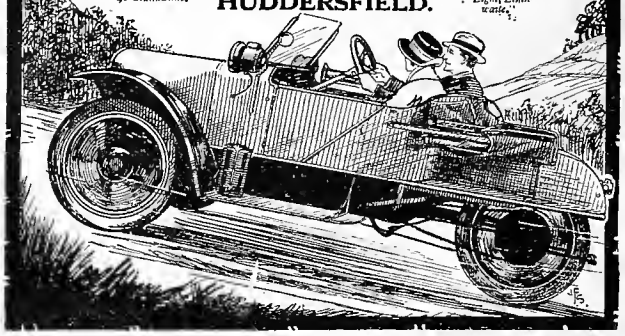

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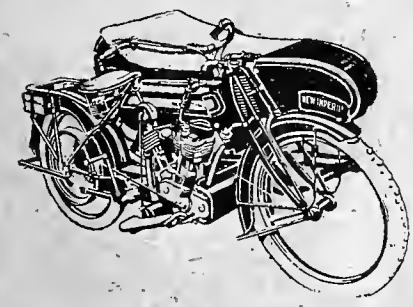

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Its Engine is the famous New Imperial J.A.P. with ample power, and fully loaded will crawl with the safety of a car in traffic, and develops speeds which you do not expect from a car; the Gear Box has three speeds with easy chain, the working parts being in ball bearings, and the gear ratios just suitable to the power developed; a Shock Absorber is also embodied, giving, with its all-chain drive, flexibility and smooth running at all speeds; the Back Wheel has Timken Roller Bearings, and these are **guaranteed for two years**; the New Patent Spring Seat Pillar gives the spring comfort of a car.

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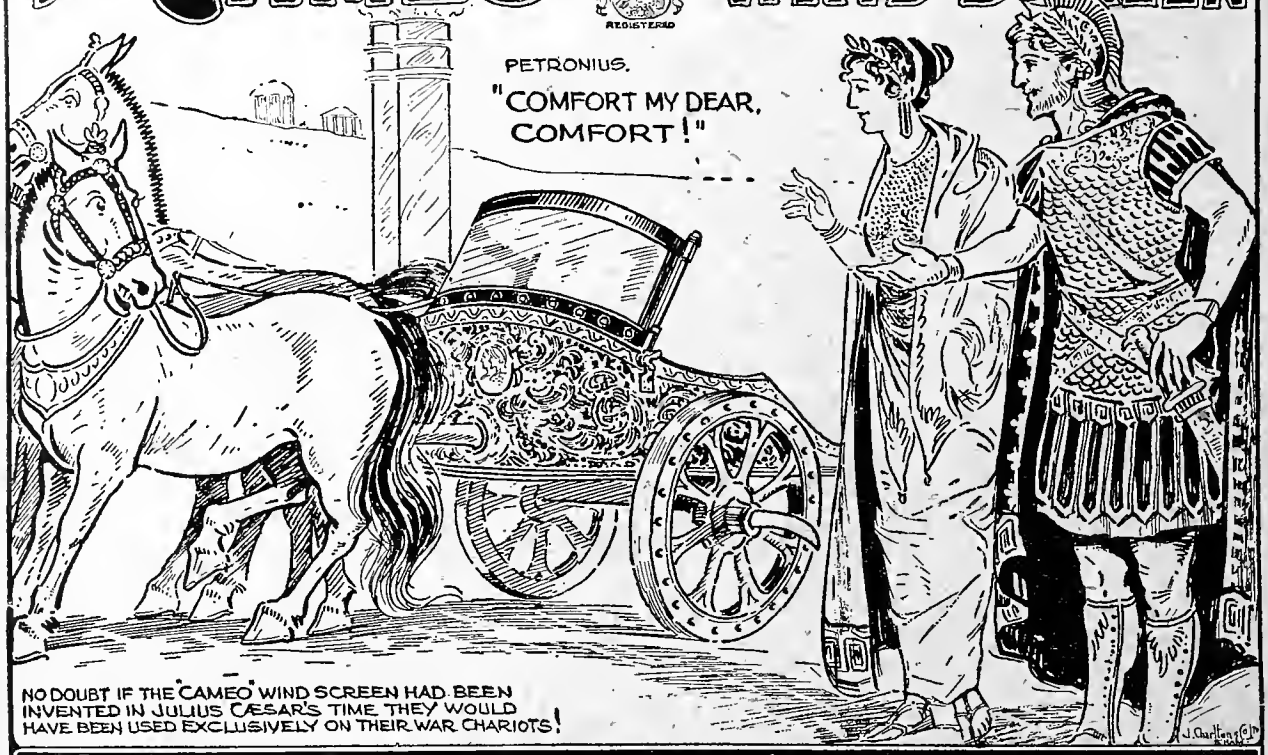
The CAMEO WIND SCREEN



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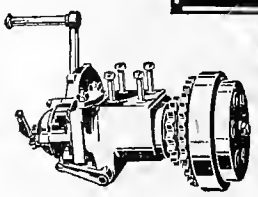

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The
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is in itself a first-class recommendation for reliability — being constructed on car lines throughout, indestructible under average usage and wear, demanding no attention whatever beyond occasionally adding a little gear grease.

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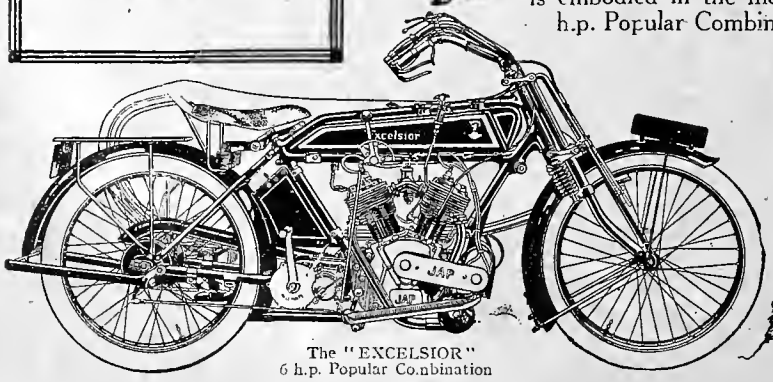
The "Burman" gear, with many other equally-famous features, is embodied in the model illustrated—"EXCELSIOR" 6 h.p. Popular Combination, **£133 net.**



The "EXCELSIOR" 6 h.p. Popular Combination

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The Trade View of the T.T. Dates.

LAST week we discussed the dates selected for the T.T. Races, viz., Tuesday, May 30th, and Thursday, June 1st, *i.e.*, the week prior to the Whitsuntide holiday. Since our comments appeared we have received many letters from prominent members of the motor cycle world, and, without exception, the opinions expressed conform with the views advanced in these columns. There seems little doubt, indeed, but that strenuous efforts will be made in order to effect some modification of the proposed programme if the event is to be thoroughly representative of the trade.

There are two main reasons why these dates are unfortunate; first, the annual London-Edinburgh Trial is timed for the day following the Senior Race. The M.C.C. event has for many years proved one of the most popular holiday trials, and always attracts a large entry, larger, in fact, than most open events, and prospective competitors will have to decide between their visit to the Isle of Man to see the Tourist Trophy and taking part in the long-distance trial to the north. These alternatives will not appeal to the majority. It might be just possible for really enthusiastic riders to hurry away from the Senior race to compete in the long-distance road trial, but it does not seem likely that many will do this. It is also suggested that the Edinburgh run provides excellent training for a strenuous road race. But the outstanding objection is that the proposed dates fall in the week preceding the Whitsuntide holiday—the busiest week of the year for motor cycle factories.

Retarding Output.

It must be remembered that any firm supporting the Tourist Trophy races, if they have serious designs on the coveted prize, must devote considerable time and energy to preparations, and that for perhaps three weeks before the races their best riders, testers, tuners, and repairmen will be absent from the works.

This will make a serious difference to the number of machines which can be produced before the holiday, when buyers are usually clamouring for delivery.

In some cases, of course, the competitions and commercial staffs are quite distinct, and in such cases the proposed dates would not cause inconvenience. At the same time, the fact that such conditions prevail in some factories rather places the less fortunate manufacturer at a disadvantage. The wealthier firms may always make better arrangements to promote success than those concerns which are only able to spare their best men for a limited period. To hold the races during the pre-holiday week would cause many seriously to consider whether they are justified in sacrificing their output at this time in what, at the best, is a gamble for fame. All keen motor cyclists desire to see a fully representative and sporting event, and it would be deplorable if an unpropitious date were selected which would have the effect of reducing the entry list.

The R.A.C. and the A.C.U.

If the races could be postponed for a fortnight the situation would be greatly relieved. There are difficulties in the way owing to the dates assigned for the car races, but surely these are not insuperable, since the R.A.C. is the parent body of the A.C.U. If the R.A.C. were approached, and the matter clearly and reasonably explained, it should be possible to arrange dates convenient to all. Alternatively, the races might be held earlier, or later, after the roads had been repaired subsequent to the car races. There are difficulties in each case, but, again, we fancy they are not insuperable. In any case, the opinions of representative manufacturers cannot well be ignored by the Auto-Cycle Union, and we feel confident that that energetic body will reconsider the dates proposed with a view to satisfying the wishes of the majority.

An index to the advertisements in this issue will be found on Sup. i.

Occasional Comments

by Ixion

White v. Black.

WHAT a relief it is to turn off a tarred road at night when visibility is low, and to open the throttle on white macadam, which gives the head lamp a chance to do its best. Always a regular night rider from necessity rather than choice, in the old days before tar was invented I used to love night work when the white roads were dry, and to dislike it when wet had dulled their sheen and reflective powers. Our head lamps are not orthochromatic. Keen eyesight is required to differentiate between (*a*) a cyclist, (*b*) a bullock, (*c*) a hedge, and (*d*) wet macadam or any sort of tarred road, for the distinction must be made by *form* rather than *colour* at night, whereas in daylight colour contrasts supplement the contrasts in outline. Does anybody know any orthochromatic device? I have heard it asserted that the Fallolite lamps differentiate colour to some extent.

Strafing the Puncture Fiend.

I FIND—so do most riders, I fancy—that punctures come in fits and starts. During 1921 I was lucky. To judge by past experience, 1922 would therefore bring me large crops of flat tyres just when I least want them. So, by way of insurance, I am busily testing out everything which offers any promise of immunity. The Challenger tube taught me last season that only a fool regards punctures as inevitable. My list of specifics for test includes Impervo, Punkho, the Jeff tube (rubber flaps, which are blown up against the hole from the inside), a mystic tube by Bramco, of Coventry, the Monie nailsweeper, and so on. But I met with a shock when I went to Rapson's place, fully prepared to purchase a rear cover complete. The salesman informed me that Rapson had ceased the manufacture of motor cycle tyres. Let us hope it is only because his car tyres tax the plant, and that later on he will show us what he can do for two-wheelers. In the meantime, the simplest road to tyre joy is to fit 3in. covers; they don't often stop you, and they make some amends for the crimes of our road authorities.

A Real Motor Cyclist.

WE quasi-amateurs who buy a new machine at least annually; the professionals who seldom stir abroad without having kept a small army of mechanics busy on their 'buses for days beforehand; the "pals" of some tradey person who get delivery of a picked mount—how little we deserve the title of "Motor cyclist" compared with some of the unknown stalwarts who blush unseen in the remote provinces. For instance, on my desk there lies a letter from a Midlander who is running a single-geared 3 h.p. combination. It is single-geared because the Armstrong three-speed hub wore out after 25,000 miles, and funds are not as yet available for a new gear. Incidentally, he obtained the machine by buying second-hand bits and building it himself. Along similar lines he has built no fewer than four monocars. The first was constructed in 1910 from the wreck of a Rover tricar. The second was half built when the army took the designer to its bosom; and his chassis was sawn up during a week's leave to mend the garden gate. The third was a washout, for he incautiously tried to make a three-wheeled buckboard out of ash laths, and found that the frame whipped. The fourth —shudder ye competition magnates!—is to have *single-geared flat belt drive* with a jockey pulley in lieu of a clutch. One presumes that Howard Davies and George Dance would have to hide their diminished heads if this kind of fellow was ever let loose with unlimited cash upon the competition world.

Prop Stands and Deflation.

THE correspondent who signs himself "Humber 1st" is a sort of junior Einstein. Readers may remember his point, which is that if a prop stand supports a motor bicycle at an angle very nearly vertical, and the back tyre proceeds to deflate slowly when the owner departs, the machine will gradually assume a vertical position and presently topple over. This is obvious, and was covered in my recent article on the subject by a stipulation that a good prop stand should be moderately splayed out, attached midships, and well out from the centre line of the track. A prop stand affixed at a steep angle to the rear chain stays would certainly let the bicycle down under the conditions described by "Humber 1st." A decent sample will *never* let the machine down. I am encouraged and comforted by this reader's verdict that if prop stands become standardised, 80% of us would use them in the garage as well as by the roadside.

Automatic Cut-outs for Dynamo Lighting.

SOME of the cheaper dynamo lighting outfits are normally marketed without any automatic cut-out, though it is naturally an easy matter to specify a cut-out, and to wire it into the circuit. The novice may not appreciate the facts which govern the adoption or rejection of such an accessory. Where

Occasional Comments.—

a cut-out is omitted, *cheapness* is always the motive, and I believe I am right in saying that no car installation is now sold minus a cut-out. Two risks confront the motor cyclist who fits an outfit without this accessory. The first is that when he leaves his machine in a garage or by the roadside, some loafer may throw his charging switch "on," in which case the accumulator will rapidly run itself down by discharge through the dynamo. The other risk is that he himself may forget to turn the charging switch off at the end of a run, when the accumulator will similarly empty itself. In other words, an automatic cut-out is well worth its cost, and is really a necessity for a man who is not extremely precise in his habits and who often leaves his machine in any public place.

The "Stick-on" Type of Dynamo Outfit.

A FIRM of dynamo manufacturers write me kindly but plaintively to the effect that too many riders and writers ignore all types of lighting dynamo except those which are combined with the magneto. There is some excuse for this common omission. The lighting ignition systems necessitate no extra drive or brackets; they merge into the clean outlines of a good design, whereas the attachment of belts and pulleys and platforms is apt to disfigure a machine which has been thought out as a good-looking whole by a designer with some eye for beauty. On the other hand, it must never be forgotten that some of these "stick-on" dynamo sets come out at a far lower price than the *de luxe* combined equipments, even when the cost of the ignition unit is set off; quite a good "stick-on" outfit may be bought for about £11, complete with lamps. Further, we ought to consider the case of a man who has a roadworthy but antique mount, and who yearns for electric lighting. He is already provided with a magneto, and its exchange value may not exceed a couple of pounds. The purchase of a sound "stick-on" installation is easily his cheapest path to the fulfilment of his dreams.

Head Lamp Bracket Fixings.

YEARS ago we could not temporarily remove our head lamp sets unless we also unscrewed the rather complex clips by which lamp, bracket, and generator were affixed to the handle-bar. Then somebody sensible came along and devised the more modern type of clip, which enables you to take off the lamp set by detaching two nuts, whilst the handle-bar clips "stay put." Latterly, a number of firms, comparatively new to the motor cycle industry, have revived the bad old type of clip, sometimes through sheer ignorance, sometimes in the interests of cheapness. The point is not radical—there are lots of riders who carry their lamps all the year round. On the other hand, there are other riders who wisely carry lamps only when lamps are likely to be used. A modern lamp set may cost anything up to £10, and it is pretty sure to be damaged if the machine falls over, as most machines do sooner or later. So it is a sensible precaution to leave the lamp set at home, whenever a daylight return is certain. Hence the buyer should frame his own policy in this matter.

To remind fair weather riders that spring and summer lie ahead—that the wet roads and leafless trees of to-day are with us for so short a period that it is not worth while to lay up the machine for the winter. To the real enthusiast there is no motor cycling season

How Valve Timing Affects Petrol Consumption.

Some Facts concerning Overlap, Lag, and Tappet Clearances

THERE are many ways in which the average rider sets out to effect economies in the running of his machine, but it is rarely that one ever hears of a rider taking any particular interest in the matter of valve timing. The carburetter generally plays the most important part in the experiments, which often effect a considerable and true economy.

There are two chief causes of petrol loss that may be debited to the account of the valve timing. First the ejection of petrol through the carburetter air port, as a result of blowing back, and secondly inefficient scavenging of the exhaust gases.

Overlap and Blow-back

The first of these causes of waste is essentially dependent upon the inlet valve timing. Now one often hears a lot about "overlap," but it is generally spoken of with regard to very high speed work, and here it is certainly permissible. In the case of producing economical running, however, care must be taken that this overlap is not carried to excess, and it is usual that overlap of only 2° or 3° be given. The first essential of the setting of overlap depends upon the closing of the exhaust valve. Should the exhaust valve close 8° or 10° past the top dead centre, then 2° or 3° overlap can be given, but in the unusual event of its closing before top dead centre, then the inlet valve must be opened rather later down the induction stroke in order to allow any exhaust gas remaining in the cylinder head to reach atmospheric pressure by further expansion—thus any serious blow-back will be avoided. In other words, overlap must be caused by a late closing of the exhaust rather than by an early opening of the inlet valve. Now as regards the closing of the inlet valve. It is natural to imagine that the end of the induction stroke is the correct moment for the inlet valve to close, but, owing to the high velocity and inertia of the gas in the induction pipe during this stroke, the inlet valve can be closed several degrees past bottom centre. This late closing varies considerably in different types of engines, and largely depends upon the size and lift of the inlet valve employed. Care must be taken, however, that the late closing is not carried too far, because if the cylinder is completely filled before the valve closes, "blow-back" will certainly be produced by the backward surge of the mixture as the piston reverses its movement.

Getting Rid of the Exhaust.

Dealing with the second cause, this depends upon the exhaust arrangements, the exhaust valve timing, lift, and size of valve and arrangement of exhaust passages. It is usual to open the exhaust valve from 40° to 50° before bottom dead centre, because when the piston has reached this point, it has more or less completed its effective working movement. There is, therefore, no objection to an early opening of the exhaust valve, and there are certainly many advantages. The slight but ineffective—so far as useful work is concerned—pressure in the cylinder at this early opening is utilised to institute a flow of gas along the exhaust pipe, and the inertia effect of this gas-flow assists the emptying of the cylinder when the piston is rising on the exhaust stroke.

Early Opening Exhaust Valves.

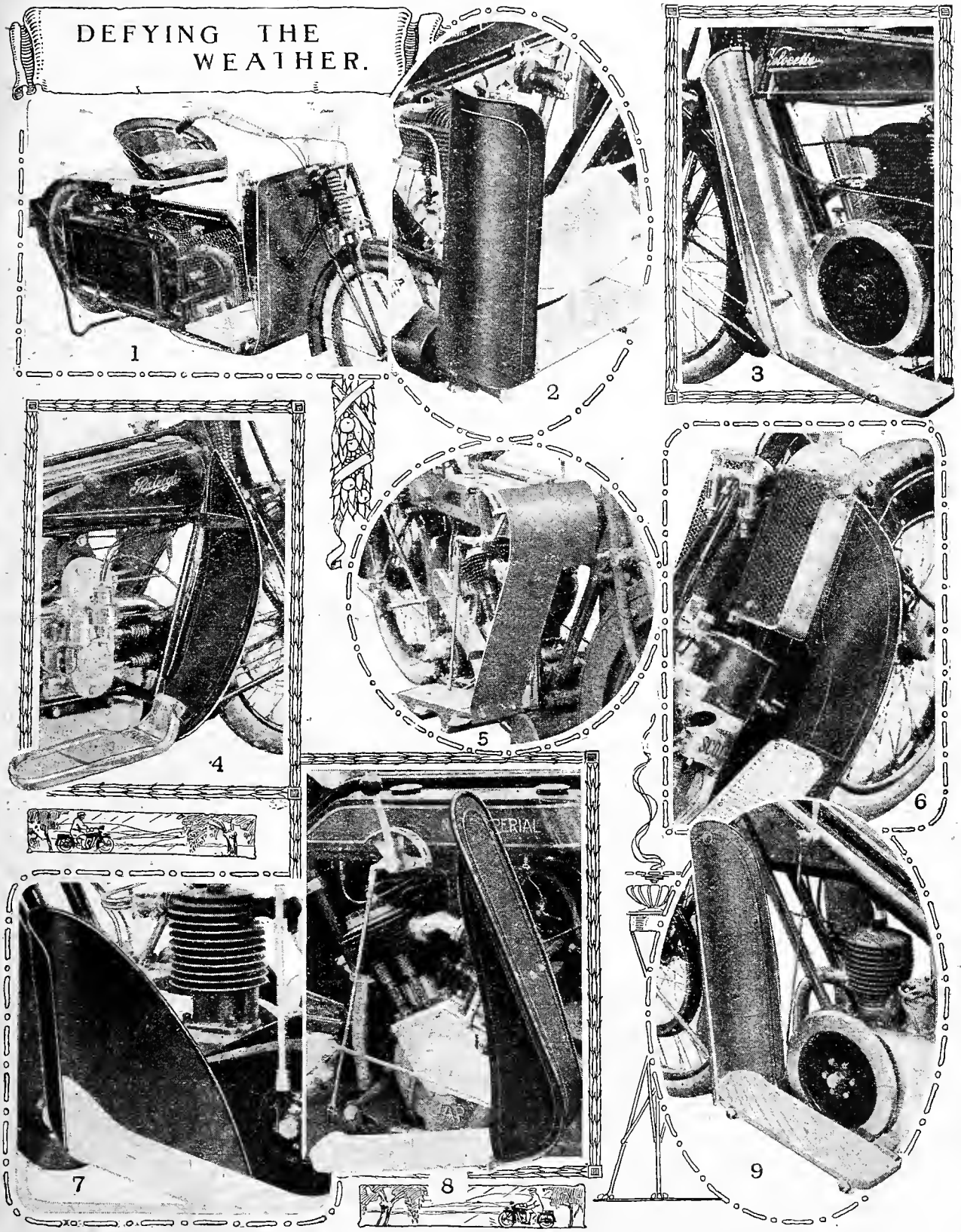
A second reason for this early opening is that the piston would otherwise encounter a back pressure, nearly equal to the pressure upon it before it reached the bottom of the firing stroke, which would not only cause a considerable loss of power, but would cause overheating by the retention of the hot gases. In the same way that the velocity of the fresh gas surging through the inlet pipe is utilised by a late inlet valve closing, so is the momentum of the exhaust gas employed to assist in clearing the cylinder head by allowing the exhaust valve to remain open after top dead centre. Thus, any gas that may remain in the combustion head at the top of the exhaust stroke is given every opportunity to be released. It is essential that no obstruction should exist in the exhaust port and passages, otherwise any effective exhaust timing will be nullified. The exhaust pipe and silencer must be periodically cleansed of any carbon formation, in order to avoid back pressure. The necessity for complete scavenging is very important, and it will be clearly understood that any exhaust gas that does remain in the cylinder very seriously depreciates the quality of the incoming mixture. Exhaust gas is composed of carbon monoxide or dioxide to a great extent, and as these gases are not combustible they retard the burning of the petrol mixture.

Tappet Adjustment.

The correct adjustment of the tappets is very important. Any error in setting the clearances has a marked effect both upon power and fuel consumption. Adjustable tappets are provided for taking up any wear in the valve mechanism, such as the rocker and the tappet rod, and also any shortening of the valve stem. Excessive adjustment should not on any account be used to correct the valve timing, because by doing so the lift of the valves will be affected. It is advisable to verify the tappet clearances at frequent intervals, particularly on small high-speed engines. The makers' advice should always be followed as to the clearance necessary, and it is advisable to reset the adjustment with the help of a feeler gauge. Perhaps, on the 1922 machines, this gauge will be part of the standard toolkit—manufacturers, please note.

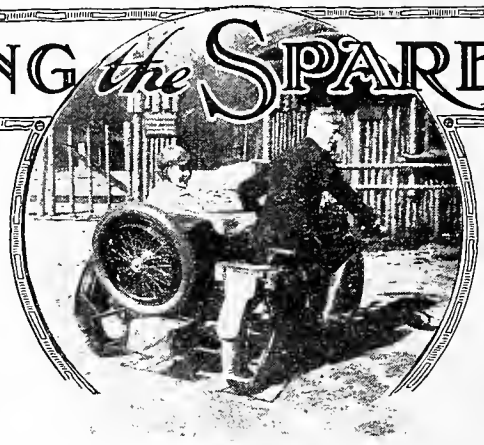
G.S.P.

DEFYING THE WEATHER.



(1) Weather protection on the Reynolds is ensured by a deep flat steel plate in front. (2) Full size guards on the de luxe 293 c.c. Francis-Barnett. (3) Nicely curved polished aluminium shields on the Velocette. (4.) Raleigh leg-guards which do not hamper cooling. (5) Knee extensions on the Matchless shields. (6) The familiar Scott mudguarding arrangements. (7) Enfield lightweight foot screens. (8) Valanced guards on the big New Imperial. (9) Simple shields on the lady's model Ivy

CARRYING the SPARE WHEEL



Methods of Mounting an Extra Wheel and Tyre.

With a Note on Accommodating Spare Covers.

THE spare wheel has come to stay; there can be no doubt about that. Its usefulness—almost necessity—has been demonstrated to motor cyclists, and the demand for sidecar outfits equipped with detachable and interchangeable wheels, with accommodation for a spare, is considerable.

So far as British machines are concerned, it is chiefly in lower-powered, lower-priced, and sporting machines that its absence is the rule, although there are certain outfits sold at figures near 100 guineas which include spare wheel. Those which do not carry a spare wheel frequently carry a spare cover, and accommodation must be found for this; a cover improperly secured will quickly chafe and be ruined.

A Discarded Location.

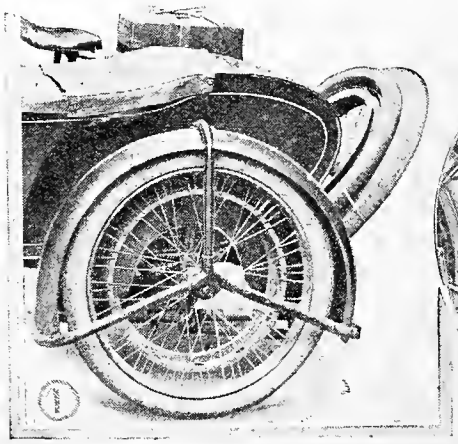
Prior to the war a common position for the spare wheel was on the off side of the back carrier, the wheel being secured to the rigid part of the frame at a point where it was subjected to more vibration than it would have suffered at any other point of the machine. In the last Scottish Six Days Trials the Matchless outfits were so equipped, but these machines had spring frames. Nevertheless, when the same team figured in the A.C.U. Six Days a month later, the spare wheels were fixed to the rear part of the sidecar body.

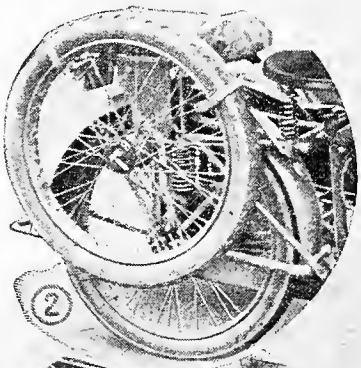
This rigid fixing is unsuitable for present-day roads; the weight of the wheel, its rigid mounting, and vibration to which it is subjected, may cause fractures in the mountings, and the wheel is very liable to come adrift. The writer once saw one roll into a hedge, the driver of the outfit being none the wiser until overtaken by a following soloist.

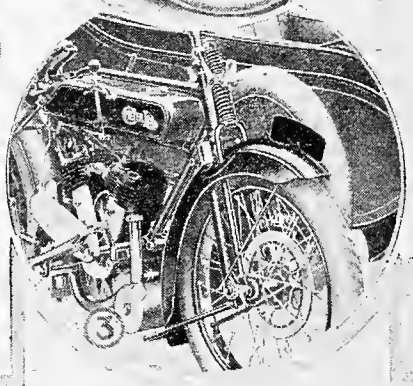
Benefiting from the Springing.

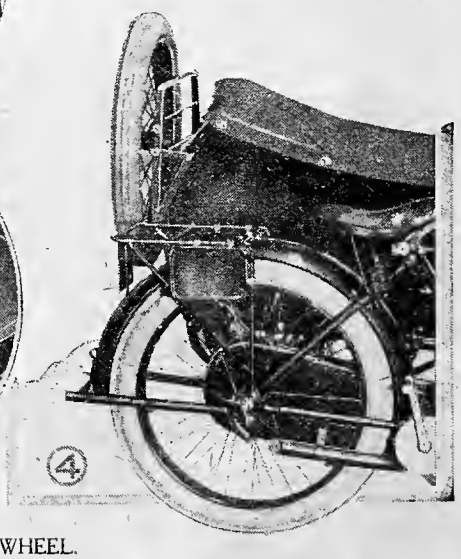
A fixing for a spare wheel which is very popular is on the body between the sidecar and the driver, and thus receives the full benefit of the body springing. This position possesses considerable advantages, in that it leaves entirely free the rear sidecar locker and luggage grid, and does not interfere in any way with the hood. Some riders object to this position on the score of appearance, which, however, can be much enhanced by fitting a leather-cloth wheel cover.

A position which is daily becoming more popular is with the wheel across the track of the machine. The standard model Matchless, the Blackburne, and Excelsior sidecars are familiar. In this position the wheel may be tilted in order to permit access to the locker, or it may be fixed to the luggage grid, thus lying horizontally when the grid is in use. The Rex Co. fit the spare



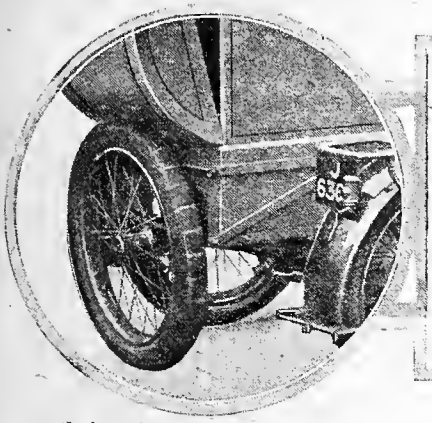


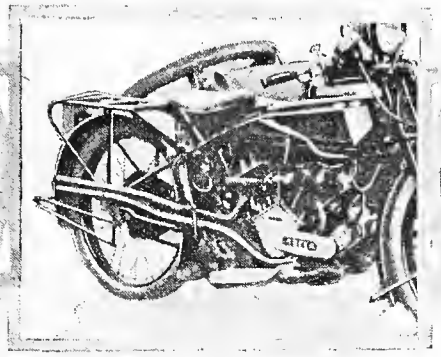


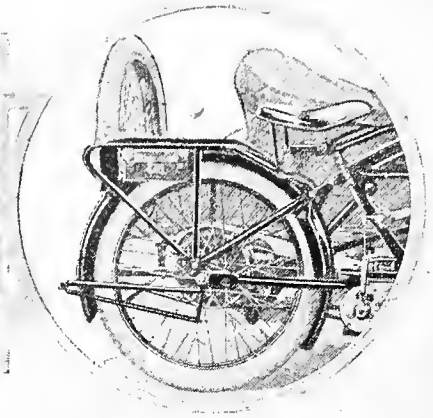


METHODS OF CARRYING THE SPARE WHEEL.

(1) On the Dunelt the wheel is carried on the underside of the bulbous back of the sidecar, permitting free access to the locker. (2) A 1921 Matchless method—on the outside of the sprung carrier. (3) The 1921 8 h.p. Chater-Lea had the wheel bracket on the front of the inside longitudinal member of the chassis. (4) On the underside of the folding luggage grid—the 8 h.p. Blackburne.





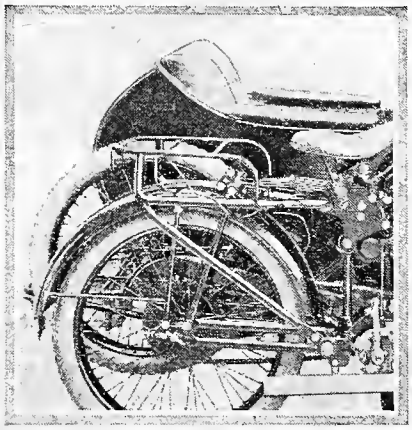


(Left) A low position on a tradesman s carrier. (Centre) On the top of the bulbous back of a sporting Rex outfit. (Right) At the rear of the boot of the Acme outfit.

wheel in a vertical position at the rear of a boot.

Two recent patents have produced a method of carrying a spare wheel or tyre which possesses many good points. The wheel is entirely enclosed, the bulbous back of the sidecar containing a compartment at the side for the reception of the wheel or tyre; in the case of the former, support is given by a central spindle.

The wheel or tyre is thus protected from the elements, cannot be lost, and yet is instantly accessible. At the same time a sidecar embodying such a housing is pleasing to the eye, the bulbous back giving a graceful effect. The track of the 8 h.p. Sunbeam sidecar illustrated is but half an inch greater than standard, owing to the utilisation of every fraction of an inch in the chassis and suspension.



Between the carrier and the sidecar is the position selected by the designer of the Royal Ruby

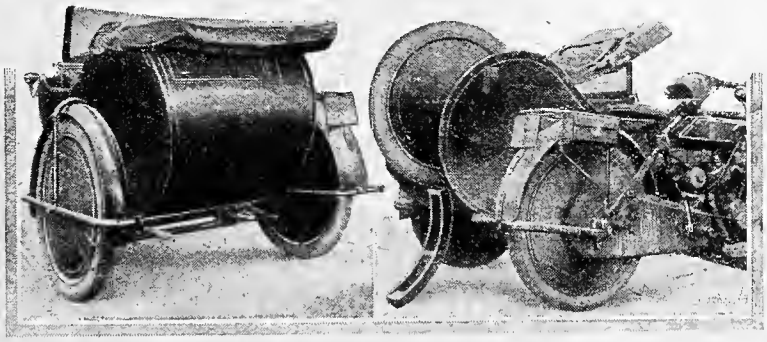
The weight is not increased, owing to the absence of a luggage grid and spare wheel bracket; public demand will demonstrate whether an enclosed spare wheel finds favour.

Another novel method of accommodating the spare wheel has been patented by a Coventry agent who has produced a sidecar with two wheels placed side by side, and so arranged that either may be brought in contact with the ground, the other remaining a few inches clear of the road surface. Either of these wheels may be used as the spare wheel for the motor cycle, which, of course, would have to be fitted with interchangeable wheels to suit.

Carrying a Spare Tyre

Coming now to the problem of carrying a spare outer cover, this is sometimes achieved by placing it over the nose of the sidecar, but it must be admitted that it leaves something to be desired in appearance, to say nothing of the protection of the sidecar enamel. The same remarks apply when the spare cover is tied to the rear of the sidecar body, where it is generally an eyesore owing to the attempts made to preserve it by wrapping it in canvas.

Quite a number of motor cyclists carry the spare cover, folded and strapped, in the nose of the sidecar, but when space is restricted this inconveniences the passenger.

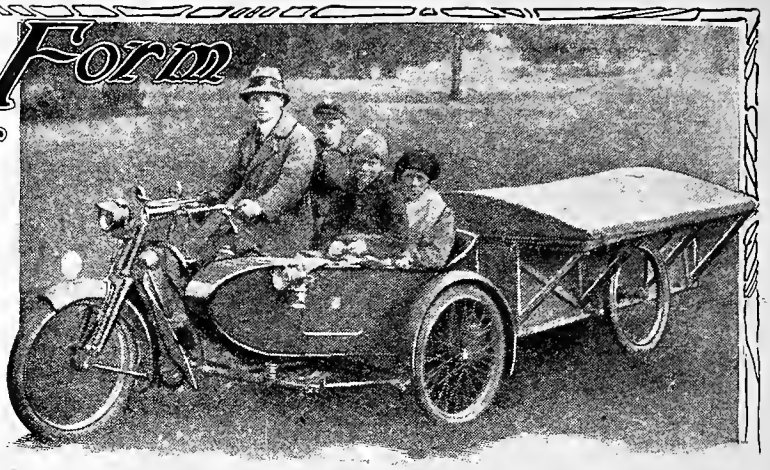


England's registered sidecar body with side locker for spare wheel

A DIFFICULT SECTION.

IN *The Motor Cycle* of December 1st, 1921, we described the (alleged) highest hard road in Great Britain, a deplorable track near Tomintoul, which we stigmatised as unfit for inclusion in a Scottish Six Days. An Aberdeen enthusiast states that the road ought certainly to figure in next year's event, but that the riders should be allowed three hours as their minimum time for the eight miles, which they must not be asked to cover non-stop. On these terms its inclusion would, he considers, form a highly sporting and popular feature. It might do. I have a kind of foreboding that my favourite grandmother will expire on the Saturday before the trials, if the Edinburgh Club considers this foolish suggestion. IXION.

The Cheapest Form of Touring



How a Reader Constructed a Trailer Caravan. His Holiday Tour and what it Cost for a Party of Four.

IN past issues of *The Motor Cycle* there have appeared illustrations of collapsible trailer caravans which must have interested many who can only just afford to run a sidecar, and who are yearly faced with the cheap holiday question.

As I could not afford to buy one of these outfits, I set out to construct one, and my experiences may be interesting and helpful to others.

Old army bedboards, which I could obtain easily and cheaply, provided the timber for the framework. These were sawn into lengths 1¼in. wide (after planing), and the four main girders were made of these lengths, using half-cut joints and small nails. These proved to be very rigid even when only one nail was used at each joint. (The rear member had the middle portion cut out later, to permit easy entrance.) The four girders were then jointed together at the bottom of the well by two lengths cut 2in. wide, and along the top in two places by 1¼in. strips.

Framework Construction.

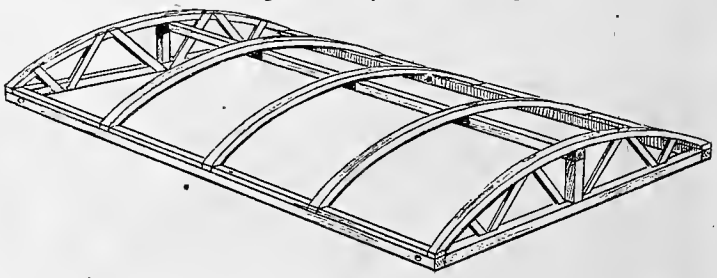
The whole framework was then strutted as shown in the diagrams, and extra strengthening pieces were placed under the seat portions and along the floor of the well. Three-ply wood was used for the floor and seats, and the far end of the well was also boarded in. Small nails were used.

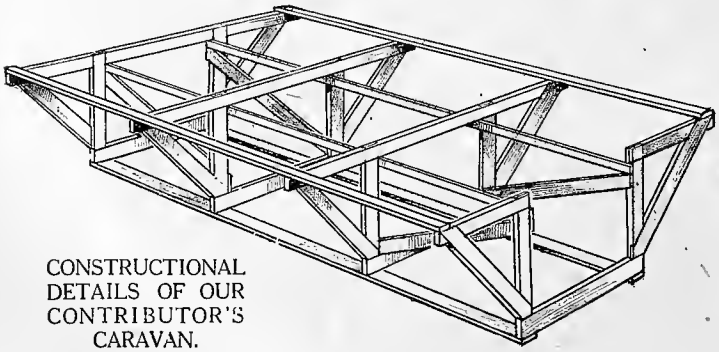
The sides of the well are of canvas—the same material as the top and sides. For this I bought two ex-Government waterproof sheets size 13ft. × 10ft. each. These proved large enough for the caravan, and left a sheet about 9ft. × 8ft., which formed a really splendid covering for the outfit. Cloth-covered pins were used to fix the canvas. A shaft 2½in. wide connects the trailer to the sidecar frame, and a bolt forms the hinge. The axle is a straight tube with the sidecar axles brazed in, and passes through the well just above the floor, and is covered by a box allowing ample movement. The wheels were supplied by a London firm, as were also the Douglas sidecar springs on which the trailer is slung.

Four folding feet steady the caravan when camping, but for perfect safety we always placed a petrol tin under the doorstep, and also left the caravan attached to the machine. The framework of the top is built up entirely of bedboards, the bent strips being ½in. thick, and bent by steaming. This was done by supporting each end and hanging a weight in the middle. The end top girders were strutted as shown.

Room for a Party of Four.

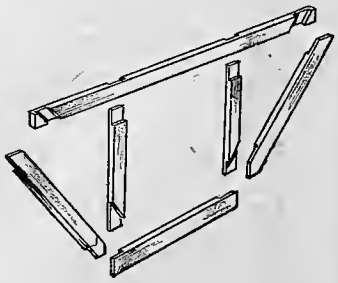
Four 1¼in. pillars hold up the roof; these are hinged on a bolt at the bottom, and slipped on a similar bolt at the top and secured by a wing-nut. The hems cut off the canvas sheets formed splendid cross-braces for the sides and ends. These acted so well that when erected the top was very firm and tight.





CONSTRUCTIONAL DETAILS OF OUR CONTRIBUTOR'S CARAVAN.

By a study of these drawings, any one handy with carpenters' tools should be able to construct the body. The complete framework is shown minus the upright stays.



The Cheapest Form of Touring.—

Four ropes were also attached to the buckles which secured the top when travelling, and acted as guy-ropes, which proved very useful on windy days.

The centre portion of the caravan is filled by a table 2ft. 6in. × 2ft. 2in., which stands on folding feet, and is a foot higher than the seats. This can also be used outside, and makes a meal a much more comfortable affair than the usual camping arrangement, and when used inside there is ample room for a party of four to sit round it.

Another piece of three-ply covers in the remaining portion when required, giving a sleeping surface of over 5ft. × 6½ft.

Having two old covers and tubes, I did not trouble to buy new tyres, but used gaiters over the bad places.

This trailer was only hurriedly finished on the morning of August 17th, and at 4 p.m. that day we set out on a seventeen day tour of Norfolk and Suffolk.

The trailer caravan erected. By comparison with the group of figures its roominess will be appreciated. The complete cost was only £11 5s. 6d

The Machine and its Equipment.

My machine is a Scott 1913 model, and the sidecar a Watsonian. I lowered the gear to 4.93 on high and 9.08 on low. My smallest boy sits on a seat slung over the passenger's knees, and the other boy is, of course, on a Tan-Sad.

We carried a large ordinary wool bed, large enough to cover the full space, and two large bolsters and two pillows. Sheets, blankets, and other bedclothes enough for adequate comfort were also taken, and we never felt cold, although the doorway was left open all night.

In the well underneath we carried a large bag of clothes, a full-sized Primus stove with spirit tin and spare paraffin tin, a large bucket, frying pan, large pan for boiling, and a soldier's "canteen." Another box contained the crockery—large and small plates, cups and saucers, etc.—and cutlery, enough for the four of us, and in a journey of over 400 miles we never had a breakage. A third box held bottles and jars for butter, jam, tea, sugar, etc., and still another held bread and provisions. Boot brushes and other personal equipment were not forgotten, and also a Thermos, candles, small medicine chest, etc.

Sleeping Arrangements.

The well also held a large enamelled wash-basin, an axe, a two-gallon petrol tin, a gallon tin of oil, the sheet for covering the motor cycle and sidecar, a spare suit of motor overalls for myself, and the lady's spare raincoat.

As none of us are tall, we found that we could sleep very comfortably in a row across the width of the trailer. When travelling, the bed and bedclothes were spread out flat under the collapsed roof, but when camped during the day we rolled the bed to the far end, and folded the bedclothes on top of it. This allowed the table to be raised, and left plenty of sitting room for four.

Rambling Round the Eastern Counties.

Twenty-nine miles was our first day's mileage, our destination being Woodhall Spa, in Lincolnshire. The next day we ran to King's Lynn, the third day to Culford Park, near Bury St. Edmund's, the fourth through Stowmarket to Stonham Aspal, and the next to near Orford, where we stayed three days with friends. On the ninth day we again set off, and arrived at Kessingland, near Lowestoft. The following day saw us camped half-way between Yarmouth and Caister-on-Sea, where we stayed two days, when we ran across the Broads to Cromer, and camped for the week-end on the cliff tops at East Runton. The Monday afternoon saw us at Hunstanton, and the next day we toured through Sandringham to King's Lynn and on to Long Sutton.

We had intended staying near Boston, but owing to the terrible shortage of water we could not find a suitable camping place, so we had to travel another twelve miles until we got to a place where water was plentiful. Next day was our shortest run, as we only ran to Woodhall Spa, and agreed to stay for our last night at the site of our first night's camp, and an easy run next morning (September 2nd) brought us home once more.

The Machine's Performance.

Speed and hill-climbing? Well, on the middle jet of the Binks, using jets Nos. 00, 2, and 7, we could easily average 15 m.p.h., and the middle jet sufficed for all except really hard work.

Only twice was the Scott stopped. The first time was between Stowmarket and Wickham Market. We got into one of the Suffolk "holes," and after descending a winding little hill and rounding a sharp bend dead slow, we were suddenly faced by a rather sharp little rise. I had to shed my passengers and start up again, and ride the outfit to the top alone. This route was "arrowed" as though for a trial, and consisted of winding lanes, with loose surfaces in places.

Our other failure was at Blakeney, on the run from Runton to Hunstanton. I was really sorry for the machine that day, as we were faced the whole way by a strong head wind. In a run of about forty miles

The Cheapest Form of Touring—

I had to use full throttle nearly the whole time, and even had to go on low-gear on the level several times because of the strong breeze. No one will be surprised to hear that I used nearly two gallons of juice that day, and I was not surprised when we stopped on this little pimple.

Many people asked, "What about the rain?" One night we had steady rain until eleven o'clock next morning, and two heavy thunderstorms the next night failed to show any impression on the covering, and, as we slept two feet above the ground, the weather bogey did not affect us

We used the machine several times without the trailer for short sight-seeing runs and shopping. Mileage done was about 430, and the total cost of our holiday for petrol, oil, and all actual living and camping expenses was just over *ten pounds* for the four of us. Of course, pocket money and amusement expenses are not included, but simply travelling expenses, food, and whatever was spent in accommodating the party.

What the Caravan Cost.

Lastly (and in this case the least), we come to the cost. The following table shows the cost of the trailer:

	£	s.	d.
Bedboards		10	0
Three-ply wood	2	0	0
Two sheets of canvas	3	15	0
Wheels	3	2	0
Springs		17	0
Axle tube and brazing		7	6
Cloth-covered pins		4	0
Blacksmith's work		5	0
Sundries (bolts, etc.)		5	0
Total	£11	5	6

In short, the whole holiday was inexpensive, and we look forward in confidence to future trips.

GEO. A. WEATHERILL.

WINTER WEAR.

What to Wear on a Winter's Day, when Cold and Wet have to be Resisted.

A MEMBER of the N.U.T. staff, who is out all the year round in the bleak northern areas, recently told me that he has tried the following kit during the last three winters:

FEET.—Army wool socks and Canadian field boots.
LEGS.—Light cotton pants, heavy woollen pants, riding breeches, and oilskin leggings.
BODY.—Light cotton underclothes under heavy woollens, woollen and cotton shirts with double-breasted sheepskin vest between them, and D.R. coat and poncho.
HANDS.—Woollen wristlets, woollen mitts, and leather gauntlet gloves.
NECK.—Woollen muffler.
HEAD.—Storm helmet.
EYES.—Airman's goggles.

In addition, he tried a pair of airman's electric gloves obtained from the Disposal Board, but found they developed a hot-spot over the backs of the hands. He finds no defects of comfort with the above kit, except that the feet get cold, that the outfit is very heavy and expensive, and that it is a long job to get into it or out of it.

Ex W.D. Clothing.

Our contributor "Ixion" stated recently that he used a Sidcot suit, infantry gum boots, R.A.F. helmet, and Archangel field force gloves. A Sidcot suit is lined with teddy bear, and covered with waterproof twill. Its main drawbacks are that it is only made in stock sizes, and so may not fit the random buyer too closely round the neck, which is always a vulnerable point in wet weather; and that the waterproof twill is not always a genuine drencherproof in solo work, though it can always be trusted in the comparative seclusion of a sidecar or cycle car.

Both these kits are recommended by practical rough-riders. Can we add anything to their winter lore?

In the first place, it is obvious that nothing resists wind like leather, and nothing resists rain as oilskin does. It is no bad plan to warm one's body with leather, *e.g.*, leather trousers or breeches, and a sleeved leather waistcoat. Dryness can then be simply attained by the cheapest and coarsest oilskin suit, which will not imply heavy expense when it tears, as all oilies do sooner or later. But the "teasiest" parts of the body have yet to be dealt with—the head, the feet, the neck, and the hands. So far as headgear goes, only one garment will really keep out heavy rain. It is the oilskin helmet, made in one piece with a face hole and a neck curtain. It makes the wearer look like nothing on earth, and should therefore be carried in the pocket or the sidecar till snow or rain signal that the time has come to don it. In dry weather, any lined leather T.T. helmet with sausage ear rolls will be warm and sightly.

The neck has already been catered for by the face-hole type of helmet. Riders who dislike making abject guys of themselves must make shift with a muffler; but it will always get soppy on a bad day.

Protecting the Extremities.

The foot problem varies according as the rider's circulation is good or bad. Men with sluggish circulations ought to eschew riding in arctic weather. For a man with an ordinarily good circulation, snow boots over ordinary boots, plus two pairs of good socks, will suffice. For a man with moderate circulation, gum boots are better. Either gum boots or snow boots are waterproof inside and out; therefore water will run down the legs and drain *into the boots*. This must be stopped by wearing waterproof leggings over the tops of the boots; if oilskin trousers are selected (and very few leggings will fit *over* big boots), a pair of cyclist's trouser clips can be used at the ankles.

The hands are an acute difficulty. Apart from the Archangel mitts, I only know of two waterproof gloves which are still obtainable. The Asbestol mitt is even heavier and stiffer than the Archangel type. Dunhills make a lined glove, of which the outside is waterproof twill. They made me a pair to measure, but I have only worn them once, because they were so stiff that I could not grip bar or levers with any comfort. I believe the best solution for the moment is to rely on one of the patent handle-bar muffs to keep the hands dry, and to help in keeping them warm. Inside the muff one can wear any thick non-waterproof glove.

ROAD RIDER

A Half-Day Jaunt Into Wales

A forced dismounting in the lane leading to the falls resulted in this pleasing snapshot.

Pistyll Rhaiadr, a graceful curtain of water falling 210 feet. A curiously shaped hole in the black rock, about half-way down, forms a fantastic bridge under which the water pours.

A Visit to the Highest Waterfall in Great Britain.

WITHOUT holding any particular admiration for George Borrow, that learned tourist-author of seventy years ago, I have read and re-read his "Wild Wales" with a peculiar delight because of a fairly intimate knowledge of many of the tracks he followed.

Many times, however, have I regretted an inability for one reason or another to visit what is perhaps the finest fall in Wales—Pistyll Rhaiadr.

Recently business took me to Shrewsbury, and left me with half a day to spare, so I hurried away with my 2¾ h.p. Douglas on to the Oswestry road without any very definite knowledge of the route or the distance. By a process of following signposts and an indistinct memory of the map of this district, I turned away through the quaintly named village of Knockin, and soon found from the milestones that Llanrhaiadr was not an hour's run.

"The Full and Awful Name."

The nearest village to the fall, to give it the full and awful name inscribed on the map, is Llanrhaiadr-ym-Mochnant; just what it means I must leave to a Welshman to explain.

It must have improved since Borrow's time, for it certainly does not merit his reference to "a dirty little street." True, there is nothing to enthuse over, for, were it not for its proximity to the fall, it would be merely another of the many pleasant Welsh villages with fearsome-looking names.

A narrow turn to the right commences the winding lane to the fall, two miles of very fair surface and not particularly hilly; no one should hesitate, fearing lack of power, for it is quite an easy road right to the foot of the fall, but there are two or three gates to open.

With regard to the distance of two miles, this was given on enquiry in the village, but was qualified with the reminder "but, look you, they are Welsh miles, indeed." I expect that it is nearer three miles, to be correct, and Borrow calls it four. It terminates at the fall, which is the most prominent feature in view for the last half mile.

Laboured description is out of place here, and anyone who does not know it might do worse than read Chapters 65, 69, and 70 of "Wild Wales." A few snatches from this talkative description will suffice:

"The water comes spouting over a crag of perhaps two hundred feet in altitude between two hills, . . . groves of pine are on the lower parts of both. . . . What shall I liken it to? I scarcely know, unless it be an immense skein of silk agitated and disturbed by tempestuous blasts. I never saw water falling so gracefully, so much like thin, beautiful threads as here."

A Drop of 210 Feet.

The total height is about 210ft.; the farmhouse standing near the bottom of the fall is to all appearances an improvement or rebuilding of the house mentioned by Borrow. He says: "As I drew near, two handsome dogs came rushing to welcome the stranger." Whether they were the descendants of those

A Half-day Jaunt into Wales.—

animals I do not know, but the sound of my engine brought four fine sheep dogs bounding over adjacent stone walls with a particularly boisterous welcome.

This waterfall, Pistyll Rhaiadr, has none of the roaring turbulence of the Swallow or the Conway Falls, when they are in full spate; it has a graceful and mysterious grandeur of its own, partly by reason of its setting in almost fantastic surroundings. I would recommend any tourist who is visiting North Wales to spend a few hours deviating from the usual ways of motorists to see this lesser frequented "lion" of the Berwyns; it lies but twenty miles off the Holyhead road at a point ten miles beyond Shrewsbury, and it is only another seventeen miles on to Bala; the tourist from the west and south may find it from Ludlow *via* Welshpool, and, for easy roads, turn left at Llynclyst a mile or so before reaching Oswestry. From the north an easy way is by Chester, Wrexham, Chirk, Oswestry, to the same turning at Llynclyst; but there are numerous by-way variants of these routes waiting to be explored.

A striking point of this beauty spot is that as yet it is unspoiled; no glaring notice-boards proclaim its whereabouts, no admission fee is charged to view, and I hope, fervently, that the land owners will retain it in its natural beauty for many a long day. Commercial exploitation with the attendant disturbance of char-à-banc traffic would shatter the romantic enchantment of this glen of the Rhaiadr, as it has done in many another gem hitherto hidden away in some odd corner of this old land of ours. WESTERNER.

TOWARDS GREATER COMFORT.

Some Notes on Improving the Riding Comfort of a Standard Machine.

ANY strange machine necessarily feels uncomfortable on first acquaintance. After 100 miles or so the rider grows accustomed to it, and is then in a position to judge its absolute comfort. If he be a youngster and a hard rider, he will probably consider there is nothing to complain of. If he is middle-aged, he will probably conceive a rooted dislike to bumpy roads, suffer from sundry aches and pains after any really long run, and decide to study comfort more intelligently in his next purchase.

Motor bicycles are like the fabled bed of Procrustes—they are built in a fixed standard size for tall and short occupants: But marked improvements in comfort can be effected at no cost by adjusting the riding position. The available adjustments which are possible include:

1. Adjusting the handle-bar (vertically).
2. Adjusting the saddle (vertically and longitudinally).
3. Bending the handle-bar.
4. Adjusting the footrests (in any direction).

Handle-bar Positions.

The first adjustment is easily the most important. If the bar is too low, or too far away from the rider, undue weight may be thrown on his wrists, and the backbone may have to take the thrust of the head and shoulders at an unnatural angle, which results in a "crick" across the small of the back. The bars should be adjusted until so much weight is taken off the wrists that the rider can sit straight up when he wishes. When this adjustment is made, the saddle will quite possibly be unsatisfactory. It is inadvisable to set it too far back, as this tends to exaggerate skidding. It is inadvisable to raise it appreciably, for this lofts the centre of gravity, enhances skids, and gives the rider's legs less power and comfort when he is straddling a stopped machine. As the saddle is usually delivered in the foremost and lowest position, the handle-bar adjustment should be made first, and the saddle left where it is, if possible; it is often necessary for a tall man to shift it backwards or buy a new bar. Riders who exceed 6ft. sometimes have to fake their saddles or even buy a new saddle, as the bridge at the rear sometimes prevents the saddle being set back far enough for their knees to clear any rational handle-bar. Such radical measures should be taken *promptly*, as a bar or saddle can be exchanged gratis when brand new, but heavy expense is involved if once the useless parts are soiled. It is for this reason that the possibility of bending the handle-bar was mentioned above. If the rider does not discover the defects of his delivery bar until such a date that the makers may refuse to exchange it, it can be bent. Bars of first-class steel, such as a Triumph, can be bent cold; bars of lesser quality or heavier gauge material require heating.

Position of the Footrests.

When bar and saddle are right, the footrests may require attention. Two pairs are the ideal, giving change of position on long runs. If footboards are used, it is always pleasant to have instep bars on them—easily made of wood, and then covered with rubber.

When the position is perfect, the machine may still be uncomfortable, as the result of excessive road shocks or vibration. The surest method of improving the insulation is to fit the biggest tyres which can be coaxed inside the frame and mudguards. It is not a cheap expedient, but it is thoroughly well worth doing on a machine which it is intended to keep. The difference between a standard Scott (one of our most comfortable machines) and the special Scott with 3in. tyres is incredible; the latter is fully equal to any spring frame on the road. A cheaper and easier expedient is to fit such a special saddle as the Brooks cantilever or the Terry or Tan-sad. The immediate effect of this is to intercept most shocks received from the back wheel, and by contrast those received from the front wheel seem all the sharper and more frequent. Nor must the outlay on big tyres be regarded as sheer extravagance; they are actually cheaper in the long run than standard size tyres, as they very seldom puncture, and their life is extraordinarily long. The ideal combination is, therefore, a good machine, perfect adjustment of the riding position, oversize tyres, and a super-saddle. Nobody who has sampled such an outfit will ever describe motor cycles as uncomfortable. B.H.D.

How the Hunting Man regards the Motor Cyclist Follower.

By J. FAIRFAX-BLAKEBOROUGH, M.C.

IN almost every hunting county in England the ubiquitous motor cyclist is turning up at meeting places, and not merely enjoying the run to the tryst and the picturesqueness of a meet of hounds, but endeavouring to see something of the day's sport from highway and by-way with the aid of his machine. This has roused the ire of hunting folk, and some masters of hounds have witnessed the increase in the number of motor cyclists with such concern that they are discussing the desirability of making all their appointments at places away from the main roads in order to shake off the sport-loving motor cyclist. Earl Fitzwilliam, who is Master of the Grove and the Wentworth Hounds, publicly called attention a few days ago to what he considered a menace to fox-hunting. Here are some of his lordship's words:

"I would like to see more young men participating in fox-hunting, but I am all against following hounds on motor cycles. There is a great tendency for motor cyclists to head foxes, and I recall a case last season when a number of misguided but enthusiastic cyclists spoiled a good run."

An Old Prejudice.

Those who are interested in rural pursuits—and the motor cycle has made many townsfolk intimate with and keen upon country life and sports—will in many cases recall that there was a tremendous outcry against the motor car at its inception on the part of hunting folk. It was to bring the chase to a sudden end, or, at any rate, be a serious drawback and handicap. There were those quaint old squires who refused to advance with the times, and who called motors "devil's carriages" and those who used them much harder names. They conscientiously believed that hounds would be killed and foxes headed, that the whole of rural England would be so petrol-stained that there it would be impossible for hounds to follow their fox owing to lack of scent, and so on, and so on. Most hunts at this early period of the history of the motor car issued official announcements as to whether cars were allowed at fixtures. Then came evolution. Hunting folk began to send on their horses and themselves start off an hour or so later in their cars to overtake them. Masters of hounds overcame their prejudice and bought motor hound vans, and now every fixture of hounds becomes something like the "parks" of motors we used to see in France during the war. That is what familiarity has done!

A Sport for All.

It will probably be the same with motor cycles, though it is hardly likely that the horse brigade will use them as a means of getting to the starting point, though we have many of us seen both sportsmen and sportswomen in full hunting kit brought to fixtures in sidecars. Fox-hunting has always been pointed to as the most cosmopolitan sport in the world. The peasant on an old crock or on foot meets the peer on a three-hundred guinea hunter on equal terms. All and sundry are free to enjoy the sport in their own way and in accordance with their own means, provided they do no damage and observe the rules of the game. Now, apart from the consideration for the agriculturist (by whose sufferance alone hunting continues), there is a code of regulations, unwritten but understood, regarding the conduct of the sport itself. A man may not shout and "tally-ho!" unrestrainedly when he sees a fox, insomuch as it may not be the hunted animal, or may have broken in a direction which the master for some good reason does not want to hunt.

The man who heads a fox; that is to say, turns a fox from the route he has decided upon and possibly causes him to run into the pack, or the pack to over-run the line he has taken, and thus cause a check, lays himself open to a reprimand from the master, the suppressed anathemas of the huntsman, and the eloquent scowls of the field. It is in this connection the motor cyclist is considered a spoil-sport. Occasionally he may be so just as a passing ploughman, a postman on a push bicycle, a tramp, hawker, or farmer on his way to market might be, though none of these had any intention of taking part

The Motor Cycle and Fox Hunting.—

the hunt. Foxes, of course, do cross highroads—sometimes three or four times during a run. They also cross railways, and only last week several hounds in one pack were killed by a passing train. These are all incidents and accidents in connection with the chase which are looked upon as part and parcel of the game. There is no sort of suggestion that trains should stop, or that those using the King's highway should become motionless when they hear the horn in the distance, on the off-chance that a hunted fox may be coming their way. The odds are against the likelihood of them in any way interfering with the sport on foot.

The Adaptable Fox.

Similarly with the motor cyclist. The odds are against the probability of those who endeavour to see a run from their machines being in the particular point in a road at the psychological moment that a fox endeavours to cross. The possibility is that, even were they at that particular point at the particular moment, a fox which had made up his mind to creep through the hedge would do so despite the on-coming motor cyclist. Animals have a wonderful knack of adapting themselves to altered conditions, and foxes are probably now almost as familiar with the car and motor cycle as are horses and other livestock. They have adapted themselves to the times and to evolution. Whilst one believes that motor cyclists would not be guilty of willingly spoiling sport, and would pull up if they caught sight of a fox coming at right angles towards them, it is an anachronism to expect the ever-increasing number of motor cyclists to feel themselves excommunicated from the roads of such parts of the country as hounds may be hunting. There must be tolerance on both sides. The motor cycle has come to stay, and a few tactful words of explanation from the master to the knights of the wheel who turn up at fixtures would have a more useful influence than derisive speeches.

Towards the covert.

Appealing to Sportsmanship.

Every motor cyclist is a sportsman. Supposing a master of hounds rode up to the group of motor cyclists at one of his meets and said, "Glad to see you chaps here. We intend to draw such and such coverts, and I should be awfully obliged if you would all keep together on the road at such and such a point, so as to let our fox get away. If you follow on afterwards, it would be kind of you, if you think hounds are coming towards you, to give the fox a chance to get across the road."

Why, if masters of hounds took this line, they would make no end of friends, and they would have no trouble whatever. Often the townsman motor cyclist, much as he may love the country and rural sports, does not know when he is erring, and only needs to be told kindly and tactfully to amend his ways. It is only when folk try and patronise the motor cyclist, or adopt the "Get off the earth" attitude, that he gets his back up and falls back upon his rights and privileges to use the road equally with the barefooted tramp or the occupant of a two-thousand guinea car.

THE BIJOU SIDECAR OUTFIT.

Lightweight Passenger Machines and their Development.

BEFORE the war it was regarded as cruelty to machinery to attach a sidecar to any motor cycle under 500 c.c. capacity, but so great has the development been in engine efficiency that there are now quite a large number of small sidecar outfits on the road giving excellent service now that framework and cycle details have been strengthened to meet the new demands.

Until recently the majority of these machines were two-strokes, but for 1922 quite a number of small four-strokes have been introduced having engines of 350 c.c. capacity, so that two and four-stroke sidecars of the bijou class are about equal.

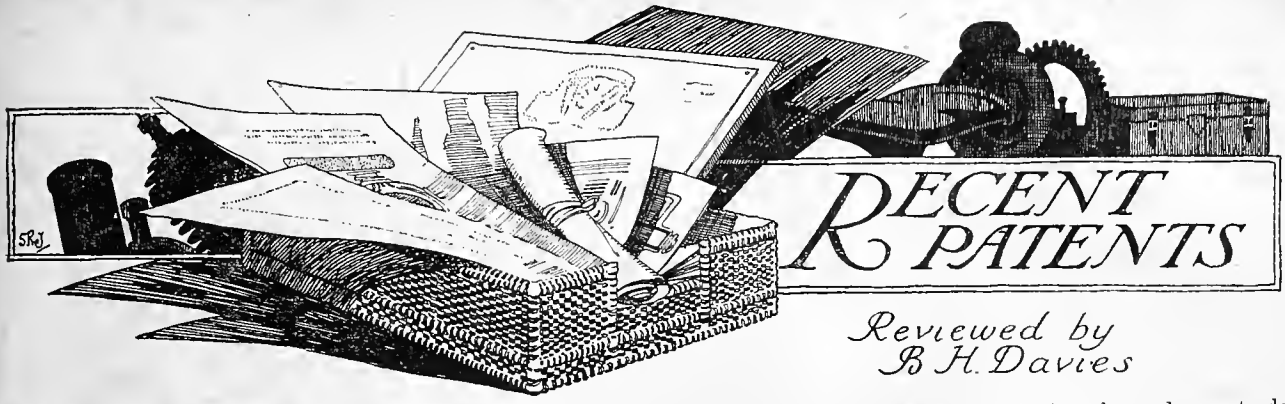
Low-priced Sidecar Outfits.

The following list conveys some idea of the machines available for selection, from which it will be seen that it is now possible to secure a sidecar outfit for less than £70, while the majority are under £100.

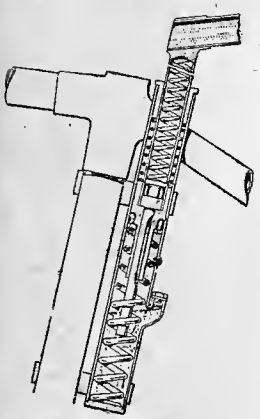
Owing to their low initial cost and, what is more important, their extremely economical upkeep charges, this type of machine promises to be very popular during the coming year. In our list we embody, in abbreviations, certain details of specification which indicate the excellent value offered.

		£	s.
2½ h.p.	Sirrah (292 c.c.), 2-st., c.-b., 2-sp.	67	0
2¾ h.p.	Sirrah (350 c.c.), 4-st., c.-b., 2-sp.	75	0
2½ h.p.	Coventry Eagle (269 c.c.), 2-st., c.-b., 2-sp. ...	75	12
2½ h.p.	Radco (247 c.c.), 2-st., c.-b., 2-sp.	77	13
3 h.p.	Calthorpe (350 c.c.), 2-st., c.-b., 3-sp. ...	85	0
2¾ h.p.	Victoria (350 c.c.), 4-st., c.-b., 3-sp.	85	0
2¾ h.p.	Allon (292 c.c.), 2-st., c.-b., 3-sp.	85	0
3½ h.p.	Connaught (370 c.c.), 2-st., c., 3-sp.	95	0
2¾ h.p.	Royal Ruby (350 c.c.), 4-st., c.-b., 2-sp. ...	95	0
2¾ h.p.	Hobart (350 c.c.), 4-st., c., 2-sp.	95	15
2½ h.p.	O.K. Junior, 2-st., c., 3-sp.	96	12
2½ h.p.	Sun-Vitesse (269 c.c.), 2-st., c., 3-sp. ...	96	12
2¾ h.p.	Verus (350 c.c.), 4-st., c., 3-sp.	98	0
2¾ h.p.	Francis-Barnett (350 c.c.), 4-st., c., 3-sp. ...	104	0
2¾ h.p.	New Scale (350 c.c.), 4-st., c., 3-sp.	105	0
2¾ h.p.	Armis (350 c.c.), 4-st., c., 3-sp.	105	0
3½ h.p.	Beardmore-Precision (350 c.c.), 2-st., c., 2-sp.	105	0
2¾ h.p.	A.J.S. (350 c.c.), 4-st., c., 3-sp.	110	0
3 h.p.	Coventry Eagle (350 c.c.), 4-st., c., 2-sp. ...	110	0

4-st., 4-stroke; 2-st., 2-stroke; c., chain drive; c.-b., chain-cum-belt; 2-sp., 2-speed; 3-sp., 3-speed.



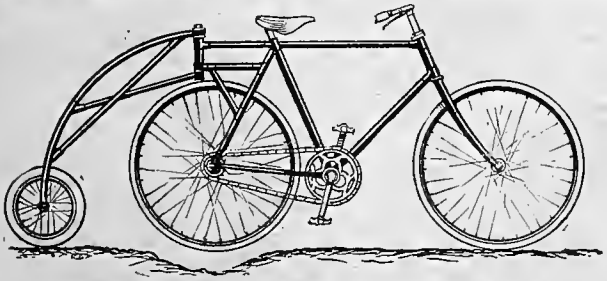
MR. T. E. C. HIRST is one of those inventors who consider that the best use has not yet been made of the spring seat-pillar, though his compound springing is quite applicable to front forks and other insulating members. He employs three coiled springs, a piston, an oil chamber, and a valve. The main spring is at the bottom in the oil cylinder. As the load compresses this spring, the valve is opened, and oil passes up a groove in the valve stem. This oil raises the head of the valve, which in turn compresses the inner of the two springs at the top of the device; the outer of the two upper springs takes the rebound.



Hirst's seat-pillar. No. 159,349. 3/3/21.

A la Heath Robinson!

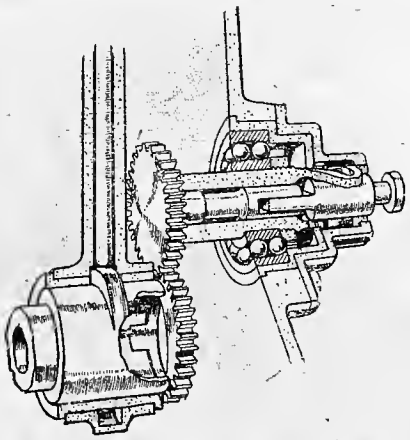
One occasionally hears of enthusiastic inventors who pawn their shirts in order to protect the great idea before holding a levy of the eager millionaires who desire to finance the patent. Let us hope that M. P. L. J. Manoury belongs to the minority who are under no such compulsion; otherwise, I fear me his property would remain at the Mont de Piete until the crack of doom. For some inscrutable reason, he is very anxious that the rear frame of a motor bicycle should be supported when the back wheel is off the ground. So he adds a tiny third wheel to trail behind, and prevent the rear wheel proper from dropping into potholes. But this extraordinary contrivance does not even fulfil the designer's ideal, for it entirely fails to cope with a bump over a hump in the road—in fact, the trailing wheel might even jerk the back wheel off the ground again after it had regained *terra firma*.



Manoury's supplementary wheel. No. 147,066. 24/3/21

Variable Timing Gear.

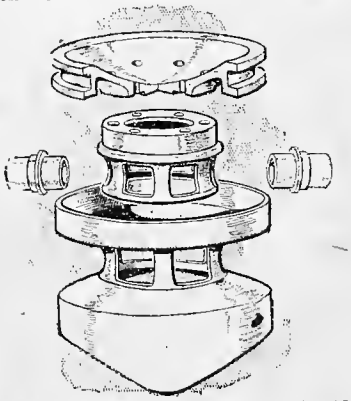
Two things may safely be predicted with regard to the Snarry and Bullows engine, if ever it comes into production. The first is that its sponsors will be on the *qui vive* for some really reliable lathe hands; the second is that the engine will not be cheap. A previous patent has indicated that the chief feature of this two-stroke engine is a transfer valve located in the piston head and operated by a long tappet mounted inside a tubular connecting rod and actuated by a cam on the crank pin. These complications do not satisfy our ardent innovators, who have now adorned their crank pin cam by making its timing variable. The cam is driven by spur gears off the crankshaft. The shaft of the driving pinion lies inside the hollow crankshaft, and is made in two pieces with a telescopic joint. The outer part of this shaft is provided with trunnions working in spiral slots machined in the wall of the hollow crankshaft. Thus the valve cam can be advanced or retarded in relation to the crank pin.



Snarry's valve mechanism. No. 158,589. 17/2/21.

An "Advanced" Piston Design.

I should much like to hear Mr. R. H. Pearsall expound the piston which he has protected in conjunction with the B.S.A. people. A glance at the sketch will instantly reveal two of its merits. In the first place, the skirt follows current feminine fashions, and is mostly conspicuous by its absence, thereby reducing oil friction. In the second place, the gudgeon pin bush holders slip into very narrow bearings in the waist of the piston; these tiny bearings allow the holders to rock a trifle, and so align themselves on the gudgeon pin; if a piston is mechanically rigid, friction losses are quite likely to occur when heat wrenches gudgeon pin bushes out of truth. On the other hand, the design does not give much escape for the intense heat communicated by the explosions to the piston head. The top skirt is little more than a narrow rim. The riveted joint between crown and bobbin is not a good heat conductor; if the heat gets past that joint, it has to forage about for a sizeable piece of skirt through which it can dissipate itself into the lubricating oil. On the other hand, the piston is like the Irishman's coat, consisting mostly of holes. Regular fountains of oil will be spraying about its interior when the engine is working; and one suspects that Mr Pearsall desires to get rid of excessive heat by injecting streams of oil into the "innards" of his piston, as contrasted with the older method of conveying the heat into a big skirt rubbing against a film of oil on the cylinder wall.

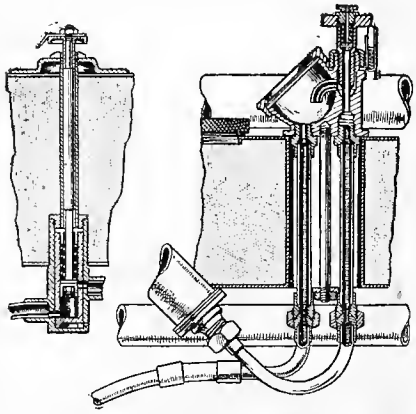


B.S.A. and Pearsall's piston No. 161,392. 14/4/21.

Recent Patents.—

Improved Lubrication Indicators.

Mr. S. L. Bailey has protected two new forms of oil indicator. The vertical type, which is illustrated below, has two special virtues. In the first place, the plunger rises when oil is passing through the connections at its base, and so pro-



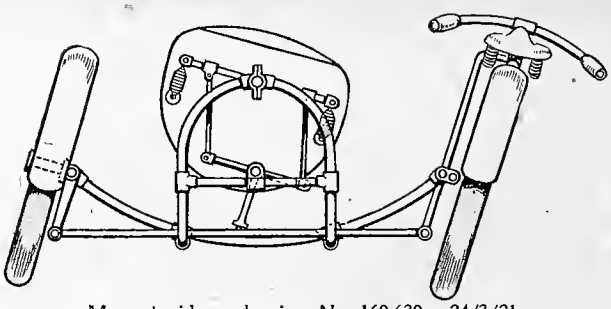
Bailey's lubrication indicator. No. 160,365 24/3/21.

vides an infallible indicator by night as well as by day. Secondly, by rotating the plunger, a sleeve is turned so that the effective area of the oil passages is varied. The second sketch shows that the plunger may be combined with a sight feed chamber and drip feed if desired, though the necessity f· · two indicators is not clear.

Sidecar Flexibility at Will, and—

Messrs. Swan and Yeats are Australians; and I hate to seem unkind towards a country which provided the British Army with some of its very finest shock troops in the late war. But I cannot camouflage the fact that they are trying to add a new terror to sidecaring. They point out, with some justice, that the current, or rigid, type of sidecar outfit demands a little care on corners, and has to be strongly built if it is to resist the resultant side stresses. They propose to facilitate cornering and to reduce the stresses thereof by a patent chassis in which a control lever of the coffee-grinder pattern is used to tilt the bicycle in or out on bends.

Their sidecar chassis is attached to the bicycle frame at three points. The lower attachments, fore and aft, are pivoted. The third is shown, complete with control lever, in the accompanying sketch, and is self-explanatory. This connection, ordinarily known as the saddle-pillar attachment, is normally rigid, an angular hinge being locked by a worm and quadrant. But when the control lever is operated, a pair of bevel pinions rotate the above-mentioned worm, and so cause the quadrant portion of the locking device to swing through an arc, small or great. The angle between the two arms of the hinge is thereby varied, and forces the sidecar chassis and the motor cycle frame ruthlessly apart or lovingly towards each other, as the case may be.



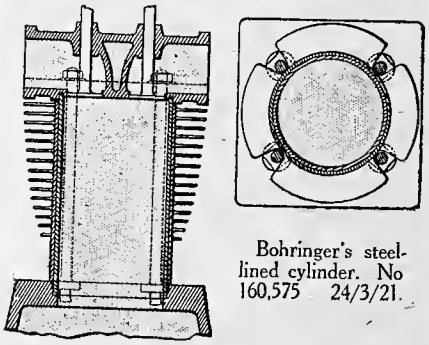
Morton's sidecar chassis. No. 160,630. 24/3/21.

—Automatically.

It is so long since I drove a sidecar attached to a motor bicycle by "flexible" joints that I have almost forgotten what the experience felt like. To the best of my belief there were two main drawbacks. One was that my thigh was apt to be rather painfully nipped between the tank and the sidecar; the other was that much faster cornering became possible, and that the tyres used to be wrenched out of their rims. However, Messrs. Morton consider that we have by no means heard the last of flexible sidecar connections, and the sketch shows their plan for an arrangement by which the sidecar wheel and the sidecar body cant over in sympathy with the tilt of the bicycle in taking a corner.

Steel Liners in Aluminium Cylinders.

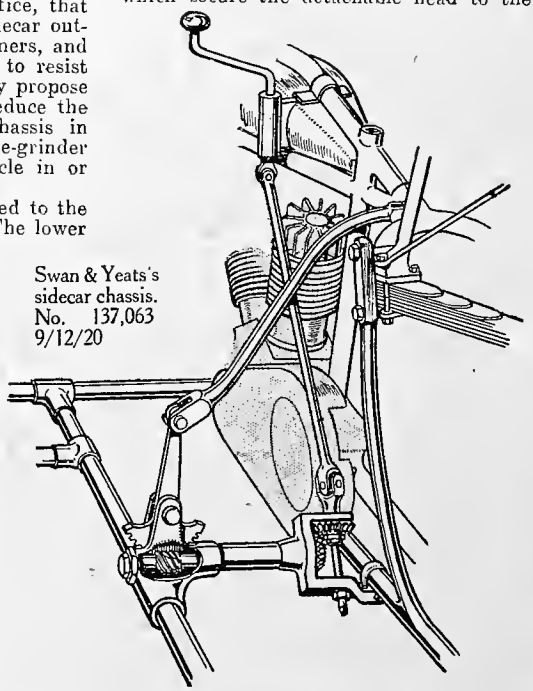
Messrs. Bohringer and Digby are interested in cylinders built up from two or more metals, and are anxious to avoid shrinking an aluminium cylinder jacket on to a steel or cast iron liner. They are also afraid that the difference in the respective expansions of such metals under heat may create stresses in the liner, and perhaps spoil the gastight joint of the detachable head. Consequently, their steel liner is held down by the bolts which secure the detachable head to the crank case, a C.A. washer being inserted at the upper joint. The aluminium jacket is shorter than the liner, and may be regarded as a radiating muff pure and simple. The wording of the patent is rather vague, and I am not at all sure what sort of a fit is proposed between the liner and muff; apparently the muff is to slide quite loosely over the liner. If an air space occurs between these two parts the cooling may not be all that the designers hope, and as a casual student of such matters I feel rather doubtful whether they can easily dispense with the shrinking-on process.



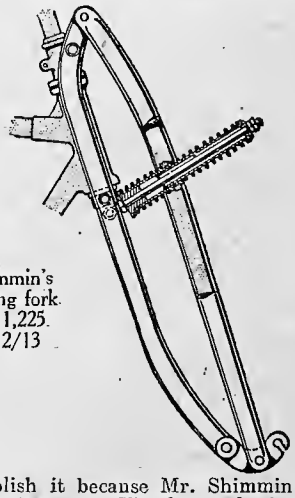
Bohringer's steel-lined cylinder. No 160,575 24/3/21.

Another Spring Fork.

Mr. G. F. Shimmin, of 6, Lawson Street, Maryport, is anxious to find a manufacturer to take up his patent spring fork, a sample of which he has been testing for some time. As the sketch implies, the fork is on quite original lines, and, though the patent was accepted in 1913,

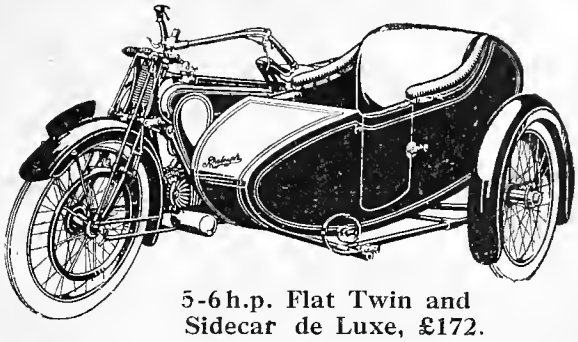


Swan & Yeats's sidecar chassis. No. 137,063 9/12/20

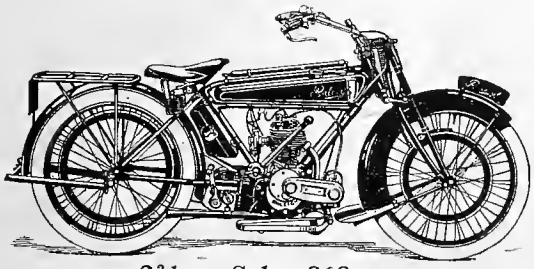


Shimmin's spring fork. No. 1,225. 11/12/13

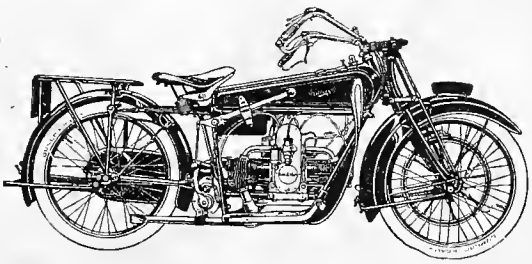
I publish it because Mr. Shimmin is an ex-Service man. The front wheel spindle and the fork-ends are coupled by short links or levers. These links are connected to a pair of compression rods. Another pair of compression rods are hinged to the top of the rigid fork. Both pairs of compression rods join at a cross-head. The cross-head works on a guide between springs. The fork may be described as a hybrid between the original Triumph and Quadrant patterns.



5-6 h.p. Flat Twin and Sidecar de Luxe, £172.



2¾ h.p. Solo, £68.



5-6 h.p. Flat Twin, £130.

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The Editor does not hold himself responsible for the opinions of his correspondents.

All letters must be addressed to the Editor, "The Motor Cycle," Hertford Street, Coventry, and must be accompanied by the writer's name and address.

SUPERLATIVE ELEVATIONS.

Sir,—Your correspondent the Rev. C. D. Fothergill says that "England can boast the highest road, hotel, and agricultural land in Great Britain." He is right in the second matter, though he does not name the highest, which is the Tan Hill Inn in Yorkshire 1,727ft. He may be right about the cultivated dirt which is nearest heaven, but that is uninteresting.

We are all interested however, in the highest British road, and therein he is wrong, for the Roman "road" above Haweswater is only a poor track, even if "paved in parts"; so is the Roman road over Blackstone Edge, near Littleborough.

I believe the highest English road to be the Killhope or Nenthead Pass, between Weardale and Alston, 2,056ft. The Cairnwell Pass in Scotland (Devil's Elbow) is 2,200ft. Messrs. Bartholomew, in their touring atlas of the British Isles, give the road from Braemar to Loch Builg as 2,500ft., but I believe this is much overstated. Their own half-inch map shows it as more like 2,200ft. There is a "road" of sorts from Ballater over to Glen Clova, which, according to Gall and Inglis, reaches 2,275ft.

After all, what is a road? Has any Scots rider of the Scott passed from Glen Muick to Glen Clova?

FITZWATER WRAY.

SIDECAR FUEL CONSUMPTION RECORDS.

Sir,—In reply to Mr. H. S. B. Booth's and Mr. Tom Hammond's letters, which appeared in your Show and following numbers respectively, I herewith supply the following details as requested.

My machine is a late 1920 chain-cum-belt Triumph, standard in every respect. I found my 32 jet was too small to give good running, so this I slightly enlarged, which I believe is not a step towards fuel economy. I keep my tappets adjusted so as to leave just sufficient space to force a visiting card between them. Have no air or oil leakages, and drive with ignition and air fully advanced (except, of course, up hills), and can get a speed of 40 m.p.h. by speedometer with a 10 st. passenger, which I think is quite the average. My sidecar is a a touring model—Paragon make, fitted with a Matchless windscreen.

I may say I weigh 14 st. and my passengers 9 and 9½ st. respectively. Pratt's petrol and Vacuum B.B. oil were used—one pumpful every five miles. I can only think Mr. H. S. B. Booth's and friends' smaller consumption is due to their method of driving.

I am, on these matters, as I sign myself, an

Ealing Common, W.5. IGNORAMUS.

Sir,—I have read with interest Mr. Tom Hammond's letter, and I can confirm a consumption of 92 m.p.g. with sidecar.

I bought a 1913 Triumph, Binks carburetter, N.S.U. two-speed, C.B. Triumph sidecar second-hand in May this year, with the intention of a trip up North for my holidays in June.

I left Watford on May 29th at 6.25 a.m., with empty sidecar (except for light suit case) and spare can of petrol, and arrived at Nottingham at 1 p.m. Left Nottingham at 4.30 p.m. with passenger and luggage, and arrived at Pontefract at 8 p.m., where I put up for the night. On the Monday we left Pontefract at 9 a.m. and passed through Wetherby to Richmond, and found on reaching there I had lost my sectional map to Kirkby Stephen.

On asking a motorist at Richmond the best way to Kirkby Stephen, the er-er-misguided man gave us directions which lay over the notorious Buttertubs Pass; but the machine took us through Reeth, and, except for one or two of the worst parts where gates ran across the road and boulders lay in the track half-way up steep hills, the fine engine pushed the machine up, and, assisted by language which blessed the person who gave us this route, we managed to get to the top all right, and had a delightful run down into Kirkby Stephen, where we had a short rest, and then pushed on to our destination, Orton, through a heavy rain storm, which caused us to miss a turning and go round by Ravensdale. and we finally arrived at Orton about 6 p.m. My only troubles were one belt and one fastener breaking.

Leaving Orton, June 5th, 9 a.m., I went north to Appleby, and through Brough, Bowes, and Scots Corner, and down to Nottingham, with only three stops for punctures, arriving Nottingham at 7 p.m., where I dropped my passenger. Left Nottingham next day at 10 a.m., and arrived at Watford at 2.30, including one stop.

I averaged, with a careful record of consumption, slightly over 86 m.p.g., and had no mechanical trouble whatever with the machine. YOUNG FORWARD.

Watford.

Sir,—Triumph outfits are not expensive to run, if my experience is worth anything. I have a 1921 all-chain model with heavy Gloria sidecar.

My wife and I weigh about 22 stone, and, with 50 lb. of luggage, the very first journey taken after the arrival of the machine from the works—a two hundred mile run—worked out at 72 m.p.g. Later this was materially improved; without luggage, in Cheshire, we have done as well as 107 m.p.g., and regularly do 80 to 90. NC 301.

Manchester.

Sir,—Referring to "Mahlib," I should like to give my mileage to the gallon. I also own a 1917 Triumph sidecar outfit, and find that I can get from 120 to 140 m.p.g. in rather a hilly district. My passenger and myself are just over 23 st. together, and always carry the usual spares. I also wish to add that I have never experimented with economy stunts. I use a 1921 B. and B. carburetter, pilot jet, and can safely say I can leave any outfit on a freak hill. I can do 64 m.p.h. any time (Stewart speedometer). I would not part with my trusty Triumph for a Rolls-Royce, even if given to me. TOP-HOLE.

Trimdon.

Sir,—I have been interested in the discussion referring to the petrol consumption of the Triumph and sidecar.

I own a 4 h.p. Triumph fitted with a Watsonian sidecar and an Easting windscreen. I regularly obtain a petrol consumption of 75 m.p.g. without any deviation from standard, and carrying a total weight of twenty stone.

I recently obtained 90 m.p.g. simply by fitting a smaller jet. It is as well to add that one has to be content with appreciably less power, and personally I was pleased to revert to the standard setting. TURNIPS.

Duffield.

Sir,—"Ignoramus's" 92 m.p.g. on a Triumph and sidecar (two up) is certainly "going some" in economical running. I own a W.D. Triumph, chain-cum-belt, 1918 engine, and riding since Whitsun over roads in various parts of the country (Wales, Derbyshire, and Yorkshire Moors included), I find I have averaged 65 m.p.g. At first I only got about 50 m.p.g., but for some reason or other it suddenly improved to 65 m.p.g., and stayed at that for months. On my last few

rides it has gone up to over 70 m.p.g., and on one trip to Brighton and back a fortnight ago it was 84 m.p.g., but that, I think, is due to a gadget I fixed up to use more air. I always buy B.P.No. 1 and Castrol C.W. oil.

An A.A. scout in Berkshire, who runs round on one of the repair outfit machines, told me he averaged 68 m.p.g. all the year through, and he humps a very hefty load around.

J. F. C. ANSELL.

Sir,—I have an Ariel No. 1 sidecar fitted to my 1921 Triumph, and on a recent visit to the East Coast, carrying one passenger, I had no difficulty in covering from 95 to 100 m.p.g. SATISFIED.

Birmingham.

AN IDEAL SPRING FRAME—FROM THE INVENTORS' VIEWPOINT.

Sir,—I have read quite a lot of correspondence lately concerning spring frames, in which everybody seems to be looking for an ideal.

What is this "ideal"? Is it such a frame as will allow the rider to delude himself into the idea that his 'bus has taken unto itself wings, and is floating along about a couple of inches off the road, or will the best that can be done with the material at our command. such as springs that will persist in oscillating a little, etc., suit the seeker?

I have a design for a spring frame (who has not who thinks about it at all?), which I can confidently state fulfils all the requirements I have seen mooted up to the present.

It does not let the back wheel wobble.

It does not interfere with lateral stability (sounds like an aeroplane).

It does not tighten or slacken the driving chain or belt, as the case may be.

It does not let the middle of the bicycle float on without a bump, while the front and back wheels alternately drop in a pot-hole about six inches deep, and there is a lot of other things it does not do; still, it is a spring frame, which at least is unique in the respect that there is no alteration in the tension of the final drive.

No, Mr. Editor, it is no use asking to see it. It is still in that portion of my anatomy I call my brain (some people, I know, are not so polite), and it is going to stop there until someone gets interested, and, incidentally, interesting.

Birmingham. SPRING FRAME.

MISLEADING HORSE POWER RATINGS.

Sir,—The writer of "Misleading h.p. Ratings" states that the 996 c.c. Matchless is exactly the same as the 10 h.p. engine which is supplied for cycle cars. In this he is very considerably mistaken. The 1,000 c.c. engine has a bore and stroke of 82×94 mm. respectively, and the 10 h.p. or 1,100 c.c. engine has a bore and stroke of 82×103.5 mm.

THE M.A.G. ENGINE CO., LTD.
OSBORNE DE LISSA, Managing Director.

[This amendment does not alter the point of the article; an increase of approximately 100 c.c. does not justify a variation of 3 h.p. in nominal rating.—ED.]

Sir,—Reading your article, I was much interested to see the many ideas suggested for deciding the power. As the person who has most concern about the motor cycle he is going to buy is the one whom the rating affects most, why cannot manufacturers give their power as "capacity—brake horse-power all out"—ratio? The racing Norton would then be 500-25. Many people wishing to buy a light touring machine would rule out the 250 c.c. J.A.P.-engined machines as being too low, and buy a 2¾ h.p. machine (350 c.c.) simply on the strength of increased capacity, though the 250 c.c. engine, being capable of revving at 10,000 r.p.m. is undoubtedly more powerful than many 2¾ h.p. machines.

Warrington. CARROTS.

SUNDAY COMPETITIONS.

Sir,—I really fail to see "EF 1508's" ideas on Sunday competitions. May I point out to him that not all men care to watch hill-climbs? Still fewer would prefer watching them on a Sunday afternoon to taking the opportunity of a sleep. Also, though "EF 1508" does not mention them, there are the women to consider. Sunday afternoon is to them a rest period, and the continual bursts of open exhaust sprints are, to say the least, not conducive to sleep.

Also, may I ask your correspondent what he means by asking whether the "man in the street" stays at home to earn the wherewithal to exist? Not many men work on Sundays. IDDY UMPTY IDDY.

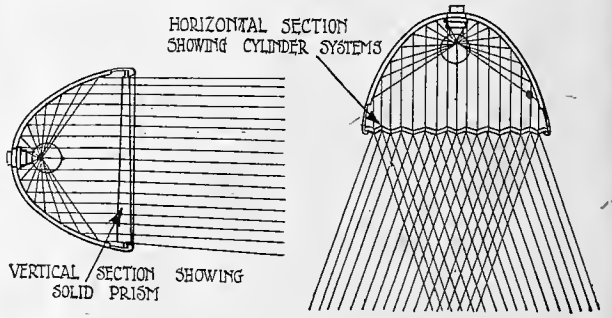
Warrington.

Sir,—Allow me to thank you for your continual stand against Sunday competitions. Being a motor cyclist and also a worker among the young, I appreciate your great help very much. S. H. HILL.

HEAD LAMP DIMMING ETIQUETTE.

Sir,—Readers of *The Motor Cycle*, who are troubled by the blinding glare of motor car head lights when riding at night, may be interested to learn how the problem is being met in the U.S.A. The sudden dimming of a car's powerful head lights may be as confusing to the driver of a car as the previous glare was to the approaching motor cyclist.

A new head light lens has been placed on the American market during the present year, which fulfils the legal requirements of every State having head light laws, and is already supplied as standard on several of the best makes of American cars.



Approved American anti-dazzle lamp referred to by Mr. E. W. Troughton in the accompanying letter.

This lens, which is made to fit any make of head lamp, optically directs the light rays, giving, without loss of light, wide dispersion and no glare. Glare is avoided by keeping the powerful light rays below eye level. This lens gives a beam 50ft. wide at a distance of 100ft. from the lamp, and renders objects plainly visible at a distance of 500ft. When viewed from in front, from above the level of the lamp, the light appears quite dim.

I recently read that our Inter-departmental Lights on Vehicles Committee has decided that "it is not possible to eliminate dazzle (in motor car head lamps) and at the same time leave an adequate driving light." It evidently has not heard what the Americans are doing to cope with this matter.

I enclose sketches showing how the American lenses achieve their good results. It will obviously be cheaper, for motorists having dazzling head lights, to fit new lenses in their lamps than to buy new anti-dazzle lamps, such as those patented by Sir H. Grubb and Sons, Ltd., or the dipping head lamps fitted on the Prince of Wales's 1922 Rolls-Royce.

I ride solely for pleasure, and have no connection with the motoring trade. ERNEST WM. TROUGHTON.

REVIVING AUTOMATIC VALVES.

Sir,—I read with great interest the letters of both Mr. J. E. Smith and "Reactionary" concerning automatic inlet valves. I am interested, inasmuch as I have ridden quite a number of machines having engines on the a.i.v. principle, and am a satisfied user of such.

My argument is: Given an engine (say present-day Sunbeam design), but fitted with an a.i.v. instead of m.i.v., the result of the running would be astounding. To my mind, it was not the a.i.v. that was responsible for many failures, but the poor designs of the engines.

Inadequate cooling properties seemed to be a great setback with most of the early motor cycle engines, as I experienced with one of my own (a 3 h.p. Cunard). This was due to the bad design of the top of the crank case, which was responsible for under-oiling; but after drilling a number of holes in this particular part to enable the oil to splash effectively to the cylinder wall, I experienced no further trouble in that direction, and I have yet to encounter

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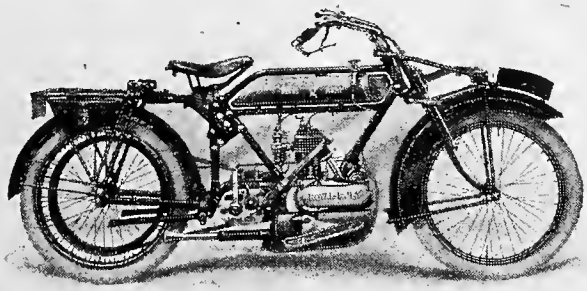

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'Phone: Nottingham 3295, 3296.

an engine of the same capacity to surmount hills better with a passenger.

Moreover, I consider the carburation and ignition ideas of the a.i.v. period were responsible for the poor running of engines, and I maintain that, given an up-to-date engine fitted with an early carburetter and magneto, the result would indeed be poor.

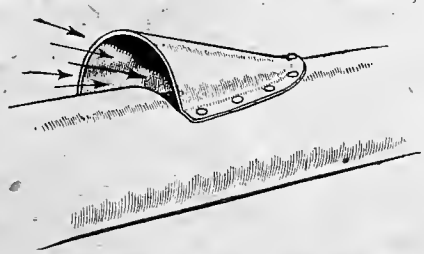
To further my argument, I advise any mechanic to strip a 2 h.p. four-stroke M.A.G. engine of its inlet valve mechanical gear, and thus convert into a simple a.i.v. by fitting a suitable spring and plugging the crown of the induction pipe. The result will be found to be identical with its former running, and this proves to me that the power derived from this remarkable little engine is not altogether due to its m.o.i.v., but to the general modern construction, and the fact of its inlet valve being of such a liberal diameter. H. LE FE.

Birmingham.

FUEL ECONOMY ON A TWO-STROKE.

Sir,—I have frequently noticed that readers of your journal complain of the low petrol consumption of the 2½ h.p. two-stroke Villiers engine.

Perhaps some items relative to the performance of a similar engine fitted to my two-speed O.K. might be of interest. It is fitted with the standard Amac two-stroke carburetter, jet No. 24, and my average m.p.g. is about 140, and as much as 160 m.p.g. has been attained on flat roads, no special tuning being done.



Three vents (as above) were fitted by Mr. R. B. Porter in the exhaust pipe of his Villiers-engined lightweight, with encouraging results.

The reason for these high figures is partly due to the fact that I fitted a long exhaust pipe to the existing small tail pipe. This pipe is fitted with air vents, as shown, such that when the machine is in motion a partial vacuum is continually set up in the pipe; thus the exhaust gases not only leave the cylinder by "expansion," as is usually the case, but flow rapidly into the exhaust pipe containing gases at a much *lower pressure*. A portion of the existing pipe was bent down slightly to prevent sound escaping. Each vent was riveted to the pipe by ⅛in. copper rivets, three vents being used in all.

I might add that the above was not fitted to the engine because the fuel consumption was poor, but rather to endeavour to increase the already moderate consumption, which was about 110 m.p.g. RAYMOND B. PORTER.

SIDECAR OR CYCLE CAR—CONTRASTING VIEWS.

Sir,—Last summer I intended buying some sort of a motor conveyance, but could not afford anything beyond £300. I haunted Great Portland Street and its environments and saw many two-seaters, but as I am a family man with two boys, I wanted something that would drag us all about with a fair amount of luggage. The cost of upkeep also had to be largely considered. With the majority of low-priced two-seaters, I could not see how I could fit four people with luggage, but with a high-powered sidecar I could arrange for one boy (aged five) with his mother in the sidecar, and the other (aged ten) on the Tan-Sad, and the luggage grid would get over the baggage problem. I eventually decided on an A.J.S. sidecar outfit, and I have never regretted my choice. We all fit up beautifully, and I have yet to meet the hill which it does not take smiling. I have no connection with the A.J.S. firm. JOHN T. DAVIES.

Sir,—"Family Man's" statements recently recall to me the days when I ran a motor cycle and sidecar, and believed that I was getting my motoring at the most advantageous cost. My experiences with three different makes of sidecar outfits used over some four and a half years were good enough to make me feel as this correspondent does. I have since found that my running costs are only slightly increased during the last two years, and that using a 1920 type G.N. This car is lighter on tyres than was any one of my motor cycle and sidecar mounts, it garages in the same shed into which my previous machines used to run, and, as for repairs, beyond plugs and minor adjustments none have become necessary. I think the extra protection from weather and general comfort, together with the ability to arrive at one's destination clean, justify the increased cost of taxation, while the insurance must be proportionately the same. D. H. VIVIAN.

TAXATION AND THE SERVICE MAN.

Sir,—I quite agree with "Corporal" as regards paying full taxation, and I am sure, if it were not for this, there would be many more of H.M. Forces enjoying the finest pastime in the world.

I do not agree with "Carrots's" letter at all. A keen motor cyclist is really never happy on a hired 'bus.

Regent's Park, N.W.1. LIFE GUARD.

72 M.P.H. ON A PRE-WAR SINGLE.

Sir,—My pre-war fixed gear Triumph (with W.S.R. jet tuned to the right point) always goes much faster when a nice breeze is blowing directly against the valves. The harder this side breeze the faster the pace, and one evening, on a splendid but not quite level road (very slightly uphill), I covered the distance between two milestones in fifty seconds, after warming up and oiling nicely, with one of the aforesaid breezes cooling the valves. Is this a well-known phenomenon? OLD 'UN.

Reading.

[Has our correspondent tried measuring the distance between the milestones as a means of explaining the phenomenon? At the same time a side breeze would undoubtedly assist in cooling the valve ports.—ED.]

WHAT APPEALED TO A LADY.

Sir,—I read with much interest your excellent reports of the Motor Show. In a later issue you have an interesting contribution concerning the machines which are considered specially suitable for women's use. I was rather surprised to notice that the little Xtra car was not mentioned. I spent a considerable time at the Show myself, and I certainly think the Xtra was quite the most attractive general-purpose machine for our sex. I know that some of us like to have fast machines, but the great majority prefer to keep clean and indulge in no excessive speeds. The Xtra impressed me very much on account of its exceptional protection of the driver. I had a trial run, and was surprised to find how very suitable the machine was, and that it was next to impossible to make it skid, even on the greasy roads which were prevalent during the Show.

As a matter of fact I was much surprised at its speed, and one would hardly believe that it could go along as well as it does with such a small engine.

I should add that I have no interest whatever in the Xtra, except that I hope to own one shortly.

VERA M. STEVENS.

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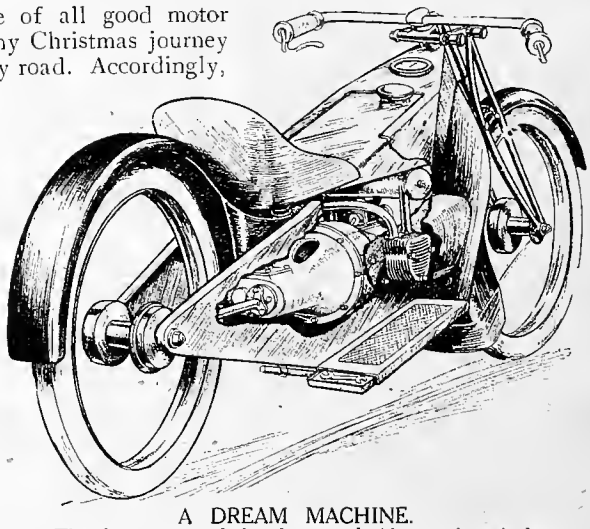
A CHRISTMAS DREAM.

Almost Every Motor Cyclist has his Own Ideas about the Perfect Motor Cycle, but it is not Everyone who Realises, like our Correspondent, that there is apt to be a Fly in the Ointment.

FOLLOWING the example of all good motor cyclists, I decided that my Christmas journey should be accomplished by road. Accordingly, the wife and family were duly packed into my 1910 single-geared sidecar outfit, and we set forth with brown paper parcels bulging from every crack. The less said about that journey the better. Suffice it that the heavily loaded sidecar was beyond the unaided efforts of my trusty "$3\frac{1}{2}$," and that, though we arrived at our destination late on Christmas Eve, my frame of mind was not exactly compatible with the seasonal festivities.



A DREAM MACHINE.
The clean sweep of the sheet steel side members is here broken away to show the flat twin engine and gear unit and shaft drive.

On the following day, having survived the usual formalities and rejoicings, I retired to a dark and incredibly draughty shed, and attempted to disgruntle the "innards" of my ancient and badly-treated engine, in the hopes of finding the extra power required for the return journey.

Working in semi-darkness, I marvelled at the ingenuity of pre-war manufacturers in placing nuts where nothing but universally jointed and case-hardened fingers could possibly remove them. Visions of the ideal machine floated before my eyes. What a 'bus it would be! Why did not manufacturers consult their clients?

An air of oil and profanity.

After hours of labour things came apart suddenly, and at this critical juncture there entered the air of oil and profanity—my wife. Calmly she informed me that it was time to clean up for Christmas dinner. My expression said more than any words in our sadly incomplete vocabulary could ever infer, and she left hurriedly. Nevertheless, civility demanded that I should leave the ruins to the tender mercies of rats and chickens, and, hoping for the best, I returned to the house to repair my damaged knuckles and generally make myself presentable.

* * * * *

That Christmas dinner was a success, and, mollified by the good fare, a comfortable armchair, and a crackling fire, I slept.

"By merely undoing one wing nut, every part becomes immediately accessible."

* * * * *

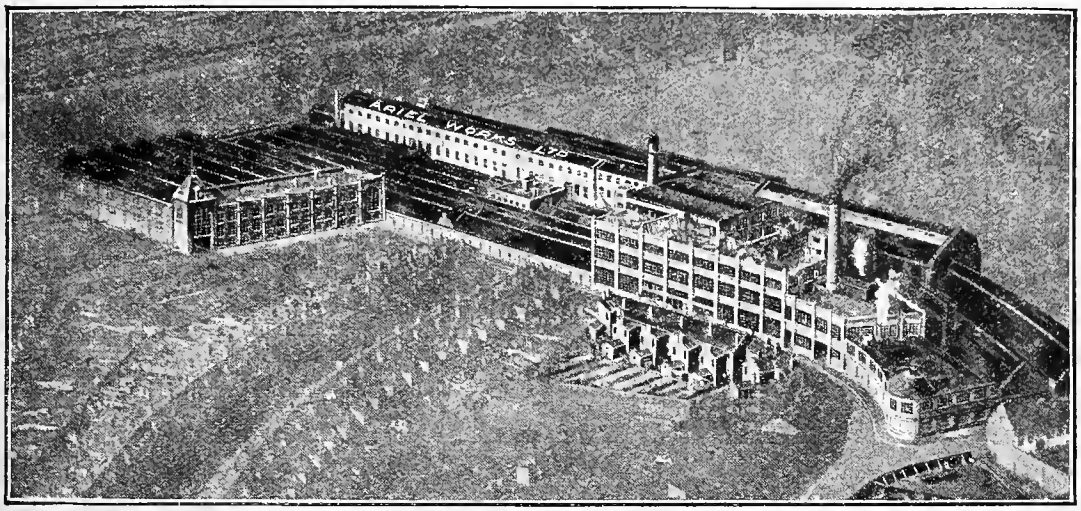
"'Ubique,'" said a voice at my elbow, "I have been appointed by a committee of motor cycle manufacturers to inform you that they have decided to place the whole of their manufacturing facilities at your disposal, and to ask you to be good enough to design a universal motor cycle—no other type will be allowed in this country." Turning, I beheld a very august figure well-known in manufacturing circles.

With the utmost calmness I replied that it was about time that my undoubted talents were recognised, since my ideas on motor cycles were without parallel. In a few moments I dashed off a sketch of my ideal. The machine had a flat twin Bradshaw type engine enclosed between two sheet steel side members, with only the cowled cylinder heads protruding from the clean sweep of its polished sides. A three-speed gear was incorporated, while the engine and final transmission was by shaft and bevel.

The job was perfect.

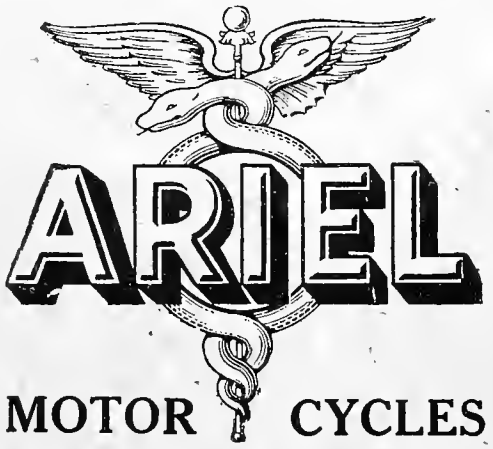
The driver sat in a comfortable armchair, and was protected by legshields, footboards, and mudguards of ample width. Tools were carried in convenient and rattleproof drawers under the footboards. Grease cups replaced oil holes, and, in short, the job was perfect.

With an air of conscious superiority I handed the sketch to the envoy, remarking in a lofty voice, "What about it?" There ensued a tense silence, followed by a string of questions. "How do you propose to attach a sidecar?" "How do you get at the carburetter?" "What happens when the magneto contact breaker sticks?" "Where are the controls?" "How do you get at *anything?*" "And how do you propose to *make* it?" Somewhat nettled by these questions, which seemed to me to cast doubts on my ability, I replied, rather testily I am afraid, "These



From an aeroplane photograph of Ariel Works, Bournbrook, Birmingham.

Your 1922 riding will be happier on an Ariel. Whatever your taste—fast road work or comfortable sidecar touring—there is an Ariel to suit you.



	£	s.	d.
3½ h.p. Sports Model ..	87	10	0
3½ h.p. Touring ,, ..	95	0	0
6-7 h.p. ,, ,, ..	110	0	0
All chain-cum-belt drive.			
Sidecars for above	30	0	0

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4½ h.p. Touring Model ..	105	0	0
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Sidecars for above, with locker at rear	35	0	0

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MOTOR CYCLES HAVE ALL THE RESOURCES OF THE VAST WORKS, ABOVE ILLUSTRATED, BEHIND THEM

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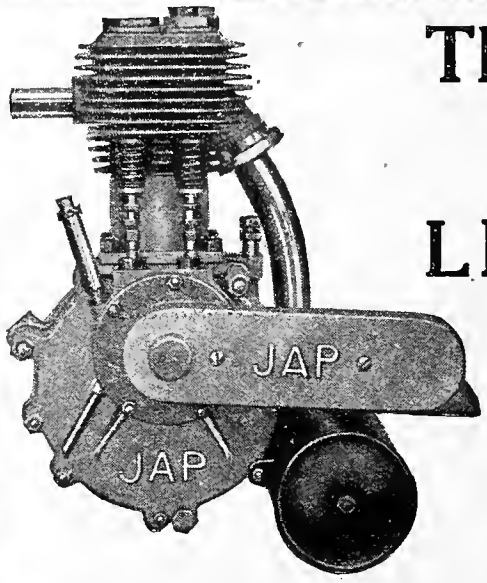

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Weight 32 lbs.

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The Most Popular AND BEST LIGHTWEIGHTS FOR 1922

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ENGINES.

Grindlay Sidecars

"For the Rider who will have the best."

Our exhibit at Olympia proved once again that the Grindlay is still the superior sidecar, and represents the best value given in sidecars.

The Grindlay range of models for the coming season is very complete, including models for machines from 2¾ h.p. to 10 h.p., and **prices from £17 to £38.**

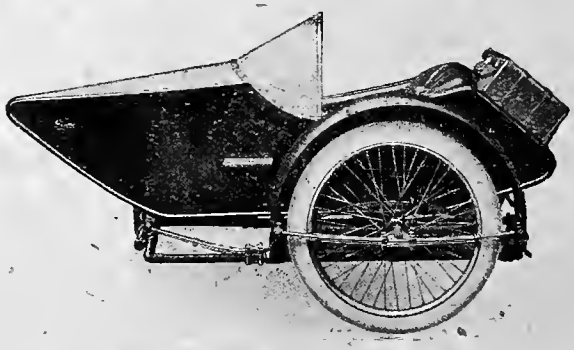


Illustration shows "Club" Model.

If you are in any way interested, write for Catalogue now.

GRINDLAY (Coventry) Ltd.,
Melbourne Works, Coventry.

A Christmas Dream—

matters are details, and besides, my dear fellow, you do not seem to realise that by merely undoing one wing nut every part becomes immediately accessible."

"Where is the wing nut?"

"That," said I, "is a secret which I shall reveal when the first batch of machines is nearing production." The envoy retired grumbling, and I resigned myself to dreams of a perfect mount, to be delivered in the early spring, free of charge, of course. Fame would come my way, and the "Ubique" motor cycle would be hailed as one of the world's greatest engineering feats. Money would pour in, but I would remain faithful to the motor cycle, and would scorn Rolls-Royces—what advantages had they over my wonderful invention, anyway? There was just one thorn amongst the rose leaves, but in my blissful state it troubled me but little—where *was* that wing nut?

* * * * * * * * *

"It's nearly twelve o'clock, dear, and you must get up early to-morrow and clean up that mess in the stable before we start."

"Where is tha—? Wha-a-t—? Oh!—"

* * * * * * * * *

I never found the correct place for that wing nut. Perhaps, after all, there was something in the insinuations of the envoy. It is just possible, indeed, that motor cycle design is best left in the hands of those whom it concerns, while the enthusiastic amateur contents himself with spoiling the manufacturers' creations.

UBIQUE.

THE F.I.C.M.

Some Notes on its Purpose and its International Competition Rules.

ALTHOUGH not very well known to the average motor cyclist, the F.I.C.M. is an organisation which does a good deal of important work. The initials stand for the French form of the International Federation of Motor Cycle Clubs—a body composed of representatives of all the principal motor cycle clubs in the various countries, whose delegates meet together about twice a year to discuss matters appertaining to motor cycles throughout the world. Though an international organisation, the F.I.C.M. is run very largely on British lines, and has taken the rules governing British motor cycle competitions as its model. Its great work has been to compel the running of all international competitions under the same rules (rules which were recently drawn up), to enquire into and pass international records, and generally to look after the interests of motor cycling internationally.

Before it was in proper working order, a British rider might take part in a competition on the Continent being absolutely ignorant of the regulations, and suffer injustices against which he would have no redress. Such a contingency is now impossible, and an English rider who has competed in the English Six Days and the T.T. can safely compete in any race or reliability trial of an international character in any one of the countries belonging to the Federation, and know for certain that his machine would have to conform to the same conditions as those drawn up for the English classic events referred to above.

Each country now recognises the others' competitors' licences, and if a British rider has his licence suspended for any malpractice he would not be able to compete in France or any other country belonging to the Federation. The same remarks apply to an Italian rider who had transgressed and attempted to enter, say, the T.T. race.

An Annual Register.

Full information is contained in the annual register of the F.I.C.M., which can be obtained from its secretary, Mr. T. W. Loughborough, 83, Pall Mall, London, S.W.1. This booklet gives the names of the various clubs forming the Federation, their secretaries, an introduction telling the reader what the F.I.C.M. is and what it does, a list of rules of the Federation and international competition rules, while it tabulates all world's motor cycle records, which, of course, are revised each year.

The last great meeting of the F.I.C.M. was at Milan, and was briefly referred to in last week's issue of *The Motor Cycle*. It lasted two days, and the same enthusiasm was shown by the delegates and the same good work carried out as has been done since the revival of the F.I.C.M. in 1912.

One interesting matter brought up at the conference was the question of Spain, where the governing of the sport is in a somewhat chaotic condition. Nominally the ruling body is the Royal Spanish Motor Cycling Club, which, like the A.C.U. of England, is closely associated with the Royal Spanish A.C., but it was clearly pointed out at the meeting that this body did not actually control the sport, but the real active club was the Catalonia Motor Cycle Club, of Barcelona, which is not recognised by the Spanish R.A.C., with the result that the Spanish delegates were told that they should endeavour to form a body truly representative of Spanish motor cyclists.

The International Trophy.

Another piece of good work was the drawing up of a proper set of regulations governing the International Trophy, presented by the British Cycle and Motor Cycle Manufacturers and Traders Union, Ltd., for the annual International Six Days Reliability Trial. These regulations merely deal with the conditions of the trophy, but it is left to the organising body of the actual competition to draw up its own rules in detail, which, of course, conform to the F.I.C.M. competition rules.

The American records quoted in last week's issue still await confirmation, pending certain information from America; and, dealing with the matter of records, it is interesting to be able to mention that Della Ferrera's flying kilometre in 25.9s., 138.99 k.p.h. (86.37 m.p.h.) in Class C (500 c.c.), ties with that of Judd (Norton) in speed, and this was allowed by the Federation to rank as an international record, the first held by Italy.

Timekeeping.

Another interesting decision was to establish an international panel of timekeepers, so as to place the timekeeping of all international events upon a satisfactory basis, and this will mean the upraising of timekeeping on the Continent to the same excellent standard which has been attained in this country, and Mr. A. V. Ebblewhite (England) and M. Georges Longuemare (France) were instructed to serve on a special sub-committee to go into the question in detail.

When claims for international records are made, metrical distances as well as miles and yards must be claimed.

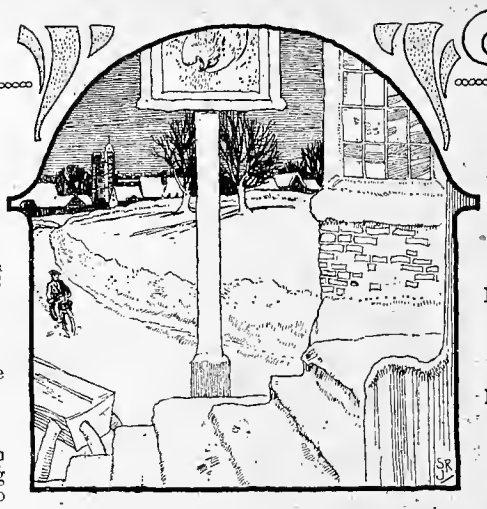
It was also agreed that a request be sent to the automobile clubs in each country represented on the Federation that, in the event of any dispute or difference arising in connection with the sport or pastime of motor cycling, the automobile clubs should recognise the F.I.C.M. as the international body authorised finally to adjudicate in any such matter.

Each club's subscription for the International Federation of Motor Cycle Clubs has now been fixed definitely at £6 sterling, while entry fees for international competitions will now be reckoned in pre-war rates of exchange; consequently, as an example, a British entry for the International Six Days Trial in Switzerland will be based on the rate of 25 fr. to the £ instead of 21 fr. to the £1.

In the course of the conference, the question of admitting ex-enemy countries into the Federation was discussed, and those present were reminded of the decision of the first F.I.C.M. meeting after the war, held in London, to the effect that those countries could only be admitted into the Federation when they were received into the League of Nations.

The meeting was attended for the first time by the Chairman of the A.C.U. (Col. F. S. Brereton), who was very much impressed by the work carried out by the F.I.C.M., and foretold a great future for it.

CURRENT CHAT



Times to Light Lamps.

Dec. 29th	...	...	4.56 p.m.
,, 31st	...	...	4.58 ,,
Jan. 2nd	...	...	5.0 ,,
,, 4th	...	...	5.2 ,,

Number plates to be illuminated thirty minutes earlier, *vide* Road Vehicles Registration and Licensing Order (1921).

Reminder.

Have you renewed your motor cycle licence yet?

In America.

Mr. W. H. Wells, the London manager for the Hendee Manufacturing Co., is in America on his annual visit to the Indian works.

From Overseas.

As usual, we are in receipt of a number of letters containing greetings from overseas readers who well timed the departure of their missives to reach the office at Christmas time.

In 1922.

To all riders: May your m.p.g. improve, may your m.p.h. be lawful or unobserved, may your competitive efforts be successful, and may punctures and other troubles be *nil*.

An Opportune Time.

This time of the year provides favourable opportunity thoroughly to overhaul the machine. Those who can ill spare their mount for this purpose should "go over" their cycle bearings, cleaning and well packing them with grease.

The London-Exeter Trial.

This year's London-Exeter Trial produced a record entry, no fewer than two hundred owners of motor cycles and three-wheelers entering for the popular Boxing Night event. Last year there were 173 entries in the two and three-wheel classes. In next week's issue of *The Motor Cycle* we shall give a number of impressions written by competitors.

An Edinburgh Race Track?

Quite a stir has been caused among Edinburgh enthusiasts by a proposal which was made at a meeting of the local association, the Edinburgh and District Motor Club. In the course of a discussion regarding the erection of an exhibition hall suitable for the Scottish Motor Show, the hope was expressed that, besides a "Show" hall, they might have a sports ground, where they would be able to have a track for motor cycle racing. The project has been received in motor cycling circles with great enthusiasm. The successful way in which the Edinburgh Motor Club organises its various trials signifies that it is wholly capable of undertaking the responsibility of a racing track, and there is no fear of want of support. It has long been a decided blank in the Scottish motor cyclist's existence; and, now the proposal has been made, it will in all probability be carried forward to successful completion.

The T.T. Dates.

We have tested the opinions of manufacturers and riders regarding the T.T. dates, and without exception all are in agreement with us; the dates are most unsuitable. Some of these opinions appear on pages 891-2.

Old Engines Never Die!

Inspired by the recent paragraph describing how a reader used a motor cycle engine to drive a circular saw, a correspondent, who runs a small cabinet-making business, informs us that an old 3½ h.p. Humber engine drives for him:

A circular saw,
A moulding machine,
A boring machine,
A planing machine (with an eight-inch cutter), and
A grindstone.

But not all at once, we should imagine!

Mr. Einar Host, secretary of the Danish Motor Cycle Club, which recently held a conference of all Scandinavian clubs at Nastved. Mr. Host, who is considered to be one of the best riders in Denmark, rides an Invicta, which carries the records of its success on its front mudguard

Special Features.

THE CHEAPEST FORM OF TOURING
A FOUR VALVE "SINGLE" UNDER TEST.
CARRYING THE SPARE WHEEL.

Longer Days Ahead.

Christmas over, longer days lie ahead, and motor cyclists begin to think of their next new mount.

Petty Offences.

Several readers report police activity with regard to such items as illumination of number-plates and the necessity for two independent brakes.

A New A.J.S. Competitions Manager.

H. R. Davies having joined the Hutchinson Tyre Co., F. W. Giles (well known as a successful competition rider) is now the A.J.S. competitions manager.

To Visit the Antipodes.

Mr. George Stevens, of the A.J.S. firm, sails for the Antipodes on Friday of next week. The object of his trip, which will include a visit to South Africa, is to study overseas conditions. Mr. Stevens has not enjoyed the best of health for some time past, and it is hoped that the long sea voyages will prove beneficial in this respect.

Programme of "The Motor Cycle" Film.

To-night the film will be shown after the dinner of the Truro and District M.C. and L.C.C., which takes place at the Women's Institute at 7.30 p.m.; to-morrow it will be included in the programme of the Polytechnic Hall, Falmouth, on behalf of the local motor cycle club. For New Year's Day the Barrow and District M.C. has staged a special exhibition for members and friends in the Walney Theatre, Barrow. On Wednesday it goes down to Neath, and on Thursday to Cardiff, where the local clubs are arranging for its exhibition.

Saving the Crops—by Sidecar.

Five hundred and ten acres of potatoes, owned by a Washington state rancher, says the *Scientific American*, were in danger of destruction by the potato bug. The little pests were working so fast that it did not seem as though any means of extermination could possibly keep up with them, let alone catch up with them. But the rancher was a resourceful soul, and he attached an insecticide-spraying outfit to the sidecar chassis of his motor cycle, utilising the power of the machine for traction and for spraying. With this outfit he found it possible to spray one hundred and ninety acres per day with Paris green, whereas a horse-drawn sprayer would by no expedient have been able to get above thirty-five acres. With the exceedingly hot, dry weather that was so general during the past summer, a day's delay might well have spelled ruin for the crop, but the motor cycle saved the situation.

THE T.T. DATES.

Opinions of Riders and Manufacturers agree with that of "The Motor Cycle" as to the Unsuitability of the Week preceding the Whitsuntide Holidays.

IN last week's issue of *The Motor Cycle*, we drew attention to the unsuitability of the T.T. dates, which are in the week preceding the Whitsuntide holidays, and therefore an inconvenient time for manufacturers, who are always busiest just before any spring holiday than at any other period of the year.

Three Alternatives.

We pointed out that an alternative date might be found by considering the following three suggestions:

(1.) To fix the date of the motor cycle races a little earlier.

(2.) To postpone the races a fortnight by arrangement with the parent body—the R.A.C.—whose car races are at present arranged to take place on June 20th and 22nd.

(3.) To hold the races in September after the Manx Highway Board has had time to repair the roads following the car races.

Quite a large number of riders and manufacturers have written us on this matter, and almost without exception agreement with our views is expressed.

Below we give a selection of these opinions from those whom the matter directly concerns:

MR. W. J. HASSALL, director of Norton Motors, Ltd., points out that their staff which would be in the Isle of Man is quite distinct from those engaged on production, but he adds:

"We should certainly like to have seen the date fixed later. . . . It is very unfortunate that the London-Edinburgh Trial will clash with the finish of the Senior race, and if it was absolutely impossible to get a later date for the I.O.M. races, we would suggest that the London-Edinburgh run be held a week or so later. . . . We trust something will be done in the matter."

MR. WILLIAM PARKES, of the Sun Cycle and Fittings Co., Ltd., suggests that the British Cycle and Motor Cycle Manufacturers Union will have to consider the matter. He says:

"I take it that the motor cycle section of the Union will consider this date, and it will depend upon them as to whether the Junior T.T. race is held on the date fixed. It seems to me that the A.C.U. do some very funny things, and take up the attitude that the manufacturer has no consideration in these matters. The A.C.U. should have seen the Manufacturers' Union first, to ascertain whether this would fit in with the demands of the industry. I shall bring this up at the first opportunity, as it is a most important matter."

Sacrifice of Home Trade.

MR. A. H. HADEN, manufacturer of New Comet motor cycles, writes:

"I am pleased to hear you have taken up the matter of the T.T. dates for 1922, as it means, both to manufacturers and agents, a cutting of their interest in the races or the sacrifice of the two best weeks of the home trade."

VIVIAN OLSSON, the well-known amateur T.T. and competition rider, deplores, but is resigned to, the dates selected:

"Seeing that the A.C.U. were foolish enough to allow the R.A.C. to annex the best date, I cannot see there is anything else to be done but hold the T.T. at the end of May. T.T. riders who wish to take part in the great M.C.C. run to Edinburgh will just have time to do so."

Another well-known rider, CAPT. J. A. WATSON-BOURNE, agrees with our views that the dates might be more suitable owing to the proximity of the holiday. He writes:

"It is a mistake to allow the races and the Edinburgh run to clash, from the point of view of public interest and entry lists of the latter. Personally, I should be very sorry to miss the run, as, when held *before* the races, it is excellent training for sitting in the saddle for long periods if one has not been doing any lengthy rides during the spring."

VELOCE, LTD., write:

"We agree with you that the dates, May 30th and June 1st, are not convenient, as they precede the holiday, and this is the busiest time of the year. We would prefer it later, so that there would be less likelihood of the roads being in bad condition for practice, etc.—say in July."

The manufacturers of the Levis motor cycle also agree with our view in a letter from which the following is an extract:

"We are quite in agreement with you regarding the T.T. dates, as they are very unsuitable. It will be a most awkward time for manufacturers to arrange to have a large percentage of their staff away in the Island, and we think for this reason alone an effort should be made to get the date altered. You are also quite right in your suggestion regarding the London-Edinburgh run, and there is no doubt whatever that the T.T. races will entirely overshadow this otherwise important event if the suggested dates are adhered to."

Middle of June Suggested.

The following is the opinion of MR. NORMAN DOWNS, of New Imperial Cycles, Ltd., the winners of *The Motor Cycle* Cup in last year's races:

"I think that the trade is indebted to you in pointing out the date when the T.T. race comes. . . . The proposed date of the race being in the week preceding Whitsuntide week is a very serious handicap, and I think that every endeavour should be made to have this date altered. The most suitable dates, it appears to me, would be June 13th for the Junior and June 15th for the Senior."

MR. GEORGE GRINTON, a well-known Scottish rider, considers the T.T. dates in conjunction with those of the Scottish Six Days Trial:

"From a Scottish rider's point of view, the dates arranged for the 1922 T.T. races are rather unfavourable, as we have the Scottish Six Days Trial in the first week in May, and the next three weeks would need to be spent in the Isle of Man practising, etc. This would mean nearly five weeks away from business at a very busy time."

MESSRS. S. A. NEWMAN, LTD., of Ivy fame, write:

"We consider that it is very unfortunate from a manufacturer's point of view, as we ourselves can ill spare our mechanics and staff away from the works just prior to the Whitsuntide holidays, and we would very much prefer the date of the Junior race, in which we are interested, to be held the first week in May, if at all possible. This date, we think, would cause manufacturers the least possible dislocation of labour and the smallest loss of output."

MESSRS. W. J. GREEN, LTD., makers of Omega motor cycles, write:

"We quite agree with your remarks that the alteration would cause unnecessary trouble to manufacturers, because, as you state, the date proposed comes in the busiest period of the year, and in even a slacker time there is much dislocation in the factories, and standard output is retarded.

T.T. Dates.—

In our opinion, the date of the T.T. should be placed as far into the latter part of the season as practicable. We think you merit the thanks of the trade for bringing this matter up."

OSWALD WADE, an A.J.S. rider and an agent in Liverpool, says:

"I think it is a bad time to hold this race, as it will interfere with the holiday trade for the manufacturers and agents. I quite agree with your opinion.

"The A.C.U. ought to consider the trade, and hold the race about the same time as they did this year."

THE SCOTT MOTOR CYCLE CO. thinks the date "unfortunate."

"We think," they write, "it unfortunate that the date comes so near Whitsuntide and clashes with the London-Edinburgh. We feel sure, however, that the A.C.U. will have weighed all these matters up and found it impossible to fix another date."

THE 1922 BEDELIA.

THE Bedelia owes much of its fame to the fact that it was the machine which inaugurated the cycle car proposition of a decade ago. As our readers will remember, the very simplicity of the type tempted many pseudo-designers and amateur constructors to enter the automobile industry, with results disastrous to themselves and the term cycle car generally. It served one good purpose, however, and that was to show car manufacturers the enormous field which existed for a light four-wheeler on sound mechanical lines, and the present-day small car and its larger sister the light car proper are the outcome.

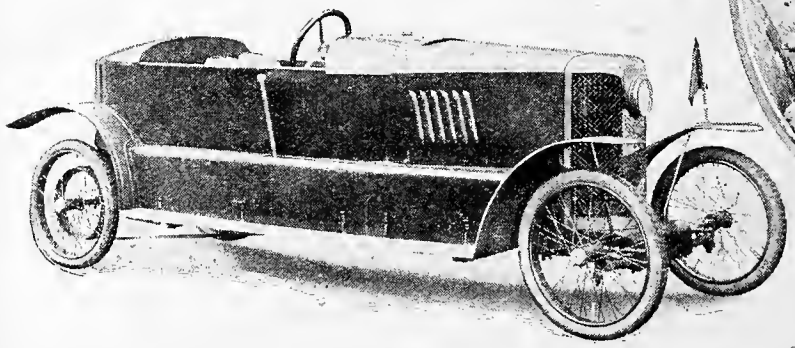
Very few of the pioneer manufacturers of belt-driven cycle cars have retained their original principles. The maker of the Bedelia is one of the exceptions, and his 1922 model, which we examined at the Paris Salon, is to be offered to the British public by Messrs. Palmer's Garage, Ltd., of Tooting, S.W.

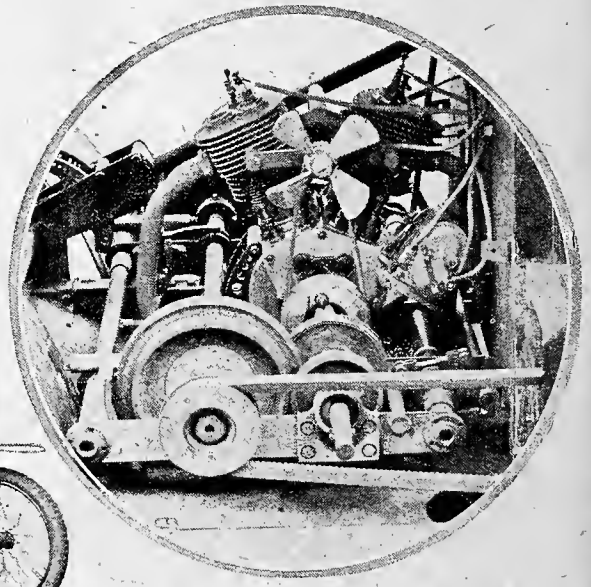
Situated in the forepart of the vehicle the engine is a "Train" with a bore and stroke of 85×99 mm. respectively. The engine-shaft is extended and arranged so as to drive two different size discs on a shaft coupled to the main shaft by means of a universal joint. These discs can be brought into contact at will with a set of discs of different diameters carried on the end of the countershaft. In other words, line contact friction drive is used which, theoretically, is more efficient than the principle adopted when friction transmission is applied to automobiles.

For declutching, the countershaft is pressed away from the flanges on the engine shaft by means of a pedal, and the change of gear is obtained in the ordinary manner by a change-speed lever. An idler wheel is employed which produces the reverse. There are belt pulleys mounted on both ends of the countershaft, and from these to the rear wheel the drive is by two 17ft. belts.

The system of steering is particularly ingenious. There is a peg pinion at the bottom of the steering column which meshes with holes in two quadrants, each quadrant being mounted on a separate cross-shaft, at the end of which are the coupling rods to the steering arms. When the wheel is turned one quadrant is pushed forward and the other is pulled back, the steering being irreversible.

The braking is also interesting. Full movement of the clutch pedal presses the larger of the disc wheels against a stationary leather shod brake shoe, while the braking of the rear wheels is obtained by pushing forward the brake lever, which has the effect of advancing the axle and pressing the belt rims against stationary shoes. Movement of this lever in the reverse direction tends to tighten the belts. Staggered seats are provided. The vehicle under review was driven under its own power from Paris to the coast, and we are told surmounted Gaillon Hill comfortably on second gear.





(Left) The new Bedelia cycle car which has been much improved in outward appearance. (Above) Power unit showing the V twin air-cooled engine and the friction disc gear.

LONDON-GLOUCESTER TWELVE HOURS RUN.

QUITE a good entry has been received for next Saturday's open trial of the N.W. London M.C.C., which consists of a fairly straightforward twelve hour run to Gloucester and back. This will be the seventh anniversary of the event.

The start and finish will take place at the Hendon Aerodrome, instead of Hampstead Heath as in former years—this in deference to the restlessness of the police. The route is over main roads as far as Tring, where is the first time check. The next twenty-five miles form the kernel of the whole trial. It is a non-stop section, and leads over some moderately difficult hills in the Chilterns, finishing near Aston Rowant. There will, of course, be no difficulty in maintaining a twenty-mile schedule in dry weather, but if there should be anything like real winter conditions some care will be needed to keep to time. Thence onward to Gloucester there will be no trouble.

On the return journey practically the same route is followed, but the non-stop section is only about thirteen miles, and will, of course, be ridden in the dark. Competitors are diverted as compared with the morning route through Missenden, Amersham, Rickmansworth, to Watford.

The approximate time as passing different points will be as follows:

Start Out.		Restart Home.	
A.M.		P.M.	
8.0	Hendon Aerodrome	2.54	Gloucester
8.27	Watford	5.31	Oxford
9.0	Berkhamsted	6.46	Princes Risborough
9.18	Tring	7.22	Amersham
9.57	Princes Risborough	7.46	Rickmansworth
11.14	Oxford	7.58	Watford
P.M.		8.25	Hendon Aerodrome
12.5	Faringdon		
1.2	Cirencester		
1.54	Gloucester		

AFTER you Buy...?

"..... Apart altogether from their merits as designers and manufacturers, it ought to be more widely known that *Bakers' are nice people to Deal With.*"

Extract from a Letter from Mr. A. Ramsay, of Fort William, Nov. 24, 1921

There are few manufacturers who give you as prompt and generous service after you have bought, who show the same personal interest in you as the makers of the Beardmore-Precision.

We have built our business upon a basis of Service-after-Sale. Frankly, and sentiment apart, service is a sound business proposition —as you have so often urged in writing to "The Motor Cycle."

The same applies to our agents. No agent is appointed to sell the Beardmore-Precision unless he is fully prepared to look after customers as keenly as he follows up enquirers.

It is not enough for you to be convinced of the wonderful value and service given you by the machine itself. We want you to know that you are safe in dealing with the makers, too. You are well looked after indeed when you join the band of Beardmore-Precision riders.

Beard more PRECISION

F. E. BAKER, Ltd.

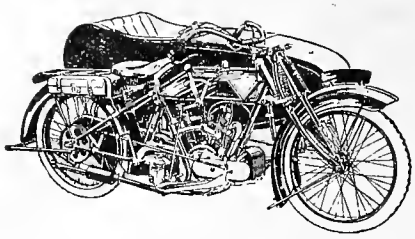
(Associated with William Beardmore & Co., Ltd.)

Precision Works, KING'S NORTON.

'Phone: King's Norton, 184-5.
'Grams: "Bachuck, Kingsnorton."

London Depot: 112, Great Portland St., London, W.1.

Scotland: James Robertson, 48, West Nile Street, Glasgow.



6 h.p. twin, 60 x 88 = 497 c.c. overhead exhaust valve, 3-speeds, hand controlled clutch, kick-starter, all-chain drive, enclosed chains, footboards, two brakes, two stands, two toolbags with tools, with Martinsyde roomy coachbuilt sidecar.

A combination suitable for business or pleasure, with reliability an essential feature.

Makers' full guarantee

1921 Models

Standard Combination

TRADE SUPPLIED. £125 EXCHANGES OR DEFERRED PAYMENTS.

MARTINSYDE

REGISTERED TRADE MARK.

Second-hands—Solo.

J.E.S. 2h.p. 1920 2-stroke, pedal starter, belt drive, Druid spring forks, J.E.S. carburetter, Dunlop tyres and belt, touring bars, tax paid; £35.

NEW IMPERIAL, 2¾h.p. J.A.P., 1919, Albion 2-speed, chain-cum-belt, B. and B. carburetter, Dunlop tyres and belt, Saxon spring forks, touring bars; £38.

VERUS 2½h.p. 1920 2-stroke, single-speed, belt drive, Amac carburetter, Hutchinson tyres, touring bars, Lucas lamp and horn; £34.

VELOCETTE, 2¾h.p., 1919, lady's model, 2-speed, chain drive, Druid forks, Amac carburetter, Clincher tyres, tax paid; £40.

A.B.C. Skootamota, 2h.p., Wood-Milne tyres, C.A.V. mag., splendid condition, tax paid; £17.

DOUGLAS, 2¾h.p., W.D. model, 2-speed, Amac carburetter, Douglas spring forks, Dunlop tyres; £50.

DOUGLAS, 2¾h.p., 1920, 3-speed, kick starter, clutch, Binks carburetter, speedometer, P. and H. lamp, horn, tax paid; £65.

HARLEY-DAVIDSON, 7-9h.p., W.D. model, Bosch mag., schebler carburetter, touring bars, P. and H. lamp, Lucas horn, tax paid; £90.

A.B.C., 3h.p., 1920, 4-speed, all-chain drive, Claudel-Hobson carburetter, Lucas dynamo lighting, tax paid; £95.

COULSON-B., 2¾h.p. Blackburne engine, 1920, 2-speed, clutch, Degory carburetter, semi-T.T. bars, electric lamps, tax paid; £45.

MAUDES
100, GREAT P
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PHONES - MUSEUM 557
100, PARIS
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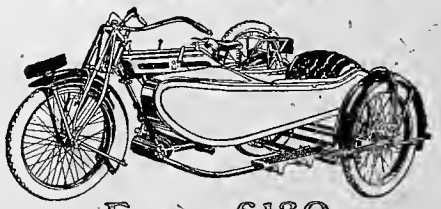
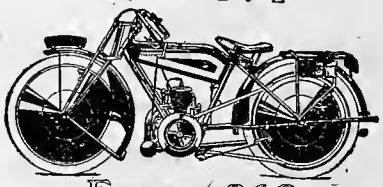
WOLVERHAM
TELEPHONE. WALSALL 4
CASH. EXCHANGES.

1922 MATCHLESS



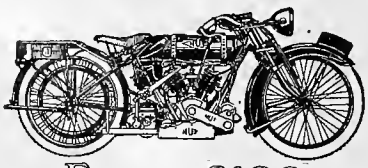
From £130

1922 IVY



From £62

1922 N.U.T.



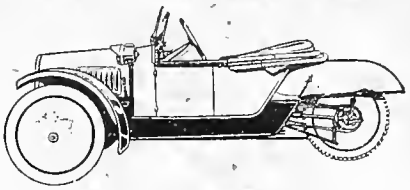
From £100

A·J·S

SAFET

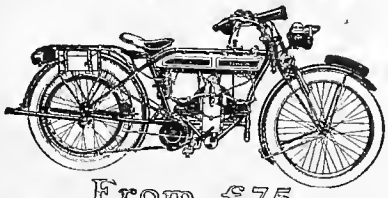
B·S·A

1922 MORGAN



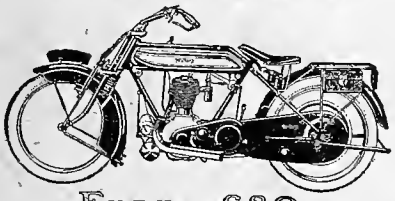
From £150

1922 DOUGLAS



From £75

1922 NORTON



From £80

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MS "ABDICATE WE SDO"
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3 h.p. twin, 69 x 54 = 398 c.c., overhead valves, four speeds, quadrant change, all chain drive, hand controlled clutch, kick-starter, spring frame and forks, automatic lubrication, Claudel single lever carburetter, two stands, carrier, leg shields, full equipment, tools, pumps, etc.

A machine suitable for lady or gentleman, giving comfort, cleanliness, and perfect reliability.

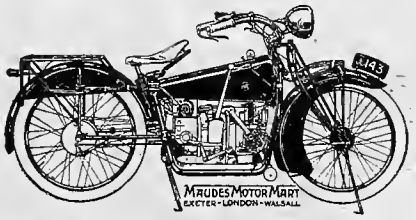
Makers' full guarantee

Latest Standard Model £98

Dynamo Model £118

TRADE SUPPLIED

EXCHANGES or DEFERRED PAYMENTS.



Second-hands—Combinations.

ZENITH, 6h.p. J.A.P. twin, 1920, Gradua gear, Amac carburetter, Watsonian sidecar, wind screen, all lamps; £85.

DOUGLAS 4h.p., W.D., 3-speed, kick start, clutch, Amac carburetter, Dunlop tyres, new coachbuilt sidecar; £85.

SUNBEAM 3½h.p., 1920, 3-speed, clutch, kick start, chain drive, Dinkie sidecar, speedometer, Lucas lamps, tax paid; £120.

SUNBEAM 3½h.p., W.D., 3-speed, kick start, chain drive, Millford sidecar, all lamps, tax paid; £105.

HARLEY-DAVIDSON 7-9h.p., 1920, 3-speed, kick start, clutch, special sidecar, the most completely equipped machine on the road, originally cost about £300, tax paid; £155

COULSON B, 4h.p. Blackburne, 1921, 3-speed, clutch, kick start, chain-cum-belt drive, Coulson sports sidecar; £100.

RUDGE 7h.p. Twin, 1920, Multi gear, clutch, pedal start, Senspray carburetter, brand new, Rudge sidecar, tax paid; £85.

P. and M. 3½h.p., 1918, 2-speed, kick start, Whitley sidecar, all lamps, tax paid; £60.

ARIEL 6h.p., 1914, 3-speed, clutch, kick start, Dunlop tyres, Ariel sidecar, Easting screen, all lamps, tax paid; £65.

RUDGE 5-6h.p., 1919, Multi gear, clutch, pedal start, Senspray carburetter, Palmer tyres, Rudge sidecar, all lamps, tax paid; £80.

MATCHLESS 8h.p. M.A.G., 1921, 3-speed, all lamps, kick start, Lucas dynamo lighting set, 2-seater sidecar, hood, screen, spare wheel, tax paid, speedometer; £170.

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"Best Possible — that's all!"

No. 1 is sold in the New Khaki Can.

No. 3 for Commercial Vehicles in the Blue Can.

Look for this Sign:

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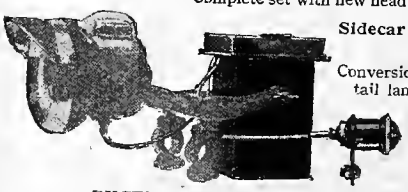
Equip your Motor Cycle with Electric Light

Bother no longer with odorous and troublesome acetylene—just switch on and flood your path with brilliant Electric Light. You can equip your Cycle with new lamps or convert your existing Lamps to Electric with

WATES ELECTRIC CONVERSION SETS



Solo Lighting Sets. Conversion set with new tail lamp ..... **£2 : 5 : 0**
Complete set with new head and tail lamp... **£4 : 0 : 0**

Sidecar Combination Lighting Sets.

Conversion set with new side and tail lamp ..... **£3 : 15 : 0**

Complete set with 5 inch head lamp... **£5 : 10 : 0**

Complete set with 7 inch head lamp... **£6 : 5 : 0**

EXCEPTIONAL ACCUMULATOR OFFER ! !
Hart or Peto and Radford Manufacture.
(In metal case with strap handle.)
4 Volts
12 amps. actual. 24 amps. ignition.

Quantity	Price each	Total price
1	14/-	14/-
2	13/-	26/-
3	12/8	38/-
4	12/3	49/-
6	12/-	72/-

Size $5\frac{3}{4} \times 3\frac{1}{4} \times 3\frac{3}{4}$
All above prices include free delivery.

Why not write today for illustrated list giving prices of complete sets for Solo and Combination work, conversion sets for existing lamps, accumulators, and our motor cycle electrical fittings.

WATES BROS.,
Retail Offices - - 5, High Street, Bloomsbury, W.C.
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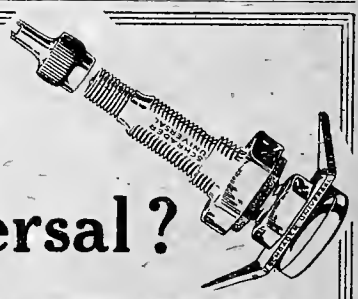
Why Universal?



Schrader Universal BRITISH MADE TYRE VALVE

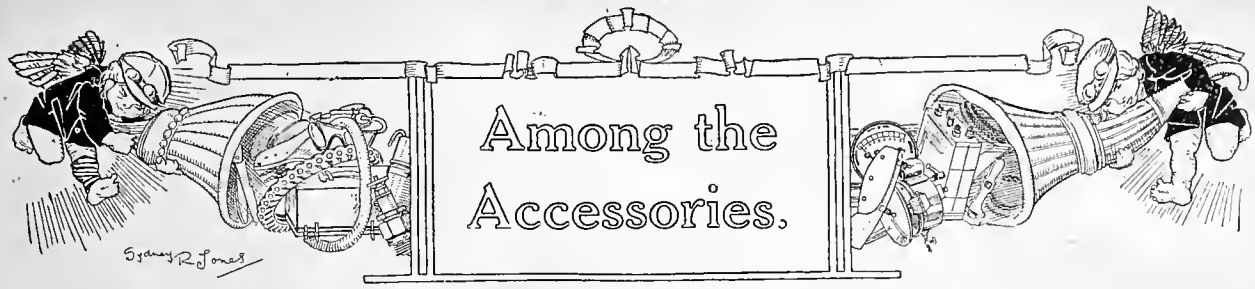
is universally used because it can be easily inflated or deflated, can be easily tested with a Tyre Pressure Gauge, is proof against neglect to tighten up caps and nuts after or during inflation, has no joints to leak, and is secure against ignorance, rough usage, or neglect.

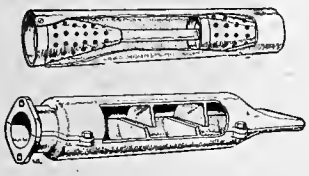
There are 30 million of them in use.

"Insides"—standard for all types and sizes of valves—can be had of all good dealers, in neat dust-proof boxes containing five.

A. SCHRADER'S SON, INC.,
British Factory: Victoria Road, London, N.W. 10
Manufacturers of the "Schrader Universal" Tyre Pressure Gauge.

Be sure it's a "SCHRADER"—Look out for the name.





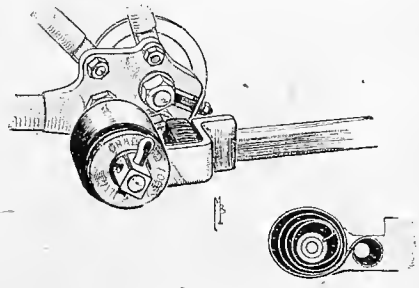
Silencers for Attachment to Open Exhaust Pipes.

Auxiliary silencers that may be fitted to existing exhaust pipes are becoming very popular. We illustrate two patented designs which have given satisfaction.

(Top) Internal drilled cones act as baffles in the silencer made by the manufacturers of the Ready motor cycle. (D. Read and Co., Orchard Street, Weston-super-Mare.)

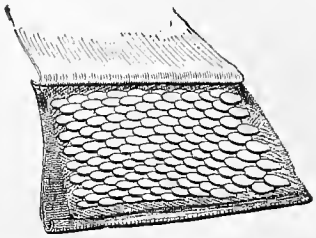
(Bottom) A type that comes apart longitudinally for cleaning purposes. (W. J. Ritchie and Co., Freedom Works, Sheffield.)

Both are marketed in various sizes for different engines



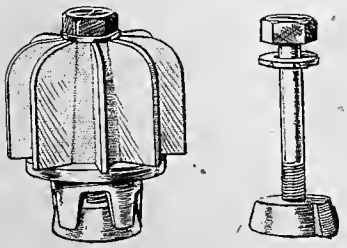
Neat Spring-up Stand.

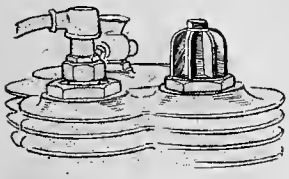
Embodying an enclosed "clock spring," this fly-up rear stand is marketed by Crado, Ltd., 26, Cross Street, Hatton Garden, London, E.C.1. The tension of the spring is adjustable by means of the cap-nut and split-pin



Armouring the Tube.

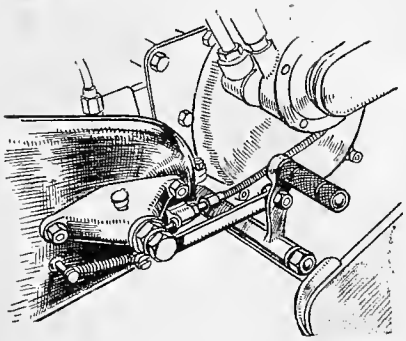
Overlapping metal scales mounted on webbing interposed between two canvas strips form a puncture guard in the tube protector sold by A. Stuart Morris and Co., 101, Leadenhall Street, London, E.C.3. A portion of the shield is shown with the top cover rolled back.





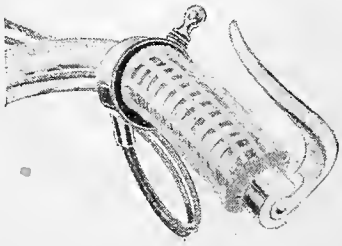
Dissipating Excessive Heat.

Aluminium valve caps, always popular and effective, are, nevertheless, liable to blow out. To overcome this, Eli Clarke, the well-known competition rider, of Cheltenham Road, Bristol, is marketing the auxiliary device shown above, which holds itself into the recess of a standard valve cap. It fits many types of engines, and has almost the cooling properties of the all-aluminium cap. (4s. 6d.)



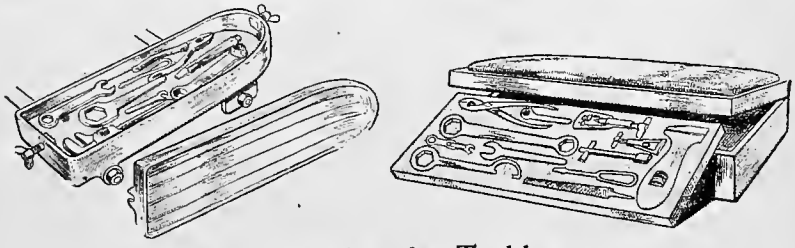
Dual Clutch Control.

Owners of touring model Sunbeams will be interested in this foot control marketed by the Endrick Engineering Co., 26, Water Lane, Watford, specially for these machines, although several other makes may also be fitted.



Conversion to Twist Grip Control.

Already described in these pages, the Pidco twist grip control has now reached the production stage. The grip itself actuates the throttle and the knob controls the extra air. Norrish and Pidcock, Lonsdale Chambers, 27, Chancery Lane, London, W.C.2, are the makers



Superseding the Tool-bag.

Two neat ideas of carrying tools and small spares. (Left) A box type of footboard made in two sizes by A. J. Woolley, Blankney, Flanshaw Lane, Wakefield. (Right) A three tray box in which the articles are held in specially shaped recesses in rubber. This case (the invention of E. C. Hill, Mengkibor Rubber Estate, Kluang, Johore, Malay States) may, with a padded top, be used as a pillion seat.

ROAD TESTS of NEW MODELS

THE 3½ h.p. FOUR-VALVE TRIUMPH.

ENGINE: 3½ h.p. (80·94 × 97 mm. = 499 c.c.) with four overhead valves.
CARBURETTER: Triumph, two-lever, semi-automatic.
GEAR BOX: Triumph three-speed, multi-plate clutch and kick-starter.
TRANSMISSION: Oil-bath primary chain; protected rear chain.
TYRES: 26in. × 3in. Dunlop.
BRAKES: Dummy belt rim rear, horse-shoe rim front.
FORKS: Druid.
WEIGHT: Approximately 240 lb.
PRICE: £120.

IN many respects the new four-valve sporting Triumph is unique.

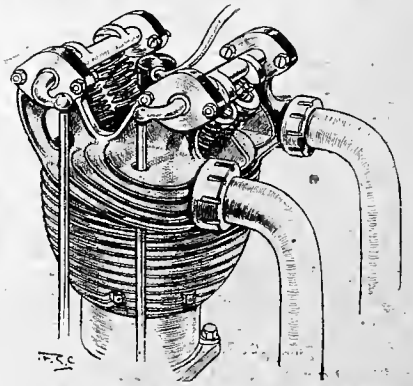
Before taking it over for a road trial, we confess that we expected to find, excepting the super-efficient engine, almost a replica of the chain-driven "four" fitted with T.T. handle-bars. The writer has had considerable eminently satisfactory experience with the latter model, and, since many of the details—gear box, transmission, control, etc.—are common to both types, the supposition was an excusable one, and the revelation was consequently all the greater. The o.h.v. 3½ h.p. machine is as different as an anti-aircraft gun is from a trench mortar.

In "feel" and in performance alike it is all that the often loosely-applied phrase "sports model" should signify; and, as those who have followed the descriptions in past issues (June 2nd and October 27th) will realise, it is as sturdily built, adequately tyred, and accessible as the hardest riding and least mechanical motor cyclist could desire.

Riding Position.

On first sitting astride the machine, the excellence of the riding position is at once apparent. The footrests are low down and well back, and just the right amount of the rider's weight is thrown on the slightly dropped handle-bars. Knee grips are now possible, for, since our first description of this model, the gear quadrant has been moved to the fore end of the tank as on the I.O.M. Triumphs. The rear brake pedal, however, might with advantage be extended more towards the foot, although old Triumph riders will have no difficulty in finding it at any time.

The standard decompressor is fitted, but the priming tap has been dispensed with; raw petrol may be sucked into the cylinder by opening the throttle fully, shutting the air right off, and kick-starting once or twice. By this means an easy start is ensured on the coldest morning. Incidentally, the slipper type of aluminium piston fitted does not gum up so readily as a cast iron one. Ignition should be fully advanced when starting on the decompressor, but should be retarded before the lever is dropped. Which brings us to another point worthy of note.



Twin inlet and exhaust valves in this case do not necessitate complicated rocker gear; four dust-proof ball bearings are used.

Full use should be made at all times of the ignition control. The engine, as any high-efficiency power unit should be, is very sensitive to variations of the firing point, and slight grades or slow speeds call for a corresponding amount of retard in the ignition setting. This need for sensible driving is accentuated by the high top gear ratio—4.23 to 1, with 3in. tyres.

Carburation and Gear Control.

Since the Triumph carburetter is to all intents and purposes semi-automatic, the air lever may be left open practically all the time, but

Road Tests of New Models.—

here, again, the o.h.v. engine is slightly more sensitive than the side-valve pattern.

All plate clutches which run in oil are inclined to drag slightly until the lubricant warms up, and it has already been remarked in these columns that, in consequence, gear changing on first acquaintanceship with this particular gear box is just a little awkward. This, however, need worry no one, for very shortly one learns to operate the gears up and down with the utmost facility and absence of noise. At the same time, if the weather be at all cold, the beginner is recommended to place his toe on the brake pedal before engaging first gear.

Once under way, second gear may be engaged early, but, to enjoy the thrill of real acceleration, top should not be brought into action too soon. On the 7.02 to 1 middle ratio, one is advised to grip tightly before opening out! A momentary closure of the throttle just previous to pushing the gear lever right down, of course, ensures a much smoother change.

Comfort and steering, attended to by 26 × 3in. tyres and Druid forks, are all that could be desired from a rigid frame machine; nor do the large tyres appear to affect maximum speed to any serious degree. No speedometer was fitted to our machine, but on the one occasion that road conditions permitted full throttle—for about twenty seconds—we have no doubt whatever that we appreciably exceeded the elusive "sixty." There was no tendency to wobble.

Speed Capabilities.

However, a fairer criterion of the machine's all-out capabilities is afforded by the well-authenticated fact that one of the production models to standard specification has lapped at Brooklands at 68 m.p.h., which, in effect, means that it has exceeded 70 m.p.h.

It should also be remembered that the racing four-valve Triumph holds the 500 c.c. hour record at 76.74 m.p.h.; it is fairly obvious that a racing setting to the carburetter or a racing carburetter and the application of a little tuning, and the production model might be even further livened up—although this would certainly not be advisable in the case of nine riders out of ten.

More remarkable is the petrol consumption of the machine in its present form. Averaging from 20-25 m.p.h.—a very pleasant, slow "ponk-ponk"—the consumption is nearly 120 m.p.g., which is a notable instance of theoretical high efficiency design proving itself in practice. Four valves in a hemispherical cylinder head, ultra light reciprocating parts, and thoroughly adequate cooling, are, it will be recollected, salient features of the Ricardo design.

It is likely that twin tail pipes will be fitted to the silencer on all future models; with these the exhaust note may only be called noisy at high speeds. The valve gear, too, is surprisingly silent.

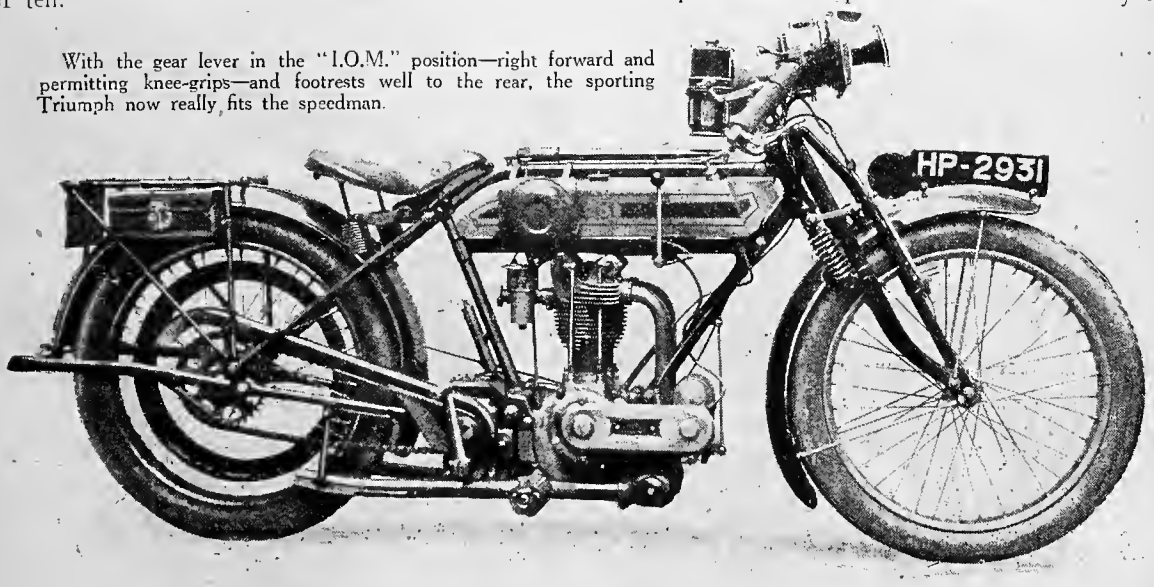
Hill-climbing and Braking.

There is little need to enlarge on the other qualities of the machine. Acceleration and hill-climbing on top gear are better than we expected, which is saying a good deal; and the brake is known to every Triumph rider. The horseshoe type front rim brake is retained for emergency use, and, as the writer has vivid memories of a lone descent of Alt-y-Bady at its greasiest with the aid of this fitment, he is not going to quibble with its retention. It is among the best of its type.

Nothing in this world is above criticism; we leave our readers to judge the seriousness of such imperfections as occurred to us. (1.) There is considerable piston slap, especially when cold; but few aluminium pistons are quite free from this. (2.) There is none too much ground clearance, especially under the footrest bar when cornering; in the case of a violent upset, say, in a freak trial, there seems a possibility of the left footrest puncturing the oil bath chain case. (3.) Since the float chamber is on the right of the jet, the machine cannot be propped against the left kerb without turning off the petrol. (4.) It was suggested in our correspondence columns recently that the plug was very inaccessible. Now, although two special spanners—box and cranked—are supplied, it is still none too easy to remove the plug when hot without burning one's fingers.

Little more need be said. Triumph finish and Triumph workmanship are in evidence in every detail.

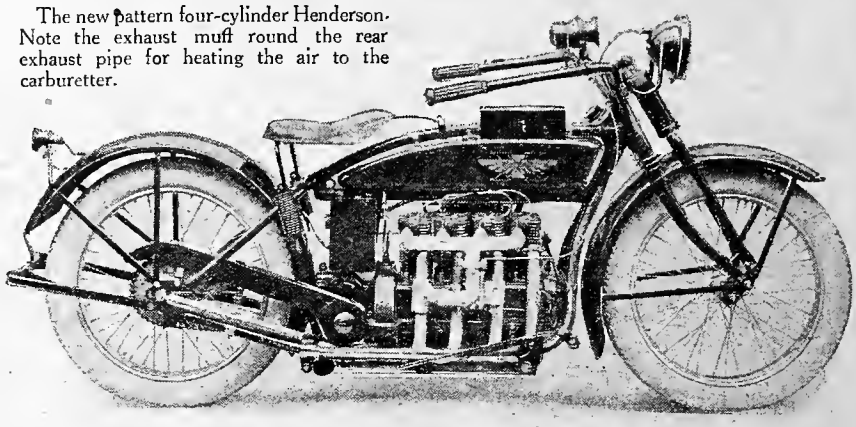
With the gear lever in the "I.O.M." position—right forward and permitting knee-grips—and footrests well to the rear, the sporting Triumph now really fits the speedman.



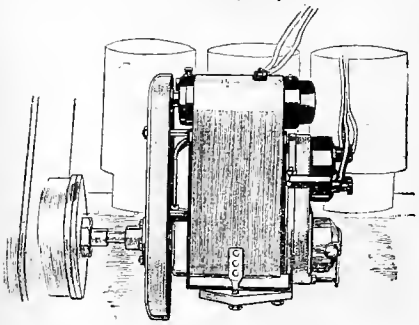
AMERICAN FOUR-CYLINDER DESIGN.

Improvements to Power Unit and Detail Finish of the 1922 Henderson.

A FOUR-CYLINDER motor cycle always arouses interest, but, apart from this, the latest model Henderson, a make of machine which has been known in this country for some years, is a thoroughly attractive mount. The new model has the 1,301 c.c. engine placed lower in the frame and more rigidly held, and the four straight-down exhaust pipes are led into an expansion chamber. The carburetter is a Zenith, provided with a hot-air muff, and the valves are now of the side-by-side pattern. The radiating surfaces on the cylinders have been greatly increased, and a clear air passage is left past the ports and along the longitudinally arranged fins on the cylinder heads. While there are numerous fins around the exhaust port, these are totally absent round the inlet, a practice which



The new pattern four-cylinder Henderson. Note the exhaust muff round the rear exhaust pipe for heating the air to the carburetter.



Method of driving the magneto and dynamo, the latter being situated above the former.

was carried out on more than one engine at the recent Olympia Show.

The method of mounting the lighting dynamo immediately above the magneto, both units being held by the same clamping arrangement, is particularly neat. A universal joint is interposed between the timing gear and the magneto spindle, and on this latter is the Splitdorf dynamo drive pulley, which is adequately protected by a guard.

Mechanical Oiling System.

Lubrication is effected by a rotary oil pump, which forces the oil to the main bearings through a hollow crankshaft to the big end bearings, following automobile practice throughout; the same system is employed to lubricate the clutch bearings. Sufficient excess of oil is delivered into the connecting rod bearings to pass through them and be thrown by centrifugal force on to the cylinder walls.

Another noteworthy feature of the 1922 Henderson is the greatly improved finish. The braking system is particularly well carried out, and the braking surfaces are of ample dimensions. The outside band brake is 1½in. wide, and is controlled by the right-hand pedal; the other brake is of the internal expanding pattern. The mudguards are exceptionally wide, and 27×3½in. tyres are fitted.

The Henderson is one of the few machines which can be fitted with a gear box giving a reverse, which is undoubtedly an advantage when a sidecar is used. This reverse is an extra, and is controlled by a separate lever. Other features are a substantially built kick starter and a clutch, which is controlled either by a pedal or by the usual American practice of a long lever adjacent to the gear lever and working on the outside of the gear quadrant. Throttle control is, of course, by twist grip.

This machine is handled in this country by Melchior, Armstrong, and Dessau, Ltd., 14, Great Marlborough Street, London, W.1.

The 1922 International Six Days Trials.

SWITZERLAND offers the finest facilities in the world for a motor cycle test, and the success of the Swiss team in the 1921 International Six Days Trials has resulted in the decision to run the event again next year in that beautiful country. This decision was made at the F.I.C.M. meeting at Geneva, and was confirmed again at the last meeting of that body in Milan, when the 1922 route was shown and approved.

Though covering a good deal of the ground traversed last August, there are several important alterations in the route, one of the most startling being the proposal to run part of the course through the Canton of Grisons, which has only seen motor cars during the war, as the peasant population has set its face against any invasion of self-propelled vehicles.

This year the trial will again start from Geneva, and will on the first day take, in the morning, the Col de Marchairuz, and will pass through the pretty Jura country, and finish for the day at Chaux-des-Fonds. The next morning will include the famous Weissenstein Hill, so sportingly referred to by Hugh Gibson (to whom it brought disastrous results last year) as the finest hill he had ever attempted. Lunch, as before, will be at Laufen, near the falls of the Rhine, an exceedingly beautiful spot. Afterwards, Basle will be skirted on the way to Zurich.

Into the High Alps.

Now comes the third day's run, which marks the entry into the high Alpine districts. Should the inhabitants of Grisons refuse to welcome the competitors, the Klausen Pass will again be surmounted—a wonderful piece of engineering. Lunch will be served at Altdorf, and the St. Gothard will be again climbed, following the same route as last year to Lugano.

The next day, Sunday, will be a day of rest, but the competitors will have the opportunity of watching the famous Monte Bre hill-climb.

On the fourth day the St. Gothard will again be climbed and the same route followed to Altdorf, after which the whole of the northern shores of beautiful Lake Lucerne will be traversed, and the day's run will terminate at Berne. This is over quite new country; and, on the morning of the fifth day a start will be made towards Interlaken along the shores of Lakes Thun and Brienz to Meiringen, when the Grimsell Pass will be climbed in the reverse direction to last year. From its summit there is a magnificent view of the Rhône Glacier nestling up against the Furka Pass, which will not be climbed, as this year the Rhône Valley will be descended, breaking new ground, and the course will continue right down to Martigny and on to Aigle, from which a circular trip will be taken. The night will be passed at Château d'Oex, and the morning of the sixth day will be marked by a hill-climb over the Jaun Pass, and the circuit will be completed by Zweisimmen; over the Col du Pillon and back to Aigle.

The head of Lake Geneva will then be traversed, a slight *détour* made to Chatel St. Denis, and the remainder of the journey will be along the northern shores of the Lake of Geneva, over the hill called La Donzelle almost into France. At the end of the day will be the flying kilometre speed trial at Eaux-Mortes, the trial finishing at Geneva.

The date of August 3rd to 9th has been chosen for this so as not to clash with any other important event either on the Continent or in England.

Motor Cycle Manufacturers

By Appointment to H.M. The King

Douglas

J. A. NEWMAN

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MR. J. A. NEWMAN, RIDING A STANDARD "SPORTS MODEL" DOUGLAS, MADE THE

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Out of 95 STARTERS only 5 "CAME THROUGH"

Mr. Newman's was one of the only two solo machines of these five.

It is now common knowledge that the wonderful Douglas "Sports Model" has excelled in the fields of competition, beyond all expectations, during the past year; every potential competition rider or sporting Motor Cyclist should not hesitate in making this Mount his choice for the coming season.

Its features incorporate:—
DETACHABLE CYLINDER HEADS—OVERHEAD VALVES—TWIN SHOCK ABSORBED ALL-CHAIN DRIVE—A DUPLEX CRADLE FRAME—INTERCHANGEABLE AND QUICK—DETACHABLE LIGHT CAR TYPE WHEELS, AND 650×65 TYRES—A THREE-SPEED BOX, CLUTCH, AND KICK-STARTER, AND MANY OTHER MODERN REFINEMENTS.

Its Price, complete with all Lamps, Horn, Licence Holder, Tools, and a full equipment, is:

£130

DOUGLAS MOTORS, LTD.
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Have you seen the New 3½ h.p. Connaught?

Generates much more power than the old 2¾ h.p.—two strokes perfectly and is fitted with three speed gearbox and all-chain transmission. Lubrication is effected by automatic drip feed and petrol system.

In the

CONNAUGHT
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nothing is left to chance.

The machine is powerful, foolproof, and remarkably economical to run and will stand up to heavy work all day.

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The QUADRANT
4½ h.p. Big Single

Chain-cum-belt Solo	**£80**	All-chain Solo	**£85**
Chain-cum-belt Comb.	**£100**	All-chain Comb.	**£105**

SPECIFICATION:—Sturmey-Archer 3-speed with kick-starter; Amac carburetter; all-straight tube frame; saddle design, oval shape, specially strong tank; front and rear stands; strong aluminium chain covers; Quadrant coach-built sidecar.

DELIVERY AT ONCE.

CATALOGUES FROM:

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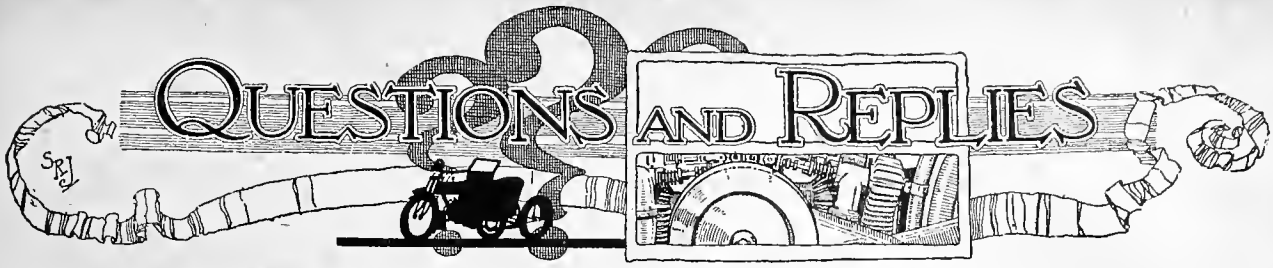

A selection of questions of general interest received from readers and our replies thereto. All questions should be addressed to the Editor, "The Motor Cycle," 20, Tudor Street, London, E.C.4, and whether intended for publication or not **must be accompanied by a 2d. stamped addressed envelope for reply.** Correspondents are urged to write clearly and on one side of the paper only, numbering each query separately, and keeping a copy for ease of reference. Letters containing legal questions should be marked "Legal" in the top left-hand corner of the envelope, and should be kept distinct from questions bearing on technical subjects.

ROUTES.—By special arrangement with the Automobile Association and Motor Union, readers of "The Motor Cycle" desiring routes may enjoy the benefit of the Road Service Department of that organisation. Queries should be addressed to the Editor in the ordinary way (enclosing a 2d. stamp), and will be dealt with by the A.A. and M.U., who are regularly in receipt of reports from their representatives all over the country as to the existing state of the roads in any particular locality.

COMPRESSION RATIO.

What is to be understood by the term "compression ratio"?—H.J.E.H.

Compression ratio is the relation between the capacity of the cylinder head when the piston is at the top of the stroke and the capacity of the cylinder head plus the swept volume of the cylinder when the piston is at the bottom of the stroke.

PRESSURES IN THE CYLINDER.

Taking the average 3½ h.p. four-stroke single-cylinder machine: (1.) To what pressure, by gauge, is the gas compressed before ignition? (2.) To what pressure, by gauge, does the pressure rise by combustion, *e.g.*, immediately after ignition? (3.) What is the pressure when the exhaust valve opens?—T.D.

(1.) This depends on the compression ratio, but is probably between 60 and 80 lb. to the square inch. (2.) Approximately 300 lb. maximum. (3.) This depends very largely upon the timing of the exhaust valve, and might be anything between 70 and 45 lb. to the square inch.

VARIOUS QUESTIONS REGARDING A TWO-STROKE LIGHTWEIGHT.

(1.) I have a Sparkbrook-Villiers (Mark IV. engine), two-speed gear (engine sprocket, fifteen teeth; countershaft sprocket, thirty teeth), and as I am wanting the new Villiers clutch fitted, and the smallest engine sprocket which can be fitted with that is sixteen teeth, would a larger countershaft sprocket (I suppose thirty-two teeth) make the gears the same as at present, viz., 5 to 1 and 9 to 1? (2.) I also have had trouble with my plugs oiling up, although no sign of over-oiling, such as four-stroking or smoking. I have been recommended to use a "spark intensifier" as a cure, but would this be detrimental to the magneto? (3.) Can a 2¼in. cover be used on a 2in. rim?—H.E.

(1.) If you wish to keep the gear ratio the same it would be necessary to fit a thirty-two-tooth sprocket on the countershaft, but we do not think it will be necessary to make this change. (2.) The use of spark gaps certainly tends to eliminate trouble from over-oiling on the sparking plugs, and it is not likely that the magneto will be damaged, provided that the gaps are not too wide. (3.) A 26 × 2¼in. cover can be used on a 26 × 2in. rim.

Important Dates.

Sat., Dec. 31st—N.-W. London M.C.C. Twelve Hours Open Winter Trial.

Fri., Jan. 27th, to Sat., Feb. 4th—Scottish Car and Motor Cycle Show.

Sun., Mar. 5th—Argenteuil Hill-climb (France).

Mon., Mar. 6th—La Turbie Hill-climb (Nice).

Wed., Mar. 15th—A.C.U. One-day Trial for Stock Machines.

Thurs., Mar. 23rd—East Midland Centre A.C.U. Open Reliability Trial.

Sat., April 1st—Western Centre A.C.U.—Open Hill-climb.

Sat., April 8th—B.M.C.R.C., Members' Meeting at Brooklands.

Fri., April 14th, and Sat., April 15th—M.C.C. London-Land's End Run.

Sat., April 22nd—N.-Eastern Centre A.C.U. Open Reliability Trial.

Sat., April 29th—S. Midland Centre A.C.U. Open Hill-climb.

Mon., May 1st, to Sat., May 6th—Scottish Six Days Reliability Trials

Sat., May 13th—Northern Centre A.C.U. Open Reliability Trial

Sat., May 20th—S.-Western Centre A.C.U. Open Reliability Trial.

Tues., May 30th—Junior Tourist Trophy Race.

Thurs., June 1st—Senior Tourist Trophy Race

FITTING LARGER ENGINE IN LIGHT-WEIGHT FRAME.

My Royal Ruby machine, with a 2¾ h.p. J.A.P. 1916 four-stroke engine, has just recently been fitted with a sidecar. The engine appears to labour under the weight, so I should be glad if you would say whether it could be replaced by a larger one without any alterations being made to the frame, thus saving expense in buying a more powerful machine. The frame seems to be quite strong, and capable of taking the strain.—H.J.W.

It would not be advisable to fit a single-cylinder engine of larger capacity than 350 c.c. in the frame of your machine, but there should be no particular danger in fitting a twin-cylinder engine of up to 500 c.c., provided you did not indulge in excessive speeds with the sidecar outfit. Possibly you would obtain better results from your present engine if you lowered the top gear ratio, but no doubt you are aware that the particular engine fitted is not really suitable for sidecar work, having been designed specifically for solo machines.

BALANCING.

Contemplating fitting an aluminium piston in my 4 h.p. 1914 Triumph engine, I should be much obliged if you could give me the rough rule for balancing. I understand that it is impossible to balance a single-cylinder engine accurately for all speeds; and, as my dealer will not tackle the job, I have decided, after careful consideration, to do it myself; am quite aware of risks, etc., and prepared for trouble.—A.M.

The rule for determining balance weights is generally given, roughly, as the total rotating masses plus half the reciprocating masses; but in the average motor cycle engine of the best type, the balance weight is, usually, the rotating masses plus approximately one-third to two-fifths of the reciprocating masses.

A FORGOTTEN MACHINE.

Owing to a breakdown, a man left his motor cycle at my house, to be called for the following morning. Three months have gone by, but no one has appeared. (1.) Is it advisable to advertise it in some paper? (2.) Would I be able to claim the machine as mine if the right owner did not come for it in, say, seven days?—DOUBTFUL.

(1.) It would be advisable to advertise to the effect that if the machine is not claimed within a certain period it will be sold to defray the expense of storage. (2.) You should most certainly take every step to find the owner before you dispose of it. The registration number will enable you to get in touch, of course, through the agency of the police.

BLACKING THE CYLINDERS.

Liquid blacklead is advertised for "those who like to blacklead their cylinders." Why should cylinders be blackened, for black is supposed to absorb heat? May I enquire how it is that cylinders are not whitened or aluminium painted, since white radiates heat?—J.H.R.

Ordinarily it is not likely that blacking the cylinders will result in overheating. Black certainly absorbs light and heat just as white reflects light. As the heat from the cylinder comes from within, the painting of the surface will not have any appreciable effect unless the paint is applied very thickly, or actually contains a non-conducting material. The majority of commercial cylinder blacks have no detrimental effect on the cooling.

MACHINE BURNT IN A PUBLIC GARAGE

Early this year I left a motor cycle and sidecar in a local garage for some slight repairs. It was not insured; but, as far as I can learn, the garage and its stock were insured by the owner. Unfortunately, the garage was burnt, and several machines, including mine, were totally destroyed. The proprietor says the insurance company disclaims liability for machines left for repair, and he also disclaims all liability himself, although I have never seen an "Owner's risk" notice in any part of his garage. He promised me some slight compensation when the insurance company paid him over the premises. I have jogged his memory several times, but he always makes the excuse that the insurance people have not paid up yet; but I was informed recently on very reliable authority that his claim had been settled long ago. Now I should like to know my position. Am I to trust to this man's kindness of heart for compensation, or have I a reasonable chance of winning my case if I take it to court?—M.J.

Unless you could prove that the damage to your machine was caused by the negligence of the garage proprietor or his staff, you have no claim against him. It is not absolutely necessary for him to exhibit a notice disclaiming liability for loss or damage to machines stored on his premises.

OVERHEATING WITH A.I.V. ENGINE.

In the issue of *The Motor Cycle* dated August 25th, page 231, you published a reader's suggested alteration from automatic to mechanical inlet valve operation for old engines. I am still running a 4 h.p. J.A.P. engine with automatic inlet, which is satisfactory in every way up to a certain temperature, when the power quickly falls to zero, but will recover after a few minutes' rest. The proposed alteration you illustrated still retains the totally enclosed inlet valve spring, which, to my mind, is the source of the falling off in power. The only advantage I can see in the sketch is that a stronger inlet valve spring could be used, but would not this suffer in the same way through being enclosed? It is the efficient *closing* of the valve that is at fault when the engine is too hot, not the *opening* (which is only what the mechanically-operated system overcomes). Would my engine be more satisfactory if the valve were lengthened and the spring placed outside?—V.M.

We cannot think that the trouble you experience with your machine is due to the inlet valve not closing sufficiently early. What actually happens is that the incoming gases become unduly heated before reaching the valve port; and, consequently, through expansion, the full charge is not drawn into the cylinder. If the spring is sufficiently strong to close the valve smartly—incidentally, it is helped by the compression as the piston commences to rise again—it is unlikely that the fact that it is enclosed has any tendency to heat it enough to cause loss of temper. The valve springs should be kept reasonably cool by the incoming charge in any case. There is no objection, however, to increasing the length of the valve stem and fitting an external spring, provided you make quite certain that there is no air leak in the guide through which the stem passes.

TOO MUCH ADVANCE.

A $2\frac{3}{4}$ h.p. Torpedo two-stroke which I have will not go; yet, to the best of my knowledge, I have tried every means. The cylinder was scored, so I had it filled in by the Barimar process. I have put new piston rings in, new bushes in the crank case and the connecting rod big and little ends, overhauled the magneto and carburetter, and stopped all possible air leaks; still it is the same. It is a fixed ignition magneto, and I have timed the spark to occur $\frac{7}{16}$in. before top dead centre. All I can get out of it is an occasional explosion, but there is no power, and it stops dead.—A.A.

The only obvious fault mentioned in your letter appears to be the ignition timing, which is much too far advanced for a magneto with fixed firing point. Time the spark so that it occurs about $\frac{1}{4}$in. before top dead centre.

The Norton Cup, presented by Norton Motors, Ltd., to the British Motor Cycle Racing Club for the best aggregate performance by a private member during 1921. The winner of the cup is Mr. Eric Longden.

TWO-STROKE CARBURETTER ON FOUR-STROKE.

Will a two-stroke carburetter function satisfactorily if used on a four-stroke engine?—F.F.

Yes; a carburetter from a two-stroke machine will usually answer quite well on a four-stroke of the same capacity, although variations in jet and choke sizes may be necessary.

NO TAX REBATE ON OLD MACHINES.

Am I entitled to claim a rebate of 25% of the duty payable on a pre-1913 motor cycle? I enclose correspondence I had from the local licensing officer, wherein he points out that motor cycles are not entitled to the rebate, and also a copy of the original registration dated 1912, in which the term "Description of car" is used. My opinion is that it is quite logical and commonsense to expect the rebate to apply to motor cycle engines as well as to motor cars.—A.A.B.

The rebate of duty on engines manufactured prior to 1913 is applicable only to cars which are taxed on h.p. As motor cycles are taxed on weight and not on power, we do not agree with you that it is quite logical to expect the rebate to apply to motor cycles also.

GEAR RATIOS AND TIMING.

I have now a $3\frac{1}{2}$ h.p. two-speed Alecto with gears $2\frac{1}{4}$ to 1 and 8 to 1. What timing do you advise for tip-top speed? When on top the engine fires as a slow four-stroke. Can this be cured?—W.R.

We think that you make some mistake when you say that your machine has gears of $2\frac{1}{4}$ to 1 and 8 to 1. We certainly should not recommend you to use a higher top gear than $4\frac{7}{8}$ to 1, if you wish to get a maximum speed out of your machine. Time the ignition so that the spark occurs when the piston is on top dead centre with the magneto fully retarded. Four-stroking is generally caused by over-rich mixture or too much oil.

EXPERIENCES WANTED.

Readers' replies to questions published under this heading should be sent to the Editor, "The Motor Cycle," Hertford Street, Coventry, when they will be forwarded direct to the querists concerned.

"P. and M." (Haworth).—Binks carburetter and 28×3in. tyres on R.A.F. model P. and M.

"H.K.R." (Manchester).—Maglita set on Triumph: Light at low and high speeds, ignition and general reliability.

"F.S." (Oldham).—Ner-a-car: Flexibility, speed, consumption and acceleration; reliability on long climbs and touring.

"S.A.R." (Southsea).—Puncture-preventing materials and devices, *i.e.*, Punkho, Improvo, tube protectors, etc.

"J.D.W." (Micheldown).—Dunelt and $2\frac{3}{4}$ h.p. sporting A.J.S.: Reliability, finish, service m.p.g., m.p.h., etc.

"L.F.P." (Birmingham).—Edmund and Coulson Blackburne-engined machines: Lateral play of springing devices after prolonged use.

SPARKLETS.

Technological Students Visit Cycle Works.

Three parties of students from the Manchester Institute of Technology, including one lady and several members from India, Japan, and other overseas countries, recently visited the works of the Ruby Cycle Co., Ltd., at Altrincham. Much interest was shown in the modern factory equipment and methods used in the production of Royal Ruby cycles and motor cycles.

Lighting-up Tables.

Referring once more to the ivorine lighting-up tablets given away by H. Taylor and Co., Ltd., of 52-53, Sussex Place, South Kensington, London, S.W., several recipients have pointed out that the times given are incorrect; this is not quite accurate, as the times stated are given to conform with the Road Vehicles Licensing Order of 1921, which requires the number plate to be illuminated half-an-hour before the driving lights are actually required by the law.

Catalogues Received.

E. Showell and Sons, Ltd., 14, New Street, Birmingham: A handsome book, with large and well-displayed pages, detailing the advantages and the various forms of the Showell rotary mechanical oil pump.

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The STANDARD K·L·G 'G' SERIES

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THE MOTOR CYCLE

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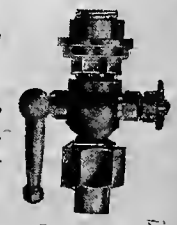

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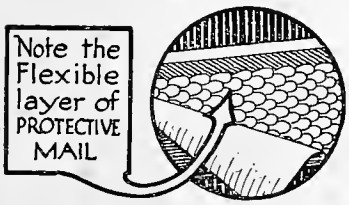

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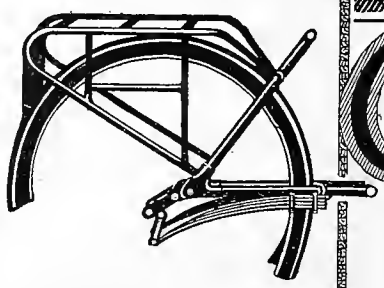

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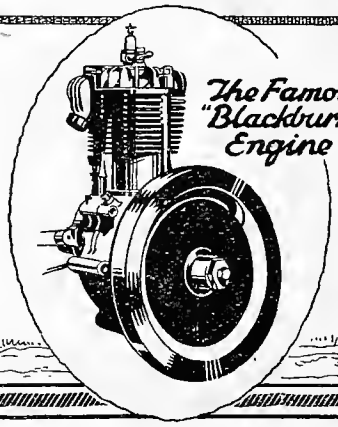

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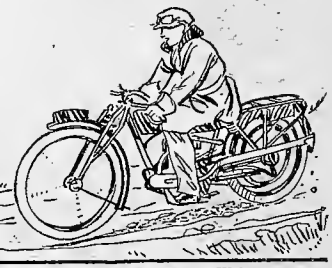

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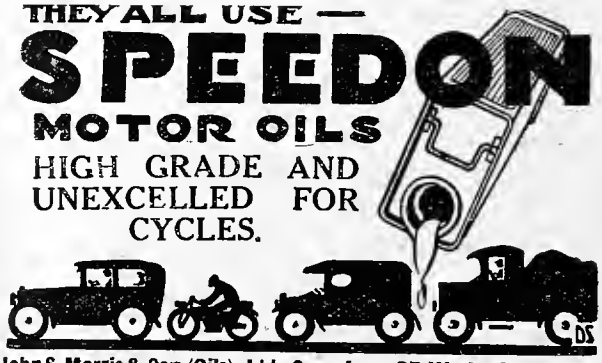

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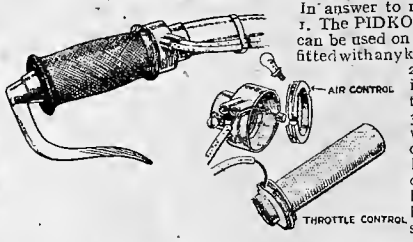

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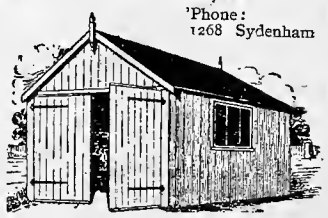

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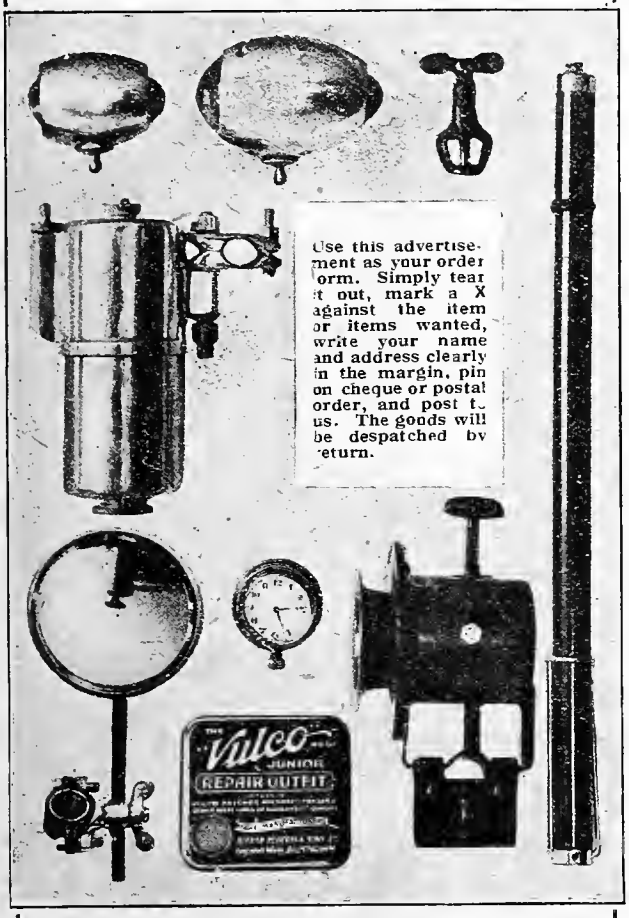

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Economy!

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ECONOMY and "EASTING" are INSEPARABLE

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MOTOR CYCLES

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2¾ h.p. single, 2-speed countershaft gear, chain and belt drive, minus cork clutch and kick-starter, 2⅜in. tyres £75

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The machine par excellence for Solo or Combination riding.
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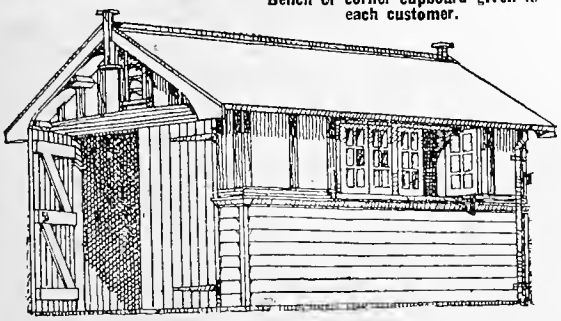
Bench or corner cupboard given to each customer.



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29, Foxley Lane, Purley, SURREY.

Dear Sirs,—I am very pleased indeed with the building you have sent me and think it excellent value for the money.

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Illustrated Catalogue Free.

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Owing to the enormous response to our advertisement we have been compelled to readjust our list, and the following only can be supplied. All orders subject to being unsold. Order at once to avoid disappointment.

Size	Make	Price
26× 2	Englebert Passenger, New	20/-
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26× 2¼	Wood-Milne Combination, W.D	20/-
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The scientific accuracy of MAPLESTONE design guarantees its practical efficiency in use—greater comfort in riding and easier steering.

Three features distinguish the MAPLESTONE Fork :—

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Specially note how the Fork's life is lengthened by No. 2 feature. In ALL other forks, wear eventually means finally scrapping—in the MAPLESTONE, only new bushes!

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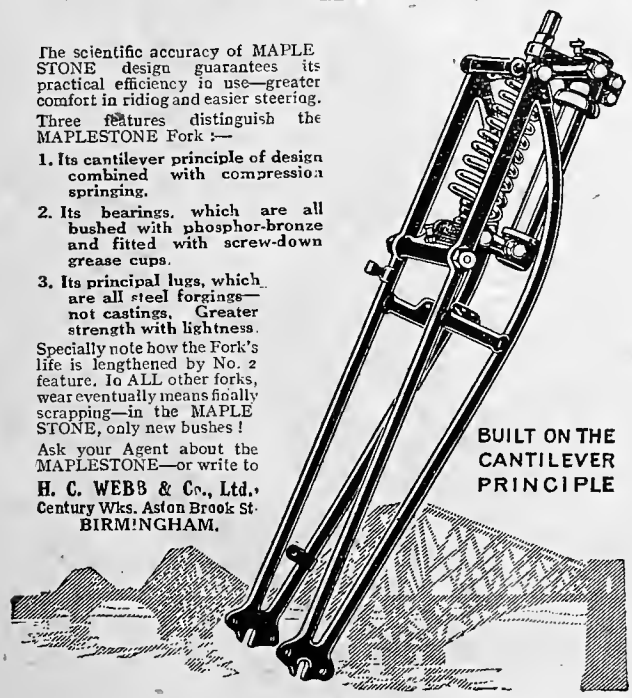

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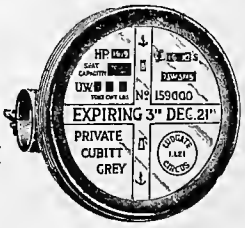

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Made from Government Proofed Cambric eyeletted at each corner. Light and compact. Absolutely waterproof. Solo size, 9′ × 6′ Post free, **15/-**

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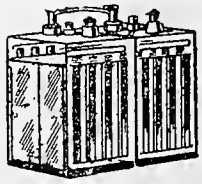

Best English make. Strong Celluloid cases. Stout plates of the best quality.

4 volt 10 amp.	..	10/-
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4 ,, 40 ,,	..	17/-
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Postage 1/-

NOTE.—Accumulators cannot be sent charged.

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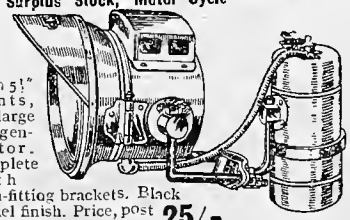

With 5½" fronts, and large size generator. Complete with stem-fitting brackets. Black Nickel finish. Price, post free, ... **25/-**

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ALLEN-BENNETT—*Best for Price and Service*

You'll come to Allen-Bennett's in the end—because we give you the *best* in every way. A wide choice of models—extended payments only 4% extra (with few exceptions where makers enforce special rates)—and Service after the machine is bought—that's what we give you. Come round *now*.

DOUGLAS RECONDITIONED MACHINES. PRICES GREATLY REDUCED.

$2\frac{3}{4}$ h.p., 2-sp., fully equipped, lamps, horn, licence holder **£55**

4 h.p., solo, 3-speed, clutch and k-s., equipped, as above **£75**

4 h.p., comb., equip. as above, with brand new bulbous back s-c. finished saxe blue, upholstered in antique leather.. .. **£95**

BRAND NEW, but slightly Shop-soiled 1921 Models, at GREATLY REDUCED PRICES.

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Triumph, 4 h.p., 3-speed..	£115	**£95**
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Calthorpe, 3 h.p., comb., dynamo lighting	£110	**£90**
Diamond, $2\frac{3}{4}$ h.p., J.A.P., 2-speed clutch	£84	**£60**
Ariel, 4 h.p., combination	£135	**£115**
Wooller, $2\frac{3}{4}$ h.p., Brooklands model ..	£96	**£70**
Matchless, Model H, Sports combination	£180	**£150**

Extended Payments only 4% extra, except where makers enforce special rates.

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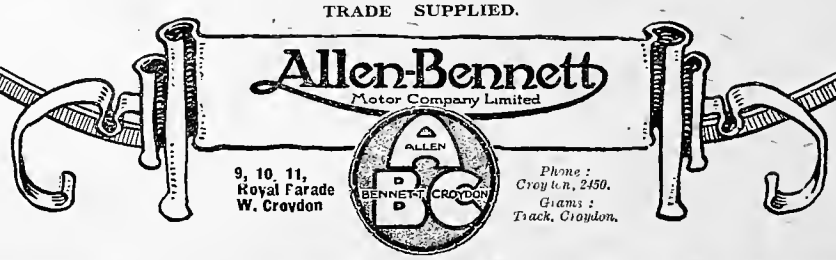

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All advertisements in this section should be accompanied with remittance, and be addressed to the offices of "The Motor Cycle," 20, Tudor Street, London, E.C.4, or 19, Hertford Street, Coventry. To ensure insertion letters should be posted in time to reach the offices of "The Motor Cycle," by the first post on Friday morning previous to the day of issue. Advertisements that arrive too late for a particular issue or that are crowded out will automatically be inserted in the following issue unless accompanied by instructions to the contrary.

All letters relating to advertisements should quote the number which is printed at the end of each advertisement, and the date of the issue in which it appeared.

The proprietors are not responsible for clerical or printers' errors, although every care is taken to avoid mistakes.

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For the convenience of advertisers, letters may be addressed to numbers at "The Motor Cycle" Office. When this is desired, the sum of 6d. to defray the cost of registration and to cover postage on replies must be added to the advertisement charge, which must include the words Box 000, c/o "The Motor Cycle." Only the number will appear in the advertisement. All replies should be addressed No. 000, c/o "Motor Cycle," 20, Tudor Street, E.C.4. *Readers who reply to Box No. advertisements are warned against sending remittance through the post except in registered envelopes; in all such cases the use of the Deposit System is recommended, and the envelope should be clearly marked "Deposit Department."*

In the case of motor cycles offered for sale under a box number, as it is unusual for these to be sold without first being inspected by the intending purchaser, advertisers will facilitate business by embodying in their advertisements some mention of the district in which the machine offered may be seen and tried.

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Persons who hesitate to send money to unknown persons may deal in perfect safety by availing themselves of our Deposit System. If the money be deposited with "The Motor Cycle," both parties are advised of this receipt.

The time allowed for a decision after receipt of the goods is three days, and if a sale is effected we remit the amount to the seller, but, if not, we return the amount to the depositor. Carriage is to be paid by the buyer, but in the event of no sale each party pays carriage one way. The seller takes the risk of damage in transit. For all transactions up to £10, a deposit fee of 1/- is charged; on transactions over £10 and under £50, the fee is 2/6; over £50 and under £75, 5/-; over £75 and under £100, 7/6; and on all transactions over £100, ½%. All deposit matters are dealt with at 20, Tudor Street, London, E.C.4, and cheques and money orders should be made payable to Iliffe & Sons Limited

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SPECIAL NOTE.

Readers who reply to advertisements and receive no answer to their enquiries are requested to regard the silence as an indication that the goods advertised have already been disposed of. Advertisers often receive so many enquiries that it is quite impossible to reply to each one by post.

MOTOR CYCLES FOR SALE.

A.B.C.

A.B.C., 1921, new condition; £78.—Clark, 7 Exhibition Rd., S.W.7. [2941

GODFREYS' RESOLUTION

FOR THE NEW YEAR

is to go still one better in the matter of service to customers.

For the last 12 years, service has been the outstanding feature of Godfreys' business, and each succeeding year our endeavour is to improve on the past.

Place your order in the New Year with the firm who delights in attending to the customers' smallest requirements.

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MATCHLESS
MORGAN RUNABOUT
NEW IMPERIAL
NORTON
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LIGHT CARS.
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GRADUAL 4% PAYMENTS.

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SCOTT SPARES
Always obtainable at GODFREYS

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208, Gt. Portland St., London, W.1

'Phone—Langham 1300 (2 lines).

MOTOR CYCLES FOR SALE.

A.B.C.

3½h.p. o.h.v. A.B.C., sports, electric, Grado; £35, or exchange.—Hirst, Bromfield, Longwood, Huddersfield. [3010

1921 A.B.C., speedometer, Cowey horn, tax paid, specially tuned engine, absolutely as new; £65; exchanges or deferred payment.—Edwards, 50, Harrington Rd., South Kensington. [3203

Ace.

1921 Ace, standard or electric, brand new, but shop-soiled, at very low prices.—14, Gt. Marlborough St., W.1. [1855

A.J.S.

A.J.S.—Quickest deliveries all models.—Merrick's Stores, Listerhills Rd., Bradford. Tel.: 2439 [1163

1922 A.J.S.—Early delivery of any model from the Premier Motor Co., Aston Rd., Birmingham. [X4037

1922 A.J.S.—Early deliveries all models from D. and S. Autocar Co., 33, The Parade, Golders Green. [2388

F.O.C.H. for A.J.S.; cash, exchange, or deferred payments. Sound second-hand machines in stock. —3, Heath St., Hampstead (near Tube). [2612

A.J.S. 1921 7h.p. Combination, dynamo lighting, everything on, cost £275, looks like new; £185.—Layton, 115, Elthorne Park Rd., Hanwell, W. [3009

A.J.S. 2¾h.p., 1916, 3-speed, hand clutch, kick start, lamps, speedometer, good tyres, tools, condition A1; price £50, or offers.—B.P. Garage, 40, Murray Mews, Murray St., Camden Town, N.W. [2261

1922 A.J.S. Lightweights, 2¾h.p. All models can be supplied from stock. Book your orders now and save disappointment. Official agents for this famous lightweight.—F. E. Wootten, Ltd., High St., Oxford. 'Phone: 308. [1967

A.J.S. 6h.p. Combination, late 1919, spring seat-pillar, special high Triplex wind screen, side wind screen, hood, side curtains, apron, splendid condition throughout; trial by appointment; £115.—C. Urquhart, Ingatestone. [3057

Spare Parts:

A.J.S. Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8631

A.J.S. Spares; prompt delivery.—Cyril Williams, Chapel Ash Depot, Wolverhampton. T.A.: Parts. [7901

Alldays.

ALLDAYS Allon 1921 3-speed Combination, kick starter, clutch, equipped, speedometer, windshields, insured; £70; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4293

American X.

1921 American X.—One or two brand new but shop-soiled for sale at bargain prices.—14, Gt. Marlborough St., W. [1854

1921 American X Combination, dynamo lighting, original tyres, Cowey speedometer; cost £240, accept £95.—24, Balliol Rd., North Kensington. [3117

BRAND New 1921 American X, 7-9h.p., Millford de Luxe sidecar, 27×3½ tyres; original list price £218, reduced to £150; easy payments only 4% extra. —The Premier Motor Co., Aston Rd., Birmingham. [X4032

Ariel.

£9.—3½h.p. Ariel, m.o.v., good magneto, but wants fitting.—King, Egrove Farm, Oxford. [X4303

ARIEL.—All models, cash or gradual payments. Spares supplied from stock.—West Central Agency, Wincycle Co., Ltd., 236, High Holborn, W.C.1. [0794

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—6-7h.p. Ariel combination, 1921, shop-soiled only; reduced to £139; no extra charge for easy terms. [3182

1921 (June) 6-7h.p. Ariel Combination, chain drive, all on, year's tax paid, excellent condition (want double seater); £120, no offers.—Kelly, 25, Chatsworth Rd., Bournemouth. [X4333

ARIEL Motor Cycles are the last word in reliability. We have always in stock the reliable motor cycles; trade supplied.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0378

Spare Parts:

ARIEL Spares for all models, post free.—Ariel Service Depot, Jones' Garage, Broadway, Muswell Hill, N.10. [0742

Bat.

BAT-J.A.P. 1919 (Nov.) 6h.p. 3 speeds K.S. Combination, lamps, splendid condition; £90; will deliver 100 miles.—H. Birkett, Hatfield, Doncaster. [3017

BAT-J.A.P. Late 1921 8h.p. Combination, Lucas Magdyno lighting, electric horn, spare wheel, mileage under 500, as new; £160, or near offer; buying car.—Cox, Templecombe, Somerset. [3016

MOTOR CYCLES FOR SALE.

Beardmore.

BEARDMORE-PRECISION 1921 3½h.p., spring frame, complete with lamps, horn, tools, guaranteed perfect; bargain, £55 net.—Dawsons' Garage, Regent St., Cambridge. 'Phone: 993. [3031

Blackburne.

1920 Blackburne 4h.p. Combination, 3-speed, clutch and K.S., Lucas dynamo, fully equipped, excellent condition; £100; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1673

Bown.

BOWN-DALM, 2¾h.p., 2-speed, 1920, engine just overhauled; £26. — Clark, 7, Exhibition Rd., S.W.7. [2943

Bradbury.

BRADBURY 1922 Models.—Agents, Bright and Hayles, 78, Church St., Camberwell, London. [2803

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Bradbury, new 1921, £70; and 6h.p. Bradbury combination, new 1921, £135; no extra charge for easy terms. [3183

Spare Parts:

BRADBURY Spare Parts.—See our adverts. under Parts and Accessories.—Bright and Hayles, 78, Church St., Camberwell. [2804

Brough.

BRAND New 3½h.p. Sports Brough, 3-speed, clutch, K.S., guaranteed 70 m.p.h.; cost £145, accept £35; any trial.—24, Balliol Rd., North Kensington. [3118

Brough Superior.

BRAND New 1921 Brough Superior Combination, 8h.p. J.A.P.; cost over £200, accept £140.—Hillier (side bell), 9, Wallingford Av., North Kensington. [3103

BROUGH Superior, 1921, 90 mm. bore, o.h.v., and Montgomery sports sidecar, complete with all lamps, etc., perfect order; bargain, £140 net.—Dawsons, Brough Specialists, Regent St., Cambridge. 'Phone: 993. [3030

DAWSONS, the Brough Superior Specialists.—Order your 1922 machine from us. Early delivery. Specially tuned to order. 90 mm. bore o.h.v., or new side valve, £150; fitted with sporting sidecar, £180; 6.5h.p. M.A.G. engine, £125. Send for catalogue.—Dawsons, Regent St., Cambridge. 'Phone: 993. [3029

ALLEN-BENNETT Motor Co., Ltd., Service Depot, and sole London agents for the Brough Superior, the sporting rider's ideal.—Immediate delivery of 1922 models at reduced prices. Mark I., 90×77½, o.h.v., 3-speed, clutch, and kick starter, £150; Mark I., sporting combination, step, mat, screen, etc., £180, or with special side valve J.A.P. engine, same price; Mark II. 6.5, mag., 72×90, 3-speed, clutch, and kick starter, £125; sporting combination, step, mat, screen, etc., £150. Demonstration models in stock. Catalogues sent post free on request.—The Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0733

B.S.A.

B.S.A. 1922 Models in stock; catalogue with pleasure

B.S.A. Replacements always by return; write for catalogue.

B.S.A. Specialists—County Cycle and Motor Co., Broad St., Birmingham. [4420

F.O.C.H. for B.S.A.'s; cash, exchange, or deferred payments. Sound second-hand machines in stock. —5, Heath St., Hampstead (near Tube). [2609

B.S.A. 2-speed, clutch, lamps, tools, excellent condition; £35; sidecar £5. Week-ends.—Hazell, Wolseley Cottage, Cleveland Rd., Barnes. [X4341

B.S.A. Combination, 1921, 6-7h.p., spare wheel and cover, luggage grid, wind screen, horn, tools, perfect order; £145; going abroad.—9, North Cliff St., Preston. [3062

B.S.A.—New 1922 Model H2 in stock for immediate delivery; £110.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3 'Phone: Avenue 5548. [0077

1920 B.S.A. 4¼h.p., S.C., all chain, Cowey trip, horn, 3 lamps, 2 generators, Easting, grid, under 2,000 miles, perfect; best offer.—Flat 1, 77, Montpelier Rd., Brighton. [3014

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—B.S.A. twin combination, 6-7h.p., 1921, shop-soiled only; reduced to £140; easy terms without extra charge. [3184

B.S.A.—All 1922 models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2857

B.S.A.—Being official agents we have them always in stock, and immediate delivery can always be given.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0379

B.S.A. 4¼h.p., all chain, de luxe sidecar, brand new; £125.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., W.1 'Phone: Mayfair 6559. [3038

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B.S.A. 4¼h.p. Combinations, 1919, £75; 1920 (delivered 1921), £85; also several others at special prices.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2873

B.S.A. 1920 Henderson Elite Combination, speedometer, lamps, horn, discs, exceptionally smart, £92; Cancelet combination, electric lighting, £82.—Clark, 7, Exhibition Rd., S.W.7. [2193

B.S.A. 1921 4¼h.p. All-chain Drive Combination, H2 sidecar, wind screen, Cowey, spring seat-pillar, Lucas Magdyno lamps and horn; £150.—Cox, Linslade Nurseries, Leighton Buzzard. [2466

Spare Parts:

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B.S.A. Spares can be had by return, post free, from Jones' Garage, Broadway, Muswell Hill, N.10. [0743

HERBERT ROBINSON, Ltd., Green St., Cambridge. —All B.S.A. parts in stock; illustrated list post free. [9396

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Calthorpe.

CALTHORPE 2¾h.p., 2-speed, fully equipped, sound bargain; or exchange Norton model 16H, cash adjustment.—P. Walton, Winslow, Bucks. [3063

CALTHORPE 1921 Combination, actually in stock for immediate delivery; cash or deferred terms; place your orders with the Calthorpe specialists.—Burlington Motors, Ltd., Clapham Common, S.W.4. 'Phone: Brixton 2417. [0509

Chater-Lea.

CHATER-LEA 1922 8h.p. Combination in stock; £147.—Tuck Bros., 154, Blackhorse Rd., Walthamstow. [2820

Cleveland.

CLEVELAND 1920 3h.p., 2-speed, clutch, kick starter, equipped, as new; £48; deferred payments. —Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4290

Clyno

5-6h.p. Clyno Combination, 1916, all on, perfect; £46.—17, Heaton Rd., Mitcham. [3109

CLYNO 1919 2½h.p., clutch, lamps, new tyres, overhauled, tools, sporting model, long exhaust; £35.—Thomas, Cryngal Velindre, Herillan, Cardiganshire. [3046

5-6h.p. 3-speed Clyno Outfit, 1913, good running order, new chains and tyres, Easting wind screen, B.S.A. luggage grid; £55, or near offer; exchange entertained.—Davies, 45, Denning Rd., Hampstead, N.W.3. [3052

Spare Parts:

CLYNO Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8633

Coulson.

COULSON 1922 Models for earliest deliveries, with all latest improvements; write for catalogue and prices.—London Motors, 61, Holborn Viaduct, E.C.1. Tel.: City 4230 [1630

1921 2¾h.p. Coulson-Jap, 2-speed Sturmey, brand new; list price 93 gns., our price £65; deferred payments and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2372

COULSON 1921 Models.—A few 2¾h.p. shop-soiled machines in stock at greatly reduced prices; cash or deferred terms.—London Motors, 61, Holborn Viaduct, E.C.1 Tel.: City 4230. [1629

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£50.—2¾h.p. Diamond-Jap, Enfield 2-speed, as new. —Carrington, 11, Foster St., Bedford. [3024

Douglas.

DOUGLAS 1921 New 2¾h.p., all-on model, shop-soiled; £72/10.—Below.

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Douglas.

1921 3½h.p. Sports Douglas, very fast; £85.—24, Balliol Rd., North Kensington. [3116

DOUGLAS 1920 4h.p. Combination, new condition, equipped; any trial; £92.—Clark, 7, Exhibition Rd., S.W.7. [2194

LATE 1920 4h.p. Douglas Combination, as new, well equipped; £75; any trial—24, Balliol Rd., North Kensington. [3115

1920 Douglas Combination, 4h.p., little used, perfect, lavishly equipped; 75 gns.—Hurst, 26, Tulse Hill, Brixton. [3161

DOUGLAS 2¾h.p., 2-speed, perfect condition, lamps, accessories; bargain, £38.—1, New Houses, Northchurch, Berkhamsted. [3064

DOUGLAS 2¾h.p., late 1916, replated, footboards; 38 gns., or part exchange higher power or combination.—348, Wandsworth Rd., S.W. [3121

£27, sacrifice.—2¾h.p. 1915 Douglas, speedometer, new lamps, horn, etc., splendid condition throughout.—35, Queen's Rd., Finsbury Park, N.4. [3094

1919 2¾h.p. Douglas, guaranteed not ridden 1,000 miles, perfect condition; open to expert examination; £50.—J. G. Duraot, Noith Tawton, Devon. [3069

DOUGLAS 1920 4h.p. Combinations, £85, £90, £95, all guaranteed.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2871

DOUGLAS 4h.p. Combinations from £55; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2862

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DOUGLAS 4h.p. Combination, 1920, fully equipped; £70.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [3036

DOUGLAS 1914 2¾h.p., 2-speed, Grosvenor sporting sidecar, equipped, good condition; £50; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4298

DOUGLAS 2¾h.p., 1920, 3-speed, guaranteed perfect; £57/10 Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [3039

DOUGLAS 1922 4h.p. Combination, lamps, horn, licence holder; wonderful value, £135; in stock; exchanges and payment terms arranged—Herbert Robinson, Ltd., Green St., Cambridge. [3088

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Douglas, 1922 models, prices £75 and £90; also 3½h.p. sports model, £130; all fully equipped; easy terms no extra charge. [3185

1920 2¾h.p. Douglas. 3-speed, clutch, K.S., Binks, new tyres, Cowey, speedometer, leg shields, magnificent condition, overhauled; nearest £70 secures.—Costin, London Rd., Westcliff-on-Sea. [3005

1920 4½h.p. Douglas and Combination, like new, £100, or offer; also 1915 2¾h.p. Douglas solo, faultless, £40, or offer; tax paid on both up to 31/12/21.—Seen at 24, Little Chester St., Belgrave Sq., S.W.1. [X4213

DOUGLAS 1922 3½h.p. Sports Model, Olympia Show machine, special finish and latest improvements, large toolbox, Amac carburetter, and all accessories; £130; in stock.—Herbert Robinson, Ltd., Green St., Cambridge. [3086

DOUGLAS 1922 2¾h.p. 2-speed Model, £75; 3-speed clutch and kick starter, £90; best quality lamps, horn, licence holder; in stock; exchanges and payment terms by arrangement.—Herbert Robinson, Ltd., Green St., Cambridge. [3087

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Spare Parts:

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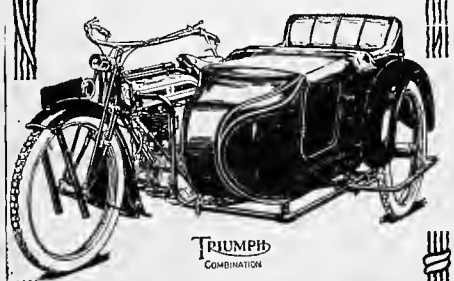

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SHEFFIELD Agent for Royal Enfields; all models in stock.—J. A. Stacey, 12, Ecclesall Rd. [0573

1918 Enfield Combination, 8h.p. Colonial model; a bargain, £85; like new.—Ross, 86, High Rd., Lee, S.E. [2162

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—8h.p. Royal Enfield combination, 1921, fully equipped; £110. [3200

ENFIELD 1920 2-stroke, equipped, new condition; £34.—Clark, 7, Exhibition Rd., South Kensington. [3208

2¾h.p. 2-speed Enfield 1911 Twin, good order, cheap for cash; £15, or near.—Davies, 45, Denning Rd., Hampstead, N.W.3. [3053

ENFIELD 1920 2¼h.p., 2-stroke, 2-speed, all on, excellent condition; best offer secures.—Cavalier, Reedens, Newick, Sussex. [3003

ENFIELD Combination, 6h.p., dynamo lighting, square, screen, speedometer, thoroughly overhauled; trial anywhere; owner purchasing car.—Robins, Shillingstone, Dorset. [3076

ROYAL ENFIELD 2¾h.p. Twin, 1913, 2-speed, chain drive, Bosch mag., good appearance, requires slight overhaul; £15; appointment.—Martin, Hillcrest, Farnborough, Kent. [3128

ENFIELD 1912 6h.p. Combination, coachbuilt sidecar, fully equipped, good condition; £65; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4292

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NEW 1922 Enfield 8h.p. Combination, electric lighting; £158, complete; delivered from works this week; easy payments only 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [X4314

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ENFIELD Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8635

F.N.

4-CYL. F.N., 2-speed, clutch, running order; £27.—5a, The Parade, Aldwich Rd., Bognor. [3066

F.N. 1922 7h.p. Combination in stock; £127.—Tuck Bros, 154, Blackhorse Rd., Walthamstow. [2819

Francis-Barnett.

1920 Francis-Barnett, 2¾h.p. J.A.P., 2-speed, clutch, K.S., fully equipped, condition as new; £56; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1674

Grandex.

GRANDEX Motor Cycle, 3h.p., 2-speed, clutch, lighting set, horn, licensed, etc., just re-enamelled and replated, appearance like new; exceptional machine; price £36.—Dental, 769, Romford Rd., Manor Park, London, E. [3113

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1920-21 Harley-Davidson de Luxe Combination, electric model; £110.—Hillier (side bell), 9, Wallingford Av., North Kensington. [3104

1920 Harley Davidson 7-9h.p., with sporting sidecar, good order, new tyres, acetylene lamps and horn; £95 for quick sale. Glasgow.—Box 7,916, c/o *The Motor Cycle*. [3042

HARLEY-DAVIDSON 1916 7-9h.p. Speed Model, discs, lamps, horn, etc.; £60.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0068

HARLEY-DAVIDSON 1916, just completely overhauled, new cyl., piston, and chain, sidecar repainted blue, complete spares, lamps, tube; £90, bargain.—Gosnell, Melksham, Wilts. [3018

1919 Harley-Davidson 7-9h.p. Solo, just overhauled, enamel good, discs, Lucas lamps, tyres unpunctured, docile but very fast; £65, or exchange A.B.C.—P.H.H., 117, Highbury New Park, N.5. [3179

Spare Parts:

HARLEY Spares.—Immediate delivery.—Kays, 8, Bond St., Ealing. [8636

Hobart.

1920 Hobart-Villiers, 2-speed, equipped, taxed; £32.—1, Othello St., Liverpool. [3133

Humber.

HUMBER 3½h.p. Combination, handle start, good condition; £38; exchange anything to value.—Mead, 14, Nashleigh Hill, Chesham, Bucks. [3074

HUMBER 1922 4½h.p. Sports Model, specially tuned engine, fast and reliable, admitted best value obtainable in sporting machines; £100; in stock. Illustrated pamphlets, etc., from Cambridge agents.—Herbert Robinson, Ltd., Green St., Cambridge. [3089

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INDIAN 1919 7-9h.p. Powerplus, 3 speeds, K.S., excellent condition; £65, or offers.—Morris Motor Works, Monmouth. [2829

INDIAN Combination, 1919, 7-9h.p., almost new, luxurious sidecar.—Write Leonardo, 167, Queen's Gate, South Kensington. [3081

1921 Indian Scout Combination, dynamo lighting, speedometer, electric horn, very little used, excellent order.—Baxter, Chobham Rd., Woking. [2073

INDIAN 7-9h.p. Combination, 2 speeds, clutch, equipped, good condition; £35; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4297

39 GNS.—7-9h.p. Indian coach combination, 3-speed, K.S., equipped, wind screen, a beautiful outfit; first cash secures. Tel.: 1002.—Ramsden's, May Bell Av., Blackpool. [3168

INDIAN 1919 7-9h.p., spring frame, Powerplus, lamps, horn, etc., splendid condition; £57/10.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548.

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INDIAN.—The Denois Accessories Stores, 89, Brixton Rd. ('Phone Brixton 3129), can supply all 7-9h.p. parts from stock, new, including all types of forks. They also specialise in Indian repairs. [1594

Ivy.

1914 4½h.p. Ivy-Precision 4-stroke, in first-class running order; nearest £21.—Knaggs, Westgate, Gisborough. [3156

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, wholesale Ivy agents, have all models in stock, including lady's model, price £69; get list. [0710

James.

JAMES 1917-18 3½h.p. Twin, sports model, equipped, indistinguishable from new; £70; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4296

JAMES 1920 6h.p. Combination, Lucas dynamo lighting, Cameo, speedometer, Cowey horn, splendid order; £115.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2875

J.A.P.

8h.p. J.A.P., Oct., 1919, excellent condition, complete—nearest £40.—22, Brookfield Rd., Chiswick. [3082

£13.—3½h.p. J.A.P., free engine model, m.o.v., mag., running order.—King, Egrove Farm, Oxford. [X4304

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1921 Lea-Francis, 3½h.p. twin, M.A.C. engine, absolutely as new, hardly used; £78.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. Phone: Padd. 789. [2961

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1920 Martinsyde 6h.p. Combination, 3-speed, clutch, K.S., fully equipped, hood and screen; £105; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1675

MARTINSYDE Sports and Touring 1922 Models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2860

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MATCHLESS 1920 Magdyno Combination, just overhauled; bargain, £108.—Clark, 7, Exhibition Rd., S.W.7. [2942

1921 Matchless Combination, Magdyno lighting, brand new, unused; £158; owner must sell.—41, Madrid Rd., Barnes, S.W. [1676

F.O.C.H. for Matchless; cash, exchange, or deferred payments. Sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2611

MATCHLESS 1922 Models from stock; exchanges or easy payments; trial run any time.—Agents, R. B. Clark and Co., 7, Exhibition Rd., S.W.7. [2198

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WAUCHOPE'S, 9, Shoe Lane, London, E.C.—8h.p. Matchless combination, sports model, new 1921; reduced to £149; easy terms no extra charge. [3186

MATCHLESS Sports New 1921 Combination, 3 speeds, clutch, kick starter; £150.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0066

1922 Sports Matchless, solo, mileage 200, indistinguishable from new; 108 gns., or with new sidecar 133 gns.—Edwards, 50, Harrington Rd., South Kensington. [2377

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MATCHLESS Combinations.—Book your orders with Ross, 86, High Rd., Lee, S.E., or 'Phone Lee Green 744 for immediate delivery of 1922 models. Exchanges and gradual payments arranged. [2163

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MOTOSACOCHE, spring forks, mag., B. and B. carburetter; £6.—E. Fitt, 21, Windsor Rd., Bournemouth. [3148

New Hudson.

NEW HUDSON 6h.p. Combination, countershaft, late 1919, excellent order, Dunlop tyres, lamps, etc.; £90, or offer; owner going abroad.—Shakespear, The Gables, Sandhurst. [3122

All letters relating to advertisements should quote the number at the end of each advertisement, and the date of the issue

Motor Cycles advertised by private owners are, when desired, marked (P).

MOTOR CYCLES FOR SALE.

New Imperial.

1920 New Imperial Combination, lavishly equipped; any trial.—24, Balhol Rd., North Kensington. [3119

NEW IMPERIAL J.A.P., 2½h.p., 2-speed, 1915, fully equipped; £32, offers.—6, Powis Villas, Brighton. [3138

NEW IMPERIAL 3-speed 350 c.c. Super Sports, J.A.P., scarcely used; £68.—Clark, 7, Exhibition Rd., S.W.7. [2195

NEW IMPERIAL 1922 2¾h.p., 3-speed, Model No. 1; in stock; £63.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0070

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. New Imperial, 2-speed only, £63; also 2-speed, clutch, and kick start model, £69; easy terms arranged. [3187

Norton.

PREMIER Motor Co. for 1922 Nortons:

NO. 9, 3½h.p., belt drive, £80; 16H 3-speed T.T., £115; Big 4, 3-speed, £120; easy payments 4% extra.—Immediate delivery from the Norton Specialists: The Premier Motor Co., Aston Rd., Birmingham. [0625

1921 Norton Model 16H, in first-class order; any examination; £95.—J. G. Durant, North Tawton, Devon. [3068

NORTON 1921 Models.—Sole district agents, Wesso Motors, Ltd., 60, Catherine St., Salisbury. 'Phone: 72. [0717

NORTON 1921 3½h.p., No. 9 model, fully equipped, new; £75; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4294

3½h.p. Norton, 1921 (late August), B.S. engine Lucas acetylene lighting and Lucas horn, Ace discs, complete set of tools, tyres unpunctured.—E. T. Rudge, 1, Dorset Rd., Bexhill, Sussex. [3093

1920 3½h.p. 3-speed Norton, just had complete overhaul, with rebushing, lamps, tools, etc., tyres good; £83; with Canoelet sidecar and Triplex screen, £89.—Belmont, Lyme Regis, Dorset. [2526

NORTON 16H Special Competition Model, exceedingly fast, 80 m.p.h., 3 speeds, clutch and kick starter; 100 gns.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559 [3037

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge have every Norton part in stock; complete illustrated list post free [9400

Omega.

OMEGA 1922 Model.—For earliest deliveries write to London Motors, 61, Holboro Viaduct, London, E.C.1, sole distributing agents for the following counties: Bedfordshire, Berkshire, Northamptonshire, Suffolk, Cambridgeshire, Hampshire, Oxfordshire, Sussex, Huntingdonshire, Norfolk, Rutland, Kent, Hertfordshire, Surrey, Essex, and Buckinghamshire, with the exception of a 20 mile radius of London [2417

Overseas.

OVERSEAS 3½h.p., 2-speed, excellent order; £20.—17, Heaton Rd., Mitcham. [3106

P. and M

R.A.F. Renovated P. and M., 2-speed, K.S., all chain drive, taxed; £37.—1, Othello St., Liverpool. [3132

£18.—3½h.p. P. and M., 2 speeds, B. and B., Simms-Bosch mag., good tyres.—King, Egrove Farm, Oxford. [X4305

P. and M. Combination, 1914, wind screen, speedometer, all accessories, very carefully used; £90, real bargain.—Wynter, Bishopswood, Highgate. [3123

P. and M. 1916 Combination, sporting, Canoelet sidecar, tyres very good, good goer; £35.—Colonial Motors, 104a, Finchley Rd., N.W. Hampstead 7822. [3172

BARGAIN; under half cost price.—P. and M. combination, perfect order, appearance as new, lighting set, spares, etc.; £55.—Grafton House, Kingswell Rd., Ensbury Park, Winton. [3075

1921 P. and M. Combination, 3½h.p., demonstration model, fully equipped, absolutely as new; £112; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1671

P. and M. Motor Cycles (ex R.A.F.), rebuilt and renovated as new, fitted with many new parts, including magneto, B. and B. carburetter, chains, tyres, etc., £40, fully equipped £45, combination £60; sidecars reupholstered, painted, and new tyre.—S. E. Porter, Whitchurch, Salop. 'Phone: 74. [3059

Spare Parts:

P. and M.—All spares in stock; stamp requirements; P. and M. spares specialist.—H. Beardwood, 147, Burlington St., Liverpool. [9986

Precision.

PRECISION 3½h.p., 3-speed, K.S., all on, perfect; £26.—17, Heaton Rd., Mitcham. [3107

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Size	Make	Our Price	List Price
24×2	Palme. Ribbed	21/-	34/
24×2¼	Clincher de Luxe Heavy	25/-	—
26×2	Englebert Passenger	19/6	53/-
"	Englebert Touring	15/-	46/-
26×2¼	Bates Special Heavy	31/-	54/
"	Palmer Cord	29/-	53/6
"	S. Moulton Extra Heavy	27 9	68/
"	Clincher de Luxe Heavy	25/-	54/6
"	Hutchinson T.T.	23/-	56/6
"	Englebert Touring	16 6	49/-
"	Wood Milne Special	13 6	53/9
26×2½	Palmer Cord Heavy	30	62/-
"	Hutchinson T.T. Rub. S.	27 6	59/9
"	Clincher de Luxe Ex. Hy.	25	68/6
26×2½	Goodrich Safety Tread	45	52/6
"	Bates Special Heavy	35	68/6
"	Clincher de Luxe Heavy	27 6	58/9
"	Wood Milne Ex. Heavy	16 6	72/3
"	Wood Milne Special	13 6	63/9
28×3	Goodrich Safety Tread	48 -	100/
"	Englebert Racing	39 6	100/9
650×65	Goodrich Safety Tread	40	67/6
"	Goodyear A.W. Tread	35/-	—
"	Best French R. Non-skid	25	70/-
"	Wood Milne Special	13 6	64/9
700×80	Beldam Bulldog	81/	—
"	Firestone R. Non-skid	58	87/8

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	Our Price.	List Price		Our Price.	List Price
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700×80		10/-		15/9	

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38, VICTORIA STREET, LONDON, S.W.1. & AT
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OUR AGENT IS THE PILLAR-BOX

MOTOR CYCLES FOR SALE.

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Spare Parts:

PREMIER.—Herbert Robinson, Ltd., Green St., Cambridge, can supply any part from stock; no waiting. [1345

PREMIER Spares and Repairs.—We are the most competent advertisers of these, as we served in the Premier works. Any part quoted per return.—Forfield Motors, Forfield Place, Leamington Spa [X4330

Radco

A FEW Brand New Radco 1921 Lightweights at enormous reductions: Single-geared models from £30; 2-speed models from £44; all carry makers' full guarantee; easy payments only 4% extra; write for special clearance bargain list.—The Premier Motor Co., Aston Rd. Birmingham. [X4036

Quadrant.

CLIFFORD WILSON Mfg. Co., sole distributers for Quadrant motor cycles. All models in stock. Exchange or deferred payments.—177, Westminster Bridge Rd., S.E.1 Tel.: Hop. 210. [1636

QUADRANT.—New 1922 models; immediate delivery from stock; exchanges arranged; extended terms.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0069

Raleigh.

PREMIER Motor Co. for 1922 Raleighs.

IMMEDIATE Delivery of 5-6h.p., spring frame, detachable wheels, £130; standard sidecar, £35; De Luxe sidecar, £42; early delivery of the new Raleigh lightweight, £68; easy payments 4% extra.—The Premier Motor Co., Aston Rd., Birmingham. [0626

1922 Raleigh, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Harrington Rd., South Kensington. [1679

RALEIGH 2¾h.p. and 3h.p. Models, earliest deliveries; book your orders now; cash or deferred payments.—London Motors, 61, Holboro Viaduct, E.C.1. Tel.: City 4230 [1628

NEW 1921 Slightly Showroom Soiled Raleigh 5-6h.p. Combination; reduced to £150; write for special end of season clearance bargain list.—The Premier Motor Co., Aston Rd., Birmingham. [X4035

RALEIGH Late 1921 5-6h.p., with special sidecar, Lucas dynamo lighting, very small mileage; cheap for cash.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 60. [2856

RALEIGH 2¾h.p. and 5-6h.p. Models for earliest deliveries; cash, exchange, deferred payments.—Raleigh Specialists: Newnham Motor Co., 223, Hammersmith Rd., W.6 'Phone: Hammersmith 80. [2355

Reading Standard.

READING-STANDARD Combination, 1920, dynamo lighting, all accessories, sound condition; £115, offers, or exchanges considered.—Colonial Motors, 104a, Finchley Rd., Hampstead 7822. [3177

Rex

REX (1914), clutch, tip-top order; £25.—B. Glenister, Bovingdon, Herts. [3077

2¾h.p. Rex, Grado gear, excellent running order; £11.—17, Heaton Rd., Mitcham. [3108

FOR Sale, Rex twin combination, Philipson pulley, running order; £45, or nearest offer.—E. Farrar, Burn, Selby. [3127

£14.—5-6h.p. Rex Twin, mechanical valves, Bosch, B. and B., low variable gear, running order.—181, Newton Rd., Burton-on-Trent. [3171

NEW 1921 Rex-Blackburne 8h.p. Combination, spare wheel; reduced to £150; easy payments 4% extra; write for special end of season clearance bargain list.—The Premier Motor Co. Aston Rd., Birmingham. [X4038

Rover

ROVER 1920 3½h.p. 3-speed Combination, excellent condition; £85; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80 [2870

SPECIAL Bargain.—3½h.p. Rover, new, shop-soiled, 1920 touring model, 3-speed, kick starter; reserve price £80; first offer above secures; an opportunity not to be missed.—Mebes, 156, Gt. Portland St., W.1. 'Phone: Langham 2230. [3056

Rudge

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Rudge Multi, I.O.M. model, 1920; £55. [3188

F.O.C.H. for Rudges; cash, exchange, or deferred payments. Sound second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2610

RUDGE Multi 3½h.p., Sept., 1919, engine 16914, clutch, starter, new heavy Dunlops and belt, good condition; £48.—Morris, Printer, Worcester. [3004

1920 3½h.p. Rudge and 35 gn. sidecar, lamps, horn, screen, spare tyre and belt, condition perfect; £76; deferred payments and exchanges.—Edwards, 50, Harrington Rd., South Kensington. [2373

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MOTOR CYCLES FOR SALE.

Rudge.

RUDGE Multi 1920 3½h.p., T.T. Isle of Man model, lamps, horn, speedometer, etc.; bargain; £50.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0072

RUDGE Multi (late 1919) 3½h.p. Roadster, just overhauled and renovated by makers, cost £34; now as new, not used since 1920, Lucas lamps and horn; £55; bargain. Glasgow.—Box 7,917, c/o *The Motor Cycle*. [3043

RUDGE Multi 7-9h.p. Twin Combination, 1920, very little used and in perfect condition, electric lamps, 8 volt accumulators, Cowey horn, tyres as new, Palmer combination rear; offers. Glasgow.—Box 7,915, c/o *The Motor Cycle*. [2041

RUDGE 3½h.p. Isle of Man Models.—We have several of these machines, which are slightly shop-soiled or run small mileage, for sale at attractive prices; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 60. [2861

Spare Parts:

HERBERT ROBINSON, Ltd., Green St., Cambridge. —All Rudge parts in stock; complete illustrated list post free. [9401

BANISTER and Botten for Rudge spares. Write for list, stamp.—341, Upper St., N.1. North. [2480 [3145

Scott.

1920 Scott 3¾h.p., excellent condition, eletric light, horn, speedometer, T.T. bars, spare sprocket, very fast; £73; after 6.—62, Abbey Rd., N.W.8. [3011

1920 Scott Combination, electric lighting, speedometer, 3 new tyres, excellent condition; bargain, £98.—Shewell, Chilcompton, Lancing, Sussex. [3155

SCOTT 1920, appearance, running, as new, electric lamps, spare bars and T.T. sprocket, insurance; bargain, £75, offers.—Wilson, 59, Waring St., Leicester. [X4173

SCOTT 1914 3¾h.p. with 1921 sidecar, equipped, speedometer, Blnemel's screen, excellent condition; £65; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4288

Spare Parts:

GODFREYS', Ltd., 208, Great Portland St., London, W.1.—Complete stock of all Scott spare parts always in stock. Write for free spare part list. [0751

SCOTT Riders.—We keep huge stock new and S.H. Scott parts. Any part on approval against cash.—Ward Motors, Ltd., The Scott Specialists, 32, Hustler St., Bradford. [0739

Sirrah.

1922 Sirrah Combination, Burman gear box, K.S., clutch; £67.—Inman, Durham Rd., Seaforth, Liverpool. [3134

Stanger.

THE Machine of the moment is the Stanger V twin 5h.p. 2-stroke. This machine is really a first-class mount with wonderful power, and excellent smooth running, fitted with the neatest rear springing yet seen; price £112/10. Send for particulars.—Jones Garage Muswell Hill, London, N.10. [0731

Sun.

SUN-VITESSE 1922 2¾h.p. 2-speed 2-stroke, clutch, kick starter; delivery from stock; £57.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0071

Sunbeam.

1916 3½h.p. Sunbeam, in splendid condition; £65.—To be seen at Hedley's Garage, 610, High Rd., Chiswick. [3015

£85.—1919 3½h.p. Sunbeam combination, 3 speeds, K.S., sporting Canoelet sidecar.—King, Egrove Farm, Oxford. [X4306

SUNBEAM 1914 2¾h.p., complete with lamps, etc., engine overhauled; £35.—Colonial Motors, 104a, Finchley Rd., N.W. Hampstead 7822. [3173

SUNBEAM 1918 3½h.p. Combination, equipped, good condition; £100; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4295

SUNBEAM 1919 3½h.p. Combination, 3 speeds, clutch, kick starter, lamps, horn, etc.; £80.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0073

BRAND New 1921 3½h.p. Sunbeam Combination, spare wheel, Easting screen, Cowey speedometer, used once; cost £210, accept £140.—Hillier (side bell) 9, Wallingford Av., North Kensington. [3102

SUNBEAM Combination, 3½h.p., 1921, practically new, lavishly equipped; £127/10.—Vivian Hardie and Lane, Ltd., 23-24, Woodstock St. (off Blenheim St.), New Bond St., W.1. 'Phone: Mayfair 6559. [3035

8h.p. M.A.G. Sunbeam Combination, late model, spare wheel, screen, luggage grid, electric lighting, speedometer; magnificent outfit; condition equal new; £125; exchange and cash.—Maton, 37 Canterbury Rd., Dalston, N.1. [3180

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Buy your NEW MACHINE from The Official Agents.

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2¾ h.p. STANDARD MODEL ..	£85	0
2¾ h.p. STANDARD SPORTS..	£85	0
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3½ h.p. COMBINATION	£125	0
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8 h.p. COMBINATION.....	£160	0

ZENITH-BRADSHAW.

3½ h.p. BELT DRIVEN	£113	0
3½ h.p. CHAIN-DRIVEN	£118	0

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R. BAMBER & Co., Ld.
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Tel. 607 SOUTHPORT.

MOTOR CYCLES FOR SALE.

Sunbeam.

SUNBEAM 1920 8h.p. De Luxe Combination, Magdyno lighting, electric horn, Bonnikeen, mudshields, luggage grid, Ace discs, spare wheel and tyre, as new; £147/10; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4291

SUNBEAM 1919 3½h.p. Combination, legshields, Binks carburetter, Cowey speedometer, Lucas horn, P. and H. lamps, Cameo wind screen, luggage grid, licensed, engine and gear box just overhauled; £117/10.—Herbert Robinson, Ltd., Green St., Cambridge. [3090

1921 3½h.p. Sporting Model Sunbeam Motor Cycle, complete with lamp, generator, horn, and usual spares, cast aluminium plates, new in April last, and in exceptionally good condition, tyres unpunctured; nearest offer to £115.—Geoffrey Smith, *The Motor Cycle*, Coventry. [X4285

Spare Parts:

SUNBEAM Owners are informed that arrangements have been made for spare parts to be stocked at the following Sunbeam Depots:

LONDON, E.C.—Sunbeam Depot, 57, Holborn Viaduct. Tel. No.: 2180 Holborn.

LONDON, S.W.—Sunbeam Depot, 157-8, Sloane St. Tel. No.: 1106 Victoria.

LIVERPOOL.—Sunbeam Depot, 68, Renshaw St. Tel. No.: 729 Royal.

MANCHESTER.—Sunbeam Depot, 20, Peter St. Tel. No.: 3952 Central.

LEEDS.—Sunbeam Depot, 5, Woodhouse Lane Tel. No.: 23277.

LEICESTER.—Sunbeam Depot, 16, London Rd Tel. No.: 3717.

BOURNEMOUTH.—Sunbeam Depot, 8, Holdenhurst Rd. Tel. No. 2706.

EDINBURGH.—Sunbeam Depot, 37, George St., Edinburgh [9268

HERBERT ROBINSON, Ltd., Green St., Cambridge. —All Sunbeam parts in stock. Write us if you are hung up for any part. [9402

Triumph

PREMIER Motor Co. for 1922 Triumphs.

IMMEDIATE Delivery of Type H 4h.p., 3-speed, £105; Type SD, chain drive, £115; Type LW, lightweight £65; sidecars from £20 to £50; easy payments 4% extra. —Buy direct from the leading Triumph agents: The Premier Motor Co., Aston Rd., Birmingham. [0627

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—4h.p. Triumph, countershaft model, W.D.; £55. [3189

TRIUMPH 1920 Countershaft, lamps; bargain, first £65 secures.—Thomson, 47, Station Rd., Hitchin. [3019

£18.—3½h.p. Triumph, splendid order, footboards, lamps, licensed.—King, Egrove Farm, Oxford. [X4307

TRIUMPHS.—A fine assortment of all models in stock at prices to suit all.—Ross, 86, High Rd., Lee. [4485

£23.—3½h.p. Triumph combination, new B. end .B., good running order.—King, Coal Merchant, Canal Wharf, Oxford. [X4308

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—Triumphs, all 1922 models supplied promptly on easy terms or exchange. [3190

1922 Triumph, all models, at list prices; deferred payment or exchanges.—Edwards, 50, Barrington Rd., South Kensington. [1678

F.O.C.H., the Triumph agents; cash, exchange, or deferred payments. Second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2608

1918 Renovated Triumph, 4h.p., countershaft 3-speed, fully equipped, splendid condition, for quick sale; details.—Meyer, 35, Trefoil Rd., S.W.18. [3012

WAUCHOPE'S, 9, Shoe Lane, London, E.C.4.—1921 Triumph, Model H, only ridden 500 miles, countershaft gear, in every respect as new; £87/10. [3191

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¼ h.p. Triumph Junior, 1921, tax paid, fully insured, all accessories; £50; easy terms arranged. [3192

TRIUMPH 1921 Sports-Model, condition as new throughout, mileage under 200; £67.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0067

TRIUMPH 1922 Models for immediate delivery; cash, exchange, deferred payments.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2859

TRIUMPH 1913 3½h.p., 3 speeds, clutch, coachbuilt sidecar, equipped, good condition; £53; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4289

TRIUMPHS.—We are the North London agents, and can deliver from stock for cash, deferred payments, or exchange.—Jones' Garage, Muswell Hill, and Woodside Parade, N. Finchley. [0382

MOTOR CYCLES FOR SALE.

Triumph.

TRIUMPH 1910 3½h.p. T.T., Philipson pulley, dropped frame, equipped, speedometer, good condition; £30; deferred payments.—Parker's, Bradshawgate, Bolton; also 245, Deansgate, Manchester. [X4287

1918 Triumph 4h.p., 3-speed Sturmey, clutch, K.S., Watsonian sidecar, speedometer, lamps, horn, wind screen, discs, excellent condition; £63; exchanges, or deferred payments.—Edwards, 50, Harrington Rd., South Kensington. [3204

1914 Triumph Combination, 3-speed, clutch, etc., lighting set, horn, licensed, etc., smart sporting sidecar, in splendid order and condition throughout; a bargain, £39.—Blackmore, 769, Romford Rd., Manor Park, London, E. [3112

TRIUMPH 1919 Gloria Combination, with dynamo lighting, £97; 1917 4h.p. solo, £59; Juniors (2), 1920 models, perfect, £40 and £42; exchanges.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2872

FOR Sale, Triumph combination, late 1918, 4h.p., 3-speed countershaft, in splendid condition, with extra new sidecar for best use; seen, or trial run by appointment; seeing and trying means buying.—Crook, Elmhurst Rd., Langley, Bucks. [X4172

1920 Renovated Triumph (makers' guarantee), Dunhill sidecar with hood, wind screen, and luggage grid, trip speedometer, lamps, horn, many spares, insured, superb condition, very fast; £85.—Owen Roberts, 2, St. Mark's Sq., London, N.W.1. 'Phone: Hampstead 4108. [3070

NEW 1921 Slightly Showroom Soiled Triumph Lightweight, £60; Type H 4h.p., 3-speed, £95; Type H with Watsonian Monarch sidecar, £120; write for special end of season clearance bargain list; easy payments only 4% extra; carriage paid to any address.—The Premier Motor Co., Aston Rd., Birmingham. [X4039

Spare Parts:

TRIUMPH Spares; immediate delivery.—Kays, 8, Bond St., Ealing. [8638

HERBERT ROBINSON, Ltd., Green St., Cambridge.—The Triumph experts; complete illustrated list post free. [9403

TRIUMPH Spares.—We are official service agents; full stock of all parts.—Premier Motor Co., Aston Rd., Birmingham. [X4042

COMPLETE Stock Triumph Spares, satisfaction guaranteed.—Ward and Co. (Albert Agg), 51, Upper Richmond Rd., Putney. [2000

TRIUMPH Spare Parts for all models, also Sturmey-Archer gear parts from stock, post free. Gear overhauls by specialist.—Jones' Garage, Broadway, Muswell Hill, N.10. [0746

TRIUMPH Parts, 1904 to 1921.—Every part, any year, in stock, new or second-hand, guaranteed serviceable. Enclose stamp for reply. Why not second-hand goods in place of new while prices are so high? Half the price; satisfaction guaranteed.—Forfield Motors, 11, Forfield Place, Leamington Spa. [X4331

Trump.

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—2¾h.p. Trump-Jap, 2-speed model, new 1922, £60; easy terms arranged. [3193

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—New late 1921 3½h.p. Trump-Jap, fitted with latest J.A.P. engine, overhead valves, 3-speed model, road racing machine; £75; no extra charge for easy terms. [3194

Velocette.

1922 Velocette, clutch and kick starter.—Early delivery from the Premier Motor Co., Aston Rd., Birmingham. [X4040

ASTOUNDING Offer of Brand New Velocette 1921 Model D2, 2-speed, chain drive, £55; easy payments only 4% extra; sent on approval; the best value ever offered in high grade motor cycles.—The Premier Motor Co., Aston Rd., Birmingham. [X4041

Verus.

£29.—1921 Verus, as new, fully equipped, perfect; bargain.—181, Newton Rd., Burton-on-Trent. [3170

1921 Verus, 4h.p. Blackburne engine, 3-speed, clutch, K.S., perfect condition throughout; £78; deferred payment and exchanges.—Edwards, 50, Harrington Rd., South Kensington [1672

1920 Verus 2¼h.p., single speed, good as new, electric light outfit, good accessories, suit overalls (5ft. 6in.), tax paid, insurance; lot cost over £75; best offer over £45 accepted; appointment only.—Schofield, 25, Santos Rd., Wandsworth, S.W.18. [3178

Zenith.

ZENITH 1917 Sports, 70 bore twin J.A.P.; £60.—164, New St., Horsham. [3154

ZENITH 4h.p., 1917, new tyres; £39; letters only.—Wilkinson, 43, Pasley Rd., S.E.17. [3021

£32.—4h.p. Zenith combination, Gradua gear, coach-built sidecar.—King, Egrove Farm, Oxford. [X4309

WAUCHOPE'S, 9, Shoe Lane, London, E.C.—3½h.p. Zenith-Bradshaw, new; price £105; easy terms arranged. [3195

With every Reconditioned Douglas purchased between now and January 31, 1922, we are giving a Full Insurance Policy for 12 months—Free.
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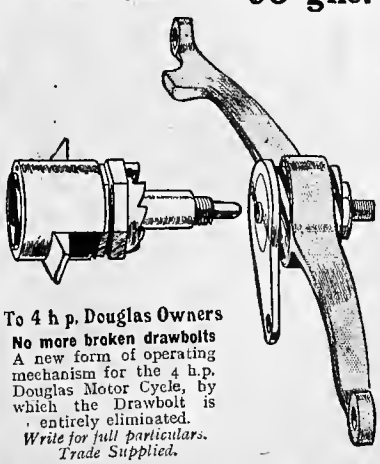
RECONSTRUCTED DOUGLASES AT BARGAIN PRICES.

Absolutely indistinguishable from new. We guarantee them to be the finest reconditioned machines and we still challenge the Trade to produce anything better.
Covered with a 3 months' guarantee similar to that which makers give with a new machine. Write for particulars of our Easy Payments—they are very liberal and taken entirely at our own risk.

2¾ h.p., fully equipped with Lamps, Horn, and Licence Holder, fitted with "Vici" Single Lever Carburetter ... . **55 gns.**

4 h.p., Solo, 3-speed, kick start, all on .. .. .. **75 gns.**

4 h.p. Combination, fully equipped with Lamps, Horn, Licence Holder, and with new Burlington No. 2 Touring Model Sidecar Body, complete with Storm Apron ... ... **93 gns.**



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No more broken drawbolts
A new form of operating mechanism for the 4 h.p. Douglas Motor Cycle, by which the Drawbolt is entirely eliminated.
Write for full particulars.
Trade Supplied.

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'Phone: Brixton 2417. Wires: Burlington Motors, Clapham
Just by Clapham Common Underground Station.

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Zenith.

ALLAN GRUZELIER, Specialist in Zenith motor cycles.

1921 8h.p. Clutch Model, shop-soiled, £112.

1921 8h.p. Sports, shop-soiled, £95.

1920 8h.p. Clutch Model, £100

1920 8h.p. Sports, £90.

1921 3½h.p. Bradshaw, only ridden once, £105.

1921 6h.p. Special, 750 c.c., as new, £75.

1920 8h.p. Clutch Model, as new, £90

1921 5h.p. Sports, £60.

AN Opportunity! Don't miss it.—1922 3-speed chain drive Zenith-Bradshaw for immediate delivery, £119

I CAN Give You Immediate Delivery of any 1922 model, and can supply within 24 hours all spare parts. Complete overhauls and tuning a speciality.—Allan Gruzelier, Ulster Chambers, 168, Regent St., W. Regent 205. [3085

WAUCHOPE'S.—8h.p. Zenith and sidecar, 1920, excellent condition, fully equipped; £97/10.—9, Shoe Lane, London, E.C.4. [3199

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for immediate delivery from stock of Zenith-Bradshaw; price £118. [0711

F.O.C.H., the Zenith agents; cash, exchange, or deferred payments. Second-hand machines in stock.—5, Heath St., Hampstead (near Tube). [2607

£29/10.—1915 Zenith-Gradua 4h.p., clutch, Klaxon, T.T., 2 brakes, new saddle, long exhaust, excellent condition; genuine bargain; ride away.—89, East Hill, Wandsworth. [3129

ZENITH 1920 6h.p. Sports, speedometer, horn, lamps, insured, new condition, £72; 1920 8h.p countershaft combination, Lucas electric lighting, £106.—Clark, 7, Exhibition Rd., S.W.7. [2200

1922 Zenith-Bradshaw in stock for immediate delivery; £118; cash, exchange, or extended payments.—Allen-Bennett Motor Co., Ltd., 9-10-11, Royal Parade, London Rd., West Croydon. 'Phone: Croydon 2450. [0734

8h.p. Countershaft Zenith Montgomery Sports Combination, brand new 10/10/21, done 300, electric lighting, Cowey speedometer, fully insured, splendid sporting outfit; £135, or near.—105, Wentworth Rd., Golders Green. [3051

Ladies' Motor Cycles.

FRANK WHITWORTH, Ltd., 139, New St., Birmingham, for ladies' Ivy motor cycles, £64. The most suitable ladies' machine. Get list. [0724

NEW 1921 Lady's Open Frame Velocette, 2-speed, chain drive, reduced to £55; easy payments 4% extra.—To be obtained only from the Premier Motor Co., Aston Rd., Birmingham. [X4043

Miscellaneous.

BARGAINS.—New O.K.'s, Ariels, Harleys, Omegas, Quadrants; exchanges entertained. — Booths' Motorics, Halifax.

BARGAINS.—1920 Matchless combination, detachable wheels, £130/10/6; 6h.p. Zenith combination; £49/10/6.—Booths' Motories, Halifax.

BARGAINS.—1917 Allon, 3-speed gear, clutch, kick starter, lamps, speedometer, £42/10/6.—Booths' Motorics.

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BOOTHS' Bargains.—1920 Williamson 6h.p. combination, £95/10/6; another, dynamo lighting, £115/10/6.

BOOTHS' Bargains.—Harley-Davidson combination, mileage 300, £139/10/6; 3h.p. Humber, £10/10/6.

BOOTHS' Bargains.—1915 B.S.A. combination, £55/19/6; 1920 Wooler, £49/19/6; 3h.p. 2-speed Enfield, £29/10/6.

BOOTHS' Bargains.—8h.p. Premier combination, £49/10/6; 1914 Phelon and Moore, £35/10/6.

BOOTHS' Bargains.—1917 4h.p. Douglas, £59/19/6; 1919 4h.p. Douglas combination, £89/10/6; another, electric lighting, £95/10/6.

BOOTHS' Bargains.—1916 Douglas, £47/10/6; 1920 Morgan de luxe, M.A.C. engine, speedometer, £165/10/6; 1920 3½h.p. Ariel combination, £85/19/6; G.W.K. light car, £139/10/6; 1922 new 4½h.p. Quadrant combination, £100.—Booths' Motories, Halifax. [2311

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Miscellaneous.

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F.O.C.H. for second-hand cycles, combinations, and runabouts at bargain prices; exchanges arranged. Any new cycle, combination, or car supplied; cash or easy payments.—Fair Offer Car House, 5, Heath St., Hampstead (near Tube). 'Phone: Hampstead 3752 Hours 9-7, including Saturdays. [2614

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CASH

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FOR Motor Cycles.

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W. T. DUNN, Ltd., always buy.

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£45 offered for best countershaft Triumph.—L. Cripps, 67, St. Aldates, Oxford. [X4312

WANTED, Ner-a-car, good running order.—62, Belvedere Rd., Upper Norwood. [3073

WANTED, cheap, old motor bike; about £5.—King, Egrove, Kennington, near Oxford. [X4311

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PALMER'S Garage, Tooting, will make you a cash offer at sight.

PALMER'S Garage, Tooting.—You will be sure of a good cheque if you sell your machine at Palmer's Garage.

PALMER'S Garage, Tooting.—Thousands of men have sold their machines here.

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PALMER'S Garage, Tooting, will collect machines from any London railway station. The auction sale is held every Thursday, commencing 2 p.m.

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PALMER'S Garage, Tooting.—You fix the price and we do the rest.

PALMER'S Garage, Tooting.—Terms: Selling commission 7½%, not chargeable unless machine is sold. If no sale a nominal auction fee is charged: For motor cars, 20/-; motor cycles under £50 value, 5/-; ditto over £50 value, 10/-. When we effect a sale these charges are cancelled and commission charged.

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WANTED, a Triumph combination, belt-driven 1921.—F. Tonar, Veterinary Surgeon, Bath. [1809

PRIVATE Purchaser requires equipped cycle, about £25.—Cranleigh, College Slip, Bromley, Kent. [3079

COMBINATION Wanted, immediately, late model; must be cheap.—Box 7,930, c/o *The Motor Cycle.* [3163

MODERN Combination, good make; full particulars, including age.—Stowe, 5, Clyde Rd., Croydon. [3100

B.S.A. Solo or Combination, late model, cheap; no dealers.—Write, 31, Langdon Rd., Upper Holloway. [3125

MATCHLESS Family Model; best bargain offered for lowest spot cash.—Box 7,914, c/o *The Motor Cycle.* [3028

GOOD 1920 3½h.p. Sunbeam wanted; reasonable price.—Particulars, Altellenda, Swindon Rd., Cheltenham. [X4269

WANTED, modern lightweights and combinations, cheap for cash.—Patterson, 12, The Quadrant, Winchmore Hill, N.21. [9502

CASH Waiting; solo and combinations, good prices given.—Write, 'phone, or call, Edwards, 50, Harrington Rd., South Kensington. 'Phone: Ken. 3709. [0604

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26×2¼ 3-ply	13/6
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24×2¼ De Luxe Heavy ..	23/6
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Montgomery Bo-Peep Sidecar Screen, easily fitted to any Sidecar ..	£3 10 0
Easting Screens	£3 18 0
Sidecar Bodies (various models) from	£4 0 0

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Goodrich, Clincher, and Hutchinson.

26×2¼ and 26×2½ ..	each 6/3
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WANTED, for immediate cash, 1921 Enfield, Harley, Indian, or Matchless C.B. combination, dynamo lighting; no dealers; call any time.—Finch, 22, Hythe Rd., N.W.10. [3060

LIGHTWEIGHT, 2-speed and foot starter (for lady), not earlier than 1920, Levis preferred; full particulars and lowest cash price; London district.—Box 7,919, c/o *The Motor Cycle.* [3055

CASH on Sight for new and second-hand motor cycles and combinations, any make or condition.—Call, write, or 'phone. Short and Glass, Ltd., 485-493, Upper Richmond Rd., East Sheen, S.W. 'Phone: Richmond 2362 and 2363. [0372

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ARGSON Hand and Motor-propelled Tricycles, for invalid and disabled.—Particulars, Argson Eng. Co., Ltd., 3, Kendalls Mews, George St., W.1. [2684

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KINGSBURY Scooters and Spare Parts.—3, Kensington Mews, George St., W.1. [5334

2¾h.p. Autoglider Scooter, £35, or exchange for good lightweight; Cardiff.—Box 7,925, c/o *The Motor Cycle.* [3091

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£15.—Auto-Wheel and bicycle, fine order, or exchange lightweight.—Akers, 51, Haverstock Hill, N.W.3. [3080

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HOODS, double texture twill, brass or nickel fittings, to fit any sidecar, from £2.—Below.

WIND Screens, adjustable, with apron, 30/- and 35/-. Hoods re-covered, new celluloid fitted to wind screens.—Collins and Son, rear of 84, High St., Putney, S.W. [3150

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RENNOC Co.—We are actual manufacturers of hoods, screens, and aprons. Send for list.—Rennoc Motors, Ltd., 155a, Marlborough Rd., Upper Holloway, N.19. [2321

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ROYAL Leicester Sidecar Bodies fit any chassis, first-class finish; have a few coachbuilt bodies, clearance lines from £5 each; extra good value.—The Willowbrook Motor Co., Leicester. [0336

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SIDECAR Body Designs for the trade only. Working, coloured, pencil, or line drawings of original designs, also working drawings, full-sized or to scale.—Cooper's Vehicle Journal, Ltd., established designers to the coach trade for over 80 years. Consult us when designing new ideas.—20, Tudor St., London, E.C.4. [0004

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SIDECAR ATTACHMENTS.

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FOR

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SANDUM (V-shaped) Wind Screen.—Our South London agent writes: "An instantaneous success; sold out; send further supply." Agents, get in touch with us.

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FREE, Free, Free.

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COACHBUILT Bulbous Back Models, complete with wind screen, from £6; polished aluminium, from £7. Bodies can be painted and upholstered to customers' requirements. Bodies in stock to suit all makes.

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INDIANS with kick starter on left present no difficulty with Middleton's special model.

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ROBINI Mfg. Co.—End of season's bargains. Underslung chassis, complete with new tyre and tube, and body complete with Coverall apron, £12/10; Millford chassis, complete tyre and tube, etc., new bulbous back body, complete with adjustable wind screen and apron, £12/15; wonderful offer. See Body column. Carriage extra. 'Phone: Brixton 1585.—Robini Mfg. Co., 1 and 3, Tulse Hill, Brixton, S.W. [3166

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BEDELIA.—The new 1922 water-cooled model, 8/10 h.p., side-by-side seating.

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BEDELIA.—The comfortable adjustable chair seats will please you. Detachable wheels.

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BEDELIA.—The flexibility and speed will tempt you. Hood and screen fitted.

BEDELIA.—A trial run will decide you. Prices: Air-cooled model, £185; water-cooled model, £195; immediate deliveries.

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BEDELIA.—Sole concessionnaires for the British Empire (all the British Isles, Dominions, and Dependencies): L. N. Palmer (Proprietor), Palmer's Garage, Tooting. Catalogues and full descriptive matter mailed free. [2841

HALIFAX.—Morgan 8h.p., £105; another, with hood and screen; £95.—Halifax Motor Exchange, Horton St., Halifax. [3096

MORGANS, 1922 models; delivery from stock; any specification; £150 upwards; exchanges; extended terms.—Below.

MORGAN Grand Prix, 1920, special low aero body, deep scuttle, etc., lamps, horn, etc.; £125.—Below.

CARDEN Cycle Car, 1921, complete with electric lighting, etc.; £72/10.—Below.

ROVER.—New 1922 8h.p. model in stock, dynamo lighting, etc.; £220.—Authorised agents (below).

G.N. 1922 Standard Touring Model, dynamo lighting, horn, speedometer, etc.; £225.—Elce, Ltd., 15-16, Bishopsgate Av., Camomile St., E.C.3. 'Phone: Avenue 5548. [0075

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30/- Each.—Not the price of a small repair job. Splitdorf magnetos, single, anti, variable ignition, and guaranteed. These are the real thing, not converted starter magnetos (the only fault is, we sell them too cheap): 30/- each.—Marble Arch Motor Exchange, 135, Edgware Rd., W.2. 'Phone: Padd. 789. [2965

THE Magneto Repairing and Winding Co. (established 1912), contractors to H.M. Government, and officially appointed by the R.A.C. Magneto repairs of every description; all repairs at lowest possible prices, and strictly guaranteed. We can mostly return them within 24 hours. We have several new and second-hand single and 2-cyl. magnetos in stock, all guaranteed.—The Magneto Repairing and Winding Co., 78, Hampstead Rd., Euston, London, N.W.1. 'Phone: Museum 1158. T.A.: Kumagnelec, Euroad, London. [2445

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FINEST Carbide, cwt. lots 22/6, f.o.r., c.w.o.; packed in lb. tins, gross or half gross lots, 5/9 per dozen.—Sports Depot, Denby Dale, Huddersfield. [2443

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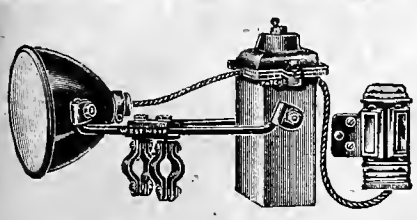

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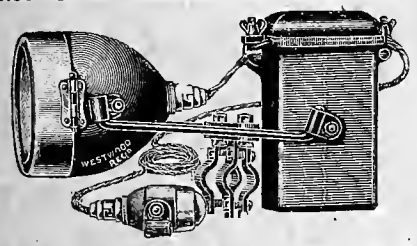

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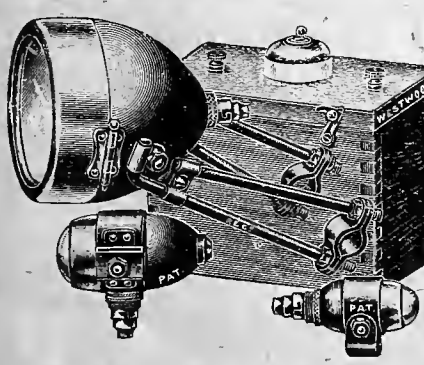

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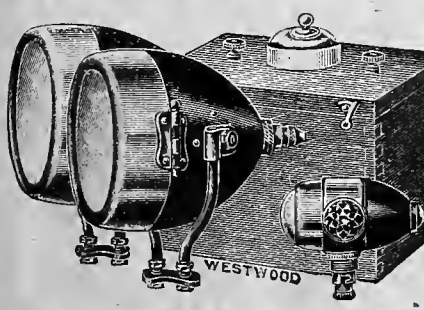

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KICK Start Complete, for 1920 A.B.C.—89, Belmont Rd., St. Andrews, Bristol. [3050

WANTED, parts for Roe 2-speed hub.—Naylet, 34, Gildersome St., Woolwich. [3025

WANTED, cylinder for 2¾h.p. Brown motor cycle.—King, Egrove Farm, Oxford. [X4313

WANTED, second-hand sidecar, to suit 3½h.p. bike. —Robertson, Painter, Forres. [3126

SUNBEAM Sidecar, No. 1.—Rector, Whittington-in-Lonsdale, Carnforth, North Lancs. [3026

DOUGLAS 4h.p. Clutch Parts, sidecar chassis, 2¾ h.p. engine parts. — Wilson, Lambert's Yard, Leeds. [3136

WANTED, cylinder, 3½h.p. Premier (1913); also piston, or complete engine.—53, Maxwell Rd., Portsmouth. [3139

FIRST-CLASS 1921 Sidecar, suit Triumph, polished aluminium preferred, or Gloria.—Box 7,928, c/o *The Motor Cycle.* [3159

WANTED, good up-to-date second-hand motor cycle accessories; state particulars and price.—Service Co., 292, High Holborn, W.C.1. [0671

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WANTED, Triumph countershaft crank cases, flywheels, S.A. gear boxes, parts, or empty cases any quantity purchased.—Hole, 129, Park Lane, Carshalton. [9767

WANTED, one pair of overhead valve J.A.P. cylinders, 90×77½; scored not objected to if otherwise perfect.—L. Waters, Motor Engineer, Riches St., Wolverhampton. [X4171

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£112	0—1921 3½ h.p. **COVENTRY EAGLE,** 3-speed, clutch, and kick-starter. Just the price of a lightweight	£79 10
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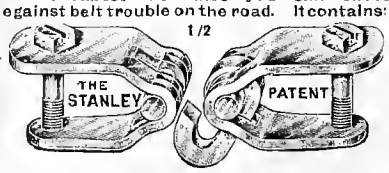

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1"	2/2
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EXCHANGE G.N. 8h.p., belt drive, in first-class condition, with cash, for first-class combination.—Newnham Motor Co., 223, Hammersmith Rd., W.6. 'Phone: Hammersmith 80. [2864

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WANTED, good motor cycle or combination in part exchange for a good 1915 Studebaker 4-seater touring car, electric lighting and starter.—Smith, Hainault Works, Chadwell Heath, Essex. [3047

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Can offer for CASH, EXCHANGE, or EASY PAYMENTS, IMMEDIATE DELIVERY of 1922 MODELS.

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A.J.S., B.S.A., DOUGLAS, ENFIELD, MATCHLESS, NEW IMPERIAL, QUADRANT, SUNVITESSE, TRIUMPH

SECOND HAND BARGAINS.

CARDEN 2-seater, hood, screen, 1921, splendid order.. .. .. .. £72 10s.
DOUGLAS, 1920 4 h.p., lamps, horn, etc., first-class condition £65 0 0
DOUGLAS, 1918 4 h.p., fully equipped, excellent condition £45 0 0
DOUGLAS, 1920 2¾ h.p. 3-speeds, clutch, kick-starter, lamps, horn, etc. £55 0 0
MATCHLESS Sports, new 1921 comb., 3-speeds, clutch, kick-starter £150 0 0
TRIUMPH, 1921 Sports model, condition as new throughout, mileage under 200 £67 0 0
HARLEY-DAVIDSON, 1916 7-9 h.p., speed model, discs, lamps, horn, etc. £60 0 0
RUDGE MULTI, 1920 3½ h.p. T.T. Isle of Man model, lamps, horn, speedometer, etc., bargain £50 0 0
SUNBEAM, 1919 3½ h.p. comb., 3-speeds, clutch, kick-starter, lamps, horn, etc. £80 0 0
INDIAN, 1919 7-9 h.p., spring frame, Powerplus, lamps, horn, etc., splendid condition £57 10 0
INDIAN, 1919 as above, but with Indian sidecar throughout as new.

15-16, Bishopsgate Avenue, Camomile St., London, E.C.3

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Dynamos & Lighting Sets

COMPLETE SOLO SETS from £11 - 2 - 0

Fittings in stock for most makes of Motor Cycles.

MR. J. W. WILDBLOOD, 52, Bates Road, Springvale, Sheffield, writes:—

"Just a word about the dynamo. I would like you to know that it works splendidly, my first dynamo lighting set, but certainly not my last."

Full particulars of 4 volt sets, 6 volt sets, and Light Car Sets, from:—

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WHITTALL for Welding. Aluminium experts. prompt delivery.

WHITTALL.—Pistons complete for Triumph, Premier, J.A.P., Bradbury, B.S.A., Douglas, Sunbeams, etc.; 14/- to 24/-, on approval, exact to pattern.

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C. R. FOSTER, of Leeds, is the original cylinder grinding specialist.

CYLINDER Grinding by Foster, of Leeds, has no equal. Price, complete with piston, from £2.

£1,000 is the value of the machine and equipment that will grind your cylinder at our works.—Foster, of Leeds, 170, Cardigan Rd. [0003

ENGINE Overhauls, quality work only, cylinders reground, pistons, valves, bushes, etc.—Below.

PISTONS for every standard motor cycle in stock from 14/- each.—Below.

CYLINDER Grinding, our speciality 2¾h.p. Douglas reground, fitted with new piston, rings, and gudgeon, 25/- each.—Below.

TRIUMPH, J.A.P., Bradbury, and all 3½h.p., 4h.p., cylinders reground and fitted new piston, rings, and gudgeon, 35/-; returned in 48 hours.—Below.

QUALITY and Satisfaction is our motto, entrust your work to specialists and get a guaranteed repair.—C.M.D. Engineering Co., Leamington Spa. 'Phone: 768. [9659

BRADBURY Spares and Repairs.—Agents, Bright and Hayles, 78, Church St., Camberwell. [2811

HUB Gears.—Great reductions in prices of replacements for Sturmey-Archer and Armstrong gears.

HUB Gears.—Wheels repaired and returned within the week; send for latest price lists.

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HUB Gears.—We undertake to supply the complete new internal portion of the gear mechanism less main driver for £5.

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ENGINES Rebushed, overhauled, rings fitted, compression guaranteed; singles 30/-, twins 40/-; returned 3 days.—Below.

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The Motor Cycle that holds the Record for **RELIABILITY**

We carry a large stock of

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WHEN FOLDED COMBINATION WILL PASS THROUGH 30 INCH DOORWAY.

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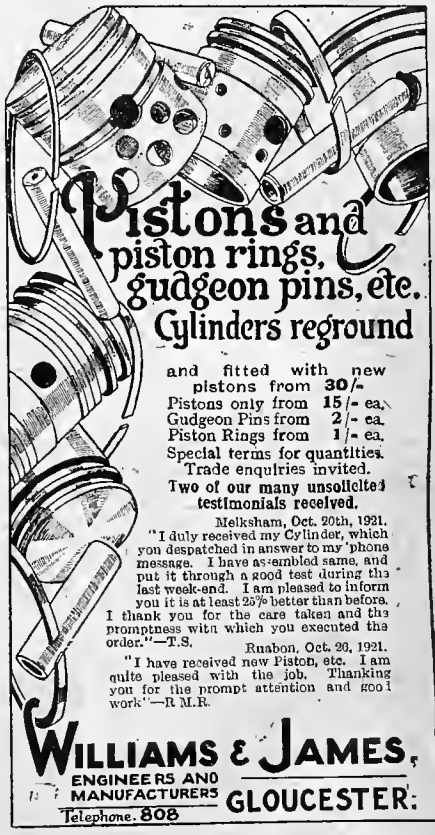
(A few doors from Holborn Tube Station.)



Pistons and piston rings, gudgeon pins, etc.

Cylinders reground

and fitted with new pistons from **30/-**
Pistons only from **15/-** ea.
Gudgeon Pins from **2/-** ea.
Piston Rings from **1/-** ea.
Special terms for quantities.
Trade enquiries invited.

Two of our many unsolicited testimonials received.

Melksham, Oct. 20th, 1921.
"I duly received my Cylinder, which you despatched in answer to my 'phone message. I have assembled same, and put it through a good test during the last week-end. I am pleased to inform you it is at least 25% better than before. I thank you for the care taken and the promptness with which you executed the order."—T.S.

Ruabon, Oct. 26, 1921.
"I have received new Piston, etc. I am quite pleased with the job. Thanking you for the prompt attention and good work"—R.M.R.

WILLIAMS & JAMES,
ENGINEERS AND MANUFACTURERS
Telephone. 808
GLOUCESTER.

GET EITHER

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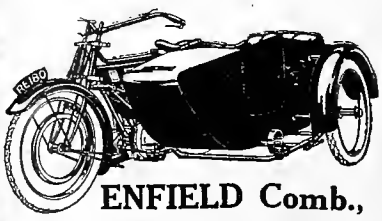
£220 or

£55 down and balance in 11 instalments of £16 - 2 - 6



ENFIELD Comb.,

£140 (Dyno. £18 extra) or

£35 down and balance in 11 instalments of £10 - 5 - 3

(Most well-known makes in stock).

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387, Euston Rd., London, N.W.1.
151, High St. Walthamstow, London, N.E.
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FLEXEKAS

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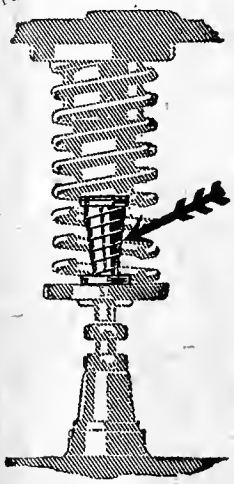

An airtight flexible spring casing enclosing the valve stem and filled with special heat proof graphite paste.

Flexibility.
Lubrication of Valves.
Easy Starting.
Xtra m.p.g.
Excludes Dust.
Kills Valve Clatter.
Air Leaks Prevented.
Slow Running Ensured.

Price 2/6 per Valve.
Carton of paste, 1/6 each.
State Make and Year of Machine.

OVER 50,000 SOLD!

I will replace any that are not giving satisfaction no matter where or when purchased.

If your dealer does not stock, send direct to

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SPEEDOMETER Experts.—Repairs to all makes. Stewart repair a speciality. New and second-hand sets in stock.—London Speedometer Co., Kramer Mews, Earl's Court. [7511

ROC 2-speeds.—Humber, Rex, V.S., Millenium, and Allday-Onions overhauled; all spares; sole licensee for all Roc 2-speeds.—Connolly, Carmelite Rd., Coventry. [X4339

PISTONS, all sorts and sizes, in stock or to order in quick time; cylinders rebored from £2; engines rebushed.—Ward and Co. (Albert Agg), 51, Upper Richmond Rd., Putney. [1999

ENAMELLING, Plating. — Tanks enamelled as before; handle-bars, etc., plated. — Send to Murray's Plating Works, Union St., Coventry. Platers and enamellers to the trade. [0024

CYLINDER Grinding, new pistons, rings, and gudgeons, 85 mm. J.A.P.'s, etc., 29/6; other sizes on request. Aluminium pistons if desired. — Vulcan Engineering Works, Walsden. [9642

WELDING.—Broken flanges, aluminium crank cases, cracked water jackets, valve seatings, welded and machined complete; scored bores filled in and ground to existing pistons.—Below.

CYLINDERS Reground, new pistons fitted complete, in cast iron or aluminium.—West London Welding Co., Essex Place, Chiswick. 'Phone: Chiswick 536. [0415

CYCLE Engines completely overhauled on flat rate price; worn parts replaced, all one price: Singles 35/-, twins 45/-.—Gonvy and Co., Ltd., 31, Upper Brook Mews, Craven Rd., Lancaster Gate. [3006

SEND Your Engine to me to be thoroughly overhauled and rebushed; singles 40/-, twins 60/-; other repairs quoted for.—Terry, 16, Grove Parade, East Finchley. 'Phone: Finchley 2261. [2951

TRIUMPH Cylinders Reground and fitted with genuine Triumph oversize pistons, complete with rings and gudgeon, 40/-; J.A.P., Rover, B.S.A., etc., same price. Compression and accuracy guaranteed.—Below.

WE Specialise in repairs, and guarantee same; complete overhauls, machining; any part made to pattern or drawing. No waiting.—Harvey's, 47, South Lambeth Rd., S.W.8. (Near Vauxhall Station.) [2883

HARLEY-DAVIDSON Repairs and Overhauls.—We are now able to put work in hand without delay; skilled staff under careful supervision.—Harley Davidson Motor Co., Ltd., 74, Newman St., London, W.1. [0043

WE can bring your machine up-to-date and make it into a countershaft model by fitting a new back, with Sturmey-Archer gear box; any machine converted.—A. Pilkington and Co., 390, Lichfield Rd., Birmingham. [1317

CYLINDER Grinding and new pistons at cut prices. We specialise in high-class work and quick deliveries for all classes of engines. Discounts to traders.—Kellett and Collinson, Ltd., Havelock Works, Great Horton, Bradford. [8629

CYLINDERS Reground, accurate finish, compression guaranteed: Triumph, Rover, Premier, etc., 37/-; all 2¾h.p. single, 33/-; twins, 2¾h.p. Douglas, 55/-; J.A.P., Indian, James, 60/-; complete with pistons and rings.

PISTONS.—Every pattern, standard or oversize, in stock; low price.

PISTON Rings, high grade; none better; thousands of testimonials; oversize or step cut 2/-, standard 1/6 each; return post.—Patent Rings, 30, Wigan Rd., Atherton. [5191

HUB Gear Machines Converted to Countershaft, or complete conversion sets supplied to suit all makes; recommended by the leading motor cycle manufacturers.—Sheldon Engineering Co., Bayley Lane, Coventry. 'Phone: 634. [2679

WELDING, Welding, Welding.—Welding done by experts; cylinders, crank cases, gear boxes, pistons, cranks, flanges, etc.; aluminium a speciality. No cure no pay, and all work returned in 6 days.—H. Heap, 105, Bissell St., Birmingham. [0023

BEACH Engineering Co., 42, Earl St., Coventry.—Engines rebushed, cylinders reground, aluminium or C.I. pistons fitted from £2; connecting rods rebushed; valves 5/-, guides 3/6; pistons complete from 25/-, rings 2/-; valve caps 4/6; other repairs quoted for. [0593

BLACKBURNE Spares.—Send to us the manufacturers, for all spare parts; prompt service, reasonable prices. Repairs and complete overhauls to Blackburne or any make of machine; enamelling (tanks a speciality), nickel plating, etc.—Osborn Engineering Co., Gosport, Hants. [0652

FRAME and Chassis Repair Specialists. Cut-downs, new forks, back stays, chain stays; fixed and hub gear machines converted; tube bending and machinery of every description; obsolete parts made to order; urgent jobs returned in 12 hours.—The Enfield Engineering Co., 31, Silver St., Enfield. [8049

DOUGLAS Specialists.—We have built over 100 Douglas machines this past season. Send us your repairs. All parts in stock. Complete overhauls, including enamelling and plating, in ten days. We pay carriage one way.—The Winstan Henney Motor Co., 63, South End, Croydon. 'Phone: 2431. [2890

Sturmey-Archer and Armstrong Gears. Immediate Repairs. All parts for all types in stock.

Quotations despatched same day as gear is received.
STURMEY-ARCHER COUNTERSHAFT GEARS, full range of 2 and 3-speed parts in stock. Any type of gear replacement made to pattern for motor cycles and cars. Instruction sheets and price lists by return of post; send stamps. (We do not repair push cycle gears.) Use our Gear Oil, specially prepared for Hub and Countershaft Gears in quart tins, 3/-, per tin, post free 3/6. Sturmey Countershaft Gear Boxes in stock, wholesale and retail—2-speed £11, 3-speed £17.

CROMWELL ENGINEERING CO.,
327, PUTNEY BRIDGE ROAD, S.W.15.
Telegrams and Telephone—Putney 1601.
Send Repairs to Putney Station (L. & S.W.R.)
For the convenience of customers we have altered our business hours as follows:—Weekdays, including Saturdays, 8 a.m. to 7 p.m.

Start the New Year by fitting

ACE (PATENT) SUPER DISCS

Their Central fixing plates make fitting a simple matter, and, besides the hours of wheel cleaning they will save you, they will add a touch of refinement to your machine or combination.

BLACK. Price 27/6 per wheel. Polished.

Write for our New Illustrated List.

CORNERCROFT, LTD., Ace Works, COVENTRY.

STURMEY-ARCHER and ARMSTRONG

Hub or Countershaft Gears repaired while you wait.

Actually in Stock—New Sturmey-Archer Countershaft Gear and Boxes spare parts. Send for Illustrated list. Trade supplied. Send wheels, Hounslow L.S.W. Railway.

COUNTY ENGINEERING CO.,
64 Staines Road, HOUNSLOW.
Wires: 'Three-speed, Hounslow.' 'Phone: Hounslow 322

MOFFAT,

West of England service stockists of TRIUMPH, DOUGLAS, STURMEY-ARCHER SPARE PARTS.
— *TRADE SUPPLIED.* —

Town Hall Garage, YEOVIL. 'Phone 50.

L. & K. PASTE SOLDER

Combined Solder and Flux.
Strength 50 x 50. In Tubes, self contained.
The simplest form of soldering.
A boon to the motorist—carry the tube in your pocket and make a good join on the road. Joins Bowden wires and nipples. No acids, flux, fire, or irons required—squeeze out a little paste—apply the heat of a match or candle, and the repair is done. *As supplied to H.M. Government.*
Ready for instant use. Per tube, 2/6 post free.
Livermore & Knight, Ld., 180, Fleet St., London

The Speedwell "V"

LEG SHIELD

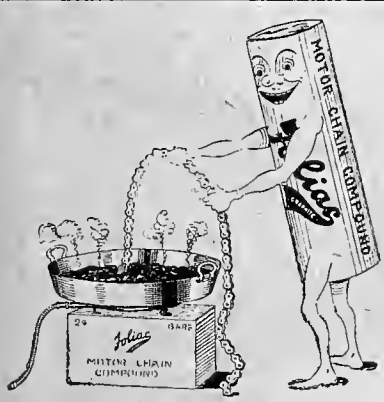
Speedwell Patent No. 83617/20

For Lightweights .. 30/-
For Heavyweights..35/-
Per set complete.

Exhaustive tests prove that their use ensures complete protection increased power and fuel economy, through engine cooling without wind resistance.

Through your agent or direct.

When ordering please specify whether outward curve or double curve is required and whether footboards or rests



BATH IT!

REMOVE that naked driving chain and clean with paraffin. When dry, place in a flat pan in which sufficient **Foliac Graphite Motor Chain Compound** to quite cover chain has been melted. Allow chain to remain in mixture about 15 minutes, during which time move every link, which ensures the lubricant reaching all interior wearing surfaces. Then, when cool, replace on machine Water, mud, or dust will not now affect it.

2/6 PER BAR.

If your garage does not stock it, we will supply you direct on receipt of name of your garage.

GRAPHITE PRODUCTS, Ltd.,
218-220, Queen's Rd., Battersea, LONDON, S.W.8

REPAIRERS.

GODFREY'S, Ltd., 208, Gt. Portland St., London, W.1, specialists in motor cycle repairs of all descriptions. Completely equipped workshops at 14, Miller St., Camden Town, N.W. (Phone: Museum 2434), which afford exceptional facilities for overhauls and repairs at moderate prices. Estimates given. [0639

ACETYLENE and Electric Welding.—Broken flanges, cracked water jackets, scored bores, worn bearings built up; aluminium gear boxes, crank cases, any broken motor part welded and machined up and returned in 7 days; 14 years' experience.—Lincoln Jeffries, Jun., Gun and Motor Maker, 120, Steelhouse Lane, Birmingham. 'Phone: Central 729. [2818

SPEEDOMETER Repairs.—Caution!—We beg to advise owners of Stewart speedometers that repairs can only be satisfactorily carried out by the makers, who alone possess the proper facilities for repair and subsequent necessary calibration of their instrument. We accept no responsibility for the working of instruments sent elsewhere which nullifies our guarantee.—The Cooper-Stwart Engineering Co., Ltd., 11, Broad St., Bloomsbury, London, W.C.2. [2950

WE Specialise in repairs to N.S.U. engines and N.S.U. engine-shaft gears; our enormous stock of N.S.U. spare parts (having acquired the company's entire stock-in-trade and patterns) enable us to supply to suit practically all N.S.U. models, including the earlier types, fitted with Eisemann L.T. mag., also for the 2h.p. N.S.U. engines fitted to 1913-14 O.K. machines. In ordering, it is important to submit old parts as pattern; trade enquiries invited.—Eagles and Co., Acton Hill Works, Spares Dept., 275, High St., Acton, London. [0355

IF only the best will satisfy you, then the Tennant Engineering Co., 238, Bristol St., Birmingham, alone can please you. Super-critical you may be, but their work will pass your inspection down to the last detail. No firm has more experience, no firm has keener workmen, no firm has greater or better facilities for turning out perfect work, and no firm will strive more to give you satisfaction. Cylinders rebored and fitted new pistons. Rebushing of every description. Engines completely overhauled and returned full of vigour and vim. Frames altered and repaired. Everything fully guaranteed and at competitive prices. Official repairers to A.C.U. and R.A.C.—'Phone: Mid. 1928. [0047

PARTS AND ACCESSORIES.

NOTE: *In addition to advertisements under this heading, advertisements of Spare Parts for individual makes of motor cycles will be found at the end of the advertisements of such makes in the classified pages of "Motor Cycles for Sale."*

COUNTY of London Engineering Works, Ltd.

AUSTER Wind Screens, Triplex glass, adjustable aluminium fittings, 13×6½in., 10/-, post free.

ELECTRIC Inspection Lamp, to fit over speedometer, complete with bulb and cable, 2/6 each.

EXHAUST Boxes, Douglas 2¾h.p., 15/-; Douglas 4h.p. clutch laces, 2/6; screwdrivers, 6in., 8in., 10in., 10d., 1/-, and 1/2 each.

HIGH-TENSION Wire, 9 mm 5d per yard, 25 yard coil 8/6; 7 mm., 4d. per yard, 25 yard coil 6/-; 5 mm., 3d. per yard, 25 yard coil 4/-; 3 mm., 2d. per yard, 25 yard coil 2/-; postage on coils, 5 mm. and upwards 1/-, 3 mm. 9d.

ALL Goods on approval per return post on receipt of cash; money refunded if not satisfied.

COUNTY of London Engineering Works, Ltd., 51a, New Park Rd., Brixton Hill, London, S.W. Tel.: Streatham 2899. T.A.: Ignitionac, Brixstret, London. [2473

PRIDE and Clarke for lamp sets at bargain prices.—Below.

27/6 Buys largest size P. and H. No. 127 lamp set; medium size sets, P. and H. No. 125, 25/6; lamps alone, 10/6.—Below.

25/6 Buys medium size Miller 31H lamp set; lamps alone, 9/-; ebony finish Lucas 462 lamps, 12/6; P. and H. generators, 14/-; good second-hand generators, 6/-; brackets, all types, 4/6; rear lamps, 3/7; postage on lamps, 1/6.—Below.

DOUGLAS 2¾h.p. New Cylinders, 25/-; crankshafts, 2¾ and 4h.p., 25/-; connecting rods, 15/6; pistons, 6/6; rings, 1/-; gudgeon pins, bushes, tappet guides, 1/6 each; chain wheels, 5/-; Renolds chains, 7/-; genuine Douglas tool rolls, 16/-.—Below.

PRIDE and Clarke.—All spares for 2¾h.p. Douglas in stock. Immediate attention given to all orders by post; postage extra; stamp reply.—Pride and Clarke, 156, Stockwell Rd., Brixton, S.W.9. Tel.: 898 Brixton. (Garage at rear.) [3143

N.S.U. Gear, off Bradbury, perfect; £4/15.—Clegg, 67, Millett St., Bury. 3065

ONE Second-hand Fafnir Engine, also two magnetos.—Morgan, 138, Gower St., W.C.1. Museum 3418. [0762

6 NEW YEAR'S BARGAINS!

1921 SUNBEAM, 3-spd. Spotless condition	**105 Guineas**
1921 NORTON, 3-speed, 16H. Perfect	**95 Guineas**
1920 DOUGLAS Comb. 4h.p. Grand value	**80 Guineas**
1919 A.J.S. Comb'n. Wonderful value	**110 Guineas**
1919 MATCHLESS and Sidecar	**90 Guineas**
1920 B.S.A. Comb'n. Lamps, horn, screen. Almost as new.	**95 Guineas**

JULIAN,
84 Broad Street,
READING. 'Phone 1024.

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We still lead the way to Tyre Bargains.

WOOD - MILNE

GUARANTEED BRAND NEW.
Not Clearance or Blemished

26×2¼, 26×2½ o.s., 650×65	SPECIAL 1 EE PLY	13/6
26×2½	EXTRA HEAVY FOUR PLY	16/6
28×3	EXTRA HEAVY FOUR PLY	28/6
28×3 to fit American rims	PALMER CORD FOUR PLY	37/6
26×2½ to fit 2¼ rims	Grooved and Ribbed. Best English make.	24/9

NEW TUBES (in all sizes), **7/-.**
1/- extra carriage paid, passenger train. Other Tyre bargains. Price List on application.
MOTOR CYCLING HELMETS (1922 Patterns). Illustrated List on application.
NEW RUBBER THIGH BOOTS, 15/-, Carriage paid

H. EMANUEL & CO.,
(TYRE FACTORS),
27, Belgrade Road,
STOKE NEWINGTON, N.16.
Stores: 37a, Balls Pond Road.
DALSTON, LONDON, N.
Telephone: Dalston 3161.

PARTS AND ACCESSORIES.

INDIAN Front Forks, gear boxes, and engines, and all parts for same.—Below.

INDIAN Intake Domes, carburetters, magnetos, clutches, kick starters.—Below.

INDIAN Carriers, chains, and guards, springs, sprockets; in fact, everything for 7-9h.p.; all parts absolutely new.—Dennis Accessories Stores, 89, Brixton Rd., London. Specialists in Indian Repairs. 'Phone: Brixton 3129. [1195

TOOL Rolls, strong leather, with strap and pockets, 7×18in., 3/-; other sizes made.—Below.

LEATHER Knee Grips with oval pads, 5/6 pair, carriage paid; cash refunded not approved.—Below.

LEATHER Leggings to measure; illustrated list and instructions free from makers.—County Legging Co., Franchise St., Perry Barr, Birmingham. [1935

CENTRAL Garage offers a splendid range of new and second-hand Douglas spares.

4h.p.—Frames, stove enamelled £4/19/6, unenamelled £4/5; engines, complete with mag. and carburetter, £18/10; gear boxes, complete with K.S., £10; overhauled by experts; and all other parts at cheap prices.

2¾h.p.—Frames with back stays, stove enamelled 90/-, unenamelled 65/-; front forks, enamelled 18/6, unenamelled 16/-; connecting rods, 18/-; new pistons, 10/6; S.H. pistons, 7/-; piston rings, 1/3; cylinders, 17/6; valves, 2/6; crankshafts, 30/-; head clips, 6/6; mudguards, 12/- pair complete; silencers, 12/6; tappet guides, 1/9; head stems, 9/6.

ENGINES, complete with mag., carburetter, £14; gear boxes, £4 complete; overhauled by experts.

ANY Goods sent on approval against cash. All cheques and P.O.'s to be made payable to Central Garage, 302, London Rd., Thornton Heath, S.E., and must include sufficient for carriage. [2945

BINKS Carburetters.—Large stock ready for immediate delivery.—Booths Motories, Halifax.

BINKS Carburetters.—We specialise in these; all models supplied.—Booths Motories, Halifax.

BINKS Carburetters.—We take your old carburetter in exchange.—Booths Motories, Halifax.

BINKS Carburetters for Douglas, Scott, Indians, Harley-Davidsons, Triumphs.—Booths Motories, Halifax.

BINKS Carburetters enable your engine to tick over; try one.—Booths Motories, Halifax.

BINKS Carburetters save petrol and give more power.—Booths Motories, Halifax.

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DOUGLAS 2¾h.p. Unused W.D. Spares; bargain prices; illustrated lists free.—McNeille and Platt.

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P. and M.—Incomplete machines, £17/10; 1918 machines, renovated as new, £50, guaranteed.—Below.

P. and M.—Engines, £8/10; gears, £5; forks, £3/10; tanks, 15/-; wheels, 35/- pair; handle-bars, 15/-.—Below.

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is used in T.T. races, suitable for Douglas, Triumph, Sunbeam Norton, J.A.P., etc., **5/-** each.

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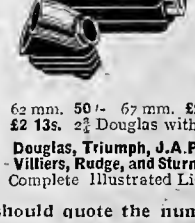

2¾ h.p. J.A.P., **73/-**, 4 h.p., 6 h.p., and 8 h.p., **82/4**; Enfield 3 h.p., **59/3** front, **58/6** rear; Humber, **£5 15s.**; Sunbeam, **£5**; Rudge, **£4 1s.**; Triumph pattern, any year, **£4 6s.**; Rover, **£5 7s. 6d.**; B.S.A., **£4 10s.**; Premier, **£6**; 2¾ h.p. Douglas **50/-**, 4 h.p. **60/-**; Norton 3½ h.p. **£4 17s. 6d.**, Big Four **£5**; Levis 2½ h.p., 62 mm. **50/-** 67 mm. **£2 15s.**, 2¾ h.p. **£2 15s.**, 2½ h.p. **£2 13s.** 2¾ Douglas with chipped fins, **25/-**

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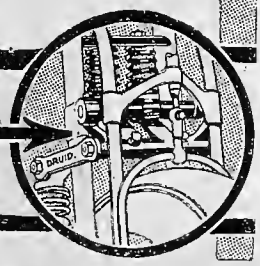

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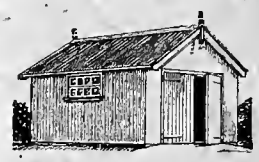

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14'×8'	6'	8'6"	18 7 6	3 16 6
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16'×12'	7'	10'3"	27 17 6	8 2 6

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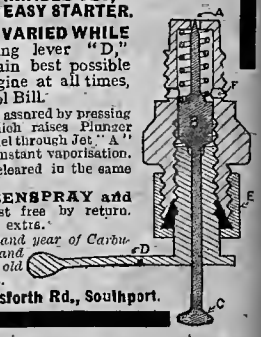

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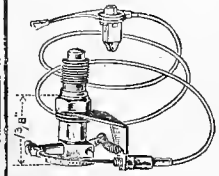

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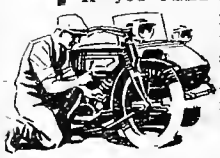

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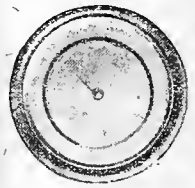

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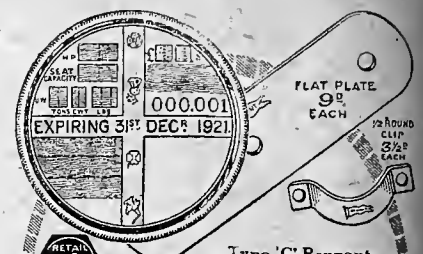

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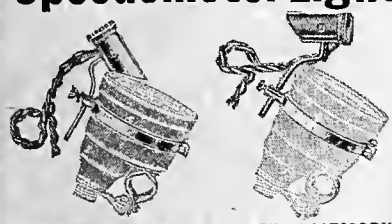

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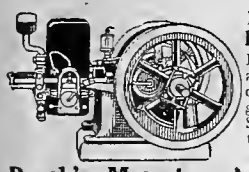

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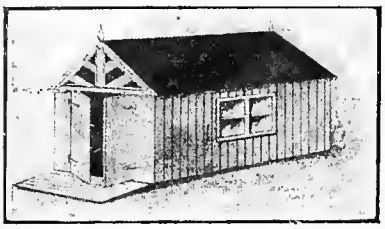

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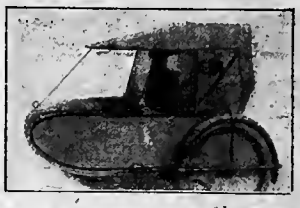

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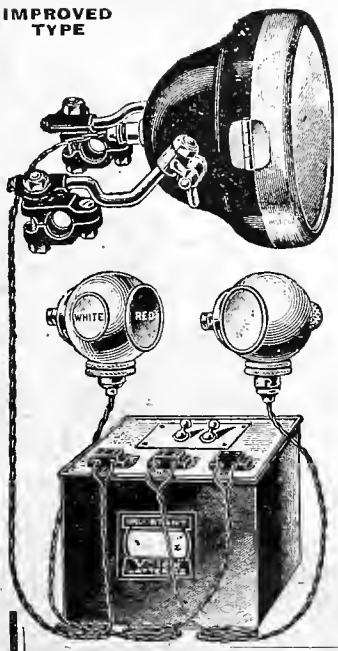

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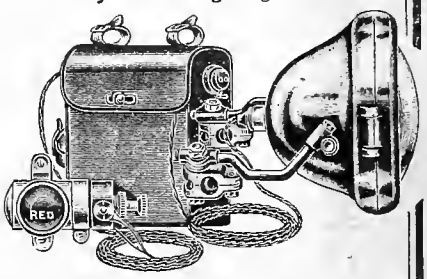

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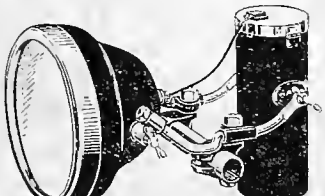

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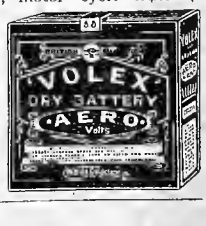

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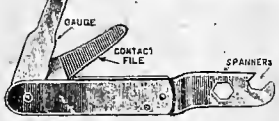

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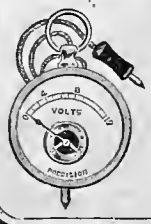

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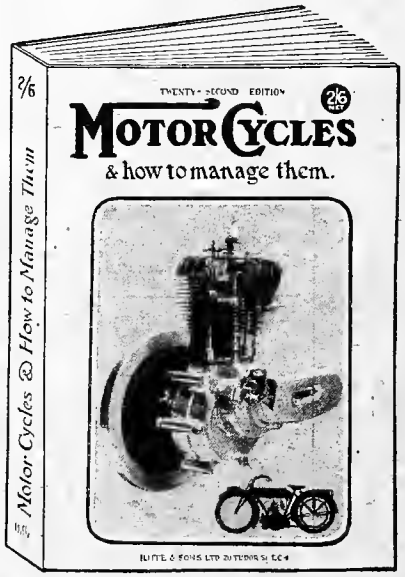

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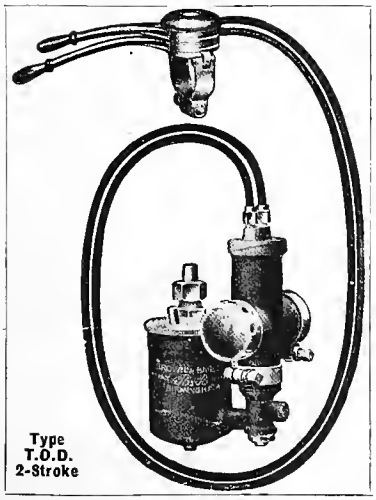

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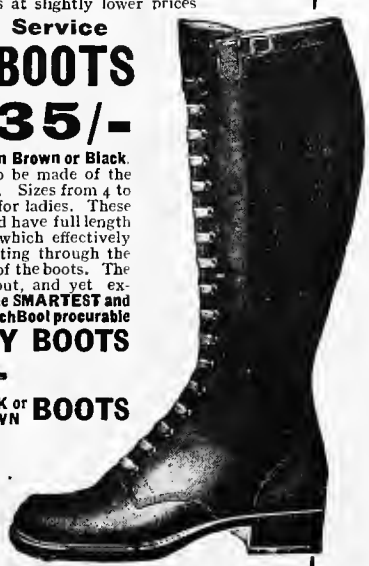

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